United States
Department of
Agriculture

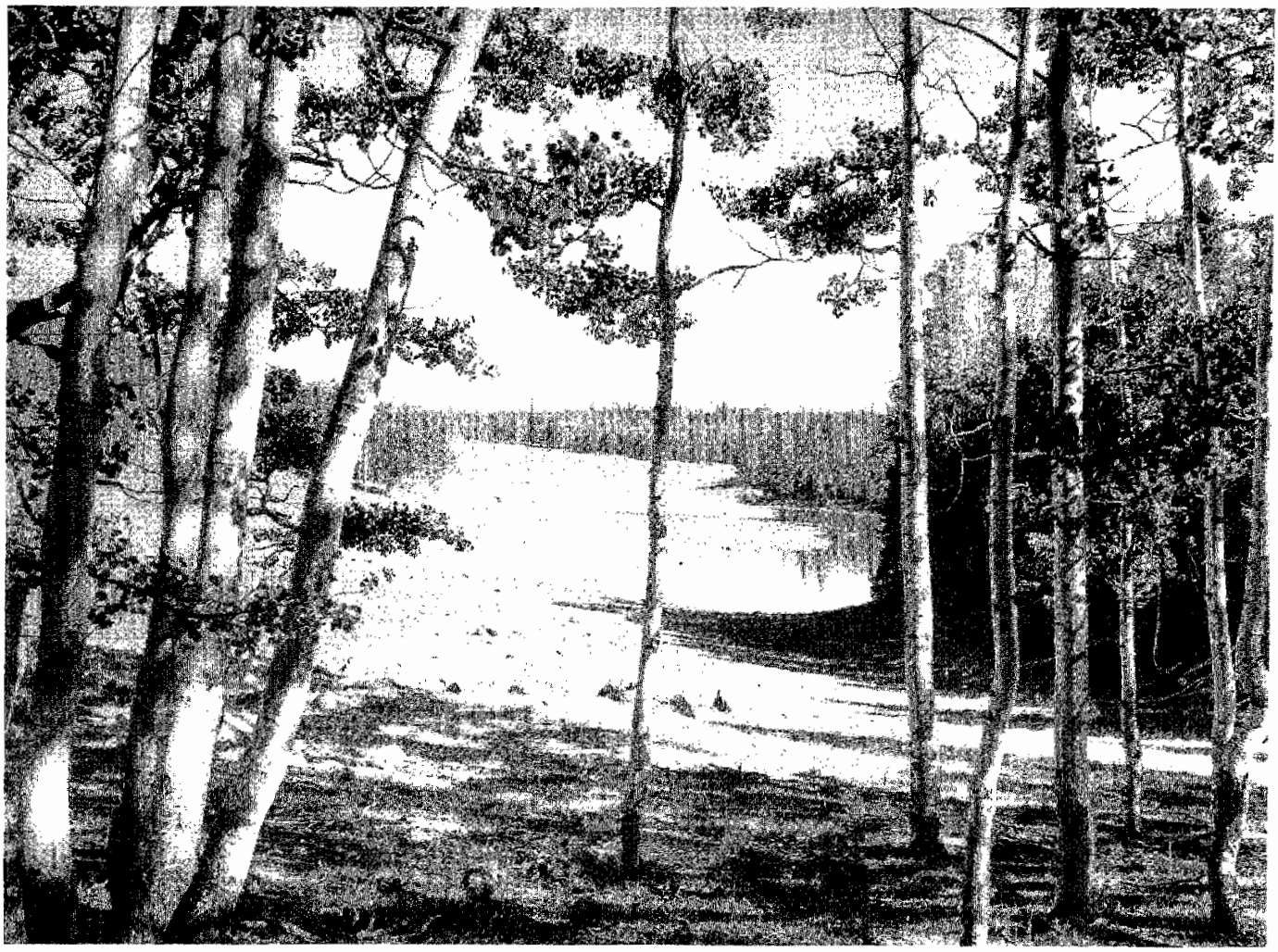
Forest Service

**Northeastern Forest
Experiment Station**

Research Paper NE-653

Northern Forest Lands: Resident Attitudes and Resource Use

Herbert E. Echelberger
Albert E. Luloff
Frederick E. Schmidt



Abstract

Residents of the northern forest lands of New England rely heavily on the natural resources of the region for their economic welfare and outdoor recreation opportunities. For many decades, the relationship between large landholders and the citizens of this region has remained stable. However, recent events portend drastic changes in ownership of large tracts of forest land. For area residents, this change may signal changes in their access to land-based economic and recreational opportunities which they have traditionally enjoyed. A telephone survey of residents in the five-county region of northern Vermont and New Hampshire was conducted to determine resident attitudes and resource use patterns. Respondents were asked to: (1) Assess problems confronting their communities and region and express their attitudes toward local and regional planning; (2) Indicate their frequency of participation in a variety of outdoor recreational activities and their knowledge of ownership of the land they used for recreation; and (3) Indicate their support for or opposition to certain options that might be available to ensure the continuation of the large, single landownership patterns within northern forest lands. Data from the survey were used to develop implications for policy alternatives.

The Authors

HERBERT E. ECHELBERGER is a research social scientist and Project Leader of the Forest Recreation Research unit at the Northeastern Forest Experiment Station's George D. Aiken Forestry Sciences Laboratory at Burlington, Vermont.

ALBERT E. LULOFF is an associate professor with The Pennsylvania State University's Department of Agricultural Economics and Rural Sociology at University Park, Pennsylvania.

FREDERICK E. SCHMIDT is Director of the Center for Rural Studies at the University of Vermont's College of Agriculture and Life Sciences at Burlington, Vermont.

Manuscript received for publication 10 January 1991

Northeastern Forest Experiment Station
5 Radnor Corporate Center
100 Matsonford Road, Suite 200
P.O. Box 6775
Radnor, Pennsylvania 19087

August 1991

Contents

Introduction

New Hampshire and Vermont's northernmost counties, like those in New York and Maine, rely heavily on natural resources for their economic base. For many decades, land ownership and residence have been stable. Several large land holders, often represented by companies headquartered outside the region, have practiced consistent land use patterns, primarily wood production. For many decades the relationship between these large landowners and the citizens of this region has remained relatively stable. Recently, however, the potential for a drastic change in ownership patterns has become evident. For residents, this change in ownership portends a change in traditional access to land-based economic and recreational opportunities.

As a result, a study was initiated on how best to protect the forest resource of the region (Harper et al. 1990). The focus of this Northern Forest Lands Study was to identify "alternative strategies to protect the long-term integrity and traditional uses of the lands." To do this requires that we also focus on the human dimensions of land management policies. Residents of the area may suffer diminished employment opportunities, environmental quality, and recreational access as a result of changes in land ownership or land use. To better understand the potential human impacts of changes in land ownership and land use in the region, a telephone survey of Vermont and New Hampshire North Country residents was conducted.

Specifically, this study sought to collect data on the attitudes and patterns of resource use of area residents—their perceptions of community problems, frequency of participation in a variety of outdoor activities, knowledge of land ownership, and attitudes toward local and regional planning.

Site Description

By almost any definition, northeastern Vermont and northern New Hampshire have a significant, if not dominant, rural character. Lying well beyond the influence of several large metropolitan areas—Boston, Massachusetts; Portland, Maine; and Montreal, Quebec, Canada—and just beyond several smaller metropolitan arees, the region contains some of the most sparsely settled land in New England (Fig. 1). Because of its location, demographics, and reliance on land-based resources for both recreational and economic opportunities, this area is well suited for a study on how large-scale restructuring of land ownerships may impact local residents. There are, however, differences in the structure of the two states. Much of the economic engine driving the four counties in northeastern Vermont is agriculturally oriented, while forest-oriented activities dominate Coos County in New Hampshire. Public land occupies a significant portion of Coos County but there is little public land in northeastern Vermont. These two differences may contribute to different perceptions between residents of the two states.

Figure 1.—North Country of northeastern Vermont and northern New Hampshire

As of July 1, 1986, the total population of this two-state region was about 109,600. This represents an increase of about 2 percent from the 1980 census, reflecting a stable or slightly expanding population base. However, Coos County in New Hampshire actually experienced a net loss of 3.2 percent during that time, while Lamoille County, Vermont, had a significant gain of 7.9 percent (Table 1). Within the five-county region, there are 114 minor civil divisions—the smallest politically recognized census unit for which data are gathered, including city, town, township, purchase, and/or grant. The 1986 populations of these units ranged from 50 in Victory, Vermont, to 12,200 in Berlin, New Hampshire. In 1986, the average population size for communities in this five-county area was 961 persons, and only 12 communities had populations exceeding 2,500.

