

# **An Assessment of State Forest Resource Planning in the Northeast United States**

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## Executive Summary

This study evaluated the current status of statewide forest resource planning in the United States, with a specific focus on the planning programs that exist in the 20 northeast United States. Specific study objectives were to understand the status of state forest resource planning with respect to the processes undertaken, organizational capacity for planning, perceptions of planning effectiveness, planner training needs, adequacy of federal support for state planning efforts, and important barriers to more effective planning programs.

The University of Minnesota's Department of Forest Resources, in consultation with the executive committee of the Northeastern Forest Resource Planners Association (NFRPA) and USDA-Forest Service, Northeast State and Private Forestry staff (S&PF), developed a mail questionnaire to obtain the information on state forest resource planning activities. A total of 45 of the 50 states completed and returned the questionnaire, resulting in a 90 percent response rate. Within the northeast region, information on state forest resource planning activities was provided by 18 of 20 states, resulting in a regional response rate of 90 percent.

Among the important findings regarding state forest resource planning programs in the northeast United States that will assist in this effort are the following.

### Scope and Influence of Planning

- State forestry agencies take the lead responsibility for a wide variety of forest resource planning activities within their state. In 2003, an agency had, on average, three to four different planning processes in which they have lead responsibility for undertaking. Some states are leading as many as five separate types of planning affecting the state's forest resources.
- The types of planning programs commonly undertaken by planning staff within a state forestry agency (and frequency of occurrence within the region) include planning for the management of state-administered forests (100 percent), comprehensive statewide forest resource planning (83 percent), agency work planning (55 percent), planning focused on a specific issue or activity (50 percent), and land use planning (30 percent).
- The planning activities of other state agencies (e.g., transportation, wildlife) can have a substantial impact on the state's forest resources. State forest resource planners regularly participate in many of these activities, and believe several have a moderate influence on the management and use of the state's forest resources. Of these nonforestry planning efforts, those addressing fish and game, economic development, and water and soil resource conservation are felt to have the greatest impact on forest resources.

### Planning Resources

- States have an average of 4.4 full time equivalents (FTE) devoted to planning in 2003—nearly three times the level of staff resources available for planning twenty years ago. Some states have as many as 30 FTEs.
- Although staff resources are higher than when first-generation comprehensive forest resource plans were prepared in the 1980s, half of all states have lost at least 10 percent of the

planning capacity over the last decade. One-third of the state forestry agencies have seen their planning capacity increase by at least 10 percent over this same period, while 17 percent have staff resources for planning changed less than 10 percent.

- States spent, on average, \$433,000 per year to support state forest resource planning activities in 2003. This represents greater than a tenfold increase in planning budgets over those that existed nearly 20 years ago. The majority of state forestry planning budgets are less than \$250,000 per year, although one state allocated \$3.5 million toward forest resources planning in 2003.
- Nearly half (44 percent) of the state forestry agencies have seen their planning budgets shrink by at least 10 percent over the past decade, with one-third of the states experiencing planning budget declines of greater than 50 percent over this same period. Not all state forest resource planning budgets have fared poorly, however. Thirty-nine percent of the states indicated they have seen their planning budgets increase by at least 10 percent since 1994, and 11 percent saw their planning resources increase by more than 50 percent.

### Comprehensive Statewide Plans

- The majority of all comprehensive statewide forest resource plans are less than ten years old. While one-third of the states reported having only a single-generation plan, some states have prepared as many as five comprehensive plans.
- States cite a number of reasons why comprehensive planning is undertaken, chief among these being a means by which a long-term vision of direction for the management of the state's forest resources can be articulated.
- Comprehensive statewide forest resource plans are largely issue-driven planning processes, wherein three-fourths of the states indicated their plans follow this format. Two-thirds of the states continue to use a plan format that includes separate resource assessment and program plans, which was a format widely used in the development of first-generation comprehensive plans.
- Planners feel their comprehensive plans give greatest attention to ecological considerations, specifically to ecosystem health, species diversity, and wildlife habitat. Wood products manufacturing is moderately emphasized and tourism and recreational aspects least apparent.
- State forestry agencies regularly seek the public's perspective and ideas in the development of comprehensive plans. Half of the states describe their effort at seeking the public's input as being extensive. Although several public involvement techniques are used, public meetings and open houses are the most common—86 percent use this method.
- Although the public's opinion is often aggressively sought in the development of comprehensive plans, the quality of input provided is quite variable. States that aggressively sought out the public's involvement in the development of their comprehensive plan often find the quality of the public's input to be quite good. Similarly, minimal involvement often results in poor quality input from the public.
- Comprehensive statewide planning is typically undertaken with significant involvement of the agency's field staff.
- A variety of professional and stakeholder-based interests regularly participate in the development of comprehensive statewide plans. Within an agency, wildlife interests are the most engaged, while mineral and ecological services units the least. Fish and game and water and soil resources are the state agencies most likely to become involved in forest resource

planning. Other state agencies rarely do so. With the exception of the USDA-Forest Service, no other federal agency is meaningfully engaged in the development of these plans.

Conservation, environmental, and forest products industry organizations are the constituent groups considered to be the most actively involved in plan development, while tribal groups are the least.

- Nearly six out of ten states indicate they are currently updating or plan to update their comprehensive statewide forest resource plan. Of these, one state indicated its update will be completed by 2006. Of the seven states not intending to revise their plan, only one indicated the reason as the existing plan is adequate. More common reasons were a lack of the necessary human and financial resources, a shift in planning emphasis, lack of support from stakeholders for planning, and changing agency information needs.

### State Land Management Plans

- All but two states develop a number of geographically specific plans. These are usually along administratively defined boundaries such as state forests. Although increasing in popularity, only 30 percent define their plans according to ecological borders. Twenty-six percent have a statewide plan that serves as a context for the development of substate plans.
- On average, states take two to three years to prepare a state land management plan. These plans are largely developed around tactical operations such as inventory, timber harvesting, or silvicultural treatments.
- Economic and ecological conditions are moderately to extensively addressed in state land management plans, and more thoroughly than in comprehensive statewide plans. Social considerations are minimally addressed in state land management plans, but less so than in comprehensive plans.
- States often use the same methods for seeking public input in both comprehensive statewide and state land management planning processes, although formal public review and comment periods are less commonly used as part of state land management planning processes.
- Substantial attempts are made to involve the public in developing state land management plans, which is similar to that of comprehensive planning. Also similar to that of comprehensive planning is the return on their investment as measured by the quality of input which is generally regarded as important.
- More so than in comprehensive planning, field staff are extensively involved in the development of state land management plans.
- Among other units within the agency, wildlife and fisheries are the disciplines that have the greatest level of involvement in developing state forest land management plans.
- Federal agencies, including the USDA-Forest Service, are minimally involved in state forest land management planning.
- Nearly all special interest groups are less involved in the development of state land management plans than in the development of comprehensive statewide plans. As with the latter type of planning, conservation and environmental organizations have the greatest level of involvement.

### Technology and Training

- Use of technology in state forest resource planning is common. While several types of technology are used, GIS systems are the most important.
- The Internet is used for a number of purposes in state forest resource planning, the most frequent being a vehicle for notifying the public about the availability of planning documents or upcoming meetings or events related to the planning process. Using the Internet to accept public comments on draft planning documents is least widely used.
- Of the many training needs identified by planners, conflict management is considered the greatest. Training on meeting facilitation techniques is considered least important of those needs assessed.
- As a source of technical support for state forest resource planning, assistance by the USDA-Forest Service could best be served by periodically sponsoring conferences to share different planning approaches and experiences, as well as developing guides for integrating federally mandated program plans.
- State forest resource planning activities are considered to moderately complement implementation of federally mandated programs state forestry agencies are responsible for implementing.

### Evaluating Forest Resource Planning Efforts

- States cite a number of tangible benefits resulting from their state forest resource planning efforts, chief among these are a better understanding of trends and conditions in their state's forest resources. Planning also helps focus the agency's mission.
- The greatest level of support for forest resource planning exists within the agency—both the state forester and the agency's field staff are considered to have moderate to extensive support for their planning efforts. Least supportive of a state forestry agency's planning programs are other state agencies.
- Of the many obstacles to more effective planning that exist, the lack of staff and financial resources as well as the time needed to carry out planning effectively are the most problematic.
- In looking at the future of state forest resource planning, a nearly unanimous opinion is that funding for planning will dictate its future direction and effectiveness. Important changes in the forest through development and conversion are also considered to be important influences on future of forest resource planning.

### Future Planning Directions

Opportunities for improving state forest resource planning include:

- © **Greater input into planning.** Processes for more effectively engaging interests in forest resource planning process should be explored.
- © **Access to quantitative planning tools.** Training sessions on how to use these tools, interpret their output, and integrate them into forest resource planning processes should be explored.
- © **Guidelines for integrating state plans with federally mandated plans.** Additional guidance from the USDA-Forest Service on how to more closely align state forest resource plans with plans for implementing federal programs (e.g., "how to" manuals and training sessions) should be explored.

- Ⓒ **Increased visibility of planning benefits among decision-makers.** Strategies for raising the awareness and importance of state forest resource planning activities within state government should be explored.
- Ⓒ **Incorporating social considerations into plans.** Opportunities for accessing existing information on the role of forests in rural community economic development, stability, and quality of life, as well as methods for collecting this information and incorporating it into state forest resource planning processes should be explored.
- Ⓒ **Improving conflict management skills.** Opportunities for state forest resource planners to participate in additional training on conflict resolution techniques should be explored.
- Ⓒ **Expanded use of the Internet in planning.** Use of the Internet in supporting state forest resource planning activities include disseminating planning documents, accessing planning data and maps, and obtaining real time feedback at critical stages in the planning process should be explored.
- Ⓒ **Sharing planning experiences and approaches.** Forums that would enable state forest resource planners to share planning experiences, approaches, and techniques should be explored.

# Contents

	<u>Page</u>
List of Figures .....	vii
List of Tables .....	viii
Introduction .....	1
Study Methods .....	2
Study Purpose .....	2
Questionnaire .....	2
Survey Recipients .....	2
Survey Administration .....	3
Results .....	3
Survey Results .....	3
Report Focus and Organization .....	4
The Landscape of Planning Undertaken by State Forestry Agencies .....	4
State Forestry Agency Planning Capacity .....	7
Comprehensive Statewide Forest Resources Planning .....	9
State Forest Land Management Planning .....	21
Planning Technology and Training Needs .....	31
Federal Role in state Forest Resource Planning .....	33
Evaluating State Forest Resource Planning Activities .....	35
Other Comments .....	38
Opportunities for Improving State Forest Resource Planning .....	38
Authors .....	40
Literature Cited .....	40
Appendix A - Questionnaire .....	41
Appendix B - Cover Letter to Questionnaire Recipients .....	58



# List of Figures

	<u>Page</u>
Figure 1. States responding to the questionnaire on state forest resource planning activities . . .	3
Figure 2. Number of different planning activities state forestry agencies have lead responsibility for undertaking among the northeast states (n=18) and all states (n=45) . . . . .	6
Figure 3. Number of full time equivalents assigned to planning activities within state forestry agencies among northeast states (n=18) and all states (n=45) . . . . .	8
Figure 4. Percent change in staff support for planning within state forestry agencies over the past ten years among northeast states (n=18) and all states (n=42) . . . . .	8
Figure 5. Financial support within state forestry agencies to support forest resources planning activities in 2003 among northeast states (n=18) and all states (n=45) . . . . .	9
Figure 6. Percent change in financial support for planning within state forestry agencies over the past ten years among northeast states (n=18) and all states (n=43) . . . . .	9
Figure 7. Level of public involvement sought (percent) in the development of comprehensive statewide forest resource plans among the northeast states (n=15) and all states (n=39) . . . . .	16
Figure 8. Quality of public input received (percent) in the development of comprehensive statewide forest resource plans among the northeast states (n=16) and all states (n=30) . . . . .	16
Figure 9. Extent of agency field staff involvement in statewide forest resource plans among the northeast states (n=16) and all states (n=30) . . . . .	18
Figure 10. Use of a single statewide versus several geographic-specific substate plans to guide the management of state administered forests among the northeast states (n=18) and all states (n=42) . . . . .	23
Figure 11. Time required to complete most recent state forest land management plan(s) among the northeast states (n=18) and all states (n=42) . . . . .	26
Figure 12. Level of public involvement sought in the development of state forest land management plans among the northeast states (n=18) and all states (n=42) . . . . .	27
Figure 13. Quality of public involvement provided in the development of state forest land management plans among the northeast states (n=18) and all states (n=42) . . . . .	28
Figure 14. Extent of agency field staff involvement in state forest land management plans among the northeast states (n=18) and all states (n=42) . . . . .	29
Figure 15. Need for federal government assistance in the development of more effective forest resource plans among the northeast states (n=18) and all states (n=44) . . . . .	34
Figure 16. Adequacy of federal assistance efforts to states in development more meaningful and effective forest resource plans among the northeast states (n=18) and all states (n=42) . . . . .	34

## List of Tables

	<u>Page</u>
Table 1. Types of planning undertaken by state forestry agencies . . . . .	5
Table 2. State forestry agency involvement in planning activities led by other state agencies . . . . .	7
Table 3. Impact of planning activities of other state agencies on state forest resources . . . . .	7
Table 4. Comprehensive statewide forest resources planning: Year in which first generation plan was completed . . . . .	11
Table 5. Comprehensive statewide forest resources planning: Number of plans prepared . . . . .	11
Table 6. Comprehensive statewide forest resources planning: Year of most recent plan . . . . .	11
Table 7. Reasons for conducting comprehensive statewide forest resource planning . . . . .	13
Table 8. Format of comprehensive statewide forest resource plans . . . . .	13
Table 9. Specific content included in comprehensive statewide forest resource plans . . . . .	13
Table 10. Extent to which comprehensive statewide forest resource plans address economic, ecological, and social considerations . . . . .	15
Table 11. Public involvement strategies utilized in the development of comprehensive statewide forest resource plans . . . . .	15
Table 12. Involvement of various disciplines within a natural resources organization in the development of comprehensive statewide forest resource plans . . . . .	18
Table 13. Involvement of other state agencies in the development of comprehensive statewide forest resource plans . . . . .	19
Table 14. Involvement of federal agencies in the development of comprehensive statewide forest resource plans . . . . .	19
Table 15. Involvement of nongovernment organizations in the development of comprehensive statewide forest resource plans . . . . .	20
Table 16. Comprehensive statewide forest resource planning: Anticipated year of next plan . . . . .	21
Table 17. Reasons given by states for not updating comprehensive statewide forest resource plan . . . . .	21
Table 18. Reasons for developing state forest land management plans . . . . .	22
Table 19. Basis for delineating geographic-specific state forest land management plans . . . . .	23
Table 20. Format of state forest land management plans . . . . .	24
Table 21. Specific content included in state forest land management plans . . . . .	24
Table 22. Extent to which state forest land management plans incorporate economic, ecological, and social considerations . . . . .	26
Table 23. Public involvement strategies utilized in the development of state forest land management plans . . . . .	27
Table 24. Involvement of various disciplines within a natural resources organization in the development of state forest land management plans . . . . .	30
Table 25. Involvement of other state agencies in the development of state forest land management plans . . . . .	30
Table 26. Involvement of federal agencies in the development of state forest land management plans . . . . .	31

**List of Tables** (continued)

	<u>Page</u>
Table 27. Involvement of private groups in the development of state forest land management plans . . . . .	31
Table 28. Importance of technology in conducting state forest resource planning . . . . .	32
Table 29. Internet use for various forest resource planning activities . . . . .	32
Table 30. Training needs of state forest resource planners . . . . .	33
Table 31. Means by which the federal government could improve its assistance to states in carrying out forest resources planning activities . . . . .	35
Table 32. Extent to which a state’s forest resource planning activities support the implementation of federally mandated program plans . . . . .	36
Table 33. Benefits of state forest resource planning activities . . . . .	36
Table 34. Support for state forest resource planning activities among various constituencies . . . . .	37

## Introduction

Planning is an integral part of forest land management in the United States. Public and private land managers make substantial investments in the development of plans to guide the management of forest resources. The format and focus of forest resource planning processes vary considerably, ranging from strategic planning to identify a long-term vision and goals for forest resources to quantitative planning models to evaluate future forest resource conditions under various investment and management scenarios (Ellefson et al. 2002). The level of management direction and specificity contained in forest resource plans is also quite variable, ranging from general characterizations of the forest resources and/or the mission of the institutions responsible for their management to detailed land management prescriptions. Outcomes of forest resource planning processes include: (1) an increasing awareness by decision-makers and the public about the important economic and ecological contributions made by these forests; (2) articulating a long-term vision for managing the resource; (3) critically evaluating and prioritizing an organization's programs and management direction; and (4) fostering communication and coordination between public agencies, as well as between public and private interests (Ellefson 1984).

Within the public sector, a great deal of the forest resource planning interest and focus has been on activities undertaken by the federal government, most notably the USDA-Forest Service. Often overlooked, however, are forest resource planning activities undertaken by state government. These planning processes impact a substantial portion of the forest lands in the United States. This includes in excess of 165 million acres of forest land directly managed by state

governments, as well as other nonfederal forests (e.g., county, municipal, and private) in which states provide land management planning assistance. All told, state forest resource planning activities have the potential to influence, directly or indirectly, management on more than two-thirds (500 million acres) of the nation's forests.

States have a long history of involvement in forest resource planning, dating back to the early 1900s (Ellefson et al. 2002). While initial efforts focused on resource protection (e.g., insects, wildfire), state forest resource planning has evolved considerably in scope, format, and sophistication. Today, state forest resource planning capacity commonly includes a variety of strategic and operational planning activities. These include comprehensive statewide forest resource plans, land management plans for state-administered forests, plans focused on specific types of forests (e.g., old-growth forests), plans focused on specific forest values or outputs (e.g., economic development, water quality), land use plans, and environmental analyses. Similarly, the number of state agencies involved in state forest resource planning has expanded considerably. While state forest resource planning was once the sole purview of state forestry agencies, it now spans a variety of state agencies. In 2000, states reported having between eight and 10 executive branch entities undertaking planning processes that affected the state's forest resources (Ellefson et al. 2002).

Previous reviews of state forest planning programs are few in number. The first formal national assessment of statewide forest resource planning found that 47 states were engaged in such planning in 1982 (McCann and Ellefson 1982). In the late 1980s, Gray and Ellefson (1987) undertook a national review of the effectiveness of statewide forest resources planning initiatives. While other

studies have focused on specific aspects of state forest resource planning programs, (e.g., Cole 1985), it has been more than 20 years since the last comprehensive national review of state forest resource planning programs was conducted (Ellefson et al. 2002). In the time since this last review was conducted, a number of important changes have occurred with respect to the institutions responsible for undertaking state forest resource planning, technologies used in forest planning, planning needs of natural resource professionals, the issues affecting the management and use of forest resources. At present, relatively little understanding exists on the current planning capability, type, efficiency, and effectiveness of existing planning programs. This information would be extremely helpful to state and federal forestry agencies in strengthening the capacity of states to successfully undertake forest resource planning.

