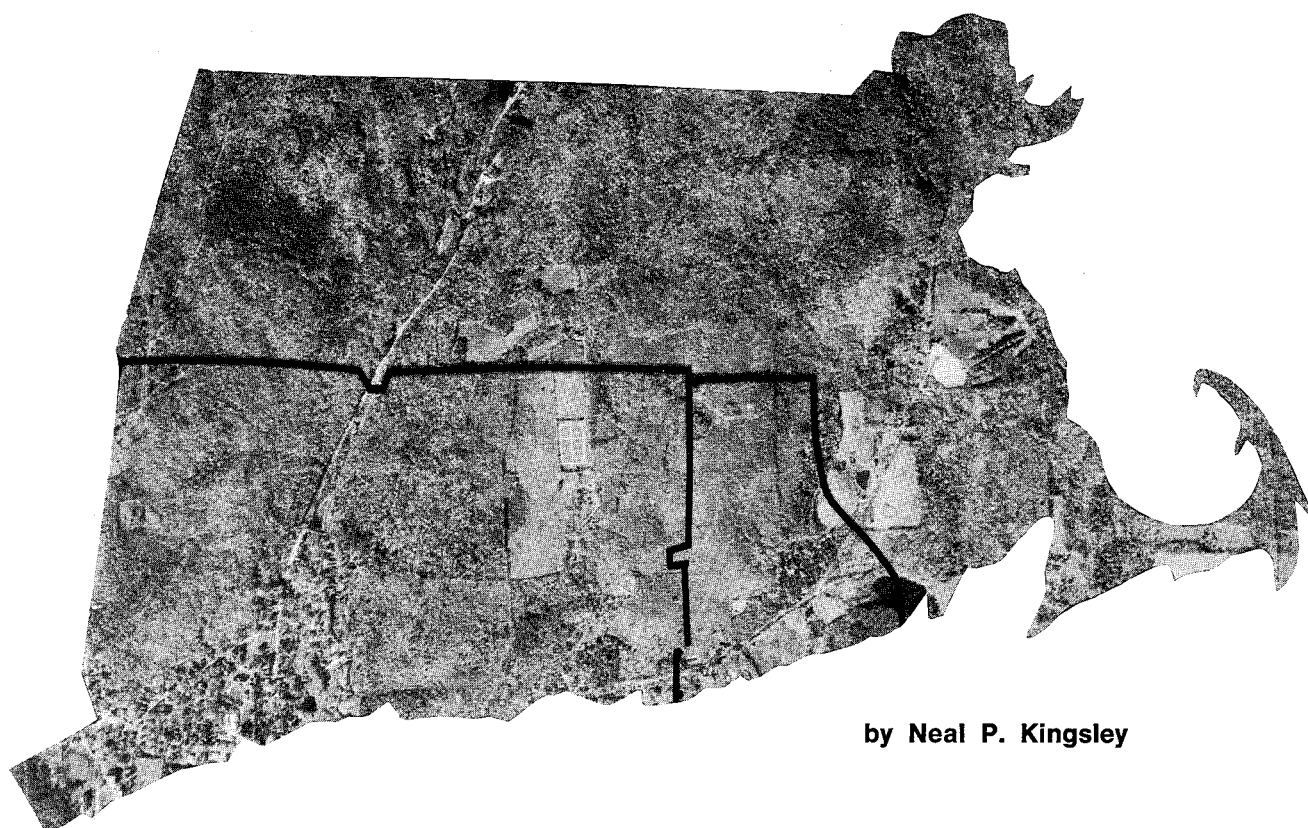


THE FOREST-LAND OWNERS OF SOUTHERN NEW ENGLAND



by Neal P. Kingsley

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COVER PHOTO—An aerial view northeast of Ashburnham, Massachusetts.

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ABSTRACT

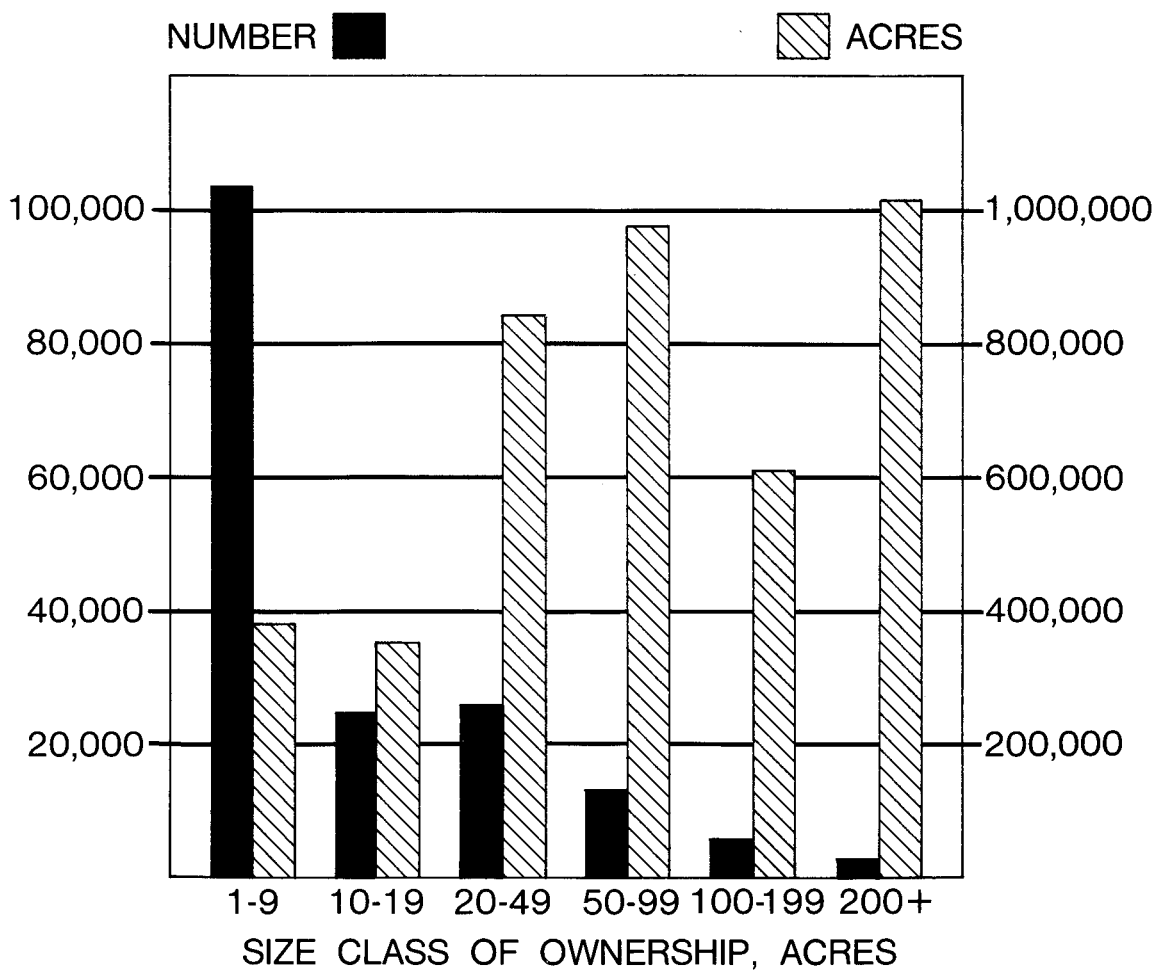
A statistical-analytical report of a mail canvass of the owners of privately owned commercial forest land in the three Southern New England States—Connecticut, Massachusetts, and Rhode Island. The study was conducted in conjunction with the second forest survey of Southern New England by the USDA Forest Service. Trends in forest-land ownership and the attitudes and intentions of owners regarding reasons for owning forest land, timber management, timber harvesting, recreational use, etc., are discussed.

THE FOREST-LAND OWNERS OF SOUTHERN NEW ENGLAND

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Figure 1.—Estimated number of forest-land owners and acreage owned.



THE FOREST-LAND OWNERS OF SOUTHERN NEW ENGLAND

THE RECENTLY COMPLETED forest survey of Southern New England provided estimates of forest area and timber volume by broad owner categories (*Kingsley 1975*). But it did not provide estimates of the volume or acreage of timber that might be available for harvesting. Nor did it describe the attitudes of typical forest-land owners, their reasons for owning forest land, or their views toward timber harvesting, forest management, and recreational use of the land by the public. The purpose of this report is to provide this information in a form that will be useful when used in conjunction with the forest-resource report for the State.

Many studies have been undertaken by various institutions and agencies to determine the attitudes and objectives of forest-land owners. Most of these studies have been limited to individual counties or groups of counties. Though such studies provide a wealth of detailed information for these areas, they do not cover a broad geographical region; nor are they designed to be used in conjunction with current forest-resource data. Nonetheless, they stand as excellent sources of supplementary data about the forest-land owner. Four such studies have been conducted in Southern New England (*Babeau et al 1965, Marrama 1972, New England Research Inc. 1974, Zumwalt 1953*). The author recommends these publications to the serious student of forest-land ownership problems in the Southern New England Region.

To fully understand the data and conclusions presented in this report, the user of these data is advised to read the discussion of study methods and sampling errors presented in the appendixes at the end of this report.