Table 1.—Changes in population and per-capita income in New Hampshire and Vermont counties included in telephone survey, 1980-86 (U.S. Dep. Commer. Bur. Census 1988)

State and county	Population			Per-capita income		
	1986	1980	Percent change	1986	1979	Percent change
	Number			*Dollars*		
New Hampshire	1,027,000	921,000	11.5	11,659	6,966	67.4
Coos	34,000	35,100	-3.2	9,060	5,746	57.7
Vermont	541,000	511,400	5.8	9,619	6,177	55.7
Caledonia	26,700	25,800	3.3	8,042	4,453	47.5
Essex	6,700	6,300	5.6	7,472	4,929	51.6
Lamoille	18,100	16,700	7.9	8,715	5,586	56.0
Orleans	24,100	23,400	2.8	7,549	5,207	45.0

Employment, development, and economic opportunity of the area rely heavily on the natural resource reserves contained within large tracts of unfragmented forest land. The sale of 100,000 acres of land in northern New Hampshire and Vermont by the Diamond Paper Company in 1988 significantly reduced the large unfragmented forest land in the region. Approximately 4,430 jobs in the northern Vermont region are related to the timber harvesting and primary and secondary timber processing industry according to figures cited by the Northern Vermont Resource Conservation and Development Group (1989).

Moreover, the five counties selected for this study are characterized by low per-capita income averages (Table 1). All reported smaller increases in per-capita income for the period 1979-85 than did their states, and only Lamoille County, Vermont, was within 10 percent of the state average. That this region failed to enjoy the kind of economic and demographic expansion experienced by the balance of New Hempshire and Vermont further supports the need for attention to the human impact of a major restructuring of resource allocation within the area.

The relatively low population totals and densities which characterize these northern New England counties may contribute to economic problems as much as they do to the quality of life. In particular, employment, unemployment, and underemployment, as well as changes in job quality, are of concern. According to Kraenzel (1980), the "social costs of space" contribute to the burden of problems besetting rural areas. Generally, geographic isolation and distance have inhibited rural people and communities from participating in many public programs and efforts that promote economic development, provide jobs, and/or enhance the quality of life (Martin and Luloff 1988). Further, rural areas often escape the attention of the policymakers: the political agenda of most states has been dominated by urban interests (Swanson 1989; Luloff 1990). It is not uncommon for state legislatures to struggle with the burden of sustaining growth and development, regardless of the presence of places which have been repeatedly bypassed (Whiting 1974; Wilkinson 1986).

The natural resources in this area afford abundant, year-round recreational opportunities. A major section of the White Mountain National Forest, several large state-owned forests, the highest peaks in both states, and the headwaters of several major rivers all lie within the boundaries of the study area. The region's spectacular scenery bespeaks the image of quintessential northern New England (Fig. 2).

Figure 2.—Picknicking along the Kancamagus Highway in the White Mountain National Forest of New Hampshire.

Residents of the area have enjoyed virtually unlimited access to the vast tracts of forest land owned by paper and logging corporations. The road network supplied by these owners provides access for a variety of outdoor recreational activities. The importance of these activities, from both a leisure-time and food-supplement perspective, cannot be overemphasized in light of the sparsely populated, rural character of the region.

Recreational amenities have begun to attract increased numbers of vacationers and retirees from large metropolitan areas within a commute of several hours (Harper et al. 1990). Numerous seasonal camps and settlements have undergone a protracted period of expansion and conversion to year-round homes, and the area is increasingly becoming a location for time-sharing condominiums (Kacprzynski 1990). Consequently, real estate values are rising, especially for land with river, pond, and/or lake frontage.

Within the prevailing economic climate, timber-holding companies are reevaluating their long-term land-holding strategies. In an economy driven by short-term efforts to maximize return on investment, the traditional, patient, long-term view associated with forest-land holdings is no longer the norm. Instead, the short-term real estate value of the land supersedes its natural resource value. In 1988, forest-land sales of more than 400,000 acres in the region by the Diamond and Occidental Paper Companies confirmed the fears of many timber industry observers. Since then, threats to change the nature of the region with its large timber company holdings have attracted state and Federal attention.

Study Design

With the potential for change from large land ownership, land utilization, and people-to-land relationships in the region, impacts of growth and development proximate to one of New England's major recreational areas may increase. To assess these impacts, a telephone sample survey of the indigenous population of the area was undertaken. The survey was designed by modifying the "total design" methodology developed by Dillman (1978), who suggests an advance letter to improve response rate and quality. We were confident of a high response rate and quality due to the "currentness" of the subject matter. Residents of Coos County (New Hampshire) and of Caledonia, Essex, Lamoille, and Orleans Counties (Vermont) were chosen in proportion to the size of the population of their towns. In New Hampshire, 175 interviews were completed and in Vermont 271 interviews were completed.

Surveys were conducted in both states over a 6-day period with randomly generated calls made on weekdays and weekends. Selection of 500 calls in the two-state North Country region ensures a sampling error of less than 2.3 percent. In general, the standard error for a percentage, P, based on a number, n, less than the total population (e.g., n = 175 for New Hampshire) can be estimated from the formula, se(P) = SQRT(P(100–P)/n). Consequently, the standard errors are less than ± 4 percent for New Hampshire and ± 3 percent for Vermont. Confidence intervals may be computed from 1.96se(P).

The survey specifically sought to identify the most important issues facing participants' communities and to determine the frequency of respondents' participation in a variety of recreational activities; their knowledge of ownership of the land on which they recreate; their attitudes toward growth and development in their community and in their surrounding communities; and their willingness to support public expenditures of funds to purchase forest lands and to support the wood-products industry. Demographic questions were included to establish sample characteristics.

In this report, demographic characteristics of the sample by state are presented along with a comparison of responses to the survey questions, also by state. Significant differences are highlighted. A comparison of responses to the survey questions, by community size, also is given. Finally, interpretations are made in light of potential policy implications, especially with respect to the profound changes to the natural-resource base of the area.

Results

Vermont Versus New Hampshire

This section reports respondents' perceptions of community problems, of local planning efforts, and of support for several options for preserving large tracts of forest lands in the two-state region. Outdoor recreation patterns also were determined. Several types of statistical tests were selected to analyze study data. The chi-square statistic was used to test nominal data and the t-test was applied to Vermont versus New Hampshire scale data. Because one-way analysis of variance (ANOVA) extends the applicability of the t-test to more than two categories, it was used to analyze disparities between size of community (population) and the scaled data.

Characteristics of respondents

The survey instrument (Appendix A) included a series of questions designed to determine the socioeconomic characteristics of persons interviewed. Data regarding respondent sex, age, number of persons over age 18 in the household, marital and work status, income levels, and educational attainment are reported in Appendix B.

Demographic and economic characteristics of this sample are believed to be typical of North Country communities. More women than men responded to the phone survey. In terms of age, just over 2 in 5 respondents were over age 50, 1 in 5 were under 30, and an additional 41 percent were representative of the middle years, 30 to 50. About 20 percent of the respondents were from single adult households versus two-thirds from households with two adults. One in five respondents has a college degree, two-thirds completed high school and/or attended some college, and 16 percent indicated some schooling without completing high school. At 5.6 percent, unemployment was double the states' rates for the period as is generally characteristic of rural areas. An additional 58 percent worked full or part time. Nearly 1 in 4 were retired, and the balance were homemakers or students. Reported household incomes were not surprising—one-third of those responding earned $15,000 to $30,000 annually, 38 percent had incomes exceeding $30,000, and about 1 in 4 reported an income below $15,000. Seventy percent of the respondents were married. Length of state residence showed a wide distribution, with 1 in 4 reporting residence in excess of 50 years, 1 in 5 with less than 10 years residence, and the balance distributed between these poles. Half reported native or near native status, with 1 in 5 having spent less than 25 percent of their lives in New Hampshire or Vermont. We hope these characteristics of the sample will be helpful in understanding some of the results that follow.

Community problems

New Hampshire and Vermont survey participants were asked to rate the seriousness of a variety of community problems, such as solid waste disposal, population growth, the preservation of forested lands, and other issues. Disposing of solid waste was the greatest concern of respondents from both states (Table 2). Access to forest lands, maintaining an industrial wood supply, and opportunities to participate in outdoor recreation activities did not receive scores that indicated respondents perceived them as serious problems.

Table 2.—Seriousness of community problems, by state

	New Hampshire		Vermont	
Community problem[a]	Mean	SD	Mean	SD
Disposing of solid waste	2.33	0.89	2.21	0.92
Preservation of forested land	2.56	.80	2.50	.81
Development's impacts on wildlife	2.61	.75	2.51	.77
Preservation of agricultural land	2.63	.80*	2.38	.84
Development's impacts on rivers and streams	2.67	.74	2.54	.80
Developing adequate sewer and water services	2.69	.68	2.72	.68
Population growth	2.74	.61	2.66	.59
Maintaining an industrial wood supply	2.79	.79*	2.96	.74
Opportunities to participate in outdoor recreation	2.81	.55*	2.91	.39
Development's impacts on lakeshores	2.83	.79*	2.59	.86
Access to forest lands in your area	2.94	.49	2.97	.49

[a]Respondents rated the seriousness of community problems as 1 = very serious; 2 = serious; 3 = not a problem.
* Significant difference between New Hampshire and Vermont respondents at .05 level (using Bonferonni's inequality resulted in no significant differences for "Maintaining an industrial wood supply" and "Opportunities to participate in outdoor recreation").

