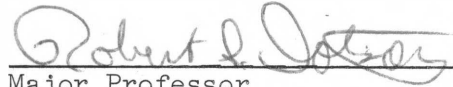


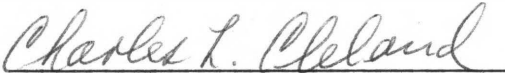
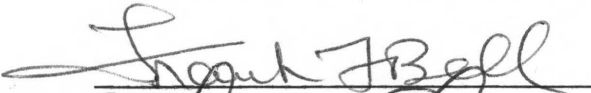
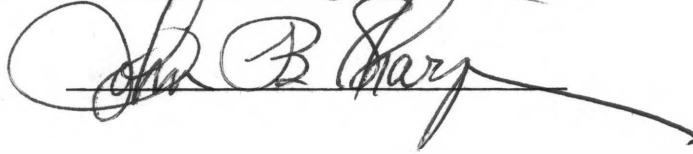
June 1, 1967

To the Graduate Council:

I am submitting herewith three related problems in lieu of thesis written by Gene C. Moles entitled: "Problem A: Characteristics of Roane County Small Woodland Owners and Their Farms; Problem B: Management Practices of Roane County Small Woodland Owners; and Problem C: Factors Influencing Woodland Management Practice Adoption by Roane County Small Woodland Owners." I recommend that they be accepted for nine quarter hours credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Extension.


Major Professor

We have read these problems
and recommend their acceptance:

Accepted for the Council:


Vice President for
Graduate Studies and Research

SMALL WOODLAND OWNERS IN ROANE COUNTY, TENNESSEE:

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

PROBLEM B: MANAGEMENT PRACTICES OF ROANE COUNTY SMALL WOODLAND OWNERS

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

Three Related Special Problems in Lieu of Thesis

In Partial Fulfillment
of the Requirements for the Degree
Master of Science

by
Gene C. Moles

June 1967

PROBLEM A

CHARACTERISTICS OF ROANE COUNTY WOODLAND OWNERS AND THEIR FARMS

A Special Problem in Lieu of Thesis

In Partial Fulfillment
of the Requirements for the Degree
Master of Science

by
Gene C. Moles

June 1967

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CHAPTER I

INTRODUCTION

I. THE SITUATION AND NEED FOR THE STUDY

Roane County is one of five counties that was selected for an Extension State Study of Management Practices of Small Woodland Owners. Other counties involved were Rhea, Monroe, McMinn and Perry. The State Study was part of a nationwide study that took place in 1962-1963. There were eleven other states besides Tennessee participating.

Roane County is located in the central part of eastern Tennessee and was established from part of Knox County in 1801. In 1880, the population was 15,237; by 1900, it had increased to 16,397. This figure was almost doubled by 1950 when the population was 31,665 (7:1).^{*} The 1960 census gives the population as 39,133.

Roane County has a total of 248,300 acres. Fifty-nine point nine percent or 148,700 acres are in forest land. Thirty-one percent or 77,100 acres make up the non-forest land, and the remaining 9.1 percent or 22,500 acres is occupied by water (13:1). It is estimated that 82 percent of Roane County's forests are made up of small owner-ships under 500 acres in size (7:19).

At the present time, there is no large lumber company in the

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

county buying sawtimber. It is estimated there are about twelve portable sawmills located in the county.

There are two companies that buy pulp wood. These are Hiwassee Land Company and The Mead Corporation. The Hiwassee Land Company buys only pine pulp wood, and The Mead Corporation buys only hardwood. In 1962, Hiwassee Land Company bought 2,038 cords of pine pulp wood from owners in Roane County. The Mead Corporation bought 2,516 cords of hardwood (15).

Projections of future demands for timber in the United States indicate that by the year 2000, the forest resources must be in a condition to grow 104.3 million board feet of sawtimber annually or over twice the current net growth of 47.3 billion board feet.

The most recent national statistics show that 55 percent of all commercial forest land in the United States is held in 4.5 million ownerships of less than 5,000 acres each. These woodlands grow substantially less timber per acre than well-managed larger woodlands that are either privately or publicly owned.

The lands owned by many forest industries and by the public already have programs of forest management. They are in the business of forest crop production. Such ownerships are in a good position to command the facilities and personnel necessary for the attainment of the greatly increased intensity of management needed. However, industrial and public land together comprise less than half the commercial forest area in the United States. Small forest ownership with 55 percent of the area must be looked to for a substantial portion

of the increased growth needed (4:1).

What can be done to influence small forest owners to double their production from their present woodland by the year 2000 and thereby produce four billion board feet more timber than the present production of all owners? The magnitude of the goal is a major reason for recognition of small forest ownerships as the key to future adequacy of timber supplies in the United States.

II. IMPORTANCE AND SCOPE OF FORESTRY IN ROANE COUNTY

Fifty-nine percent or 148,700 acres of land in Roane County are in forest land. According to the 1964 census of agriculture, 885 farms in Roane County were reported to have some woodland (14).

Forest land in Roane County today is much better stocked than it was ten or twenty years ago. Much of this improvement has come about as a result of the improvement and extension of public fire protection.

The County Agricultural Extension Service has placed much emphasis on reseeding poorly stocked forest land with pine seedlings. Tennessee Valley Authority has helped with the improvement of forest land with their program "Plant Trees, Grow Jobs."

III. QUESTIONS TO BE ANSWERED

Basic questions raised for consideration in the study included:

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

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

3. What are some of the characteristics of noninnovators (those not among the first few to adopt recommended practices) in Roane County?

IV. PURPOSE OF THE STUDY

The purpose of this study was to obtain basic information concerning the characteristics of small woodland owners in the county which could be used in planning the forestry part of the county extension program.

V. REVIEW OF RELATED LITERATURE

John D. Black states that it is obvious from the papers that he has reviewed that one of the major obstacles to better forestry in this country is lack of public concern and the indifference of woodland owners. This poses for the foresters a difficult problem in social psychology. They must find something in the attitudes and reactions of people at large, and of timberland owners, that they can seize upon that will draw these groups into their programs (2:434).

In a Kentucky study, Santopolo found that most woodlands had been owned for twenty years or more, time enough to realize the benefits of forestry practices. More than half the forest tract consists of less than 100 acres. The forest innovators from Kentucky are much like other innovators when compared with their neighbors and others. They

are better educated, have higher-status jobs, make more money and own more land (9:249).

In his research summary on "Characteristics of Good and Poor Managers of Small Woodlands," Frutchey found that as the size of the woodland increased, the intent to manage for timber production increased. Interest in forestry appears to be associated with the size of the woodland, the larger the more favorable. There was a positive correlation between size of ownership and use of forestry practices. The larger the holding, the larger is the percent of owners who harvested in the past ten years. Owners who received a major portion of their income or other substantial benefits from their woodlands did a better job of management. Woodlands that provided only a small portion of total income, received less attention and had less effective management. Urban resident owners place greater emphasis on growing timber; rural resident owners on using timberland for range, with forestry secondary. At least two-thirds of the owners lived within 25 miles of their woodland. Thus a large number of owners would probably not consider travel costs a deterrent to management. A large part (65 percent) of the forest-land owners live either within the town where their forest land is located or in one of the adjoining towns. Woodlands still in the hands of the original owners were being managed better than those that had changed hands. People who retained ownership for twenty years or more did the best job of woodland management. Individuals who inherited their property showed slightly more interest in good management than those who purchased it. Owners who

had good timber apparently had more incentive to practice forestry than those who had poor stands. Those with unmortgaged property were more successful than those with mortgages. There were many indications that low-income and financial difficulties were the main reasons for unsatisfactory management. Interest in forestry appears to be associated with the fact that an owner has sold timber recently. Good managers had more schooling than poor managers (3:1-4).

In a Michigan study by Dr. C. H. Schallau, it is stated that most woodland owners will travel from one end of a county to the other to save themselves \$100 when buying a car or a piece of machinery, but won't hesitate to sell stumpage to the first timber buyer who comes along. As a result, they may sell for several hundred dollars less than they could have received.

It was also found that most of the timber products derived from southern Michigan's forest resources grew in spite of, rather than because of, the owners' efforts. Only 5 percent of the woodland owners interviewed had carried out any woodland improvement. Most of this was confined to timber stand improvement endeavors. The frequency of tree planting, although this is an act of regeneration rather than improvement, did indicate an interest on the part of some of the owners in creating woodland-type values. One-fifth of the owners stated that they had planted trees. However, except for the businessman-professional owners (the average-sized forest plantation established by this group was 31 acres) most of the planting efforts were inconsequential. Then too, only thirteen percent of all owners who planted trees indicated

timber production to be their main reason for planting. Creation of aesthetic values was the most frequent reason given. Despite the lack of woodland improvement activity, seventy-six percent indicated that they could improve their forest management. Forty-one percent of these owners indicated a lack of interest in forestry as their main reason for not improving their woodland management, while 31 percent said they had more rewarding activities claiming their time and effort (10:8,9).

In his book, Developing Farm Woodlands, Preston states that the growing of wood as a farm crop, a woodland enterprise as part of the farm business, is a conception that has had a long struggle for recognition. In spite of the fact that farmers own 30 percent of the privately owned commercial forest land of the United States, and that nearly 25 percent of the farms east of the Mississippi River are in the woodland, farmers have been slow to recognize the necessity and the feasibility of growing wood as a farm crop. As a result, thousands of farms have been abandoned where a large proportion of the farm area could never profitably produce any crop other than forest products. Failure of the forest to contribute its share of farm income, failure of the farmer to "farm the forest," doomed such farms from the beginning. Most of the woods income in such cases has gone to the stumpage buyer, especially the "lump sum" buyer. He prospered but the farmers went broke. Farm forestry can make the difference between a farm income so low that the farmer cannot survive and one that makes the farm a going concern. The truth is that our agricultural philosophy and teaching have not included wood products in the list of approved farm crops.