184 Thousand Owners

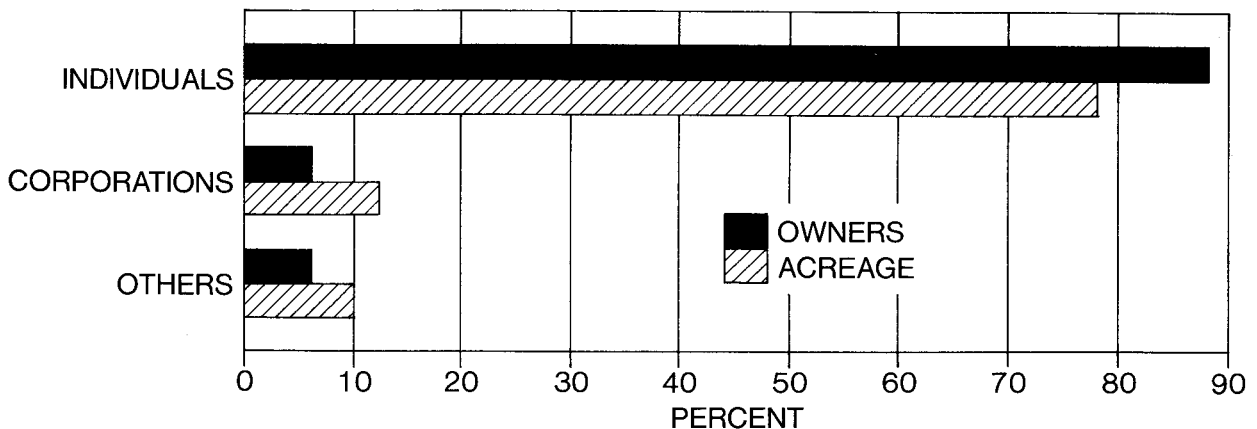
There are an estimated 184,100 owners of private commercial forest land in the three Southern New England States—Connecticut, Massachusetts, and Rhode Island. The area of forest land these owners own ranges from 1 acre to more than 20,000 acres. The average ownership is 24.2 acres. However, 58 percent of the ownerships fall in the 1-to-9-acre class. And less than 1 percent are of more than 500 acres (fig. 1).

88 Percent are Individuals

Individuals—as opposed to corporations, partnerships, and other forms of ownership such as associations, trusts, or individual estates—account for 88 percent of all ownerships. Individuals hold nearly 3.5 million acres—78 percent—of the region's privately owned commercial forest land.

The occupations of these individual owners cover a wide spectrum. Retired persons own 22 percent of the commercial forest land. Executives and professionals own 17 and 16 percent respectively. In 1953 farmers owned about 24 percent of the region's commercial forest land. In 1973 farmers accounted for only 4 percent of the individual owners and held only 10 percent of the land owned by individuals. This drop is vivid evidence that the farmer's place in rural Southern New England has declined substantially in recent decades.

Figure 2.—Percentage of owners and acreage owned, by form of ownership.



Corporations of one kind or another own more than 522 thousand acres—12 percent—of the forested land in Southern New England. Corporations engaged in forest-based industries, such as sawmilling, account for only 5 percent of this land, or 25,600 acres. Corporations engaged in real estate account for 24 percent of the forest land held by corporations, and incorporated farms account for another 12 percent. Other industries and other corporations account for the remaining 59 percent (fig. 2).

Southern New England forest-land owners are typically older, well-educated, high-income people. Owners 50 years old and older own 67 percent of the land held by individuals. The 36 percent of the individual owners who have more than 12 years of formal education own 43 percent of the land held by individuals. Owners with incomes in excess of \$10,000 per year own a total of more than 2.1 million acres—61 percent—of the commercial forest land owned by individuals. Nearly half of the individuals who own forest land in Southern New England spent the first 12 years of their lives in an urban environment.

Most owners have owned their forest land for 10 years or more. These owners hold 65 percent of the private commercial forest land in the region.

Many observers have wondered at the importance of the non-resident or absentee land-owners. The results of our research show that only 5 percent of the forest-land owners in the region reside more than 15 miles from their

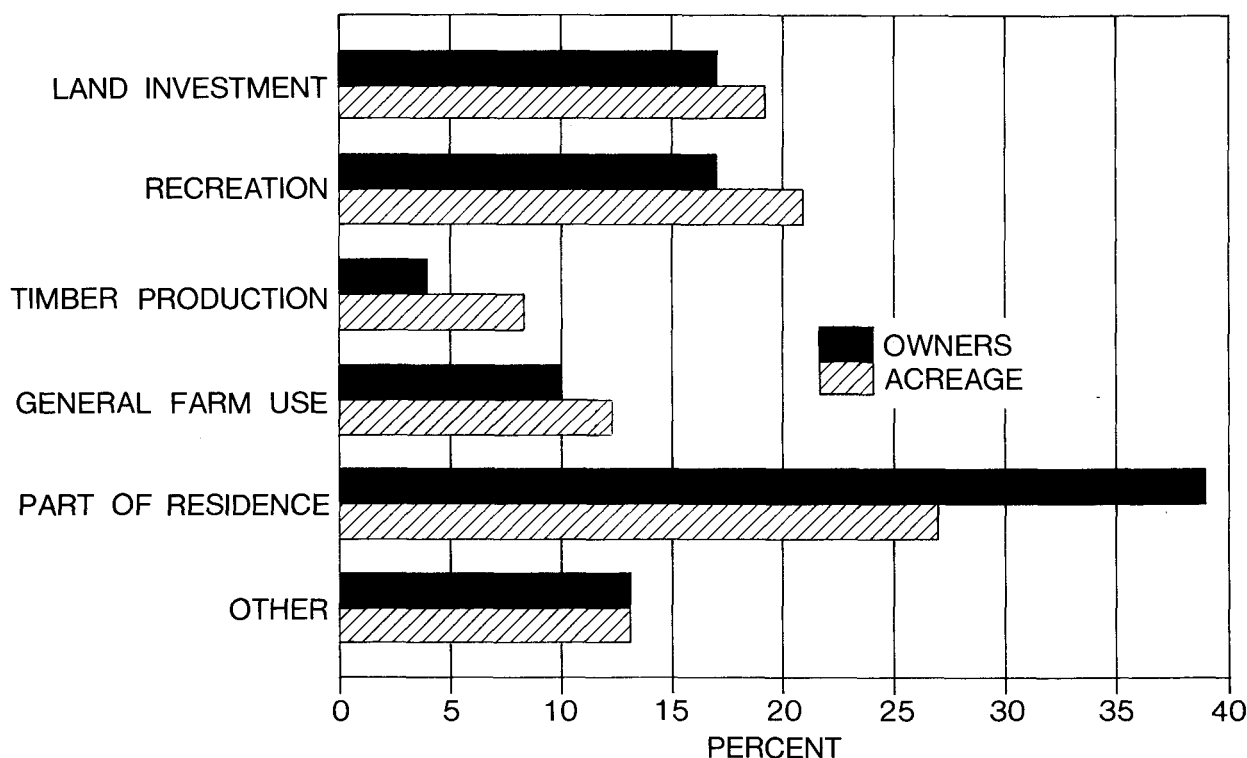
land. However, these owners typically hold larger-than-average tracts, and they own 11 percent of the privately owned commercial forest land in the three States. Eighty-seven percent of the region's forest-land owners live either on their land or within 5 miles of it.

Why People Own Forest Land

More than one-third of the forest-land owners in the region—39 percent—own forest land simply because it is part of their residence. However, these people, on average, own smaller tracts of land. Land investment and recreation each were listed by 17 percent of the owners as the most important reason for owning forest land. The recreationists, however, control 21 percent of the land, while the land investors own 19 percent. Owners who hold forest land for timber production account for 4 percent of the owners and own only 8 percent of the privately owned commercial forest land in the three-state region (fig. 3).

To gain a further insight into why people own forest land, we asked owners what benefits they had derived from their land in the past 5 years and what benefits they expect to derive in the coming 5-year period. Forty-six percent of the owners indicated esthetics as the most important past benefit, and 39 percent expect it to be the most important future benefit. The second major benefit, both past and future, was the increase in land value. Recreation ran a close third. Only 2 percent of the owners, who hold only 5 percent of the commercial forest land, indicated that sale of timber was

Figure 3.—Reasons for owning forest land, by percentage of owners and acreage.



the major benefit in the past 5 years. And only 4 percent of the owners thought it would be the most important benefit in the coming 5 years. Clearly, Southern New England forest-land owners do not look to their forest land as a source of income from timber production, but as a source of such intangible benefits as esthetic enjoyment and recreation.

PROSPECTIVE TIMBER AVAILABLE FROM PRIVATE OWNERSHIPS

One of the major objectives of this study is to provide an estimate of the volume of timber that is available for harvesting in the region. Because the answer to this question is influenced by many social and economic factors, it is difficult to determine exactly how much timber is available at any one time. Furthermore, even if such an estimate were made, its utility would be limited to the time to which

it applies, because industrial developments, market conditions, and social and economic developments can drastically alter those factors that interact to determine how much timber could be brought to market. We can, however, get an idea of how much timber might be available in Southern New England by examining both the past practices and future intentions of the region's forest-land owners.

To answer the question of how much timber is available for harvesting, we must first estimate what portion of the privately owned commercial forest land in Southern New England constitutes a land base that can be considered as producing timber that will become available. To do this, it is necessary to analyze the answers given by owners to certain questions. The owners of 1,865,500 acres said that they have not harvested timber in the past for reasons that would seem to preclude the possibility of future harvests on that land during the present owner's tenure. These reasons are:

1. Logging would destroy the scenery.
2. The owner distrusts loggers.
3. The owner feels that he has an insufficient area to permit harvesting.
4. The owner is opposed philosophically to the harvesting of timber.
5. The owner feels that harvesting would destroy the value of the land for hunting or wildlife.
6. The owner is in the process of selling the land.
7. The land is tied up in an estate settlement.
8. Logging, in the owner's opinion, would constitute a fire hazard.

