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Green Mountain National Forest

Land and Resource Management Plan

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Green Mountain National Forest
Land and Resource Management Plan
(2006 Forest Plan)

Eastern Region
Milwaukee, Wisconsin
February 2006

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As the population of the country rises and demands on the timber, forage, water, wildlife, and recreation resources increase, the national forests more and more provide for the material needs of the individual, the economies of the towns and States, and contribute to the Nation's strength and well-being. Thus the national forests serve the people.

- Edward P. Cliff, Ninth Chief of the USDA Forest Service, *The USDA Forest Service – The First Century,* FS 650, Washington DC, July 2000.

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Smokey Bear and Fisherman at the Fish Derby,
photo courtesy of Scott Wixsom

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View from Appalachian Trail, photo courtesy of David Lacy

Chapter 1 Introduction to the Forest Plan

1.1 INTRODUCTION TO THE FOREST PLAN

1.1.1 Introduction

The Green Mountain National Forest

The Green Mountain National Forest (GMNF) encompasses more than 400,000 acres in southwestern and central Vermont, forming the largest contiguous public land area in the State (Figure 1.1-1). Characterized by striking scenery that combines rugged mountain peaks with quintessential Vermont villages, the Forest is an attraction for many visitors. The GMNF signifies a multiple-use ethic through its role of providing ecological and science-based forest stewardship, clean water, diverse vegetation, high-value, high-quality forest products, economical and educational contributions, and trail-based backcountry recreation.

Located within a day's drive of more than 70 million people, the GMNF is a destination for visitors seeking a variety of recreation opportunities. The Forest includes three nationally designated trails: The Appalachian National Scenic Trail, Long National Recreation Trail, and the Robert Frost National Recreation Trail. The Forest also includes three alpine ski areas, seven Nordic ski areas, and approximately 900 miles of multiple-use trails for hiking, cross country skiing, snowmobiling, horseback riding, and bicycling. In addition to recreation opportunities, the Forest includes a variety of species of plants and animals. Northern hardwoods, softwoods, rare and unique plants, fish, birds, and numerous animals of all sizes are part of the attraction for visitors.

The USDA Forest Service manages the GMNF, aided by partners, other agencies, and individuals. There are two Ranger Districts: the Manchester in southwest Vermont and the Rochester-Middlebury in central Vermont. The Forest Headquarters is currently located in Rutland, Vermont.

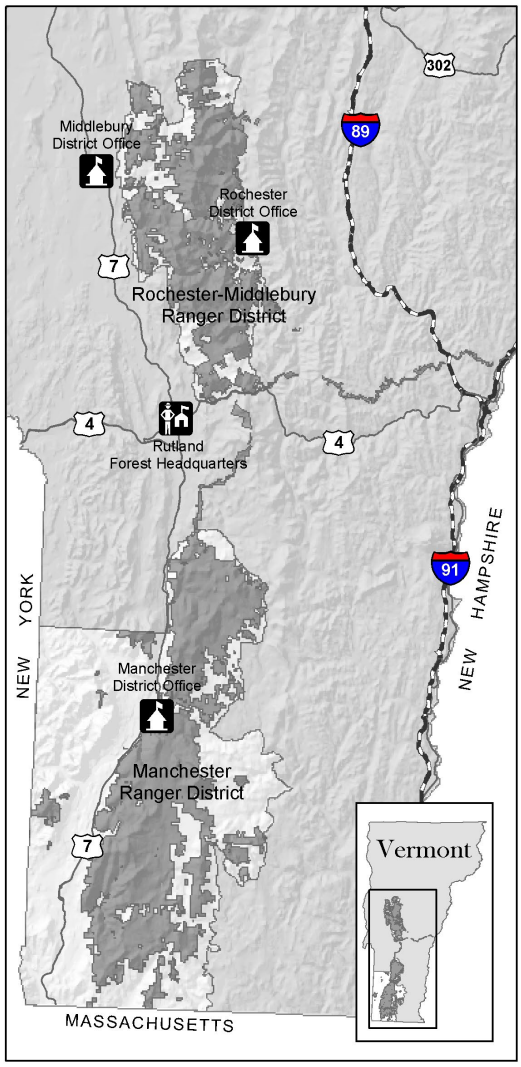


Figure 1.1-1: Location of the Green Mountain National Forest in Vermont

Purpose of the Forest Plan

The Forest Plan, also known as the Land and Resource Management Plan, guides all natural resource management activities for the GMNF. It describes Forest-wide goals and objectives, management area desired resource conditions, standards and guidelines for implementation of projects, levels of resource production and management, and the availability of suitable land for resource management.

The purpose of the Forest Plan is to provide management direction to ensure that ecosystems are capable of providing a sustainable flow of beneficial goods and services to the public. More specifically, the Plan establishes:

- How the Forest should look if the Forest Plan is fully implemented (Goals and Desired Conditions)
- Measurable, planned results that contribute to reaching the desired conditions (Objectives)
- Required action or resource status designed to meet the desired conditions and objectives (Standards)
- Preferable action used to reach desired conditions and objectives (Guidelines)
- Management Direction that is applicable Forest-wide
- Management direction that is applicable only to specific management areas
- Management direction that is applicable only to specific landscape ecosystems
- Monitoring and evaluation requirements
- Designation of land as suitable or not suitable for timber production and other resource management activities

Land use determinations and management area standards and guidelines constitute a statement of the Plan's management direction; however, the actual outputs, services, and rates of implementation are dependant on annual budgets from Congress.

Revising the 1987 Forest Plan

A Forest Plan for the Green Mountain National Forest was issued in 1987. The National Forest Management Act (NFMA) regulations require that Forest Plans be revised every 10 to 15 years (36 CFR 219.10). This 2006 Forest Plan is a result of the revision effort described in the Final Environmental Impact Statement (Final EIS).

Included in the Final EIS are several management alternatives. The 2006 Forest Plan is based on the Selected Alternative, Alternative E, which is described in Chapter 2 (Section 2.1.7) of the Final EIS. The Forest Plan is a result of extensive analysis and considerations addressed in the accompanying Final EIS. The 2006 Forest Plan completely replaces the 1987 Forest Plan.

Forest Plan Revision in the Future

The GMNF Forest Supervisor is required to review conditions of the land at least every five years to determine if the Forest Plan needs to be revised. If monitoring and evaluation indicate that immediate changes are needed and these needed changes cannot be handled by a Plan amendment, then it would be necessary to revise the Plan.

Forest Service Planning Rules

This Forest Plan revision process was conducted under the 1982 version of the Forest Service planning rules as stated in 36 CFR 219. The Forest Service developed revised planning rules that were approved in 2005; however, they were not adopted by the GMNF during revision of the 1987 Plan. Subsequent revisions or amendments to the Plan will be developed under applicable planning rules.

Consultation with Tribes

To ensure that the rights of sovereign tribal governments are fully respected, the President has directed agencies to operate within a government-to-government relationship; to consult with tribal governments prior to taking actions affecting resources in which tribal governments may have an interest; to assess the impact of plans, projects, and programs to assure that tribal governments' rights and interests are considered; and, to remove any procedural barriers to working directly and effectively with tribal governments.

The Forest Service has been in contact with tribes throughout the process of preparing the 2006 Forest Plan. Contact is ongoing between the Forest Service and the Abenaki Nation of Vermont and the Stockbridge-Munsee Band of the Mohican Nation, Wisconsin.

Consultation with the Mohican Nation supports Executive Order 13175 (November 6, 2000), which recognizes the sovereignty of federally recognized American Indian tribes and the special government-to-government relationship between the United States and American Indian tribes.

1.1.2 Implementing the 2006 Forest Plan

The 2006 Forest Plan provides a framework and context that guides the Green Mountain National Forest's day-to-day resource management operations. It is a strategic, programmatic document and does not make any project level decisions.

The National Forest Management Act (NFMA) requires that "permits, contracts, and other instruments for use and occupancy" of National Forest System lands be "consistent" with the Forest Plan (NFMA 1976). In the context of a revised Plan, the NFMA specifically conditions this requirement in three ways:

1. These documents must be revised only "when necessary"
2. These documents must be revised as "soon as practicable"
3. Any revisions are "subject to valid existing rights"

Basic Principles of Management

A set of fundamental principles guides management on the Green Mountain National Forest. Direction in the 2006 Forest Plan qualifies and expands upon these four basic principles.

Principle 1

The Forest Service will follow laws and regulations as well as policies in Forest Service Manuals and Handbooks that relate to managing National Forest System land. The Plan is designed to supplement, not replace, direction from these sources.

Principle 2

The Forest Service will coordinate management activities with the appropriate local, State, or tribal governments, as well as with other federal agencies.

Principle 3

The Forest Service will actively consult with tribal governments and collaborate with interested organizations, groups, and individuals on resource planning and implementation.

Principle 4

The Forest Service will manage the Green Mountain National Forest for multiple uses. The Green Mountain National Forest is open for any legal public activity or management action, unless specifically restricted in law, policy, or the 2006 Forest Plan. While allowed, such activities and actions may require administrative review and authorization before they are implemented.

Tools and Techniques

The Forest will reach desired vegetative conditions through natural ecological processes and through utilization of a diverse range of management tools and techniques as per the 2006 Forest Plan.

To the extent practical, timber management will be used to emulate naturally occurring disturbances, such as windstorms and fire, as well as to create desired vegetative types. Management practices will include fire, and both even-aged and uneven-aged timber harvesting techniques. Clearcutting will continue to be used on the Forest when it is the optimal method to meet the objectives and requirements of the 2006 Forest Plan. The Forest Service will also use shelterwood, group selection, individual tree selection, and other harvest methods to create or maintain even-aged and uneven-aged stands.

Prescribed fire will be used alone or with silvicultural treatments to mimic the effects of natural fire. Prescribed fire will help maintain, enhance, and restore natural ecological processes on the Forest.

The Forest Service will promote re-growth of harvested or other disturbed forests with a variety of regeneration practices. This includes regenerating forests through tree planting, seeding, and natural regeneration. Some areas will naturally change through forest succession.

Environmentally sustainable management practices will provide commodity and non-commodity resources to contribute to the social and economic stability of local communities. Management practices to achieve this include prescribed fire, mowing, timber harvest, non-commercial and commercial use of forest products, and restoration activities. Recreation opportunities will be provided in a multiple-use setting by using management tools such as the Recreation Opportunity Spectrum.

Ecological functions of watersheds and riparian areas will be enhanced or restored through techniques such as reconstructing or improving road and trail crossings, or using silvicultural treatments to enhance shade, coarse woody debris recruitment, or bank stability in riparian areas.

Site-Level Projects

"Implementing the 2006 Forest Plan" means developing and implementing site-level forest management projects in order to reach the desired conditions established in the Plan.

Project-level compliance with the NFMA is primarily concerned with consistency with the 2006 Forest Plan and the NFMA regulations, as well as disclosure of potential environmental impacts.

Compliance with the National Environmental Policy Act involves the environmental analysis process for a specific proposal, proper documentation, and public disclosure of effects in an environmental assessment, environmental impact statement, or categorical exclusion. An analysis file or project file is available for public review. Environmental analysis is driven by public involvement and determined issues.

Environmental analysis of site-level projects will use, as its basis, the data and evaluations in the 2006 Forest Plan and the Final Environmental Impact Statement for the Forest Plan. The following are some examples of project-level decisions that may require additional environmental analyses and disclosure as the 2006 Forest Plan is implemented:

- Timber harvest
- Wildlife improvement and restoration projects
- Prescribed burn projects
- Trail construction

Operational Activities Exempt from National Environmental Policy Act (NEPA) Procedures

Resource inventories, action plans, and schedules do not require additional environmental analysis and disclosure at the project level. The following are examples of operational activities that do not constitute site-specific decisions and therefore are exempt from NEPA procedures:

- Developing fire-situation reports
- Scheduling maintenance for developed recreation sites
-

Beaver Meadows Pond

Budgets

Annual Forest budget proposals are based on the activities and actions required to achieve the desired conditions and objectives of the 2006 Forest Plan. Congress reviews and allocates Forest budgets on an annual basis, which may, or may not be, sufficient to implement proposed annual activities.

The National Forest System appropriation from Congress provides funds for stewardship and management of approximately 192 million acres of federal land and the natural ecosystems on that land across the country. These appropriated funds are necessary for translating the desired conditions and objectives stated in the 2006 Forest Plan to on-the-ground results.

Upon receipt of the final budget, the Forest annually prepares an implementation budget. This budget is a result of program development, annual work planning, and monitoring processes. These processes supplement the 2006 Forest Plan and make the annual adjustments and changes needed to reflect current priorities within the overall management direction contained in the Plan. Therefore, the funding distribution between program components and the intensity or level of activities in those programs is a reflection of the Forest Plan as well as the will of Congress. The final determining factor in carrying out the intent of the 2006 Forest Plan is the level of funding, which dictates the rate of implementation of the Plan.

Forest Plan Amendments

Proposed activities should be consistent with direction in the 2006 Forest Plan. When conditions change, such as a change in public interest or land resource conditions, or monitoring and analysis shows an error in the Plan, adjustment to the 2006 Forest Plan would require an amendment.

The need to amend management direction may result from:

- Changes in physical, biological, social, or economic conditions
- Recommendations of an interdisciplinary team based on the results of monitoring and evaluation
- Determination by the Forest Supervisor that existing or proposed projects, permits, contracts, cooperative agreements, or other instruments authorizing occupancy and use are appropriate, but not consistent with elements of the 2006 Forest Plan management direction
- Errors in planning found during implementation. Conflicts may be identified between different sections of management direction, for instance there could be discrepancies in the selected alternative map and the narrative description of the selected alternative. The Forest Plan does not prioritize management direction; therefore a discrepancy would need to be resolved by determining the management intent using a variety of information, such as the planning record, Final Environmental Impact Statement, and the 2006 Forest Plan. The Forest Supervisor will determine whether proposed changes to the Forest Plan are significant or non-significant as defined by the National Forest Management Act, to determine the level of analysis necessary to amend the Plan.

Chapter 2 Forest-Wide Management Direction

2.1 ROLE OF THE GREEN MOUNTAIN NATIONAL FOREST

2.1.1 Historical Perspective

The Green Mountains form the backbone of the Western Abenaki homeland. Native life was thrown into turmoil by contact with French, Dutch, and English societies in the 17th and 18th centuries, reducing their population and altering their lifestyles. English settlement of this area began in the mid-18th century and flourished after the Revolution. Land-use in the 19th century included subsistence farming, grazing, and orchard operations, but was shaped by extractive industries like logging and mining. By the early 20th century, visitors to Vermont began considering the mountains a source of beauty and recreation opportunities.