The basic truth that farm forests can be managed and wood grown as a farm crop, thus enabling the non-arable land to assist the arable land in producing a farm income, has never been fully grasped in all the history of American agriculture (6:1,2).

The marketing of forest products is inefficient and disorderly. There are more than 160,000 small forest owners in Tennessee that market stumpage perhaps two or three times in a lifetime. Numerous in number, their individual offerings are small. The situation is very much like that in the field of agriculture except that combinations of sellers, such as are found in agricultural marketing cooperatives, are almost non-existent in the case of timber marketing throughout the country. There are none in Tennessee.

The farmer's unfamiliarity with the market is in two forms. First is his lack of information regarding existing market prices, and second is his lack of knowledge and contact with the various markets handling different products (12).

VI. DEFINITION OF TERMS

A small woodland owner was defined as a woodland owner who owned more than five acres and less than 2,500 acres of woodland. An innovator was defined as a farmer who is among the first few to accept and carry out recommended farm practices. A noninnovator was defined as a farmer who is not among the first few to accept and carry out recommended farm practices.

VII. METHOD AND PROCEDURE

A complete list of all farms in Roane County was obtained from the Roane County Stabilization and Conservation office. The County Agricultural Extension Agent, Mr. Kenneth Sutton; the Agriculture Stabilization and Conservation office manager, Mr. Eddie Smith, and the writer selected the top one hundred farmers in Roane County. From this list, every fourth name was selected for the innovators. From the remaining 1,000 names, every twelfth name was selected for the non-innovators' list.

Dr. John Sharp, Extension Forester of the University of Tennessee, assisted in five try-out interviews. The writer personally interviewed each respondent, spending an average of one hour and ten minutes for each interview. Reference may be made to the interview schedule by turning to Appendix A. Interviews were started in August, 1962, and completed May, 1963.

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. Eighty-four percent of the innovators were known either "very well" or "fairly well" as compared to 39 percent for the noninnovators. Thirty-seven percent of the noninnovators were not known at all by the interviewer as compared to 12 percent of the innovators.

II. OWNER ATTITUDE TOWARD SURVEY

The information obtained in this survey depended largely on the attitude and response of the woodland owners.

Ninety percent of all owners were rated "friendly." Another 4 percent were in the "somewhat friendly" category. Only one person refused to grant an interview. The difference in attitude of innovators and noninnovators was negligible. This information is contained in Table II.

III. WOODLAND ACREAGE

From Table III it may be seen that 65 percent of all owners had fifty acres or more of woodland. Fifty-six percent of the innovators had fifty acres or more compared to 65 percent of the noninnovators.

TABLE I
DEGREE TO WHICH INTERVIEWER KNEW ALL OWNERS, INNOVATORS
AND NONINNOVATORS BY PERCENTS*

Degree to which interviewer knew respondent	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Very well	20	40	13
Fairly well	30	44	25
Not very well	19	4	24
Not at all	31	12	37
Total	100	100	100

*Percents are rounded to nearest whole number.

TABLE II

ATTITUDES TOWARD THE SURVEY AS DETERMINED BY THE INTERVIEWER
 ACCORDING TO PERCENTS OF ALL OWNERS,
 INNOVATORS AND NONINNOVATORS*

Attitude toward survey	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Not answered	3	0	4
Friendly	90	96	88
Somewhat friendly	4	4	4
Indifferent	2	0	3
Antagonistic	1	0	1
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,
 INNOVATORS AND NONINNOVATORS*

Acreage interval	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
5-9	8	4	9
10-19	4	4	4
20-29	7	16	7
30-49	16	20	15
50-99	31	24	33
100-249	28	20	31
250-499	6	12	4
500-2,500	0	0	0
Total	100	100	100

*Percents are rounded to nearest whole number.

None of the owners had more than 500 acres of woodland, and only 6 percent of all owners had 250 acres or more.

IV. PORTION OF TOTAL LAND IN WOODLAND

Fifty-two percent of all owners had one-half or more of their land in woodland. Fifty-seven percent of the noninnovators had one-half or more of their land in woodland compared to 36 percent of the innovators. This information is found in Table IV.

V. DISTANCE LIVED FROM WOODLAND

Ninety percent of all owner's woodland was on the farm where they lived, and 98 percent was within less than ten miles of their places of residence. Table V indicates that there is no significant difference in innovators (96 percent) and noninnovators (99 percent) who lived within less than ten miles from their woodlands.

VI. MAJOR OCCUPATIONS

Table VI shows that 39 percent of all the owners were full-time farmers. Forty-two percent of the innovators were full-time farmers and 35 percent of the noninnovators were full-time farmers.

VII. MAJOR FARM ENTERPRISE

Data in Table VII show that the major farm enterprises for all owners were as follows: beef, 28 percent; general farm, 20 percent; beef and tobacco, 15 percent; tobacco, 12 percent; and forestry, 8 percent.

TABLE IV
PORTIONS OF TOTAL LAND IN WOODLAND BY PERCENTS OF ALL
OWNERS, INNOVATORS AND NONINNOVATORS*

Portion of total land in woodland	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Less than one-fourth	16	20	15
One-fourth to one-half	32	44	28
One-half to three-fourths	39	28	43
Three-fourths to all	10	4	11
All	3	4	3
Total	100	100	100

*Percents are rounded to the nearest whole number.

TABLE V

DISTANCES LIVED FROM WOODLANDS BY PERCENTS OF ALL OWNERS,
INNOVATORS AND NONINNOVATORS*

Distance from woodland	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Live on place	90	84	92
Less than 10 miles	8	12	7
10-29 miles	2	4	1
30-99 miles	0	0	0
100 miles or more	0	0	0
Total	100	100	100

*Percents are rounded to the nearest whole number.

TABLE VI
MAJOR OCCUPATIONS BY PERCENTS OF ALL OWNERS,
INNOVATORS AND NONINNOVATORS*

Major occupation listed	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
N A	0	0	0
Full-time farmer	39	42	35
Part-time farmer	18	12	20
Business	6	4	7
Professional	5	4	5
Wage earner	11	8	12
Housewife or widow	1	0	1
Retired	13	12	13
Other	7	8	7
Total	100	100	100

*Percents are rounded to the nearest whole number.

The innovators major enterprises were beef and tobacco, 28 percent; beef, 20 percent; general farming, 16 percent; and forestry, 12 percent.

Major enterprises for the noninnovators were beef, 31 percent; general farming, 21 percent; tobacco, 13 percent; and forestry, 7 percent.

VIII. EDUCATIONAL LEVEL

The data in Table VIII indicate that the average years of school completed by all owners were 9.38. The average for the innovators completed was 10.97 years compared with 8.75 years by the noninnovators. Thirty-three percent of all owners had a high school education or more. Fifty-six percent of all woodland owners had completed the eighth grade or more.

IX. GROSS FAMILY INCOME

The question on family income was optional; therefore, 25 percent of all owners interviewed gave no answer. The information from Table IX shows that the average income of those responding was \$3,853 per year. It is interesting to note that the noninnovators had a higher average income (\$392 more) than the innovators. Over half of the owners who answered this question were in the \$2,000-4,000 bracket. Only 12 percent had a gross income of \$6,000 or more.

TABLE VII

MAJOR FARM ENTERPRISES ACCORDING TO PERCENTS OF ALL OWNERS,
INNOVATORS AND NONINNOVATORS*

Major farm enterprise	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Beef	28	20	31
General farm	20	16	21
Tobacco	12	8	13
Forestry	8	12	7
Dairy	10	12	9
Beef and tobacco	15	28	11
Forestry and beef	2	0	3
Soil bank	2	0	3
Beef and hogs	3	4	3
Total	100	100	100

*Percents are rounded to the nearest whole number.

TABLE VIII

EDUCATIONAL GRADE LEVELS AND AVERAGE EDUCATIONAL GRADE
LEVELS BY PERCENTS OF ALL OWNERS,
INNOVATORS AND NONINNOVATORS*

<u>Educational category</u>	<u>All owners Percent (N = 100)</u>	<u>Innovators Percent (N = 25)</u>	<u>Noninnovators Percent (N = 75)</u>
No answer	19	24	17
None	0	0	0
1-4	10	4	12
5-7	15	8	17
8th	16	8	19
9-11	7	8	7
12th	20	32	16
1-3 yrs. of college	5	4	5
B.S.	8	12	7
Graduate work or advanced degree	0	0	0
Total	100	100	100
Average educational level	9.38	10.97	8.75

*Percents are rounded to the nearest whole number.

TABLE IX

TOTAL 1966 GROSS FAMILY INCOMES AND AVERAGE INCOMES BY
PERCENTS OF ALL OWNERS, INNOVATORS
AND NONINNOVATORS*

Total gross family income category	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Not answered	25	28	24
\$0-1,999	9	4	11
2,000-3,999	39	36	36
4,000-5,999	15	16	15
6,000-7,999	10	4	12
8,000-9,999	2	0	3
Total	289,000	64,000	225,000
Average	3,853	3,555	3,947

*Percents are rounded to the nearest whole number.

X. MARKETING TIMBER BY GROSS SALE

Table X shows that 69 percent of all owners had not marketed any timber in the past five years. Fifty-six percent of the innovators had not sold any compared with 73 percent of the noninnovators. Only 10 percent of all owners had sold \$1,000 or more of timber in the last five years.

XI. AGE OF OWNER

The information on Table XI indicates that the average age of all land owners interviewed was 54.4 years. The innovators were 5.4 years younger than the noninnovators. Sixty-one percent of all the owners were over fifty years of age; 35 percent were over sixty years of age. Only one owner was under thirty years of age.

