

AN ABSTRACT OF THE THESIS OF

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Title: OBJECTIVES AND ATTITUDES OF NONINDUSTRIAL
SMALL-FOREST OWNERS IN LANE COUNTY, OREGON

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Sixty nonindustrial small-forest owners were interviewed in Lane County, Oregon to determine their objectives for forest lands, and knowledge of and attitudes toward public assistance in forestry.

Owners were randomly sampled from a preselected size class of 10 to 200 acres. A formal questionnaire was used to measure forest land use objectives, opinion of public assistance in forestry, knowledge of previous assistance programs, and general characteristics of the owner and his land.

Results indicated that of those land owners sampled, 23 owners (39 percent) had timber production as a primary goal, or secondary objective in conjunction with recreation or agricultural uses; 15 owners (25 percent) considered their forest lands to be inactive, 11 owners (18 percent) wished to sell their forest lands, and another 11 owners had either recreational or agricultural objectives. Size

of forest holding, distance from residence, planning horizon, income and age were found to be significantly related to forest land objectives.

Thirty-four respondents (56 percent) favored public assistance to forest land owners. Three-fourths of the owners did not know of such assistance available in the past, or of special tax laws for forest lands.

Eight owners (12 percent) would accept a long term lease on ten acres of five year old, stocked lands. Six owners would borrow money for forestry purposes at interest rates of six percent or below.

It was concluded that sample members were in an older age class which precluded active forest management, most owners have little or no interest in silvicultural practices, and that assistance programs must pay a substantial share of a silvicultural practice and be well publicized to induce a portion of the owners to engage in timber production.

Objectives and Attitudes of Nonindustrial
Small-forest Owners in
Lane County, Oregon

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OBJECTIVES AND ATTITUDES OF NONINDUSTRIAL
SMALL-FOREST OWNERS IN
LANE COUNTY, OREGON

I. INTRODUCTION

A frequently advocated solution to possible timber shortages has been promotion of public programs to encourage more intensive forest management on private small-forest lands. Many of these programs have engendered little success and low participation rates among forest owners for which they were intended. Most recently the Rural Environmental Assistance Program (REAP), designated to carry out the cost-share payments to landowners for various management practices, was discontinued by the Nixon Administration. Other programs have been suggested (see Burlison, Stoddard, Wyatt on page 19) without evidence of forest owner acceptance.

This study seeks to disclose forest owner attitudes and receptiveness toward various public programs which were designed to promote intensified forest management on private lands. It also attempts to identify owner objectives and land use patterns for forest lands. Without owner objectives in mind, how may proponents of public aid programs be equipped to suggest effective methods of assistance?

Defining the Problem

Historically the purported "problem of small-forest ownerships" has been stated in terms of meeting the Nation's future timber requirements. In the United States, where 60 percent of the commercial forest land is in small private ownership,¹ it is easy to understand why the desire to increase timber production is directed toward these lands.

The private small-forest owner is an anomaly of American Forestry. This owner has been described as a poor forest manager. Timber productivity on his land has been judged as inferior by criteria established beyond the landowner's frame of reference by public forest agencies.

A brief survey of the problem is reported below.

Review of Public Statements

Probably one of the earliest official statements concerning private forest ownership came from "The Capper Report" based on data gathered by the U. S. Forest Service in 1920 (p. 70). It considered private forest holdings a problem and suggested that "All timbered and cut-over land in state or private ownerships which is not

¹Since 1941 the U. S. Forest Service has defined the small private forest owner as having not more than 5,000 acres. This ownership class is about equally divided between "farm" and "other private" landowners.

now required for other uses than timber growing should be classed as 'forest land' and placed under the control of the State forestry organizations."

Several years later The Copeland Report of 1933 (U. S. Forest Service, 1933, p. 59) concluded:

. . . there is nothing in past experience or definitely in sight for the future which gives reason for hope that private ownership can be depended upon for anything approaching the contribution to American Forestry that has been expected of it during the past 20 years.

"The Joint Committee on Forestry Report" in 1941 (U. S. Congress, 1941, p. 20) focused on the small forest landowner. The following excerpt describes the formally recognized "small ownership problem":

Privately owned forest land is characterized by small ownership, 40 percent is in farm woodlands, 40 percent more, or a total of 80 percent is in ownerships not exceeding 5,000 acres . . . Privately-owned commercial forest lands contain nearly three-fifths of the saw-timber. They are generally the most accessible, easily logged, and most productive. . . It is evident--because of these factors, difficulties inherent in complex ownership pattern, and absence of good forest lands constitute the Nation's most critical and important land use problems.

The U. S. Forest Service Reappraisal Report (U. S. Forest Service, 1947, p. 5) amplified the importance of small private forests:

Many of the obstacles to better forestry stem from the huge numbers of these small properties; their small, often uneconomical size; the diversity of aims and lack of skill with which they are handled; the instability of

their ownership and management; the lack of capital and the pressure for current income. Yet the small holdings include much of the most productive forest land. Practical means must be found to bring this large and important segment of private forests under good management.

Early in 1958 the Timber Resources for America's Future (U. S. Forest Service, 1958, p. 88), a comprehensive analysis based on inventory data collected in 1952 and 1953, stated:

A key to the future timber situation of the United States lies with the farmers and with other nonforest industry private owners. These ownerships are in greatest need of improvement.

More recently the 1965 report entitled "Timber Trends in the United States" (U. S. Forest Service, 1965b, p. 104) treated the small-forest owner lightly, yet this official statement of the U. S. Forest Service did not underestimate the importance of the small owner:

Thus, in spite of relatively low inventory volumes per acre, they continue to be of primary importance in supplying wood to the forest industries . . . the general level of management of these lands, however, is below that attained on most public and industrial lands.

The latest in the series of national timber status reports, the unpublished "Outlook for Timber in the United States," is a statement based on 1970 data. It treats the small ownership problem as an economic issue by emphasizing that the long growing period necessary for timber exceeds the span of interest of most private owners and the rates of return in forestry are low. The summary of this

report best states the current opinion of forest economists regarding small-forest owners:

The indifference of forest owners to management opportunities, and the problem of diminishing returns in expanding programs of persuasion, suggest that all economic opportunities for timber management intensification are not to be realized. (U. S. Forest Service, unpublished, 1972, p. 3-16).

Prominent forest economists have shared and criticized the U. S. Forest Service view of the small-forest owner. Stoddard (1961, p. 1) introduced his book on small private forests by stating: "Clearly the smaller units are not producing timber anywhere near their growth capabilities. This situation is found on both the farm woodlands and on small tracts held by nonfarm individual owners."

Schallau (1961, p. 1) also shared the U. S. Forest Service view, "Today's ownership problem centers upon the conclusion that the small woodland owners . . . must shoulder a sizable share of the responsibility in providing for the Nation's future timber needs."

Duerr (1961, p. 67) has stated the problem somewhat differently: ". . . the small, exploitively managed private forest holding is, in a sense, not a national problem in forest conservation, but a national instrument for forest conservation." He points out that the small private owner has provided considerable timber for market, thus removing demand pressures from public and large industrial holdings.

In a deductive study of the nonindustrial owner, McMahon (1962, p. 1) emphasized the economic position of the owner, rather

than the nation, as he faces the decision to invest in forestry. He states: "Owners intensify forest practices when expected rates of return equal or exceed the maximum rate of return from the same capital if invested in a nonforestry alternative." Accordingly, the problem as defined in terms of the small-forest owner satisfying national timber shortages does not exist. McMahon's study may have been the beginning of de-emphasis on the small-forest owner as indicated by the latest U. S. Forest Service timber appraisal.

Revaluation of the Problem

American forest policy of the last two decades has asserted that the small-forest owner offers the solution to a predicted timber shortage. Numerous studies of small-forest owners since the early fifties have shed much light on the small owner problem. It is now evident that the problem must be reformulated considering the complexity of the small-forest owner and his reluctance to invest in forestry. The small-forest owner's actions have been judged from the public viewpoint of the overall forest economy, not from the owner's perspective of maximizing his own limited inputs. As McMahon (1964, p. 116) pointed out:

Separating the public goal of increased timber production from the problem of getting increased production largely divorces the latter from the nonindustrial owner situation; other realistic alternatives are available for meeting the goal.

The problem is to evaluate the owner's perspective and see if this coincides with the public view expressed by public assistance programs. This empirical study of the problem is limited to Lane County in western Oregon.

Study Objectives

The objectives of this study are twofold: (1) To determine non-industrial small-forest owners' objectives for their forest lands in Lane County, Oregon, and (2) To determine attitudes of the same owners toward public assistance programs designed to increase timber production on their forest lands.

For the purposes of this study the term "nonindustrial small-forest owner" shall mean a private land owner who does not own timber processing facilities and has title or mortgage to, at least ten acres and not more than 200 acres of forest land. Forest land shall mean land carrying forest growth or, if totally lacking it, bearing evidence of former forest and not now in other use (Ford-Robertson, 1971).

As a corollary to the stated objectives three hypotheses are tested by this study. They are:

- (1) that there are significant differences of land use objectives between owners with predominantly cutover land that has no merchantable trees and owners with lands that have

merchantable or near merchantable trees.

- (2) that there are significant differences of land use objectives between owners having small acreage and owners with larger acreage of forest land, and
- (3) that owners reject intensified forestry because it is inconsistent with their economic circumstances.

II. PUBLIC SOLUTIONS

Programs of public aid in forestry have paralleled the previously reviewed timber appraisal reports. Outlined below are federal and state assistance programs for the small-forest owner.

Review of Public Forestry Assistance

Federal Programs

Federal assistance began in 1924 when the Clark-McNary Act called for federal and state matched funds for nursery production and distribution of trees for planting on public and farm lands and for educational assistance and technical advice to owners of farm land (Dana, 1956).