## **Study Methods**

### **Study Purpose**

The purpose of this study was to ascertain the current status of statewide forest resource planning in the United States, with a specific focus on the planning programs that exist in the 20 northeast United States. Specific study objectives were to understand the status of state forest resource planning with respect to the processes undertaken, organizational capacity for planning, perceptions of planning effectiveness, planner training needs, adequacy of federal support for state planning efforts, and important barriers to more effective planning programs.

### **Questionnaire**

The University of Minnesota's Department of Forest Resources, in consultation with the

executive committee of the Northeastern Forest Resource Planners Association (NFRPA) and USDA-Forest Service, Northeast State and Private Forestry staff (S&PF), developed a mail questionnaire that would be used to obtain the information needed to accomplish the study's objectives (Appendix A). Major sections of the questionnaire were devoted to two major types of planning activities commonly undertaken by state forestry agencies, namely, comprehensive statewide planning and state forest land management planning. For each type, information was requested on the major reasons for conducting forest resource planning, plan format and content, and general public, agency, and organization input and involvement in plan development.

The questionnaire also contained sections requesting information on the types of planning the lead agency was responsible for undertaking, resources devoted to planning, the role of technology in forest resource planning, training needs of planners, the federal role in state forest resource planning activities, and the evaluation of agency forest resource planning activities. As part of its development several NFRPA executive committee members and S&PF participated in a pretest of the questionnaire, resulting in several suggested changes in the questionnaire's content and format.

### **Survey Recipients**

The NFRPA provided the names of seventeen contacts within state forest resource agencies in the northeast region, while the names from the remaining states were obtained from the National Association of State Foresters. A total of 50 names, representing each state, were collected and thus comprised the sample. Included on the questionnaire were instructions to have the lead person responsible for coordinating state

forest resource planning to complete the survey. Thus, in several instances, the survey respondent was not the individual to whom the questionnaire was originally directed.

### Survey Administration

Once finalized, the 15-page questionnaire was sent to state forestry agencies in all 50 states in March 2003. Administration of the survey followed a modification to techniques described by Dillman (2000), and consisted of a cover letter and questionnaire package, followed by a postcard reminder mailed two weeks after the initial questionnaire was mailed. Two weeks after the postcard was mailed, a second questionnaire package was sent to those states that had not responded, followed by phone calls to the individuals to whom the questionnaire was sent.

## Results

### Survey Response

A total of 45 of the 50 states completed and returned the questionnaire, resulting in a 90 percent response rate (Figure 1). Within the northeast region, information on state forest resource planning activities was provided by 18 of 20 states, resulting in a regional response rate of 90 percent. Collectively, the responding northeastern states account for 92 percent of the region's forest lands and 87 percent of the forests administered by state government. Nationally, responding states account for 93 percent of all forest land, and 92 percent of all state-administered forests (Smith, et al, 2001).



**Figure 1.** States responding to the questionnaire on state forest resource planning activities.

## Report Focus and Organization

The primary focus of this report is on state forest resource planning programs in the northeast region. National data on state forest resource planning programs are provided in the tables and figures as a point of reference. Where notably different from the northeast, the national data are described in the text.

## The Landscape of Planning Undertaken by State Forestry Agencies

### *Planning processes*

State forestry agencies are engaged in a variety of planning processes. These include:

*Comprehensive statewide forest resource planning.* A systematic and thorough examination of forest resource conditions, trends, and strategic issues that considers all forest resources within the state, regardless of ownership. A comprehensive statewide forest resources plan identifies the desired social, economic, and ecological outcomes of proposed actions, and proposes strategies to achieve these outcomes. A comprehensive statewide forest resources plan is typically intended to set the general direction toward an agency's mission and is not used to make specific land use or management decisions.

*State forest land management plans.* A process by which plans for the management and use of forest lands owned and/or managed by the state is specified. This type of planning contains enough specificity to provide clear direction for the management activities for state-administered forests. State forest land management plans will typically outline a set or sequence of management activities needed to achieve desired future conditions at geographic levels ranging from administrative (i.e., one or more state forests or districts within forest), ecological, or forest stand units.

*Agency work plan.* A process by which state forestry agencies allocate resources (staff,

financial, equipment) to accomplish agreed-to agency goals and performance objectives. The timelines for agency work planning typically coincide with budget cycles, most often annual or biennial.

*Planning based on select topics, issues, or activities.* Planning that focuses on a specific issue or topic of public concern. The scope of the plan is determined by the scale and complexity of the issue or topic. The public involvement process, especially with issue-based planning, may involve resolution of demands for desired future conditions that are mutually or partially exclusive of each other (e.g., old-growth forest preservation, fire prevention/suppression, open space, recreation planning, urban forests, rural development, manufacturing, and tourism).

*Land use planning.* Planning that allocates land among a variety of uses, generally or specifically (e.g., public versus private land uses, agriculture versus forest versus development, or wilderness versus multiple-use versus timberland).

### *Types of planning undertaken*

In 2003, state forestry agencies have lead responsibility for undertaking a wide range of planning activities that directly or indirectly affect decisions regarding the use, management, and protection of the state's forest resources. As indicated in Table 1, planning for the management of state-administered forest lands was the most common type of planning undertaken by state forestry agencies in 2003. In the northeast US, 83 percent of the state forestry agencies responding to our survey indicated they led efforts to develop plans that would guide the management of forests owned by the state. From a national perspective, 87 percent of all responding state forestry agencies played a leadership role in developing plans for state-administered forests. Developing

**Table 1.** Types of planning undertaken by state forestry agencies.

	Northeast Region			All States		
	Percent of states*	Percent of total planning effort		Percent of states*	Percent of total planning effort	
		Mean	Maximum		Mean	Maximum
State-administered forests	83	34	100	87	28	100
Comprehensive statewide forest resource planning	78	10	30	51	13	50
Operational agency work planning	72	24	55	84	27	80
Select topics, issues, or activities	78	14	50	82	19	65
Land use planning	28	9	30	22	9	30
Other	17	10	20	13	14	80

\* Percentages do not total 100 because respondents could select more than one response.

comprehensive statewide forest resources plans and plans that focus on specific topics, issues or activities (e.g., old growth forests) were the second most common types of planning state forestry agencies in the northeast take the lead in undertaking. Both types of plans were found to occur in 78 percent of the northeast states. By contrast, approximately half (51 percent) of the nation's state forestry agencies conducted statewide forest resources planning, whereas greater than four out of five forestry agencies developed plans that were based on a specific topic or issue. Of those planning processes common to forest resources, land use planning was the least common, wherein such efforts were led by only 28 percent of northeast state forestry agencies and 22 percent nationwide led such efforts.

*Number of different planning activities within a state*

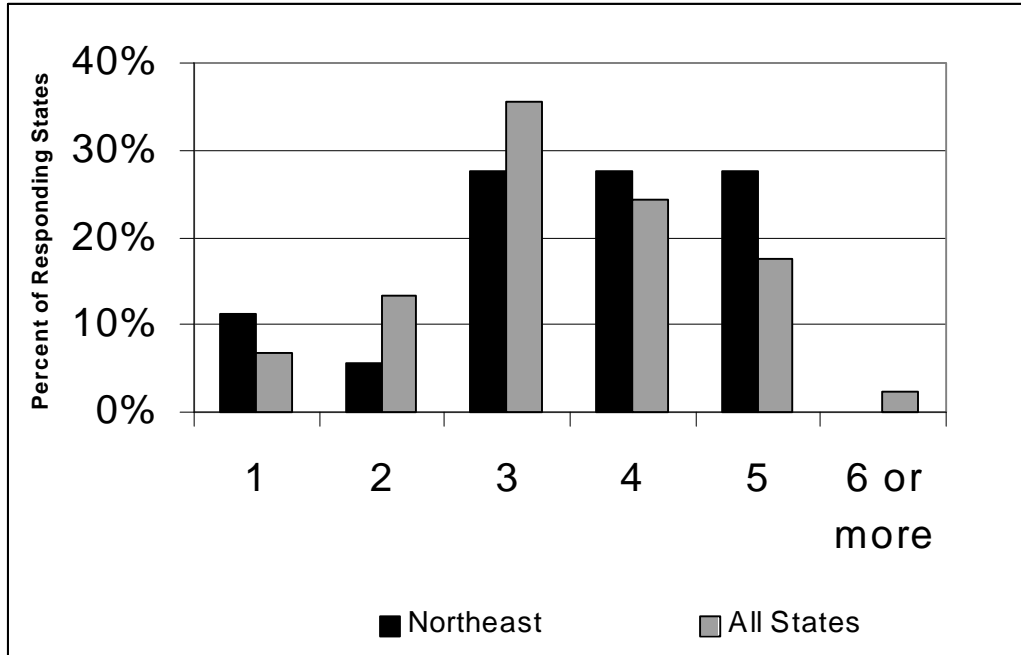
Within the northeast region, state forest resource planners managed as few as one to as many as five different planning initiatives in 2003 (Figure 2). Regionwide, this amounted to an average of 3.6 distinct planning efforts the agency had lead responsibility for undertaking. Greater than 80 percent of the responding northeast states indicated they led between three to five forest resource planning

programs. Only two states (11 percent) stated their forest resource planning program consisted of just one type of planning. When all states responding to our survey are considered, the average number of different planning programs the state forestry agency had responsibility for was 3.4 with individual states managing as many as six different planning efforts.

*Allocation of planning efforts*

State forestry agencies chose to allocate their planning resources quite differently among the different types of planning activities they have responsibility for undertaking (Table 1). On average, one-third of all planning time within state forestry agencies in the northeast was spent developing plans for the management of state-owned forests in 2003. Developing annual or biennial work planning and/or budget planning, the second most time-demanding planning activity among northeastern state forestry agencies, consumed an average of 24 percent of an agency's available planning resources. At the national level, state forestry agencies allocated roughly equal resources among state forest planning and agency work planning (28 and 27 percent, respectively). Only 10 percent of the planning resources within northeastern state forestry agencies





**Figure 2.** Number of different planning activities state forestry agencies have lead responsibility for undertaking among the northeast states (n=18) and all states (n=45).

were spent on developing comprehensive statewide forest resources plans—significantly less than the amount of time allocated to statewide forest resources planning programs when first-generation plans were developed in the early 1980s (Gray and Ellefson 1989). At a national level, comprehensive statewide forest resources planning consumed, on average, roughly 13 percent of the total planning effort within a state forestry agency.

The proportion of total available planning effort dedicated to a particular type of planning activity varied considerably among individual northeastern states in 2003 (Table 1). Some states devoted as much as their entire planning effort toward the development of plans for the management of state forest lands. More common, however, was an agency that apportioned resources among multiple planning processes. For those states that did, no one planning process consumed greater than 55 percent of the agency’s planning resources. By comparison, some

states in the west and south spent as much as 80 percent of their planning resources on agency work planning, and up to 65 percent of their time on topic- or issue-specific-based forest resource plans. Comprehensive statewide forest resources planning, a major focus of agency planning efforts in the 1980s, never consumed more than 30 percent of a state forestry agency’s planning resources in the northeast, whereas some western and southern states spent as much as half of their time engaged in this type of planning.

*Involvement in other agency planning efforts*

In addition to planning activities initiated within the agency, state forest resource planners often participate in the planning efforts undertaken by of other state agencies. Our survey found that these individuals are involved in a wide range of nonforest planning processes (Table 2). Of the different planning efforts examined, northeast state forest resource planners were found to have the greatest participation in planning efforts of

state fish and game management, water and soil resources, and agricultural agencies (mean ratings of 2.4, 2.6, and 2.7, respectively, based on a rating scale of 1=extensively involved, 2=moderately involved, 3=minimally involved, 4=not involved. On average, state forest planner involvement in transportation, economic development, pollution control, and waste management planning was extremely minimal.

**Table 2.** State forestry agency involvement in planning activities led by other state agencies.

State agency	Northeast region (n=18)		All states (n=45)	
	Mean*	S.D.	Mean*	S.D.
Fish and game	2.4	0.7	2.5	0.8
Water and soil resources	2.6	0.6	2.6	0.7
Agriculture	2.7	0.7	2.9	0.8
Economic development	3.1	0.7	3.0	0.8
Pollution control	3.2	0.5	2.9	0.7
Transportation	3.3	0.6	3.3	0.6
Waste management	3.4	0.5	3.4	0.6

\* Rating scale: 1=extensively involved, 2=moderately involved, 3=minimally involved, 4=not involved.

### *Influence of other planning efforts on state forest resources*

When asked about the perceived influence other state agency's planning efforts have on forest resources in their state, forestry planners felt the level of influence was minimal to moderate (Table 3). Fish and game management planning was perceived to be most influential on the state's forest resources, with a mean rating in the northeast and among all states of 1.9 (1=extensively affected, 2=moderately affected, 3=minimally affected, 4=not affected). Economic development and water and soil resources planning were the second highest rated state planning activities affecting forest resources (mean ratings of 2.2 each). Of the types of planning activities evaluated, only the planning activities conducted by a state's waste management agency was considered to have less than a "minimal" effect on the state's forest

resources. From a national perspective, forest resource planners rated the relative importance of various state planning activities on the state's forest resources very similarly to the northeast state forest resource planners.

**Table 3.** Impact of planning activities of other state agencies on state forest resources.

State agency	Northeast region (n=18)		All states (n=45)	
	Mean*	S.D.	Mean*	S.D.
Fish and game	1.9	0.7	1.9	0.8
Economic development	2.2	0.5	2.4	0.7
Water and soil resources	2.2	0.8	2.1	0.8
Transportation	2.4	0.9	2.6	0.8
Agriculture	2.5	0.9	2.6	0.9
Pollution control	2.8	0.7	2.6	0.7
Waste management	3.2	0.4	3.3	0.5

\* Rating scale: 1=extensively affected, 2=moderately affected, 3=minimally affected, 4=not affected.

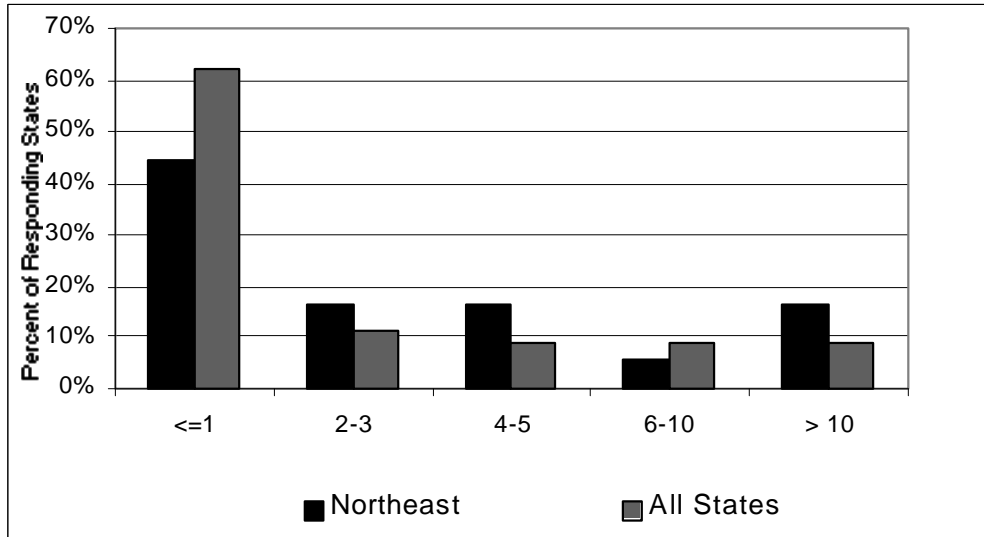
## State Forestry Agency Planning Capacity

### *Human resources devoted to planning*

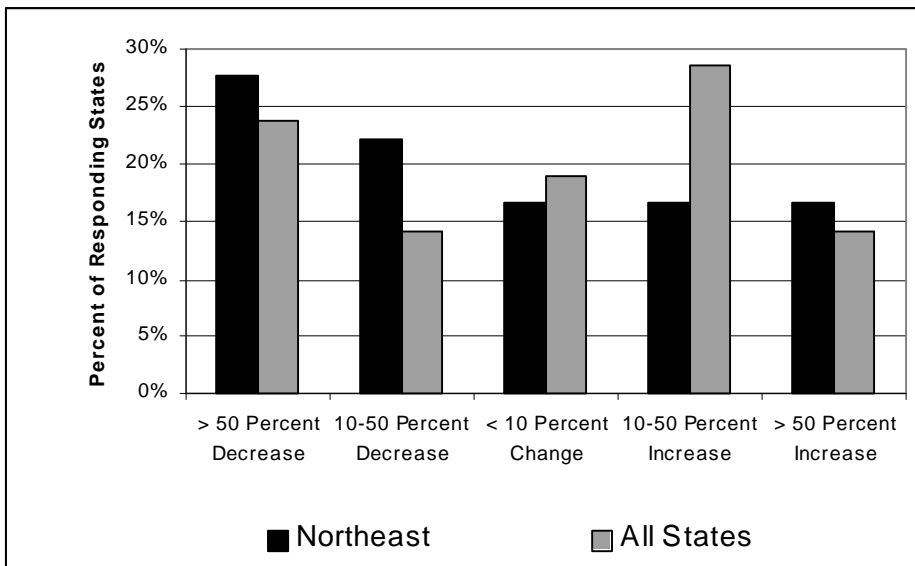
Gray and Ellefson (1987) reported that in 1981, the period when most states were preparing first generation statewide forest resource plans, staff resources devoted to planning averaged 1.5 persons across the northeast 20 states. By 1985, as these planning processes neared completion, the regional average had dropped to 1.2 persons per state. Over the following two decades, states have considerably expanded the resources devoted to planning. Our survey found that in 2003, state forestry agencies in the northeast had, on average, 4.4 staff equivalents devoted to forest resources planning activities, with individual state planning capacity as high as 20 full-time equivalents (FTE) (Figure 3). Nearly half the northeast states had one or fewer planners, while three states had more than ten. The average number of forest resource planners in the northeast exceeded the national average. Across the US, state forestry agencies had an

average of 3.7 FTEs. Individual states had as many as 50 FTEs assigned to work on forest resource planning, although nearly two-thirds of the responding state forestry agencies indicated they had one or fewer FTEs devoted to planning activities.

Over the past ten years, the northeast region has seen considerable variation in a state’s capacity to undertake forest resource planning activities (Figure 4). Twenty-eight percent of the northeast states indicated their planning staff capacity has decreased by more



**Figure 3.** Number of full time equivalents assigned to planning activities within state forestry agencies among northeast states (n=18) and all states (n=45).