XII. INTEREST IN WOODLAND IMPROVEMENT

According to the opinion of the interviewer, 70 percent of all owners were "somewhat interested" in improving their woodland. Thirty-six percent of the innovators were "very interested" in improving their woodlands as compared to 7 percent of the noninnovators. This information is included in Table XII.

XIII. INTEREST IN MANAGEMENT ASSISTANCE BY PRIVATE ARRANGEMENTS

Twenty-two percent of all owners "were interested" in making private arrangements with a forester or company to help manage their woodland. Forty-four percent of the innovators compared with 15 percent

TABLE X
GROSS TIMBER SALES MADE DURING THE PREVIOUS FIVE
YEARS ACCORDING TO PERCENTS OF ALL OWNERS,
INNOVATORS AND NONINNOVATORS*

Gross sales category	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
No sales	69	56	74
Less than \$250	12	20	9
250-499	9	4	11
500-999	0	0	0
1,000 and over	10	20	7
Total	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XI
AGES AND AVERAGE AGES BY PERCENTS OF ALL OWNERS,
INNOVATORS AND NONINNOVATORS*

Age group (years)	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Under 30	1	4	0
30-39	7	12	5
40-49	31	40	28
50-59	26	20	28
60 or more	35	24	39
Total	100	100	100
Average age	54.42	50.4	55.8

*Percents are rounded to the nearest whole number.

TABLE XII

INTERVIEWER OPINION OF RESPONDENT INTEREST IN WOODLAND
IMPROVEMENT BY PERCENTS OF ALL OWNERS,
INNOVATORS AND NONINNOVATORS*

Interest in improve- ment category	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
No answer	4	0	5
Very interested	14	36	7
Somewhat interested	56	56	56
Indifferent	8	4	9
Not interested	18	4	23
Total	100	100	100

*Percents are rounded to the nearest whole number.

of the noninnovators "were interested." This information is shown in Table XIII.

XIV. INTEREST IN COOPERATIVE ARRANGEMENTS

Table XIV shows that almost the same percent thought they "would be as interested" in cooperative arrangements as they were in private arrangements. Seventeen percent of all owners "were interested" in joining an association which would hire a private forester to help manage their woodlands. Forty-four percent of the innovators "were interested" compared with 8 percent of the noninnovators.

XV. MANAGEMENT SYSTEM PREFERRED

Very few farmers had given any thought to improving their woodlands in the near future. Thirty-two percent of all owners "were not interested" in any system to help manage their woodland. Thirty-six percent "were interested" in securing forestry assistance by some other arrangement than private arrangements with a forester or by joining an association. Table XV indicates that 44 percent of the innovators "would prefer private arrangements with foresters" or joining an association while only 21 percent of the noninnovators "were interested" in these arrangements.

XVI. WOODLAND OWNERS' RATINGS OF THEIR WOODLAND

Fifty-one percent of all owners rated the condition and value of their woodland as "fair" according to information contained in

TABLE XIII

INTEREST IN MAKING PRIVATE ARRANGEMENTS WITH A FORESTER
OR COMPANY TO HELP MANAGE THEIR WOODLAND, EXPRESSED
BY PERCENTS OF ALL OWNERS, INNOVATORS
AND NONINNOVATORS*

Degree of interest	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Not interested	75	48	84
Might be interested	3	8	1
Interested	22	44	15
Total	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XIV

INTEREST IN JOINING WITH OTHER OWNERS IN AN ASSOCIATION
WHICH WOULD HIRE A PRIVATE FORESTER TO HELP MANAGE
THEIR WOODLAND, EXPRESSED BY PERCENTS OF ALL
OWNERS, INNOVATORS AND NONINNOVATORS*

Degree of interest	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
No answer	2	4	1
Not interested	77	48	87
Might be interested	4	4	4
Interested	17	44	8
Total	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XV

MANAGEMENT SYSTEM PREFERRED BY PERCENTS OF ALL OWNERS,
INNOVATORS AND NONINNOVATORS*

Management system preferred	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Not answered	5	4	5
Private arrangements with forester	15	24	12
Association with private forester	12	20	9
Forester secured other way	36	40	35
None of them	32	12	39
Total	100	100	100

*Percents are rounded to the nearest whole number.

Table XVI. Another 34 percent rated their woodland as "good," while only 3 percent rated their woodlands "excellent." Eighty percent of the innovators rated their woodland either "good" or "fair" as compared to 87 percent of the noninnovators.

XVII. INTERVIEWER'S RATINGS OF WOODLAND

Eighty-six percent of the woodland owners were not rated by the interviewer because he was not familiar with the condition and value of their woodland. The interviewer was able to rate 32 percent of the innovators and only 8 percent of the noninnovators. This information is found in Table XVII.

TABLE XVI

OWNER RATINGS OF THE CONDITION AND VALUE OF WOODLANDS
 ACCORDING TO PERCENTS OF ALL OWNERS, INNOVATORS
 AND NONINNOVATORS*

Woodland rating	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Not answered	4	4	4
Excellent	3	8	1
Good	34	44	31
Fair	51	36	56
Poor	8	8	8
Total	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XVII
INTERVIEWER'S RATINGS OF THE CONDITION AND VALUE OF
WOODLANDS OF ALL OWNERS, INNOVATORS AND
NONINNOVATORS BY PERCENTS*

Woodland rating	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Situation not known well enough to rate	86	68	92
Excellent	2	4	1
Good	4	16	0
Fair	8	12	7
Poor	0	0	0
Total	100	100	100

*Percents are rounded to the nearest whole number.

CHAPTER III

SUMMARY

A total of one hundred (100) small woodland owners (25 innovators and 75 noninnovators) was interviewed in Roane County in 1962-63. The generally stated questions guiding the study were:

1. What are the characteristics of small woodland owners in Roane County?
2. What are the characteristics of innovators?
3. What are the characteristics of noninnovators?

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 Roane County.

1. The interviewer knew 84 percent of the innovators either "very well" or "fairly well" as compared to 39 percent of the non-innovators.
2. Ninety percent of all owners were rated friendly by the interviewer. All of the innovators were rated "friendly" or "somewhat friendly."
3. Almost two-thirds (65 percent) of all woodland owners had fifty acres or more of woodland.
4. Fifty-one percent of all owners had one-half or more of

their total land in woodland. The noninnovators had more of their land in woodland than the innovators.

5. Ninety percent of all owners' woodland was on the farm where they lived. There was very little difference in innovators and non-innovators concerning the distance lived from woodland.

6. Only 39 percent of all owners were full-time farmers. Forty-two percent of the innovators were full-time farmers as compared to 35 percent of the noninnovators.

7. Almost one-third, 28 percent of all owners, reported beef as their major farm enterprise. Another 15 percent listed tobacco and beef as their major enterprise. Only 8 percent reported forestry as a major farm enterprise.

8. The average educational level for all owners was 9.38 years with innovators (10.97) averaging more than two grade levels higher than the noninnovators (8.75 years),

9. The average gross family income was \$3,853. Of those reporting the noninnovators had a higher income (\$392 more) than the innovators.

10. Over two-thirds (69 percent) of all owners had not marketed any timber products in the last five years. Only 10 percent of all owners had sold \$1,000 or more of timber products in the last five years.

11. The average age of all owners was 54.4 years. The innovators were slightly younger (5.4 years) than the noninnovators.

12. Seventy percent of all owners were somewhat interested in improving their woodland. More of the innovators (36 percent) were

very interested than the noninnovators (7 percent).

13. About three-fourths of all owners were not interested in making private arrangements with a forester or company to help manage their woodland, or in joining an association which would hire a private forester to help manage their woodland. Forty-four percent of the innovators were interested as compared to 8 percent of the noninnovators.

14. Over one-half of all owners (51 percent) rated the condition and the value of their woodland as fair; only 3 percent of all owners rated the condition and value of their woodland as excellent.

II. IMPLICATIONS

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

1. Almost 60 percent (148,700 acres) of the land in Roane County which is in woodland is not returning a fair profit to its owners.

2. Fifty percent of all owners had more than one-half of their total land in woodland, and 69 percent of these owners had not marketed any timber in the last five years.

3. Forestry income must be competitive with that of tobacco, beef and other farm enterprises if it is to compete for the owner's time and labor. Any educational effort in forestry will have to take

into consideration these other farm enterprises.

4. Practically all woodland owners would be somewhat friendly with any person or agency who would help them improve their woodland management.

PROBLEM B

MANAGEMENT PRACTICES OF ROANE COUNTY WOODLAND OWNERS-

A Special Problem in Lieu of Thesis

In Partial Fulfillment
of the Requirements for the Degree
Master of Science

by
Gene C. Moles

June 1967

CHAPTER I

INTRODUCTION

The economic and recreational future of Roane County will depend to a large extent on the management and production of its woodlands. Approximately 60 percent (148,000 acres) are in woodland (13:1).^{*} These woodlands contain a wide variety of species including short leaf pine, red oak, hickory, and white oak.

A considerable amount of timber has been marketed before it was mature, and there is only a small percent of good marketable timber in the county. There are several thousand acres of cut over land containing scrub oak and other species of little value. Many steep hills, rough and eroded land are in the need of reforestation (7:19).

Most of the farmers in the county consider using land for timber production as a poor investment since so much of their woodlands are stocked with undesirable species. However, most farmers want some woodland on their farm to furnish building materials, fence posts, fire wood, shade for cattle, recreation and aesthetic value.

In the past, very little effort has been made to find out which recommended woodland management practices owners were using. It is felt that a closer look at the management practices of small woodland

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

owners would provide information to improve the educational efforts of the different agricultural agencies.

I. THE PURPOSE OF THE STUDY

The purpose of this study was to determine which recommended forestry practices in Roane County woodland owners were following. An attempt was made to determine the differences between innovators and noninnovators.