Respondents from the two states differed significantly in assigning the level of seriousness to several of the problems. Vermont respondents were more concerned about preservation of agricultural land ($t = 3.15$, $p < .01$) and impacts of development on lakeshores ($t = 3.05$, $p < .01$). New Hampshire respondents voiced greater concern regarding the maintenance of an industrial wood supply ($t = 2.17$, $p = .03$) and opportunities to participate in outdoor recreation ($t = 2.24$, $p = .03$), though these problems were rated low in importance. These differences may be explained by the context: agriculture makes a greater direct economic contribution in Vermont than in New Hampshire. The dominance of wood industries in northern New Hampshire, when contrasted with the more diversified economy in Vermont's Northeast Kingdom, helps explain the different perceptions of the importance of maintaining an industrial wood supply. Differences in the perceived importance of development impacts on lakeshores and opportunities to participate in outdoor recreation are not so clear.

Disposing of solid waste was cited as the *single most serious* problem by more than one-third of both New Hampshire and Vermont respondents (Table 3). Population growth ranked a distant second (14 percent), followed by preservation of farm land (12 percent), and development's impact on wildlife and on lakeshores (8 percent each). For the Vermont sample, differences among lesser ranked items were slight: preservation of agricultural land ranked second in seriousness (15 percent), followed by population growth (12 percent). New Hampshire respondents selected population growth as the second most serious problem (12 percent), followed by development's impact on wildlife and lakeshores (8 percent each).

Table 3.—Most serious community problem, by state, in percent

Most serious problem[a]	New Hampshire	Vermont	Total
Disposing of solid waste	35	39	38
Population growth	21	12	14
Preservation of agricultural land	6	15	12
Development's impact on wildlife	8	8	8
Development's impact on lakeshores	8	8	8
Development's impact on rivers and streams	5	9	7
Developing adequate sewer/water services	6	6	6
Maintenence of an industrial wood supply	5	3	3
Opportunities to participate in outdoor recreation	5	--	1
Number of responses	62	155	217

[a] "Preservation of forested lands" and "access to forest lands in your area" were not rated.

Outdoor Activities

Participants were asked to indicate how frequently they take part in various outdoor recreational activities. Walking and driving for pleasure were listed as frequent outdoor activities by respondents from both states (Table 4). Respondents also participate in fishing, berry picking, hiking, bird watching, firewood gathering, swimming, bicycling, stargazing, and picnicking. Relatively few North Country residents participated in all-terrain vehicle use, maple sugaring, and horseback riding. Respondents differed significantly by state regarding only one activity, with New Hampshire residents more likely to engage in canoeing ($t = -2.05$. $p = .04$). However, if Bonferroni's inequality is used, there were no differences found.

Table 4.—Frequency of outdoor activities

	New Hampshire		Vermont	
Outdoor activity[a]	Mean	SD	Mean	SD
Walking	1.63	0.94	1.57	0.89
Driving for pleasure	1.80	1.05	1.98	1.10
Picnicking	2.15	1.08	2.11	1.02
Swimming	2.20	1.23	2.16	1.23
Berry picking	2.28	1.15	2.46	1.09
Bird watching	2.52	1.25	2.46	1.27
Hiking	2.56	1.19	2.66	1.15
Fishing	2.57	1.25	2.78	1.17
Stargazing	2.66	1.16	2.72	1.09
Bicycling	2.78	1.18	2.91	1.18
Gathering firewood	2.85	1.29	2.71	1.30
Cross-country skiing	2.95	1.20	3.06	1.13
Sunbathing	2.98	1.18	3.02	1.11
Canoeing	3.11	1.12*	3.33	1.04
Motor boating	3.13	1.13	3.20	1.09
Skating	3.13	1.12	3.24	1.07
Developed camping	3.20	1.10	3.26	1.05
Hunting	3.23	1.18	3.20	1.17
Downhill skiing	3.29	1.13	3.46	1.03
Snowshoeing	3.30	1.01	3.38	1.02
Backcountry camping	3.31	1.01	3.31	1.04
Snowmobiling	3.33	1.07	3.34	1.06
Sugaring	3.62	.81	3.47	1.02
Horseback riding	3.65	.81	3.57	.85
All-terrain vehicle use	3.69	.79	3.69	.79
Trapping	3.91	.38	3.92	.45

[a]Respondents indicated the level of participation in outdoor activities as 1 = frequently; 2 = occasionally; 3 = seldom; 4 = never.
* Significant difference between New Hampshire and Vermont respondents at .05 level.

Land ownership patterns

Survey participants were asked if they knew who owned the land they recreated on, if the land was public land, and if there were restrictions on access to places they frequently visited (Table 5). It should be noted that we did not attempt to ascertain the accuracy of responses. Most of the respondents (91 percent) indicated an awareness of who owns the land where they engaged in outdoor recreation. Responses were not significantly different by state. One dimension of land ownership patterns—public versus private ownership—was used to further probe the level of respondents' awareness of the type of ownership of the lands they frequented. Most reported using public land for outdoor recreation. The chi-square statistic indicated that significantly more New Hampshire respondents said they engaged in recreational activities on public land than did Vermont respondents ($p = .04$), probably due to their proximity to the White Mountain National Forest in New Hampshire. Related to the larger issue of land ownership are issues regarding the posting of lands. One-fourth of the respondents said they found no trespassing signs in places they frequently visited. More New Hampshire participants indicated having found such signs than Vermont respondents, but the difference was not statistically significant.

Table 5.—Knowledge of land ownership issues, in percent

Issue	New Hampshire	Vermont	Total
Awareness of land ownership			
Yes	88	92	91
No	12	8	9
Use of public land			
Yes	66	57	60
No	34	43	40
No trespassing signs present			
Yes	29	22	24
No	68	72	71
Don't know	3	6	5
Sample size (no.)	175	271	446

Local/regional planning preference

A series of questions addressed respondents' attitudes toward growth and development, their evaluation of planning efforts within their own community as well as in other communities, and their preferences for regional versus local planning groups.

Half of the respondents from both states favored limitations to growth in their own community: 29 percent favored strong limitations and 21 percent moderate ones (Table 6). One-third of the total believed that their community should encourage development—13 percent would strongly encourage it and 20 percent would moderately encourage it. The chi-square statistic showed that respondents from New Hampshire and Vermont differed in their attitude toward future growth ($p = .02$). The New Hampshire respondents tended to be split in their attitudes toward growth: about 42 percent believed growth should be limited while 36 percent reported that growth should be encouraged. By contrast, 54 percent of the Vermont respondents indicated that growth should be limited; only 30 percent would encourage future growth. About 10 percent of the Vermonters and 14 percent of the New Hampshire sample reported that growth is a minor problem.

Table 6.—Community management of further growth, by state, in percent

Management of growth	New Hampshire	Vermont	Total
Strongly limit	30	29	29
Moderately limit	12	25	21
Not much of a problem	14	10	12
Moderately encourage	23	17	20
Strongly encourage	13	13	13
Don't know/no answer	8	6	7
Sample size (no.)	175	271	446

In sum, attitudes toward the growth issue differed significantly between the two states (chi-square = 13.82 with 5 df and $p = .025$), probably because of the notoriety of Act 200 in Vermont. This legislation was passed in 1988 to encourage appropriate development within the state based on thorough and well-designed local and regional plans. Act 200 seems to have either strong proponents or strong opponents, but there are few knowledgeable Vermonters (probably about 1 in 4) who have not given it considerable thought.

Local planning can provide a means for promoting or discouraging growth. Without raising specific local planning problems, respondents were asked to evaluate the performance of their own town's planning. More than 40 percent rated their town planning as good to excellent (Table 7). Another 30 percent found the local efforts to be fair. Commmunity planning was rated as poor by 16 percent of the total survey participants. Thus, 7 of 10 North Country repondents appeared to react positively to their local planning effort.

Table 7.—Quality of current planning level in respondent's community, in percent

Own town's planning level	New Hampshire	Vermont	Total
Excellent	4	10	8
Good	30	35	33
Fair	38	24	30
Poor	18	15	16
Don't know/no answer	10	15	13
Sample size (no.)	175	271	446

The Vermont respondents were relatively more positive about their communities' planning efforts. The chi-square statistic showed that attitudes differed significantly by state ($p = .01$). Approximately 10 percent of the Vermonters rated their community planning as excellent, versus 4 percent of the New Hampshire respondents. Community planning efforts were rated good by 35 percent of the Vermont respondents compared to 30 percent of the New Hampshire respondents.

Respondents were asked to rate the planning efforts of the communities surrounding their own. Their responses indicate that they placed neighboring communities' current planning levels below their own (Table 8). Other communities' planning efforts were rated excellent by 4 percent of the survey participants. About 60 percent rated those efforts as good or fair, and 15 percent rated planning efforts in neighboring communities as poor.