Subtracting the acreage these people own from the 4,454,500 acres of privately owned commercial forest land in Southern New England leaves 2,589,000 acres. Of this, 207,200 acres are owned by owners who have harvested timber in the past but say that they do not plan to harvest again. This gives rise to the question: How much of the land owned by these past harvesters should be withdrawn from the timber-producing base?

About half the acreage held by owners who have not harvested timber is held by those who have not for some reason that would preclude future harvesting. It seems reasonable to conclude that the same is true of those owners who have harvested timber in the past, but do not plan to harvest again. Thus, an additional 103,600 acres should also be withdrawn from the timber producing base. This subtraction further reduces the base timber-producing acreage to 2,485,400 acres or 56 percent of the privately held commercial forest land in the three-state region.

These 2.5 million acres that have been defined as the timber-producing land base are not static. Land now owned by an owner who is opposed to harvesting may be sold to one who is not opposed, and vice-versa. But the data and analysis indicate that this is now the proportion of Southern New England's privately owned commercial forest land that is growing timber that can realistically be considered available for harvesting.

How much volume and how much net annual growth does this acreage represent? There is no evidence to indicate that the timber-growing base is more productive or more heavily

stocked than the average of all private commercial forest land in Southern New England. Therefore, we can say that, since 56 percent of the forest land is available, 56 percent of the timber volume and 56 percent of the growth are also available.

There is, according to the most recent forest survey of Southern New England, a total of 5,348 million cubic feet of growing stock on private commercial forest land in the three states (*Kingsley 1975*). This means that there are 2,984 million cubic feet of growing stock on that portion of this land considered here as the timber-producing base. Applying this same logic to net annual growth, we estimate that this land produced about 103 million cubic feet of growth in 1971. This volume could be considered the maximum that could be harvested annually over a sustained period of time from the presently available timber base without materially affecting the condition of the forest.

By this system of logic, then, we can say that the realistic maximum volume of timber available from privately owned commercial forest land is nearly 3 billion cubic feet or 56 percent of the total volume on private land.

A minimum estimate can be obtained by looking at what owners say they intend to do. The owners of 804,000 acres report that they plan to harvest timber at some time during the coming decade. Since these people have rather definite plans, it seems reasonable to assume that they own mostly larger timber and larger tracts. To estimate the volume held by these owners, we have eliminated from consideration the volume and growth in stands with an average diameter of less than 5 inches dbh. This means that these lands are growing timber at the rate of 61 cubic feet per acre and in total produce 49 million cubic feet annually. If we can assume that all of these owners are successful in harvesting, this volume could be considered the minimum volume available annually. Another way to look at this is to coin a term and call this the "volume offered for harvesting annually".

That this indeed may be the volume offered annually is borne out by the estimates of timber harvested annually in Southern New England during the period 1952-71. During this

20-year time span, the average volume of timber harvested in the three states was 42 million cubic feet per year. Significantly, however, 24 million cubic feet of this average annual harvest was not utilized in any way. This is borne out by the fact that land-clearing is one of the most common reasons for harvesting timber in Southern New England. Thus it would appear that, at least during the 1952-71 period, Southern New England inadvertently harvested more timber than there was demand for.

In summary, we feel that annually one may expect that approximately 50 million cubic feet of growing stock will be offered for harvesting in New England. This is about twice the volume demanded for forest products, because of the extensive harvesting that is done as land-clearing. Should the demand for timber increase to such a degree that one would wish to know how much timber could be harvested in Southern New England annually, we would

put this upper limit at about 90 million cubic feet. To harvest more than this would require a massive selling and re-education program for stimulating greater production by land owners.

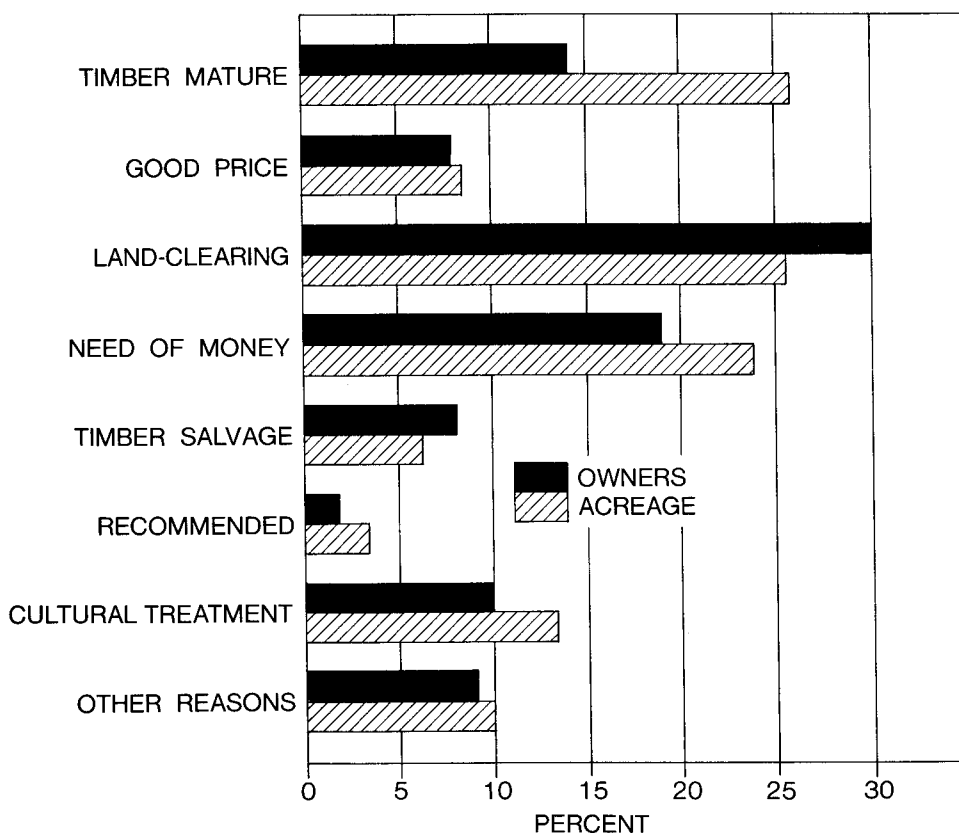
Why Owners Harvest Timber

The most common reason given by forestland owners for harvesting timber was land-clearing. Thirty percent of those owners who harvested timber indicated land-clearing as their reason for doing so. However, these owners own only 11 percent of all the land held by owners who have harvested timber.

Owners of 26 percent of the land held by past harvesters said they harvested their timber because it was mature. They account for 14 percent of the owners who harvested. Another 19 percent of the owners who have harvested, and who own 24 percent of the land, did so because they needed money.

Ten percent of the owners harvested timber

Figure 4.—Reasons for harvesting timber, by percentage of owners and acreage.



as part of a timber-stand cultural treatment. These owners hold 13 percent of the forest land held by owners who have harvested. Three reasons for harvesting—timber salvage, harvesting recommended by a forester, and cultural treatment—all imply a conscious effort on the part of the owner to improve the condition of his forest land. All together, 20 percent of those Southern New England owners who have harvested timber did so for one of these reasons. They own 22 percent of the forest land held by harvesting owners (fig. 4).

Why Owners Do NOT Harvest Timber

In Southern New England, 87 percent of the owners have never harvested timber from their land. These people own 69 percent of the region's privately owned commercial forest land. More than a fourth of these people have not harvested timber because of a fear that harvesting would destroy the scenery. Another 20 percent have not harvested because they feel that their timber is immature.

Less than 3 percent of the nonharvesting owners did not harvest timber because they either did not trust loggers or were opposed to the cutting of trees for one reason or another. Such owners account for only 4 percent of the land owned by owners who have not harvested timber.

It is interesting to note that only 13 percent of the owners of privately held commercial forest land have ever harvested timber, but that 30 percent of the region's forest-land owners say they intend to harvest timber in the future. However, only 9 percent of these people could say that they intend to harvest timber in the next 10 years.

Predicting Owner Behavior

What an owner will do or intends to do with his forest land is influenced by many factors. To predict which owners in Southern New England are most likely to harvest timber in the future, we have used a multivariable analysis technique called AID III (*Sonquist et al 1971*). To use this technique, it is first necessary to remove from the data all those questionnaires on which the respondent failed to answer the question that dealt with his intention to harvest or not to harvest timber. The

remaining and usable samples then represent 172,400 forest-land owners and 4,196,100 acres of privately owned commercial forest land.

Because people plan their actions for different periods of time, it is necessary to ask not only if an owner intends to harvest timber, but also when he intends to do it. The respondent could answer this question in any one of four possible ways: (1) in the next 5 years; (2) in 5 to 10 years; (3) possibly at some unspecified future time; and (4) never.

Twenty-two variables were tested to determine which would most accurately predict the owner's future intentions about harvesting. The owner's response to the question—"Which of the following do you feel will be the most important benefits you expect to derive from your woodland in the next 5 years?"—proved to be the most consistent predictor. There were five possible answers to this question: (1) recreation; (2) income from the sale of timber; (3) increase in land value; (4) esthetics; and (5) any other. If the respondent indicated more than one of the five he was also asked to rank his choices.