It was under this act that forestry became an important part of the Agricultural Extension Program. Extension foresters working with county agents disseminate relevant information to landowners through public meetings, bulletins, and demonstrations. In Oregon information on markets and current timber prices is also provided through extension efforts.

Until December 5, 1972, cost-share assistance was offered landowners under the Rural Environmental Assistance Program (REAP). On that date federal assistance funds were frozen only to be eliminated entirely by executive order a month later.

Congress, in 1970, directed that the old Agricultural Conservation Program (ACP) be given the new name REAP. Although the cost-share program did not change with the new name, the emphasis did. The newly named program put more emphasis on environmental improvement and protection. The ACP originated in the Agricultural Adjustment Act of 1933. Farm support practices of the ACP were later declared unconstitutional by the Supreme Court (Dana, 1956). Congress retaliated with a revised Agricultural Conservation Program under the Soil Conservation and Domestic Allotment Act of 1936.

Under REAP (or ACP), payments were made to forest land owners for tree planting, timber stand improvement, and in Oregon, construction of fire prevention roads and ponds. Cost-share payments varied from county to county as well as state to state, but generally they were 50 percent of the total costs up to a given maximum amount per acre and per owner.

The Cooperative Forest Management (CFM) Act of 1950 authorized technical assistance to private forest land owners. The CFM Act repealed the 1937 Norris-Doxey Act which provided assistance to farmers only. Under CFM, costs of technical services are shared equally by federal and state governments, usually through a state forestry department, as in Oregon.

The CFM forester (a state farm forester in Oregon) demonstrates marking trees for removal and estimation of timber volumes

for owners. He also advises the owner on marketing, timber stand improvement, restocking, and other management practices. To prevent competition with private forestry consultants, an individual landowner is limited to technical advice only.

Within Soil Conservation Districts (SCD) of a state, technical assistance is offered to farmers. This assistance takes the form of land use planning advice offered by federal work unit conservationists. Where forest lands or possible forest tracts are included in the landowner's holdings, management advice is given concerning appropriate forestry practices from tree planting to harvest cutting.

Soil Conservation Districts are independent of federal control. They are established by enabling legislation of a state. Since 1937 the Soil Conservation Service (SCS) has provided the conservationists to these districts for technical assistance.

Another form of public assistance is offered by the Federal Land Banks. Supervised by the federal Farm Credit Administration, local Federal Land Bank Associations offer loans for agriculture and forestry purposes at rates of interest traditionally lower than current market interest levels (Worrell, 1970). The local Land Banks require a first mortgage on the property and precise requirements as to the condition of the land and timber used for collateral.

Other federal subsidies which will not be discussed here include the capital gains treatment of income from timber, federal

grants to forest research, and price support subsidies for naval stores products.

State Programs

Several state programs exist in Oregon to encourage intensification of forest management on private forest lands. These incentives include provision for low cost seedlings by the State Nursery, the Forest Fee and Yield Tax, and the Western Oregon Small Tract Optional Tax.

The Oregon Forest Nursery provides tree seedlings at the State's cost to private landowners to encourage reforestation. Since 1925 when the first nursery was established in Corvallis, seedlings have been available to Oregon rural private landowners at a price below private nursery stock.

Private forest land owners in Oregon are encouraged to produce timber by the 1929 Forest Fee and Yield Tax and the Small Tract Optional Tax. Under the Forest Fee and Yield Tax landowners pay a major portion of their taxes on income received when the timber is harvested. Until the timber is cut the owner pays only a small annual tax on the land (ten cents per acre in western Oregon).

The Western Oregon Small Tract Optional Tax provides for a tax on forest property determined by the ability of the land to produce an income from timber production. Timber is not taxed.

Eligibility for classification under this law requires that an owner have no more than 1000 acres of forest land, that the land have no higher use other than farm or forest, and that timber on the land average not more than 60 years of age.

Objectives of Public Forestry Assistance

Federal and state forestry assistance program objectives are difficult to ascertain. Contributing to this difficulty is the observation made by Worrell (1970) that many of the public assistance efforts to private forest land owners have been a minor part of broader programs to farmers. Forestry assistance programs are often attached as riders to agricultural programs. Only Cooperative Forest Management has been independent of agricultural assistance, and it was not until 1950 that the 1937 Norris-Doxey Act was amended to include forest land owners other than farmers.

Muench (1965) raises another issue when attempting to evaluate the objectives of public assistance programs. He mentions that stated objectives are not often the same as desired objectives. Possibly the political pressures inherent in congressional bill passage account for this disparity.

Keeping these shortcomings in mind, what are the objectives of the various assistance programs? Starting with REAP (the old ACP), a pamphlet published by the agency describes the program

purpose this way:

The major purpose of REAP is to improve the quality of life for all people. REAP puts its priorities on enduring conservation practices. . . REAP emphasis also is on encouraging farmers to undertake projects they could not--or would not--carry out without cost-sharing assistance. (U.S. D. A., 1971, p. 1).

From the above statement two objectives can be implied. The first is resource conservation and the second is income redistribution. The latter objective is reiterated in the same leaflet by proclaiming that cost-share payments "may be increased up to 80 percent for low-income farmers. . ." (p. 4). Forest land owners are not mentioned, but timber stand improvement and tree planting are defined as approved practices. Emphasis is on the farmer and rancher.

The objectives of forestry Extension under the Clark-McNary Act may be similar to REAP. An important observation made by John Muench (1965) in his study of public programs in North Carolina illustrates that Agriculture Extension is both "allocative and distributive." Muench states that "Extension serves an allocative purpose by showing the land manager how to better use his available forest resources," and shows that Extension is redistributive "by using public funds to educate many who could not otherwise afford to acquire such knowledge themselves," (p. 62).

On the other hand the primary objective of the Cooperative Forest Management program may be resource conservation only.

Muench terms the CFM objective as a "resource allocation program."

It is concerned with the optimum use of the forest resources over time. The following quotation from the 1950 Act supports the preceding assumption:

. . . for the purpose of encouraging the States, Territories and possessions to provide technical services to private forest land owners and operators, and processors of primary forest products with respect to the management of forest lands and the harvesting and marketing and processing of forest products . . . (64 Stat. 473).

Like CFM, the Soil Conservation Service technical advice is primarily concerned with resource conservation. The stated objectives of the SCS program are putting land into uses compatible with soil and water conservation (U. S. Stat., 1935). These advised uses may not always offer more income to the landowner, therefore income redistribution may not be an objective.

Objectives of the Federal Land Bank can be traced back to its creation in 1916. A. G. Black, an early administrator of the Farm Credit Administration which is responsible for the Land Bank, stated that the 1916 legislation had two objectives: "One was checking tenancy and promoting farm ownership, and the other was strengthening the economic position of the farmer generally." (Johnson, 1963, p. 264). Each of these objectives supports the assumption that Federal Land Bank's primary purpose is income redistribution to private landowners.

Objectives of the State programs are more apparent. State nursery seedlings are provided to assure reforestation, a resource allocative role. Although they are provided at State cost the purpose is not to compete with private nurseries and stringent requirements for use are made of seedling buyers.

Oregon Revised Statute 321.260 states that the purposes of the Forest Fee and Yield Tax Law are:

(1) To provide the forest owner with tax relief during the growing period, and to protect and maintain the county tax base and stabilize tax revenues; and thereby (2) to promote the establishment of new forest crops on cut-over or denuded privately owned forest lands; . . . and to discourage premature harvesting of forest crops.

Essentially the provisions of this law are resource allocation--that is, to encourage greater timber production. Secondly, maintenance of a county tax base and tax revenues may be an objective. It is assumed that the tax relief to forest owners is an incentive to practice forest management rather than for the purpose of income redistribution.

Western Oregon's Small Tract Optional Tax falls into this same category of resource allocation. This objective is reaffirmed by the statute:

. . . the increasing value of the growing timber tends to force those smaller owners with predominantly young growth holdings to harvest their timber before it has properly matured because of the constantly increasing taxes. . . make it possible for such owners to hold their timber to the proper rotation age. (ORS 321.710).

Table 1 on page 18 summarizes each of the above assistance programs. The assumed objectives correspond to the stated and implied goals of such programs.

Proposed Solutions

The desire to improve existing programs or to meet the objectives of intensified forest management on private lands has generated thoughtful program proposals. Whether such programs would be accepted by small-forest owners is a central question of this thesis. Following is a brief description of several programs suggested.

Forest credit has long been endorsed as a method to solve low productivity on small-forest holdings. By offering government loans to forest land owners it is hoped that long term repayment would reduce early liquidation of timber for income needs. An example of such a proposal to extend credit to forest land owners was the Cooley Bill which failed in the 84th Congress. Under this bill (U. S. Congress, 1956) Department of Agriculture would have granted low interest federal loans to owners with no more than 100 acres of land suitable for growing timber. The loan would have become due six months after the estimated date of timber harvest. Loan collateral would have been a first mortgage on the property.

Another suggestion, presently practiced by private forest industry, is leasing of private lands by public agencies for intensified

Table 1. Summary of objectives of major public forestry assistance programs in Oregon.

Public Assistance Program	Year of Inception	Objectives
<u>Federal</u>		
Forestry Extension under Clark-McNary Act	1924	Resource Allocation ¹ Income Redistribution ²
Rural Environmental Assistance Program (formerly ACP)	1936-72	Resource Allocation Income Redistribution
Soil Conservation Service Technical Assistance	1937	Resource Allocation
Cooperative Forest Management	1950	Resource Allocation
Federal Land Bank Loans on Timber	1960	Income Redistribution
<u>State</u>		
Oregon State Nursery Seedlings	1925	Resource Allocation
Oregon Forest Fee and Yield Tax	1929	Resource Allocation Stabilized County Tax Base
Western Oregon Small Tract Optional Tax	1961	Resource Allocation

¹Resource allocation may denote producing more timber and/or soil and water conservation.