II. REVIEW OF LITERATURE

Recent studies in Tennessee and other states have included some information concerning the small woodland situation and the recommended practices that owners were or were not using. Efforts have been made to determine the difference between innovators and noninnovators, and to establish where all owners are in the stages of the diffusion process.

In an interview-type study in Tennessee, Sharp and Dotson found that innovators on the average, were as far along in the adoption process as the trial stage on only two of the relevant practices, namely: (1) shopping around for best prices for selling trees and (2) selling trees to obtain optimum returns (11:32).

Romancier states that trees can be a crop just as cotton, corn, and tobacco are a crop. Trees, however, differ from annual crops in that all along they reach maturity for one product or another, and some trees can always be left to grow and increase in value (8:11).

A Forest Service paper written by Worley states that low productivity and lack of management seem to be much more prevalent on small holdings than on large. The first step in solving the small woodland problem is to find out more about the owners--who they are, how they live, and what they think (16:1).

In 1961, Frutchey noted that good managers were in the trial and adoption stages of the diffusion process. Poor managers were in the awareness, interest or exploration stages (4:3).

III. METHODS

A complete list of all farmers (1,200) in Roane County was obtained from the Roane County Agricultural Stabilization and Conservation office. From this list, a panel composed of the county agricultural agent, soil conservation technician, ASC office manager, assistant county agricultural agent, and myself, selected the top one hundred farmers for the innovator list. Twenty-five of these were randomly selected for innovators. Seventy-five other farmers were selected at random as noninnovators from the remaining 1,100 names.

Definitions of innovators, noninnovators, and small woodland owners can be found in Problem I, pages 8 and 9.

Each of the woodland owners was personally interviewed concerning his woodland situation. In obtaining the information regarding the production practices, the interviewer explained only basic details regarding the practices. The respondent therefore understood each practice and felt free to answer as he felt he was carrying out this practice in his woodland.

IV. RATING EXPLANATION

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

The following rating scheme was used to classify management levels of individuals on each of the twenty-one items: (1) no points were given if the person interviewed had not heard of the specific practice; (2) one point was given if the person had only heard of the practice; (3) two points were given if the person was only interested in it; (4) three points were given if the person had not tried it but planned to do so; (5) four points were given if the person had tried the practice but was not using it at time of interview; and (6) five points were given if the person had tried the recommended practice and was still using it.

Average practice diffusion ratings of the groups are compared in this report. For this purpose, the practice diffusion process is considered in the following stages: "unaware," 0-.49; "aware," .5-1.49; "interested in it," 1.5-2.49; "planning to try," 2.5-3.49; "tried," 3.5-4.49 and "using," 4.5-5.0.

An average practice diffusion rating was determined for each woodland owner by adding up his total score and dividing by 21 (the number of recommended practices). Group total average ratings were completed for the purpose of comparing groups. Other data reported are percents and averages. Main comparisons are between innovators and noninnovators.

CHAPTER II

FINDINGS

I. INTERVIEWER'S RATING OF WOODLAND MANAGEMENT LEVEL

The data in Table XVIII give the average practice diffusion rating and total average rating of all woodland owners, innovators, and noninnovators.

The average rating of all woodland owners was (2.12) just "interested." The innovators were in the "planning to try" stage (2.85) compared with the noninnovators who were in the middle of the "interested" stage (1.87).

The largest percent (29) of all owners was in the "unaware" (0.00-0.49) stage. Fewer innovators (15 percent) were in this stage than noninnovators (33 percent).

Twenty-one percent of all owners were in the "using the practice" stage (4.50-5.00). Over twice the percent of innovators (35 percent) were in this stage as noninnovators (16 percent). The other three stages show very little difference in ratings of innovators and noninnovators.

II. PRACTICES IN GENERAL

As shown in Table XIX, the average woodland practice rating for all owners range from a high of 3.76 on Practice 1 (Control grazing) to a low of .13 on Practice 21 (Preparing ground for natural seeding).

TABLE XVIII

INTERVIEWER'S AVERAGE PRACTICE DIFFUSION RATINGS AND
 TOTAL AVERAGE RATINGS OF ALL OWNERS, INNOVATORS
 AND NONINNOVATORS BY PERCENTS*

Average practice diffusion rating intervals	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
0.00-0.49	29	15	33
0.50-1.49	17	15	18
1.50-2.49	10	10	11
2.50-3.49	22	24	22
3.50-4.49	1	1	0
4.50-5.00	21	35	16
Total	100	100	100
Total average rating	2.12	2.85	1.87

*Percents are rounded to the nearest whole number.

TABLE XIX

AVERAGE WOODLAND PRACTICE DIFFUSION RATINGS AND TOTAL AVERAGE RATING

Woodland management practice	All owners average rating (N = 100)	Innovators average rating (N = 25)	Noninnovators average rating (N = 75)
1. Control grazing (fencing out livestock)	3.76	3.72	3.77
2. Shopping around for best price for selling trees	3.16	4.16	2.83
3. Planting trees to reforest woodland	2.71	3.40	2.48
4. Establishing a diameter limit for tree to be cut	2.59	3.36	2.33
5. Getting the advice of professional foresters	2.53	3.56	2.19
6. Thinning the woods	2.47	3.48	2.13
7. Constructing fire lanes	2.46	2.96	2.29
8. Making an inventory of the salable timber in your woodland and its value	2.37	3.20	2.09
9. Selling trees to obtain optimum returns	2.36	3.80	1.88
10. Starting to harvest trees within a year after marking	2.32	3.56	1.91
11. Using a written contract in selling trees	2.23	3.12	1.93
12. Marking trees for selective cutting	2.13	3.48	1.68

TABLE XIX (continued)

Woodland management practice	All owners average rating (N = 100)	Innovators average rating (N = 25)	Noninnovators average rating (N = 75)
13. Having a plan for growing and selling timber and/or other forest products	2.12	3.12	1.79
14. Participating in ASC or other government forestry programs	2.10	2.76	1.88
15. Controlling disease outbreaks	2.04	2.32	1.95
16. Establishing woodland on open land suited to trees	2.02	2.60	1.83
17. Killing undesirable trees	1.87	2.64	1.61
18. Controlling insects	1.81	1.84	1.80
19. Pruning stand trees	1.01	1.64	.80
20. Participating in non-government forestry programs	.35	.84	.19
21. Preparing ground for natural seeding or planting	.13	.40	.04
Total average rating	2.12	2.85	1.87

The highest rating for innovators was 4.16 on Practice 2 (Shopping around for best prices for selling trees).

The average practice diffusion score for all owners was 2.12 or in the middle of the "interested in the practice" stage. The innovators average score (2.85) "plan to try" was one rating above the noninnovators (1.87) "interested in the practice." The innovators out-performed the noninnovators on twenty of the twenty-one practices.

Bundles of practices were included in the survey schedule related to certain aspects of woodland production and marketing. They were as follows: practices related to establishment of the woodland, practices related to growth and management of the woodland, and practices related to marketing of timber and woodland products. Each of these will be discussed separately in the paragraphs that follow.

III. PRACTICES RELATED TO PLANNING OF THE WOODLAND

Four of the practices are in this group. They are Practice 5, 13, 14, and 20. Each of these practices will be treated separately as they are related to Tables XIX, XX, XXI, and XXII.

On Practice 5 (Getting the advice of a professional forester), all owners (2.53) were in the "plan to try" stage of the diffusion process. The innovators (3.56) clearly out performed the noninnovators (2.19). Nearly one-third (31 percent) of all owners were in the "unaware" or "aware" stage of the practice; another third (31 percent) were in the "plan to try" stage while almost one-fourth (24 percent) were "using" the practice. When innovators and noninnovators were compared, it was

TABLE XX

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

Woodland management practice	Unaware		Aware		Interested		Plan to try		Tried and not using		Total	
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	N = 100	Percent
1. Control grazing (fencing out livestock)	11		12		5		3		0		69	100
2. Shopping around for best price for selling trees	13		9		12		25		0		42	100
3. Planting trees to reforest woodland	11		24		9		25		1		30	100
4. Establishing a diameter limit for tree to be cut	20		13		11		28		0		28	100
5. Getting the advice of professional foresters	21		10		13		31		1		24	100
6. Thinning the woods	23		17		6		26		0		28	100
7. Constructing fire lanes	13		16		10		47		1		13	100
8. Making an inventory of the salable timber in your woodland and its value	10		31		10		29		1		19	100
9. Selling trees to obtain optimum returns	30		10		12		19		0		29	100
10. Starting to harvest trees within a year after marking	31		8		15		18		0		28	100

TABLE XX (continued)

Woodland management practice	Unaware		Aware		Interested		Plan to try		Tried and not using		Using		Total	
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	N = 100	Percent
11. Using a written contract in selling trees	20		19		14		29		1		17		100	
12. Marking trees for selective cutting	23		22		10		27		0		18		100	
13. Having a plan for growing and selling timber and/or other forest products	27		18		19		12		0		24		100	
14. Participating in ASC or other government forestry programs	25		19		5		37		0		14		100	
15. Controlling disease outbreaks	18		5		20		43		0		4		100	
16. Establishing woodland on open land suited to trees	27		32		7		6		2		26		100	
17. Killing undesirable trees	37		22		8		8		0		25		100	
18. Controlling insects	21		24		16		35		0		4		100	
19. Pruning stand trees	51		27		9		4		1		8		100	
20. Participating in non-government forestry programs	81		8		6		5		0		0		100	
21. Preparing ground for natural seeding or planting	91		5		4		0		0		0		100	
Total average percent	29		17		10		22		1		21		100	