Twenty-one categories were created, based on the two most important benefits indicated by the respondent. These 21 categories were then sorted into three major groups:

Group I: This includes a high percentage of owners who intend to harvest in each of the three time frames. There are an estimated 4,900 owners owning 209,300 acres in this group.

Group II: This includes a low percentage of owners who intend to harvest within the next 10 years, but a higher percentage who intend to harvest at some indefinite future date. There are an estimated 49,600 owners holding 1,655,400 acres in this group.

Group III: This includes a low percentage of owners who intend to harvest in any of the three time frames. There are an estimated 117,900 owners with 2,331,400 acres in this group.

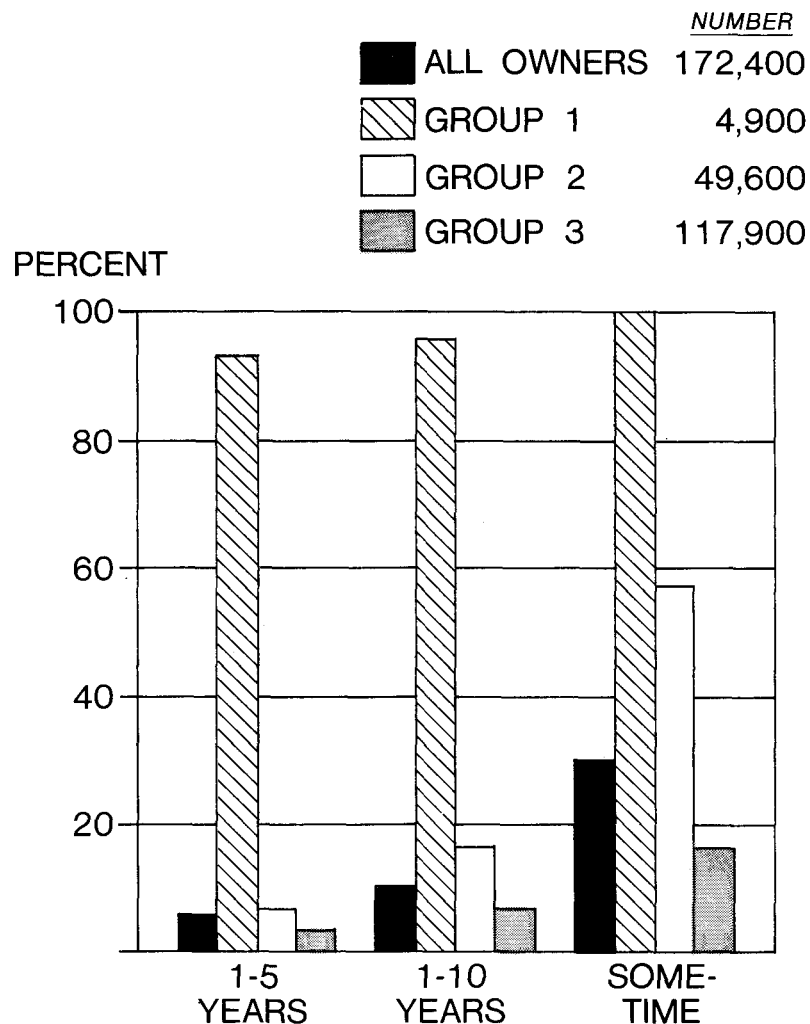


Figure 5.—Percentage of owners who intend to harvest timber, by expected time of harvest.

In Group I, 92 percent of the owners intend to harvest timber within the next 5 years, 94 percent within the next 10 years, and 100 percent sometime in the future. In Group II only 7 percent plan to harvest in the next 5 years and 15 percent within the next 10 years; but 59 percent intend to harvest sometime in the indefinite future. Group III, the largest of the three groups, contains only 15 percent who ever intend to harvest timber (fig. 5).

In general, those owners who anticipated that the most important future benefit they would derive from forest-land ownership would involve a real or perceived monetary gain were more likely to reply that they intend to har-

vest timber in the future. Real monetary gain involves income from the sale of timber, and a perceived monetary gain would be the feeling that the land has or will increase in value. Conversely, those owners who said that they expected the most important future benefits they would derive from their land would be nonmonetary in nature, such as esthetic enjoyment and recreation, were least likely to plan a timber harvest.

When we compare the three groups, several interesting patterns or characteristics of each group emerge; and other expected characteristics fail to emerge. Owners in Group I generally own more land than those in Group II

and Group III. In fact, acreage declines appreciably from Group I to Group III. Group I owners average 43 acres, Group II 33 acres, and Group III 20 acres. Group I owners, on average, have owned their land for more than 10 years. But so have the Group III owners. Group II owners have owned theirs for less than 10 years, and these are also the most indefinite owners. Group I owners average more than 50 years old, while owners in Groups II and III average less than 50. Group I owners typically come from rural backgrounds, while Group II owners are either from a town or rural background, and Group III owners typically are from a town or city background. Many other owner characteristics such as educational level, occupation, or income appear—at least in Southern New England—to have little or nothing to do with whether or not an owner intends to harvest timber.

From this we can say that, the more land an owner owns, the older he is, and the more rural a background he grew up in, the more likely he is to harvest timber.

SOME ASPECTS OF FOREST MANAGEMENT ON PRIVATE OWNERSHIPS

Harvesting Practices

Southern New England forest-land owners apparently live up to the reputation that all New Englanders have of being independent. Forty-six percent of the owners who harvested timber selected for themselves which trees would be cut. Only 10 percent had a forester select the timber, and another 10 percent assisted a forester in selecting the trees. Either the landowner or a forester or both together selected which trees would be cut on 66 percent of the ownerships on which harvesting occurred. These ownerships accounted for 58 percent of the acreage held by owners who have harvested.

The timber buyer selected the timber to be harvested on 21 percent of the ownerships, and this accounted for 24 percent of the acreage owned by harvesting owners. Another 7 percent of the owners, who own 10 percent of the land held by harvesters, selected the timber with the "assistance" of the buyer.

The selection system is the most popular method of timber harvesting in Southern New England. This method was used by 27 percent of the owners who harvested timber. These owners account for more than 467 thousand acres or 34 percent of the land held by harvesters. The diameter-limit method accounted for 28 percent of the land held by harvesters, and clearcutting accounted for only 12 percent. The relatively small acreage involved with clearcutting is most likely a reflection of the fact that there is no large active pulpwood market in most of this region. Clearcutting is more common in regions that produce substantial volumes of pulpwood.

More owners harvested sawlogs than any other timber product—15,000 owners who own a total of more than 1 million acres. Other products, including fireplace wood, were harvested by 9,800 owners who own more than half a million acres.

Forestry Assistance

Of the 184,100 owners of commercial forest land in Southern New England, only 20,000—11 percent—have ever sought forestry assistance. These owners account for 25 percent of the private forest land in the region. Even more surprising is the fact that 63 percent of the owners (who account for 45 percent of the land) replied that they did not know what agency to contact for forestry assistance. Undoubtedly many of these owners hold small tracts and have not perceived a need for forestry assistance.

The Connecticut Department of Environmental Protection, Forestry Unit; the Massachusetts Department of Natural Resources; and the Rhode Island Department of Natural Resources are the three agencies that are responsible for providing forestry assistance to landowners in the region. Only 18 percent of the owners of forest land in Southern New England said that they would contact "the state" for forestry assistance. These owners account for 28 percent of the privately owned commercial forest land in the region. These owners and those owners who said they did not know who to contact for assistance account for 81 percent of the owners and 73 percent of the private commercial forest land. The re-

maintaining 19 percent of the owners mentioned various agencies such as the USDA Cooperative Extension Services, "the county," the USDA Forest Service, a consulting forester, and many others. Since most of these agencies cooperate to some degree in landowner assistance programs, they would undoubtedly put the landowner in touch with the proper agency. A consulting forester could provide the service.

Of the 20,000 owners who received forestry services, 5,900 received assistance with tree planting. While this was the highest proportion of owners who received any kind of assistance, the 5,100 owners who sought assistance for timber-stand improvement owned the largest acreage, 268,600 acres; and the 2,900 who received assistance for general forest management owned 252,800. Tree planters owned 240,500 acres.

Recreation on Private Forest Land

Nearly one-third of the privately owned commercial forest in Southern New England is posted either against all forms of trespassing or against hunting specifically. Apparently many more owners do not knowingly permit public use, although they do not post their land, since the highest permitted use—hiking—is permitted on only 48 percent of the private commercial forest land.

Picnicking is permitted on 33 percent of the acreage, fishing on 30 percent, and camping on 26 percent. While hunting is permitted by only one owner in four, these are obviously the larger owners, because hunting is permitted on 37 percent of the private commercial forest land.

INTRODUCING "SAM YANKEE"

Now that we've discussed the who's, what's, and why's of the forest-land owners of Southern New England, we can describe the typical Southern New England forest-land owner. Like all such "average" characters, he doesn't really exist. So to make him seem a little more real we'll call him "Sam Yankee."

Sam is more than 60 years old and has an income of more than \$10,000 per year. He has 12 years of formal education and grew up in a city of more than 15,000 people. Sam has

owned his forest land, which consists of less than 10 acres, for more than 10 years. His forest land is part of his residence, although recreation and the increasing value of the land are also important reasons why he owns it. In the past the most important benefit Sam has derived from his land was esthetic enjoyment. He also expects this to be the most important benefit he'll derive from it in the future.

Sam has never harvested timber from his land because he feels that that would destroy the scenery. He has never contacted anyone about forestry assistance. Also, he is not inclined to let the general public use his land for any form of recreation.