The origin of the Green Mountain National Forest (GMNF) is due in large part to the persistent effort of committed Vermont citizens and legislators working over a three-decade period in the early 1900s to persuade Congress and the USDA Forest Service of the need for Vermont's own national forest. The tragic flood of 1927, with its resulting devastation to Vermont's towns and surrounding lands, was a key event that finally led to official studies, proposals, and legislative actions resulting in President Herbert Hoover's proclamation of April 25, 1932 creating Vermont's sole national forest. The name chosen was in honor of Vermont's namesake, the Green Mountain State.

The proposal that eventually led to the creation of the GMNF spoke of the need to improve and preserve local watersheds, offer resources for local wood industries, provide recreation to a region with an expanding population, and to "serve as a demonstration area of proper forest management" – reasons still valid today.

Today National Forest System lands are found within 53 towns in southern and central Vermont. Like other national forests in the eastern United States, the GMNF has been assembled parcel by parcel from lands acquired from willing private landowners. In earlier years, many of these lands had been heavily logged, grazed, farmed, and later abandoned. Soils were often highly eroded with streams and riverbanks in poor condition. Current federal ownership is now more than 400,000 acres and comprises 49 percent of the land within the 821,000-acre Forest Proclamation Boundary. Due to the natural resilience of Vermont's forests and careful management, the USDA Forest Service has worked for more than 70 years to restore a healthy, productive, and beautiful forest – one among a system of 155 national forests nationwide.

2.1.2 The Role of Today's Green Mountain National Forest

Straddling the spine of the Green Mountain range over the southern two-thirds of the State, the land within the National Forest embodies much of what is representative of Vermont's character and quality of life – lush forested hillsides interspersed by farms and village communities. The Green Mountains serve as an abiding connection of Vermont's people to the land and heighten the strong sense of place many feel. With the nation's population projected to double by the end of the 21st century, the Forest Service owes a special duty to act in ways that help conserve and maintain Vermont's landscape, its communities, and rural economy.

Today the GMNF encompasses 6 percent of Vermont's land base – roughly 50 percent of the public land within the State. It is the largest contiguous expanse of public land in Vermont. In contrast to some regions in the western US, where public ownership makes up two-thirds of the land, in the New England-New York Region public land makes up only 17 percent of the land base. With more than 70 million people

currently living within a day's drive of the GMNF, public land is under increasing pressure to serve the people of this region in a variety of ways. Coming decades are predicted to bring further urbanization, sprawl, and loss of open space. As such, our management philosophy continues to be guided by the belief that public land in the Northeast will be increasingly scarce and precious. With each passing decade this increasingly involves managing among a host of often competing and sometime conflicting interests.

Although the Forest Service will continue to manage these lands for multiple-use purposes, we will strive to emphasize the following uses and interests seeking to provide benefits for people today, with an eye towards coming trends so as to maintain options and opportunities for future generations:

- The headwaters of many of Vermont's rivers flow from the National Forest. The foundation of our stewardship responsibilities begins by conducting our management activities in a manner that **perpetuates an abundance of clean water and the maintenance of productive soils**.

- We recognize that local citizens value the National Forest as their "backyard" and that visitors are drawn from afar to experience its striking scenery and varied recreational opportunities. Our recreation niche will focus on the fact that the GMNF's large, contiguous blocks of land are **well suited to trail-based activities in backcountry settings**. The remote nature of much of this land makes **Wilderness a special role** the GMNF will serve to play. **Working in partnership** with many organizations will continue to be a hallmark of how the Forest Service provides recreation opportunities to the public.

- Our forest management activities will be especially geared towards providing a diverse range of vegetation ages and species composition in order to **enhance wildlife and plant habitat conditions,** including those for threatened, endangered, and rare species. The guaranteed long tenure of ownership of National Forest System lands allows for trees to be grown longer, so that the Forest Service will **focus on producing high-quality, high-value forest products.** This activity will be directed towards more productive and accessible lands.

- The Green Mountain National Forest contributes to the economic well being of Vermont by serving as the setting for appropriate small businesses such as guiding services and large businesses such as ski areas, as a source of material for the forest products industry, and as the scenic background and setting attractions for the tourism industry. We will collaborate with the State of Vermont, regional organizations, and towns so that our actions **actively contribute towards sustaining the character of Vermont's rural landscape, fostering vibrant local communities and economies.**

- The Green Mountain National Forest will strive to **serve as a model of ecological and science-based forest stewardship,** where monitoring and evaluation activities are applied in order to adapt and improve management practices over time. We will collaborate with other parties to offer opportunities for research on forest ecosystems. The GMNF will serve as a demonstration area of various types of sustainable management techniques in order to serve as an example for other forestland ownerships.

- The GMNF will **play an increasingly important educational role** whereby people may gain a clearer understanding of the origins of the natural resources they use in everyday life so as to develop a greater conservation ethic and sense of personal responsibility for their actions.

2.2 FOREST-WIDE GOALS AND OBJECTIVES

2.2.1 Introduction

The National Forest Management Act (NFMA) requires that Forest Plans contain multiple-use goals and objectives that include a description of the desired future condition of the Forest and the identification of the quantities of goods and services that are expected to be produced or provided during the planning period. Goals and objectives are conditions and activities that the GMNF is working toward but may not be able to completely achieve during the life of the 2006 Forest Plan. They are not intended to be construed as requirements.

Forest goals are concise statements that describe desired conditions to be achieved sometime in the future. They are normally expressed in broad, general terms, and are timeless in that they have no specific dates by which they are to be completed. Goal statements form the principal basis from which objectives are developed.

Forest objectives are concise, time-specific statements of measurable planned results or outcomes that are needed to achieve established goals. Objectives form the basis for building management programs and further planning to define the precise steps to be taken and the resources to be used in achieving goals. Objectives generally are accomplished by implementing projects or activities, and have a specific timeframe for achieving the desired outcome. The objectives shared below are expected to be accomplished during the life of the Plan (10 to 15 years) unless there is a specific stated timeframe for accomplishment of the objective.

Managers will use Forest-wide goals and objectives as a means of measuring progress achieved by implementing the 2006 Forest Plan. Information gained from comparing actual implemented progress against the Forest's desired future condition through monitoring and evaluation will be used to determine future management actions and resources needed to achieve the goals.

2.2.2 Goals and Objectives

Goal 1: Provide for a wide range of uses and activities in an ecologically, socially, and economically sustainable way.

This is the overarching goal for the management of the Green Mountain National Forest. Because of its broad nature, this goal will be achieved by following the goals and objectives listed below.

Goal 2: Maintain and restore quality, amount, and distribution of habitats to produce viable and sustainable populations of native and desirable non-native plants and animals.

Forest-wide Habitat Composition and Structure Objectives:

Maintain northern hardwood forests on sites that ecologically support these habitats.

Support, and where desirable enhance, the natural conversion of northern hardwood forests to mixedwood and softwood forests on sites that ecologically support a higher proportion of softwoods.

Increase acres of oak-dominated and oak-pine forest habitat on sites that ecologically support these habitats. Maintain, and where ecologically feasible increase, the oak component in oak-northern hardwood forests.

Increase acres of aspen-birch forest and regenerating forest in order to support species that prefer these habitats.

Maintain, and where desirable increase, the acres of upland open habitats at slightly higher than ecological tendencies to support species that prefer these habitats.

Increase acres of late-successional and old forest habitats through natural successional processes within lands not suitable for timber management, and through use of extended rotations within lands suitable for timber management.

Maintain acres of forested and non-forested wetlands, predominantly through natural processes.

The following composition objectives (Table 2.2-1) represent long-term ecological tendencies of Forest landscapes, with adjustments to manage aspen-birch, oak, and permanent upland opening habitats at, or slightly higher than, current levels. Because changes in forest composition take time, even with management, these composition objectives may take decades or even centuries to achieve.

Table 2.2-1: Long-Term Composition Objectives for all GMNF Lands

Habitat Type	Current (% Forest)	Objective (% Forest)
Northern Hardwoods	76	30-40
Mixedwood	10	45-55
Softwoods	7	15-25
Aspen-Birch	3	1-5
Oak	1	1-5
Permanent Upland Openings	1-2	1-5
Wetlands	1-2	1-2

Age Class Objectives for Diverse Forest Use, Diverse Backcountry, Remote Wildlife, Escarpment, and Moosalamoo Recreation and Education Area Management Areas:

Apply the following age-class objectives (Table 2.2-2) to suitable lands that will be managed using even-aged silvicultural systems to provide a variety of habitat conditions for wildlife and create a balanced distribution of age classes to meet timber objectives. Because balancing age classes to meet objectives takes time, it may be decades before these age class objectives are attained.

Table 2.2-2: Age Class Objectives for Suitable Lands

Habitat Type	Age class		Desired % range
Northern hardwoods	Regen.	0-9	5-10
	Young	10-59	30-50
	Mature	60-119	35-50
	Old	120+	5-30
Mixedwoods and Softwoods	Regen.	0-9	5-15
	Young	10-39	15-40
	Mature	40-99	35-55
	Old	100+	5-40
Aspen	Regen.	0-9	10-20
	Young	10-39	45-55
	Mature	40-59	25-35
	Old	60+	3-5
Birch	Regen.	0-9	5-15
	Young	10-49	45-55
	Mature	50-79	30-40
	Old	80+	3-5
Oaks	Regen.	0-9	5-15
	Young	10-59	45-55
	Mature	60-99	30-40
	Old	100+	5-10

Note: Applies only to suitable lands using even-aged silvicultural systems within the five MAs.

Maintain a full range of age classes from young to old, including late successional and multi-age conditions, within management areas where age class can be actively manipulated toward goals, objectives, and desired future conditions.

Manage a minimum of 20 percent of lands suitable for timber management using uneven-age silvicultural systems to create multi-age conditions.

Achieve the desired amounts and distribution of various age classes for different forest types using standard and extended rotation ages whereby:

- Lands emphasizing quality timber products are managed to Standard Rotation Ages (Table 2.2-3)
- Lands emphasizing recreation, enhancement of ecological communities, wildlife habitat, or other resource values may be managed to longer rotations, up to the Extended Rotation Ages (Table 2.2-3)

Table 2.2-3: Rotation ages

Forest type	Standard rotation age (years)	Extended rotation age (years)
Northern hardwoods	100	150-250
Oak	100	150-250
White and red pine	100	150-200
Hemlock	100	150-300
Aspen	50	–[1]
Paper birch	60	–[1]
Spruce and larch	80	150-200
Balsam fir	60	–[1]
Jack and Scotch pine	50	–[1]

[1] Extended rotation ages not appropriate for these species.

Wildlife Reserve Tree Objectives:

Reserve snags, den trees, and nest trees, including trees with exfoliating bark, during timber management activities in sufficient quality, quantity, and distribution to maintain well-dispersed, self-sustaining populations of snag-tree, den-tree, and nest-tree dependent wildlife indigenous to the Green Mountain National Forest.

Manage mast-producing species to increase or expand mast productivity where practical. Mast species are nut and fruit producers such as hop hornbeam, black cherry, apple, hawthorn, shadbush, blueberry, oak, beech, and hickory.

Threatened, Endangered, Proposed, and Sensitive Species; Species of Local Interest; Rare and Exemplary Natural Communities Objectives:

Protect critical habitat and key habitat features upon which federally listed endangered, threatened, proposed species, and Regional Forester's Sensitive Species depend.

Implement established recovery or conservation strategies for federally-listed endangered, threatened, or proposed species within the Proclamation Boundary of the GMNF, according to guidelines from the US Fish and Wildlife Service.

Implement established conservation strategies for Regional Forester's Sensitive Species where they exist; otherwise, maintain or enhance habitat conditions for these species through the development of specific site prescriptions during project development.

Coordinate with the Vermont Fish and Wildlife Department to maintain and enhance habitat conditions for the State's rare species and natural communities.

Maintain or enhance habitat for Species of Local Interest, which includes those species for which there is a concern in the State or on the Forest, but which do not meet criteria for inclusion in the Regional Forester's Sensitive Species list.

Maintain viable reproducing populations for all native plant and animal species. For species where the Forest alone cannot support a viable population, species persistence will be maintained, and the Forest will contribute to maintaining or improving viability where possible.

Fisheries Objectives:

Increase Atlantic salmon populations in streams through stocking and spawning activities, in cooperation with the Connecticut River Atlantic Salmon Commission, as identified in the *Strategic Plan for the Restoration of Atlantic Salmon to the Connecticut River Basin.*

Maintain or enhance fish populations through habitat protection, enhancement, and restoration, and stocking programs.

Non-native Invasive Species Objective:

Minimize adverse effects of non-native invasive species on National Forest resources. Program efforts include introduction preventing, inventory, containment, and abatement.

Goal 3: Maintain or restore the natural, ecological functions of the soil.

Objectives:

Minimize the adverse impacts on soils from management activities.

Restore natural soil processes and functions on degraded soils.

Goal 4: Maintain or restore aquatic, fisheries, riparian, and wetland habitats.

Objectives:

Minimize the adverse impacts on aquatic, fisheries, riparian, vernal pool, and wetland resources from management activities.

Meet or exceed all State Water Quality Standards, including biotic standards.

Restore and improve aquatic, riparian, fisheries, and wetland resources.

Maintain or enhance riparian areas, including aquatic features, using a watershed approach.

Move streamside riparian area forest composition gradually towards an increase in mature and over-mature softwood species where ecologically appropriate.

Restore and enhance fisheries habitat using principles of stream geomorphology and habitat management to provide:

- Less than 50 percent substrate embeddedness in spawning and rearing areas, primarily riffle and run habitats
- Less than 20 percent fine sediment, sand, and silt in spawning areas
- At least 30 percent pool habitat, of which at least one third should be Class 1 and 2 holding and resting pools
- No more than 15 percent of stream bank area eroded on the entire length of stream

Brook Trout from Little Rock Pond

Goal 5: Maintain or improve air quality on the GMNF.

Objectives:

Continue to provide credible air quality and Air Quality Related Value monitoring data to contribute to air quality permit reviews and Regional Planning Organization processes.

Assess major new sources of air pollution to determine if they would have an adverse effect on Air Quality Related Values in the Class I Lye Brook Wilderness, and advise the appropriate air quality regulators.

Continue to manage prescribed fire in a manner that minimizes smoke impacts on air quality and visibility.

Goal 6: Maintain or restore ecological processes and systems on the GMNF within desired ranges of variability, including a variety of native vegetation and stream channel types, and their patterns and structural components.

Objectives:

Manage at least five percent of each ecological type present on the GMNF for old-growth characteristics.

Manage oak-pine natural communities on the GMNF to maintain their presence and continuity on the Forest, using natural as well as human-caused disturbance processes including fire use when necessary.

Reduce hazardous fuels where needed to reduce threats to private property, threatened and endangered species habitat, or risks to ecosystem components resulting from wind throw, blowdown, ice storm damage, or epidemic disease or insects.