TABLE XXI

PERCENTS OF INNOVATORS AT THE VARIOUS STAGES OF THE DIFFUSION PROCESS
WITH REGARD TO THE WOODLAND MANAGEMENT PRACTICES

Woodland management practice	Unaware		Interested		Plan to try		Tried and not using		Total	
	Percent	Aware Percent	Percent	Aware Percent	Percent	try Percent	Percent	using Percent	N = 25	Percent
1. Control grazing (fencing out livestock)	4	16	12	4	0	4	0	64	100	
2. Shopping around for best price for selling trees	0	8	4	4	0	20	0	68	100	
3. Planting trees to reforest woodland	8	12	4	4	4	28	4	44	100	
4. Establishing a diameter limit for tree to be cut	4	12	8	4	0	36	0	40	100	
5. Getting the advice of professional foresters	4	0	12	4	0	44	0	40	100	
6. Thinning the woods	4	12	4	4	0	36	0	44	100	
7. Constructing fire lanes	4	24	8	4	0	32	0	32	100	
8. Making an inventory of the salable timber in your woodland and its value	4	20	8	4	0	28	0	40	100	
9. Selling trees to obtain optimum returns	8	4	8	4	0	20	0	60	100	
10. Starting to harvest trees within a year after marking	16	8	0	0	0	16	0	60	100	

TABLE XXI (continued)

Woodland management practice	Unaware		Aware		Interested		Plan to try		Tried and not using		Using		Total	
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
11. Using a written contract in selling trees	8		16		12		24		0		40		100	
12. Marking trees for selective cutting	0		12		16		28		0		44		100	
13. Having a plan for growing and selling timber and/or other forest products	8		8		28		16		0		40		100	
14. Participating in ASC or other government forestry programs	12		20		4		36		0		28		100	
15. Controlling disease outbreaks	12		12		16		56		0		4		100	
16. Establishing woodland on open land suited to trees	20		28		4		4		8		36		100	
17. Killing undesirable trees	24		12		12		16		0		36		100	
18. Controlling insects	12		40		8		36		0		4		100	
19. Pruning stand trees	32		28		16		8		0		16		100	
20. Participating in non-government forestry programs	56		16		16		12		0		0		100	
21. Preparing ground for natural seeding or planting	72		16		12		0		0		0		100	
Total average percent	15		15		10		24		1		35		100	

TABLE XXII

PERCENTS OF NONINNOVATORS AT THE VARIOUS STAGES OF THE DIFFUSION PROCESS
WITH REGARD TO WOODLAND MANAGEMENT PRACTICES

Woodland management practice	Unaware		Aware		Interested		Plan to try		Tried and not using		Using		Total	
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	N = 75	Percent
1. Control grazing (fencing out livestock)	13		11		3		3		0		71		100	
2. Shopping around for best price for selling trees	17		9		15		27		0		33		100	
3. Planting trees to reforest woodland	12		28		11		24		0		25		100	
4. Establishing a diameter limit for tree to be cut	25		13		12		25		0		24		100	
5. Getting the advice of professional foresters	27		13		13		27		1		5		100	
6. Thinning the woods	32		19		7		23		0		23		100	
7. Constructing fire lanes	16		13		11		52		1		7		100	
8. Making an inventory of the salable timber in your woodland and its value	12		35		11		39		1		12		100	
9. Selling trees to obtain optimum returns	37		12		13		19		0		19		100	
10. Starting to harvest trees within a year after marking	36		8		20		19		0		17		100	

TABLE XXII (continued)

Woodland management practice	Unaware		Aware		Interested		Plan to try		Tried and not using		Using		Total	
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	N = 75	Percent
11. Using a written contract in selling trees	24		20	15		31	1		9				100	
12. Marking trees for selective cutting	31		25	8		27	0		9				100	
13. Having a plan for growing and selling timber and/or other forest products	33		21	16		11	0		19				100	
14. Participating in ASC or other government forestry programs	29		19	5		37	0		9				100	
15. Controlling disease outbreaks	20		16	21		39	0		4				100	
16. Establishing woodland on open land suited to trees	29		33	8		7	0		23				100	
17. Killing undesirable trees	41		25	7		5	0		21				100	
18. Controlling insects	24		19	19		35	0		4				100	
19. Pruning stand trees	57		27	7		3	1		5				100	
20. Participating in non-government forestry programs	89		5	3		3	0		0				100	
21. Preparing ground for natural seeding or planting	98		1	1		0	0		0				100	
Total average percent	33		18	11		22	0		16				100	

found that almost twice as many innovators (44 percent) as noninnovators (23 percent) were using the practice. Another 44 percent of the innovators were in the "plan to try" stage while 27 percent of the noninnovators were in the "unaware" stage.

With reference to Practice 13, (Getting the advice of professional forester) all owners (2.12) rated in the "interested in the practice" stage while the innovators (3.12) were in the "plan to try" stage and the noninnovators (1.79) were in the "interested in the practice" stage.

Over two-fifths (45 percent) of all owners were in the "unaware" or "aware" stage of the diffusion process for Practice 13. Almost one-fourth (24 percent) of all owners were using the practice. When comparing innovators with noninnovators, it was found that 40 percent of innovators were "using" this practice while 33 percent of the non-innovators were "unaware" of the practice.

The average diffusion rating of all owners on Practice 14 (Participating in Agricultural Stabilization and Conservation or other government forestry programs) was (2.10) in the middle of the "interested in the practice."

The innovators were a full diffusion stage (2.76), "plan to try," above the noninnovators who rated (1.88) "interested in the practice." Over two-fifths (44 percent) of all owners were in the "unaware" or "aware" stage of this practice. Another 37 percent were in the "plan to try" stage and only 14 percent were "using" the practice. In comparing innovators with noninnovators, 28 percent of the former group were using the practice compared to 9 percent of the latter group.

Thirty-seven percent of the noninnovators were in the "plan to try" stage with almost an equal percent (36) of the innovators being in this stage.

The only Agricultural Stabilization and Conservation practice available to owners at the time of the study was "planting forest tree seedlings." Under this practice, the farmer was reimbursed at the rate of 80 percent of the cost of the seedlings and labor for setting them. Cost was estimated at about \$15.00 per acre--A.S.C. paying about \$12.00.

Only one practice had less appeal than practice 20 (Participating in non-government forestry programs). The average diffusion rating for all owners was .35 or "unaware." The innovators' rating was .84 or just "aware" while the noninnovators rated .19 "unaware."

Over four-fifths, or 81 percent, of all owners were in the "unaware" stage. The highest rating for this was "plan to try" with 12 percent of the noninnovators in this stage while only 3 percent of the noninnovators were in the "plan to try" stage. Eighty-nine percent of the noninnovators were in the "unaware" stage while only 56 percent of the innovators were in this group.

IV. PRACTICES RELATED TO ESTABLISHMENT OF THE WOODLAND

The three practices related to establishment of the woodland had the widest range in the practice diffusion score. Tables XIX, XX, XXI, XXII, pages 44, 47, 49, and 51, disclose that the average practice diffusion rating for all owners was (2.71) "planning to try" stage for Practice 3 (Planting trees to reforest woodland). The

innovators were almost one diffusion rating (3.40) above the non-innovators (2.48). Almost one-third (30 percent) of all owners were using this practice. Forty-four percent of the innovators were using this practice compared to 25 percent of the noninnovators. Two-fifths, or 40 percent, of the noninnovators were in the "unaware" or "aware" stage compared to only 20 percent of the innovators.

The average practice diffusion rating of all owners on Practice 16 (Establishing woodland on open land suited to trees) was 2.02 ("interested in the practice"). Innovators (2.60) were in the "plan to try" stage while the noninnovators (1.83) were barely in the "interested" stage. Over half (59 percent) of all owners were in the "unaware" or "aware" stage of the diffusion process. Another one-fourth of all owners were in the "using" stage. Over one-third of the innovators were in the "using" stage compared to almost one-fourth (23 percent) of the non-innovators.

Practice 21 (Preparing ground for natural seeding) had the lowest diffusion rating of any of the twenty-one practices. The average diffusion rating for all owners was "unaware" (.13). Ninety-one percent of all owners were in the "unaware" stage on this practice. Only 4 percent of all owners rated as high in the diffusion process as "plan to try."

V. PRACTICES RELATED TO GROWTH AND MAINTENANCE OF THE WOODLAND

Seven of the twenty-one practices were related to the growth and maintenance of the woodland. The following information comes

from Tables XIX, XX, XXI, and XXII, pages 44, 47, 49, and 51.

Practice 1 (Controlled grazing) rated the highest among all the twenty-one practices for all owners. The average rating for all owners (3.76) was in the "tried" stage. There was little difference between the innovators (3.72) and the noninnovators (3.77). Over two-thirds (67 percent) of all owners were using this practice. The noninnovators had a higher percent using this practice (71 percent) than the innovators with 69 percent using the practice.

Practice 6 (Thinning the woods) on the average discloses all owners (2.47) at the top of the scale in the "interested in the practice." Innovators (3.48) were at the top of the "planning to try" stage while the noninnovators (2.93) were in the middle of the "interested in the practice" stage. Over one-fourth (28 percent) of all owners were "using" this practice. Forty-four percent of innovators were "using" this practice and 23 percent of the noninnovators were "using" the practice. Almost one-third (32 percent) of the noninnovators were "unaware" of this practice compared to only 4 percent of the innovators.

Another practice that rated high with all owners was Practice 7 (Constructing fire lanes). The average for all owners (2.46) was in the upper stage of the "interested in the practice." Innovators (2.96) were in the "plan to try" stage while the noninnovators (2.29) were in the upper half of the "interested in the practice." More innovators (32 percent) than noninnovators (7 percent) were using this practice. However, 52 percent of the noninnovators were "planning to try" this practice compared to 32 percent of the innovators.