**Figure 4.** Percent change in staff support for planning within state forestry agencies over the past ten years among northeast states (n=18) and all states (n=42).

than 50 percent over the past decade, and 22 percent lost between 10 and 50 percent of their capacity. Together, half the states indicated a loss in planning staff of at least 10 percent. Of those states that added planning staff capacity over the past decade, 17 percent (three states) reported increases exceeding 50 percent, and an additional 17 percent indicated gains between 10 to 50 percent. Seventeen percent of the 18 responding states in the region (three states) indicated that planning staff capacity has changed by less than 10 percent. The variation in how individual state forestry agencies have adjusted their planning resources during the past ten years is also evident at the national level, where 38 percent (16 states) reported losing at least 10 percent of their planning staff capacity, while 43 percent (18 states) reported staff increases of the same magnitude. Only 19 percent (eight states) indicated planning staff capacity changed by less than 10 percent over the past decade.

#### *Financial resources devoted to planning*

Forestry agencies in the northeast region devoted an average of \$433,000 annually to support forest resource planning activities in 2003 (Figure 5). This represents more than a tenfold increase in planning resources available to these same agencies in 1985. Even when adjusted for inflation, planning budgets for forestry have increased substantially over the past two decades in real dollars. This “average” budget can give a misleading impression of state expenditures on forest resource planning. Greater than three-fourths of the responding northeast states indicated their annual planning budgets totaled \$250,000 or less. One state indicated its annual forest resource planning budget was \$3.5 million, whereas another stated it had no budget for conducting forest resources planning in 2003. Nationally, states budgeted \$400,000 for forest resources planning in

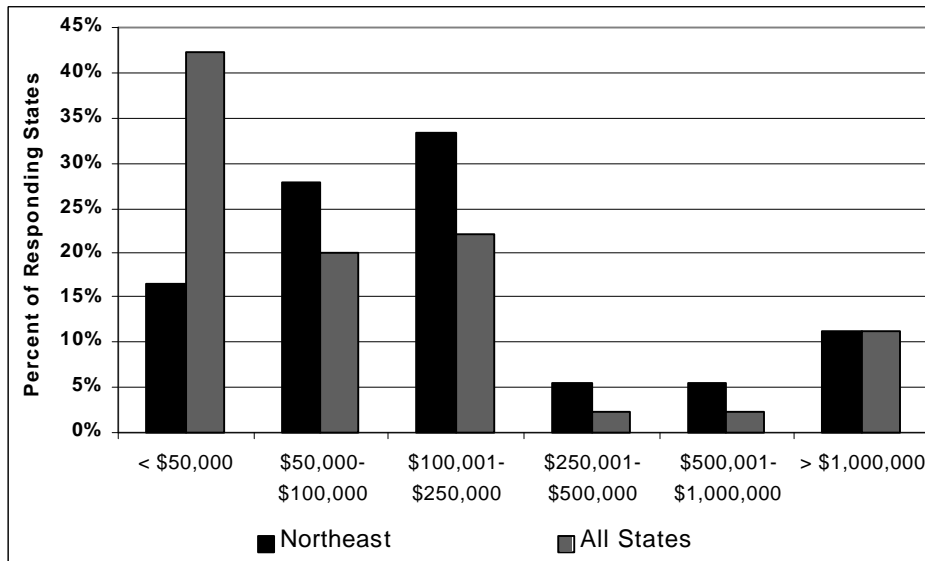
2003. Forty-two percent (19 states) had no more than \$50,000 allocated for planning, whereas 11 percent (five states) spent more than one million dollars each in 2003 on forest resources planning activities.

When asked to specify how forest resource planning budgets have changed over the last ten years, one-third of the respondents indicated a decrease by 50 percent (Figure 6). When considering the states in the region that have lost at least 10 percent of their planning budget over the past decade, the percentage increases 44 percent. However, not all of the region’s states have experienced shrinking planning budgets over the past ten years. Thirty-nine percent of the responding state forestry agencies (seven states) indicated the financial resources available for forest resources planning has increased by at least 10 percent over the past decade, with 11 percent (two states) witnessing budget increases in excess of 50 percent over 1994 planning budgets. At the national level, the number of states experiencing planning budget losses of at least ten percent since 1994 equaled the number of states with budget increases of at least this magnitude over the same ten-year period.

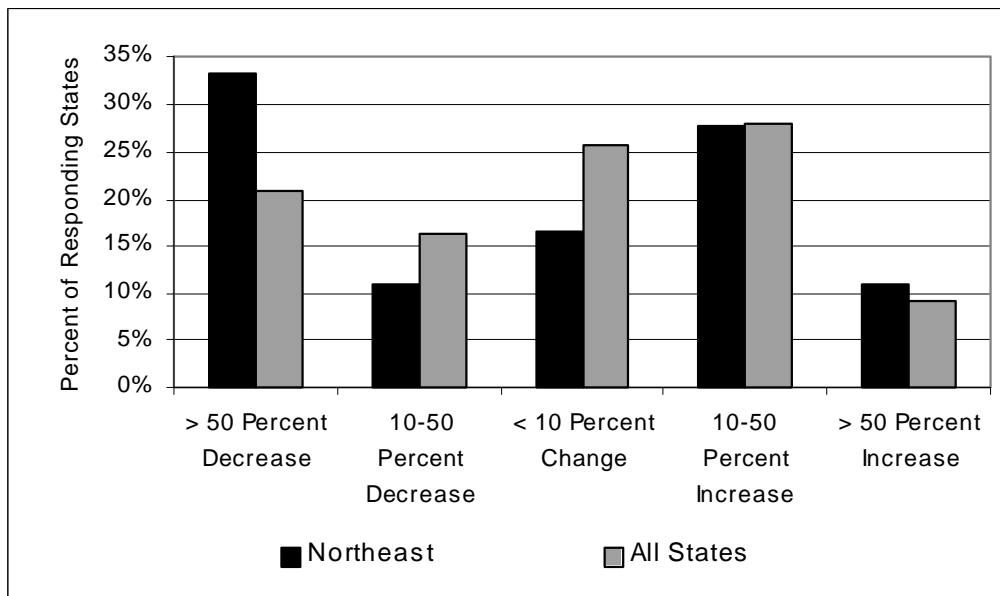
#### **Comprehensive Statewide Forest Resources Planning**

##### *Year of initial plan*

The Cooperative Forestry Assistance Act of 1978 was a major impetus for the development of statewide forest resources programs, providing financial and technical assistance to states to help develop comprehensive and strategic plans that considered a wide range of forest resources values and uses (Gray and Ellefson 1989). In their review of state planning efforts in the northeast, Gray and Ellefson (1989) reported that all northeast states completed their first generation plans in the 1980s. Our survey



**Figure 5.** Financial support within state forestry agencies to support forest resources planning activities in 2003 among northeast states (n=18) and all states (n=45).



**Figure 6.** Percent change in financial support for planning within state forestry agencies over the past ten years among northeast states (n=18) and all states (n=43).

generated slightly different information about when initial statewide forest resources plans were completed. Only 59 percent of the responding northeast states indicated they completed their first plan between 1980-1989 (Table 4). Three of the 17 states (18 percent) responding to this question indicated their

initial plans were prepared in the 1990s, and four (24 percent) stated initial comprehensive plans were completed prior to 1980. Possible explanations for this inconsistency include different definitions of what constitutes a “comprehensive forest resources plan,” when the plan was “completed,” as well as loss of

“institutional memory” of previous planning efforts. From a national perspective, 28 percent of all responding states completed their initial comprehensive statewide forest resources plan prior to 1980, and 15 percent since 1990.

**Table 4.** Comprehensive statewide forest resources planning: Year in which first generation plan was completed.

First year plan was prepared	Northeast region		All states	
	Freq	%*	Freq	%*
Prior to 1980	4	24	9	28
1980-1984	6	35	11	34
1985-1989	4	24	7	22
1990-1994	2	12	2	6
1995-1999	1	6	3	9
Total	17	100	32	100

\* Percentages may not total 100 percent due to rounding.

#### *Number of plans prepared*

Northeastern state forestry agencies have prepared as many as five comprehensive statewide forest resources plans—three states reported doing so in 2003 (Table 5). Only one-third of the responding northeastern states reported having a single-generation comprehensive statewide forest resources plan. All others have prepared at least two plans. Nationwide, five states indicated they have prepared at least five comprehensive

**Table 5.** Comprehensive statewide forest resources planning: Number of plans prepared.

Number of plans prepared	Northeast region		All states	
	Freq	%*	Freq	%*
One	4	33	9	39
Two	3	25	4	17
Three	2	17	5	22
Four	0	N/A	0	N/A
Five or more	3	25	5	22
Total	12	100	23	100

\*Percentages may not total 100 percent due to rounding.

statewide plans for their state’s forests, with one state reporting that it has generated 14 comprehensive plans over a 32-year period.

#### *Year of the most recent plan*

The publication date of a state’s most recent comprehensive statewide forest resources plan varies considerably within the northeastern region (Table 6). The majority (57 percent) of the region’s state forestry agencies have plans that are less than ten years old, with two states (13 percent) reporting their comprehensive statewide forest resources plan is three years old or less. Across the region, all but four of the reporting states (26 percent) indicated their most recent plan was completed in 1990 or later. Compared to the nation, the northeast has a greater percentage of their states with comprehensive statewide forest resources plans that are less than a decade old (57 percent for northeast, 45 percent for all states). However, when considering the current plans with publication dates of 1990 or later, the northeast and U.S. are nearly identical—76 and 74 percent of their plans, respectfully, are 14 years old or newer.

**Table 6.** Comprehensive statewide forest resources planning: Year of most recent plan.

Year of most recent plan	Northeast region		All states	
	Freq	%*	Freq	%*
1980-1984	2	13	4	13
1985-1989	2	13	4	13
1990-1994	3	19	9	29
1995-2000	7	44	9	29
2000-2003	2	13	5	16
Total	16	100	31	100

\*Percentages may not total 100 percent due to rounding.

#### *Reasons for comprehensive planning*

A state’s decision to engage in a comprehensive statewide forest resources planning process is driven by a number of important factors. This “bundle” of factors is

often unique to a state and reflects a complex mix of biological/physical, economic, and political conditions surrounding the management and use of its forest resources. State forest resource planners provided insight on the factors which are most important drivers of comprehensive statewide forest resources planning activities in their state (Table 7). Chief among these in the northeast is providing a long-term vision or direction for the management of a state's forest resources, which received a mean importance rating of 1.2 (1=very important; 2=moderately important; 3=not important). Changing economic conditions impacting the state's forest resources and the need to raise the awareness of emerging forest resource issues within the state were also cited as important reasons for conducting comprehensive statewide forest resources planning (mean ratings of 1.4 each). Interestingly, the existence of legislation mandating the development of a comprehensive statewide forest resources plan was perceived to have only a modest influence on why states undertake such planning, although its importance was considered moderate (mean rating of 1.9).

#### *Plan format*

First-generation comprehensive forest resources planning in the northeast was largely an issue-driven planning process, with the goal to systematically identify, analyze, and resolve problems or concerns perceived as important to the state's forestry community (Gray and Ellefson 1989). This type of planning is still quite common, both in the northeast where three-fourths of the responding state forestry agencies indicated the use of such a format, as well as nationwide where it was applied in 17 states (65 percent) (Table 8). First generation comprehensive state forest resources plans also often included both long-range resource assessments as well

as more detailed documents to guide the implementation of state forestry programs. Our survey revealed that separate resource assessments and program plans are still common in the northeast where eight states (67 percent) continue to use this format. Several states are now organizing their comprehensive plans around specific agency or resource performance measures, wherein five responding northeast states (42 percent) and ten states nationwide (39 percent) indicated the use of this format.

#### *Plan content*

Table 9 identifies the major components of comprehensive statewide forest resource plans. All of the northeastern state's plans contain a vision for the state's forest resources, an identification of strategic forest resource issues, and historical information on the state's forest resources. Thirteen of the 15 responding states in the region (87 percent) have plans that describe and provide direction for programs administered by the state's forestry agency and include socioeconomic information pertinent to the management and use of its forest resources. Least frequently mentioned as components of comprehensive plans in the northeast were environmental impact analyses of proposed management directions identified in the plans. Nationally, the content of comprehensive statewide forest resource plans largely mirror those found in the northeast.

#### *Plan focus*

Public agencies are continually challenged to manage forests in a manner that balance the ecological, economic, and social values placed on these resources by the public. Comprehensive statewide forest resources plans provide a venue to clarify and define these components and their relative emphasis in the management of a state's forest resources. We asked state forest resource

**Table 7.** Reasons for conducting comprehensive statewide forest resource planning.

	Northeast region (n=18)		All states (n=45)	
	Mean <sup>1</sup>	S.D.	Mean <sup>1</sup>	S.D.
Providing a long-term vision/direction for management of forest resources	1.2	0.4	1.4	0.6
Changing economic conditions impacting the state's forest resources	1.4	0.5	1.5	0.6
Raising awareness of emerging forest resource issues	1.4	0.5	1.5	0.6
Changing physical/ecological condition of the state's forest resources	1.5	0.6	1.7	0.7
Increasing legislative and policy-makers awareness of state's forest resources	1.8	0.9	1.7	0.8
Need for cross-ownership assessment of forest resources conditions/ coordination of strategies	1.8	0.5	1.9	0.7
Pressure from state forest resource stakeholders	1.8	0.6	1.9	0.6
Legislative mandate	1.9	0.8	2.0	0.9
Providing a process for developing agency work planning and budget priorities	1.9	0.6	1.8	0.7

<sup>1</sup> Rated on a scale where 1=very important and 3=not important.

**Table 8.** Format of comprehensive statewide forest resource plans.

	Northeast region (n=12)		All states (n=26)	
	Freq	%*	Freq	%*
Plan is organized around a limited number of strategic forest resource issues	9	75	17	65
Plan contains separate forest resource assessment and program documents	8	67	11	42
Plan is organized around specific performance measures (e.g., criteria and indicators of forest sustainability)	5	42	10	39
Plan develops multiple future forest management and timber harvesting scenarios and evaluates resulting forest resource conditions and economic and ecological implications	2	17	4	15
Other	2	17	5	19

\* Percentages do not total 100 because respondents could select more than one response.

**Table 9.** Specific content included in comprehensive statewide forest resource plans.

	Northeast region (n=15)		All states (n=30)	
	Freq	%*	Freq	%*
Historical information on the state's forest resources	15	100	25	83
Identification of strategic forest resource issues	15	100	27	90
Vision for the state's forest resources	15	100	27	90
Description of/direction for agency-specific programs	13	87	25	83
Socioeconomic information	13	87	24	80
Strategies for cross-ownership coordination	10	67	14	47
Prioritization or ranking of strategic forest resource issues	9	60	15	50
Description of state laws and regulations affecting forest resources	7	47	15	50
Projections of future forest resource conditions	7	47	16	53
Site-specific land management strategies	5	33	10	33
Agency budget/funding history	3	20	9	30
Environmental impact analysis	2	13	4	13

\* Percentages do not total 100 because respondents could select more than one response.



planners to identify the extent to which economic, social, and ecological considerations are incorporated into their statewide forest resource plans. On average, comprehensive forest resource plans in the northeast give greatest attention to ecological considerations; specifically forest ecosystem health and species diversity (Table 10). Each had an average rating of 1.6 (1=extensively addressed, 2=moderately addressed, 3=minimally addressed, 4=not addressed). Wildlife habitat also was given extensive treatment in such plans (mean rating of 1.8). Least emphasized in northeast state comprehensive plans was nonwood forest products (2.7 mean rating). State planners indicated that wood products manufacturing were moderately addressed in comprehensive plans, with tourism and recreational aspects to a lesser degree. Nationally, the emphasis on ecological, social, and economic aspects of forest resources mirrors the patterns found in the northeast.

#### *Means of public involvement*

Input and involvement of the public is an integral component of forest resources planning in the public sector, as it provides an opportunity for the interjection of new ideas and perspectives. Additionally, public support for the plan itself as well as resultant management activities can be greatly influenced by the public's perception of the openness and sincerity by which the agency seeks and incorporates outside perspectives. State forestry agencies used a number of methods to engage the public in comprehensive statewide forest resources planning (Table 11). In the northeast, public meetings and open houses are the most common means of seeking public involvement, wherein 86 percent of the region's responding states indicated using this method. Agencies will often establish specific opportunities for the public to review

and comment on draft plans prepared. Our survey found that 11 of the 14 responding states (79 percent) incorporated public review and comment periods into their process for developing comprehensive statewide forest resources plans. More than a third of the region's state forestry agencies (five states) used the Internet to post planning documents and related materials and accepting public comments, and three states (21 percent) developed focused media campaigns at key points in the plan development process. One northeast state used a steering committee as a principal means of seeking the public's input into the development of its plan.

#### *Extent of public input sought*

When asked about the level of public involvement states sought in the development of their state's comprehensive statewide forest resources plan, northeast state forest planners felt the public has ample opportunity to participate. Across the northeast, the mean rating of public input sought was 1.7 (1=extensive, 2=moderate, 3=minimal, 4=none) (Figure 7). None of the northeastern states developed a comprehensive statewide forest resources plan without some opportunity for the public to provide input. Nationally, state planners rated the level of public input as only moderate (mean rating of 2.0), meaning public input was provided primarily at the beginning and end of the planning process, with minimal opportunity for public involvement as the plan was being developed.

Figure 7 illustrates how state forest resource planners in the northeast and across the U.S. described their efforts to engage the public in the development of their comprehensive statewide forest resource plan. Nearly half of the responding states in the northeast felt their effort to seek the public's input was extensive. In contrast, only 35

**Table 10.** Extent to which comprehensive statewide forest resource plans address economic, ecological and social considerations.

	Northeast region (n=18)		All states (n=45)	
	Mean <sup>1</sup>	S.D.	Mean <sup>1</sup>	S.D.
<b><i>Economic considerations:</i></b>				
Wood products manufacturing	2.0	0.5	2.0	0.7
Recreation and tourism	2.3	0.6	2.4	0.6
Nonwood forest products	2.7	0.8	2.8	0.8
<b><i>Ecological considerations:</i></b>				
Ecosystem/ species diversity	1.6	0.6	1.8	0.8
Forest ecosystem health	1.6	0.6	1.7	0.7
Wildlife habitat	1.8	0.6	1.8	0.5
Soil and water resources	2.2	0.7	2.0	0.7
<b><i>Social considerations:</i></b>				
Consumption patterns/trends	2.4	0.7	2.4	0.8
Cultural uses and values	2.4	0.8	2.4	0.9
Community stability/quality of life	2.5	0.7	2.4	0.9

<sup>1</sup> Rated on a scale where 1=extensively addressed, 2=moderately addressed, 3=minimally addressed and 4=not addressed.

**Table 11.** Public involvement strategies utilized in the development of comprehensive statewide forest resource plans.