²Income redistribution implies the goal of increasing the income of low income landowners.

forest management. A recent lease proposal by Burlison (Burlison, unpublished mimeo, 1972) would designate a special government management agency to negotiate long-term leases and carry out appropriate management practices for timber production. Participating landowners would receive annual payments based on the predicted productivity of their forest lands under intensive management.

Stoddard (1961), after reviewing many assistance programs, discloses that small forest owners are not organized as small business units for which many programs are directed. This point is stressed when he suggests that technical assistance should be directed toward the "larger" private small-forest owner. Stoddard goes on to recommend that public efforts should be concentrated toward the most productive owners, those owners with larger holdings in the coniferous regions. These efforts should be in the form of service programs through Soil Conservation Districts, with closer cooperation between existing agencies directing assistance to forest owners.

McMahon (1962) agrees with Stoddard by emphasizing that public programs need to be reoriented toward those forest holdings that would achieve the optimum timber supply at the lowest total cost. Such ownerships would be industrial and larger nonindustrial forest lands.

Legislators, too, have proposed extensive programs for intensified management on private forest lands. Oregon representative,

Wendell Wyatt, in 1970 recommended that the federal government "provide various incentives to see that the maximum effort is made to return these lands to productive use. . ." by incentives to include ". . . tax devices, free seedlings, and technical assistance." (Rep. Wyatt. . .)

More recently Senator Mark Hatfield presented the "American Forestry Act of 1973" to the 93rd Congress (S. 1996). This bill contains a provision for cost-share assistance to private nonindustrial owners. The federal government would provide payments to various size class owners in the following percentages (S. 1996, 1973, p. 12):

<u>Forest acreage of owner</u>	<u>Federal share of total costs</u>
10 to 50	70 percent
51 to 150	60 percent
151 to 500	50 percent
501 to 5000	25 percent

These incentive payments would be provided to small-forest owners who had carried out appropriate management activities on their lands. Such a program accounts for size class variation among private owners, but in the reverse order advocated by Stoddard and McMahon. The objectives of Hatfield's bill in this case may be more redistributive than resource allocative.

This list of proposals describes only a few of the many public

solutions found. Although this list is not complete, it is representative and it prefaces the analytic portion of the study.

III. PREVIOUS RESEARCH

Examination of research literature reveals an abundance of material concerning the nonindustrial small-forest owner. Many of these studies refer to owner objectives for his forest holdings and several studies pertain to owner attitudes toward public assistance programs.

Two important characteristics of these previous works should be considered when reviewing this literature. First, there is tremendous variability among small-forest owners. The only commonality among owners may be that they own forest land (some owners may not even think of themselves as forest land owners). Size of forest holding and industrial versus nonindustrial ownership often were not explicitly included for analysis by researchers. This adds to the complexity of ownership response, especially if a 100 acre forest holding is given equal status for comparative analysis as a 5,000 acre holding.

Second, the region which the owner sample represents should be an important variant when comparing ownership studies. Most of the private forest owner studies have been in eastern regions of the United States. The majority of private forest land is in the East. Yet within the regions of the East there exist marked differences in forest types, marketing, and land tenure.

These two attributes, large variability among owners and regional differences, may account for differences between this study and past research.

Studies of Forest Owner Objectives

The one study in western Oregon done by Robert Keniston (1962) showed that 40 percent of 122 owners held their forest lands for timber production. Forest land objectives for the remainder were primarily investment and sale (18.5 percent) and pasture (11 percent). The sample was taken from four counties in western Oregon and represented owners with ten to 5,000 acres. Six of the owners were corporations and one was an association. The remainder was individuals.

Keniston found that owners practicing the best forest management tended to own over 80 acres of forest land which was site III or better. Their lands were at least 70 percent stocked with commercial species.

Other research results in the United States have differed from Keniston's research in percentage owning land for timber production. But ambiguous terminology among studies may account for the high variance among studies of owners who claim timber production as a goal. For instance, what may be described as the owner's objective by "forest production," "letting timber grow," or "timber growing" could mean either that the owner has no intent of cutting and

selling or that he is producing timber for the market. Hutchison and McCauley (1961, p. 7) aptly stated that "Many feel that they are growing timber when their land is not devoted to another use."

Farrell (1964), in a study of Ozark owners, went even further by indicating that owners who had expressed intent of growing timber gave little evidence of really meaning it. He based his analysis on past actions taken by the forest owner on his property.

In a summary of 25 forest ownership studies since 1949, Robert Stone (1969) showed that 28 percent of all the owners surveyed indicated timber production as an objective. Stone admitted that "28 percent represents a maximum ratio" (p. 15) considering the many connotations given to timber growing for sale.

Other uses for the forest land may be more important than production of timber for sale. For instance, a 1965 study in Massachusetts (Babeu) revealed that the most important reason for owning woodland was for personal recreation and residential use.

Another study (Schallau, 1962) confirms this. Only six percent of the owners in Michigan's Upper Peninsula gave timber production as a primary objective. Residence and general farm use were most often cited as reasons for ownership.

In a Wisconsin study by Sutherland and Tubbs (1959) a large proportion, 50 percent, indicated timber growing as a primary objective. Yet closer analysis suggested that no more than 24 percent of

the owners had ever sold timber. Many of the woodland owners had cut timber for their own uses.

Reasons given for not growing timber for sale were well represented in a West Virginia study (Christensen and Grafton, 1966). Of the 75 percent who did not consider the sale of timber as an objective, most stated that past cutting had so depleted the stand that merchantable timber was not available, that current prices were too low, and that timber was being held to meet unexpected contingencies. Over 70 percent of those who sold timber did so to meet current expenses such as tax expenses and emergency money needs.

One research work noted the change in owner objectives from a previous study. Levens (1967) observed that nontimber objectives became more important in the period from 1960 to 1967. He demonstrated that the percentage of eastern Texas owners with investment or speculative goals doubled in this time span.

The importance of this change of objective over time was stressed by Stone in 1969. He stated that many owners have nontimber production objectives most of the time, but during the period when their timber is merchantable, they pursue timber producing values. Thus a certain portion of the small-forest owner group will always dispose of their timber, but because of minimal investment in the timber stand, the rate of production is below the potential of the land.

Studies of Forest Owner Attitudes

Attitudes and response by small-forest owners to public assistance programs in forestry form an important part of this study. Little work has been done in the area of owner attitudes toward public forestry assistance. Several studies have measured the response and effectiveness of forestry programs among owners. This research is reviewed here.

Although Keniston (1962) considered the motivations of owners, he did not evaluate owner's attitudes toward public assistance or available programs in Oregon. He contributed to an understanding of the owner by pointing out that a significant portion of the small-owners do not have economic barriers, but personal motives which preclude forest management. An owner's personal interest, knowledge, and background in forest management possibly influence his desire to practice forestry as much, if not more, than his economic status. Accordingly, public assistance programs designed to remove only economic obstacles may not be successful.

An Arkansas study demonstrated this concept. Perry and Guttenberg (1959) concluded that 60 percent of all owners in their sample did not utilize public assistance because they were not interested in forestry, or felt they did not have enough land or timber to make it worthwhile.

Similarly, Pomeroy and Yoho (1964) discovered that 56 percent of the owners selling timber realized that CFM tree marking services were available but failed to take advantage of them because they did not think they would gain sufficiently from it. Of those owners who had not heard of CFM technical services, only one-third appeared interested after learning of such services.

Little or no interest in public assistance programs is shared by Michigan forest owners. Several research projects (Yoho, 1958, Schallau, 1962; Schallau, 1964) confirm this by indicating low participation rates, near four percent, and poor knowledge of programs. In one sample 82 percent had not heard of ACP, CFM or forestry extension; another sample demonstrated that over 60 percent of the landowners did not know there were public programs for forest landowners.

Lease proposals presented to landowners also were not popular. Farrell (1964) established that if lease services were available to owners in Missouri who do not practice forest management, 67 percent would not accept such services. The 1964 study by Pomeroy and Yoho indicated that fewer than 21 percent were interested in a management lease, and only three percent were more than just moderately interested. The major reason was fear of losing decision making rights to the property. Only eight percent of those in Sutherland and Tubbs' (1959) Wisconsin study were interested in long-term leasing.

To conclude this review, Weyrick (1968), in a southern Minnesota research project concerning the impact of public assistance on the practice of forestry, stated that assistance programs can be more effective when forest owners "have more positive attitudes toward forestry practices and long-term objectives . . . and have woodlands in better condition," (p. 227). Thus owners more receptive to public assistance may already have the most productive forest lands.

IV. STUDY AREA AND METHODS

Determination of nonindustrial small-forest owner objectives and attitudes involves several procedural problems. First, small-forest land owners must be distinguished from other landowners. Then, having separated the private forest owners from other landowners, one must set limits on the size of forest holdings and decide how to choose only nonindustrial owners.

Next, owners must be selected to represent objectives and attitudes of the population in the size class. Methods to determine and evaluate these objectives and attitudes become an important part of any study.

Solutions to the above problems are found in this chapter. To begin, a description of the study area is given.

The Study Area

Lane County in central western Oregon was chosen for the study area. This county, which extends from the Cascade crest west to the Pacific Ocean, typifies a segment of the western Oregon forest region. Commercial forest land represents 81 percent of all land in Lane County (U. S. Forest Service, 1965a). Table 2 shows how this commercial forest land is divided among owners. Note that the farmer and miscellaneous private class (traditionally the small

owner class) represents 14 percent of total land ownership. The small owners hold approximately 37 percent of all private commercial forest land in Lane County and 20 percent of all private saw-timber.

Table 2. Area of commercial forest land and volume of sawtimber by ownership class in Lane County, Oregon, 1963.¹

Ownership Class	Area		Volume ²	
	<u>acres</u>	<u>percent</u>	<u>Mbf</u>	<u>percent</u>
National Forest	1, 179, 000	50	58, 301	70
Other public	281, 000	12	8, 417	10
Forest industry	567, 000	24	12, 896	16
Farmer and miscellaneous private	336, 000	14	3, 305	4
All ownerships	2, 363, 000	100	82, 919	100

¹ Forest statistics for west central Oregon, U. S. D. A., U. S. Forest Service, Pacific Northwest Forest and Range Expt. Sta. Resource Bulletin PNW-10. 1965.