Restore and enhance stream ecosystem processes using knowledge of riparian/floodplain functions and large woody debris (LWD) dynamics for the purpose of improving and connecting aquatic habitats, such as those for wild trout and Atlantic salmon, promoting stream stability and sediment and organic matter storage, or to increase stream productivity. Stream habitat should be managed to provide:

- LWD quantities between 75 and 130 pieces greater than 12 inches diameter per mile of stream
- Approximately 100 pieces between 8 to 12 inches diameter per mile of stream

Goal 7: Protect rare or outstanding biological, ecological, or geological areas on the GMNF.

Objective:

Maintain or enhance areas with rare or outstanding biological, ecological, or geological features.

Goal 8: Provide for a sustainable supply of forest products.

Objectives:

Provide high-quality sawtimber and other wood products for local economies.

Provide sustainable opportunities to harvest special forest products.

Log Truck Loading

Goal 9: Demonstrate innovative, scientifically, and ecologically sound management practices that can be applied to other lands.

Objectives:

Develop demonstration forestry project areas and areas where state-of-the-art silvicultural practices are applied.

Provide opportunities for public education on Forest Service management practices.

Increase the use of native seed mixes and/or develop native seed mixes for Forest use.

Goal 10: Provide other resource benefits through coordinated timber harvesting.

Objective:

Increase the coordination among wildlife and fish biologists, recreation planners, fire planners, silviculturists, and other specialists in order to utilize vegetation management to accomplish objectives of other program areas. The emphasis is using vegetation management as a tool to accomplish the habitat or setting desired by program areas.

Goal 11: Provide opportunities for renewable energy use and development.

Objectives:

Increase opportunities for renewable energy use and development.

Reduce the amount of energy needed to operate Forest facilities by employing state-of-the-art conservation practices and alternative heat and electricity sources when constructing new facilities or when modifying existing facilities as necessitated for other reasons.

Goal 12: Provide a diverse range of high-quality, sustainable recreation opportunities that complement those provided off National Forest System lands.

Objectives:

Accomplish foreground mapping using Scenery Management System principles on the Appalachian Trail, from the Massachusetts border to Route 140, and from Route 4 to Route 100.

Maintain or enhance high-quality opportunities for downhill skiing in partnership with private sector.

Continue to provide diverse, high-quality opportunities for recreation in partnership with private sector by authorizing appropriate activities through special use authorization and by improving administration of special use authorizations.

Complete construction and designation of remaining sections of the Catamount Ski Trail within the GMNF in cooperation with the Catamount Trail Association.

Complete comprehensive trail planning for 100 percent of the Forest.

Increase the effective use of partnerships in the improvement, maintenance, and operation of the Forest trails system.

Increase the number of miles of trails that are operated and maintained to full standard.

Reduce the total deferred maintenance on the GMNF trail system.

Increase the number of developed recreation sites that are operated and maintained to standard.

Reduce total deferred maintenance on GMNF developed recreation facilities.

Increase the number of inventoried Concentrated Use Areas managed to standard to reduce health, safety, and resource impacts caused by unmanaged recreation use in the general forest area.

Complete a Forest-wide comprehensive interpretive plan for recreation and trails.

Complete comprehensive management plans that address the enhancement of dispersed recreation activities, non-facility related, that occur in the general forest area.

Goal 13: Manage designated wilderness to preserve an enduring resource that represents ecosystems and natural processes unique to northeastern forests while providing opportunities for solitude and unconfined recreation consistent with the Wilderness Act of 1964 and subsequent legislation.

Objectives:

Increase the number of acres of congressionally designated wilderness areas managed to national standards.

Increase the field monitoring of wilderness resource values through scheduled visits of boundaries, streams, ponds, and areas showing signs of overuse by recreationists.

Increase the annual information and education contacts with the public to improve appreciation of wilderness values and increase understanding of ways to minimize the effects of user visits.

Goal 14: Provide a safe, efficient, and effective Forest transportation system that meets both the needs of the Forest Service and the public.

Objectives:

Use design elements and standards that permit maximum economy while meeting management direction for resource and environmental protection and user safety.

Design roads constructed or reconstructed for use by the general public in accordance with the latest standards using American Association of State Highway Transportation Officials (AASHTO) Policy on Design of Highways and Streets section on rural roads and special purpose roads.

Complete comprehensive transportation system planning for 100 percent of the Forest.

Goal 15: Maintain or enhance visual resources such as viewsheds, vistas, overlooks, and special features.

Objectives:

Complete a transition from the current Visual Management System to the Scenery Management System.

Maintain or enhance visual quality of special areas that contain scenic features.

Maintain or enhance visual quality on the Forest.

Moosalamoo Vista and Wildlife Opening

Goal 16: Provide protection and stewardship for significant heritage resources on the GMNF.

Heritage Resource Objectives:

Reduce the backlog of unevaluated heritage sites.

Move toward 100 percent heritage resource inventory.

Develop a GIS sensitivity model for prehistoric archaeological sites.

Increase the number of partnerships that help accomplish the Forest's heritage inventory, evaluation, and interpretation and education needs.

Increase proper stewardship for the Forest's historically significant buildings and structures.

Improve curation facilities or move curated material to a facility that meets the federal standards (36 CFR 79) for heritage collections, records, and administrative history archives.

Tribal Relations Objectives:

Maintain relationships with federally recognized tribes and tribal groups with historical ties to the Forest by having contact quarterly with appropriate representatives (for example, meetings, letters, phone calls).

Produce at least one relevant interpretation and education product during the planning period.

Goal 17: Support regional and local economies through resource use, production, and protection.

Objectives:

Increase coordination with communities and local businesses to enhance the GMNF's economic contribution.

Vary the range of project sizes for contracts.

Maintain communications with Forest communities with regard to Payment in Lieu of Taxes, 25 Percent Fund, and/or Secure Schools and Community Self-Determination Act.

Goal 18: Maintain and enhance partnerships with communities and organizations.

Objectives:

Increase the effective use of partnerships to achieve Forest goals.

Increase coordination with other federal, State, county, and local agencies and the private sector in the prevention, control, containment, and monitoring of non-native invasive species.

Establish, maintain, or enhance partnerships with community organizations for resource planning.

Work with communities in community development to enhance social capital and economic baseline.

Goal 19: Provide a diverse range of information and education opportunities that will enhance the understanding of the GMNF.

Objectives:

Expand internal and external public awareness of Forest Service management.

Provide timely, sufficient information regarding Forest recreation and management to internal and external audiences.

Include teacher development in stewardship of living systems in the educational outreach program.

Establish two sites, one on the North Half of the Forest and one on the South Half of the Forest, for demonstration forests, discovery trails, or plots and other "living laboratories" for teacher/non-formal educator use.

Improve awareness about, and encourage stewardship of, heritage resources by delivering interpretation and education (I&E) products and public participation projects.

Goal 20: Coordinate Forest planning and implementation with federal, State, and local agencies.

Objective:

Improve communication and collaboration with federal and State agencies, regional commissions, town governments, and other local organizations.

Goal 21: Protect human life, property, and facilities from wildland fire hazards.

Objectives:

Provide an Appropriate Management Response to all wildland fire. Firefighter and public safety will be given the first priority in every fire management activity.

Develop and maintain agreements with outside partners to increase effectiveness and efficiencies.

Reduce hazardous fuels through fire use, mechanical treatments, and harvest treatments.

Goal 22: Meet anticipated future needs and opportunities on public lands and improve management effectiveness of the National Forest through adjustment of land ownership.

Objectives:

Adjust landownership through purchase, donation, exchange, transfer, interchange, right-of-way acquisition, and boundary adjustment of the National Forest.

Consult with the State and towns in regards to land adjustment program activities.

Silver Lake

2.3 FOREST-WIDE STANDARDS AND GUIDELINES

2.3.1 Introduction

This chapter presents Forest-wide standards and guidelines for the Green Mountain National Forest. These standards and guidelines apply to all Forest areas for the purpose of protecting or managing forest resources. Standards and guidelines are designed to achieve the desired conditions, goals, and objectives stated in the 2006 Forest Plan. They are usually mitigation measures that minimize or negate the effects of a management action or land use. Standards and guidelines only govern management actions implemented under the 2006 Forest Plan. They do not apply to existing conditions or management actions implemented under previous Forest Plans. Existing conditions that do not meet the 2006 Forest Plan standards and guidelines will be brought into compliance as appropriate and practicable based on the need to protect resources. The Forest-wide standards and guidelines are used in addition to the standards and guidelines included in management area guidance (Chapter 3).

Standards (non-discretionary):

Standards are Forest Plan management requirements that are applicable to all foreseeable situations. Deviation from standards requires an amendment to the 2006 Forest Plan. Standards are mandatory permissions, limitations, desirable conditions, or in some instances required courses of action needed to achieve the goals and objectives of the Plan. Standards can be forest-wide or management-area specific.

Standards should be implementable and comply with all applicable laws, regulations, executive orders, and policies. They should not include factors beyond management control, for example water temperature and pH, budget-dependent items, or any type of desired future plans, analyses, or accomplishments that may never happen.

Guidelines (discretionary):

Guidelines are Forest Plan management requirements that are applicable to most situations but can be modified at the project level. To communicate discretionary guidance, guidelines are permissions, limitations, desirable conditions, or courses of action that should be implemented in most situations. Deviation from a guideline does not require a Forest Plan amendment, but it does require that the rationale for deviation be disclosed in the project decision documents and analysis.

Guidelines can be forest-wide or management-area specific. This set of standards and guidelines is designed to be specific to the Green Mountain National Forest; management area guidelines are addressed in Chapter 3. Laws, regulations, and Forest Service directives are not repeated in this section. References to particular laws or directives may be included to provide needed emphasis for the protection and management of specific resources. Implementation of the 2006 Forest Plan will comply with all applicable laws, regulations, and directives (listed in Final EIS Appendix G).

2.3.2 Soil, Water, and Riparian Area Protection and Restoration

Standards

S-1: Direction provided in FSM 2526.03.2 and .5 (05/25/2000, pp. 18 and 19) applies to all riparian areas, streams (perennial, intermittent, and ephemeral), wetlands, and seasonal pools.

S-2: A protective strip of predominantly undisturbed soil (having plant and/or organic matter cover) shall separate soil-disturbing activities from all water sources (streams, lakes, ponds, wetlands, and vernal or seasonal pools).

- Protective strips (Table 2.3-1) shall be applied to all soil disturbing activities and impacts, including construction (examples: campground, parking lot, or trail construction) and logging. The purpose of the protective strip is to protect the soil's infiltration capacity, and to filter out sediment.
- A minor amount of soil disturbance is allowed in the protective strip provided adherence to FSM 2526.03.2 and .5. Logging and heavy construction equipment shall only operate in the protective strip when:
    - Soils are dry, frozen, or covered with sufficient snow to minimize soil disturbance; or
    - Measures are taken to assure compliance with FSM 2526.03.2 and .5; or
    - Local topography eliminates the risk of stream sedimentation associated with ground disturbing activity (for example, if a natural berm in the protective strip separates a stream from soil-disturbing activity)

Table 2.3-1: Protective Strip Width Guide (based on AMPs)

% Slope of land between disturbed area and water source	Width of protective strip between disturbed area and water source (ft)
0-10	50
11-20	70
21-30	90
31-40*	110

*Add 20 feet for each additional 10% side slope

S-3: Heavy construction and logging equipment operations shall only occur when soil conditions are such that compaction, rutting, and erosion will be minimal. Equipment operations shall be carefully monitored to assure that erosion and sedimentation are minimized. Prompt corrective measures shall be implemented if erosion or sedimentation problems arise.

S-4: Sites for servicing and refueling logging and construction equipment must be located outside the protective strip and approved by a Forest Officer. Fuel leaks from such equipment shall be repaired immediately. A supply of acceptable absorbent materials shall be kept on the job site (where such equipment is used) for use in the event of a hazardous fluid spill. Acceptable absorbent materials are those that are manufactured specifically for the containment and clean up of hazardous materials.

S-5: All permanent stream crossings shall:

- Be approved in terms of the design, location, structure type, and size by a Forest engineer.
- Be sized to pass water and debris for the targeted storm event (for example, a 25-year storm), and allow free movement of resident aquatic life. The targeted storm event shall be determined with consideration of direction in FSM 2526.03.2 and .5.

S-6: Drainage structures shall be kept in working order.

S-7: All stream crossings shall avoid wetlands, including seeps, wherever possible. When not possible, stream crossings shall be at the narrowest point, or at a point that provides for the least impact to resources.

Guidelines

G-1: To maintain bank stability and provide for long-term recruitment of large woody debris (LWD) to streams and ponds, tree cutting and/or harvesting should not occur within 25 feet of a perennial stream or high water mark of a pond. Maintain a minimum basal area of 50 square feet per acre including the retention of large diameter trees within 25 feet of the bank of intermittent streams. Exceptions to these guidelines include: tree removal for public safety; prescriptions to benefit hydrological and/or ecological function of associated stream, pond, or riparian area; and tree removal needed to construct and maintain existing roads, bridges, and other infrastructure. Trees cut or moved in this zone should be used to benefit riparian and aquatic habitat.

G-2: Application of Acceptable Management Practices (AMPs):

- Timber harvesting should comply with AMPs. Harvest practices may deviate from AMPs provided that:
    - FSM 2526.03.2 and .5 are met; and/or
    - Forest plan standards and guidelines and special mitigation measures are implemented to provide an extra measure of resource protection or improvement

G-3: Skid road/trail grades should not exceed 20 percent beyond a distance of 300 feet. Soils must have sufficient depth, and be sufficiently drained to allow erosion control structures to be installed. Erosion control structures should be in working order at all times.

G-4: New structures such as a trail, road, or skid trail stream crossing may be allowed in the protective strip provided compliance with FSM 2526.03.2 and .5.

G-5: Water bars and other erosion control structures should be designed, located, and constructed to prevent sediment from entering streams.

G-6: Revegetation of critical bare soil areas should be completed on all projects as soon as practical. Mulching may be used alone outside the growing season, with seeding to follow at the start of the next growing season. Critical bare soils areas are soils largely devoid of vegetation:

- Within 25 feet of water sources (ponds, streams, wetlands, or vernal pools)
- On skid roads having a grade over 20 percent
- Where dips or ditches empty close to water sources
- At other locations as identified by a Forest Officer

G-7: As a general rule, temporary seeding and/or mulching of critical bare soil areas should be done when soil-disturbing activities are anticipated to be inactive for more than approximately one month. See Non-Native Invasive Species standards and guidelines for further guidance.

G-8: Trees or downed wood that have fallen naturally into streams, rivers, or ponds should not be removed unless they are hazards to people or structures, or present impassable barriers in navigable waters.