Table 8.—Perceived quality of planning in other communities, in percent

Other communites' planning	New Hampshire	Vermont	Total
Excellent	3	4	4
Good	26	32	30
Fair	33	28	30
Poor	16	14	15
Don't know/no answer	21	22	22
Sample size (no.)	175	271	446

Study participants were asked whether they favored local planners working in a regional planning group or maintaining local activities by themselves. Nearly one-third of the respondents had not given much thought to the relative benefits or disadvantages of regional versus local community planning (Table 9). However, 43 percent expressed a preference for regional planning cooperation. Approximately 25 percent favored local planners working alone.

Table 9.—Preference for regional vs. locl planning, in percent

Regional or local planning	New Hampshire	Vermont	Total
Strongly regional	20	20	20
Moderately regional	22	24	23
Not thought about it	40	26	31
Moderately local	9	11	11
Strongly local	8	19	15
Sample size (no.)	171	271	442

Responses to this question were significantly different by state ($p = .01$). Although similar portions of New Hampshire and Vermont residents expressed preferences for local/regional planning efforts, New Hampshire respondents (40 percent) were much less able to express opinions than Vermonters (26 percent). While Vermont respondents were evenly split in their preferences for strongly regional versus strongly local planning, New Hampshire respondents showed a large disparity, possibly due to the notoriety of Act 200 in Vermont. Thirty percent of Vermonters said they would prefer local planning compared to only 17 percent of New Hampshire respondents.

Public expenditures and forest lands

One possibility for maintaining large expanses of forested land in the North Country is through public purchase of land. We asked participants if they would be in favor of public purchase to acquire forest lands for wildlife habitat, recreational opportunities, a continued supply of timber, and wilderness protection.[1] The highest level of support (85 percent) was registered for public purchase of land for wilderness protection (Table 10). Respondents from the two states were similar in their level of support for public land acquisition to protect wilderness. Respondents also indicated strong support (81 percent) for public purchase of land to protect wildlife habitat. Vermonters were slightly more supportive of this measure, though the differences were not statistically significant. An equal number of respondents (81 percent) indicated their support for public land acquisition to maintain recreational opportunities. Vermont and New Hampshire responses to this issue were similar. A sizeable majority (72 percent) favored public land acquisition to assure a continued supply of timber. Three-fourths of the Vermont respondents favored this expenditure compared to two-thirds of the New Hempshire residents.

[1] "Wilderness" was not defined for survey participants. Some people may have responded to the term believing that motorized vehicles would be prohibited; others may have believed that wilderness-like opportunities would exist.

Table 10.—Support for public land acquisitions, in percent

Item	New Hampshire	Vermont	Total
Protect wilderness			
Yes	83	86	85
No	11	10	10
Not sure	6	4	5
Sample size (no.)	172	270	442
Maintain recreational opportunities			
Yes	80	80	80
No	16	16	16
Not sure	4	4	4
Sample size (no.)	173	271	444
Maintain wildlife habitat			
Yes	79	82	81
No	14	12	12
Not sure	7	6	7
Sample size (no).	174	271	445
Assure timber supply			
Yes	67	75	72
No	20	15	17
Not sure	13	10	11
Sample size (no.)	172	271	443

Another option for preserving large tracts of forest land is to maintain the current ownership pattern characterized by large private timber holdings. One method to ensure this pattern entails creating more favorable business conditions for landowners within the timber industry. Respondents were asked if they would favor public expenditures to improve business conditions for the wood-products industry. Those respondents favoring such expenditures were then asked to react to four different kinds of assistance: tax incentives, marketing, technical assistance, and grants. Of the total responses, 59 percent did not favor such use of public funds (Table 11). There was no significant difference between responses by state.

Table 11.—Support for public funding of wood-products industry, in percent

Funds for wood-products industry	New Hampshire	Vermont	Total
Yes	38	43	41
No	62	57	59
Sample size (no.)	149	237	386

Those who responded favorably toward expending public funds to promote the wood-products industry were asked to indicate their support for various program options for such expenditures. In general, the use of public expenditures for both marketing purposes and grants was favored, followed by technical assistance (Table 12). Tax incentives received the support of less than half the respondents. In all four cases, Vermonters were more supportive of individual types of assistance than their New Hampshire counterparts.

Table 12.—Uses of public funds to assist wood-products industry that are favored by survey participants, in percent[a]

Method	New Hampshire	Vermont	Total
Tax incentives	36	50	45
Marketing	52	70	64
Technical assistance	46	67	60
Grants	46	75	65
Subsample size (no.)	56	101	157

[a] Column totals to not sum to 100 percent because participants responded yes or no to each method.

Population of communities in survey

The following section focuses on the relationship between size of community and the survey items. In such small, highly rural states, population density is an important consideration in policy decisionmaking. For example, in the five-county study region, no county has more than 42 people per square mile. For the states as a whole, the population densities are 58 people per square mile in Vermont and 113 in New Hampshire. By contrast, Massachusetts has more than 700 people per square mile. Community size is examined with respect to residency, perceptions of community problems, frequency of outdoor activities, planning preferences, and attitudes about public acquisition of lands in the study area. Figure 3 shows the population density of each county in the study.

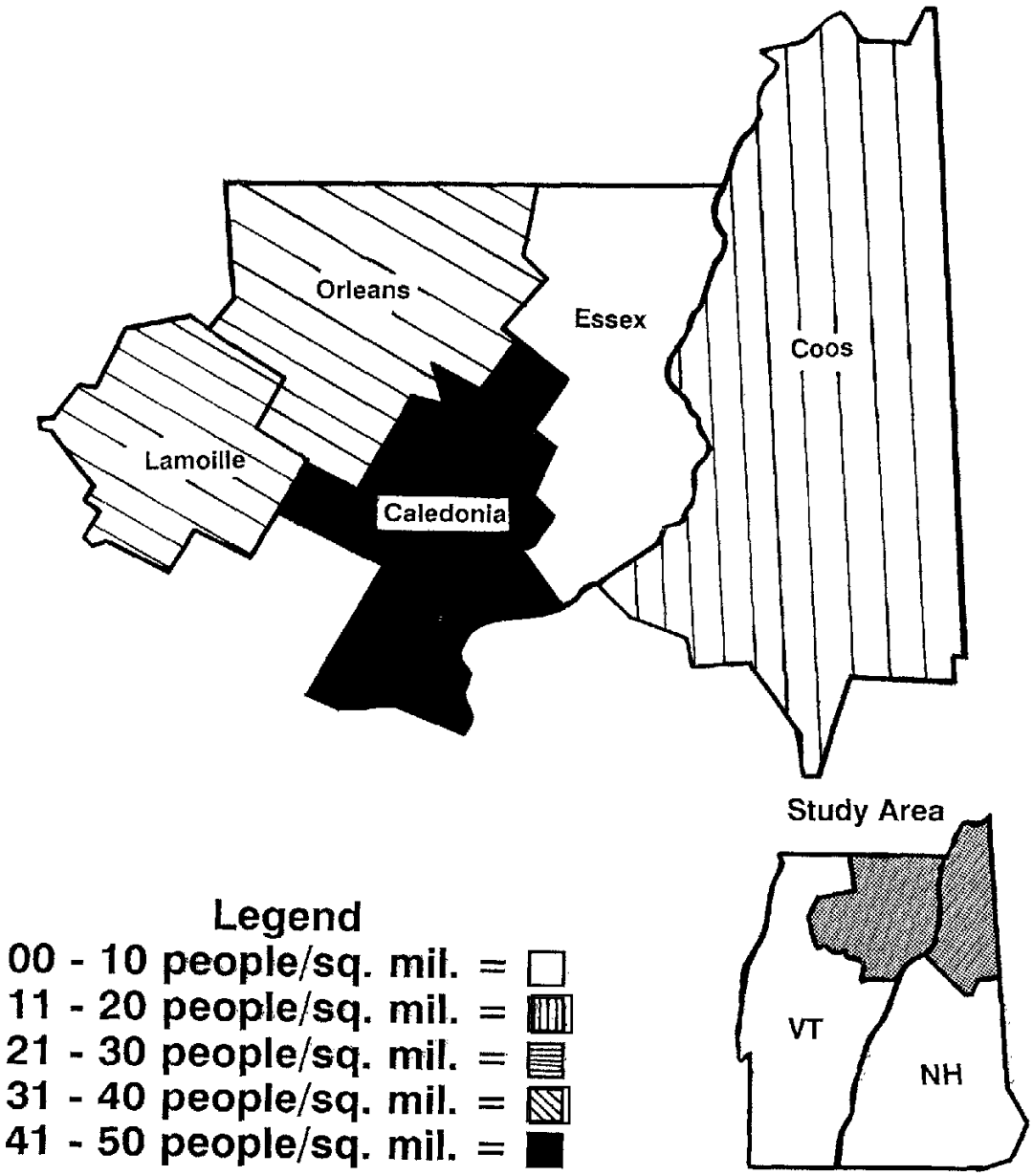


Figure 3.— Population density of Vermont and New Hampshire counties included in the survey.