	Northeast region (n=14)		All states (n=29)	
	Freq	%*	Freq	%*
Public meetings or open houses	12	86	22	76
Formal public review/comment period	11	79	20	69
Ongoing opportunity for the public to provide input	8	57	17	59
General informational mailings	7	50	12	41
Public opinion surveys	7	50	8	28
Web-based input	5	36	8	28
Media campaigns	3	21	4	14
Other	3	21	6	21

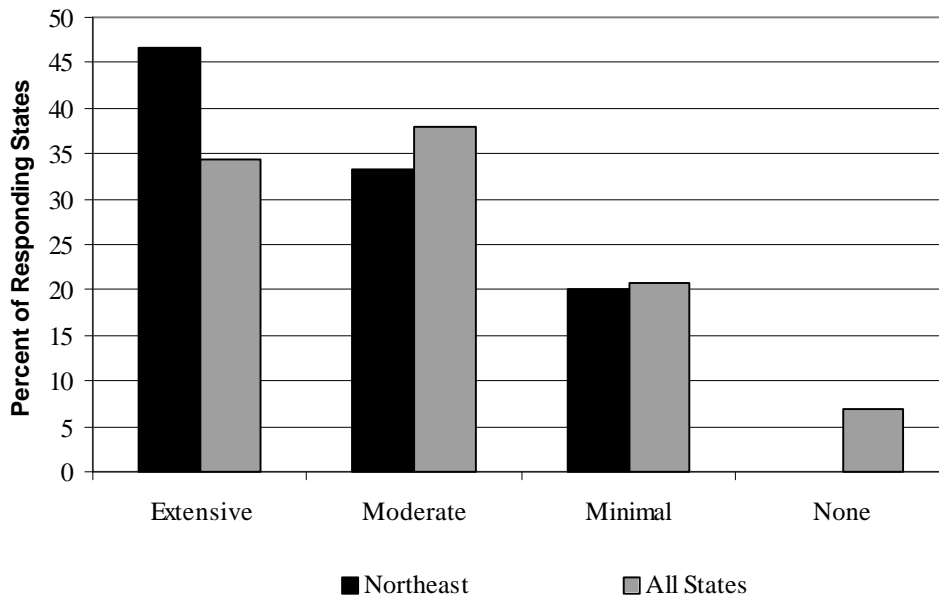
\* Percentages do not total 100 because respondents could select more than one response.

percent of planners nationwide felt this way. More common was the perspective that agency efforts to seek public opinion were moderate. Three states (8 percent) outside the northeast did not seek public input as part of their planning process.

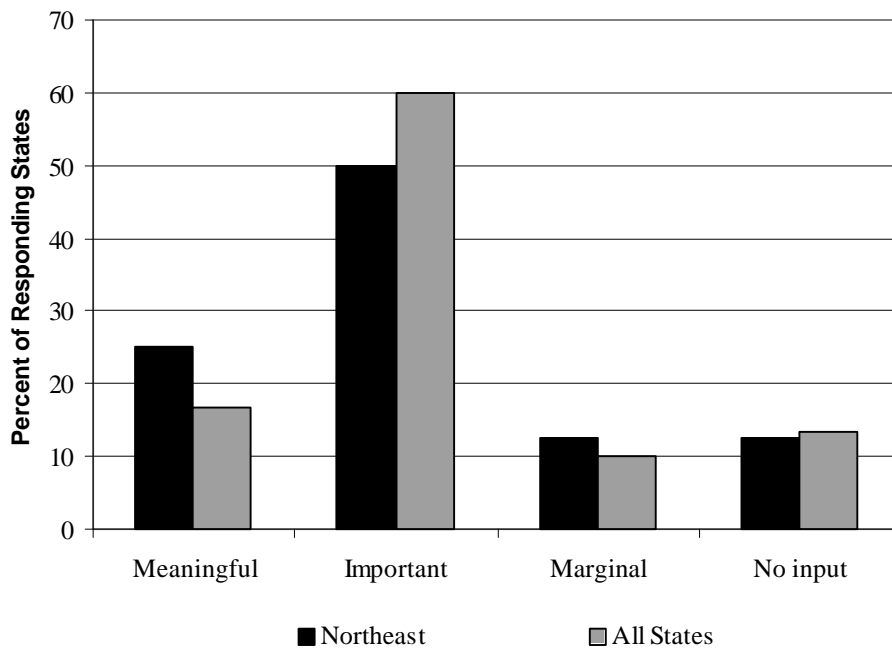
#### *Quality of public input*

Northeast state forest resources planners felt public input occasionally influenced the scope and/or content of the planning process or resulting products of the plan. The average rating of the quality of public input as 2.1

(1=meaningful, 2=important, 3=marginal, 4=no input) (Figure 8). However, two of the 16 northeast states responding to this question felt that although they provided opportunities for the public to become engaged in the planning process, the public did not participate in the development of their comprehensive statewide forest resources plan. The survey found a strong positive correlation between the extent of public input sought and quality of public involvement obtained ( $p < .01$ ). States that aggressively sought out the public's involvement in the development of



**Figure 7.** Level of public involvement sought (percent) in the development of comprehensive statewide forest resource plans among the northeast states (n=15) and all states (n=39).



**Figure 8.** Quality of public input received (percent) in the development of comprehensive statewide forest resource plans among the northeast states (n=16) and all states (n=30).

comprehensive statewide forest resources plans found the quality of the public's input to be quite good. Similarly, states that did not put a lot of effort into seeking out the public's ideas found the quality of the public input they did receive to be marginal. The survey also documented that certain methods of engaging the public in statewide forest resources planning made a difference in the level and quality of input. In particular, states that used open houses as a forum for involving the public were rewarded with both a high level of public involvement and valuable perspectives that meaningfully shaped the plan. Differences in the quality of public input were not discernable with regards to the northeast and all states.

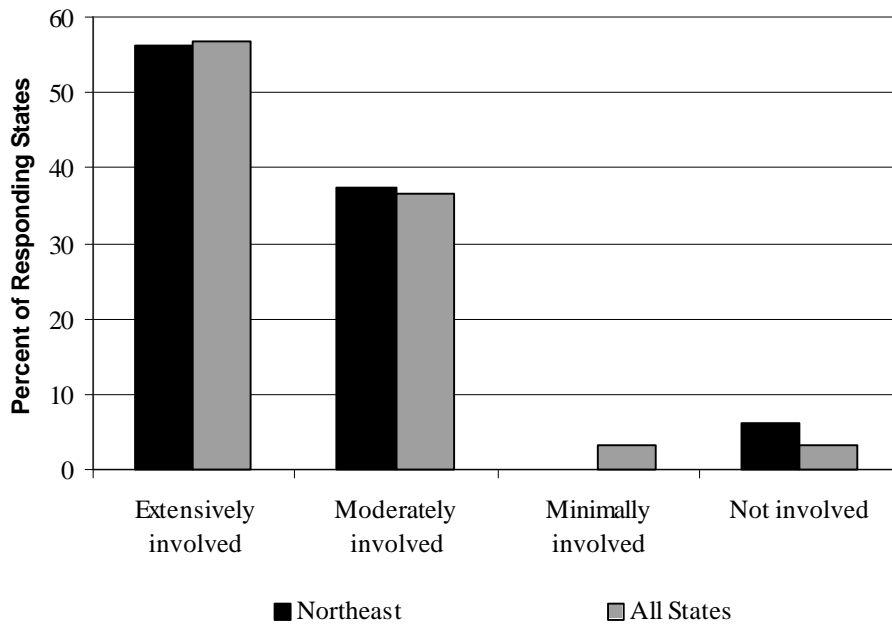
#### *Consultation with agency field staff*

The unique perspectives offered by an agency's field staff regarding the types and importance of issues affecting the state's forest resources, as well as strategies for effectively addressing them, are extremely valuable in the development of statewide comprehensive forest resource plans. Further, as the agency's personnel for the implementation of new policies and programs resulting from the plan, their involvement in the plan's development is critical. Northeastern state forest resources planners felt the level of consultation with agency field staff in the development of their comprehensive statewide forest resources plan existed at a fairly high level (Figure 9). Across the northeast, the average rating of involvement with field staff was 1.6 (1=extensive involvement, 2=moderate involvement, 3=minimal involvement, 4=none). One state (6 percent) indicated its field staff were not involved in the development of its comprehensive statewide forest resources plan. All others perceived agency staff consultation in the development of their plans to be moderate to extensive.

Across all states, the average rating of field staff involvement was 1.5, with response patterns similar to what was found in the northeast.

#### *Involvement of stakeholder groups*

A wide variety of public and private interests can be materially affected by the outcomes of comprehensive statewide forest resources plans. They can include other disciplines with the organization where the state forestry agency is located (e.g., separate fisheries, wildlife divisions or departments), other state agencies with an interest in state forest resources (e.g., pollution control and economic development), federal agencies (e.g., USDA-Forest Service), local governments, and interest groups (e.g., tourism, forest products trade associations). As such, the involvement of these groups in the development and implementation of these plans is extremely important. Table 12 indicates the perception of state forest resource planners regarding the extent to which different resource disciplines co-located with the state forestry agency (e.g., wildlife) are involved in the development of their comprehensive statewide forest resource plans. Of the disciplines examined, northeast planners felt wildlife interests within their agency have the greatest level of involvement in their planning activities, receiving a mean rating of 1.9 (1=extensively involved, 2=moderately involved, 3=minimally involved, 4=not involved). State mineral and ecological services units were perceived to have the least level of involvement in comprehensive statewide forest resources planning (2.9 and 2.5, respectively). Nationally, the attitudes of state forest resource planners regarding the level of involvement of other disciplines in their agency in developing the plan generally mirror those of northeast planners.



**Figure 9.** Extent of agency field staff involvement in statewide forest resource plans among the northeast states (n=16) and all states (n=30).

**Table 12.** Involvement of various disciplines within a natural resources organization in the development of comprehensive statewide forest resource plans.

State agency	Northeast region (n=18)		All states (n=45)	
	Mean <sup>1</sup>	S.D.	Mean <sup>1</sup>	S.D.
Wildlife	1.9	0.6	1.8	0.7
Fisheries	2.2	0.8	2.4	0.9
Parks and Recreation	2.3	0.8	2.4	0.9
Watershed Management	2.4	0.9	2.2	1.0
Ecological services	2.5	1.1	2.2	1.1
Minerals	2.9	1.1	3.2	0.9

<sup>1</sup> Rated on a scale where 1=extensively involved, 2=moderately involved, 3=minimally involved, 4=not involved.

State agencies outside the state forestry agency are generally minimally involved in the development of comprehensive statewide forest resource plans (Table 13). Of those agencies evaluated, fish and game are perceived to have the greatest level of involvement in comprehensive statewide forest resources planning, both within the northeast as well as nationwide (mean rating of 2.1 and 1.9, respectively). In contrast, state

pollution control agencies (which oversee regulatory and permitting programs directly or indirectly affecting the state’s forest resources and associated industries) have extremely little involvement in developing comprehensive statewide forest resources plans. In the northeast, these agencies received a mean rating of 3.5, meaning their perceived level of involvement was between minimal and nonexistent. Nationally, state pollution

control agencies are also perceived to have less than a minimal involvement in the development of comprehensive statewide forest resources plans. Waste management and transportation also had low mean ratings both in the northeast and throughout the nation.

With the exception of the USDA-Forest Service, all other federal agencies play virtually no role in the development of comprehensive statewide forest resources plans (Table 14). This includes the United States Department of the Interior's (USDI) Fish and Wildlife Service, National Park Service, and Bureau of Land Management. Even so, northeast state forest planners rate the USDA-Forest Service's involvement as somewhat less than moderate (average rating of 2.3). At a national level, USDA-Forest

Service involvement in state planning activities is somewhat higher, although still considered only moderate.

The involvement of county and local governments in the development of comprehensive statewide forest resource plans was perceived by planners to be modest. On average, this level of government received a mean rating of 2.6 across the northeast, suggesting a minimal to moderate level of involvement. Nearly identical ratings of involvement in comprehensive statewide forest resource plan development were assigned when the perspectives of all state planners are considered. In general, the participation of local units of government was less than state agencies and the USDA-Forest Service, yet rated higher than all other federal agencies.

**Table 13.** Involvement of other state agencies in the development of comprehensive statewide forest resource plans.

State agency	Northeast region (m=18)		All states (n=45)	
	Mean*	S.D.	Mean*	S.D.
Fish and game	2.1	1.0	1.9	0.9
Water and soil resources	2.5	0.9	3.4	0.9
Agriculture	2.8	1.0	2.7	1.0
Economic development	3.0	0.8	3.0	0.8
Pollution control	3.5	0.5	3.2	0.9
Transportation	3.5	0.5	3.4	0.6
Waste management	3.5	0.5	3.6	0.7

\* Rated on a scale where 1=extensively involved, 2=moderately involved, 3=minimally involved, 4=not involved.

**Table 14.** Involvement of federal agencies in the development of comprehensive statewide forest resource plans.

State agency	Northeast region (n=18)		All states (n=45)	
	Mean*	S.D.	Mean*	S.D.
USDA-Forest Service	2.3	0.8	2.0	0.8
Fish and Wildlife Service	3.3	0.7	2.9	0.9
Environmental Protection Agency	3.6	0.6	3.3	0.8
National Park Service	3.8	0.4	3.6	0.6
Corp of Engineers	3.8	0.4	3.6	0.6
Bureau of Land Management	3.9	0.4	3.3	0.9

\* Rated on a scale where 1=extensively involved, 2=moderately involved, 3=minimally involved, 4=not involved.

In considering the many different interest groups affected by plans for the management of forest resources within their state, conservation and environmental organizations have the greatest level of involvement in developing comprehensive statewide forest resources plans in the northeast (mean rating of 1.8 each) (Table 15). Similarly, forest products industry is also considered to be actively involved in the development of these plans (mean rating of 1.9). Tribal groups are thought to be least involved of the interest groups examined and are considered to have less than minimal involvement (mean rating of 3.4). National trends regarding the involvement of interest groups largely follow those found within the northeast.

#### *Future plans*

Ten of 17 responding northeastern states (59 percent) indicated they plan to revise their comprehensive statewide forest resource plan in the future. All but one of the ten knew the expected year such a revision would take place (Table 16). Of the remaining nine, each indicated their next generation plan would be completed within the next three years (by 2006).

Nationally, there is roughly the same number of states who are currently updating or expect to update their plan as there are states with no such intent. Of those that are currently revising/updating their comprehensive statewide forest resource plan, four will complete the process in 2003, and an equal number in 2004 (Table 16). One state indicated its next plan won't be completed until 2008.

Seven northeastern states indicated they do not plan to revise or update their comprehensive statewide forest resources plan. The reasons for not doing so are varied (Table 17). Only one state indicated the reason for not updating its plan is due to its

perceived adequacy. The most common reason given for not updating their plan was a lack of adequate financial or human resources—six northeastern states (67 percent) cited this situation. Such a response was not surprising, given the austere financial climate facing many state forestry agencies. Generally, many state forestry agencies are facing shrinking operating budgets. A shift within the agency from a focus on comprehensive planning to a focus on critical state forest resources issues or needs was also a common explanation given. Nationally, less than half of the responding states plan to revise their comprehensive forest resources plan. The reasons cited in the northeast mirror the sentiment of state forestry agencies nationally for their decision not to revise or update its plan, namely inadequate resources to update the plan and increased emphasis within the state on issue-based forest resources planning.

### **State Forest Land Management Planning**

#### *Reasons for planning*

With an overall goal to articulate how forest lands administered by the state will be managed, states cited a number of specific reasons for developing state forest land management plans (Table 18). Developing a long-term vision and direction for the management of state-administered forest lands was the most important reason given for preparing state forest land management plans. Among northeast forest resource planners, providing vision and direction for management had a mean rating of 1.1 (1=very important, 2=moderately important, 3=not important). Articulating strategies to address management issues and concerns on state-administered forests was also cited as an important reason for developing plans for these forests (mean rating of 1.2). Responding to legislative directives for state forest land

**Table 15.** Involvement of nongovernment organizations in the development of comprehensive statewide forest resource plans.

State agency	Northeast region (n=18)		All states (n=45)	
	Mean*	S.D.	Mean*	S.D.
Conservation organizations	1.8	0.7	1.8	0.8
Environmental organizations	1.8	0.8	1.9	1.0
Forest products industry	1.9	1.0	1.8	1.0
Forest landowner association	2.0	0.9	1.9	0.9
Timber producers	2.0	0.9	2.0	0.9
Outdoor recreation groups	2.4	0.9	2.6	0.9
Tribal groups	3.4	1.1	3.1	1.1

\* Rated on a scale where 1=extensively involved, 2=moderately involved, 3=minimally involved, 4=not involved.

**Table 16.** Comprehensive statewide forest resource planning: Anticipated year of next plan.

Year of next plan	Northeast region (n=14)		All states (n=29)	
	Freq	%*	Freq	%*
2003	1	11	4	22
2004	2	22	4	22
2005	2	22	3	17
2006	4	44	6	33
2007 or later	0	N/A	1	6
Total	9	100	18	100

\* Percentages may not total 100 percent due to rounding.

**Table 17.** Reasons given by states for not updating comprehensive statewide forest resource plan.

	Northeast region (n=9)		All states (n=20)	
	Freq	%*	Freq	%*
Lack of adequate resources (human/financial) for statewide forest resource planning	6	67	14	70
Shift at the statewide level from comprehensive planning to focus critical issues/ needs	5	56	9	45
Shift in priorities to other planning scales (e.g. administrative and other landscape units)	3	33	6	30
Changing information needs of forest resource management organizations	2	18	3	15
Lack of external stakeholder support for statewide forest resource planning	2	18	5	25
Existing plan is adequate	1	11	1	5
Planning activities of other organizations have replaced the need for statewide forest resource planning	1	11	2	10
Other agency planning activities have replaced the need for statewide forest resource planning	0	N/A	2	10

\* Percentages do not total 100 because respondents could select more than one response.



**Table 18.** Reasons for developing state forest land management plans.

	Northeast region (n=18)		All states (n=45)	
	Mean*	S.D.	Mean*	S.D.
Provides a long-term vision/direction for management of state's forest resources	1.1	0.3	1.2	0.5
Develops strategies to address important issues/concerns	1.2	0.4	1.3	0.6
Changing physical/ecological condition of the state's forest resources	1.6	0.6	1.5	0.6
Pressure from state forest resource stakeholders	1.6	0.7	1.7	0.7
Provides a process for developing agency work planning and budget priorities	1.6	0.7	1.5	0.6
Raises the awareness of emerging forest resource issues	1.6	0.6	1.7	0.7
Changing economic conditions impacting the state's forest resources	1.7	0.7	1.7	0.6
Legislative mandate	1.9	0.9	1.8	0.8
Increases legislative and policymakers awareness of state's forest resources	1.9	0.8	1.9	0.7

\* Rated on a scale where 1=very important, 2=moderately important, 3=not important.

management plans and increasing the visibility of the state's forest resources among state policymakers were only moderately important reasons for developing these plans (both received mean ratings of 1.9). The national perspective for the important reasons for developing state forest land management plans mirrored the northeast perspective.