² International 1/4 inch rule.

The economy of Lane County is closely related to its land and forest resources. Forest industry predominates with almost one-third of the total county employment in lumber, wood and paper manufacturing (Ore. Employ. Div., 1970). Markets for primary forest products are not too distant from any point in Lane County.

Such a county, where forest industry and forest lands play an important role, provides an appropriate study area for small-forest owner research.

Sampling Procedure

Well maintained and accessible landowner records are kept by the Lane County Court House. Delineation of private forest land owners from other landowners was facilitated by the 1971 Lane County Forest Patrol Assessment Roll. This is a list of forest land owners by tax lot number. It provides name and address of owner as well as total forest acreage for each tax lot. The roll is complete except for isolated small-forest ownerships protected by rural fire departments.

Approximately 12,000 private ownership tracts were listed on this assessment roll. A single owner may hold more than one tract, so the first task was to combine all ownerships under the same ownership name. The combined ownership tracts were then stratified into forest acreage classes for sampling purposes. Table 3 shows the percentage of owners and acreage in each size class.

The smallest size class (10-199 acres) was chosen for sampling for two reasons. First, it contained 84 percent of the small-forest owners between 10 and 4999 acres (the U. S. Forest Service definition of a small-forest owner). And second, since past studies have indicated a positive correlation between size class and intensity of forest management (Babeu, 1965, Penn. St. Univ., 1969, Stoltenberg and Webster, 1959) concentration on one size class would

emphasize the owners with more homogeneous management practices.

Table 3. Private small-forest owners and commercial forest acreage in Lane County by size class, 1971.¹

Size class	Owners		Area	
	<u>number</u>	<u>percent</u>	<u>acres</u>	<u>percent</u>
10- 199	2904	84	148,135	42
200- 499	442	13	84,857	24
500-1999	93	3	75,692	21
2000-4999	17	(2)	47,256	13
Total	3456	100	355,940	100

¹ Derived from the Eastern and Western Lane County Forest Patrol Assessment Roll, 1971.

² Less than one-half of one percent.

Industrial owners were removed from the 10 to 199 size class by visual inspection. Names that indicated ownership by primary or secondary wood industry were deleted. Ninety owners were randomly selected from the remaining 2699 owners in this size class. Distinction between owners with merchantable, pre-merchantable, and non-merchantable timber became necessary to test the hypothesis that owner objectives were different among these classes.

The 90 owners were stratified into three timber classes based on State tax revenue records. Forest owners that held timber

assessed for tax purposes were considered commercial timber owners. By examining owner tract accounts on ownership maps and aerial photographs, holdings were divided into precommercial and noncommercial forest ownerships. Forest tracts containing timber that would become merchantable within 15 years were considered precommercial forest lands.² The noncommercial forest land class contained the balance of owner tracts.

The first 20 owners in each of the three classes were chosen for interview. Replacements were taken from the remaining owners for those not available for interview or disqualified by either too small or too large a forest holding for the acreage class.

The Interview

In his Ph. D. thesis on methodology for investigating forest owners' objectives, Christensen (1957) concluded that personal interviews were best adapted for discovering owners' motivations and objectives.

Landowners who had telephones were called to set up an interview appointment at the owner's convenience. Only the caller's name and a general statement concerning forest ownership research at Oregon State University were given to the owner so as not to bias the

²State forest appraisers report trees merchantable when they become 12 inches in diameter at breast height.

owner's attitudes before the interview. It was thought that proper identification of the researcher, although it might bias the owner slightly, would establish better rapport.

This proved to be true in cases where owners, who had no phones, were contacted at their residence. They were first skeptical of strangers asking them questions about their lands, but once it was established that the investigators were from the School of Forestry at Oregon State University, the owners were usually quite receptive.

Questioning was carried out by two investigators. The first ten owners were interviewed by both investigators jointly. This technique helped establish continuity when interviewing separately.

Questioning usually began shortly after a few introductory words had established a comfortable relationship. A formal questionnaire (Appendix A) was used to insure uniformity of questioning among interviewees. After the first few questions concerning acreage and type of lands, the owner was asked to move 12 magnets on a metallic board set before him. Circles on the board were labeled to represent various present land use objectives for his forest land only (see page 69, Appendix A). He was asked to distribute the magnets into the circles that best represented his own proportional land use objectives. Thus a numerical weighting of objectives was possible for later analysis.

Subsequent questions based on the owner's selection of land use objectives were given. Many questions were open ended, allowing the respondent to explain his motivation for various answers. This was found to be very effective. Owners frequently gave detailed answers to these open questions. The two investigators often found themselves recording information in the margins concerning owner attitudes and problems.

Questions concerning personal data, such as age and income, were saved for last on the questionnaire, when the owner felt more comfortable with the interviewer.

Interviews lasted from half an hour to more than two hours, depending on the owner's length of answers and his interest in relating to the investigator.

All interviewees were cooperative and willing to participate in the study. Several landowners, contacted by telephone, were "too busy" to make an appointment. They were called several times later by the interviewers and were not available. After persistence by the investigator some owners were later interviewed. The others were replaced by the next small-forest owner on the randomly selected owner list.

Data Analysis

Except for timberland classification information from the State

revenue office, the questionnaire furnished all data for analysis. Answers to questions were coded after all owners had been interviewed. This prevented the interviewers from directing the respondents of open ended questions to appropriate codes on the questionnaire. One investigator coded all the questionnaires to assure uniformity in analysis. Coded questions were transferred to computer punch cards, two cards per questionnaire.

The Questionnaire

Questions found on the interview form can be separated into four categories:

- (1) demographic and general characteristics of the owner and his forest land;
- (2) objectives for forest land;
- (3) knowledge of forest tax laws, assistance, and management; and
- (4) attitudes toward public assistance.

The first category contained the independent variables, and the last three categories the dependent variables.

Measurement of qualitative responses was facilitated by rating the answers. For example, the answer to "What is your opinion about cost-share payments from a public agency to increase timber production on private forest land?", was rated on a scale as follows:

1. strongly favor
2. favor
3. indifferent, no opinion
4. disfavor
5. strongly disfavor

Other questions such as knowledge of forest management or tax laws were rated by the descriptive quality and number of laws or management methods the interviewee mentioned. The scale used in these cases was from one to three, the higher number indicating more knowledge. A more definitive scale was not possible since poor, fair, and good were the best approximations of varied answers.

Questions were arranged on the interview form so as to prevent "leading questions." For instance, the respondent was asked who he might ask for management advice before inquiring of his knowledge of the State farm forester.

Statistical Procedure

The computer punch cards simplified statistical analysis and assured accuracy of results. Tabulations of coded responses were easily done by computer.

Combinations of independent variables with several dependent variables were tested by the chi-square contingency table used for measuring qualitative data. This method is well described by Walter

and Lev (1953) in Statistical Inference. Chi-square analysis was used to determine the probability that the relationships observed could be explained by chance alone. A significance level of five per cent was used.

An example of the chi-square test and a table of the results of the chi-square tests made in this study are shown in Appendix B.

V. RESULTS

Results of tabulations and data analysis are arranged below under the four general categories found on the questionnaire. Significant relationships between the dependent variables, and demographic and general characteristics of the owner and his land are included in the text under each topic.

Demographic and General CharacteristicsThe Owner

Table 4 shows that 70 percent of the forest owners are 50 years of age or older. Eighteen of the 60 owners interviewed were over 65. There were three owners under 30. An owner's age significantly affected his objectives and his decisions to choose forestry as a long term investment. This will be demonstrated later.

Table 4. Nonindustrial small-forest owners by age and annual income classes in the sample taken in Lane County, Oregon, 1973.

Age class	Number	Percent	Income class	Number	Percent
<u>years</u>					
less than 30	3	5	less than \$3,000	7	12
30-39	9	15	\$3,000- 6,999	17	28
40-49	6	10	\$7,000-14,999	21	35
50-59	15	25	\$15,000-24,999	12	20
60+	27	45	\$25,000 and over	3	5
	<hr/>	<hr/>		<hr/>	<hr/>
Total	60	100	Total	60	100

Sixty percent of the respondents have an annual family income of less than \$10,000. This group owns 59 percent of the forest land in the sample. Owners are distributed among income classes as indicated by Table 4. Note that 12 percent, or seven owners, had an annual family income less than \$3,000. In most cases these owners were retired and living on social security payments.

Diversity among owners is demonstrated by the distribution of owners in education and occupation classes. Table 5 shows that 68 percent of the owners are at least high school graduates. This is five percentage points higher than the general population of individuals 25 years and older in Lane County (U. S. Dept. Commerce, 1972).

More than one-third of the forest owners are either retired, or a housewife or widow. The remainder of the sample is well distributed among the occupation classes shown in Table 5.

Table 5. Nonindustrial small-forest owners by education and occupation classes in the sample taken in Lane County, Oregon, 1973.

Education	Number	Percent	Occupation	Number	Percent
Eighth grade or less	19	32	Wage earner	16	27
High school graduate	19	32	Retired	16	25
Some college or technical school	9	15	Own business	12	20
College graduate	7	11	Business or professional	11	18
Graduate school	6	10	Housewife or widow	6	10
	<u>60</u>	<u>100</u>		<u>60</u>	<u>100</u>

Five owners indicated they were members of the Oregon or Lane County Small Woodlands Association. Four of these five owners had merchantable timber on their lands. Ten respondents stated that they were Grange members.³ Most owners were not members of land management, forestry, or farm organizations.