G-9: In the 25 to 50 foot distance zones of all streams, consider leaving large diameter trees (12 inches or greater), especially conifers to enhance achievement of riparian vegetation composition goals.

G-10: Within 100 feet of wetlands and seasonal pools, activities should be limited to those that protect, manage, and improve the condition of these resources. Acceptable activities should be approved on a case-by-case basis.

G-11: Crossing wetlands with roads or trails should be avoided whenever possible.

G-12: When wetlands must be crossed to provide access to adjacent uplands, crossings should be located to minimize wetland impacts, and use should be permitted:

- Only under frozen soil conditions; or
- When the ground is covered with sufficient snow to minimize soil disturbance; or
- When other measures are taken to assure compliance with FSM 2526.03.2 and .5

G-13: An average canopy closure of at least 70 percent should be maintained over a stream's length to ensure that stream temperatures are appropriate for native fish species. Permanent upland openings may be maintained and established to the water's edge in accordance with FSM 2526.03.2 and .5. Trees cut or moved in this zone should be used to benefit riparian and aquatic habitats when possible.

G-14: Sites that show signs of advanced deterioration should be rehabilitated, closed, or relocated. Examples of deterioration include widespread bare mineral soil, obvious soil erosion, exposed tree roots, or vegetation that is reduced in vigor or dying.

2.3.3 Minerals

Leasable Minerals

Standards

S-1: Lands will be available for exploration provided that surface disturbance does not occur, except where prohibited by law.

S-2: Surface disturbing mineral activity is prohibited where specified in Management Area Standards.

S-3: Where permitted by law and management area standards, surface disturbing mineral activity is permitted when supported by site specific environmental analysis and an appropriate decision document.

S-4: Nominations for the leasing of federally owned oil and gas under National Forest System lands are analyzed in cooperation with the Bureau of Land Management. Site specific decisions are based on appropriate environmental analysis.

Common Variety Minerals

Standards

S-1: When supported by site specific environmental analysis and a decision, exploration and development of common variety minerals is permitted, except where prohibited by law or Management Area Standards.

S-2: Before development of a site, an operating plan shall be prepared. The plan will include at least the following items:

- A schedule of activities
- An estimate of the amount of material to be removed
- Expected use of roads and infrastructure
- Rehabilitation measures for stabilizing soil, protecting water quality, restoring vegetation, and protecting visual quality

Recreational Mineral Collecting

Standard
S-1: Gold panning for recreational purposes may be allowed within stream channels. Collection methods not needing a permit are limited to small trowels or similar digging tools for scooping sediment into the pan.

Guidelines
G-1: Except in areas closed for such activity by Forest Supervisor order, the collection of mineral specimens for personal use may be allowed without a permit as long as there is no surface disturbance.

G-2: Deciding officials should close areas or place restrictions in permits where appropriate for public safety and/or the protection of resources.

2.3.4 Timber or Vegetation Management

Selection of Appropriate Silviculture

Standard
S-1: Treatments will be designed and/or approved by a federally certified silviculturist.

Guidelines
G-1: Select the most appropriate silviculture system for an area that best fulfills the objectives over time.

G-2: Timber sales may be used to enhance habitats and vegetative diversity, scenic views, and public access. The following non-priced benefit is a major element of the Forest's stated goals and objectives:

- Regeneration of stands to provide young age classes to increase the structural diversity of the forest (*see* Chapter 2 Forest-wide Goals and Objectives, Tables 2.2-2 and 2.2-3)

G-3: Even-aged silviculture may be used to achieve, but is not restricted to achieving, the following:

- Produce stands in which all trees are about the same age; that is, the difference in age between trees forming the main crown canopy level will usually not exceed 20 percent of the rotation length
- Create diversity of stand types and age classes among stands
- Regenerate species that are intolerant, or intermediately intolerant, of shade such as aspen, paper birch, and oak
- Regenerate high-risk and sparse stands
- Prevent spread of insects and disease
- Salvage stands damaged by insect, disease, or climatic catastrophe, or to stop the spread of an insect or disease outbreak

G-4: Uneven-aged silviculture may be used to maintain:

- Recurring regeneration of desirable species
- Continuous high-forest canopy
- Orderly growth and development of trees through a range of diameter or age classes

G-5: Timber may be cut where financial revenues fall below financial costs when the Forest Service determines the resulting non-priced benefits are needed, or desirable, to meet the goals of forest stewardship.

Public Meeting mapping exercise

Application of Even-Aged Silviculture

Regeneration Cuts

Standards

S-1: Clearcutting shall only be used when it is found to be the optimum method of regeneration, or type conversion, to achieve the following resource objectives:

- Salvage stands damaged by insect, disease, or climatic catastrophe, or to stop the spread of an insect or disease outbreak
- Improve the condition of stands which have a high risk of dying within the next ten years or which are sparsely stocked and will be unable to fully utilize the site within ten years
- Regenerate aspen and paper birch stands that are intolerant of shade and valuable for wildlife habitat and vegetative diversity
- Convert hardwood stands to softwood or aspen stands to enhance vegetative diversity and habitat for deer, grouse, beaver, and other wildlife
- Create or convert woodland to permanent upland openings for better vegetative diversity and improved wildlife habitat
- Create or convert woodland to vistas and parking areas to enhance public use and enjoyment of the National Forest

S-2: Remove the remaining overstory, if compatible with other resource objectives, after the regeneration has been established.

Guidelines

G-1: The shelterwood regeneration method may be applied to regenerate species that are somewhat tolerant of shade and to regenerate spruce on wind-firm sites.

- Trees left, other than wildlife reserve trees, should be of good quality, wind-firm, and of sufficient size to permit a commercial removal cut within ten years.
- Post-sale treatment to remove all remaining stems over one inch in dbh that are not wildlife trees should be done within two years after the first cut, unless prescribed fire is used.

G-2: Shelterwood with reserves regeneration method may be used to regenerate species that are somewhat tolerant of shade in areas where the second cut of a standard shelterwood should be delayed beyond 20 percent of rotation years to:

- Maintain overstory trees in locations of high visual sensitivity or to eventually convert even-aged stands to uneven-aged stands when current stocking is insufficient.
- Trees left should be of good quality, wind-firm, and of sufficient number, size, and distribution.

Intermediate Cuts

Guidelines

G-1: Release desirable species or individual trees to:

- Increase the proportion of softwoods to improve deer wintering areas
- Enhance the survival of oak stands on all sites where they occur to allow for continued presence and to maintain vegetative diversity
- Improve tree crop growth and vigor

G-2: When compatible with site productivity and overall resource objectives, use intermediate cuts to improve the existing stand quality and regulate its growth.

G-3: Stand improvement may be done to achieve, but is not limited to achieving, the following non-priced benefits:

- Maintain vegetative diversity by ensuring the survival of oak in stands where a commercial thinning is not feasible
- Maintain vegetative diversity and improve stand health by thinning softwood stands in deer wintering habitats
- Provide firewood
- Provide aesthetic benefits along roadways and other scenic vistas

Application of Uneven-Aged Silviculture

Guidelines

G-1: Group Selection generally results in temporary openings of less than one acre and is appropriate in:

- Northern hardwood stands where species intermediately tolerant to intolerant of shade are desired
- White pine and Spruce stands
- Hardwood stands to facilitate the conversion to softwood stands
- Areas needing small temporary openings to meet other resource objectives
- Some even-aged stands to facilitate the conversion to uneven-aged stands
- Areas where small temporary openings or gaps in the canopy are desirable

G-2: Individual tree selection is appropriate in:

- Northern hardwood stands where shade tolerant species are desired
- Hemlock stands
- Areas where maintenance of a continuous forest canopy is desired

G-3: A mixture of individual and group selections is appropriate when a combination of factors requiring both methods occurs.

Reforestation

Guidelines

G-1: Site preparation may be done by manual, mechanical, biological, prescribed fire, or chemical methods based on a site-specific analysis. Chemical controls should only be used when other methods are ineffective.

G-2: Natural regeneration should be the preferred method. Consider artificial regeneration when sources of natural regeneration are not sufficient or where forest-type conversions are prescribed.

Tree Improvement

Standard

S-1: When planting or seeding is needed to meet resource objectives, the stock will be genetically diverse and of local origin from Vermont or New Hampshire.

Guidelines

G-1: Genetic diversity should be maintained by using seed from multiple parents.

G-2: Seed orchards should include a minimum of 30 unrelated parents.

G-3: Collections from stands or seed production areas that will be used for reforestation should include seed from a minimum of 15 parents.

- When possible, use genetically diverse sources of local seed that is superior for growth rates, stem quality, pest resistance or adaptability to specific sites.
- Evaluation plantations that achieve genetically diverse samples of species gene pools and provide information that is useful for development of seed movement or global climate change research should be protected and maintained. These include yellow birch, sugar maple, butternut and American chestnut.

G-4: Vegetation management techniques should foster the maintenance of genetic diversity and local adaptation.

2.3.5 Openings

Standard
S-1: The maximum size of a temporary opening shall be limited to 30 acres or less. Individual exceptions to the maximum size of temporary openings may be granted for salvage of timber resulting from natural catastrophes caused by fire, insects, diseases, ice, or windstorms.

Guidelines
G-1: Permanent upland openings and temporary openings should have irregular shapes to provide more interspersion with forested lands and to improve visual quality; a maximum of 100 feet around permanent openings should be managed to provide vertical diversity and gradual transitions between the opening and surrounding forest.

G-2: Permanent upland openings should:

- Be created where there are less than 30 to 50 acres of permanent open land per 1,000 acres of forest
- Be clustered where possible
- Be useable for future management activities such as log landings or vistas
- Be located where tree reproduction is slow, such as frost pockets or excessively drained soils.
- Be located in conjunction with activities that create and maintain open conditions, for example log landings, utility rights of way, and road or trail rights of way
- Be located near streams, ponds, lakes, and wetlands
- May exceed maximum size, 30 acres, to address site-specific needs such as beaver flowages

G-3: Temporary openings should:

- Not be created directly adjacent to previously regenerated areas, until the average height of the adjacent area reaches a minimum of 15 feet
- Not exceed 30 acres in size; exceptions may include salvage of timber resulting from natural catastrophes caused by fire, insects, diseases, ice, or windstorms
- Be separated by manageable stands of at least ten acres in size

G-4: New even-aged regeneration cuts should not be made adjacent to previous even-aged regeneration areas until the average height of the previously harvested stand is at least 15 feet tall.

2.3.6 Special Forest Products

Standard
S-1: Permits shall be required for commercial gathering of special forest products.

Guideline
G-1: Gathering of special forest products for personal, tribal, or scientific use may require a permit. Permits are generally required for personal use of Christmas trees, firewood, boughs, and maple syrup. Other products considered foods, herbs, medicinals, decoratives, and specialty products may require a permit if the Forest Service determines that collection of these products may be at or trending toward unsustainable levels. Exceptions can be made for specific arrangement with Native American tribes.

2.3.7 Wildlife

Guideline
G-1: Wildlife management should be coordinated with the US Fish and Wildlife Service, the Vermont Fish and Wildlife Department, and other agencies or organizations as necessary.

Wildlife Reserve Trees – General

Standards
S-1: Uncut patches totaling five percent of the harvested area shall be retained during forest management activities of five acres or greater where harvest reduces the basal area of a stand below 30 square feet per acre.

S-2: At least five wildlife trees shall be retained per acre harvested during forest management activities outside potential Indiana bat maternity roosting habitat (as defined below) where harvest will leave basal area above 30 square feet per acre.

S-3: Wildlife reserve trees shall include two cavity or snag trees of the largest available dbh, live trees with exfoliating bark, den trees, nest trees, or yellow birch and red maple greater than 26 inch dbh considered "cull" or unacceptable growing stock. In areas lacking such cavity trees and snags, retain at least two trees of the largest available dbh with defects likely to lead to cavity formation.

S-4: All hard snags and den trees and two mast trees per acre shall be retained within 300 feet of ponds, lakes, beaver ponds, wetlands, permanent upland openings greater than five acres, and within riparian zones of all streams as shown on USDA Forest Service 1:24,000 topographic maps. If hard snags, mast trees, and den trees are not available in these areas, retain at least six replacement trees per acre.

S-5: All shagbark hickory trees shall be retained unless they pose a safety hazard.

Guidelines
G-1: Patches of retained trees should be at least one-quarter acre in size and located to encompass as many wildlife trees as possible, including nest or den tees; trees with exfoliating bark; snags greater than or equal to eight inches dbh; other trees with cavities or broken tops; and mast trees such as oaks, bear-clawed beech, hop hornbeam, hickories, apple, and black cherry.

G-2: Patches of retained trees should be located along the edge of openings or riparian corridors where possible.

G-3: Cull material from harvested trees, especially hollow logs, should be left in the woods.

G-4: Down and dead material should be retained during forest management activities to provide habitat for small mammals, amphibians, and reptiles.

Indiana Bat Maternity Roosting Areas

Standards
S-1: All known Indiana bat roost trees on the GMNF shall be retained and protected until such time as they no longer serve as roost trees, for example following loss of exfoliating bark or cavities, blow down, or decay.

S-2: Protective measures shall be established by developing a management strategy, in cooperation with the US Fish and Wildlife Service and the Vermont Department of Fish and Wildlife, immediately upon discovery of a maternity roosting colony.

S-3: Potential Indiana bat maternity roosting habitat shall be defined as

- Lands adjacent to the Champlain Valley or in the Valley of Vermont (adjacent to Route 7) that are below 800 feet elevation, and
- Other areas specifically identified by the US Fish and Wildlife Service

S-4: Timber harvest shall not take place within potential Indiana bat maternity roosting habitat or within 3 miles of a known maternity roost site from April 15 through October 30 unless appropriate surveys, conducted in accordance with standards and protocols identified by the Indiana Bat Recovery Plan and the US Fish and Wildlife Service, have failed to detect the presence of Indiana bats in the proposed project area during the previous two years.

S-5: Management activities other than timber harvest within potential Indiana bat maternity roosting habitat from April 15 through October 30 shall not result in the loss or damage of potentially occupied roost trees unless exit-count, ecolocation, or other appropriate surveys indicate to the maximum extent possible that Indiana bats are not present. Potentially occupied roost trees are those of 8 inches dbh or greater, including:

- Class 1 and Class 2 tree species (as defined in the Glossary).
- Trees with exfoliating, rough, crevassed, or furrowed bark.
- Trees with dead limbs, cavities, or broken tops.

S-6: At least eight wildlife trees shall be retained per acre harvested during forest management activities within potential Indiana bat maternity roosting habitat where harvest will leave basal area above 30 square feet per acre.