*Geographic focus of plans*

Twelve of the northeastern states (67 percent) indicated their state forest land management planning process consists of developing several geographically-specific plans (Figure 10). Greater than four out of five states define the plans according to administratively-defined boundaries (e.g., the boundary of a state forest) (Table 19). The development of plans that are oriented around ecological boundaries (e.g., Ecological Classification System) is becoming increasingly popular. More than a quarter of the northeastern states have state forest land management plans defined by ecological boundaries. One state indicated it develops an individual plan for each property under its management authority, and no northeastern state has a plan for its state-administered

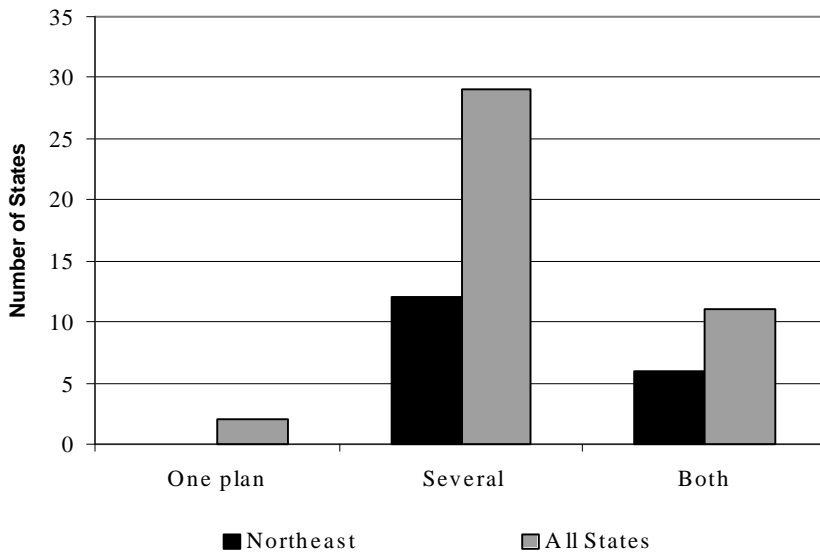
forests that is defined by political boundaries. The remaining one-third of the northeast states affirmed that their plans consist of both an umbrella plan that provides a statewide context for state forest land management planning, as well as more detailed forest plans covering specific regions of the state. Not one northeastern state prepares a single plan to guide the management of forest resources under its management authority.

**Table 19.** Basis for delineating geographic-specific state forest land management plans.

	Northeast region (n=18)		All states (n=45)	
	Freq	%*	Freq	%*
Administrative boundaries	15	83	35	78
Ecological boundaries	5	27	11	24
Political boundaries	0	N/A	2	4
Other	3	17	8	18

\* Percentages do not total 100 because respondents could select more than one response.

Nationally, only two states have a single statewide plan that guides the management of state-administered forests (Figure 10). More common is a planning process that develops separate plans for various regions of the state (29 states or 69 percent indicated this model).



**Figure 10.** Use of a single statewide versus several geographic-specific substate plans to guide the management of state administered forests among the northeast states (n=18) and all states (n=42).

Eleven of the responding states (26 percent) have a nested planning process for the management of state-administered forests that includes a statewide plan and several geographic-specific plans.

*Plan format*

States use a number of formats for developing their state forest land management plans. In the northeast, greater than 80 percent of the responding states indicated the plans for forests under its management authority are organized around state-level tactical operations such as conducting forest inventories, applying silvicultural treatments, and conducting timber harvesting (Table 20). Nine states (56 percent of those responding northeast states) indicated stand-level inventories are also used as a focal point of state land management plans. Other formats used include multiple scenarios of alternative forest resource conditions (44 percent), plans that contain separate assessment and program documents (38 percent), and those that are issue-based (38 percent). Four states in the

northeast responded that their land management planning activities are focused around specific performance measures such as criteria and indicators of forest sustainability. In non-northeastern states, the use of criteria and indicators for developing land management plans for state-administered forests is more common, wherein nine such states do so.

*Plan content*

The type of information found in state forest land management plans is often quite similar to that found in comprehensive statewide forest resources plans, with the major difference often being the level of spatial scale and management specificity contained in each. Across the northeast, site-specific land management treatments are the most common components included in plans guiding the management of state-administered forests (Table 21). All responding states indicated this level of spatial detail was found in their plans. Also commonly included in state forest land management plans are

**Table 20.** Format of state forest land management plans.

	Northeast region (n=16)		All states (n=40)	
	Freq	%*	Freq	%*
Plan is organized around stand level inventory and/or stand level tactical operations	13	81	28	70
Plan is organized around stand-based forest inventory data	9	56	26	65
Plan develops multiple future forest management and timber harvesting scenarios and evaluates resulting forest resource conditions and economic and ecological implications	7	44	14	35
Plan contains separate forest resource assessment and program documents	6	38	14	35
Plan is organized around a limited number of strategic forest resource issues	6	38	14	35
Plan is organized around specific performance measures (e.g., criteria and indicators of forest sustainability)	4	25	13	33
Other	2	13	4	10

\* Percentages do not total 100 because respondents could select more than one response.

**Table 21.** Specific content included in state forest land management plans.

	Northeast region (n=16)		All states (n=40)	
	Freq	%*	Freq	%*
Site-specific land management strategies	16	100	37	93
Identification of strategic forest resource issues	14	88	30	75
Current and historical information on the state's forest resources	13	81	30	75
Vision for the state's forest resources	13	81	28	70
Description of/direction for agency-specific programs	11	69	25	63
Description of state laws and regulations affecting forest resources	10	63	19	48
Projections of future forest resource conditions	8	50	24	60
Environmental impact analysis	6	38	17	43
Socioeconomic information	6	38	13	33
Prioritization or ranking of strategic forest resource issues	5	32	11	28
Strategies for cross-ownership coordination	3	19	7	18
Other	4	25	5	13

\* Percentages do not total 100 because respondents could select more than one response.

descriptions of strategic issues (88 percent), vision statements for the management and use of state-administered forests (81 percent), and background information (current and historical) on these forests (81 percent). Descriptions of the state laws, rules, and regulations influencing the management of these forests are also found in a majority of the northeast state forest land management plans. Nationally, the content of state forest land management plans mimic those trends found in the northeast states.

#### *Time required to prepare plan*

The amount of time it takes a state forestry agency to develop land management plans for forests under its management authority depend on a number of circumstances. Among the latter are the availability of planning resources within an agency, extent of state-managed forest land area, geographic coverage of plans, planning process, and both the method and role of public input. Our study found that northeast state forest resources planners took, on average, two to three years to prepare their

most recent state forest land management plan (Figure 11). Twenty-two percent (four states) of the respondents in the northeast indicated it took as little as less than one year to prepare their most recent state land management plan, while 12 percent (two states) indicated their most recent planning process lasted more than five years.

#### *Plan focus*

As with comprehensive statewide plans, state forestry agencies strive to achieve a balance of ecological, economic, and social objectives in the management of state-administered forest lands. Using the same scale to rate the inclusion of economic, ecological, and social considerations in comprehensive plans (1=extensively addressed, 2=moderately addressed, 3=minimally addressed, 4=not addressed), northeast planners stated that ecological considerations are given the greatest attention (Table 22). Overall, planners felt such considerations are moderately to extensively addressed in state land management plans. When asked about specific ecological attributes, the diversity of forest ecosystems and associated species and wildlife habitat were most extensively addressed (mean ratings of 1.4 for each). With the exception of nonwood forest products, the other economic considerations that we evaluated (wood products manufacturing and tourism and recreation) were also moderately to extensively addressed. Plans minimally addressed social attributes as measured by consumption patterns and trends, community stability, and quality of life. In contrast to comprehensive statewide forest resources plans, state forest land management plans more extensively address economic considerations, yet are less thorough in their treatment of societal aspects of forest resources. Nationally, the attention given in state forest land management plans to the

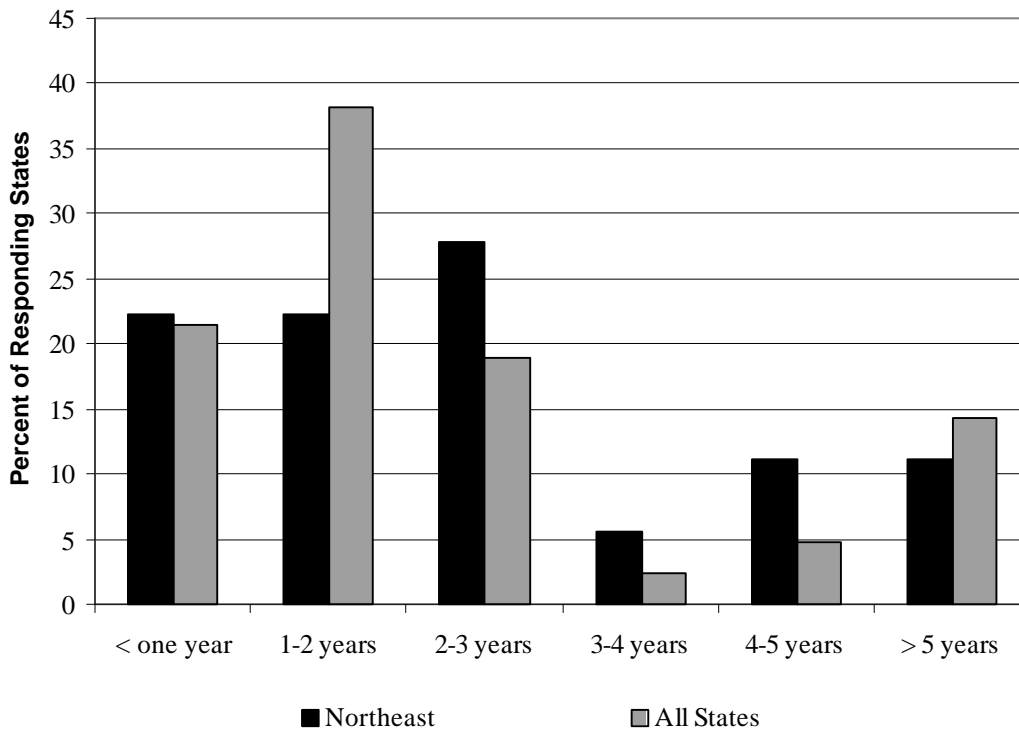
ecological, social, and economic aspects of forest resources was similar to what was found in the northeast.

#### *Means of public involvement*

As with comprehensive statewide forest resources planning, public input plays an important role in the development of land management plans for state-administered forests. Our survey found that state forestry agencies use a number of methods by which to engage the public in state forest land management planning activities (Table 23). Public meetings and open houses are the most frequently used method of seeking public input. Fifteen of the 17 responding northeast states (88 percent) indicated using public meetings and open houses. Ten states (59 percent) establish formal public comment and review processes as part of their efforts to develop state forest land management plans. Even with more than half the northeast states establishing formal public input processes, more than half of the states also stated that there are ongoing opportunities for citizens to provide input throughout the land management planning process. Use of the World-Wide Web as a vehicle for seeking public input was also common, with eight states (47 percent) indicating use of this approach. This stands in contrast to only five northeast states (36 percent) who used web-based methods of seeking public input in the development of comprehensive statewide forest resources plans.

#### *Extent of public input sought*

Reflecting on the extent to which their state seeks to engage the public in the development of state forest land management plans, planners felt positive about the opportunities they provided (Figure 12). Across the northeast, planners characterized public input opportunities as being moderate to extensive (mean rating of 1.8, where



**Figure 11.** Time required to complete most recent state forest land management plan(s) among the northeast states (n=18) and all states (n=42).

**Table 22.** Extent to which state forest land management plans incorporate economic, ecological and social considerations.

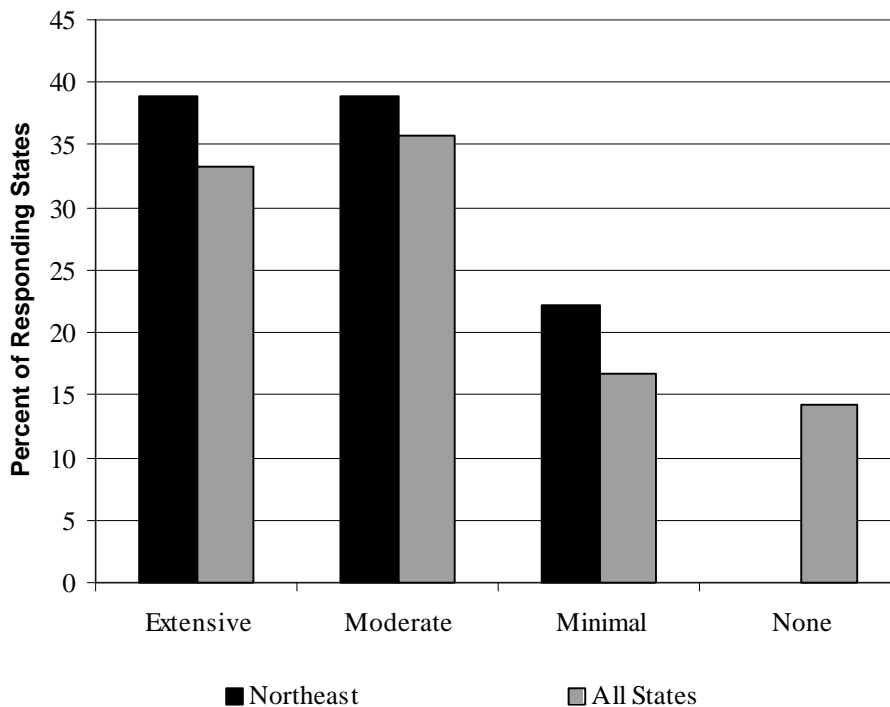
	Northeast region (n=18)		All states (n=45)	
	Mean <sup>1</sup>	S.D.	Mean <sup>1</sup>	S.D.
<b><i>Economic considerations:</i></b>				
Wood products manufacturing	1.6	0.7	1.4	0.6
Recreation and tourism	1.7	0.7	1.8	0.8
Nonwood forest products	2.2	0.7	2.3	0.8
<b><i>Ecological considerations:</i></b>				
Ecosystem/ species diversity	1.4	0.6	1.6	0.8
Wildlife habitat	1.4	0.6	1.5	0.6
Forest ecosystem health	1.6	0.7	1.5	0.6
Soil and water resources	1.8	0.9	1.7	0.8
<b><i>Social considerations:</i></b>				
Cultural uses and values	2.4	1.0	2.3	1.0
Consumption patterns/trends	3.0	1.1	2.7	1.1
Community stability/quality of life	3.1	1.1	2.9	1.0

<sup>1</sup> Rated on a scale where 1=extensively addressed, 2=moderately addressed, 3=minimally addressed and 4=not addressed.

**Table 23.** Public involvement strategies utilized in the development of state forest land management plans.

	Northeast region (n=17)		All states (n=42)	
	Freq	%*	Freq	%*
Public meetings or open houses	15	88	27	64
Formal public review/comment period	10	59	21	50
Ongoing opportunity for the public to provide input	9	53	23	55
Web-based input	8	47	14	33
General informational mailings	7	41	14	33
Field tours	7	41	14	33
Media campaigns	3	18	8	19
Public opinion surveys	2	12	5	12
Other	2	12	8	19

\* Percentages do not total 100 because respondents could select more than one response.



**Figure 12.** Level of public involvement sought in the development of state forest land management plans among the northeast states (n=18) and all states (n=42).

1=extensive, 2=moderate, 3=minimal, 4=none). As with comprehensive statewide forest resources planning processes, all northeast states provided public input opportunity in the development of state forest land management plans. In contrast, state forest resource planners nationally characterized their efforts to provide

opportunities for public as somewhat less (mean rating of 2.1). Six states (15 percent) outside the northeast indicated they do not explicitly seek public input in the development of plans for the management of state-administered forests.

### *Quality of public input*

Northeast state forest resources planners felt public input occasionally influenced the content of the planning process or resulting products of state forest land management plans. The average rating assigned by planners to the quality of public input received during plan development was 2.1 (1=meaningful, 2=important, 3=marginal, 4=no input) (Figure 13). All northeast states indicated the public does participate at some level in the development of state forest land management plans. This stands in contrast to non-northeastern states, where 12 percent (five states) indicated they do not receive any public input in the development of their plan.

The survey also documented that the quality of public input a state obtains in the development of its state forest land management plan(s) is a function of the effort it makes to involve the public. States willing to make a commitment to seeking public input in the planning process are rewarded with public comments that have a direct influence on the resultant plans ( $p < .01$ ). Correlation between the method of seeking public input and the quality of input received was also significantly positive for web-based input and holding open houses ( $p < .01$ ). Use of the web and open houses showed a positive correlation, illustrating that satisfaction with the quality of public input increased with use of the web and open houses.

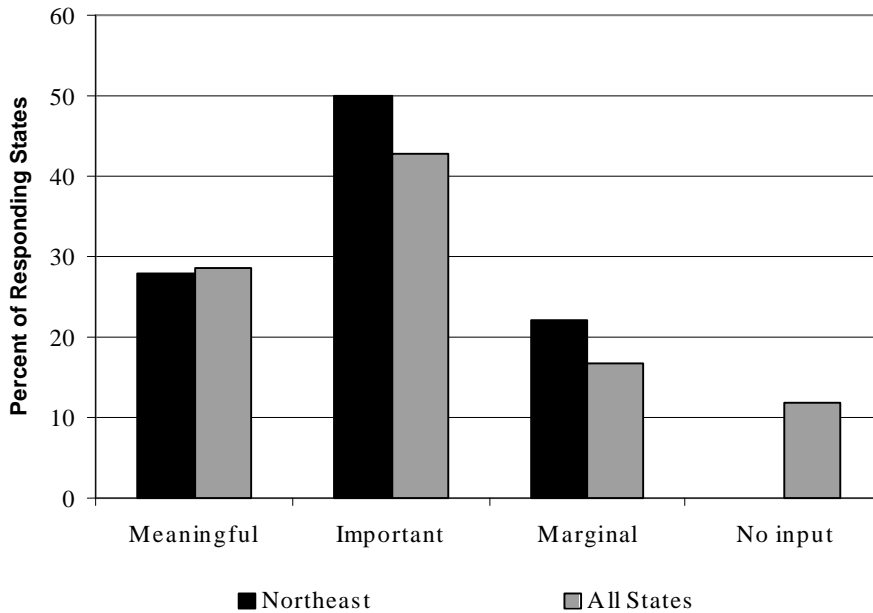
### *Consultation with agency field staff*

State forest resources planners in the northeast indicated that the development of plans for the management of state-administered forest land involved extensive consultation with the agency's field staff (Figure 14). On a scale of one to four (1=extensive involvement, 2=moderate involvement, 3=minimal involvement, 4=none), the mean rating of staff involvement

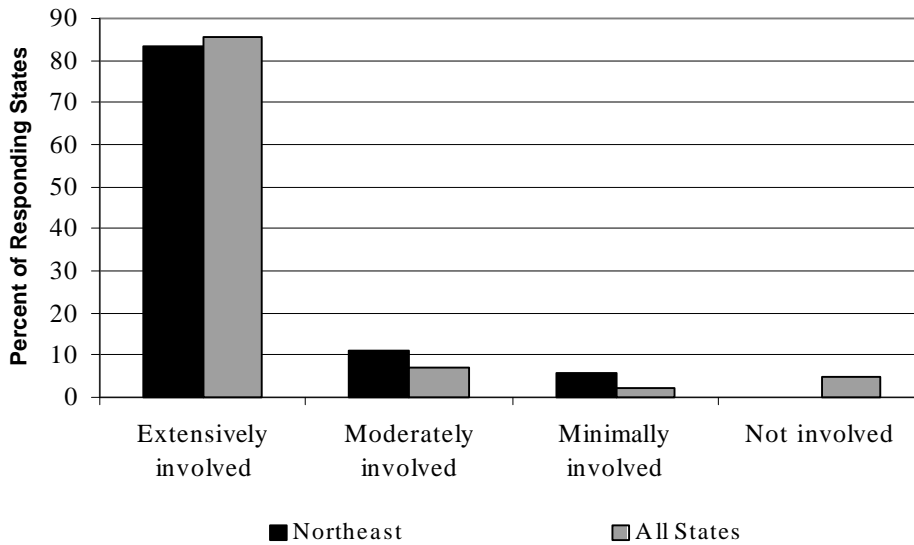
in the northeast was 1.2. With the exception of three states (two indicated their field staff are moderately involved and one only minimally involved) (17 percent), the participation of field staff in the development of state forest resources plans was extensive. The average national level of involvement of field staff in state land management planning is nearly identical to that found in the northeast, although two states (5 percent) indicated their field staff played no role in plan development.