The Land

This sample included 2989 acres or two percent of the total private small-forest land in the 10-199 acre class in Lane County. Sixty-five percent of the owners sampled had between ten and 50 acres of forest land, 20 percent from 51 to 100 acres, and 15 percent between 101 and 199 acres.

Sixty-seven percent (40) of the owners resided on their forest land. Four owners lived more than 30 miles from their forest land.

Average length of ownership, since original acquisition of forest land, was 17.3 years. Table 6 shows that 67 percent of the owners had held their lands for more than nine years. Method of acquisition is also shown in Table 6.

Thirteen owners had sold a portion of their forest land. Five owners stated that "needed income" was the reason for selling the

³Interestingly, only two full-time farmers were included in the sample of 60 owners.

Table 6. Nonindustrial small-forest owners by length of tenure and method of acquisition in the sample in Lane County, Oregon, 1973.

Item	Number	Owners	Percent
Length of tenure (years)			
less than 5	6		10
5-9	14		23
10-24	24		40
25+	16		27
	Total		100
Method of acquisition			
mortgage	25		42
outright purchase	24		40
inheritance	7		12
trade	3		5
homestead	1		1
	Total		100

land and four owners sold for rights-of-way. Eleven owners had bought additional forest land; only one had bought this land for timber production.

Less than 50 percent (27 owners) had harvested timber from their forest lands. Twenty-five of these owners had cut the timber for sale. Many owners stated that the timber had just been cut before they purchased the land.

Twenty-three owners had spent time working on their forest lands to improve the land or timber. These owners estimate they spend an average of 20 eight-hour days per year working on their forest lands. They cited thinning and brush removal as the most common activities. The merchantable timberland owners spent the most time on their lands, over 70 percent of the total work time recorded.

Eight owners in the sample used the services of the State farm forester. Four others had received management advice for their lands from a friend who was a forester.

Owner Objectives

The "six-circled objective board" with 12 magnetized pieces facilitated measurement of owner objectives for his land. Respondents placing one-half or more of the pieces into one circle were considered as having that objective as a major goal for their forest land.

In the case where an owner divided the 12 pieces equally between two circles, the mutually exclusive goal was considered the major objective. For instance, if an owner had placed six pieces in the "inactive" circle and six in the "hold for sale" circle, the latter was chosen as the major goal.

Table 7 lists the owners by primary objectives. If six or more pieces were placed in the combination of timber production, and recreation, and/or farming and grazing, the owner was placed under the second category listed. Note that "inactive" and "hold for sale" account for 43 percent of the owners.

Twenty-three owners (39 percent) listed timber production as either a primary objective or in combination with another compatible use.

Sixteen of the 37 people who had nontimber objectives, stated they would accept a 100 percent cost-share payment from a public agency for management costs and switch to timber production. These 16 owners added to those who had stated a timber production goal would total 39 persons that might have timber production as a major objective if 100 percent cost-share payments were given. This represents a total of 65 percent of the sample who would consider timber production as a goal. Table 8 summarizes the major characteristics of owners induced to change major objectives by a 100 percent cost-share payment.

Table 7. Objectives for forest lands of a sample of nonindustrial small-forest owners in Lane County, Oregon, 1973.

Objective	Owners	Percent
Inactive	15	25
Timber production and recreation and/or farming and grazing	14	24
Hold for sale	11	18
Timber production	9	15
Recreation and/or residence	6	10
Farming and/or grazing	5	8
Total	60	100

Table 8. Major characteristics of owners who would accept a 100 percent cost-share payment to change major objective to timber production.¹

Stated objectives	Number of owners	Reason for objective	Number of owners
Inactive	5	"too old or know too little about timber production"	5
Farming or grazing	4		
Other	7	"grazing more important"	4
Total	16	Other	7
		Total	16

Occupation	Number of owners	Forest acreage	Number of owners
Wage earners	6	10- 50 acres	13
Retired	5	51-100 acres	3
Other	5		—
Total	16		Total 16

¹Based on 16 owners that would accept cost-share payments and change to timber production.

Owner Characteristics Related to Objectives

Chi-square tests, shown in Appendix B, were used to determine owner characteristics that might be significantly related to the objectives an owner indicated for his forest lands. The three hypotheses specified at the end of the introduction under study objectives on page 7 were tested. These characteristics were forest land class (based on the presence or absence of merchantable timber), size of holding, and economic circumstance which was measured in terms of total family income.

A chi-square contingency table was established using the owner objective on one axis and the owner characteristic across the other axis. Using the method described in Appendix B, a test of independence was determined at the five percent level. The null hypothesis used was that proportions on the contingency table were the same. The hypothesis was accepted in one case and rejected in two cases. It was concluded that:

(1) there was not a significant difference of land use objectives between owners with predominantly cutover land that has no merchantable trees and owners with lands that have merchantable or near merchantable trees,

(2) there were significant differences of land use objectives between owners having small acreage and owners with large acreage of forest land, and

(3) owners rejected intensified forestry because it was inconsistent with their economic circumstance.

Other characteristics showing a significant relationship to owner forest land objectives were distance to forest from residence, planning horizon, and age. Owners living close to their forest lands, with longer planning horizons, or that were younger tended to choose land use objectives of agriculture, recreation, or timber production.

Motivations

Reasons given by landowners for choosing timber production as a major objective ranged from "I think this land is best suited for timber production" to "I want to grow trees for retirement income." Eleven owners thought that timber production was the best land use for their forest lands. Several others stated that they liked to see trees growing or that they received personal satisfaction from forest management activities. The investigators observed that several of the owners practiced timber management as an avocation or hobby. They had a highly developed personal interest in forest practices. For those owners the motivation for practicing forestry was a personal rather than an economic interest.

Owners who did not indicate timber production as a primary goal most often stated that they were too old to practice timber management. This was the reason in ten cases. The second most frequently stated reason (eight owners) was that the aesthetic, recreational, or residential use of their forest land was more important than timber production. In six other instances owners indicated that the highest value for their forest lands was not in timber production but as investment property. Another six owners thought grazing to be the most important use of their forest lands.

In answer to a question concerning whether the respondent had

ever considered timber production as an alternative to their non-timber production goal, 22 owners (37 percent) answered "no." Again, important reasons for not considering timber production were age or aesthetic reasons.

Planning Horizon

Another aspect of the owner's objective is the economic concept of planning horizon. Planning horizon describes how far into the future an individual's planning extends. Twenty-three owners (38 percent) expected no change in use of their forest land during their lifetime. These owners often expected to pass the land on to heirs. Thirteen owners (22 percent) listed their planning period as greater than ten years. Eleven owners (18 percent) indicated a period of three years or less. These owners tended to have "hold for sale" as an objective. In 26 cases a future use envisioned at the end of an owner's planning horizon was to sell. Five older owners desired to give their forest lands to relatives while still alive.

Investment

A hypothetical situation was presented to landowners in which they were given \$2,000 to invest or spend any way they desired. The list of alternatives ranged from long term forestry investments to an immediate expenditure for pleasure at the owner's choice. Only two

owners decided to invest \$1,000 or more in the area of forest management practices. Eighteen people (30 percent) chose to invest their money in farm equipment or an agricultural use. Fifteen chose stocks and bonds or real estate investment. Twenty-five (42 percent) persons decided to spend their money on home improvements, vacations, or save until they "knew what to do."

Owner Knowledge

Assistance Knowledge

Interviewees were asked if they knew about any cost-share payment programs for forestry purposes available in the last five years. Only eight knew of forestry assistance programs. Fifty-two (87 percent) did not know of any programs available to small-forest owners.

Twenty-one owners (35 percent) knew of a State farm forester serving their area. Only ten of these owners knew the State farm forester's name or office location.

Knowledge of forest tax laws for private small-forest landowners was mediocre among respondents. Forty-five owners (75 percent) did not know what tax law their forest land was under. Forty-eight owners (80 percent) had a "poor" rating of tax knowledge. Three owners, representing five percent of the sample, had a "good" rating of tax

knowledge. They knew of alternative methods of forest land classification for taxation.

In a question testing the respondent's knowledge of loans for forestry purposes, three owners, among those primarily interested in timber production, mentioned the Federal Land Bank as a source of funds.

Management Knowledge

Forest owners stating timber production as a primary goal were questioned concerning their knowledge of forest management practices. Nine of 18 owners had a fair or better rating on knowledge of forestry practices. This rating was based on seven questions concerning what the respondent would do to improve productivity on forest lands if asked for advice. Five owners indicated that to "just let the forest grow" without administering thinning or planting was sufficient.

Owner Attitudes

Public Assistance

Owners were asked their opinion of public cost-share assistance given to small-forest land owners to increase timber productivity. Thirty-four owners (56 percent) favored public

assistance to forest land owners. Table 9 summarizes the results. When asked if another means of public assistance might be more acceptable, seven landowners replied that tax relief would be better and five stated that advice or educational services should be the only help provided by public agencies. Three owners suggested government loans provided to an owner against his harvest would be a better alternative to cost-share payments.

Table 9. Attitudes toward public cost-share payments to increase timber productivity on private lands by nonindustrial small-forest owners in the sample in Lane County, Oregon, 1973.

Attitude scale	Owners	
	<u>Number</u>	<u>Percent</u>
Strongly favor	5	8
Favor	29	48
Indifferent or no opinion	6	10
Disfavor	10	17
Strongly disfavor	<u>10</u>	<u>17</u>
Total	60	100

Asked whether they would prefer a state or federal agency to administer assistance programs, 20 owners (33 percent) preferred a state agency, six respondents (ten percent) decided a federal agency would be best, and the remaining owners (57 percent) were indifferent or had no opinion.

A significant correlation existed between opinion of public

assistance and forest land use objective. The number of owners who indicated timber production as a goal were equally divided between those in favor and those strongly against cost-share payments.

Lease of Lands

Interviewees were asked if they would accept a lease from a private company for ten acres of five year old, stocked forest land, if they owned such land. Seven owners (12 percent) responded with a "yes." Table 10 summarizes the characteristics of these owners.