The next practice in this group was Practice 15 (Controlling disease outbreak). The average score for all owners (2.04) fell within "interested in the practice" stage. Innovators (2.32) and noninnovators (1.95) were in the same stage. Over two-fifths (43 percent) of all owners were in the "plan to try" stage of the diffusion process. Fifty-six percent of the innovators were in this stage compared with 39 percent of the noninnovators.

Practice 17 (Killing undesirable trees) revealed that all owners (1.87) were in the lower stage of "interested in the practice." The innovators (2.64) were almost a full diffusion stage above the non-innovators (1.61). Almost three-fifths (59 percent) of all owners were in the "unaware" or "aware" stage of the diffusion process. Two-thirds (66 percent) of the noninnovators were in the "unaware" or "aware" stages compared with only 38 percent of the innovators.

There was very little difference in the average diffusion rating among all owners (1.81), innovators (1.84), and noninnovators (1.80) on Practice 18 (Controlling insects). Almost one-half (45 percent) of all owners were in the "unaware" or "aware" stage of the diffusion process. Almost an equal percent (36) of innovators and noninnovators (35 percent) were in the "plan to try" stage of the diffusion process.

Practice 19 (Pruning the stand) rated the lowest of any of the practices that was related to growth and maintenance of the woodland. The all owners average (1.01) was in the middle of the "aware" stage. The innovators (1.64) rated "interested in the practice" while the non-innovators (.80) were only in the "aware" stage. Over three-fourths

(78 percent) of all owners were in the "unaware" or "aware" stages. Only 8 percent of all owners were in the "using" stages of the diffusion process. Sixteen percent of the noninnovators were in the "using" stage compared to only 5 percent of the innovators. Eighty-four percent of the noninnovators were in the "unaware" or "aware" stage.

VI. PRACTICES RELATED TO MARKETING OF TIMBER AND WOODLAND PRODUCTS

Seven of the twenty-one recommended practices in Tables XIX, XX, XXI, and XXII, pages 44, 47, 49 and 51, were related directly to marketing of timber and woodland products. Practice 2 (Shopping around for best prices for selling trees) average rating was the second highest for all owners (3.16), "plan to try" stage. The innovators (4.16) rated the highest on this practice of all the twenty-one practices. They were in the "tried the practice but not using it" while the noninnovators (2.83) were only in the "plan to try" stage. Over two-fifths (42 percent) of all owners were "using" the practice. Sixty-eight percent of the innovators were "using" it and 33 percent of the noninnovators were "using" it. Seventeen percent of the non-innovators were "unaware" of this practice while none of the innovators were in this low stage of the diffusion process.

Another practice that rated high with all owners was Practice 4 (Establishing a diameter limit for trees to be cut). The average practice diffusion rating for all owners (2.59) was in the "plan to try" stage. The innovators (3.36) were a full diffusion stage above the noninnovators (2.33) who were in the "interested in the practice"

stage. Twenty-eight percent of all owners were "using" the practice and another 28 percent "planned to try" the practice. Thirty-three percent of all owners were in the "unaware" or "aware" stage. When comparing innovators with noninnovators, it was found that 40 percent of the former was "using" the practice and 24 percent of the latter group was using the practice. More innovators (36 percent) "plan to try" the practice than noninnovators (25 percent). Thirty-eight percent of the noninnovators were in the "unaware" or "aware" stage of the diffusion process compared with only 16 percent of the innovators.

Another practice related to marketing the timber and woodland products was Practice 8 (Making an inventory of the salable timber in your woodland and its value). On the average, all owners rated in the "plan to try" stage. Comparing innovators (3.20) and noninnovators (2.09), it is seen that the former fell in the "plan to try" stage and the latter fit the "interested in the practice" level. Two-fifths (40 percent) of the innovators were "using" this practice while only a little over one-tenth (12 percent) of the noninnovators were "using" this practice. Almost one-half (47 percent) of the noninnovators were either in the "unaware," "aware" stage of the diffusion process compared with only one-fourth (24 percent) of the innovators.

With reference to Practice 9 (Selling trees to obtain optimum returns), the average diffusion rating of all owners (2.36) was found to be in the top level of the "interested in the practice" stage. The innovators (3.80) were in the "tried the practice" stage which was two full diffusion stages above the noninnovators (1.88). Three-fifths of

the innovators were in the "using" stage of the diffusion process compared with less than one-fifth (19 percent) of the noninnovators.

On the average, all owners had reached the top level of the "interested in the practice" stage of the diffusion rating on Practice 10 (Starting to harvest trees within a year after marking). The innovators (3.56) out-performed the noninnovators (1.91) by one and one-half diffusion stages. Almost one-third (31 percent) of all owners were "unaware" of Practice 10. Three-fifths of the innovators were "using" the practice while less than one-fifth (17 percent) of the noninnovators were "using" the practice.

The all owners average (2.33) was just above the middle of the "interested in the practice" stage of Practice 11 (Using a written contract in selling trees). The innovators (3.12) in the "plan to try" stage of the practice were almost one and one-half diffusion ratings above the noninnovators (1.93) who were in the lower level of the "interested in the practice." Almost two-fifths (39 percent) of all owners were in the "unaware," "aware" stages of the diffusion process. Another 29 percent were in the "plan to try" stage, 1 percent in the "tried but not using" stage and 17 percent were in the "using" stage. Four-tenths (40 percent) of the innovators were "using" the practice while less than one-tenth (9 percent) of the noninnovators were in the "using" stage. Twenty-four percent of the noninnovators were "unaware" of this practice while only 8 percent of the innovators was in this category.

The last practice related to marketing of timber and woodland products was Practice 12 (Marking trees for selective cutting). The average practice diffusion rating for all owners on Practice 12 was (2.13) in the middle of the "interested in the practice" stage. The innovators (3.48) in the very top of the "plan to try" stage were almost two full diffusion stages above the noninnovators (1.68) who were just barely in the "interested" stage.

Almost half (45 percent) of all owners were in the "unaware," "aware" stages of the diffusion process; 10 percent were in the "interested" stage, 27 percent were in the "plan to try" stage, and 18 percent were "using" the practice. Over two-fifths (44 percent) of the innovators were in the "using" stage of the diffusion process compared with 9 percent of the noninnovators. Over half (56 percent) of the noninnovators were in the "unaware," "aware" stage while none of the innovators were in the "unaware" stage and only 12 percent were in the "aware" stage.

VII. SYSTEM USED TO ARRIVE AT PRICE PER TIMBER UNIT

The data in Table XXIII shows that 89 percent of all owners had not marketed any timber in the last five years. There was very little difference when comparing the innovators (76 percent) and the non-innovators (93 percent) who did not sell any timber in the last five years. Nine percent of all owners sold to the usual buyer without consulting other buyers, and only 2 percent sold to the highest bidder after determining all possible prices.

TABLE XXIII

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

System used to arrive at price per timber unit sold	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Did not sell timber	89	76	93
Sold to usual buyer without consulting other buyers	9	16	7
Sold to highest bidder after determining all possible prices	2	8	0
Total	100	100	100

*Percents are rounded to the nearest whole number.

VIII. SOURCES KNOWN FOR TIMBER MARKET INFORMATION

As shown in Table XXIV, 74 percent of all owners "did not know" where to find information about marketing timber. Fifty-two percent of the innovators and 81 percent of the noninnovators were in this category. Twenty-two percent of all owners obtained their information for timber marketing from a "neighbor or friend." Only 2 percent of all owners knew of a professional forester (Extension service forester) as a source of market information.

IX. INTEREST IN OBTAINING TIMBER MARKET INFORMATION

Over half (51 percent) of all owners were "not interested" in obtaining marketing information related to timber and other forest products. Very little difference was seen in innovators (44 percent) and noninnovators (53 percent) who were "not interested." Table XXV shows that 31 percent of all owners were "very interested." Over twice the percent of innovators (52 percent) were in the "very interested" group than the noninnovators (24 percent).

X. SOURCES KNOWN FOR TIMBER PRODUCTION COST INFORMATION

With reference to Table XXVI, more than four-fifths (84 percent) of all owners reported than they "did not know" of any source of timber production cost. Four percent of all owners obtained their information from the County Agent, and another 4 percent obtained information from a neighbor or friend. Only 6 percent of all owners knew of professional

TABLE XXIV

SOURCES KNOWN FOR MARKET INFORMATION BY PERCENTS OF ALL
OWNERS, INNOVATORS AND NONINNOVATORS*

Source of information	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Did not know	74	52	81
County Agent	2	0	3
Extension forester	2	0	3
Neighbor or friend	22	48	13
Total	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XXV

INTEREST IN OBTAINING MARKET INFORMATION FOR TIMBER AND
OTHER FOREST PRODUCTS SHOWN BY PERCENTS OF ALL
OWNERS, INNOVATORS AND NONINNOVATORS*

Degree of interest in obtaining market information	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Very interested	31	52	24
Somewhat interested	17	4	21
Indifferent	1	0	1
Not interested	51	44	53
Total	100	100	100

*Percents are rounded to the nearest whole number.

TABLE XXVI

SOURCES KNOWN FOR TIMBER PRODUCTION COST INFORMATION BY
PERCENTS OF ALL OWNERS, INNOVATORS AND NONINNOVATORS*

Source of information	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Did not know	84	68	89
County Agent	4	4	4
Extension forester	2	0	3
Service forester	1	0	1
Industrial forester	3	8	1
Soil conservationist	2	8	0
Neighbor or friend or other	4	12	1
Total	100	100	100

*Percents are rounded to the nearest whole number.

foresters as a source of information pertaining to timber production cost. Very little difference was noted between innovators and non-innovators.

XI. OWNERS INTEREST FOR TIMBER PRODUCTION COST INFORMATION

Over two-fifths (41 percent) of all owners were "not interested" in information concerning timber production costs. Twenty-six percent were "somewhat interested," and 30 percent were "very interested," Table XXVII shows that 60 percent of the innovators were in the "very interested" group compared with only 20 percent of the noninnovators in the same group. Over half (51 percent) of the noninnovators were "not interested" while just over one-tenth (12 percent) of the innovators were in the "not interested" category.