IN CONCLUSION

For timber production, Southern New England's privately owned commercial forest land is greatly underutilized. And, given the present attitudes of its 184,000 owners, it is highly unlikely that a greater portion of its potential will be realized in the near future. Further, the highly fragmented ownership pattern of the private portion of the region's commercial forest land would seem to preclude full utilization of the land's productive potential.

The overwhelming majority of forest-land owners in the region hold forest land for reasons not related to monetary or material gain. Few have definite plans to harvest timber. This indicates that the primary function of forest land in Southern New England is its use for amenity and environmental values. Forested land forms an integral part of the living environment; and judging from the responses and attitudes expressed by many of the respondents to this study, it is generally a cherished part of the environment.

Even though few Southern New England owners have harvested timber in the past, most owners do not seem to be unalterably opposed to harvesting timber. This would lead to the conclusion that much of the forest potential is going unutilized by default or in some cases through the mistaken notion that cutting timber would not benefit the forest. It seems that the productive potential of the region's private forest land might be increased if owners could be made aware that judicious and limited tim-

ber harvesting could serve to protect and enhance the very values they derive from their forest land while at the same time helping to defray the costs of forest-land ownership.

The owners of only 25 percent of the region's private forest land have sought forestry assistance. This brings up the question: How many of the other owners have not sought assistance because they assume that forestry is related only to timber production? Forestry programs are often designed to serve many different ownership objectives. Through more effort given to educational programs, owners could be made aware of this. Frequently, to achieve such forest-management objectives as wildlife-habitat improvement, esthetic improvements, and increased recreational values, it is necessary to harvest timber. Thus, even while achieving other objectives, forest management could still help bring about a gain in timber production.

One might well ask: Why be concerned with possible ways of increasing timber production when the region is presently removing more

timber from the forest base than is demanded for products? Two hidden factors seem to be at work here. One is that, because of land-use changes and land-clearing, the forest land base of the region is shrinking. Another is that there is much evidence to indicate that we can expect the demand for wood and other renewable resources to increase throughout the world in coming decades.

As supplies of non-renewable resources such as oil and minerals become more and more scarce, technologies will need to be developed to supply chemicals and plastics from renewable and biodegradable sources. In many instances these sources mean wood. Also, wood in its traditional forms as lumber, plywood, and paper may be put to uses which in today's world are exclusively the domain of nonrenewable resources. Because forests improve slowly, and old attitudes die hard, we ought to be thinking now of what to do and how to do it in the future, even though the need may seem remote.

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APPENDIX

I

Study Method

The sampling scheme used in this study was derived from the sampling design used in the forest survey by the Northeastern Station. Forest-survey field crews attempted to obtain the correct name and mailing address of the owner of each of the 619 privately owned forested field plots in the three States. In addition, they attempted to obtain the names of persons owning land pinpointed on 1,146 randomly located photo-interpretation points on aerial photographs of the three States. The field crews were able to obtain usable addresses for nearly 90 percent of the field plots and photo points. A total of 1,863 questionnaires were mailed to owners of commercial forest land in Southern New England. A total of 1,091 were returned with usable information.

The questionnaire used in this study was developed after investigation of several earlier ownership studies and consultations with other investigators. It was field-tested before the mass mailings. The mailing consisted of the questionnaire plus a cover letter explaining the purpose of the survey. Approximately 2 weeks after the first mailing, those addressees who had not responded were mailed a second copy of the questionnaire and the cover letter plus a second letter urging cooperation with the study. Approximately 1 month later, 782 owners had responded. Then a 100-percent field canvass of non-respondents was undertaken. This effort resulted in an additional 246 usable questionnaires.

The resulting data were compiled by electronic computer, using the FINSYS generalized computer system. (Wilson, Robert W., Jr., and Robert C. Peters, 1967. The Northeastern Forest Inventory Data Processing System. I. Introduction. USDA For. Serv. Res. Paper NE-61. 20 p., illus.)

Since the sampling scheme used in this study is essentially the one used in the forest survey of timber resources, it introduces a bias because the sample is proportional to the forest area being sampled and is not proportional to the number of owners of forest land. To overcome this bias, it was necessary to weight the numbers of owners obtained in the sample. This procedure can be stated mathematically as:

$$wx = \frac{CFLp/Nr}{Ai}$$

and

$\sum wx$ = estimated numbers of private owners in the State

where

wx = the weighted number of private owners represented by the respondent.

$CFLp$ = the area of privately owned commercial forest land in the State.

Nr = number of respondents in the survey.

Ai = acres owned by individual respondent.

The sum of the weighted number of owners

then provides a statistically unbiased estimate of the total number of persons who own commercial forest land in Southern New England.

The acreage of commercial forest land was estimated in a manner similar to that used in the forest survey. The total area of privately owned commercial forest land in each State was divided by the number of field plots represented in the ownership canvass. Thus, if a particular respondent owned land on which one forested plot was located, his response was given a weight of one. If a respondent represented two forested plots, his response received a weight of two or double the acreage and so on. Actual reported acreage was used only to calculate the sample mean, mode, and median.

It was also necessary to determine if those questionnaires obtained through the mail and those obtained by means of the field follow-up were both samples of the same population. The hypothesis tested was that there was no significant difference in the mean acreage of the subsamples. Student's *t*-test showed that no significant difference existed at the 99-percent probability level.

Because this study encompasses a three-state region, it was necessary to make the calculations for each of the three states and then sum the results. The following tabulation shows the pertinent data for each of the States:

	Questionnaires mailed (No.)	Usable questionnaires returned (No.)	Acreage per plot (Acres)
Connecticut	801	486	3,386
Massachusetts	676	393	6,020
Rhode Island	386	212	1,761
All states	1,863	1,091	—

II

Sampling Errors

Sampling errors were calculated for the estimated total number of forest-land owners in each of the three States and for the combined total. The sampling error for the number of acres of commercial forest land in private ownership was calculated as part of the forest survey. These sampling errors are presented below. The user of these data is cautioned that, as the size of any estimate decreases in relation to the total estimate, the sampling error, expressed as a percentage of the estimate, increases drastically. Sampling error for:

State	Acres of private commercial forest land	Number of owners of private commercial forest land
Massachusetts	±48,600 (±2.0%)	±13,010 (±12%)
Connecticut	±38,200 (±2.3%)	± 6,590 (±10%)
Rhode Island	±11,600 (±3.1%)	± 2,300 (±16%)
Total	±62,500 (±1.4%)	±14,764 (± 8%)

For a discussion of the method of calculating these sampling errors, see: Cochran, William G. 1963. Sampling techniques. 2nd ed., 252 p. John Wiley & Sons, Inc., New York.

III

Definitions of Terms

Forest land.—Land that is at least 16.7 percent stocked (contains at least 7.5 square feet of basal area) with forest trees of any size, or that formerly had such tree cover and is not currently developed for nonforest use. (Forest trees are woody plants that have a well-developed stem and usually are more than 12 feet in height at maturity.) The minimum area for classification of forest land is 1 acre.

Commercial forest land.—Forest land that is producing or capable of producing crops of industrial wood (more than 20 cubic feet per acre per year) and is not withdrawn from timber utilization. (Industrial wood: all roundwood products except fuelwood.)

Private commercial forest land.—All commercial forest land other than that owned by Federal, state, or local governments or their agencies.

Softwoods.—Coniferous trees that are mostly evergreen, having needles or scalelike leaves.

Hardwoods.—Dicotyledonous trees that are usually broad-leaved and deciduous.

Stand.—A growth of trees on a minimum of 1 acre of forest land that is at least 16.7 percent stocked with forest trees of any size.

Growing-stock trees.—Live trees of commercial species that are classified as sawtimber, poletimber, saplings, and seedlings; that is, all live trees of commercial species except rough and rotten trees.

Growing-stock volume.—Net volume, in cubic feet, of live growing-stock trees that are 5.0 inches dbh and over, from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem. Net volume equals gross volume less deduction for rot or sweep and crook.

Sawtimber trees.—Live trees of commercial species: (a) that are of the following minimum diameter at breast height: softwoods 9.0 inches and hardwoods 11.0 inches; and (b) that contain at least one 12-foot or two noncontiguous 8-foot merchantable sawlogs and meet regional specifications for freedom from defect.

Sawtimber volume.—Net volume in board feet, International $\frac{1}{4}$ -inch rule, of merchantable sawlogs in live sawtimber trees. Net volume equals gross volume less deductions for rot, sweep, and other defects that affect use for lumber.

Board foot.—A unit of lumber measurement 1 foot long, 1 foot wide, and 1 inch thick, or its equivalent. By forest-survey convention, softwoods less than 9.0 inches dbh and hardwoods less than 11.0 inches dbh do not contain board-foot volume.

Annual net growth.—The annual change (resulting from natural causes) in volume of sound wood in sawtimber and poletimber trees.

Timber removal.—The volume of growing stock or sawtimber trees harvested or killed in logging or in cultural operations such as timber-stand improvement, land-clearing, or changes in land use.

Forest industries.—Companies or individuals operating wood-using plants.

Timber salvage.—Removal of down, damaged, or diseased trees.

Selection system.—The method of timber harvesting in which usually only the oldest or largest trees in a stand are harvested. Trees are taken singly or in small groups, but the entire stand is never cleared off completely.

Clearcutting.—The method of timber harvesting in which the area is cut clear in the literal sense of the word; virtually all the trees, large and small, are removed. The term is often erroneously applied to any type of cutting in which all the merchantable timber is removed and all that is not merchantable is left.