Table 10. Major characteristics of small-forest owners in Lane County, Oregon who would accept a lease from a private company for ten acres of five year old, well stocked forest land, 1973.¹

Characteristic	Item	Number of owners
Forest land objective	Hold for sale or inactive	4
Income	\$7,000-14,999	6
Education	Eighth grade graduates	6
Forest acreage class	Ten to fifty acres	5
Timberland class	Nonmerchantable or premerchantable	6

¹Based on seven owners that stated lease acceptance.

Reasons for acceptance of a lease, stated by all seven persons, was immediate income from forest lands. Twenty-two owners indicating nonacceptance of a lease proposal stated that such a lease would discourage buyers or tie up property that would be given

to heirs. Nine other owners thought a long term lease would be too long a period to consider.

A significant correlation existed between lease acceptance, and education, and objectives for land. Six owners had formal education through the eighth grade, and four owners had nontimber production objectives.

Forestry Loans

Fifty-two owners (87 percent) would not borrow money for a long term loan for forestry purposes at below market interest rates. Six owners would accept a loan for forest management practices at interest rates of six percent or less. When owners who stated timber production as a goal were asked what interest rate they would expect to have to pay for a loan intended for forest management work, seven stated from a five to seven percent rate. All others did not know or expect a market rate of interest.

Management Advice

Small-forest owners were asked from whom they would seek advice concerning their forest lands and whether they were willing to pay for the consulting services of a public forester.

Four owners listed the State farm forester as a source of advice for first choice (none listed him as a second choice). Twenty-one

owners (35 percent) listed an extension agent as first or second choice. Eight owners (13 percent) would seek the advice of a private forestry consultant. Others would enlist their friends or known foresters for management advice.

Twenty-three owners (38 percent) stated they would be willing to pay for the consulting services of a public forester, if they needed such services. Five of these owners were willing to pay between five and 20 dollars per four hour visit. Five other respondents indicated an amount between 25 and 75 dollars per visit. The remaining owners had no idea what would be a reasonable amount to pay.

This concludes the study results. More detailed tabulations are available in Appendix C.

VI. SUMMARY AND CONCLUSIONS

Summary

What objectives do small-forest owners have for their forest lands? How much do they know about, and what are their attitudes toward public forestry assistance? These are the questions answered in this study of nonindustrial small-forest owners in Lane County, Oregon. Sixty owners were randomly sampled and interviewed to determine these objectives and attitudes.

Guardians and administrators of America's forest resources have long been concerned about the future abundance of timber. Important in this concern has been the public goal of obtaining increased timber production from private small-forest owners who hold a significant portion of the Nation's commercial forest land. Numerous studies have indicated small-forest owners hold forest lands well below productive capacity because of high alternate rates of return, short planning horizons, rapid ownership turnover, and interests and time requirements that preclude silvicultural practices.

Alternative public solutions to these shortcomings are regulation of private lands, public management, persuasive education, or direct aid to the owner. The importance of private ownership in the United States limits government endeavors to the latter two methods. These methods are formulated in extension programs, technical

services, cost-share payments, and tax relief. Such assistance is designed as an appeal to private small-forest owners in an effort to intensify forest management.

These forestry assistance devices tie in with the objectives of this study when asking the question, "How would small-forest owners in Lane County, Oregon receive forestry assistance programs?" This question can best be answered by examination of owners' general characteristics, objectives, attitudes, and past acceptance and knowledge of assistance programs. Then it can be shown if they qualify as production units for an increased timber supply.

Survey of small-forest owners in Lane County reveals that they are generally in their later working years or retired. Not many other attributes distinguish these owners from other members of the population. As a group they represent most education, occupation, and income classes. Such diversity contributes to the complexity of designing assistance programs for them.

Forest owners in Lane County appear to be concentrated in the acreage class, from 10 to 200 acres (84 percent). Sixty-five percent of the owners sampled in this class hold less than 50 acres. This small size of holding decreases economic efficiency.

Forty-two percent of the owners had cut timber off their lands for sale. Thirty-eight percent had spent time working to improve their forest production. If either of these figures were used as an

indicator of owners interested in timber production, it would agree with Keniston's (1962) study in western Oregon.

In the order of most importance, 25 percent of the owners considered their objective for forest land to be "inactive"; 24 percent indicated a combination of timber production, recreation, and/or farming and grazing as an objective; 18 percent were holding their forest land for sale; 15 percent had timber production as a primary goal; ten percent listed recreation and/or residence as most important; and a little more than eight percent indicated that farming or grazing was their primary objective.

Adding the two timber objective owner categories together yields 39 percent who consider timber production on their lands at all. If another 27 percent, who stated they would change their primary goal to timber production given a 100 percent cost-share payment, were added, this would bring the total to 65 percent that would consider timber production.

Owners who indicated timber production as a goal for their lands did not necessarily intend to practice silvicultural treatments. Many owners considered the "let-it-grow" method as a technique for timber production. Only nine owners (15 percent of all respondents) had at least a fair knowledge of timber management practices.

Significant differences of land use objectives were shown to exist between owners having small acreage and owners with larger

acreage of forest land. Owners with larger acreages tended to indicate agricultural and forest land use objectives.

Owners scored low in their knowledge of forestry assistance programs available in the past and forest land taxation. Eighty-seven percent of the interviewees did not know of ACP, CFM, or the State nursery program. Only 17 percent knew where to locate the State farm forester. Eighty percent of the owners had little or no knowledge of special tax laws for forest lands.

Attitudes toward public assistance in forestry were generally favorable. Fifty-six percent favored cost-share payments to forest land owners. Thirty-four percent did not favor such a plan. The remainder were indifferent.

Asked if they would accept a long term lease for timber production, 12 percent of the owners said "yes." Primary reason for non-acceptance was that such an arrangement would discourage future buyers or tie up lands to be given to heirs.

Of the 39 owners (65 percent) who would consider timber production as a goal, six would borrow money for forest management purposes at interest rates of six percent or less. Investment in forestry by engaging in silvicultural practices was not a popular alternative even among those who had indicated timber production as an objective. Only two owners indicated they would use part of

a windfall of \$2,000 for planting, thinning, or other forest management practices.

Conclusions

The conclusions of this study have implications for the direction and method of public assistance efforts in forestry. Although the study applies only to nonindustrial small-forest owners in Lane County, more universal applications may be used as a background for program development in forestry assistance planning. Based on a general interpretation of the results, the conclusions are listed below:

(1) Almost two-thirds of the small-owners have an interest in timber production, but this statistic is inflated because of high cost subsidy to inactive owners and the minimum number of owners who would practice silvicultural treatments.

(2) Many owners who consider timber production as a primary objective do so with minimum cultural practices on their forest lands.

(3) The small percentage of owners who practice intensive forest management are motivated by personal interest in forestry rather than a return on their investment. (Several owners did state that best use for their forest land, in an economic sense, was timber production, but with little or no cultural practice.)

(4) Requirement for a high alternate rate of return on

investments by small-forest owners, and the rise in demand for forested residential homesites precludes timber production on many small-forest lands.

(5) The older mean age of small-forest owners may negatively influence timber production objectives and lead to considerations such as immediate retirement income or preservation of land and the rights to the timber for heirs.

(6) Over three-fourths of the small-forest owners are not aware of forestry assistance programs or tax incentives for forest owners.

(7) A potential exists for inducing inactive forest land holders to produce timber on their lands, but only at a very high cost to government on smaller sized units.

(8) Assistance programs designed to intensify management on small-forest lands will have to be better publicized and develop an owner's active interest in forestry by appealing to his personal interests.

(9) Public assistance efforts directed toward owners with over 50 acres of forest land may be more successful.

Further research of small-forest owners could determine the minimum economic size of a single holding for timber production, the most effective publicity methods for public assistance in forestry, the effects of specialized taxation on forest land owner acceptance of

timber production, and the importance of personal interest in motivating small-forest owners to produce timber.

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APPENDICES

APPENDIX A

O. S. U. FORESTRY SCHOOL OWNERSHIP STUDY QUESTIONNAIRE--
 INFORMATION CONFIDENTIAL

_____ Owner Number

- A. 1. a. _____ How many acres of forest land do you own, or control through mortgages, including woodlots and cutover forest lands?
- b. _____ How many of these acres would you consider to be cutover forest land?
- c. _____ difference
- d. _____ How many acres do you own that you don't consider as forest land or cutover forest land?

2. How are you using these nonforest lands that are not included in cutover or forest land?

a. _____

Approximately, how many acres do you have in each use?

b. _____

The next section of the questionnaire refers to your forested and cutover forest lands.

3. We have devised a method for measuring your present use of all your forest lands including cutover lands. You have twelve chips to place on the circles on the diagram in front of you. The number of chips you place on the circle will indicate the importance of that use to you. In other words, the more chips you place on that circle the more important that use is to you. Would you please place the chips on the circles to indicate your present uses for your forest lands only.

_____ How many years do you plan to maintain the use that you have indicated here for your land?

I		II	III
_____	Hold	_____	_____
_____	Inact.	_____	_____
_____	Farm Gr.	_____	_____
_____	Recreat.	_____	_____
_____	Timber	_____	_____
_____	Other	_____	_____

(If a change is indicated) What will be the primary use?

FARMING
OR
GRAZING

OTHER
USE
please describe

INACTIVE

TIMBER
PRODUCTION

HOLD
FOR
SALE

RECREATION
scenery
fishing, hunting
commercial recreation

4. (For those who plan sale) Why do you plan to sell this forest land?

5. Was this forest land you presently own obtained by

- _____ inheritance
- _____ outright purchase
- _____ purchase through mortgage
- _____ trade
- _____ gift
- _____ other means (specify) _____

6. How many years has it been since you first obtained this forest land?

7. (For other than inheritance) Would you please tell me why you acquired your original forest land?