Population characteristics

The population size of respondents' towns of residence varied greatly, ranging from less than 100 to more than 12,000 persons. In 1986, the population of the average community for the five counties in the study was 1,261 (U.S. Dep. Commer. 1988). Although most communities have from 1,000 to 5,000 residents, nearly 1 in 5 exceeds 5,000, and nearly 30 percent have less than 1,000 (Table 13).

Community problems

Differences exist among respondents by size of community (Table 14). Respondents from towns of 2,501 to 5,000 residents differed from those living in towns with 501 to 1,000 people with respect to population growth, defining this as a more serious problem. And respondents from towns in the 1 to 500 class expressed significantly less concern about developing adequate water and sewer services than those living in towns in the largest population class. There also was a significant difference in concern about access to outdoor recreation opportunities. Respondents from towns of 2,501 to 5,000 view access as a more serious problem than those from towns with populations exceeding 5,000.

Table 13.—Distribution of survey respondents by community size

	Respondents		
Population (no.)	Number	Percent	Cumulative Percent
Under 500	41	9.2	9.2
501 to 1000	86	19.3	28.5
1001 to 2500	129	28.9	57.4
2501 to 5000	107	24.0	81.4
5001 +	83	18.6	100.0
Total	446	100.0	100.0

Table 14.—Seriousness of community problems, by size of respondents' community

	Population (no.)				
Community problem[a]	1 to 500	501 to 1000	1001 to 2500	2501 to 5000	5000 +
	— — — Level of seriousness — — —				
Disposing of solid waste	2.44	2.23	2.25	2.32	2.12
Preservation of agricultural land	2.44	2.44	2.49	2.40	2.64
Development's impact on wildlife	2.44	2.61	2.54	2.54	2.57
Preservation of forest land	2.54	2.48	2.46	2.61	2.58
Development's impact on rivers and streams	2.56	2.73	2.59	2.55	2.52
Development's impact on lakeshores	2.76	2.71	2.62	2.62	2.82
Population growth	2.76	2.77*	2.67	2.58	2.75
Maintaining an industrial wood suppy	2.81	2.93	2.84	2.94	2.93
Access to forest land	2.90	2.94	3.00	2.99	2.92
Developing adequate water and sewer services	2.90*	2.76	2.67	2.71	2.63
Access to outdoor recreation opportunities	2.95	2.87	2.85	2.93*	2.78

[a] Respondents rated the seriousness of community problems as 1 = very serious; 2 = serious; 3 = not a problem.

* Significant difference with at least one other population category at .05 level using one-way ANOVA with LSD contrasts.

Outdoor activities

Respondents differed somewhat in participation in outdoor activities according to community size (Table 15). Participants from towns with populations exceeding 5,000 reported significantly less cross-country skiing, snowmobiling, canoeing, sugaring, and horseback riding than those from towns in the smaller population classes. Respondents from towns with 2,501 to 5,000 persons were much less likely to hunt, fish, pick berries, gather firewood, picnic, or stargaze than residents of towns with fewer than 2,501 residents. However, motorboating and use of all-terrain vehicles were enjoyed by significantly more respondents from towns in the larger population classes than by those from towns of 1 to 500 people.

Table 15.—Frequency of participation in outdoor activities, by size of respondents' community

Average frequency of outdoor activities[a]	Population (no.) 1 to 500	501 to 1000	1001 to 2500	2501 to 5000	5000+
Walking	1.56	1.67	1.57	1.51	1.66
Driving for pleasure	1.98	1.97	1.78	1.95	1.95
Swimming	1.98	2.23	2.12	2.27	2.17
Picnicking	2.12	2.08	1.99	2.35*	2.08
Berry picking	2.12	2.24	2.41	2.58*	2.40
Bird watching	2.39	2.33	2.43	2.63	2.59
Hiking	2.39	2.64	2.52	2.71	2.75
Stargazing	2.42	2.61	2.62	2.91*	2.78
Fishing	2.61	2.65	2.57	2.94*	2.68
Gathering firewood	2.63	2.47	2.47	2.98*	3.31*
Cross-country skiing	2.83	3.11	2.85	2.94	3.40*
Bicycling	2.98	3.01	2.74	2.79	2.93
Canoeing	2.98	3.29	3.10	3.29	3.47*
Hunting	3.07	3.13	3.09	3.41*	3.28
Skating	3.12	3.19	3.07	3.31	3.31
Sunbathing	3.20	2.92	3.02	2.91	3.08
Backcountry camping	3.22	3.37	3.20	3.33	3.43
Snowshoeing	3.29	3.39	3.19	3.45	3.43
Downhill skiing	3.42	3.42	3.36	3.32	3.51
Snowmobiling	3.44	3.15	3.24	3.32	3.63*
Developed camping	3.44	3.17	3.18	3.20	3.25
Motorboating	3.46*	3.06	3.06	3.23	3.25
Sugaring	3.54	3.45	3.41	3.57	3.72*
Horseback riding	3.68	3.67	3.45	3.64	3.68*
Trapping	3.81	3.93	3.92	3.92	3.94
All-terrain vehicle use	3.93*	3.62	3.59	3.71	3.80

[a] Respondents rated the frequency of outdoor activity as 1 = frequently; 2 = occasionally; 3 = Seldom; 4 = never.

* Significant difference with at least one other population category at .05 level using one-way ANOVA with LSD contrasts.

Planning for future growth

Respondents differed in their attitudes toward further growth in their communities based on community size (Table 16). Those from smaller towns were more likely to favor limits on growth while those from the largest towns were more likely to encourage it. Respondents from towns with more than 5,000 people were significantly more likely to favor encouraging growth than those from smaller towns ($p = .01$).

Table 16.—Preferences for community management of further growth, by size of respondents' community, in percent

Community management of growth	Population (no.) 1 to 500	501 to 1000	1001 to 2500	2501 to 5000	5000 +	Total
Strongly limit growth	32	42	26	31	18	29
Moderately limit growth	20	22	25	21	8	20
Not much of a problem	17	5	15	8	17	12
Moderately encourage growth	20	14	20	16	29	20
Strongly encourage growth	7	9	9	14	24	13
Don't know/no answer	5	8	5	9	4	7
Sample size (no.)	41	86	129	107	83	446

Respondents were asked to rate the quality of their own town's current planning efforts. Their responses differed significantly ($p = .04$) depending on community size. The majority of those from small towns rated local planning as good or excellent (Table 17), while respondents from towns with larger populations more often characterized their community's planning efforts as fair.

Table 17.—Perceived quality of planning in town of residence, by size of respondents' community, in percent

Planning quality in own town	Population (no.) 1 to 500	501 to 1000	1001 to 2500	2501 to 5000	5000 +	Total
Excellent	12	7	9	11	1	8
Good	41	35	33	31	30	33
Fair	15	26	29	32	40	30
Poor	22	24	12	12	17	16
Don't know/no answer	10	8	19	14	12	13
Sample size (no.)	41	86	129	107	83	446

Respondents also were asked to rate the planning efforts of other communities. While more respondents from larger towns reported that planning in their neighboring communities was excellent, those from smaller towns were more likely to give the planning of other towns a good rating (Table 18). Respondents from smaller towns appeared to be more willing or able to answer this question than those from towns with higher populations.

Table 18.—Perceived quality of planning in other communities, by size of respondents' community, in percent

Planning quality in other towns	Population (no.)					
	1 to 500	501 to 1000	1001 to 2500	2501 to 5000	5000 +	Total
Excellent	—	2	4	5	5	4
Good	39	36	30	22	29	30
Fair	29	27	32	33	29	30
Poor	12	16	13	15	16	15
Don't know/no answer	20	19	21	25	22	21
Sample size (no.)	41	86	129	107	83	446

Respondents from towns with larger populations tended to view regional planning more favorably than those from smaller towns (Table 19); conversely, those from smaller towns were more likely to prefer local planning. Nearly one-third of all respondents had not given much thought to the concept, indicating their lack of knowledge, or concern, about planning in general.

Table 19.—Preference for regional vs. local planning, by size of respondents' community, in percent

Type of planning	Population (no.)					
	1 to 500	501 to 1000	1001 to 2500	2501 to 5000	5000 +	Total
Strongly regional	20	19	18	18	26	20
Moderately regional	15	27	26	25	17	23
Not thought about it	22	26	32	32	40	31
Moderately local	12	10	13	9	7	11
Strongly local	32	19	10	16	10	15
Sample size (no.)	41	86	127	106	82	442

Public expenditures and forest lands

A possible way to ensure the maintenance of large tracts of forested lands in northern New Hampshire and Vermont would be to purchase these lands with public funds. There were no significant differences in preferences for public purchase of forest lands due to population size of respondents' towns (Table 20). The greatest support (85 percent) was for wilderness protection while the least support (72 percent) was for acquisition to assure continued timber supply.