TABLE XXVII
INTEREST IN OBTAINING INFORMATION CONCERNING TIMBER
PRODUCTION COST SHOWN BY PERCENTS OF ALL OWNERS,
INNOVATORS AND NONINNOVATORS*

Degree to which per acre timber pro- duction cost figures are needed	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Very interested	30	60	20
Somewhat interested	26	28	25
Indifferent	3	0	4
Not interested	41	12	51
Total	100	100	100

*Percents are rounded to the nearest whole number.

CHAPTER III

SUMMARY

One hundred small woodland owners in Roane County were interviewed in the fall of 1962 and spring of 1963 concerning their use of twenty-one recommended forestry practices. A woodland production management practice diffusion rating was set up ranging from zero for "unaware" of the practice to five for "using" the practice. The practice diffusion ratings were used in comparing the management levels of all owners, innovators and noninnovators in relation to the twenty-one recommended forestry practices.

Other information was obtained on marketing, production cost, sources of market and production costs and the woodland owners' interest in these various costs.

I. REVIEW OF FINDINGS

Listed below is a summary of the important findings as related to woodland management practices used in Roane County.

1. The average diffusion rating for all owners (2.12) was just above the middle of the "interested in the practice" stage. The innovators (2.85) "planning to try" stage, were a full diffusion stage above the noninnovators (1.87) "aware" stage.

2. The innovators out-performed the noninnovators on twenty of the twenty-one practices. The innovators were one or more full diffusion stages above the noninnovators on thirteen of the twenty-one practices.

3. Eighty-nine percent of all owners did not sell any timber in the last five years.

4. Seventy-four percent of all owners did not know a source of information for marketing timber. Twenty-two percent obtained their market information from neighbors or friends.

5. Thirty-one percent of all owners were "very interested" in obtaining market information for timber. However, over half (51 percent) were not even "interested" in market information.

6. With regard to information concerning timber production costs, 30 percent of all owners were "very interested." The innovators (60 percent) were much more interested than the noninnovators (20 percent). Almost two-fifths (38 percent) of the noninnovators were not even "interested" in the timber production costs.

II. IMPLICATIONS

1. Roane County small woodland owners were generally aware of the recommended forestry practices, but additional information and educational efforts are needed if the owners are to adopt more recommended practices.

2. Innovators were further along in the adoption of recommended practices than the noninnovators. It can be assumed that this is true because they tend to seek the latest farming information from the County Agent and other agricultural agencies.

3. It would appear that the reason the woodland owners rejected

the use of recommended woodland practices was that they did not value their woodlands very highly.

4. An educational effort needs to be exerted by the agricultural agencies in the county to show the woodland owners the value of using recommended woodland practices.

PROBLEM C

FACTORS INFLUENCING WOODLAND MANAGEMENT ADOPTION

BY ROANE COUNTY WOODLAND OWNERS

A Special Problem in Lieu of Thesis

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

by

Gene C. Moles

June 1967

CHAPTER I

INTRODUCTION

This report "Factors Influencing Woodland Management Adoption by Roane County Woodland Owners" is based on data from a survey of one hundred small woodland owners. The data presented in this report was collected in an effort to identify some of the most important attitudes which woodland owners have concerning their woodland.

The county agricultural agents, University of Tennessee Foresters, Soil Conservation Service personnel, State Foresters and industrial foresters have advised small woodland owners in Roane County in past years. This information has been given mostly to individuals on request. Very little effort has been made in the past to present a woodland management program by means of a community demonstration, circular letters, news articles, radio programs or at community club meetings.

Since almost 60 percent of the land area in Roane County is classified as woodland, it is felt that information is needed concerning those factors motivating owners to manage their woodlands poorly or well. Based on these findings, it was felt that the efforts of the various agricultural agencies and of government and industrial foresters might be more effectively planned.

I. PURPOSE OF THE STUDY

The purpose of this study was to try to determine what factors, other than those identified earlier, have influenced Roane County

woodland owners to adopt or not to adopt recommended forestry practices.

II. REVIEW OF LITERATURE

In a recent study 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 income; (3) more than one-third felt they didn't use recommended forestry management practices for the following reasons: (a) cost of practices outweighs possible benefits; (b) didn't have technical knowledge needed; (c) net benefit would result but it would have been too small; (4) more than one-third of the owners interviewed indicated that the reason "don't have technical knowledge" was given by small woodland owners when they were asked why they did not adopt recommended practices (11:70).*

A survey in eastern Kentucky by Worley revealed that the most important obstacles to forestry were low incomes and poor education. Worley says that this situation suggests that a first step is to make the owners aware of the income potential of their woodlands so that they will want to practice forestry (16:5).

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

Kilbourne of the Division of Forestry Relations, Tennessee Valley Authority, said at a Farm Woodlot Conference in Chicago that good forestry practice will be adopted to the extent that it is economic and makes sense from the standpoint of sound business management. The extent to which this can be done by the small woodland owners is still undetermined (1:25).

Rogers, Associate Professor of Rural Sociology at Ohio State University, writing in the Journal of Cooperative Extension, stated, "It is obvious to any acute observer of any social system that not all of its members adopt new ideas at the same time. A general finding of past investigations is that adopter distributions follow a bell-shaped curve over time and approach normality. In other words, only a few individuals adopt a new idea at first, then many individuals follow the example that has been set. Finally, the rate of adoption slows until no one in a social system remains to adopt. The result is a bell-shaped normal curve." (5:71)

III. METHODS

Each of the one hundred woodland owners were interviewed in 1962-1963 using a schedule (see Appendix) consisting of questions designed to reveal characteristics, production practices and factors influencing practice adoption. This study has to do with those questions related to the factors influencing practice adoption not already dealt with in the two previous problems.

Main comparisons in the present study will be between innovators and noninnovators. Analyses will be made based on simple numbers and percents. Data will be in tabular form.

CHAPTER II

FINDINGS

I. ACREAGE IN DIFFERENT LAND CATEGORIES

In reference to Table XXVIII, it was seen that the average size farm of all owners was 175.5 acres. The innovators owned 207.8 acres while the noninnovators owned 164.7 acres. The average amount of total woodland of all owners was 89 acres or 51.5 percent of total land. The innovators had 106.5 acres or 51.2 percent of total land in woodland, and the noninnovators had 83.2 acres or 50.6 percent of total land in woodland. Approximately 40 percent of the total land of all owners, both innovators and noninnovators, was in pasture. It was surprising to find that only thirteen acres per farm or 7.4 percent of land owned was in row crops.

II. THINGS LIKED ABOUT WOODLAND

One of the important questions asked the woodland owners was, "In what way does your woodland benefit you?" The data in Table XXIX shows that 51 percent of all owners mentioned marketable timber as being the most important benefit received from their woodland. The next most important benefit mentioned was general farm use with 34 percent of all owners mentioning this benefit first. Other benefits mentioned by woodland owners in order of descending percent were: "shelter for livestock" (4 percent); "soil conservation" (3 percent);

TABLE XXVIII

AVERAGE ACREAGES AND AVERAGE PERCENTS OF LAND IN THE VARIOUS
CATEGORIES OWNED BY ALL OWNERS,
INNOVATORS AND NONINNOVATORS*

Land category	All owners		Innovators		Noninnovators	
	Average acres	Average percent	Average acres	Average percent	Average acres	Average percent
Cropland	12.99	7	14.68	7	12.43	7
Pasture (not woodland)	72.86	41	84.64	41	68.93	42
Total woodland	89.06	52	106.52	51	83.24	51
Woodland grazed**	21.95	26	12.72	12	25.03	30
Woodland un- grazed**	67.11	75	93.80	88	58.21	70
Other land	.59		2.04	1	.01	
Total land	175.50	100	207.88	100	164.71	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 XXIX

BENEFITS WOODLAND PROVIDED OWNERS IN ORDER OF FREQUENCY
MENTIONED BY PERCENTS OF ALL OWNERS
INNOVATORS AND NONINNOVATORS*

Benefit provided	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Marketable timber	51	48	52
General farm use	34	44	31
Shelter for live- stock	4	4	4
Soil conservation	3	0	4
Firewood	2	0	3
None mentioned	6	4	7
Total	100	100	100

*Percents are rounded to the nearest whole number.

and "firewood" (2 percent). About an equal percent of noninnovators (52 percent) and innovators (48 percent) mentioned marketable timber as a benefit.

III. REASONS WHY WOODLAND OWNERS DO NOT ADOPT RECOMMENDED PRACTICES

With reference to Table XXX, each owner was asked to select the principal reasons why woodland owners generally do not adopt recommended forest management practices. Specifically they were asked to select three reasons as the most important from twelve established in previous studies and agreed upon by a panel of authorities in the field of forestry. The major reasons for not adopting recommended woodland practices were as follows: "more rewarding activities claimed time and money" with about an equal percentage of innovators (52 percent) and noninnovators (56 percent) selecting this reason first; "such a long time to grow crops and get income" given by 54 percent of all owners, innovators, 44 percent; noninnovators, 57 percent; "don't have technical knowledge needed" given by 47 percent of all owners, 44 percent of innovators and 48 percent of noninnovators; "cost of practices outweighs possible benefits" given by 34 percent of all owners, 32 percent of innovators and 35 percent of noninnovators. Other reasons selected by woodland owners can be seen by referring to Table XXX.