Diameter limit.—The method of timber harvesting in which all trees above a specified diameter are removed.

Sawlog.—Any log from which lumber is to be sawed.

Veneer log.—Any log from which veneer is to be made either by peeling (rotary cut) or slicing.

Pulpwood.—Any log from which woodpulp is to be made. Usually measured in bolts of 4, 5, or 8 feet and somewhat smaller in diameter than either sawlogs or veneer logs.

IV

Tabular Data

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Table 1.—Estimated number of private owners of commercial forest land

Size-class (acres)	Massachusetts		Connecticut		Rhode Island		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
OWNERS								
1-9	62,800	60	36,100	55	6,700	47	105,600	58
10-19	14,200	14	9,900	15	2,400	17	26,500	14
20-49	14,100	14	10,900	16	2,800	20	27,800	15
50-99	7,100	7	5,800	9	1,500	11	14,400	8
100-199	4,100	4	2,500	4	600	4	7,200	4
200-499	1,300	1	700	1	200	1	2,200	1
500+	300	(**)	100	(**)	(*)	(**)	400	(**)
Total	103,900	100	66,000	100	14,200	100	184,100	100
ACRES OWNED								
1-9	192,600	8	152,400	9	21,800	6	366,800	8
10-19	180,600	7	132,000	8	29,100	8	341,700	8
20-49	433,500	18	328,400	20	83,500	23	845,400	19
50-99	487,700	20	397,500	24	94,400	26	979,600	22
100-199	523,800	22	314,900	19	72,600	20	911,300	20
200-499	373,300	15	207,100	12	43,600	12	624,000	14
500+	240,800	10	126,700	8	18,200	5	385,700	9
Total	2,432,300	100	1,659,000	100	363,200	100	4,454,500	100

*Fewer than 50 owners.

**Less than 0.5 percent.

Table 2.—Form of forest-land ownership

Form of ownership	Owners		Acreage owned		Owners who have harvested timber	Acreage owned
	No.	Pct.	Acres	Pct.	Pct.	Pct.
MASSACHUSETTS						
Individuals	87,800	85	1,860,300	76	14	36
Corporations	8,700	8	307,000	13	18	43
Partnerships	4,500	4	102,300	4	8	41
Other	2,900	3	162,700	7	34	37
Total	103,900	100	2,432,300	100	15	37
CONNECTICUT						
Individuals	61,200	93	1,323,700	80	10	25
Corporations	1,500	2	172,700	10	39	35
Partnerships	1,100	2	67,700	4	6	10
Other	2,200	3	94,900	6	6	29
Total	66,000	100	1,659,000	100	11	26
RHODE ISLAND						
Individuals	12,900	91	293,300	81	4	16
Corporations	900	6	42,700	12	5	4
Partnerships	100	1	5,100	1	—	—
Other	300	2	22,100	6	5	15
Total	14,200	100	363,200	100	4	14
ALL STATES						
Individuals	161,900	88	3,477,300	78	12	30
Corporations	11,100	6	522,400	12	20	36
Partnerships	5,700	3	175,100	4	7	28
Other	5,400	3	279,700	6	20	33
Total	184,100	100	4,454,500	100	13	31

Table 3.—Occupations of individual forest-land owners

Occupation	Massachusetts		Connecticut		Rhode Island		Total	
OWNERS								
	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>
Professional	11,000	13	10,800	18	2,000	16	23,800	15
Executive	17,700	20	7,200	12	1,600	12	26,500	16
Retired	15,100	17	10,400	17	4,600	36	30,100	19
White collar	14,600	17	7,000	11	700	5	22,300	14
Skilled labor	17,900	20	15,200	25	1,800	14	34,900	21
Farmer	2,600	3	3,100	5	500	4	6,200	4
Other	8,900	10	7,500	12	1,700	13	18,100	11
Total	87,800	100	61,200	100	12,900	100	161,900	100
ACREAGE OWNED								
	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>
Professional	253,100	14	247,300	18	56,800	19	557,200	16
Executive	392,300	21	186,400	14	28,400	10	607,100	17
Retired	373,300	20	308,100	23	90,800	31	772,200	22
White collar	234,100	12	156,000	12	24,600	8	414,700	12
Skilled labor	221,500	12	156,000	12	28,400	10	405,900	12
Farmer	202,500	11	117,900	10	24,600	8	345,000	10
Other	183,500	10	152,000	11	39,700	14	375,200	11
Total	1,860,300	100	1,323,700	100	293,300	100	3,477,300	100

Table 4.—Corporate ownerships of forest land

Type of corporation	Massachusetts		Connecticut		Rhode Island		Total	
OWNERS								
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Real estate	900	10	300	20	200	22	1,400	13
Corporate farm	200	2	100	7	—	—	300	3
Forest industry	400	5	—	—	—	—	400	4
Other industry	3,100	36	300	20	200	22	3,600	32
Other corporations	4,100	47	800	53	500	56	5,400	48
Total	8,700	100	1,500	100	900	100	11,100	100
ACREAGE OWNED								
	Acres	Pct.	Acres	Pct.	Acres	Pct.	Acres	Pct.
Real estate	51,200	17	58,700	34	13,600	32	123,500	24
Corporate farm	51,200	17	10,400	6	—	—	61,600	12
Forest industry	25,600	8	—	—	—	—	25,600	5
Other industry	86,500	28	71,700	42	22,900	54	181,100	34
Other corporations	92,500	30	31,900	18	6,200	14	130,600	25
Total	307,000	100	172,700	100	42,700	100	522,400	100

Table 5.—Age class of individual forest-land owners

Age class (years)	Owners		Commercial forest land owned	
	No.	Pct.	Acres	Pct.
Under 40	32,500	20	433,300	12
40 to 49	41,800	26	713,500	21
50 to 59	36,000	22	943,400	27
Over 60	51,600	32	1,387,100	40
Total	161,900	100	3,477,300	100

Table 6.—Education level of forest-land owners

Education level	Owners		Commercial forest land owned	
	No.	Pct.	Acres	Pct.
0 to 8 years	29,800	18	611,300	18
9 to 12 years	73,700	46	1,355,800	39
1 to 4 years of college	31,500	19	742,400	21
More than 4 years of college	26,900	17	767,800	22
Total	161,900	100	3,477,300	100

Table 7.—Income level of forest-land owners

Income category (annual)	Owners		Commercial forest land owned	
	No.	Pct.	Acres	Pct.
Under \$10,000	68,300	42	1,362,100	39
\$10,000 to \$30,000	63,300	39	1,319,600	38
Over \$30,000	30,300	19	795,600	23
Total	161,900	100	3,477,300	100

Table 8.—Early life environment of forest-land owners

Type of environment ^a	Owners		Commercial forest land owned	
	No.	Pct.	Acres	Pct.
City over 100,000 population	32,800	20	696,100	20
City of 15,000 to 100,000 population	41,100	26	678,100	20
Town under 15,000 population	37,400	23	918,400	26
Rural area	50,600	31	1,184,700	34
Total	161,900	100	3,477,300	100

^a First 12 years of life.

Table 9.—Length of ownership of forest land by individual owners

Period of ownership (years)	Owners		Commercial forest land owned	
	No.	Pct.	Acres	Pct.
Less than 5	32,400	18	603,100	14
5 to 9	45,500	25	950,600	21
10 to 24	59,600	32	1,605,400	36
25 or more	46,600	25	1,295,400	29
Total	184,100	100	4,454,500	100

Table 10.—Distance of owner's residence from his forest land

Distance from tract	Owners		Commercial forest land owned	
	No.	Pct.	Acres	Pct.
Lives on property or within 5 miles	159,900	87	3,608,600	81
6 to 15 miles	14,400	8	339,400	8
More than 15 miles	9,800	5	506,500	11
Total	184,100	100	4,454,500	100

Table 11.—Number of forest tracts owned by all groups of owners

Tracts owned (number)	Owners		Commercial forest land owned	
	No.	Pct.	Acres	Pct.
1	159,000	86	3,203,700	72
2	21,000	12	692,700	16
3 or more	4,100	2	558,100	12
Total	184,100	100	4,454,500	100

Table 12.—Reasons for owning forest land

Reason	Massachusetts		Connecticut		Rhode Island		Total	
OWNERS								
	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>
Land investment	17,000	16	12,400	19	2,100	15	31,500	17
Recreation	16,800	16	12,800	19	1,800	13	31,400	17
Timber production	3,800	4	4,000	6	600	4	8,400	4
General farm use	9,300	9	6,100	9	2,200	16	17,600	10
Part of the residence	42,400	41	23,400	36	5,500	38	71,300	39
Other	14,600	14	7,300	11	2,000	14	23,900	13
Total	103,900	100	66,000	100	14,200	100	184,100	100
ACREAGE OWNED								
	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>
Land investment	458,900	19	327,200	20	70,500	19	856,600	19
Recreation	499,000	21	359,700	22	66,500	18	925,200	21
Timber production	244,800	10	106,300	6	20,000	5	371,100	8
General farm use	289,900	12	192,200	12	49,800	14	531,900	12
Part of the residence	643,200	26	449,800	27	111,000	31	1,204,000	27
Other	296,500	12	223,800	13	45,400	13	565,700	13
Total	2,432,300	100	1,659,000	100	363,200	100	4,454,500	100

Table 13.—Reasons for owning forest land by owners who have harvested timber

Reason	Massachusetts		Connecticut		Rhode Island		Total	
	OWNERS							
	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>
Land investment	1,700	11	1,100	16	200	32	3,000	13
Recreation	2,600	17	1,400	20	*	**	4,000	18
Timber production	1,700	11	600	8	100	17	2,400	10
General farm use	2,400	16	1,000	14	100	17	3,500	15
Part of the residence	5,400	35	2,400	34	100	17	7,900	34
Other	1,600	10	600	8	100	17	2,300	10
Total	15,400	100	7,100	100	600	100	23,100	100
	ACREAGE OWNED							
	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>
Land investment	141,400	16	63,100	15	10,600	21	215,100	16
Recreation	168,500	19	85,100	20	7,700	15	261,300	19
Timber production	163,000	18	52,900	12	7,600	15	223,500	16
General farm use	135,900	15	76,300	18	7,300	14	219,500	16
Part of the residence	201,300	22	98,300	23	15,000	29	314,600	23
Other	87,000	10	54,300	12	3,000	6	144,300	10
Total	897,100	100	430,000	100	51,200	100	1,378,300	100

* Fewer than 50 owners.