Table 20.—Support for public land acquisitions, by size of respondents' community, in percent

	Population (no.)					
Item	1 to 500	501 to 1000	1001 to 2500	2501 to 5000	5000 +	Total
Protect wilderness						
Yes	87	81	85	82	90	85
No	13	13	9	12	6	10
Not sure	—	6	6	6	4	5
Sample size (no.)	39	86	129	106	82	442
Maintain wildlife habitat						
Yes	80	80	77	82	86	81
No	15	15	14	11	8	13
Not sure	5	5	9	7	6	6
Sample size (no.)	40	86	129	107	83	445
Maintain recreational opportunities						
Yes	85	78	78	89	81	80
No	15	19	18	13	13	16
Not sure	—	3	4	4	6	4
Sample size (no.)	39	86	129	107	83	444
Assure timber supply						
Yes	72	70	72	76	71	72
No	21	19	17	14	16	17
Not sure	7	11	14	10	13	11
Sample size (no.)	39	86	129	107	82	443

There were no significant differences among population groups regarding attitudes for using public funds to improve business conditions for the wood-products industry (Table 21). Those who favored expending public funds for this purpose were asked to indicate their level of support for various program options for such expenditures.

There were no significant differences among respondents by community size for the four types of public expenditures listed (Table 22). In descending order, respondents tended to favor assistance through grants, marketing, technical assistance, and tax incentives.

Table 21.—Support of public funding to assist wood-products industry, by size of respondents' community, in percent

Public funds for wood-products industry	Population (no.)					
	1 to 500	501 to 1000	1001 to 2500	2501 to 5000	5000 +	Total
Yes	27	47	40	40	43	41
No	73	53	60	60	57	59
Sample size (no.)	37	74	116	90	69	386

Table 22.—Uses of public funds to assist wood-products industry that are favored by survey participants, by size of respondents' community, in percent

Method[a]	Population (no.)					
	1 to 500	501 to 1000	1001 to 2500	2501 to 5000	5000 +	Total
Tax incentives	40	57	43	39	40	45
Marketing	40	77	63	66	53	64
Technical assistance	40	63	74	56	47	60
Grants	30	74	67	69	57	65
Subsample size (no.)	10	35	46	36	30	157

[a] Column totals do not sum to 100 because study participants responded yes or no to each method.

Summary and Conclusions

Residents of the North Country of New Hampshire and Vermont use their forest lands for a variety of recreational and economic activities. Results from this survey of the five-county region indicate that, while they share many concerns about their region, residents differ in opinion with regard to specific community problems and planning issues.

Community Problems

Three development-related issues were mentioned most often: solid waste disposal, population growth, and impacts of development on lakeshores, wildlife, rivers and streams. Concerns also were expressed about the development of adequate sewer and water services. Vermont residents viewed the preservation of agricultural lands as a very serious problem, while those from New Hampshire voiced greater concern about the maintenance of an industrial wood supply and opportunities to participate in outdoor recreation.

There also were differences among respondents by population of town of residence with respect to community problems, particularly those related to issues of growth. Persons residing in larger communities identified population growth and the development of adequate sewer and water services as serious problems. By contrast, residents from middle-size communities expressed concern about access to outdoor recreation opportunities. Rural residents were less likely to perceive or be concerned about infrastructure-based community problems such as adequate sewer and water services.

Knowledge of Ownership Patterns

In rural regions, such as this study area, it is not surprising that residents were well aware of who owned the land they used for various recreational activities. In fact, many people reported using public lands for outdoor recreation. Public forested land appears to be an asset for recreational opportunities. This study did not attempt to identify specific patterns or knowledge regarding land ownership. As a result, it would appear that additional research in this area is warranted.

Public Expenditures and Forest Lands

One possibility for maintaining large expanses of forested land in the North Country is through public ownership. Survey results revealed that a majority of residents from both states would support public land purchase to protect wilderness, maintain recreational opportunities, protect wildlife habitat, and assure a continued supply of timber. Responses did not differ by state.

Despite 75 percent support for public purchase of land to assure a continued supply of timber, only 40 percent of the study participants were willing to expend public money to support the wood-products industry. New Hampshire residents were significantly less supportive of this concept, probably because of the presence of the White Mountain National Forest. Of those respondents who indicated support for the wood-products industry, about 65 percent favored the use of public expenditures for grants and for marketing purposes. Vermonters expressed significantly more support for all four types of assistance than their New Hampshire counterparts.

Community size was not a factor in types of support for public purchase of land. Similarly, there were no significant differences by community size with regard to respondents' preferences for the use of public funds to improve business conditions for the wood-products industry.

Recreational Activities

State of residence had a limited effect on participation in different types of recreational activities. However, results suggest that participation did vary by community size. Persons living in larger towns were less inclined to participate in cross-country skiing, snowmobiling, canoeing, sugaring, and horseback riding, and more inclined to engage in activities involving motorboats and all-terrain vehicles. Persons in smaller communities were more likely to hunt, fish, pick berries, gather firewood, picnic, and stargaze. Further study might shed light on possible relationships between community size and participation in different types of recreational activities.

Local/Regional Planning

North Country respondents had strong opinions regarding the growth and development of their communities and community planning efforts. Nearly half favored limitations on growth within their communities. Vermonters indicated a preference for controlled growth in much greater numbers than they did for encouraging growth. New Hampshire respondents were more evenly divided, with one-third favoring limits on growth and one-third encouraging growth.

In general, respondents were positive about their communities' planning efforts, though Vermonters were slightly more positive than their New Hampshire counterparts. Respondents from both states were more positive about planning in their own communities than about planning efforts in neighboring communities. Although nearly one in three had not considered the concept, more than 40 percent of the respondents from both states favored the idea of local/regional planning cooperation. In Vermont, where there is much debate about planning at the local/regional level, an equal number of respondents favored local planning versus local/regional planning cooperation.

Community size was marginally related to attitudes toward growth and planning. Respondents from large communities were more likely to favor encouraging growth, while those from smaller communities preferred limiting growth. In general, survey participants from smaller communities looked more favorably on local planning then respondents from larger communities. Community size was unrelated to opinions about local planning relative to neighboring community planning and to preferences for local/regional planning cooperation.

Implications for Policy Decisions

The results of this survey suggest that North Country residents are quite knowledgeable and have considerable concern about issues of resource use and population growth. Residents of both states were most concerned about the disposal of solid waste. Problems of population growth and the impacts of development on water resources and wildlife also were cited, as was concern about local infrastructure in terms of providing water and sewer services. Policymakers can use a number of these findings in their planning activities. For example:

- If a move is made to secure large tracts of North Country lands with public funds, there will likely be much local support if the money is used to secure wilderness areas, or to maintain recreational opportunities, protect wildlife habitat, or assure a continued supply of timber. However, officials would not find broad-based support for the use of public funds to improve business conditions for the wood-products industry.

- Although size of community does not appear to be a significant factor affecting attitudes of North Country residents, it should be noted that the area encompassed in this study represents a highly rural region of both states. Since the largest community barely exceeds 12,000 persons, community size is less differentiated than it would be in more urban areas of the two states.

- A substantial number of North Country residents hold strong opinions at both ends of the spectrum regarding growth and development in their region. As a result, planners should be careful when proposing programs that reflect "a generally held opinion." Vermonters indicated a strong preference for controlled growth while New Hampshire respondents were more evenly divided between favoring limits on growth and encouraging growth.

- Any effort to initiate a local/regional planning mechanism should be preceded by a well thought out public education program. In general, respondents were positive about local community planning efforts, especially Vermonters. However, the idea of local/regional planning cooperation is met with some skepticism by residents of both states.

Literature Cited

Dillman, Don A. 1978. **Mail and telephone surveys: the total design method.** New York: John Wiley & Sons.

Harper, Stephen C.; Falk. L. L.; Rankin, E. W. 1990. **The northern forest lands study of New England and New York: a report to the Congress of the United States on the recent changes in landownership and land use in the northern forest of Maine, New Hampshire, New York and Vermont.** Rutland, VT: U.S. U.S. Department of Agriculture, Forest Service.

Kacprzynski, Frederick T. 1990. **Condominium development in the White Mountains—how will it impact recreation management on the White Mountain National Forest?** In: More, Thomas A.; Donnelly, Maureen P.; Graefe, Alan R.; Vaske, Jerry J., eds. Proceedings of the 1990 northeastern recreation researchers symposium; 1990 February 25–28; Saratoga Springs, NY. Gen. Tech. Rep. NE-145. Radnor, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiement Station: 71-78.

Kraenzel, Carl F. 1980. **The social cost of space in the Yonland.** Bozeman, MT: Big Sky Books.

Luloff, A. E. 1990. **Community and social change: how do small communities act?** In: Luloff, A. E.; Swanson, L. E., Jr., eds. American rural communities, Boulder, CO: Westview Press.

Martin, Kenneth M.; Luloff, A. E. 1988. **State rural policy initiatives: their time has come.** Journal of the Community Development Society. 19(2): 30-41.

Northern Vermont Resource Conservation and Development Group. 1989. **Testimony to the U.S. Northern Forest Lands Study.** November. Island Pond, VT: Northern Vermont Resource Conservation and Development Group.