### *Involvement of stakeholder groups*

As with comprehensive statewide forest resources plans, a range of interest groups have a stake in the management direction for state-administered forest lands. As such, many of these are actively involved in developing the plans that guide their management and use. Across the various resource disciplines within an agency, planners stated that none is more engaged in developing these land management plans than wildlife professionals (Table 24). In the northeast, the mean rating of wildlife professional involvement was 1.4 (1=extensively involved, 2=moderately involved, 3=minimally involved, 4=not involved). With the exception of minerals staff, planners indicated that all other resource disciplines worked more closely with them in developing land management plans for state-administered lands than they did in the development of comprehensive statewide forest resources plans. The survey also documented that the involvement of other resource disciplines in state forest land management planning is more extensive in the northeast than it is nationally.



**Figure 13.** Quality of public involvement provided in the development of state forest land management plans among the northeast states (n=18) and all states (n=42).



**Figure 14.** Extent of agency field staff involvement in state forest land management plans among the northeast states (n=18) and all states (n=42).



**Table 24.** Involvement of various disciplines within a natural resources organization in the development of state forest land management plans.

State agency	Northeast region (n=18)		All states (n=45)	
	Mean <sup>1</sup>	S.D.	Mean <sup>1</sup>	S.D.
Wildlife	1.4	0.5	1.5	0.7
Fisheries	2.0	0.9	2.2	1.0
Ecological services	2.2	1.0	2.2	1.1
Parks and recreation	2.2	1.0	2.3	1.1
Watershed management	2.3	0.9	2.2	1.1
Minerals	3.0	0.8	3.1	0.9

<sup>1</sup> Rated on a scale where 1=extensively involved, 2=moderately involved, 3=minimally involved, 4=not involved.

With the exception of fish and wildlife and water and source resources agencies, the involvement of other state agencies in developing state forest land management plans is largely inconsequential (Table 25), both within the 20 northeast states and nationally. Although fish and wildlife and water and soil resources were rated the highest, both were only modestly involved in the planning process. Similar to comprehensive statewide forest resources planning, state pollution control agencies had virtually no involvement in developing state forest land management plans.

**Table 25.** Involvement of other state agencies in the development of state forest land management plans.

State agency	Northeast region (n=18)		All states (n=45)	
	Mean <sup>1</sup>	S.D.	Mean <sup>1</sup>	S.D.
Fish and game	1.9	1.0	1.9	1.0
Water and soil resources	2.7	0.9	2.6	1.0
Economic development	3.5	0.9	3.4	0.8
Agriculture	3.6	0.7	3.4	0.8
Transportation	3.6	0.7	3.6	0.7
Pollution control	3.8	0.5	3.7	0.6
Waste management	3.9	0.3	3.7	0.8

<sup>1</sup> Rated on a scale where 1=extensively involved, 2=moderately involved, 3=minimally involved, 4=not involved.

Of all the federal agencies we asked state forest resources planners to evaluate, each was considered only minimally involved in the

development of forest land management planning (Table 26). The two federal agencies with the greatest role in developing these plans in the northeast were the USDA-Forest Service (mean rating of 3.1) and the UDSI-Fish and Wildlife Service (mean rating of 3.3). With few exceptions, the Environmental Protection Agency, National Park Service, Army Corp of Engineers, and Bureau of Land Management were not involved in state forest land management planning activities. In contrast, planners felt local units of government were modestly involved in their planning process for state-administered lands (average rating of 2.6 for the northeast, 2.8 nationwide).

Excluding tribal groups, all interests we asked state forest resource planners to evaluate had more than a minimal involvement in the development of state forest land management plans (Table 27). Most involved, both in the northeast and nationally, were conservation and environmental organizations (mean rating of 2.0). Planners rated forest product industry groups and sporting interests as equally engaged in state land management planning activities (mean rating of 2.2 in the northeast), while the involvement of private forest landowner associations in planning was fairly minor in the northeast as well as from a national perspective.

**Table 26.** Involvement of federal agencies in the development of state forest land management plans.

Federal agency	Northeast region (n=18)		All states (n=45)	
	Mean*	S.D.	Mean*	S.D.
USDA-Forest Service	3.1	0.7	3.1	0.8
Fish and Wildlife Service	3.3	0.7	3.0	1.1
Environmental Protection Agency	3.8	0.4	3.5	0.7
National Park Service	3.7	0.4	3.7	0.6
Corp of Engineers	3.8	0.4	3.7	0.6
Bureau of Land Management	3.9	0.3	3.7	0.6

\* Rated on a scale where 1=extensively involved, 2=moderately involved, 3=minimally involved, 4=not involved.

**Table 27.** Involvement of private groups in the development of state forest land management plans.

	Northeast region (n=18)		All states (n=45)	
	Mean*	S.D.	Mean*	S.D.
Conservation organizations	2.0	0.8	2.1	0.9
Environmental organizations	2.0	0.8	2.1	1.0
Forest products industry	2.2	0.9	2.3	1.1
Sporting groups	2.2	0.9	2.4	1.0
Timber producers	2.2	0.7	2.4	1.0
Forest landowner association	2.8	1.1	2.7	1.1
Tribal groups	3.2	1.1	3.2	1.0

\* Rated on a scale where 1=extensively involved, 2=moderately involved, 3=minimally involved, 4=not involved.

## Planning Technology and Training Needs

### *Forest resources planning technology*

In contrast to when first-generation state forest resources plans were prepared, planners in 2003 have access to a number of technology-based planning “tools” to assist in measuring, analyzing, and predicting changes in forest resources. We asked planners to rate the importance of various technologies in conducting forest resource planning activities. Of those technology tools evaluated, planners indicated that geographic information systems (GIS) are the most important (Table 28). Across the northeast, the average rating of importance assigned by planners to GIS technology was 1.7, illustrating it was considered moderately to very important in the

preparation of state forest resource plans. Remote sensing technology was considered the second most important technology-based planning tool, although planners saw its importance as somewhat less than moderate. All other technologies evaluated were considered by northeast planners to be minimally important. At a national level, forest planner attitudes about the importance of various technologies in planning were consistent with those found in the northeast.

**Table 28.** Importance of technology in conducting state forest resource planning.

	Northeast region (n=18)		All states (n=45)	
	Mean*	S.D.	Mean*	S.D.
Geographic Information Systems (GIS)	1.7	1.2	1.6	1.0
Remote Sensing	2.4	1.1	2.2	1.0
Ecological models (e.g., FRAGSTATS)	3.1	0.9	3.3	1.5
Economic models (e.g., IMPLAN)	3.1	1.0	3.0	1.0
Resource simulation models (e.g., Forest Vegetation Simulator)	3.1	1.0	3.0	1.0
Decision support models (e.g., IDA)	3.3	0.7	3.4	0.7

\* Rated on a scale where 1=very important, 2=moderately important, 3=minimally important, 4=not important.

### *Use of the Internet*

The Internet has substantially increased a forest resource planner’s capacity to access information and to interact with the public in developing plans and planning documents. Northeast forest resource planners use the Internet for a variety of functions in the development of their plans (Table 29). The Internet’s most extensive use in state forest resource planning in the northeast is notifying individuals about specific planning events or activities such as the availability of planning documents and upcoming public information meetings. Every state in the region used the Internet for this purpose. Overall, the region’s planners rated the Internet’s use for this function as 1.7 (1=extensively used, 2=moderately used, 3=minimally used, 4=not used). Disseminating reports and documents was the second most extensive use of the Internet in forest resources planning, rated by the region’s planners as moderately used. Northeast planners rated both using the

Internet to make planning-related data and maps available to the public and as a venue for accepting public comments on draft forest plans fairly minor, suggesting such practices are not widely practiced. When comparing use of the Internet in the northeast to that nationwide, northeast planners use the Internet more extensively in all areas of forest resource planning that were inquired about.

### *Training needs of planners*

The skill set required of today’s forest resources planners is extensive. In addition to being thoroughly grounded in the biological, physical, and social sciences of forests and forest management, planners need to have sound analytic capabilities, meeting facilitation, and “people” skills. Planners are constantly seeking out new techniques and technologies that will assist them in developing more effective and efficient planning processes. We asked planners to describe their training needs in a number of

**Table 29.** Internet use for various forest resource planning activities.

	Northeast region (n=18)		All states (n=45)	
	Mean*	S.D.	Mean*	S.D.
Notifying the public (e.g., availability of planning documents, notice of upcoming meetings/events)	1.7	0.7	1.9	1.0
Disseminating planning documents	1.9	1.0	2.1	1.0
Making planning-related data and maps available for public review and use	2.2	0.9	2.5	1.0
Accepting comments from the public on draft planning documents	2.4	0.6	2.5	1.2

\* Rated on a scale where 1=extensively used, 2=moderately used, 3=minimally used, 4=not used.

skill areas commonly used in forest resources planning. Of those training needs examined, techniques in managing conflict among multiple interests was considered to be the greatest in the northeast, assigning it an average rating of 1.9 (Table 30). Also considered moderately important by planners was training in the development and implementation of quantitative models to assess forest resource conditions (mean rating of 2.0). Even developing more effective meeting facilitation skills, the lowest rated training need of the region's planners, received an average score of 2.4, illustrating its need as an area of training was considered moderately to minimally important.

### Federal Role in State Forest Resource Planning

#### *Need for federal assistance*

The federal government provided considerable technical and financial support to state forestry agencies in the late 1970s and 1980s to assist them in developing the capacity to establish state forest resource planning programs. As state planning capacity and sophistication expanded, federal assistance for such efforts diminished. Today, federal technical and financial support to state forest resource planning programs is but a fraction of the level that existed 20 years ago. We asked northeast state forest resource planners to rate the need in 2003 for federal

assistance in undertaking their planning activities (Figure 15). More than 80 percent of the responding planners in the region indicated an extensive need for federal assistance in developing more effective and meaningful plans. Ten percent felt the need was moderate, and an equal percent felt only a minimal need for federal support. The perspectives of northeast planners regarding federal help stand in sharp contrast to the attitudes of state forest resource planners nationwide, wherein the latter feeling a much less need for federal assistance. Only 22 percent of the responding states nationwide felt there is an extensive need for help from the federal government, with 36 percent feeling a minimal need. Four states (all located outside the northeast region) felt there is no need for the federal government to assist them in conducting their forest resources planning activities.

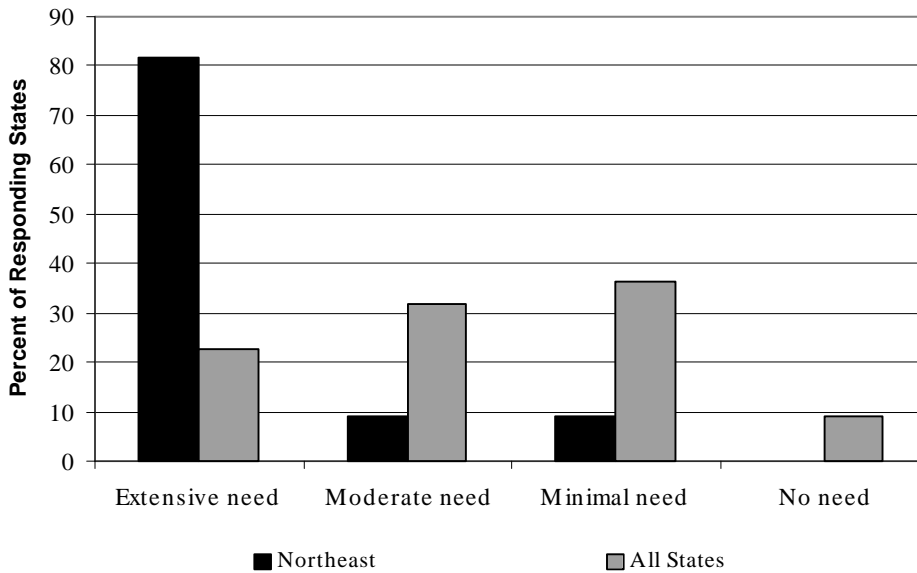
#### *Adequacy of federal support provided*

When asked about the adequacy of existing federal assistance provided to state forestry agencies, planner's attitudes were mixed (Figure 16). One-fourth of all responding northeast states felt the assistance is very inadequate, while two-thirds of the respondents were equally split in their belief that the assistance was either somewhat inadequate or somewhat adequate. Only 8 percent felt federal support for state planning activities was very adequate. Nationally, the

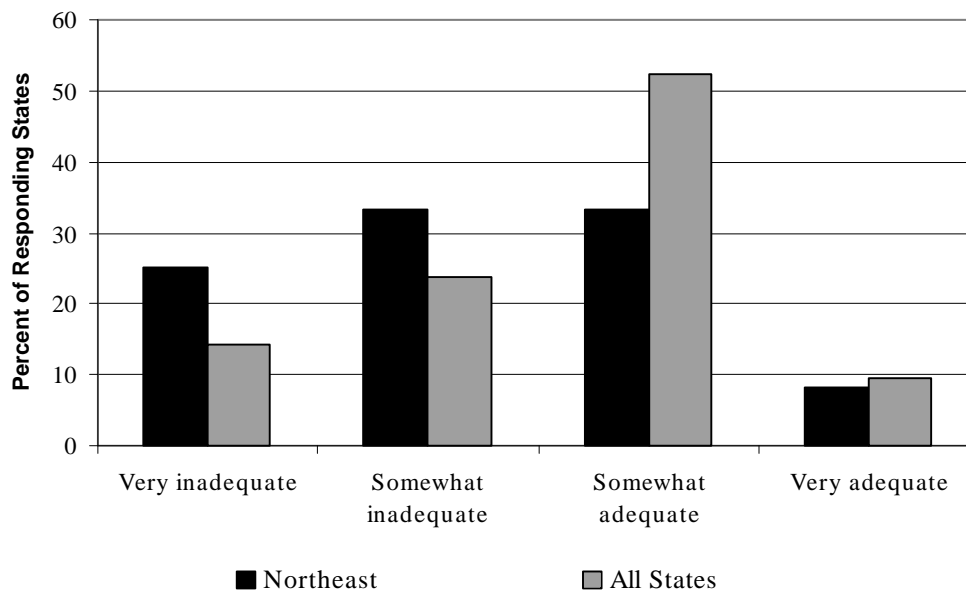
**Table 30.** Training needs of state forest resource planners.

	Northeast region (n=18)		All states (n=45)	
	Mean*	S.D.	Mean*	S.D.
Conflict management	1.9	0.7	2.1	0.8
Model development and implementation	2.0	0.9	2.1	1.1
Use of technology (e.g., creating web pages, GIS mapping)	2.1	0.6	2.0	0.8
Data assessment and analysis	2.2	0.6	2.0	0.8
Meeting facilitation	2.4	0.6	2.4	0.7

\* Rated on a scale where 1=extensive need, 2=moderate need, 3=minimal need, 4=no need.



**Figure 15.** Need for federal government assistance in the development of more effective forest resource plans among the northeast states (n=18) and all states (n=44).



**Figure 16.** Adequacy of federal assistance efforts to states in developing more meaningful and effective forest resource plans among the northeast states (n=18) and all states (n=42).

perspectives of state forest resource planners regarding the adequacy of federal assistance were somewhat more positive, with more than half feeling assistance was somewhat adequate.

The above results suggest substantial opportunity exists for the USDA-Forest Service to increase the effectiveness of the assistance it currently provides to state planners. We queried planners about ways the federal government would better assist them in developing more effective plans and planning processes. State planners provided a number of specific suggestions on how federal assistance could be improved (Table 31). Sponsoring conferences that identified and discussed different planning approaches and experiences, and developing guides to assist states in better integrating federally-mandated program plans (e.g., Urban Forestry) were the most common suggestions (each was cited by 72 percent of the responding northeast planners). Providing ongoing training and workshops as well as technical publications on innovative and effective planning techniques were also mentioned by a majority of the region’s planners. Only one-third of the planners indicated that providing on-site assistance would be helpful.

With respect to how a state’s forest resources planning program assists in implementing federal programs (e.g., Forest Legacy), planners felt the support was moderate across the six federal programs evaluated (Table 32). The usefulness of a state’s forest planning activities was perceived to be greatest in the delivery of Community and Urban Forestry programs and least supportive in implementing a state’s Fire Management program, although the average ratings assigned were very similar.

### Evaluating State Forest Resource Planning Activities

#### *Benefits of forest resource planning*

State planners cited a number of tangible benefits flowing from their forest resource planning activities (Table 33). Chief among these was a better understanding of forest resource conditions and trends. Overall, planners in the northeast felt their efforts had a moderate to extensive influence over developing a more concise picture of the changes occurring within the state with respect to its forest resources (mean rating of 1.5 wherein: 1=extensive influence, 2=moderate influence, 3=minimal influence, 4=no influence). Another important benefit of state planning activities was in more clearly articulating the agency’s mission (mean rating

**Table 31.** Means by which the federal government could improve its assistance to states in carrying out forest resources planning activities.

	Northeast region (n=18)		All states (n=45)	
	Freq	%*	Freq	%*
Convene/facilitate conferences to share planning approaches/experiences	13	72	22	49
Develop guides for integrating federally-mandated program plans (i.e., Urban Forestry, Stewardship, Forest Land Enhancement and Forest Legacy) into one plan	13	72	22	49
Training/workshops on planning	12	67	23	51
Technical publications on planning techniques	10	56	16	36
On-site assistance	6	33	17	38
Other	4	22	9	20

\* Percentages do not total 100 because respondents could select more than one response.

**Table 32.** Extent to which a state’s forest resource planning activities support the implementation of federally mandated program plans.