** Less than 0.5 percent.

Table 14.—Reasons for owning forest land by owners who have not harvested timber

Reason	Massachusetts		Connecticut		Rhode Island		Total	
OWNERS								
	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>
Land investment	15,300	17	11,300	19	1,900	14	28,500	18
Recreation	14,200	16	11,400	19	1,800	13	27,400	17
Timber production	2,100	2	3,400	6	500	4	6,000	4
General farm use	6,900	8	5,100	9	2,100	16	14,100	9
Part of the residence	37,000	42	21,000	36	5,400	39	63,400	39
Other	13,000	15	6,700	11	1,900	14	21,600	13
Total	88,500	100	58,900	100	13,600	100	161,000	100
ACREAGE OWNED								
	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>
Land investment	317,500	21	264,100	22	59,900	19	641,500	21
Recreation	330,500	21	274,600	22	58,800	19	663,900	21
Timber production	81,800	5	53,400	4	12,400	4	147,600	5
General farm use	154,000	10	115,900	9	42,500	14	312,400	10
Part of the residence	441,900	29	351,500	29	96,000	31	889,400	29
Other	209,500	14	169,500	14	42,400	13	421,400	14
Total	1,535,200	100	1,229,000	100	312,000	100	3,076,200	100

Table 15.—Benefits derived by forest-land owners in the last 5 years and benefits expected in the next 5 years

Benefit	Last 5 years				Next 5 years			
	Owners		Commercial forest land owned		Owners		Commercial forest land owned	
	No.	Pct.	Acres	Pct.	No.	Pct.	Acres	Pct.
OWNERS WHO HARVESTED								
Recreation	4,900	3	305,800	7	4,800	3	326,500	7
Sale of timber	3,000	2	228,800	5	3,700	2	213,100	5
Land-value increase	4,500	2	314,300	7	5,000	3	356,400	8
Esthetics	9,800	5	445,700	10	8,500	4	393,000	9
Other	900	1	83,700	2	1,100	1	89,300	2
Total	23,100	13	1,378,300	31	23,100	13	1,378,300	31
OWNERS WHO HAVE NOT HARVESTED								
Recreation	32,500	17	750,300	17	33,900	18	739,200	17
Sale of timber	—	—	—	—	4,200	2	127,100	3
Land-value increase	43,400	24	805,300	18	47,000	26	884,700	20
Esthetics	75,800	41	1,282,200	29	64,200	35	1,087,400	24
Other	9,300	5	238,400	5	11,700	6	237,800	5
Total	161,000	87	3,076,200	69	161,000	87	3,076,200	69
ALL OWNERS								
Recreation	37,400	20	1,056,100	24	38,700	21	1,065,700	24
Sale of timber	3,000	2	228,800	5	7,900	4	340,200	8
Land-value increase	47,900	26	1,119,600	25	52,000	29	1,241,100	28
Esthetics	85,600	46	1,727,900	39	72,700	39	1,480,400	33
Other	10,200	6	322,100	7	12,800	7	327,100	7
Total	184,100	100	4,454,500	100	184,100	100	4,454,500	100

Table 16.—Benefits derived and benefits expected by forest-land owners: MASSACHUSETTS

Benefit	Last 5 years				Next 5 years			
	Owners		Commercial forest land owned		Owners		Commercial forest land owned	
	No.	Pct.	Acres	Pct.	No.	Pct.	Acres	Pct.
OWNERS WHO HARVESTED								
Recreation	3,200	3	197,800	8	2,900	3	206,800	9
Sale of timber	2,300	2	164,400	7	3,000	3	150,900	6
Land-value increase	2,800	3	211,700	9	3,100	3	243,200	10
Esthetics	6,700	7	275,800	11	5,900	6	248,700	10
Other	400	(*)	47,400	2	500	(*)	47,500	2
Total	15,400	15	897,100	37	15,400	15	897,100	37
OWNERS WHO HAVE NOT HARVESTED								
Recreation	16,800	16	372,500	15	17,700	17	365,500	15
Sale of timber	—	—	—	—	3,000	3	79,800	3
Land-value increase	26,100	25	400,300	17	27,300	26	428,700	18
Esthetics	40,800	39	630,100	26	34,100	33	541,600	22
Other	4,800	5	132,300	5	6,400	6	119,600	5
Total	88,500	85	1,535,200	63	88,500	85	1,535,200	63
ALL OWNERS								
Recreation	20,000	19	570,300	23	20,600	20	572,300	24
Sale of timber	2,300	2	164,400	7	6,000	6	230,700	9
Land-value increase	28,900	28	612,000	26	30,400	29	671,900	28
Esthetics	47,500	46	905,900	37	40,000	39	790,300	32
Other	5,200	5	179,700	7	6,900	6	167,100	7
Total	103,900	100	2,432,300	100	103,900	100	2,432,300	100

* Less than 0.5 percent.

Table 17.—Benefits derived and benefits expected by forest-land owners: CONNECTICUT

Benefit	Last 5 years				Next 5 years			
	Owners		Commercial forest land owned		Owners		Commercial forest land owned	
	No.	Pct.	Acres	Pct.	No.	Pct.	Acres	Pct.
OWNERS WHO HARVESTED								
Recreation	1,600	3	97,700	6	1,700	3	108,200	7
Sale of timber	700	1	56,800	4	700	1	54,800	3
Land-value increase	1,500	2	88,900	5	1,700	3	99,600	6
Esthetics	2,900	4	151,600	9	2,400	3	128,400	8
Other	400	1	35,000	2	600	1	39,000	2
Total	7,100	11	430,000	26	7,100	11	430,000	26
OWNERS WHO HAVE NOT HARVESTED								
Recreation	13,000	20	307,700	18	13,600	20	303,200	18
Sale of timber	—	—	—	—	1,000	2	39,700	3
Land-value increase	14,600	22	324,700	20	16,600	25	364,600	22
Esthetics	27,900	42	515,400	31	23,800	36	434,900	26
Other	3,400	5	81,200	5	3,900	6	86,600	5
Total	58,900	89	1,229,000	74	58,900	89	1,229,000	74
ALL OWNERS								
Recreation	14,600	23	405,400	24	15,300	23	411,400	25
Sale of timber	700	1	56,800	4	1,700	3	94,500	6
Land-value increase	16,100	24	413,600	25	18,300	28	464,200	28
Esthetics	30,800	46	667,000	40	26,200	39	563,300	34
Other	3,800	6	116,200	7	4,500	7	125,600	7
Total	66,000	100	1,659,000	100	66,000	100	1,659,000	100

Table 18.—Benefits derived and benefits expected by forest-land owners: RHODE ISLAND

Benefit	Last 5 years				Next 5 years			
	Owners		Commercial forest land owned		Owners		Commercial forest land owned	
	No.	Pct.	Acres	Pct.	No.	Pct.	Acres	Pct.
OWNERS WHO HARVESTED								
Recreation	100	1	10,300	3	200	1	11,500	3
Sale of timber	(*)	(**)	7,600	2	(*)	(**)	7,400	2
Land-value increase	200	1	13,700	4	200	2	13,600	4
Esthetics	200	1	18,300	5	200	1	15,900	4
Other	100	1	1,300	(**)	(*)	(**)	2,800	1
Total	600	4	51,200	14	600	4	51,200	14
OWNERS WHO HARVESTED								
Recreation	2,700	19	70,100	19	2,600	19	70,500	19
Sale of timber	—	—	—	—	200	1	7,600	2
Land-value increase	2,700	19	80,300	22	3,100	22	91,400	25
Esthetics	7,100	50	136,700	38	6,300	44	110,900	31
Other	1,100	8	24,900	7	1,400	10	31,600	9
Total	13,600	96	312,000	86	13,600	96	312,000	86
ALL OWNERS								
Recreation	2,800	20	80,400	22	2,800	20	82,000	22
Sale of timber	(*)	(**)	7,600	2	200	1	15,000	4
Land-value increase	2,900	20	94,000	26	3,300	24	105,000	29
Esthetics	7,300	51	155,000	43	6,500	45	126,800	35
Other	1,200	9	26,200	7	1,400	10	34,400	10
Total	14,200	100	363,200	100	14,200	100	363,200	100

*Fewer than 50 owners.