Swanson. L. E., Jr. 1989. **The rural development dilemma.** Resources. 96: 14-16.

U. S. Department of Commerce, Bureau of the Census. 1988. **Northeast 1986 population and 1985 per capita income estimates for counties and incorporated places.** Curr. Popul. Rep., Ser. P-26, No. 86-NE-SC. Washington, DC: U.S. Department of Commerce, Bureau of the Census.

Whiting, Larry R. 1974. **Communities left behind: alternatives for development.** Ames, IA: Iowa State University Press.

Wilkinson, Kenneth P. 1986. **In search of the community in the changing countryside.** Rural Sociology. 51(1): 1-17.

Appendix A

Telephone Interview

Attitudes and Resource Use:
A Study of North Country Citizens

ID Number:

Hello, my name is _____and I am calling on behalf of the Institute for Policy and Social Science Research at the University of [UVM or UNH]. We are doing a survey in the state to obtain opinions on some environmental issues. I would like to ask you just a few questions. But, first, is this a residential number? [IF NO, "THANK YOU" AND TERMINATE]

Are you 10 years of age or older? [IF NO, ASK FOR SOMEONE WHO IS. IF NO ONE, GET A TIME TO CALL BACK, THEN "THANK YOU" AND TERMINATE.]

1. What city or town is this? _____

2. How long have you lived in [state]? ____years [IF NOT A RESIDENT OF STATE, THEN "THANK YOU" AND TERMINATE]

3. How long have you lived in your current community? _____ years

Now, here are several problems that some people have mentioned in *other* areas of your state. For each one, please indicate how serious a problem you feel it is for *your* community. Is this a very serious problem for your community, a serious problem, or is it not a problem at all?

[READ FROM TOP: HALFWAY THROUGH THE LIST REPEAT THE CATEGORIES]

	Very ser	Ser	Not a Prob	DK
4. Population growth	1	2	3	9
5. Getting rid of solid waste	1	2	3	9
6. Access to forest lands in your area	1	2	3	9
7. Developing adequate sewer and water services	1	2	3	9
8. Preservation of agricultural land	1	2	3	9
9. Preservation of forested lands	1	2	3	9
10. Maintaining an industrial wood supply	1	2	3	9
11. Opportunities to participate in outdoor recreation activities	1	2	3	9
12. Development's impacts on wildlife	1	2	3	9
13. Development's impacts on lakeshores	1	2	3	9
14. Development's impacts on rivers	1	2	3	9

15. Of those you mentioned as being "Very Serious" above, which problem do you see as the single most serious? [READ ITEMS FROM LIST ABOVE UNDER VERY SERIOUS] _____(number of items)

For the next series of questions. I would like you to indicate how frequently you participate in each activity. Do you frequently do it, occasionally do it, seldom do it, or is it something you never participate in?

	Freq	Occasly	Seldom	Never
16. Hunting	1	2	3	4
17. Fishing	1	2	3	4
18. Trapping	1	2	3	4
19. Cross-country skiing	1	2	3	4
20. Downhill skiing	1	2	3	4
21. Snowmobiling	1	2	3	4
22. Berry picking	1	2	3	4
23. Hiking	1	2	3	4
24. Backcountry camping	1	2	3	4
25. Developed camping	1	2	3	4
26. Birding (bird watching)	1	2	3	4
27. Gathering firewood	1	2	3	4
28. Canoeing	1	2	3	4
29. Swimming	1	2	3	4
30. Motor boating	1	2	3	4

[REPEAT CATEGORIES HERE]

31. ATV use (all terrain vehicle)	1	2	3	4
32. Snowshoeing	1	2	3	4
33. Skating	1	2	3	4
34. Sugaring	1	2	3	4
35. Bicycling	1	2	3	4
36. Driving for pleasure	1	2	3	4
37. Walking	1	2	3	4
38. Star gazing	1	2	3	4
39. Sun bathing	1	2	3	4
40. Picnicking	1	2	3	4
41. Horseback riding	1	2	3	4

[FOR EACH OF THE NEXT THREE QUESTIONS, IF A RESPONSE OTHER THAN YES OR NO IS PROVIDED, WRITE IN THE RESPONSE GIVEN]

42. When you engage in the most frequent activities mentioned above, are you aware of who owns the land? Y N

43. Is this public land Y N

44. Have you found "No Trespassing" signs in a place that you frequently visit? Y N

The next several questions concern your attitudes toward growth and development.

45. Do you think that in the next several years your community should *limit* further growth and development or *encourage* growth and development, or isn't growth much of a problem one way or the other? [IF THEY CHOOSE ONE WAY OR THE OTHER, ASK: "Do you feel strongly about this matter or not strongly?]

1. strongly limit growth
2. moderately limit growth
3. not much of a problem
4. moderately encourage growth
5. strongly encourage growth
6. DK/NA

46. How well do you think your community is doing right now in planning for the future: excellent, good, fair, or poor, or are you unsure?
1. excellent 2. good 3. fair 4. poor 5. Unsure/NA

47. How well do you think other communities around you are doing in planning for the future: excellent, good, fair, or poor, or are you unsure?
1. excellent 2. good 3. fair 4. poor 5. Unsure/NA

48. As far as you are concerned, would you prefer that your local community planners work in a regional planning group or by themselves? Or, haven't you thought much about this problem one way or the other? [IF THEY CHOOSE ONE WAY OR THE OTHER. ASK: "Do you feel strongly about this matter or not strongly?]
1. strongly regional planning group
2. moderately regional planning group
3. not thought much about it/unsure
4. moderately work alone
5. strongly work alone

49. One possibility for maintaining large expanses of forested lands in the north country is for a public purchase of these lands to occur. Would you be in favor of the public expenditure of funds to acquire lands for: [NO PROMPT...THIS IS A YES/NO/NOT SURE QUESTION - REPEAT FULL QUESTION FOR FIRST TWO ITEMS, THEN ASK C&D DIRECTLY]

a. maintaining wildlife habitat	Y	N	NS
b. maintaining recreational opportunities (e.g., fishing, trapping, and/or camping)	Y	N	NS
c. to assure a continued supply of timber	Y	N	NS
d. wilderness protection	Y	N	NS

50. Would you favor public expenditure of funds to improve business conditions for the wood-products industry? Y N [If NO, GO TO #52]

51. How should these expenditures for the wood-products industry be made? Would you favor: [IF ASKED MEANING OF ANY OF THE FOUR ITEMS BELOW, READ DEFINITIONS PROVIDED]

a. tax incentives	Y	N
b. marketing	Y	N
c. technical assistance	Y	N
d. grants	Y	N

Finally, I'd like to ask just a few final questions about yourself. Please remember that all responses are anonymous and will be used for statistical purposes only. All of your answers will be kept strictly confidential.

52. Including yourself, how many members of your household are 18 or over?
_____ actual number 8. 8 or more 9. Refused
[WRITE IN NUMBER]

53. Is your marital status currently [READ LIST]
1. married
2. divorced
3. separated
4. single
5. widowed
6. REF/NA

54. Are you currently employed? [IF YES: "Part-time or full-time?" IF NOT EMPLOYED. ASK: "Are you retired, a student, or a homemaker?"]
1. full-time
2. part-time
3. retired
4. student
5. homemaker
6. not employed now
9. REF/NA

55. What was the last grade in school you completed?
1. 8th grade or less
2. 9-11, some high school
3. graduated high school GED
4. some college, voc. tech.
5. graduated college
6. postgraduate work
9. REF/NA

56. What was your total family's income in 1988? Was it more or less than $30,000?
more than 30,000 — if more, was it more or less than 45,000
1. more 2. less
less than 30,000 — if less, was it more or less than 15,000
3. more 4. less 9. REF/NA

57. And, finally, in what year were you born? _____ [WRITE TWO LAST DIGITS]

THANK YOU FOR YOUR TIME AND COOPERATION. YOU HAVE BEEN VERY HELPFUL TO US.

Appendix B

Socioeconomic Characteristics of Respondents

Sixty-four percent of the New Hampshire and Vermont residents participating in the survey were female (Table 23).

Table 23.—Gender of respondents, by state, in percent

Gender	New Hampshire	Vermont	Total
Female	62	66	64
Male	38	34	36
Sample size (no.)	170	268	438

The average age of New Hampshire respondents was 41, and of Vermont respondents, 42 (Table 24). Nearly one in five respondents were between 18 and 30 years of age and 23 percent were between 31 and 40. Approximately 40 percent of the respondents were between 41 and 65 years old and 19 percent were over 65.

Table 24.—Respondents' age, by state, in percent

Age (years)	New Hampshire	Vermont	Total
18 to 22	6	7	7
23 to 30	13	11	12
31 to 40	20	24	23
41 to 50	18	18	18
51 to 65	22	22	22
66 to 75	17	11	14
76 to 100	4	6	5
Sample size (no.)	172	271	443

Sixty-one percent of the respondents reported that, including themselves, two persons age 18 or over lived in their households (Table 25). Approximately 18 percent indicated having households with one person 18 or over, that is, the respondent lived alone. Twelve percent reported three household members 18 years or over and 8 percent reported four or more persons in that category.