Federal programs	Northeast region (n=18)		All states (n=45)	
	Mean*	S.D.	Mean*	S.D.
Community and Urban Forestry Programs	1.8	0.9	1.9	0.9
Forest Health Management Program	1.9	0.9	1.8	0.9
Forest Legacy Program	1.9	1.0	2.2	1.0
Forest Stewardship Program	1.9	0.8	1.8	0.9
Forest Land Enhancement Program	2.0	0.9	1.9	1.0
Fire Management Program	2.1	1.1	1.8	1.0

<sup>1</sup> Rated on a scale where 1=extensive support, 2=moderate support, 3=minimal support, 4=no support.

**Table 33.** Benefits of state forest resource planning activities.

	Northeast region (n=18)		All states (n=45)	
	Mean*	S.D.	Mean*	S.D.
Better understanding of the condition of and major trends in the state’s forest resources	1.5	0.7	1.7	0.9
The mission of the state’s forestry agency more clearly defined	1.8	0.9	1.9	0.9
Development of alternative strategies to address issues and/or achieve goals	2.0	1.0	2.2	1.0
Better integration of various resource disciplines (e.g., wildlife) impacting forest resources	2.1	0.7	2.0	0.7
Better coordination among agencies with forest resource management responsibility	2.2	0.6	2.2	0.8
Political support for forest resources management among state policy makers	2.3	0.8	2.3	0.9
Identification of important economic development strategies	2.4	0.8	2.4	0.8
Identification of important environmental protection strategies	2.4	0.7	2.3	0.8
Increased awareness of forest resources importance among state citizenry	2.5	0.9	2.3	0.8

\* Rated on a scale where 1=extensive influence, 2=moderate influence, 3=minimal influence, 4=no influence.

of 1.8). Similarly, identifying strategies to address important state forest resource issues, promoting integration of forest management approaches across disciplines, and facilitating better coordination among agencies responsible for managing the state’s forests are outcomes moderately influenced by the agency’s planning activities, as indicated by the overall mean rating. However, planning as a means for increasing the awareness of the importance of forest resources within the state was considered to have only a moderate to minimal impact (mean rating of 2.5).

The benefits of state forest resources planning were compared to the perceived planning benefits identified by Gray and Ellefson 20 years ago. Both surveys found that state forest resource planning is viewed as an effective means by which to focus the state forestry agency’s mission. Additional benefits include enhancing the capacity to effectively deal with forest resource issues, and facilitating better coordination among agencies with responsibility for forest resource management. A notable change in the perceived benefits of planning over the past 20 years is the role state forest resource planning

has in raising the visibility and awareness of forest resources among policymakers and the general public. In the early 1980s, planning was believed to have very little impact on increasing the awareness of forestry issues among policymakers, while it was viewed as moderately successful in raising such awareness among the general public (Gray and Ellefson 1987). This survey found moderate improvements in raising political support for forest resource planning while public support for planning remained relatively stable.

*Support for state forest resources planning*

The extent to which a state’s forest resources planning program is successful depends on the support it receives from various constituencies, both within and outside the agency. We asked planners to rate the support for their planning program among various clientele groups. The results demonstrate that the greatest proponents of state forest resources planning programs lie within the state’s forestry agency (Table 34). In the northeast as well as nationwide, state foresters were rated the strongest supporters, receiving a rating of 1.3 (1=extensive support, 2=moderate support, 3=minimal support, 4=no support). Although the support for planning was considered only moderate, the agency’s

field staff was perceived to be the second strongest supporter for planning of the constituent groups evaluated (average rating of 1.9 across the region and considering all responding states). The support for state forest resources planning by the governor and state legislature, as well as among private forestry interests (e.g., forest landowners) was considered fairly modest, each receiving a mean rating of 2.4. Least supportive of a state’s forest resource planning efforts were other state agencies (mean rating of 2.7).

*Impediments to more effective planning*

Planners were asked to identify the greatest impediments to a more effective forest resource planning in their state. Of the 38 planners who provided their perspectives on this open-ended question, nearly six in ten respondents stated that the lack of financial resources needed to undertake planning was the greatest barrier. Inadequate staff resources was also an important obstacle to a more effective planning program, cited by 29 percent of the planners. Twenty-six percent of the planners also mentioned the lack of time served as a significant barrier. These top three responses suggest planners have the tools and know-how to effectively undertake effective planning processes, but lack the capacity for

**Table 34.** Support for state forest resource planning activities among various constituencies.

	<b>Northeast region</b>		<b>All states</b>	
	<b>(n=18)</b>		<b>(n=45)</b>	
	<b>Mean*</b>	<b>S.D.</b>	<b>Mean*</b>	<b>S.D.</b>
State Forester	1.3	0.5	1.3	0.5
Agency field staff	1.9	0.7	1.9	0.7
Federal agencies	2.0	0.7	2.4	0.8
Other divisions within natural resources agency	2.1	0.8	2.3	0.9
Forest Industries	2.2	0.8	2.4	0.9
Governor	2.4	0.9	2.4	1.0
Other private interests	2.4	0.7	2.6	0.8
Private forest landowners	2.4	0.7	2.5	0.8
State Legislature	2.4	0.9	2.5	0.8
Other state agencies	2.7	0.9	2.6	0.9

\* Rated on a scale where 1=extensive support, 2=moderate support, 3=minimal support, 4=no support.



planning as measured by budgets, staff, and available time.

### *Factors influencing the future of state forest resources planning*

Planners were also queried to list the two most important factors influencing the future of forest resource planning in their state. Of the 37 respondents providing insights on this open-ended question, 38 percent stated the availability of financial resources allocated to planning as the most important factor influencing the future direction and effectiveness of state forest resource planning. Planners also believed that development and fragmentation of the forest was one of the most significant influences on the future of planning, wherein 27 percent cited this as one of the most important reasons. Maintaining the public's interest in and support for planning, as well as that of policymakers were mentioned by 19 percent of the planners as important factors. These responses suggest that state forest resource planning will be strongly influenced not only by the political support for an agency's planning activities, but also important changes in the state's forest resources.

### **Other Comments**

The questionnaire included a section for respondent's comments. Several of the respondents took the opportunity to provide insightful information about their planning program and the environment in which it is carried out. A few respondents took the opportunity to voice some of their frustrations regarding lack of resources dedicated to forest resource planning. For instance, one respondent said, "it is disheartening not to have the resources to properly manage our forest resources when our existing and talented work force (foresters) assume many roles." On a more positive note, several comments indicated their enthusiasm toward

planning. Comments such as these included "I highly value planning as providing policy direction for the state forestry programs. A firm footing helps support the state forester." In conclusion, another respondent stated that, "it is an exciting time to be involved with forest resource planning as society recognizes the many benefits forest provide through forest products and ecosystem services. Also the analytical tools, GIS and satellite imagery provide significant information."

## **Opportunities for Improving State Forest Resource Planning**

This review provides considerable insight on the current status of and important trends occurring in the planning activities undertaken by state forestry agencies. It suggests that state forest resource planning continues to evolve in response to important organizational and economic changes, as well as important changes that are occurring to the resource base. It also points to the uniqueness of forest resource planning program in each state, due to a number of factors such as varying statutory authority and direction, available resources, and political support for planning. Understanding the current landscape of state forest resource planning programs is an important first step in assisting states and others (e.g., S&PF) in designing more effective planning programs.

The information gathered from the survey indicates several opportunities exist to improve state forest resource planning efforts. These include designing more effective and useful planning processes, as well as strengthening the professional capacity of the individuals who are responsible for designing and implementing these processes. The following are suggested areas of focus for improving state forest resources planning.

**C Greater input into planning.** Planners cited concern about the ability to design planning processes that facilitated meaningful input from a broad cross-section of interests. This included both the general public, as well as specific constituencies such as other public agencies (e.g., pollution control) and resource disciplines (e.g., fisheries) which have historically not participated in the development of state forest resource plans. Processes for more effectively engaging interests in forest resource planning process should be explored.

**C Access to quantitative planning tools.** Several planners indicated a need to have access to models that would assist them in evaluating the consequences of different management alternatives on forest conditions. These included forest growth, harvest scheduling, and spatial models. Training sessions on how to use these tools, interpret their output, and integrate them into forest resource planning processes should be explored.

**C Guidelines for integrating state plans with federally mandated plans.** Several states indicated the need to receive additional guidance from the USDA-Forest Service on how to more closely align state forest resource plans with plans for implementing federal programs (e.g., Forest Legacy Program). This assistance could be in the form of written “how to” manuals, as well as training sessions.

**C Increased visibility of planning benefits among decision-makers.** Planners felt the governor’s office and state legislators often had a very limited understanding of state forest resource planning activities, as well as the benefits these plans provide. Also often perceived to be lacking is the support for forest resource planning from

other state agencies and outside interests. Strategies for raising the awareness and importance of state forest resource planning activities within state government should be explored.

**C Incorporating social considerations into plans.** Planners generally felt their plans gave minimal attention to the social importance of forest resources (e.g., cultural uses and values of forests, the role of forests in community stability, and quality of life). Opportunities for accessing existing information on the role of forests in rural community economic development, stability, and quality of life, as well as methods for collecting this information and incorporating it into state forest resource planning processes should be explored.

**C Improving conflict management skills.** Planners are routinely called upon to manage conflict as part of the process of preparing a forest resource plan. Understanding different techniques that can be used to effectively manage disagreement among individuals or groups was identified by forest resource planners as a priority training need. Opportunities for state forest resource planners to participate in additional training on conflict resolution techniques should be explored.

**C Expanded use of the Internet in planning.** Many planners currently use the Internet as a means of accepting comments from the public on draft planning documents. Other uses of the Internet in supporting state forest resource planning activities include disseminating planning documents, accessing planning data and maps, and obtaining real time feedback at critical stages in the planning process should be explored.

**C Sharing planning experiences and approaches.** Planners expressed an interest in better understanding of how forest resource planning processes are undertaken in other states. This interest includes methods for traditional planning undertaken by state forestry agencies such as comprehensive statewide forest resource and land management planning, as well as the nontraditional planning approaches. While opportunities for this exchange do exist, planners felt additional venues would be beneficial. Forums that would enable state forest resource planners to share planning experiences should be explored.

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# Appendix A

## Questionnaire

# Questionnaire on Planning Activities Undertaken by State Forestry Agencies

The University of Minnesota's Department of Forest Resources is assisting the Northeast Forest Resource Planners Association in conducting a study of the types and extent of planning being undertaken by state forestry agencies. To do so, we are asking each state to complete this questionnaire. The questionnaire, which requests information and opinions on forest resource planning activities, should be completed by the person who has lead responsibility for coordinating forest resource planning within your agency. Responses to questions asking for opinions and perceptions should be that of the individual filling out the questionnaire.

For purposes of completing this questionnaire, the term "agency" means the state's administrative unit with lead responsible for forestry matters in the state (i.e., forestry division). If this unit is part of a larger natural resources organization (e.g., a forestry division within a department of natural resources), the responses provided should describe the forestry unit's planning responsibilities, not those of the state's natural resources agency. Definitions of different types of planning are included at the end of the survey to assist you in completing the questionnaire.

## I. Types of Planning the Lead Agency is Responsible for Undertaking

1. Indicate the different types of planning efforts affecting the state's forest resources that your agency has lead responsibility for undertaking: (check all that apply).  
 Comprehensive statewide forest resource planning (all ownerships)  
 Planning for the management of state-administered forest lands  
 Planning focused on select topics, issues, or activities  
 Land use planning  
 Operational agency work planning (e.g., annual, biennial)  
 Other: \_\_\_\_\_
2. For each type of planning your agency has lead responsibility for undertaking, indicate the percentage of your agency's total planning effort devoted to each.  
**% Time**  
 Comprehensive statewide forest resource planning  
 Planning for the management of state-administered forest lands  
 Planning focused on select topics, issues, or activities  
 Land use planning  
 Operational agency work planning  
 Other forest resource planning

## II. Comprehensive Statewide Forest Resource Planning Activities

In this section, we would like you to provide information about your agency's efforts to conduct comprehensive statewide forest resource planning.

3. In what year was the first comprehensive statewide forest resource plan completed? \_\_\_\_\_
4. How many comprehensive statewide forest resource plans have been prepared since preparation of the original plan? \_\_\_\_\_
5. In what year was the most recent comprehensive statewide forest resource plan completed (updated)? \_\_\_\_\_

6. Is your agency currently revising or does it plan to revise/update its comprehensive statewide forest resource plan?  
 \_\_\_\_\_ Yes. Expected year of revision/update: \_\_\_\_\_  
 \_\_\_\_\_ No

**(If YES, go to question #8; If NO, continue with question #7)**

7. Identify the major reasons why the comprehensive statewide forest resource planning is not being revised/updated (check all that apply)
- \_\_\_\_\_ Existing plan is adequate
  - \_\_\_\_\_ Changing information needs of forest resource management organizations
  - \_\_\_\_\_ Lack of external stakeholder support for statewide forest resource planning
  - \_\_\_\_\_ Lack of adequate resources (human/financial) for statewide forest resource planning
  - \_\_\_\_\_ Other agency planning activities have replaced the need for statewide forest resource planning
  - \_\_\_\_\_ Shift in priorities to other planning scales (e.g., administrative and other landscape units)
  - \_\_\_\_\_ Shift at the statewide level from comprehensive planning to focus on critical issues/needs
  - \_\_\_\_\_ Planning activities of other organizations have replaced the need for statewide forest resource planning (Specify organization/type of plan: \_\_\_\_\_)
  - \_\_\_\_\_ Other: \_\_\_\_\_

### Reasons for Conducting Comprehensive Statewide Forest Resource Planning

8. Rate the importance of the following reasons for conducting comprehensive statewide forest resource planning.

	Very Important	Moderately Important	Not Important
Legislative mandate: Exists    Doesn't Exist ----- circle one -----	1	2	3
Pressure from state forest resource stakeholders	1	2	3
Changing physical/ecological condition of the state's forest resources	1	2	3
Changing economic conditions impacting the state's forest resources	1	2	3
Need for cross-ownership assessment of forest resources conditions/coordination of strategies	1	2	3
Increasing legislative and policy-makers awareness of state's forest resources	1	2	3
Providing a long-term vision/direction for management of forest resources	1	2	3
Raising the awareness of emerging forest resource issues	1	2	3
Providing a process for developing agency work planning and budget priorities	1	2	3

## Statewide Comprehensive Forest Resource Plan Format and Content

9. Identify which of the following are included in your statewide forest resource plan. (Check all that apply.)

- Vision for the state's forest resources
- Identification of strategic forest resource issues
- Prioritization or ranking of strategic forest resource issues
- Historical information on the state's forest resources
- Projections of future forest resource conditions
- Strategies for cross-ownership coordination
- Site-specific land management strategies
- Environmental impact analysis
- Socioeconomic information
- Description of/direction for agency-specific programs
- Description of state laws and regulations affecting forest resources
- Agency budget/funding history
- Other (please specify: \_\_\_\_\_)

10. Characterize the extent the following are addressed in your statewide forest resources plan.

	Extensively Addressed	Moderately Addressed	Minimally Addressed	Not Addressed
<b>Economic Considerations</b>				
• Wood products manufacturing	1	2	3	4
• Nonwood forest products	1	2	3	4
• Recreation and tourism	1	2	3	4
<b>Ecological Considerations</b>				
• Ecosystem/species diversity	1	2	3	4
• Wildlife habitat	1	2	3	4
• Forest ecosystem health	1	2	3	4
• Soil and water resources	1	2	3	4
<b>Social Considerations</b>				
• Cultural uses and values	1	2	3	4
• Consumption patterns/trends	1	2	3	4
• Community stability/quality of life	1	2	3	4

11. Which of the following best describe the *format* of your statewide forest resource plan? (Check all that apply.)

- Plan contains separate forest resource assessment and program documents
- Plan develops multiple future forest management and timber harvesting scenarios and evaluates resulting forest resource conditions and economic and ecological implications.
- Plan is organized around specific performance measures (e.g., criteria and indicators of forest sustainability).
- Plan is organized around a limited number of strategic forest resource issues.
- Other: \_\_\_\_\_

## Input in Statewide Forest Resource Planning Process

12. Identify the means used by your agency to engage the public in statewide forest resource planning? (Check all that apply.)
- Public meetings or open houses
  - Formal public review/comment period
  - Ongoing opportunity for the public to provide input
  - Public opinion surveys
  - General informational mailings
  - Media campaigns
  - Web-based input
  - Other: \_\_\_\_\_
13. Characterize the **level of public involvement sought** in the development of your statewide forest resource plan. (Check one.)
- Extensive.** The public's input is sought throughout the planning process; public meetings are held throughout the planning process; multiple opportunities for public input and comment are provided.
  - Moderate.** Public input is sought primarily at the beginning and end of the planning process, with minimal opportunity for public involvement as the plan is developed.
  - Minimal.** Public input is sought only at the beginning and/or toward the end of the planning process.
  - None.** Opportunities for public input during the planning process are not explicitly sought.
14. Characterize the **quality of public input provided** in the development of your statewide forest resource plan. (Check one.)
- Meaningful.** Public input routinely influences the scope and/or content of the planning process and/or resulting products.
  - Important.** Public input occasionally influences the scope and/or content of the planning process and/or resulting products.
  - Marginal.** Public input rarely influences the scope and/or content of the planning process and/or resulting products.
  - No Input.** The public does not meaningfully participate in the development of our statewide forest resources plan.
15. To what extent are agency field staff consulted in the development of your agency's statewide forest resource plan? (Check one.)
- Extensively involved (consultation and input is routine)
  - Moderately involved (consultation and input is sporadic)
  - Minimally involved (consultation and input is rare)
  - Not involved



16. To what extent are the following resource disciplines *within your state's natural resources organization* involved in statewide forest resource planning?