S-7: One-third of all large diameter (>12 inches dbh) post-harvest snags shall be protected within potential Indiana bat maternity roosting habitat by retaining live residual trees adjacent to these snags. Such reserve trees shall be located in groups and along intermittent drainages to provide foraging corridors into harvest areas.

S-8: Monitoring and evaluation shall be conducted before, during, and after management activities within potential Indiana bat maternity roosting habitat to ensure that potential roost trees are being retained in accordance with appropriate standards and guidelines.

Guidelines

G-1: Wildlife reserve trees within potential Indiana bat maternity roosting habitat should emphasize retention of potential roost trees (as described above) and trees likely to develop those characteristics.

G-2: Skid trails should be designed to avoid felling suitable roost trees, as identified in the guideline, above.

Indiana Bat Hibernacula

Standard

S-1: Timber harvest within 5 miles of a known Indiana bat hibernaculum (as defined in the Glossary) from April 15 through October 30 shall be in accordance with provisions of a Forest Service management plan for that hibernaculum, which was developed in consultation with the US Fish and Wildlife Service and the Vermont Fish and Wildlife Department. Timber harvest shall not take place within 5 miles of a known Indiana bat hibernaculum from April 15 through October 30 until such a management plan is in effect.

Snags

Guidelines

G-1: All soft snags should be retained unless they pose a safety hazard.

G-2: Evidence of wildlife use for feeding, roosting, nesting, or denning should be used to prioritize snags for retention.

Den and Nest Trees

Guidelines

G-1: Den trees with cavities or openings that are not prone to collecting water should be retained whenever possible.

G-2: Raptor nest trees should be retained.

Mast Trees

Guidelines

G-1: The largest available mast trees should be retained whenever possible, because they may fill several functions by providing mast and potentially den and snag habitats simultaneously. Species to be considered will be oaks, bear-clawed beech, hop hornbeam, hickories, apples, and black cherry.

G-2: Groups of bear-clawed beech trees should be retained in favor of single bear-clawed beech trees; single bear-clawed beech trees exhibiting repeated use should be retained where clumps are absent.

G-3: Apple trees should be retained and released whenever possible.

Deer Wintering Areas

Standard

S-1: Deer wintering areas shall be identified using all available information and tools, including existing maps of deer wintering areas, stand characteristics, and deer distribution and abundance data, and in consultation with the Vermont Department of Fish and Wildlife.

Guidelines

G-1: Wintering habitat for white-tailed deer should be maintained and enhanced on the Forest by retaining and encouraging vegetation conditions for both shelter and browse using both even-aged and uneven-aged silvicultural systems, as appropriate.

G-2: Timber stands intended to provide high-quality shelter should include a mixture of species within stands. Depending on site conditions, the following tree species priority is suggested: 1-eastern hemlock, 2-red spruce, 3-balsam fir, and 4-eastern white pine.

G-3: Rotation age for even-aged management in deer wintering habitat may be lengthened beyond standard rotation ages if the quality of shelter for deer is not compromised.

G-4: Eastern hemlock and northern white cedar are preferred shelter species that should be retained in deer wintering areas.

G-5: Timber harvest and other management activities should be designed and scheduled so that at least six 10-year age classes of trees are represented within a deer wintering area.

G-6: Softwood regeneration activities should be designed such that at least half of the cover portion of individual deer wintering areas continue to provide functional winter shelter.

G-7: The basal area removed at each thinning should be 10 to 40 percent on primary softwood sites and 30 to 50 percent on other sites, approaching the lower end of the following ranges wherever possible.

G-8: A minimum cover width of 500 feet for shelter portions of wintering areas should be maintained to reduce snow depth and provide good travelways for deer.

G-9: Red Spruce should be regenerated using the most appropriate methods to minimize the threat of Armillaria root rot outbreaks.

G-10: Even-aged stands in deer wintering areas should not exceed 20 acres to ensure good interspersion of shelter and forage. Cutting in the center of wintering areas should be minimized.

G-11: Where several patch cuts are made in a stand, their individual size should not exceed two acres.

G-12: Summer logging, where it can be accomplished in compliance with soil and water standards and guidelines, should be preferred to minimize disturbance to deer during the winter and to enhance regeneration by scarifying the soil.

G-13: Permanent upland openings containing grasses and forbs should be provided adjacent to deer wintering areas to provide forage in early spring.

G-14: Newly created permanent upland openings within deer wintering areas should not exceed ten acres.

G-15: Recreation use in and adjacent to deer wintering areas may be restricted seasonally or by area to minimize disturbance to deer during winter and to ensure protection of habitat.

G-16: The construction of new winter-use trails should be prohibited in shelter portions of deer wintering areas.

G-17: Opportunities to relocate existing winter-use trails, trailheads, and associated facilities out of shelter portions of deer wintering areas should be considered.

G-18: Surface disturbing mineral activities should not be allowed in lands adjacent to deer wintering areas from November 30 to May 1, and not at any time on lands managed for winter shelter for deer.

Rare and Unique Biological Features

Threatened, Endangered, Proposed, and Sensitive Species; Rare and Exemplary Natural Communities

Standards

S-1: All project sites must be investigated for the presence of federally listed endangered, threatened, or proposed species, Regional Forester's Sensitive Species, and/or habitat for these species prior to beginning any authorized ground-disturbing activity at the site. TES plant surveys must be completed for all new ground-disturbing projects, when biologists determine TES plant species occurrences are likely.

S-2: The GMNF shall maintain a list of federally listed endangered, threatened, or proposed species, and Regional Forester's Sensitive Species (TES species), which will be updated periodically whenever new designations are made by the US Fish and Wildlife Service (USFWS) or Regional Forester. The TES species list shall be available at the GMNF and regional office websites, GMNF offices, and shall be included in the GMNF annual monitoring report.

S-3: Management activities that may influence the rare or uncommon natural communities on the Forest, considered significant by the agency and/or the State, shall be limited to those that maintain or improve the composition, structure, or functioning of the natural community.

Guidelines

G-1: Reintroduction of native plant and animal species may be undertaken where local sources of seed or breeding stock have been eliminated, for example American chestnut. Reintroductions should be undertaken in cooperation with research, and/or relevant federal, State, and local agencies or organizations.

G-2: Habitat that is important to conservation of federally listed endangered, threatened, or proposed species, or Regional Forester Sensitive Species, should be retained in Green Mountain National Forest ownership in all land adjustments.

G-3: Use restrictions may be implemented to protect habitat for threatened federally listed endangered, threatened, or proposed species, or Regional Forester Sensitive Species.

G-4: Management activities adjacent to Ecological Special Areas should be designed so as not to compromise the ecological values for which the area is designated.

Indiana Bat

Standards
S-1: Indiana bat hibernacula shall be designated smoke-sensitive areas in order to avoid adversely affecting Indiana bats by prescribed burns conducted from October to May. If hibernacula are in the vicinity of the area proposed for burning, factors including wind direction, speed, mixing height, and transport winds shall be considered in order to avoid, to the maximum extent possible, smoke drifting into or near occupied hibernacula.

S-2: All monitoring activities for Indiana bats shall adhere to standards and protocols established by the Indiana Bat Recovery Plan and the US Fish and Wildlife Service.

Guidelines
G-1: At all sites where Indiana bats are documented on the GMNF, habitat use should be characterized and quantified at both the local and landscape levels.

G-2: Forest Service monitoring for Indiana bats should be focused within

- Five miles of all occupied Indiana bat hibernacula,
- 250 acres (1 square km) surrounding any Indiana bat maternity colony or roost tree,
- Three miles (5 km) of any non-maternity roost tree,
- Areas on the GMNF in potential Indiana bat maternity roosting habitat that are planned for timber harvest, both pre- and post harvest, and
- Other areas specifically identified by the US Fish and Wildlife Service

Bald Eagle

Standard
S-1: Prohibit controllable disturbance within approximately 330 feet of each eagle nest, except as necessary to protect the nest.

Guidelines
G-1: Management within 660 feet of an eagle nest should be designed to conserve or enhance site conditions, for example structural and compositional integrity.

G-2: In some instances, landform or vegetative conditions may necessitate expanding protected area beyond 660 feet.

Peregrine Falcon

Standards
S-1: 0-660 Foot, Nest Site Buffer Zone

- Non-administrative activities shall be prohibited in the buffer zone between March 1 and September 30 for active nesting sites. Such activity may be allowed sooner if it is determined the birds have left by a specific date.

S-2: 0-330 Foot, Nest Site Buffer Zone

- All disturbing land uses will be prohibited except as necessary to protect the site.

S-3: 330-660 Foot, Nest Site Buffer Zone

- Permit only activities that are designed to conserve or enhance site conditions

Guideline
G-1: The buffer zone may be extended beyond 660 feet on a case-by-case basis where necessary to protect nesting birds.

Jacob's Ladder

Standard
S-1: Site protection measures for roadside populations of Jacob's ladder shall be maintained based on the most recent conservation assessment and strategy developed for populations on the Forest.

Species of Local Interest

Great Blue Heron, Northern Goshawk, and Osprey

Guidelines
G-1: Management within 660 feet of an occupied rookery or nest site:

- May prohibit non-administrative activities between March 15 and August 1, or until nesting activities have been completed.
- Should be designed to conserve or enhance site conditions, for example structural and compositional integrity

G-2: Management within 330 feet of occupied rookery or nest site may:

- Prohibit all disturbing land uses except as necessary to protect the rookery or nest site

G-3: In some instances, landform or vegetative conditions may necessitate expanding protected area beyond 660 feet.

2.3.8 Fisheries

Standards
S-1: New management activities must not permanently block fish passage except to meet prescribed fish management objectives. Replacement of existing road and trail crossings must provide fish passage, unless barriers are needed to prevent the expansion of non-indigenous species or strains.

S-2: Fish shall only be introduced after alternative measures for native fish management prove unsatisfactory. Fish shall only be introduced with responsible State agency's concurrence.

Guidelines
G-1: Fisheries management should be coordinated with the Vermont Fish and Wildlife Department, the US Fish and Wildlife Service, and other agencies or organizations as necessary.

G-2: The use of native materials, such as boulders, trees, and root masses, should be emphasized in stream restoration or enhancement projects to harmonize with the surrounding visual setting.

G-3: Trout may be released in streams that:

- Are accessible for fish stocking and meet Vermont Department of Fish and Wildlife stocking criteria
- Have high public use and demand
- Cannot sustain the fishery with natural reproduction

G-4: Natural reproduction may be supplemented by stocking in ponds lacking adequate spawning area or impacted by acid deposition but capable of maintaining a productive fishery.

G-5: Pond reclamation may be used where it can be shown that a featured fish species is unable to support angling due to competing species in the same habitat. Emphasize indigenous fish species management, fishing opportunities enhancement, and natural ecosystem restoration.

2.3.9 Forest Health and Disturbance Processes

Pests, Diseases, and Non-Native Invasive Species

Standards

S-1: The Forest shall incorporate information on the status and threat of non-native invasive species (NNIS) infestation as part of project development. Methods for determining risk shall be standardized in keeping with regional and national guidelines. For projects that pose moderate to high risk of introducing or spreading NNIS, measures shall be identified that can be undertaken to prevent and control the spread of NNIS during project implementation.

S-2: The Forest shall include in contracts and permits appropriate clauses concerning the prevention or spread of NNIS.

S-3: Seed mixes or cultivated plants used for any purpose on National Forest lands shall not include any species on the Forest's NNIS list, or any species of potential concern as identified by the State.

S-4: In cooperation with the USDA Forest Service Forest Health Protection (Durham, NH) and the Vermont Department of Forests, Parks and Recreation, the Green Mountain National Forest shall monitor and report on forest health conditions including insects, pathogens, invasive plants, air pollution, and weather-related damage.

S-5: Non-native insect and disease pathogens shall be managed using appropriate biological, silvicultural, or chemical controls. Chemical controls shall only be used when other methods are ineffective.

Guidelines

G-1: For projects that pose low risk of introducing or spreading NNIS, basic prevention measures should be implemented.

G-2: When treatment of NNIS is undertaken, the Forest Service should:

- Attempt to determine the source of the infestation before treatment begins
- Cooperate with willing adjacent landowners
- Include restoration of native communities where feasible
- Use herbicides/pesticides only when other methods are ineffective
- Consider potential naturally developing control mechanisms

G-3: Seed mixes or cultivated plants used for any purpose on National Forest lands should not include species of concern in adjacent states. This should include checking for obvious signs of NNIS in the root wads of woody plants to be planted.

G-4: The Forest should use only NNIS-free forage and mulch on National Forest land when feasible; this includes forage brought onto National Forest land for the purpose of feeding domestic animals.

G-5: When it is safe and effective to do so, the Forest should use an integrated pest management approach to manage NNIS, prioritizing these actions in the following order:

- Prevent introduction of new invasions
- Prioritize treatment in sites that have the greatest ability to provide a source of seeds or propagules for other infestations, such as gravel pits, administrative sites, trailheads, parking lots, campgrounds, and emergency staging areas
- Protect known sites for TES animals and plants
- Protect Special Areas and Research Natural Areas
- Conduct early treatment of new infestations
- Contain and control established infestations

G-6: Composition of seed mixes should be prioritized as follows:

- Native species with local genotypes
- Native species with non-local genotypes
- Desirable (non-invasive) non-native species (may be preferable in some situations that call for rapid regeneration of ground cover)

G-7: Biological and/or chemical pesticide use may be allowed after an analysis has been conducted and when deemed necessary to prevent significant resource value losses.

2.3.10 Fire Management

Standards

S-1: All ignitions must receive an appropriate management response: suppression, prescribed fire, or Wildland Fire Use, according to a Fire Management Plan.

S-2: Wildland fire use (WFU) implementation criteria must be described in a Fire Management Plan before fire is managed under WFU (Zimmerman and Bunnell 1998). Wildland fires that do not meet the established criteria shall be managed using the full range of suppression options available to confine, contain, and control (see Glossary for fire terminology).

Guidelines

G-1: Fire planning should be integrated into all resource management plans to ensure treatment objectives utilize fire in an appropriate manner from both ecological and resource protection standpoints.

G-2: Fire suppression and prescribed fire impacts should be minimized by implementing Minimum Impact Suppression Tactics as described in the *Interagency Standards for Fire and Fire Aviation Operations.*

G-3: Fuel reduction projects should consider the effects on deadwood in relation to wildlife habitat.

G-4: Best available smoke management practices should be used to ensure that prescribed fire will not result in adverse effects on public health and safety, or visibility in the GMNF Class I air quality area (Lye Brook Wilderness).

2.3.11 Recreation

General Forest Area

Standards

S-1: The General Forest Area (GFA) shall be managed consistent with management area direction and the desired Recreation Opportunity Spectrum (ROS) class to provide a range of dispersed recreation opportunities, while ensuring the balanced protection of social and natural resources.