IV. SEEKING PROFESSIONAL ADVICE

Table XXXI shows that 83 percent of all owners did not seek any advice. When innovators were compared with noninnovators, it was

TABLE XXX

REASONS MENTIONED IN THE TOP THREE WHY WOODLAND OWNERS DO NOT
ADOPT RECOMMENDED WOODLAND MANAGEMENT PRACTICES BY
PERCENTS OF ALL OWNERS, INNOVATORS
AND NONINNOVATORS*

Reasons why woodland owners do not adopt recommended practices	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
More rewarding activities claim time and money	55	52	56
Such a long time to grow crops and get income	54	44	57
Don't have technical knowledge needed	47	44	48
Cost of practices outweighs possible benefits	34	32	35
Net benefits would result but too small	29	48	23
Physically unable to do super- vision and management needed	25	12	29
Hope to clear woodland for pasture	23	28	21
Want to keep woodland "wild" as in nature	17	20	16
Expect to move away from farm	9	4	9
Expect to sell my woodland	7	12	5
Woodland too far away for supervision	1	4	0

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

TABLE XXXI

PROFESSIONAL WORKERS AND OTHERS WHOSE ADVICE WAS SOUGHT
 ACCORDING TO PERCENTS OF ALL OWNERS,
 INNOVATORS AND NONINNOVATORS*

Person from whom advice sought	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Professional:			
No advice sought	83	48	89
County Agent	2	0	3
Service Forester	2	4	1
Soil Conservationist	5	12	3
Two or more professional workers	5	12	3
Non-professional:			
Neighbors, friends, others	3	4	1
Total	100	100	100

*Percents are rounded to the nearest whole number.

shown that 28 percent of the innovators sought professional advice and only 11 percent of the noninnovators sought professional advice. Five percent of all owners sought advice from two or more professional workers. Five percent of all owners sought advice from the soil conservationist. Three percent obtained advice from neighbors and friends.

V. INTERVIEWER'S OPINION AS TO WHETHER OWNER SHOULD
PAY MORE ATTENTION TO MANAGEMENT

Since the interviewer did not know a large percent of the owners, it was very difficult for him to make this judgment about the owner's woodland. This is the reason that almost two-fifths (38 percent) of all owners were listed in the "uncertain" category. Table XXXII shows, in the interviewer's opinion, that over two-fifths (44 percent) of all owners should "pay more attention" to their woodland. Very little difference was noted between innovators (40 percent) and noninnovators (45 percent). For various reasons, it was felt that 18 percent of all owners should not "pay more attention" to their woodlands than they were presently doing.

TABLE XXXII

INTERVIEWER'S OPINION CONCERNING WHETHER OWNERS SHOULD PAY
 MORE ATTENTION TO WOODLAND OR NOT ACCORDING TO
 PERCENTS OF ALL OWNERS, INNOVATORS
 AND NONINNOVATORS*

Amount of attention respondents should pay to woodland management	<u>All owners</u> Percent (N = 100)	<u>Innovators</u> Percent (N = 25)	<u>Noninnovators</u> Percent (N = 75)
Should pay more attention	44	40	45
Uncertain	38	32	40
Should not pay more attention	18	28	15
Total	100	100	100

*Percents are rounded to the nearest whole number.

CHAPTER III

SUMMARY

In 1962-1963, one hundred Roane County small woodland owners were interviewed to find what factors influenced them to adopt recommended woodland management practices. The one hundred woodland owners were divided into two groups (25 innovators and 75 noninnovators).

Each owner was asked what he liked and disliked most about his woodland. The owners were also asked to select and rank the most important three reasons why owners do not adopt recommended woodland practices. The woodland owners were asked to give the total acres in their farm and the number of acres in cropland, pasture, woodland and others. Each owner was asked if he sought advice about his woodland. The interviewer tried to determine whether the owner should or should not pay more attention to his woodland.

I. REVIEW OF FINDINGS

Listed below are some of the most important factors influencing the management practice adoption of woodland owners in Roane County.

1. The average size farm of all owners was 175 acres. The innovators owned 207 acres and the noninnovators owned 164 acres. The average amount of total woodland was 89 acres.

2. Fifty-one percent of all owners mentioned "marketable timber" as being the most important benefit received from their woodlands.

3. Fifty-five percent of all owners selected "more rewarding activities claim time and money" as the main reason woodland owners do not adopt recommended woodland practices.

4. Eighty-three percent of all owners did not seek any professional advice concerning their woodland.

5. In the interviewer's opinion, 44 percent of all owners should pay more attention to the management of their woodland. The interviewer was unable to make a decision for 38 percent of the owners because he was unfamiliar with their woodland situation.

II. IMPLICATIONS

The extension forestry program in Roane County could be improved based on information from this study. The following are some factors that should be considered when planning a farm woodland program:

1. With the average woodland holding being approximately 89 acres, the owners could increase their farm income by following recommended practices.

2. Since "marketable timber" was the benefit that the woodland owners liked most about their woodland, it can be assumed that they would be interested in better production.

3. An educational effort should be made to give the woodland owners the technical information needed so that by adopting recommended woodland management practices their woodlands would be more rewarding to them.

4. Woodland owners need to be made aware of the professional advice that is available to them.

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BIBLIOGRAPHY

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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 _____ (Check to be sure items
- c. Improved pasture _____ b, c, d and e add up to
- d. Total woodland _____ the TOTAL FARM ACREAGE
- (1) Grazed _____ in a.)
- (2) Ungrazed _____
- e. Other land _____

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.

4. In what way does it benefit you? _____
5. In what way doesn't 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 most importance. 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 each 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.

	" Has tried "		" Is using " or " Read or " Interested				" in "	
	" Yes " " No "		" Yes " " No "		" Yes " " No "		" Yes " " No "	
	" (a) " " (b) "		" (c) " " (d) "		" (e) " " (f) "		" (g) " " (h) "	
8. Woodland practices	"	"	"	"	"	"	"	"
(1) Making an inven-	"	"	"	"	"	"	"	"
tory of the sal-	"	"	"	"	"	"	"	"
able 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 _____

	Has tried		Will use		Read or heard of		Interested in	
	Yes	No	Yes	No	Yes	No	Yes	No
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
(5) Establishing woodland on open land suited to trees	"	"	"	"	"	"	"	"
i. Reasons								
(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								

	"			"	Is using	"			"
	"			"	or	"	Read or	"	Interested
	"	Has tried	"	will use	"	heard of	"	in	"
	"	Yes	"	No	"	Yes	"	No	"
	"	(a)	"	(b)	"	(c)	"	(d)	"
(11) Constructing fire lanes	"		"		"		"		"
	"		"		"		"		"

i. Reasons _____

(12) Control grazing	"		"		"		"		"
(fencing out	"		"		"		"		"
livestock)	"		"		"		"		"

i. Reasons _____

(13) Controlling insects	"		"		"		"		"
	"		"		"		"		"

i. Reasons _____

(14) Controlling disease outbreaks	"		"		"		"		"
	"		"		"		"		"

(15) Shopping around for best price for selling trees	"		"		"		"		"
	"		"		"		"		"
	"		"		"		"		"

(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)

	"		"	Is using	"		"		"
	"		"	or	"	Read or	"	Interested	"
	"	Has tried	"	will use	"	heard of	"	in	"
	"	Yes	"	No	"	Yes	"	No	"
	"	(a)	"	(b)	"	(c)	"	(d)	"
(18) Selling trees to	"	"	"	"	"	"	"	"	"
obtain optimum	"	"	"	"	"	"	"	"	"
(best) returns	"	"	"	"	"	"	"	"	"

i. Reasons _____

(19) Participating in	"	"	"	"	"	"	"	"	"
ASC or other gov-	"	"	"	"	"	"	"	"	"
ernment forestry	"	"	"	"	"	"	"	"	"
programs	"	"	"	"	"	"	"	"	"

i. Reasons _____

(20) Participating in	"	"	"	"	"	"	"	"	"
government fores-	"	"	"	"	"	"	"	"	"
try programs	"	"	"	"	"	"	"	"	"
(local forestry	"	"	"	"	"	"	"	"	"
development asso-	"	"	"	"	"	"	"	"	"
ciations, indus-	"	"	"	"	"	"	"	"	"
trial groups,	"	"	"	"	"	"	"	"	"
civic organiza-	"	"	"	"	"	"	"	"	"
tions, banks, and	"	"	"	"	"	"	"	"	"
other business	"	"	"	"	"	"	"	"	"
groups, indivi-	"	"	"	"	"	"	"	"	"
duals and others)	"	"	"	"	"	"	"	"	"

i. Reasons _____

(21) Getting the ad-	"	"	"	"	"	"	"	"	"
vice of profess-	"	"	"	"	"	"	"	"	"
ional 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 B10 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 _____

f. Timber buyer _____

b. County agent _____

g. Soil conservationist _____

c. Extension forester _____

h. ASC committeeman _____

d. Other technical foresters:

i. Vo-Ag teacher _____

(1) Service forester _____

(2) Consulting forester _____

j. National forest ranger _____

(3) Industrial forester _____

- e. Sawmill operator _____ k. Banker _____
 l. Other (Specify) _____

13. Major occupation of respondent

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

14. What is your major farm enterprise?

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

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

"The thing I like 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 under-score it.

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

"The thing I dislike 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 dislike most?" Then under-score 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.
(Question #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. 0-1,999 _____ | i. 16,000-17,999 _____ |
| b. 2,000-3,999 _____ | j. 18,000-19,999 _____ |
| c. 4,000-5,999 _____ | k. 20,000-21,999 _____ |
| d. 6,000-7,999 _____ | l. 22,000-23,999 _____ |
| e. 8,000-9,999 _____ | m. 24,000-25,999 _____ |
| f. 10,000-11,999 _____ | n. 26,000-29,999 _____ |
| g. 12,000-13,999 _____ | o. 30,000-49,999 _____ |
| h. 14,000-15,999 _____ | 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 _____

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 judgment)
- 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 _____