**Less than 0.5 percent.

Table 19.—Reasons for harvesting timber

Reason	Individuals ^a		Corporations		Other ^b		Total	
OWNERS								
	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>
Timber mature	2,800	14	200	9	300	20	3,300	14
Good price	1,400	7	100	5	400	26	1,900	8
Land-clearing	5,800	30	1,100	49	(*)	(**)	6,900	30
Need of money	3,900	20	100	5	300	20	4,300	19
Company use	300	2	(*)	(**)	(*)	(**)	300	2
Timber salvage	1,100	6	600	27	100	7	1,800	8
Recommended	400	2	—	—	100	7	500	2
Cultural treatment	2,200	11	100	5	100	7	2,400	10
Other	1,500	8	(*)	(**)	200	13	1,700	7
Total	19,400	100	2,200	100	1,500	100	23,100	100
ACREAGE OWNED								
	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>
Timber mature	272,500	26	58,400	30	25,300	18	356,200	26
Good price	65,900	6	18,000	9	21,500	16	105,400	8
Land-clearing	118,100	12	31,100	16	3,300	2	152,500	11
Need of money	271,000	26	22,500	11	31,100	23	324,600	24
Company use	11,500	1	10,900	6	3,300	2	25,700	2
Timber salvage	65,000	6	14,700	8	6,000	4	85,700	6
Recommended	41,600	4	—	—	6,000	4	47,600	3
Cultural treatment	126,400	12	31,100	16	25,500	19	183,000	13
Other	72,400	7	8,500	4	16,700	12	97,600	7
Total	1,044,400	100	195,200	100	138,700	100	1,378,300	100

*Fewer than 50 owners.

**Less than 0.5 percent.

^a Includes joint ownerships.^b Includes partnerships, undivided estates, clubs, associations, etc.

Table 20.—Reasons for not harvesting timber

Reason	Individuals ^a		Corporations		Other		Total	
OWNERS								
	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>	<i>No.</i>	<i>Pct.</i>
Timber immature	29,300	21	800	9	1,900	20	32,000	20
No market for timber	6,000	4	(*)	(**)	100	1	6,100	4
Low price	1,000	1	100	1	(*)	(**)	1,100	1
Would destroy scenery	41,100	29	700	8	700	7	42,500	26
Distrust of loggers	600	(**)	(*)	(**)	—	—	600	(**)
Poor quality	8,000	6	3,000	34	700	7	11,700	7
Low volume	2,600	2	—	—	600	6	3,200	2
Insufficient area	16,300	11	—	—	3,800	40	20,100	13
Opposed to harvesting	2,800	2	(*)	(**)	300	3	3,100	2
Other	34,800	24	4,300	48	1,500	16	40,600	25
Total	142,500	100	8,900	100	9,600	100	161,000	100
ACREAGE OWNED								
	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>
Timber immature	614,900	25	44,100	13	90,600	29	749,600	25
No market for timber	119,600	5	12,300	4	2,900	1	134,800	4
Low price	52,100	2	19,300	6	4,600	2	76,000	2
Would destroy scenery	632,400	26	101,900	31	54,700	17	789,000	26
Distrust of loggers	36,800	2	6,900	2	—	—	43,700	1
Poor quality	145,600	6	22,900	7	24,800	8	193,300	6
Low volume	44,600	2	—	—	12,400	4	57,000	2
Insufficient area	55,800	2	—	—	9,800	3	65,600	2
Opposed to harvesting	51,600	2	12,300	4	17,100	5	81,000	3
Other	679,500	28	107,500	33	99,200	31	886,200	29
Total	2,432,900	100	327,200	100	316,100	100	3,076,200	100

*Fewer than 50 owners.

**Less than 0.5 percent.

^a Includes joint ownerships.^b Includes partnerships, undivided estates, clubs, associations, etc.

Table 21.—Who selected the timber to be harvested

Who selected timber	Owners who harvested		Acreage owned	
	<i>No.</i>	<i>Pct.</i>	<i>Acres</i>	<i>Pct.</i>
Landowner	10,600	46	408,400	29
Forester	2,300	10	258,100	19
Friend	800	3	38,400	3
Buyer	4,800	21	325,900	24
Landowner and forester	2,200	10	140,800	10
Landowner and buyer	1,700	7	136,100	10
Other ^a	700	3	70,600	5
Total	23,100	100	1,378,300	100

^a Includes landowner and friend, forester and friend, forester and buyer, and friend and buyer.

Table 22.—Method of selecting timber to be harvested

Who selected timber	Owners who harvested		Acreage owned	
	No.	Pct.	Acres	Pct.
Selection	6,300	27	466,500	34
Diameter-limit	4,600	20	390,100	28
Clearcutting	5,600	24	170,100	12
Other ^a	5,200	23	283,200	21
Don't know	1,400	6	68,400	5
Total	23,100	100	1,378,300	100

^a Includes (1) diameter limit-selections, (2) diameter limit-clearcut, and (3) all other methods.

Table 23.—Timber products harvested

Harvesting method ^a	Sawlogs	Veneer logs	Pulpwood	Other products ^c	Total
OWNERS					
	No.	No.	No.	No.	No.
Selection	5,800	400	500	2,800	9,500
Diameter limit	4,300	100	400	1,400	6,200
Clearcutting	1,300	(*)	1,100	1,700	4,100
Other ^b	3,000	(*)	400	3,200	6,600
Don't know	600	—	(*)	700	1,300
Total	15,000	500	2,400	9,800	27,700
ACREAGE OWNED					
	Acres	Acres	Acres	Acres	Pct.
Selection	348,600	18,800	42,800	172,300	582,500
Diameter limit	337,900	21,300	24,700	97,200	481,100
Clearcutting	118,900	3,400	23,300	79,600	225,200
Other ^b	197,400	12,000	19,700	162,300	391,400
Don't know	34,300	—	1,800	28,100	64,200
Total	1,037,100	55,500	112,300	539,500	1,744,400

^a Owners and acres are counted more than once if multiple products were harvested.

^b Includes combinations of methods.

^c Includes fuelwood, posts, poles, etc.

*Fewer than 50 owners.

Table 24.—Expected time of future timber harvest

Expected time of future harvest	Owners		Commercial forest land owned	
	No.	Pct.	Acres	Pct.
OWNERS WHO HAVE PREVIOUSLY HARVESTED TIMBER				
0 to 10 years	5,500	3	540,900	12
Indefinite	11,500	6	630,200	14
Will never harvest	6,100	4	207,200	5
Total	23,100	13	1,378,300	31
OWNERS WHO HAVE NOT PREVIOUSLY HARVESTED TIMBER				
0 to 10 years	11,500	6	263,100	6
Indefinite	28,000	15	1,123,100	25
Will never harvest	121,500	66	1,690,000	38
Total	161,000	87	3,076,200	69
ALL OWNERS				
0 to 10 years	17,000	9	804,000	18
Indefinite	39,500	21	1,753,300	39
Will never harvest	127,600	70	1,897,200	43
Total	184,100	100	4,454,500	100

Tables 25.—Agency from which owners would seek forestry assistance

Agency	Owners		Commercial forest land owned	
	No.	Pct.	Acres	Pct.
County	7,800	4	429,900	10
State	33,100	18	1,248,600	28
Soil Conservation Service	2,800	1	106,000	2
U.S. Forest Service	5,500	3	98,000	2
Consulting forester	5,100	3	217,400	5
Cooperative Extension Service	12,200	7	250,800	6
Other	1,600	1	107,300	2
Don't know	116,000	63	1,996,500	45
Total	184,100	100	4,454,500	100

Table 26.—Forestry services received by owners

Service received	Owners		Commercial forest land owned	
	No.	Pct.	Acres	Pct.
Timber-marking	1,700	1	159,600	4
Timber-stand improvement	5,100	3	268,600	6
Tree-planting	5,900	3	240,500	5
Timber-sales administration	300	(*)	29,000	1
Insect and disease control	1,600	1	31,500	1
Timber-stand evaluation	1,500	1	162,000	4
Surveying	900	(*)	47,000	1
General forest management	2,900	2	252,800	6
Other	1,900	1	151,100	3
Total	21,800	12	1,342,100	30

^a 19,968 owners (11 percent) owning 1,114,900 acres (25 percent) performed some kind of forestry treatment. Totals do not add to these totals because some performed more than one treatment.

Table 27.—Recreational use of commercial forest land

Use	Owners		Commercial forest land owned	
	No.	Pct.	Acres	Pct.
Hiking	76,800	42	2,144,100	48
Picnicking	41,300	22	1,460,400	33
Camping	32,800	18	1,166,700	26
Fishing	31,800	17	1,355,200	30
Hunting ^a	46,900	25	1,661,700	37

^a 1,382,300 acres are posted against hunting.

Headquarters of the Northeastern Forest Experiment Station are in Upper Darby, Pa. Field laboratories and research units are maintained at:

- Amherst, Massachusetts, in cooperation with the University of Massachusetts.
- Beltsville, Maryland.
- Berea, Kentucky, in cooperation with Berea College.
- Burlington, Vermont, in cooperation with the University of Vermont.
- Delaware, Ohio.
- Durham, New Hampshire, in cooperation with the University of New Hampshire.
- Hamden, Connecticut, in cooperation with Yale University.
- Kingston, Pennsylvania.
- Morgantown, West Virginia, in cooperation with West Virginia University, Morgantown.
- Orono, Maine, in cooperation with the University of Maine, Orono.
- Parsons, West Virginia.
- Pennington, New Jersey.
- Princeton, West Virginia.
- Syracuse, New York, in cooperation with the State University of New York College of Environmental Sciences and Forestry at Syracuse University, Syracuse.
- Warren, Pennsylvania.

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