S-2: On-site developments, for example USDA Forest Service installed facilities, shall not be allowed except for basic improvements for site protection only, and shall be consistent with the ROS Class.

S-3: Pit toilets shall be constructed at least 100 feet away from bodies of water.

S-4: The use of motorized or mechanized vehicles, and saddle, pack and draft animals shall not be allowed off National Forest System roads and trails in GFAs except for administrative purposes or as authorized by the Forest Service in writing.

Guidelines

G-1: General Forest Areas (GFAs) should be managed according to National Quality Standards for recreation to the extent allowed by budgets (National Quality Standards for Meaningful Measures http://www.fs.fed.us/r3/measures).

G-2: Geocaching, the maintenance of minor registers on mountain summits and similar activities may be allowed if no significant resource problems result from the activity.

Developed Recreation

Standards
S-1: Developed recreation sites shall be managed consistent with management area direction and the desired Recreation Opportunity Spectrum (ROS) class to provide a range of developed recreation opportunities, while ensuring the balanced protection of social and natural resources.

S-2: Prior to substantial change to an historical recreation structure, it shall be evaluated to determine its eligibility for listing on the National Register of Historic Places.

Guidelines
G-1: Developed recreation sites should be managed according to National Quality Standards for recreation. (National Quality Standards for Meaningful Measures at http://www.fs.fed.us/r3/measures/).

G-2: Recreation maintenance and improvements should focus on the reduction of deferred maintenance needs on existing facilities before the development of new facilities.

G-3: Developed recreation sites should be managed following policy and procedures identified in the most recent Forest Recreation Facility Master Plan.

G-4: Developed recreation site maintenance, rehabilitation, and reconstruction should be undertaken based on the following priority items:

- Correct health and safety problems
- Mitigate social and/or natural resource problems
- Improve accessibility for people with disabilities
- Decrease deferred maintenance costs
- Improve operation and maintenance efficiency

G-5: Decisions to construct, relocate, or rehabilitate trail shelters should be made cooperatively with trail management partners.

G-6: Recreation areas, sites, and facilities located on National Forest System lands should complement, and not compete with, commercial public services within communities or on private or other public land.

2.3.12 Trails

Standards
S-1: The National Forest trail system shall be managed consistent with management area direction.

S-2: Regulatory, warning, and guide signs shall conform to standards identified in FSH 2309.18 and EM 7100-15 and other internal trail management direction.

Guidelines
G-1: National Forest System trails should be operated and maintained to National Quality Standards for trails (National Quality Standards for Meaningful Measures at http://www.fs.fed.us/r3/measures/).

G-2: Trail maintenance and improvement activities should focus on the reduction of deferred maintenance needs on existing trails before the development of new trails.

G-3: All trails should be monitored for resource impacts in accordance with an established monitoring plan. Responsibility for monitoring should be shared by the Forest Service and cooperators.

G-4: Multiple use trails should be emphasized over single use trails where the uses are compatible.

G-5: Multiple use recreation trails should be designed and maintained to adequately and safely accommodate the most demanding or impacting type of use allowed.

G-6: Summer motorized use may be allowed for administrative purposes when approved in writing by the Forest Service.

Non-Motorized

Hiking Trails

Standard:

S-1: Consistent with existing agreements, the Green Mountain National Forest shall consult with the Appalachian Trail Conference (ATC), and the appropriate managing trail club (either Green Mountain Club or the Dartmouth Outing Club) on management actions that affect side trails to the Appalachian and Long Trails.

Guidelines:

G-1: Side trails to the Appalachian and Long Trails (identified in the Long Trail System Management Plan and Dartmouth Outing Club Local Management Plan for the Appalachian Trail) should be managed primarily as non-motorized trails designated for foot travel. Minor exceptions, such as sharing with motorized uses, may be allowed where there are no other reasonable alternatives.

G-2: Management of side trails to the Appalachian and Long Trails should conform to the following documents:

- Long Trail System Management Plan
- Dartmouth Outing Club Local Management Plan for the Appalachian Trail

G-3: Trail facilities (trail shelters, tent platforms, trailheads and similar facilities), located outside AT and LT Management Areas (MA 8.1, 8.2) on side and spur trails identified in the Long Trail System Management Plan are considered a component of the overall Appalachian Trail and Long Trail systems. These facilities should be managed to be consistent with direction in the Appalachian Trail Management Area (MA 8.1) and the Long Trail Management Area (MA 8.2).

Cross-Country Skiing

Guideline

G-1: The Catamount Trail should be managed predominately as a non-motorized cross-country ski trail. Minor exceptions, such as sharing with motorized uses, may be allowed where there are no other alternatives.

Bicycling

Standard

S-1: Bicycling shall be allowed only on National Forest System trails that are designated for that use. Forest System Roads (Class I-V) shall be open to bicycling unless posted closed.

Guideline

G-1: Bicycle trails should be identified and maintained in cooperation with partners.

Saddle, Pack, and Draft Animals

Standard

S-1: Saddle, pack, and draft animals shall be allowed only on National Forest System trails that are designated for that use. Forest System Roads (Class I-V) shall be open to saddle, pack, and draft animals unless posted closed.

Guideline

G-1: Saddle, pack, and draft animal trails should be identified and maintained in cooperation with partners.

Dogsledding and Skijoring

Standard

S-1: Dogsledding and skijoring shall be allowed only on National Forest System roads or trails that are designated for that use.

Guidelines

G-1: Dogsledding should be prohibited on trails that pass through deer wintering areas.

G-2: Summer training of dogsled teams should be directed to closed and gated National Forest System roads.

Motorized Vehicles

Standards
S-1: The GMNF trail system shall remain closed to motorized vehicles unless designated open.

S-2: Motorized trail vehicles shall be allowed only on National Forest System (NFS) roads and trails which are designated for that use.

S-3: Jeeps, four-wheel drive cars and trucks, and similar street-size vehicles shall be limited to open, NFS roads.

S-4: Motor vehicle management, including motorized trail use and maintenance, shall be consistent with State laws. All motor vehicles using Forest trails shall meet State safety and registration requirements, and other applicable State laws.

S-5: Summer off-road vehicle trails shall be limited to connecting corridors that link sections of a larger state-wide, regional, subregional, or multi-town summer motorized trail system located off NFS lands.

S-6: Trail termini or trailheads for summer ORV trails shall not be located on NFS lands.

S-7: An entirely or predominantly contained summer ORV trail system shall not be located on NFS lands.

Guidelines
G-1: Summer off-road vehicle trails should be limited to the minimum distance needed to provide connectors for the trail system located off of NFS lands. Exceptions to this may be granted to provide opportunities to reduce impacts to other resources or enhance the recreational experience (for example, access to a vista).

G-2: New motorized trail proposals should be supported by an organized partner group affiliated with a state-wide entity that is financially and technically capable and willing to assume primary responsibility for construction, operations, and maintenance.

2.3.13 Visuals

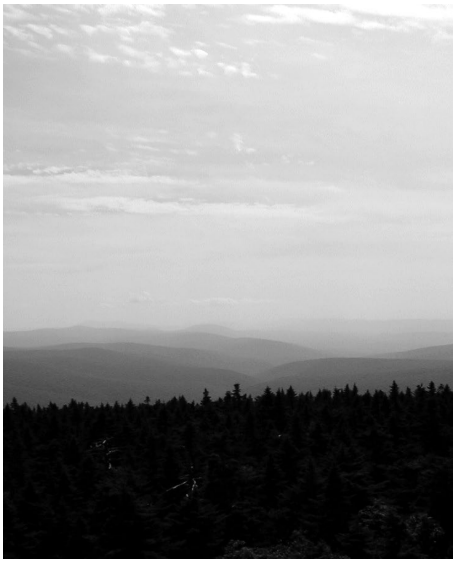
Standards
S-1: Visual quality objectives shall be determined when implementing the 2006 Forest Plan on specific areas.

S-2: Visual quality objectives shall be met for all activities.

S-3: For the viewshed as seen from the Appalachian Trail and the Long Trail, but outside of the AT and LT Management Areas, activities shall meet a visual quality objective (VQO) of at least Partial Retention.

Guidelines
G-1: The Built Environment Image Guide (BEIG) (FS 710 December 2001) should be used to develop the image, appearance, or architectural character of existing or proposed facilities, when considering rehabilitation, expansion, replacement, or the addition of new improvements.

G-2: The following tables (Tables 2.3-2 and 2.3-3) should be used as guidelines to determine visual quality objectives (VQOs). Table 2.3-2 requires use of desired Recreation Opportunity Spectrum (ROS) objectives for areas to determine VQOs (see glossary for definitions of terms).



View from Glastenbury Mountain

Table 2.3-2: Visual Condition Guidelines for On-Site and Off-Site Views

RECREATION OPPORTUNITY SPECTRUM (ROS)	VIEWER SENSI-TIVITY	VISUAL CONDITION ON-SITE (within ½ mile) and DISTRIBUTION per mile (50 acres) of travel corridor or per 1000 acres of other land	VISUAL CONDITION AS SEEN from OFF-SITE at MORE THAN ½ MILE
Primitive	High	Up to 1% of the travel corridor may be PERMANENT PARTIAL RETENTION. At least 99% of travel corridor should be PRESERVATION. 100% of area outside of travel corridor should be PRESERVATION.	Appears natural and unchanged by humans to the casual Forest visitor. (RETENTION)
Semi Primitive Non Motorized	High	Up to 1% of the travel corridor may be PERMANENT PARTIAL RETENTION. At least 99% of travel corridor should be RETENTION.	Appears natural and unchanged by humans to the casual Forest visitor. (RETENTION)
Semi-Primitive Motorized	High	Up to 4% of travel corridor may be PERMANENT PARTIAL RETENTION. At Least 96% of travel corridor should be RETENTION.	Appears natural with only occasional evidence of human change. On the upper part of the more noticeable peaks and ridges change is not evident to the casual Forest visitor. (RETENTION) On other locations change is occasionally noticeable but is subordinate to the natural appearing surroundings. (PARTIAL RETENTION)
	Moderate	Up to 4% of travel corridor may be PERMANENT PARTIAL RETENTION. Up to 10% of travel corridor may be TEMPORARY PARTIAL RETENTION. At least 90% of travel corridor should be RETENTION.	
	Low	Up to 1% per 1000 acres may be PERMANENT PARTIAL RETENTION. Up to 8% per 1000 acres may be TEMPORARY MODIFICATION	
Roaded Natural	High	Up to 10% of travel corridor may be PERMANENT MODIFICATION. At least 90% should be RETENTION.	When viewing these lands from a distance, some change may be apparent. On the upper part of the more noticeable peaks and ridges, changes may be seen but are subdued and subordinate to the surrounding natural appearing landscape. (PARTIAL RETENTION) on other locations, changes may be more noticeable and even begin to dominate the view but should be in harmony as are most private pastures and croplands. (MODIFICATION).
	Moderate	Up to 10% of travel corridor may be PERMANENT MODIFICATION. Up to 15% of the travel corridor may be TEMPORARY PARTIAL RETENTION. At least 85% of the travel corridor should be RETENTION.	
	Low	Up to 1% per 1000 acres may be PERMANENT MODIFICATION. Up to 10% per 1000 acres may be TEMPORARY MODIFICATION.	
Rural	High	Up to 10% of travel corridor may be PERMANENT MAXIMUM MODIFICATION. At least 70% should be RETENTION. Temporary alterations should meet RETENTION.	Rural areas reflect considerable changed by humans but are not acceptable on higher peaks and ridges. Changes to the lower elevations on National Forest may occasionally dominate the view but should be in harmony with the surrounding natural appearing landscape. (MODIFICATION).
Urban	High	Not normally found on National Forest but may occur on adjacent private lands such as highly developed base facilities of major winter sports areas. On adjacent National Forest use same objectives as for Highly Sensitive Rural Areas.	If National Forest is involved, apply Rural objective above.
Ski area developments may under-achieve these guidelines. Follow Alpine Ski Area MA (7.1) direction.			

Table 2.3-3: Visual Condition Guidelines Related to Timber Harvesting Activities for the GMNF

ACTIVITY	VIEWER SENSITIVITY (foreground)	VISUAL QUALITY AND TIME	PERCEIVED SIZE AND SHAPE[1]
INDIVIDUAL TREE SELECTION OR THINNING	High	Retention upon completion of project	Not Significant
	Moderate or Low	Partial Retention within 1 year. Retention within 3 years	Not Significant
GROUP SELECTION	High	Retention upon Completion of project	Openings up to 1/10 acre Irregular shape
	Moderate	Partial Retention within 1 year. Retention within 3 years	Openings up to ½ acre Irregular shape
	Low	Modification within 1 year. Partial retention in 3 years. Retention in 5 years.	No Geometric shapes
SHELTERWOOD WITH RESERVES, TWO CUT SHELTERWOOD, and THREE CUT SHELTERWOOD	High	Visual enhancement, demonstration projects, and for ecological restoration must be designed or reviewed by landscape architect, timber production is a secondary objective.	Must relate to the surrounding landscape character.
	Moderate	Partial retention 1 year. Retention in 15 years from regeneration cut.	Up to 10 acre shelterwood and removal cut. Road side opening up to 400 feet and trail side up to 200 feet, with at least 1000 feet between openings. Irregular shapes.
	Low	Modification in 1 year. Partial retention in 3 years. Retention in 15 years from regeneration cut.	No geometric shapes.
CLEARCUT	High	Visual enhancement, demonstration projects, and for ecological restoration must be designed or reviewed by landscape architect, timber production is a secondary objective.	Must relate to the surrounding landscape character.
	Moderate	Partial retention within 1 year. Retention within 15 years.	Up to 5 acres with islands and irregular shape. Road and Trail side opening up to 200 feet with at least 1000 feet between openings.
	Low	Modification in 1 year. Partial retention in 3 years. Retention in 15 years.	Up to 15 acres with irregular shapes.
VISUAL RESOURCE MITIGATION SHOULD BE DETERMINED ON A CASE BY CASE BASIS.			

[1]Perceived size and shape of temporary openings (or permanent upland openings where clearcut is used to create them) as seen from the sensitive viewing locations. Actual size may be larger. Wildlife reserve trees that dominate the surroundings may be removed after consultation with the Forest Wildlife Biologist. Residual debris (tree branches, root wads, stumps and other debris) should appear consistent with the VQO.

2.3.14 Tribal Relations

Standards
S-1: The Forest must consult with Tribal Historic Preservation Offices (THPO) and federally recognized Native American tribes, as appropriate, early in the planning process regarding proposed management activities in order to identify and address tribal interests, either on a case-by-case basis or through a programmatic agreement.

S-2: The Forest must consult appropriate THPO and federally recognized Native American tribes regarding the discovery of any human remains on the Forest.