	Extensively Involved	Moderately Involved	Minimally Involved	Not Involved	Doesn't Apply
Wildlife	1	2	3	4	5
Fisheries	1	2	3	4	5
Watershed management	1	2	3	4	5
Ecological services	1	2	3	4	5
Minerals	1	2	3	4	5
Parks and recreation	1	2	3	4	5
Other: _____	1	2	3	4	5

17. To what extent are the following *other state agencies* involved in statewide forest resource planning?

	Extensively Involved	Moderately Involved	Minimally Involved	Not Involved	Doesn't Apply
Transportation	1	2	3	4	5
Economic development	1	2	3	4	5
Pollution control	1	2	3	4	5
Fish and game	1	2	3	4	5
Water and soil resources	1	2	3	4	5
Agriculture	1	2	3	4	5
Waste management	1	2	3	4	5
Other: _____	1	2	3	4	5

18. To what extent are the following *federal agencies* involved in statewide forest resource planning?

	Extensively Involved	Moderately Involved	Minimally Involved	Not Involved	Doesn't Apply
USDA-Forest Service	1	2	3	4	5
Fish and Wildlife Service	1	2	3	4	5
Environmental Protection Agency	1	2	3	4	5
National Park Service	1	2	3	4	5
Corps of Engineers	1	2	3	4	5
Bureau of Land Management	1	2	3	4	5
Other: _____	1	2	3	4	5

19. To what extent are *local agencies* involved in statewide forest resource planning?

	Extensively Involved	Moderately Involved	Minimally Involved	Not Involved	Doesn't Apply
County/municipal agencies	1	2	3	4	5
Other: _____	1	2	3	4	5

20. To what extent are the following *interest groups* involved in statewide forest resource planning?

	Extensively Involved	Moderately Involved	Minimally Involved	Not Involved	Doesn't Apply
Forest products industry	1	2	3	4	5
Timber producers	1	2	3	4	5
Conservation organizations	1	2	3	4	5
Environmental organizations	1	2	3	4	5
Forest landowner associations	1	2	3	4	5
Outdoor recreation groups	1	2	3	4	5
Tribal groups	1	2	3	4	5
Other: _____	1	2	3	4	5

### III. State Forest Land Management Planning

In this section, we would like you to provide information about your agency's efforts to plan for the management of state-administered forest lands in your state. **If your agency does not plan for the management of state-administered forest lands, skip this section and go to section IV (question 36).**

#### Reasons for Planning for State-administered Forest Lands

21. In your opinion, rate the importance of the following reasons for undertaking planning for the management of state-administered forest lands.

	Very Important	Moderately Important	Not Important
Legislative mandate: <b>Exists</b> <b>Doesn't Exist</b> -----circle one-----	1	2	3
Pressure from state forest resource stakeholders	1	2	3
Changing physical/ecological condition of the state's forest resources	1	2	3
Changing economic conditions impacting the state's forest resources	1	2	3
Development of strategies to address important issues/concerns	1	2	3
Increasing legislative and policy-makers awareness of state's forest resources	1	2	3
Providing a long-term vision/direction for management of the state's forest resources	1	2	3
Raising the awareness of emerging forest resource issues	1	2	3
Providing a process for developing agency work planning and budget priorities	1	2	3

## State Forest Land Management Plan Format and Content

22. Does your agency prepare one plan for the management of all state-administered forests, or several geographically-specific plans, or both?

- One plan  
 Several plans  
 Both

If your state prepares geographic-specific plans, please indicate the basis for delineating these plans (check all that apply).

- Administrative boundaries  
 Ecological boundaries  
 Political boundaries  
 Other: \_\_\_\_\_

23. Identify which of the following are included in your state forest land management plans. (Check all that apply.)

- Vision for the state's forest resources  
 Identification of strategic forest resource issues  
 Prioritization or ranking of strategic forest resource issues  
 Current and historical information on the state's forest resources  
 Projections of future forest resource conditions  
 Strategies for cross-ownership coordination  
 Site-specific land management treatments  
 Environmental impact analysis  
 Socioeconomic information (e.g., demographics, forest industry, recreation)  
 Description of and direction for agency-specific programs  
 Description of laws and regulations affecting forest resources  
 Other (Specify: \_\_\_\_\_)

24. Characterize the extent the following are addressed in your state forest land management plans.

	Extensively Addressed	Moderately Addressed	Minimally Addressed	Not Addressed
<b>Economic Considerations</b>				
• Wood products	1	2	3	4
• Nonwood forest products	1	2	3	4
• Recreation and tourism	1	2	3	4
<b>Ecological Considerations</b>				
• Ecosystem/species diversity	1	2	3	4
• Wildlife habitat	1	2	3	4
• Forest ecosystem health	1	2	3	4
• Soil and water resources	1	2	3	4
<b>Social Considerations</b>				
• Cultural uses and values	1	2	3	4
• Consumption patterns/trends	1	2	3	4
• Community stability/quality of life	1	2	3	4

25. Which of the following best describes the *format* of your state forest land management plans? (Check all that apply.)
- Plan is organized around stand level inventory and/or stand level tactical operations
  - Plan contains separate forest resource assessment and program documents
  - Plan develops multiple future forest management and timber harvesting scenarios and evaluates resulting forest resource conditions and economic and ecological implications
  - Plan is organized around specific performance measures (e.g., criteria and indicators of forest sustainability)
  - Plan is organized around a limited number of strategic forest resource issues
  - Plan is organized around stand-based forest inventory data
  - Other: \_\_\_\_\_
26. Estimate the time required to complete the most recent plan(s) for state-administered forest lands?
- Less than 1 year
  - 1 to 2 years
  - 2-3 years
  - 3-4 years
  - 4-5 years
  - More than 5 years

### Input in Planning Process for State-administered Forest Lands

27. Identify the means used by your agency to engage the public in the development of state forest land management plans. (Check all that apply.)
- Public meetings and open houses
  - Formal public review/comment period
  - Ongoing opportunity for the public to provide input
  - Public opinion surveys
  - General informational mailings
  - Field tours
  - Media campaigns
  - Web-based input
  - Other (please specify: \_\_\_\_\_)
28. Characterize the **level of public involvement sought** in the development of your state forest land management plans. (Check one.)
- Extensive.** The public's input is sought throughout the planning process; public meetings are held throughout the planning process; multiple opportunities for public input and comment are provided.
  - Moderate.** Public input is sought primarily at the beginning and end of the planning process, with minimal opportunity for public involvement as the plan is developed.
  - Minimal.** Public input is sought only at the beginning and/or end of the planning process.
  - None.** Opportunities for public input during the planning process are not explicitly sought.

29. Characterize the **quality of public input provided** in the development of your state forest land management plans.
- \_\_\_\_\_ **Meaningful.** Public input routinely influences the scope and/or content of the planning process and/or resulting products.
- \_\_\_\_\_ **Important.** Public input occasionally influences the scope and/or content of the planning process and/or resulting products.
- \_\_\_\_\_ **Marginal.** Public input rarely influences the scope and/or content of the planning process and/or resulting products.
- \_\_\_\_\_ **No Input.** The public does not meaningfully participate in the development of our statewide forest resources plan.

30. To what extent are *agency field staff* consulted with in the development of state forest land management plans? (Check one.)
- \_\_\_\_\_ Extensively involved (consultation is routine)
- \_\_\_\_\_ Moderately involved (consultation is sporadic)
- \_\_\_\_\_ Minimally involved (consultation is rare)
- \_\_\_\_\_ Not involved

31. To what extent are the following resource disciplines *within your state's natural resources organization* involved in the development of state forest land management plans?

	Extensively Involved	Moderately Involved	Minimally Involved	Not Involved	Doesn't Apply
Wildlife	1	2	3	4	5
Fisheries	1	2	3	4	5
Watershed management	1	2	3	4	5
Ecological services	1	2	3	4	5
Minerals	1	2	3	4	5
Parks and recreation	1	2	3	4	5
Other: _____	1	2	3	4	5

32. To what extent are the following *other state agencies* involved in the development of state forest land management plans?

	Extensively Involved	Moderately Involved	Minimally Involved	Not Involved	Doesn't Apply
Transportation	1	2	3	4	5
Economic development	1	2	3	4	5
Pollution control	1	2	3	4	5
Fish and game	1	2	3	4	5
Water and soil resources	1	2	3	4	5
Agriculture	1	2	3	4	5
Waste management	1	2	3	4	5
Other: _____	1	2	3	4	5

33. To what extent are the following *federal agencies* involved in the development of state forest land management plans?

	Extensively Involved	Moderately Involved	Minimally Involved	Not Involved	Doesn't Apply
USDA-Forest Service	1	2	3	4	5
Fish and Wildlife Service	1	2	3	4	5
Environmental Protection Agency	1	2	3	4	5
National Park Service	1	2	3	4	5
Corps of Engineers	1	2	3	4	5
Bureau of Land Management	1	2	3	4	5
Other: _____	1	2	3	4	5

34. To what extent are *local agencies* involved in the development of state forest land management plans?

	Extensively Involved	Moderately Involved	Minimally Involved	Not Involved	Doesn't Apply
County/municipal agencies	1	2	3	4	5
Other: _____	1	2	3	4	5

35. To what extent are the following *interest groups* involved in the development of state forest land management plans?

	Extensively Involved	Moderately Involved	Minimally Involved	Not Involved	Doesn't Apply
Forest products industry	1	2	3	4	5
Timber producers	1	2	3	4	5
Conservation organizations	1	2	3	4	5
Environmental organizations	1	2	3	4	5
Forest landowner associations	1	2	3	4	5
Sporting groups	1	2	3	4	5
Tribal groups	1	2	3	4	5
Other: _____	1	2	3	4	5

#### IV. Other Planning Activities Affecting the State's Forest Resources

36. To what extent does the planning *conducted by other state agencies* affect the forest resources of your state?

	Extensively Affected	Moderately Affected	Minimally Affected	Not Affected	Doesn't Apply
Transportation	1	2	3	4	5
Economic development	1	2	3	4	5
Pollution control	1	2	3	4	5
Fish and game	1	2	3	4	5
Water and soil resources	1	2	3	4	5
Agriculture	1	2	3	4	5
Waste management	1	2	3	4	5
Other: _____	1	2	3	4	5

37. To what extent is your agency involved in the planning activities *led by other state agencies*?

	Extensively Involved	Moderately Involved	Minimally Involved	Not Involved	Doesn't Apply
Transportation	1	2	3	4	5
Economic development	1	2	3	4	5
Pollution control	1	2	3	4	5
Fish and game	1	2	3	4	5
Water and soil resources	1	2	3	4	5
Agriculture	1	2	3	4	5
Waste management	1	2	3	4	5
Other: _____	1	2	3	4	5

#### V. Resources Devoted to Agency Forest Resource Planning Activities

38. Over the course of a typical year, estimate the total level of staff effort from your agency devoted to forest resource planning activities: \_\_\_\_\_

(measured in full time equivalents; (1 FTE= 2,000 hours) over \_\_\_\_\_ # of employees.

39. How has your agency's staff support for forest resource planning changed over the past 10 years? (Check one.)

- \_\_\_\_\_ Decreased substantially (> 50% decrease in staff effort)
- \_\_\_\_\_ Decreased somewhat (10-50% decrease in staff effort)
- \_\_\_\_\_ Remained the same (<10% change in staff effort)
- \_\_\_\_\_ Increased somewhat (10-50% increase in staff effort)
- \_\_\_\_\_ Increased substantially (> 50% increase in staff effort)

40. Over the course of a typical year, estimate the level of financial support (including salaries) from your agency to support forest resources planning activities. (In \$1,000's) \_\_\_\_\_

41. How has your agency's financial support for forest resource planning changed over the past 10 years? (Check one.)
- Decreased substantially (> 50% decrease in financial resources)
  - Decreased somewhat (10-50% decrease in financial resources)
  - Remained the same (<10% change in financial resources)
  - Increased somewhat (10-50% increase in financial resources)
  - Increased substantially (> 50% increase in financial resources)

## VI. Role of Technology in Forest Resource Planning

42. Identify the importance of the following technology in your agency's forest resource planning activities preparing your state's statewide forest resource plan.

	Very Important	Moderately Important	Minimally Important	Not Important
Geographic Information Systems (GIS)	1	2	3	4
Remote sensing	1	2	3	4
Economic models (e.g., IMPLAN)	1	2	3	4
Decision support models (e.g., IDA)	1	2	3	4
Resource simulation models (e.g., Forest Vegetation Simulator)	1	2	3	4
Ecological models (e.g., FRAGSTATS)	1	2	3	4
Other: _____	1	2	3	4

43. Identify the extent to which the Internet is used in your agency's forest resource planning activities.

	Extensively Used	Moderately Used	Minimally Used	Not Used
Notifying the public (e.g., availability of planning documents, notice of upcoming meetings or events)	1	2	3	4
Accepting comments from the public on draft planning documents	1	2	3	4
Making planning-related data and maps available for public review and use	1	2	3	4
Disseminating planning documents	1	2	3	4
Other: _____	1	2	3	4



## VII. Training Needs of Planners

44. Describe your agency's need for training in the following skill areas commonly used in forest resources planning.

	Extensive Need	Moderate Need	Minimal Need	No Need
Conflict management	1	2	3	4
Meeting facilitation	1	2	3	4
Use of technology (e.g., internet, creating web pages, GIS mapping)	1	2	3	4
Data assessment and analysis	1	2	3	4
Model development and implementation	1	2	3	4
Other: _____	1	2	3	4

## VIII. Federal Role in State Forest Resource Planning Activities

45. Rate the need for assistance from the federal government (notably those of the USDA Forest Service, State and Private Forestry) in assisting your agency in developing more meaningful and effective forest resource plans.

- Extensive need  
 Moderate need  
 Minimal need  
 No need

46. Rate the adequacy of federal efforts in provide planning assistance to your state in developing more meaningful and effective forest resource plans.

- Very inadequate  
 Somewhat inadequate  
 Somewhat adequate  
 Very adequate

47. Indicate specific ways in which federal efforts could better assist your state in developing more meaningful and effective forest resource plans (check all that apply).

- Training/workshops on planning  
 Technical publications on planning techniques  
 On-site assistance  
 Convene/facilitate conferences to share planning approaches/experiences  
 Develop guides for integrating federally-mandated program plans (i.e., Urban Forestry, Stewardship, Forest Land Enhancement and Forest Legacy) into one plan  
 Other: \_\_\_\_\_

48. Characterize the extent to which your agency's forest resource planning activities support implementation of the following federal programs?

	Extensive Support	Moderate Support	Minimal Support	No Support	Not Applicable
Forest Legacy Program	1	2	3	4	5
Forest Land Enhancement Program	1	2	3	4	5
Forest Stewardship Program	1	2	3	4	5
Community and Urban Forestry Programs	1	2	3	4	5
Fire Management Program	1	2	3	4	5
Forest Health Management Program	1	2	3	4	5

## IX. Evaluation of Agency Forest Resource Planning Activities

Considering **ALL** forest resource planning conducted by your agency, please answer the following.

49. Characterize the extent to which your agency's forest resource planning activities influence the following.

	Extensive Influence	Moderate Influence	Minimal Influence	No Influence
Better coordination among agencies with forest resource management responsibility	1	2	3	4
Better integration of various resource disciplines (e.g., wildlife) impacting forest resources	1	2	3	4
Better understanding of the condition of and major trends in the state's forest resources	1	2	3	4
Better understanding of important issues affecting the state's forest resources	1	2	3	4
Political support for forest resources management among state policy makers	1	2	3	4
Identification of important economic development strategies	1	2	3	4
Identification of important environmental protection strategies	1	2	3	4
Increased awareness of forest resources importance among state citizenry	1	2	3	4
The mission of the state's forestry agency is more clearly defined	1	2	3	4
Development of alternative strategies to address issues and/or achieve goals	1	2	3	4

50. Characterize the extent to which support exists for your agency's forest resource planning activities from the following.

	Extensive	Moderate	Minimal	None	Not Sure
Governor	1	2	3	4	5
State legislature	1	2	3	4	5
State forester	1	2	3	4	5
Agency field staff	1	2	3	4	5
Other divisions with natural resources agency	1	2	3	4	5
Other state agencies	1	2	3	4	5
Federal agencies	1	2	3	4	5
Forest industries	1	2	3	4	5
Private forest landowners	1	2	3	4	5
Other private interests	1	2	3	4	5

51. What are the *greatest impediments* to a more effective forest resource planning in your state?

52. What are two *most important factors* influencing the future of forest resource planning in your state?

53. Please share any other comments/perspectives you have on forest resources planning.

**Thank you very much for your participation in this survey.  
Please return the survey in the enclosed envelope by April 15, 2003.**

**If you have any questions, please feel free to contact:**

**Mike Kilgore  
Department of Forest Resources  
University of Minnesota  
1530 Cleveland Avenue North  
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Phone: 612-624-6298  
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mkilgore@umn.edu**

## **Definitions of Types of Planning Commonly Conducted by State Forestry Agencies**

*Comprehensive Statewide Forest Resource Planning.* A systematic and thorough examination of forest resource conditions, trends, and strategic issues that considers all forest resources within the state, regardless of ownership. A comprehensive statewide forest resources plan identifies the desired social, economic and ecological outcomes of proposed actions, and proposes strategies to achieve these outcomes. A comprehensive statewide forest resources plan is typically intended to set the general direction toward an agency's mission and is not used to make specific land use or management decisions.

*State Forest Land Management Plans.* A process by which plans for the management and use of forest lands owned and/or managed by the state is specified. This type of planning contains enough specificity to provide clear direction for the management activities for state-administered forests. State forest land management plans will typically outline a set or sequence of management activities needed to achieve desired future conditions at geographic levels ranging from administrative (i.e., one or more state forests or districts within forest), ecological, or forest stand units.

*Planning Based on Select Topics, Issues or Activities.* Planning that focuses on a specific issue or topic of public concern. The scope of the plan is determined by the scale and complexity of the issue or topic. The public involvement process, especially with issue-based planning, may involve resolution of demands for desired future conditions that are mutually or partially exclusive of each other (e.g., old-growth forest preservation, fire prevention/suppression, open space, recreation planning, urban forests, rural development, manufacturing, and tourism).

*Land Use Planning.* Planning that allocates land among a variety of uses, generally or specifically (e.g., public versus private land uses; agriculture, versus forest versus development; or wilderness versus multiple-use versus timberland).

**Appendix B**  
**Cover Letter to Questionnaire Recipients**

# UNIVERSITY OF MINNESOTA

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March 18, 2003

Dear State Forest Resource Planner:

The University of Minnesota's Department of Forest Resources, in cooperation with the Northeast Forest Resource Planners Association (NFRPA), is conducting a national assessment of forest resource planning activities. Enclosed is a questionnaire seeking information about state forest resource planning activities undertaken by your agency. The questionnaire should be completed by the individual within your agency who is considered to have the most working knowledge of your agency's involvement in state forest resource planning activities.

The questionnaire seeks information on a number of important aspects of forest resource planning undertaken by your agency. A particular focus is on your agency's involvement in comprehensive statewide forest resource planning, as well as planning for the management of state-owned or managed forest lands. The questionnaire also requests information on the resources devoted to planning, planning-related training and assistance needs, and perceptions of planning effectiveness. Several state forestry planners who pre-tested the questionnaire found it could be completed in approximately 30 minutes.

The information you provide on behalf of your state will be used to prepare a report on the status of and emerging issues in state forest resource planning in the United States. Survey data will be summarized on a national and, where appropriate, regional basis. Individual state responses will not be reported. Once prepared, a copy of the report will be provided to your agency. Note the hand written number on the 1<sup>st</sup> page of the questionnaire is only used for survey administration purposes.

**Please return the completed questionnaire in the enclosed, self-addressed stamped envelope, within two weeks of its receipt.** Thank you in advance for taking the time to complete the questionnaire. Please do not hesitate to contact me (612-624-6298, [mkilgore@umn.edu](mailto:mkilgore@umn.edu)), if you have any questions or concerns about the survey.

Sincerely,

Michael Kilgore  
Assistant Professor of Natural Resource Economics

Enc: Questionnaire, self-addressed stamped envelope