8. a. _____ How many acres have you added to this forest land since you originally obtained it?

b. _____ Why did you buy this additional forest land?

c. _____ How many acres of this forest land have you sold since you originally obtained it?

d. _____ Why did you sell this forest land?

9. What tax law or laws is your forest land and timber under?

	(Acres)
_____ General property tax	_____
_____ Western Oregon Ad Val. (nondes.)	_____
_____ Western Oregon Ad Val. (designated)	_____
_____ Small Tract	_____
_____ Forest Fee and Yield	_____
_____ Doesn't know	_____

10. How is your forest land and timber taxed under this law or laws?

_____ good _____

_____ f. know. _____

_____ p. know. _____

11. Do you know of any other forest tax laws that you could classify your forest land and timber under? (Timber includes rep. and nonmerch.)

_____ Yes

_____ No

If yes, what are they?

_____ Number _____

12. a. _____ Yes Have you ever cut or harvested timber from your forest lands?

b. _____ (If yes) What year(s) _____

c. _____ Sell-Did you cut this timber for your own use or for sale?

_____ Own Use

_____ Use (If own use) What use?

13. a. _____ Yes Have you spent any of your time or money for work on your forest properties?

_____ No

(If yes) What was the last project you carried out on your forest properties?

_____ No. days Approximately how many 8 hour days did you spend on this project?

14. Now let us assume that you own 10 acres of recently cutover forest land well stocked with five year old trees and a private timber company offers you a 70 year lease on this forest land. This company will base the annual lease payments on the potential income on the land minus their management costs, including taxes. Lease payments will also be adjusted for changes in long run average timber prices. Would you accept the company's offer?

a. _____ Yes Why? _____

_____ No (Why not?) _____

Would you accept if a Federal Forestry Agency made the same offer?

b. _____ Yes Why? _____

_____ No (Why not?) _____

Would you accept if the State Forestry Department made the same offer?

_____ Yes Why? _____

_____ No (Why not?) _____

15. If you needed advice for the management of your forest land and timber who would you ask first? Then who might you ask?

- a. _____ State farm forester _____ Friend
 _____ State forester _____ Neighbor
 _____ Federal forester _____ Relative
 _____ Extension agent _____ Private consultant

b. Why would you consult your first choice?

16. Would you be willing to pay for consulting services of a public forest for the management advice of your forest lands and timber?

_____ Yes

_____ No

(If yes) What payment per visit would you be willing to pay for four hours of consulting services for your forest land?

(The four hours would include the forester's travel time and preparation of his reports.)

_____ \$

17. _____ Yes Do you have a state farm forester serving your area, that is where your forest land is

_____ No

_____ Doesn't know

_____ (If yes) What is his name?

_____ Doesn't know

_____ Where is his office?

_____ Doesn't know

18. _____ Yes Have you yourself ever received any forest management advice for this land?

_____ No

_____ (If yes) Where did you get it?

B. NONTIMBER PRODUCTION AS GOAL (_____).
 class

1. For a previous question you have indicated _____ as a primary goal. Why have you chosen _____ for your _____ of forest land?
 class

2. _____ Yes Have you considered timber production as an alternative to the use you have chosen?
 _____ No

(If yes) Would you mind telling me why you didn't choose timber production for the land use?

(If no) May I ask why you eliminated timber production as a choice?

- _____
3. a. _____ Yes If a public agency offered you a share payment covering all of the costs to encourage timber production on your land, would you accept the payment and change your land use from _____ to timber production?
- _____ No
- b. _____ Fed. (If yes) Would you prefer that a federal or state agency control the share payment?
- _____ State
- c. (If no) May I ask you why you would not accept this offer?
- _____

C. TIMBER PRODUCTION - PRIMARY USE - Part I

1. Why have you chosen timber production as the most important use:

for your cutover lands?

I _____

for your nonmerchantable timber lands?

II _____

for your merchantable timber lands?

III _____

2. How many years from now do you expect to get a commercial harvest from your

_____ forest land?

(oldest age class)

_____ years.

CLASS I - CUTOVER LANDS

3. Suppose someone owning the same number of acres in cutover land as you do and asked how he might increase timber production on this land. What would you recommend that he do with this land?

a. _____

(If he had brush problems on his cutover land what would you recommend?) (Do you know of any other method of brush removal?)

b. _____

(How would you recommend that the area be planted?) (Do you know of any other method of planting?) (Where would you recommend that he get the trees for planting?)

c. _____

(What other practices might you recommend on this cutover land?)

d. _____

4. a. What is your opinion about cost-share payments from a public agency to increase timber production on cutover forest lands?

b. Assuming that share payments were made, would you prefer that a federal or state agency administer the share payment?

_____ Fed.

_____ State

c. _____ Yes In your opinion would another form of help be more acceptable to help increase timber production?
_____ No

(If yes) What form might be better?

5. Assuming for a moment that you own 10 acres of cutover forest land that required brush removal and planting to increase timber production, and we estimate these practices to cost \$800 for contracting the work on the total acreage. What percentage (or portion) of this total amount would you require as a share payment from a public agency?

a. _____ %

If the acres of planting were to double, that is you would have 20 acres of cutover land at a total cost of \$1600 what percentage (or portion) of this total amount would you require as a share payment from a public agency?

b. _____ %

CLASS II or III Precommercial _____ Commercial _____

3. Suppose someone owning the same number of acres in precommercial forest land as you, that is, forest land that is adequately stocked with nonmerchantable trees, and he asked how he might increase timber production on this land. What would you recommend that he do with this land?

a. _____

ment. remin. (Would you recommend:)

b. _____ fertilization (why? not?) _____

_____ pruning (why? not?) _____

_____ precommercial thinning (why? not?) _____

4. _____ 1 Please look at this card with the management practices and tell me how you would rank them from one to three for highest investment returns.

_____ 2

_____ 3

5. a. What is your opinion about cost-share payments from a public agency to increase timber production on forest lands?

b. _____ Fed. Assuming that share payments were made, would you prefer that a federal or state agency administer the share payment?
_____ State

- c. _____ Yes In your opinion would another form of help other than share payments be more acceptable to help increase timber production?

_____ No

(If yes) What form might be better?

7. Assuming for a moment that you own 10 acres of precommercial forest land, that is well stocked with unmerchantable trees, and it required precommercial thinning in order to increase net money return and we estimate this to cost \$750 for contracting the work on the total acreage. What percentage (or portion) of this total amount would you require as a share payment from a public agency?

a. _____ %

If the acres of precommercial thinning were to double, that is you would have 20 acres of cutover land at a total cost of \$1500, what percentage (or portion) of this total amount would you require as a share payment from a public agency?

b. _____ %

C. TIMBER PRODUCTION - Part II

8. If someone were to ask you how they might select trees for thinning, how would you tell them what trees to choose for cutting?
- _____

9. If they were to cut trees for harvest how might you tell them which trees to cut?

Possibilities

No.

_____ diameter	_____ rate of growth
_____ everything buyer will pay for	_____ financial maturity
_____ clearcut	_____ other _____
_____ salvage of dead or down trees	_____ doesn't know

10. a. For this _____ land, it will probably take _____ years for your
(lowest class) (35 max)

first commercial crop of trees.

If a public agency were to offer loans for (restocking or increasing production) what would be the highest interest rate you would be willing to pay to borrow money to put your land into full timber production?

none 1 2 3 4 5 6 7 8

- b. _____ If you were to borrow money for a long-term loan, say 35 years for forestry purposes, what interest rate would you expect to have to pay?
- c. _____ Yes Would you borrow money for a long term forest loan to increase timber production, over a 20 year period for your property at the current market rate of 8.5 percent?
 _____ No
- d. _____ agency If a neighbor were to come to you to ask for a long term forest loan, where might you send him?
 _____ none
 _____ doesn't know

D. GENERAL

- 1. a. What share payment programs have been available within the last five years to (restock or increase production) on your land?
 _____ program
 _____ doesn't know
- b. (If knows) What are the conditions and amounts of the share payments?

	estimates	knows	doesn't know
percentage paid	_____	_____	_____
maximum per acre	_____	_____	_____
maximum total	_____	_____	_____
- c. Where do you apply for these share payments?
 _____ doesn't know
 _____ agency listed
 _____ location
- 2. _____ miles How many miles is your residence from your nearest forest land?
- 3. _____ years May I ask you your approximate age?
- 4. _____ What is the occupation of the chief bread winner in the family?
 _____ What industry is he working in?
 _____ What job? Self employed?
- 5. _____ May I ask the last grade of school you completed?
- 6. Which of the following organizations are you presently a member?

_____ Small Woodlands	_____ NW Christmas Tree Growers Assn.
_____ Grange	_____ other, please tell me
_____ Farm Bureau	_____
_____ S. A. F.	
_____ Industrial Forest Assn. (tree farm)	

7. On this card please tell me the letter next to the income that best fits your total family income from all sources before taxes?

_____ letter

Please choose the letter next to
the amount that best fits your family income
from all sources before taxes:

- A. Less than \$3,000
- B. \$3,000-4,999
- C. \$5,000-6,999
- D. \$7,000-9,999
- E. \$10,000-14,999
- F. \$15,000-19,999
- G. \$20,000-24,999
- H. \$25,000-and over

8. If you were given \$2,000, no strings attached, to invest any way you saw fit, check the area you would choose to invest this money and indicate the portion of the \$2,000 for each item checked, unless you were to invest it all in one area,

_____	<input type="checkbox"/>	purchase of farm equipment
_____	<input type="checkbox"/>	livestock
_____	<input type="checkbox"/>	plant trees on forest land
_____	<input type="checkbox"/>	vegetable or seed crop
_____	<input type="checkbox"/>	savings account
_____	<input type="checkbox"/>	thinning, pruning, and/or fertilization of forest
_____	<input type="checkbox"/>	stocks and/or bonds
_____	<input type="checkbox"/>	buildings or storage shelters
_____	<input type="checkbox"/>	pay on mortgage
_____	<input type="checkbox"/>	other, list _____

APPENDIX B
CHI-SQUARE TESTS

Many of the measurements in this study were of discrete variables. Association between these noncontinuous quantities was facilitated by the use of chi-square and contingency tables.