Guidelines
G-1: The Forest should work with tribes to determine whether regulation of the gathering of natural resources and/or special forest products for traditional purposes is best done on a case-by-case basis or through an agreement (see Special Forest Products standards and guidelines).

G-2: The Forest should respect, and incorporate in decisions when appropriate, concerns expressed by Native American groups and individuals with historical ties to the Forest independent of their federal recognition status.

2.3.15 Heritage Resources

Standards
S-1: Heritage resources management shall be coordinated with State Historic Preservation Offices (SHPO), and Tribal Historic Preservation Offices (THPO) and federally recognized Native American tribes as appropriate, either on a case-by-case basis or through a programmatic agreement. Mitigation plans must include the above consultation, and the Advisory Council on Historic Preservation (ACHP) when projects might affect resources eligible for the National or State Registers of Historic Places (NR).

S-2: All proposed undertakings must take into account the effect on any NR-listed, NR-eligible or unevaluated heritage resource within the Area of Potential Effect (APE) prior to implementation. The Forest must protect and manage properties found to be eligible for the NR, or which remain unevaluated, as if they were listed on the NR.

S-3: Discoveries of human remains and associated objects must remain in place and protected if encountered, and must be reported immediately to USDA Forest Service Law Enforcement Officers (LEOs) and USDA Forest Service heritage resource specialists; project work in the area of the discovery must cease until LEO and heritage evaluation is completed.

S-4: The nature and location of archaeological and Native American sacred or traditional use sites shall remain confidential and exempt from the Freedom of Information Act (36 CFR 296.18).

S-5: Heritage inventory activities and resulting data shall meet current national guidance and professional standards, shall be maintained in the Forest's corporate database and mapping systems, and shall be consistent with SHPO standards.

Guidelines
G-1: Heritage resources should be evaluated to determine their eligibility for listing on the NR with reference to the State Historic Preservation Plan as appropriate.

G-2: Heritage resource artifact collections and records, and administrative history and archival data, should be curated in accordance with federal standards (36 CFR 79), and through consultation with SHPO and other interested parties.

2.3.16 Interpretation and Education

Standards
S-1: Interpretation and education (I&E) efforts shall reflect the integration of the social, ecological, economic, and land use history of the Forest and region while emphasizing the mission of the Forest Service in managing National Forest System lands.

S-2: The Forest Service mission and image shall remain visible on all I&E products produced by the Forest Service and its partners.

S-3: I&E efforts shall be executed consistent with management area direction and the desired Recreation Opportunity Spectrum class.

Guidelines
G-1: Visitors should be informed of the distribution, differences, and roles of the federal, State, and private lands found in the Green Mountain region and the respective range of recreation and cultural interest opportunities and facilities available.

G-2: Nationally adopted I&E programs, such as *Leave No Trace*, should be promoted to Forest visitors to create a better understanding of the Forest environment and to reduce impacts to Forest resources.

G-3: I&E efforts should utilize a wide range of technologies to provide a range of media for the dissemination of information related to the health, safety, education, and enjoyment of Forest visitors.

G-4: The Forest Service should provide adequate information for Forest users to take full advantage of available goods and services.

G-5: Internal or external partner development of new I&E products, related to the GMNF, should be reviewed by appropriate resource groups for consistency and quality of messages prior to being finalized.

2.3.17 Land Ownership Adjustments

Guidelines
G-1: Lands that become available for purchase by willing sellers and meet one or more of the following will be the highest priority. The more guidelines a property meets, the higher it will be in priority.

- Consolidate public ownership to facilitate natural resource restoration and conservation, improve management effectiveness, and provide large contiguous areas for multiple-use opportunities
- Benefit the purposes of the Taconic expansion area
- Are within established Wilderness areas
- Conserve rivers, watersheds and significant streams
- Benefit the Appalachian National Scenic Trail and the Long National Recreation Trail systems
- Provide administrative and/or public access to the National Forest
- Provide resources for forest products
- Provide wildlife habitat and corridors
- Provide fisheries habitat
- Conserve threatened, endangered, and sensitive species habitat
- Provide recreation opportunities
- Have uncommon or outstanding scenic, physical, or biological qualities
- Protect significant historic properties
- Resolve occupancy trespass and encroachment onto federal land
- Consider the goals of towns, regional planning commissions, and the State of Vermont
- Meet National Forest System resource needs on lands outside and adjacent to the proclamation boundary

G-2: Although the 2006 Forest Plan is the guiding document for land adjustment in that it lists the purchase priorities, the Forest Service may go for years without purchasing acres in any of the priorities, such as acquisition of Wilderness inholdings. This does not mean the priorities are being ignored. It means no tracts with priority characteristics are available for purchase. Priorities can only be applied when multiple opportunities exist and limited funding requires prioritization. Otherwise, land is purchased when it is available if it meets one or more of the guidelines.

G-3: The transfer of lands, or interest in lands, from the Forest Service to other parties should be guided by the following criteria:

- Lands no longer needed for National Forest System purposes
- Parcels that will serve a greater public need in State, county, city, or other federal agency ownership
- Parcels isolated from other National Forest System lands
- Parcels having boundaries, or portions of boundaries, with inefficient configurations
- Reduction of administrative problems and management costs

G-4: Newly acquired land should be assigned a management area classification shown on the 2006 Forest Plan Proclamation Boundary map.

G-5: On newly acquired lands, existing roads and trails may be designated and maintained if:

- the road or trail is consistent with MA direction and the DFC
- the road or trail is a necessary component of a larger transportation system or networks

G-6: Designations should be considered temporary and should be reviewed when comprehensive transportation planning is completed for the area.

2.3.18 Transportation Analysis

Standard

S-1: Transportation project proposals shall follow FSM 7712 -Transportation Analysis, which covers roads analysis, accessibility, traffic volumes, economic impacts, road management objectives, soil and water impacts, and effects on recreation and timber management.

Road Design and Construction

Standards

S-1: Road designs shall follow FSM 7721 and FSM 7722, and receive a technical review, including a plans-in-hand field review by the District Ranger and the appropriate interdisciplinary team.

S-2: Roads constructed or reconstructed for use by the general public shall be designed in accord with the latest AASHTO Policy on Geometric Design of Highways and Streets standards section on rural roads and special purpose roads.

S-3: New drainage structures shall be located and designed to minimize road and ditch erosion and to outlet onto stable slopes and drain into areas suitable for trapping sediment.

S-4: Stream crossings and other in-stream structures shall be designed and constructed to pass water and debris for the targeted storm event and allow free movement of resident aquatic life.

S-5: Replacement of drainage structures with known fish passage opportunities must provide fish passage except to meet prescribed fish management objectives

S-6: Temporary erosion control devices shall be installed and maintained until disturbed ground has been stabilized.

Road Operation and Maintenance

Standards
S-1: The Forest Service shall cooperate with State and town governments and highway departments in managing town-maintained roadways through the Green Mountain National Forest.

S-2: Public access shall be controlled to meet 2006 Forest Plan management objectives such as achieving desired recreation opportunities (see Recreation and Visual standards and guidelines) and protecting wildlife habitats (see Wildlife and Fish standards and guidelines).

S-3: Road restrictions, year-round or seasonal, shall be considered when:

- Use causes unacceptable damage to roadbed or soil and water resources
- Use causes unacceptable wildlife conflict or habitat degradation
- Use results in unsafe conditions
- A seasonal public or administration need is served
- The area accessed has seasonal need for protection or non-use
- It is necessary to resolve conflicts between users

S-4: Users shall be informed of closures through signing.

Guideline
G-1: New road grades should generally be between 2 and 20 percent. If grades greater than 10 percent are deemed necessary, they should only be considered if other alternatives are too expensive and mitigating measures, such as additional drainage control, are possible.

2.3.19 Special Uses

Recreation Special Uses

Standards
S-1: Special use permits shall be administered to standards described in Forest Service Handbooks and Manuals, as well as other internal management direction.

S-2: Special use permits shall be administered consistent with management area direction.

S-3: Existing uses that are not compatible with the 2006 Forest Plan shall be brought into compliance upon renewal or re-issuance to a new holder.

S-4: Outfitters/guides shall submit operating plans and itineraries as part of their annual permit applications.

Guidelines
G-1: Recreation special uses should be managed to protect the characteristics of the desired Recreation Opportunity Spectrum classification.

G-2: Special use authorizations should be issued only when there are no private land alternatives, or when the use has a clear and significant public benefit.

G-3: Recreation special use permits should be denied when it is determined that undesirable social and/or resource impacts occur.

G-4: Recreation special use permits should be denied when permit applications are not received within administratively established time frames or the proposed use cannot be effectively administered.

G-5: Recreation special use allocation studies should be instituted if monitoring and analysis determines that recreation demand exceeds the capacity of the land and/or facility to accommodate such activities.

G-6: Permitted activity group sizes should be limited when necessary to provide for safety and resource protection, and/or to minimize the impact large groups have on others.

G-7: Commercial use of summer off-road vehicles should not be approved if the proposal is primarily dependant on the National Forest trail system.

Non-Recreation Special Uses

Standards

S-1: Special use permits shall be administered to standards described in Forest Service Handbooks and Manuals, as well as other internal management direction.

S-2: Special use permits shall be administered consistent with management area direction.

S-3: First Amendment group uses, such as freedom of assembly and worship, shall not be denied on the basis that they can reasonably be accommodated on non-National Forest System lands.

S-4: Existing uses that are not compatible with the 2006 Forest Plan shall be brought into compliance upon renewal or re-issuance to a new holder of an authorization.

S-5: Maple tapping shall require a special use permit in addition to a forest products permit.

S-6: Military training activities shall be authorized only after the Department of Defense has determined and substantiated that lands under its jurisdiction are either unsuitable or unavailable in accordance with the Master Agreement between the Department of Defense and the Department of Agriculture that governs the use of National Forest System lands for these purposes. When local supplemental agreements with military agencies exist, consult such agreements for additional direction. Activities must be in conformance with management area objectives.

S-7: All research permits shall include a requirement that the Forest receive a copy of the final report or analysis.

S-8: Special use permits shall not be approved for new uses where the primary use is storage or disposal of hazardous materials including, but not limited to, landfills and liquid septage disposal facilities.

S-9: Special Use applications shall be denied if the authorizing officer determines that:

- The proposed use would not be in the public interest.
- The proposed use would otherwise be inconsistent with applicable federal, State, and local laws, regulations, and special orders that apply to the national forests.
- The proposed use may endanger public health or safety.
- The proposed use would conflict or interfere with administrative use by the Forest Service, other authorized existing uses, or uses of adjacent non-federal lands.
- The applicant does not, or cannot, demonstrate technical or financial capability.

S-10: Special use permits required by law to provide access to non-federal land shall be issued.

Guidelines

G-1: Special use authorizations should be issued only when there are no reasonable private land alternatives, or when the use has a clear and significant public benefit.

G-2: New special use permits for transportation, utility and communication corridors should be co-located with existing corridors to reduce the proliferation of separate rights-of-way.

G-3: Current uses, where the primary use is storage or disposal of hazardous materials including, but not limited to, landfills and liquid septage disposal facilities, should be phased out.

G-4: First Amendment group uses may only be denied a permit if the use does not meet the eight criteria listed in Federal regulations (36 CFR 251.54).

G-5: Electrical utility lines of 33 kilovolts or less, communication lines, or pipelines should be buried unless one or more of the following applies:

- Visual quality objectives of the area can be met using an overhead line.
- Burial is not feasible due to geological hazards or unfavorable geologic conditions.
- Greater long-term site disturbance would result.
- It is not technically feasible.
- State law governing the use of public highway rights-of-way for utility purposes applies. Generally, it applies in cases where land was acquired for National Forest System purposes subject to an existing public highway right-of-way.

G-6: Agricultural uses should meet the requirement of having a clear and significant public benefit, such as maintaining desirable open space as determined by appropriate analysis. Do not authorize such uses merely to continue a past use on land now part of the National Forest System.

G-7: Non-Recreation special use permits should be denied when it is determined that undesirable social and/or resource impacts occur.

2.3.20 Administrative Facilities and Uses

Guidelines

G-1: Existing facilities may be maintained.

G-2: On roads, trails, and general forest areas where motorized vehicle uses are prohibited, motorized access may be allowed for law enforcement, emergency, firefighting, maintenance, and other administrative purposes.

G-3: Research activities and facilities may be allowed as long as they are consistent with management area direction.

Hapgood Pond, photo courtesy of Donna Marks

Chapter 3 Management Area Direction

Introduction

Chapter 3 presents management direction for specific management areas (MAs). The management direction that applies Forest-wide, found in Chapter 2, also applies to all management areas. Management area direction is developed to be appropriate for the variety of uses and resources in the management areas.

Each management area has a major emphasis and desired future condition. In addition, each management area has a set of standards and guidelines.

DIVERSE FOREST USE (3.1)

Major Emphasis

The Diverse Forest Use Management Area (MA) emphasizes a variety of forest uses. Vegetation management emphasis is placed on production of high quality sawtimber and other timber products on a sustained yield basis. Management actions provide a mix of habitats for wildlife species, including deer wintering habitat. Public use is managed to provide a full range of recreation opportunities, from motorized and non-motorized trails to dispersed campsites and developed campgrounds. The mix of vegetation conditions and recreation opportunities across the landscape provides a mosaic of landscape conditions that strives to be visually attractive to people visiting the Forest.

Desired Future Condition

The landscape character will be a mix of deciduous and coniferous forest stands of various types. The stands will vary in size, shape, height, and tree species. Along road and trail corridors, large diameter trees of diverse species will predominate. Vistas of landscapes with a mosaic of vegetative patterns will be provided along roads and trails. Forest communities that would naturally be present, such as northern hardwoods, aspen, and oak, will be retained and enhanced where feasible.

Management practices will include both even-aged and uneven-aged silviculture systems. As a result, two different conditions will occur among the stands: some stands will consist of trees of about the same age and size; the remaining stands will consist of a mix of tree sizes and ages ranging from seedlings to very large mature trees. Silvicultural practices will be used to meet timber, wildlife, ecological, visual, and recreation objectives.

Suitable habitat will be provided for a variety of wildlife and plant species. Deer wintering habitat will be emphasized within, or adjacent to, identified deer wintering areas. Habitat at the landscape level will include a sustainable mix of young and mature forests. Permanent upland and temporary openings will occur across the landscape in shapes and sizes that are consistent with visual objectives in the area. Views, ecological processes, and management practices will be interpreted at some vista sites.

Recreation opportunities will be diverse in this MA, with pockets of semi-primitive motorized to the more common roaded natural recreation opportunity classes. Recreation management will be towards the desired ROS class of Roaded Natural. Forest visitors will be common in developed recreation sites and camping areas along roads in the general forest area. Trail opportunities will be diverse, ranging from hiking and bicycling to snowmobiling and potentially summer ORV riding. Summer ORV trails will be limited in scope as described in the Forest-wide Standards and Guidelines. Interaction among visitors will be in moderate to high concentrations in locally popular areas. Impacts from recreation use will be evident.