Table 25.—Persons age 18 and over in household, by state, in percent

Persons age 18 and over	New Hampshire	Vermont	Total
1	18	17	18
2	59	62	61
3	11	13	12
4 or more	9	7	8
Refused to answer	2	--	1
Sample size (no.)	175	271	446

Forty-three percent of the respondents were high school graduates while 16 percent reported having a grade school or partial high school education (Table 26). Approximately 40 percent indicated educational experience beyond high school: 20 percent had some college or vocational school experience, 16 percent were college graduates, and 5 percent reported some postgraduate work. Educational attainment differed significantly between the Vermont and New Hampshire samples ($p = .04$). Approximately the same percentage of New Hampshire and Vermont respondents reported being high school graduates—44 and 43 percent, respectively. More New Hampshire respondents reported having some college or vocational/technical school than Vermont respondents (21 and 19 percent, respectively). However, New Hampshire respondents had a higher percentage of persons with less than a high school degree (20 percent) than Vermont respondents (13 percent). Also, more Vermonters (25 percent) reported having completed college and/or some postgraduate work than New Hampshire respondents (22 percent).

Table 26.—Educational level, by state, in percent

Education level	New Hampshire	Vermont	Total
Grade school	11	6	8
Some high school	9	8	8
High school graduate	44	43	43
Some college/vo-tech	21	19	20
College graduate	11	18	15
Postgraduate work	3	7	5
Refused/no answer	1	--	--
Sample size (no.)	175	271	446

More than half of the survey respondents (58 percent) indicated working either full or parttime, while 6 percent were unemployed (Table 27). Nearly 12 percent of the total respondents were homemakers. More Vermont respondents (48 percent) reported working fulltime than New Hempshire respondents (37 percent). However, more of the New Hampshire sample (17 percent) reported working parttime than Vermont respondents (13 percent). More New Hampshire respondents than Vermont participants reported being retired (26 versus 21 percent).

Table 27.—Employment status, by state, in percent

Employment status	New Hampshire	Vermont	Total
Fulltime	37	48	44
Parttime	17	13	14
Retired	26	21	23
Student	2	2	2
Homemaker	13	11	12
Not employed	6	6	6
Sample size (no.)	175	271	446

Distribution of total family income was similar for respondents in both states, with nearly one-third in the $15,000 to $30,000 range (Table 28). More New Hampshire respondents (25 percent) reported family incomes between $30,000 and $45,000 than Vermont respondents (19 percent), and more Vermont respondents (20 percent) reported incomes below $15,000 than New Hampshire respondents (16 percent).

Table 28.—Total family income, by state, in percent

Family income (dollars)	New Hampshire	Vermont	Total
45,000 +	19	17	18
30,000 to 45,000	24	18	21
15,000 to 30,000	33	32	33
0 to 15,000	15	20	18
Refused/no answer	9	13	11
Sample size (no.)	175	271	446

More than 70 percent of the respondents reported being married (Table 29). Approximately 6 percent were divorced, 1 percent separated, 8 percent widowed, and 14 percent single.

Table 29.—Marital status, by state, in percent

Marital status	New Hampshire	Vermont	Total
Married	73	69	71
Divorced	5	7	6
Separated	0	2	1
Single	15	13	14
Widowed	7	9	8
Sample size (no.)	173	270	443

Length of Residency

Participants were asked to indicate the number of years they had lived in their respective states and in their current communities. Respondents from both Vermont and New Hampshire reported living in their respective states an average of approximately 32 years. About 21 percent lived in their state for 10 years or less while 22 percent had been state residents for more than 50 years (Table 30). Approximately 16 percent reported state residency of 11 to 20 years, 15 percent between 21 and 30 years, and 16 percent between 31 and 40 years. The smallest percentage of respondents (11 percent) was in the 41- to 50-year category.

Table 30.—Years lived in current state of residence, in percent

Years in state (no.)	New Hampshire	Vermont	Total
10 or less	21	20	20
11 to 20	14	17	16
21 to 30	16	14	15
31 to 40	17	15	16
41 to 50	10	12	11
50 +	22	22	22
Sample size (no.)	170	270	440

The percentage of time in which survey respondents resided in New Hampshire or in Vermont varied widely (Table 31). State residency status was determined by dividing length of time living in the state by the respondent's age. Relatively more Vermonters (30 percent) were assigned "native" status than New Hampshire residents (25 percent). However, 20 percent of the New Hampshire respondents were "longtime" residents versus only 13 percent of Vermont respondents. More Vermont residents were in the "semiresident" category (17 percent) than New Hampshire respondents (12 percent).

Table 31.—State residence status, in percent

State residence status	New Hampshire	Vermont	Total
Native (100%)[a]	25	30	28
Near native (90–99%)	22	21	22
Long time resident (50–89%)	20	13	15
Semiresident (25–49%)	12	17	15
Newcomer (1–24%)	20	19	19
Sample size (no.)	169	271	440

[a] Percentages indicate how much of a respondent's life has been spent in current state of residence.

Respondents from New Hampshire had lived in their current communities an average of 24 years compared to an average of 20 years for Vermont respondents. Within the sample as a whole, 41 percent had lived in their towns for 10 years or less while 20 percent had maintained their community residency for 11 to 20 years (Table 32). Approximately 22 percent of the respondents claimed between 21 and 40 years of residency in their towns, and 17 percent over 40 years. About 30 percent of the Vermont respondents had lived in their towns for 5 years or less compared with 25 percent of the New Hampshire participants. Vermonters residing in their towns for 20 years or less accounted for 65 percent of the sample, compared with 53 percent of the New Hampshire respondents. About 46 percent of the New Hampshire respondents resided in their current communities for more than 40 years while 35 percent of the Vermonters reported that length of residency.

Table 32.—Years lived in community, by state, in percent

Years in community (no.)	New Hampshire	Vermont	Total
5 or less	25	30	28
6 to 10	13	13	13
11 to 20	16	22	20
21 to 30	12	11	11
31 to 40	13	10	11
40 +	20	14	17
Sample size (no.)	172	270	442

Not surprisingly, both Vermont and New Hampshire respondents had resided less time in their current communities than in their states (Table 33). Nearly 40 percent of all respondents were "newcomers" in their communities; that is, they had lived in the community less than a quarter of their lives. Another 21 percent were "short-time residents." These two categories represented 60 percent of the total, indicating that a majority of North Country residents have spent less than one-half of their lives in their current communities. Similar to state residency patterns, the Vermont residents claimed shorter community residency than New Hampshire respondents. Approximately 12 percent of the New Hampshire respondents are native to their current community compared with 10 percent of Vermonters. Slightly more than 15 percent of the New Hampshire participants were considered "near natives," while only 7 percent of the Vermont respondents were in that category. Roughly equivalent percentages of the respondents from the two states were "long-time residents" of their current home towns. About 23 percent of the Vermonters were "short-time residents" versus 19 percent of those from New Hampshire. Approximately 42 percent of the Vermonters were "newcomers" compared with 35 percent of New Hampshire respondents.

Table 33.—Community residence status, by state, in percent

Community residence status	New Hampshire	Vermont	Total
Native (100%)[a]	12	10	11
Near native (90–99%)	15	7	10
Long-time resident (50–89%)	18	19	19
Shorttime resident (25–49%)	19	23	21
Newcomer (1–24%)	35	41	39
Sample size (no.)	170	271	441

[a] Percentages indicate how much of a respondent's life has been spent in current community of residence.

Echelberger, Herbert E.; Luloff, Albert E.; Schmidt, Frederick E. 1991. **Northern forest lands: resident attitudes and resource use.** Res. Pap. NE-653. Radnor, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station. 26 p.

Describes socioeconomic characteristics of residents of northern New Hampshire and northeastern Vermont; their level of participation in outdoor recreational activities; perceptions of community problems; and attitudes concerning local versus regional planning, public ownership of northern forest lands, and other pertinent issues with respect to changes in patterns of land ownership that are potentially significant. Responses by state and by size of respondents' communites are compared.

ODC 906:907.2:911:923.3

Keywords: Local and regional planning; recreation; land ownership; community growth and development; wood-products industry

☆U. S. GOVERNMENT PRINTING OFFICE: 1991/548-088/20025

Headquarters of the Northeastern Forest Experiment Station is in Radnor, Pennsylvania. Field laboratories are maintained at:

Amherst, Massachusetts, in cooperation with the University of Massachusetts

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

Morgantown, West Virginia, in cooperation with West Virginia University

Orono, Maine, in cooperation with the University of Maine

Parsons, West Virginia

Princeton, West Virginia

Syracuse, New York, in cooperation with the State University of New York, College of Environmental Sciences and Forestry at Syracuse University

University Park, Pennsylvania, in cooperation with The Pennsylvania State University

Warren, Pennsylvania

"Caring for the Land and Serving People Through Research"