Qualitative and discrete characteristics of the owners were arranged in a contingency table to test association between these attributes. The table below shows how this was done between the objectives of an owner and his forest acreage. If such an association were near perfect there would be one large entry between each row and column of cells. If there were no correlation there would be a tendency towards an equal distribution of cases among cells.

Owner Objective

		Hold for sale	Inactive	Farming or grazing	Recrea- tion	Timber	Totals
Size Class Acres	10- 50	66	166	69	68	57	426
	51-100	26	26	27	14	49	142
	101-199	35	3	17	6	47	108
Totals		127	195	113	88	153	=676

The measure of association for chi-square test is based on a comparison of the number of cases actually occurring in a given cell and the number of cases which would be likely to occur in the cell if chance alone were involved.

If n_r is the sum of cases in a given row, n_c is the sum in a given column, and n_{rc} is the number in a given cell then $n_{rc} - \frac{n_r n_c}{N}$ will be the difference between the actual number of cases and the theoretically expected number due to chance alone. The ratio of the square of this value to the theoretical number of cases is χ^2 , the test for goodness of fit shown here:

$$\chi^2 = \sum \frac{\left(n_{rc} - \frac{n_r n_c}{N} \right)^2}{\frac{n_r n_c}{N}}$$

Using this formula, the calculated value of chi-square for the above table is 114.08. Degrees of freedom are determined by $(r-1)(c-1) = \text{d.f.}$, in this case $(3-1)(5-1) = 8$.

Referring to a table of the distribution of χ^2 , as in Li's book (1964), page 500, the value corresponding to .01 significance, with 8 degrees of freedom, is 20.1.

Since the computed chi-square value is equal to or greater than the hypothetical value, the observed distribution, or relationship between the two variables, could occur by chance alone not more often than once in 100 times. It is concluded that forest acreage is significantly related to forest land objective.

Table 11. Results of Chi-square tests.¹

Independent variable \ Dependent variable	Forest land objective	Opinion of public assistance	Lease acceptance	Investment choice	Planning horizon
Forest land type	N	N			
Total forest acreage	**	N	N	N	N
Weighted forest acreage (acres x objective)	**	N		N	
Education	**	*	*	N	N
Occupation	**	N	N	N	N
Income	**	N	*	N	N
Age	**	N	N	*	N
Distance to forest from residence	*				
Method of acquisition	**				
Planning horizon	**				
Reason for acquisition	**				
Investment choice	**				N
Opinion of public assistance	**				

¹N = no significant relationship. * = significant at five percent level. ** = significant at one percent level.

TABULATIONS OF RESULTS

	<u>Number of owners</u>		<u>Number of owners</u>
1. Owner forest class		7. Knowledge of own property tax law	
<u>acres</u>		no knowledge	45
10- 50	39	stated tax law	<u>15</u>
51-100	12		60
101-199	<u>19</u>		
Total	60	8. Forest tax knowledge	
2. Planning horizon		good	3
<u>years</u>		fair	9
less than 3	11	poor	<u>48</u>
4-10	9		60
11-15	8	9. Cut timber off land	
16+	5	yes	27
"long as living"	23	no	<u>33</u>
no change foreseen	<u>4</u>		60
	60		
3. Future use contemplated		10. Last timber harvest	
sell	26	<u>years</u>	
give to heirs before deceased	5	1 year or less	5
cut trees & sell land	<u>1</u>	2- 5	7
	32	6-15	7
		16+	<u>8</u>
			27
4. Reason for original acquisition		11. Number of times cut timber	
residence	22	once	19
residence & agr. prod.	10	twice	3
investment	8	three	1
timber production	3	four or more	<u>4</u>
recreation	3		27
other	<u>14</u>	12. Purpose of cut	
	60	sell	24
5. Reason for acreage addition		own use	<u>3</u>
agriculture	3		27
recreation	2	13. Worked on forest lands (8-hour days/year)	
residence	2	none	37
residence & forest prod.	2	1-10	12
other	<u>2</u>	11-20	5
	11	21+	<u>6</u>
6. Reason for acreage sold			60
income	4		
rights of way	4		
retirement income	2		
other	<u>2</u>		
	12		

	<u>Number of owners</u>		<u>Number of owners</u>
14. How work spent		19. Advice for forest lands	
brush removal	6	<u>2nd choice</u>	
thinning	5	Extension service	7
planting	2	private consultant	5
pruning	2	federal forester	5
combination of above	<u>9</u>	state forester	4
	23	O. S. U. Forestry	4
		friend or neighbor	3
15. Acceptance of lease from		relative	3
<u>private co. or state</u>		self	2
yes	7	other	<u>27</u>
no	50		60
indifferent or not sure	<u>3</u>	20. Reason for advice	
	60	most knowledgeable	20
<u>federal agency</u>		don't know who would	
yes	6	be better	11
no	51	have been helpful in	
indifferent or not sure	<u>3</u>	the past	5
	60	know well	5
		other	<u>19</u>
16. Reason for nonacceptance			60
of lease		21. Willing to pay for public	
would discourage		consultant	
buyers	12	yes	23
heirs might not agree	10	no	34
skeptical	9	not sure	<u>3</u>
I can manage better	7		60
don't want to tie up	5	22. Amount willing to pay	
too low income		(per 4 hr. visit)	
expected	5	\$ 5-10	3
other	<u>3</u>	11-20	2
	51	21-30	3
		31+	2
17. Reason for acceptance		not sure	<u>13</u>
of lease			23
income	<u>7</u>	23. Knowledge of State farm	
	7	forester	
18. Advice for forest lands		yes	21
<u>1st choice</u>		no	39
Extension Service	14	name	10
federal forester	8	office location	10
state forester	7	24. Received forest management	
self	6	advice	
State farm forester	4	yes	12
friend or neighbor	4	no	<u>48</u>
relative	3		60
private consultant	3		
O. S. U. Forestry School	2		
other	<u>9</u>		
	60		

	<u>Number of owners</u>		<u>Number of owners</u>
25. Received advice from		31. Why not accept share-	
state farm forester	8	payment?	
federal forester	2	other uses more	
private forester	1	more profitable	9
friend	<u>1</u>	too old to consider	5
	12	don't like to share	
		payment	4
26. Reason for nontimber prod.		not enough time	<u>2</u>
too old to handle	10		21
aesthetic or residential		32. Opinion of forestry public	
use more important	8	assistance	
highest value not		strongly favor	5
timber production	6	favor	29
grazing more important	6	indifferent	6
don't know how to grow		disfavor	10
timber	4	strongly disfavor	<u>10</u>
other	<u>3</u>		60
	37		
27. Ever considered timber prod.		33. Another form of help more	
yes	15	acceptable	
no	<u>22</u>	tax relief	7
	37	advice or educational	
28. Why didn't choose after		services	5
consideration		loans against future	
aesthetic & recreation		harvest	3
more important	9	other	<u>2</u>
too old	8		17
not enough profit in		34. Reason for choosing timber	
timber	7	production	
too busy	4	land best suited for	
don't know how to	4	timber	11
other	<u>5</u>	like to see trees	
	37	growing	2
29. Would accept 100% share		just happen to have trees	2
payment to produce timber		self fulfillment	2
yes	16	retirement income	<u>1</u>
no	<u>21</u>		18
	37	35. Timber management knowledge	
30. Prefer state or federal to		rating	
administer program		good	4
federal	6	fair	5
state	20	poor	<u>9</u>
indifferent	14		18
no comment	<u>20</u>		
	60		

	Number <u>of owners</u>	Number ⁸⁵ <u>of owners</u>
36. Would borrow at this interest rate		
five	3	
six	3	
eight	<u>2</u>	
	8	
37. Would borrow money for forestry at 8.5%		
yes	0	
no	21	
undecided	<u>1</u>	
	22	
38. Knowledge of forest loans		
Federal Land Bank	3	
doesn't know	<u>19</u>	
	22	
39. Knowledge of forestry assistance programs		
doesn't know	52	
ACP	7	
State nursery	<u>1</u>	
	60	
40. Knows where to apply location	5	
doesn't know	<u>2</u>	
	7	
41. Distance to forest from residence		
<u>miles</u>		
0- 5	43	
6-15	7	
16-30	6	
31+	<u>4</u>	
	60	
42. Owner age		
<u>years</u>		
less than 30	3	
30-39	9	
40-49	6	
50-59	15	
60-65	9	
66+	<u>18</u>	
	60	
43. Owner education		
less than 8th	2	
8th graduate	17	
high school graduate	19	
some college or technical	9	
college graduate	7	
graduate school	<u>6</u>	
	60	
44. Owner occupation		
wage earner	16	
business and profession	11	
own business	12	
retired-wage	12	
retired- prof. -business	3	
housewife-widow	<u>6</u>	
	60	
45. Membership		
Small Woodlands Assn.	5	
Grange	10	
Farm Bureau	2	
S. A. F.	1	
Industrial Forest Assn.	1	
other land organization	<u>2</u>	
	21	
46. Owner annual family income		
less than \$3,000	7	
3,000- 4,999	8	
5,000- 6,999	9	
7,000- 9,999	12	
10,000-14,999	9	
15,000-19,999	6	
20,000-24,999	6	
25,000+	<u>3</u>	
	60	
47. Investment choice (\$2,000)		
forest management	2	
farming-grazing-agr.,		
real estate	18	
stocks, bonds	15	
savings account, expenditure	<u>25</u>	
	60	
48. Length of tenure		
<u>years</u>		
less than 5	6	
5- 9	14	
10-24	24	
25+	<u>16</u>	
	60	