Snowmobiling on the Green Mountain National Forest

Standards and Guidelines for Diverse Forest Use (3.1)

Forest-wide standards and guidelines apply. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the management area standards and guidelines, the most restrictive standard and guideline shall apply.

Minerals

Guideline:

G-1: Subject to valid existing rights, mineral exploration and extraction that causes surface disturbance within this area may be permitted.

Fire Management

Guideline:

G-1: Prescribed fire may be permitted

Relics and Ruins Field School

WILDERNESS (5.1)

Major Emphasis

The Wilderness Management Area emphasizes the management and protection of congressionally designated wilderness areas. The existing Wilderness areas include Bristol Cliffs, Breadloaf, Joseph Battell, Big Branch, Peru Peak, Lye Brook, Glastenbury, and George D. Aiken (Table 3.1-1). Lye Brook Wilderness is also a Class I Air Quality Area. Management emphasizes the maintenance of wilderness values consistent with the Wilderness Act of 1964 and subsequent legislation, including:

- A general appearance of being affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable
- Outstanding opportunities for solitude or a primitive and unconfined type of recreation
- At least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition
- Ecological, geological, or other features of scientific, educational, scenic, or historical values

In order to maintain these values, wilderness areas prohibit the use of motorized and mechanized vehicles and equipment, installation of new structures, and road development except where provided for by law.

Desired Future Condition

While Eastern wilderness includes lands that have been modified through logging and other human uses over hundreds of years, current natural ecological processes will be allowed to take place. The Wilderness management areas will be a product of natural succession where large and small-scale changes occur through natural events such as wind disturbances or ice storms. Vegetation composition will result from natural ecological processes rather than human-caused activities. Vegetation cover will vary based primarily on ecological conditions. Temporary openings, early successional forest, small permanent upland openings, and the wildlife associated with these areas may be found but will be uncommon and the result of natural processes. Components of the natural disturbance regime will include individual tree throw, infrequent large-scale blow down, very infrequent fire, insect damage, and beaver flooding. Parcels previously maintained as early successional units will disappear with the passage of time.

Recreation management will be towards the desired ROS class of Primitive. There will be little evidence of human development in Wilderness MAs with several exceptions including trails, trail shelters, trail blazes, and limited trail signing that provides onsite guidance to visitors. Interaction between users will vary by wilderness, specific places within each wilderness, and season of use. In general, use will be concentrated around trail corridors and other popular features. Away from trails and in low-use wildernesses, evidence of, and interaction with, other users will be low. Facilities and designated campsites may be present when necessary to protect Wilderness values. Managerial controls will be kept to a minimum and used only as necessary to protect ecological and social values.

The Appalachian Trail (AT) and Long Trail (LT) pass through Wilderness Management Areas. These trails provide an opportunity for visitors to experience a Wilderness setting while hiking these long distance trails. The unique characteristics of both the wilderness areas and the AT and LT will be protected and maintained to the greatest extent possible.

There may be evidence of previous settlement, such as stonewalls, cellar holes, old roads, or other structures or features which will be returning to natural conditions. Structures, facilities, or shelters will occur only where specific exceptions to the Wilderness Act were placed in the enabling

legislation, or where such properties are determined historically significant (eligible to the National Register for Historic Places) and consistent with the character of the wilderness. Individual rustic campsites may be noticed, but will not dominate a landscape. Old roads will be restored to natural conditions unless they are designated as trails.

Areas Congressionally Designated as Wilderness 5.1

Table 3.1-1: Designated Wilderness	
Wilderness	**Acres**
George D. Aiken	5,060
Lye Brook	17,718
Peru Peak	7,672
Bristol Cliffs	3,775
Breadloaf	25,237
Big Branch	6,767
Joseph Battell	12,333
Glastenbury	22,425

Standards and Guidelines for Wilderness 5.1

Forest-wide standards and guidelines apply. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the management area standards and guidelines, the most restrictive standard and guideline shall apply.

Guidance for managing Wilderness is found in:

Wilderness Acts
- PL 88-577, September 3, 1964 (Wilderness Act)
- PL 93-622, January 3, 1975 (Eastern Wilderness Act) and Amendment PL94-268, April 1976 for Bristol Cliffs
- PL 98-322, June 19, 1984 (Vermont Wilderness Act)
- PL 109-382, December 1, 2006 (New England Wilderness Act)

Code of Federal Regulations (CFRs) covering Wilderness, include:
- Title 36 CFR – Part 293 – Wilderness – Primitive Areas
- Title 36 CFR subpart 228.15 (Minerals)
- Title 36 CFR subpart 261.61 (National Forest Wilderness prohibitions)

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Wilderness Management Plans

Minerals

Standard:

S-1: Subject to valid existing rights, minerals in Wilderness shall be unavailable for lease.

Timber Management

Standard:

S-1: Timber management shall not be permitted.

Guideline:

G-1: Vegetation changes should be left to the forces of nature except as provided for in Forest Service direction.

Special Forest Products

Standard:

S-1: Gathering of special forest products for commercial sale shall be prohibited.

Range

Standard:

S-1: Livestock areas shall be prohibited.

Wildlife

Standard:

S-1: Wildlife habitat improvement projects shall be prohibited. Habitat shall be a result of natural processes.

Fisheries

Guideline:

G-1: Fish stocking may continue in lakes where it has historically been done.

Ecological Special Areas and Mount Horrid

Standard:

S-1: Ecological special areas and the Mount Horrid candidate Research Natural Area contained within Wilderness shall be managed to protect their special ecological values.

Guideline:
G-1: Recreation and other activities may be restricted or prohibited through area closures to protect the special ecological values of these areas.

Pests, Diseases, and Non-Native Invasive Species

Guidelines:
G-1: Non-native invasive species may be suppressed where native ecological communities or TES species are threatened by their presence.
G-2: Ecosystem restoration should be considered only if the need is causally linked to human-induced changes, and if those changes pose a significant threat to resources outside of wilderness.

Fire Management

Guideline:
G-1: Wildland Fire Use may be permitted.

Recreation

Standards:
S-1: Storing equipment/materials shall be prohibited.

S-2: A minimum tools analysis shall be completed before undertaking any project.

Guidelines:
G-1: Education efforts on pre-trip planning should discourage group sizes larger than ten people.

G-2: Monitor effects of geocaching activities to determine if there are conflicts with wilderness values and resources. Consider prohibition of geocaching if conflicts occur.

G-3: Whenever practical, campsites outside of the Appalachian Trail and Long Trail should be managed in ways to make them as unrecognizable as possible. Only minimal physical changes and structures should exist at most sites (simple rock fire rings).

G-4: The minimum tool concept should be used to guide management actions.

G-5: Restoration efforts should be site-specific and small scale, such as rehabilitating campsites or other sites impacted by recreation.

G-6: Numbers of users may be limited to provide opportunities for solitude and low to moderate contact with other groups or individuals.
G-7: Visitor use may be managed by informing visitors of alternative opportunities outside of wilderness, restricting access to the wilderness, limiting length of stay, limiting group size, and/or instituting a permit system.

Developed Recreation

Standard:
S-1: Construction of new overnight facilities shall be prohibited.

Guidelines:
G-1: Overnight facilities identified in the area-enabling legislation may be retained.

G-2: Shelters identified for retention should be maintained. Native materials are to be used, if possible, for maintenance and repair. Non-native materials may be used only if native material is unavailable or impractical. Materials are to be replaced in-kind. Any materials used should be durable, and should blend closely with the natural surroundings.

G-3: An existing facility determined eligible for the National Register of Historic Places may be retained if this is the only way to adequately preserve and protect its historical or cultural significance.

G-4: Existing overnight facilities that are not identified in area-enabling legislation should be removed if they can no longer meet health and safety standards without full replacement; if they are not needed for resource protection; and are not historically significant.

G-5: For shelters that will be retained, every practical effort should be made to minimize the presence of the shelter and its impact on the surrounding area.

Trails

Standard:

S-1: The use of horses, pack animals, dog teams, bicycles, and motorized vehicles in Wilderness shall be prohibited, except for search and rescue operations with Forest Supervisor approval, fire suppression with Forest Supervisor approval, and motorized access to private in-holdings as authorized by law and permits.

Guidelines:

G-1: Cairns, limited scree walls, blazing, and directional arrow signs may be used only when the summer trail tread is not easily discernible, for resource protection, or to mitigate an unusual or extraordinary public safety hazard.

G-2: Trails may be added or eliminated to protect wilderness values.

G-3: Trails should be constructed, relocated, and maintained to a minimum standard necessary for protection of the soil, water, vegetation, visual quality, user safety, and long-term maintenance. Emphasis should be placed on trails that appear to be part of the wilderness environment and not an intrusion upon it.

Appalachian Trail and Long Trail

Standards:

S-1: Activities shall be planned and carried out in cooperation with the appropriate trail management partner(s).

S-2: Management direction contained in the Appalachian Trail National Scenic Trail MA (8.1), the Long Trail MA (8.2) and Wilderness MA (5.1), apply to areas where each respective trail goes through a Wilderness MA. Where conflict exists, the stricter standards shall be followed.

S-3: The use of horses, pack animals, dog teams, bicycles, and motorized vehicles on the footpath of the AT/LT shall be prohibited.

Guidelines:

G-1: Any physical changes and structures should be limited to those needed to prevent deterioration of the site by repeated use.

G-2: Existing shelters and associated facilities may be maintained on the AT/LT and associated trails.

G-3: Use of hand-held power tools, such as chainsaws, to re-open trails following catastrophic natural events may be authorized by the delegated authorizing official.

G-4: When existing trail shelters deteriorate to the point that they must be replaced or reconstructed, the shelter and shelter location should be analyzed for historic significance. When possible, relocate shelters to appropriate sites outside of wilderness.

Heritage Resources

Guidelines:

G-1: Archaeological research and excavations may be permitted under the condition that they will not alter the long-term ecological integrity or wilderness values of the area.

G-2: Preservation, maintenance, research, and interpretation related to significant historic properties may be undertaken under the condition that such properties are consistent with the character of the Wilderness.

Transportation Analysis

Standards:

S-1: Roads shall be prohibited unless required by law to provide access to private land or easements.

S-2: Decommissioned roads shall be restored to landscape level or converted to trails.

Guideline:

G-1: Historically significant roads may be closed, rather than decommissioned, as determined through SHPO. Actions for closing roads shall follow Forest Service transportation policy.

Lye Brook Wilderness

Recreation Special Uses

Standards:

S-1: Permits for competitive or recreation events shall be prohibited.

S-2: Permits for recreation facilities shall be prohibited.

Guidelines:

G-1: Future development of use zones through the LAC process may restrict Outfitter Guide use or not allow use to increase beyond a level that can be accommodated within the established standards.

G-2: Outfitter/guide permits should not disperse use from high- to low-use areas.

Non-Recreation Special Uses

Standards:

S-1: Permits for roads and trails shall not be issued unless required by law to provide access to non-federal land.

S-2: On-the-ground military exercises shall be prohibited in wilderness.

Guideline:

G-1: Other non-recreation special use permits may be authorized provided they are consistent with management area emphasis and Desired Future Condition, and they will not threaten or diminish the character or purpose for which the management area was designated, or as directed by the Wilderness Act of 1964.

REMOTE BACKCOUNTRY FOREST (6.1)

Major Emphasis

The Remote Backcountry Forest Management Area emphasizes large expanses of relatively natural landscapes where terrestrial and aquatic ecosystems develop under natural disturbance regimes. Management actions are limited to those that help restore or maintain natural processes, natural communities, and associated species within their natural ranges of variation in the landscape. Public use is managed at a scale and intensity that either helps keep species or processes within their natural range of variation, or has minimal effect on the area's integrity. Non-motorized trail recreational opportunities will be available that provide a relative sense of isolation and remoteness in a predominantly natural or natural-appearing landscape.

Desired Future Condition

Extensive areas of mature northern hardwoods and conifers will dominate the landscape. These areas will contain a mix of tree sizes and ages, including very large live and dead trees, young trees, and canopy gaps that will occur as a result of natural disturbances. This management area will typically occur in contiguous parcels of at least 2,500 acres. There will be little evidence of current human development. Historical evidence of human activities that have become overgrown or dilapidated may be present

The Remote Backcountry Forest will be accessible by foot and other non-motorized means of transport, such as skis, snowshoes, horses, and bicycles. Motorized trails will not be present, unless required by law to provide access to private land. Away from trails, evidence of, and interaction with, other users will be low. Recreational impacts will be managed to protect natural resources such as water quality and rare plants and animals, to minimize visual disturbance, and to preserve a sense of wildness. Recreation management will be towards the desired ROS class of Semi-primitive Non-motorized.

Changes in vegetation will be predominantly the result of natural processes. Natural disturbances such as wind, ice storms, or outbreaks of native insects and diseases will be considered part of these natural processes. Under some circumstances, management actions that will further the desired future condition of this MA may be appropriate. Management activities may be used to conserve and protect populations of threatened, endangered, or sensitive (TES) species. Ecological restoration within these areas may occur through control of non-native invasive species, removal of forest plantations, road closures, maintenance of deer wintering areas and bear clawed beech stands, soil stabilization, anadromous and native inland fish stocking, and aquatic habitat restoration. The minimum managerial controls necessary will be used to maintain acceptable ecological and social standards.

Remote Backcountry Forest management areas contain a number of ecological special areas not included in the Ecological Special Area MA. The unique characteristics and values of both an Ecological SA and Remote Backcountry Forest will be protected and maintained to the greatest extent possible.

Standards and Guidelines for Remote Backcountry Forest 6.1

Forest-wide standards and guidelines apply. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the management area standards and guidelines, the most restrictive standard and guideline shall apply.

Minerals

Standard:

S-1: Subject to valid existing rights, mineral exploration and extraction that causes surface disturbance within this area shall be prohibited.

Timber Management

Guideline:

G-1: Changes resulting from vegetation management activities should be kept as naturally appearing as possible. Vegetation management is typically not permitted. Infrequent vegetation management may take place for any of the following reasons:

- Vegetation management activities are needed to improve habitat for threatened, endangered, and Regional Forester's Sensitive Species; restore terrestrial or aquatic ecosystem composition and structural characteristics; or maintain existing unique or important wildlife features.
- The cutting, sale, or removal of timber is incidental to the implementation of a management activity.
- The removal of vegetation is needed to maintain existing trails, vistas, and overlooks, or to establish new trails for resource protection or public safety needs.
- The removal of vegetation on or around heritage sites is needed for preservation, research and/or interpretive purposes.
- The removal of vegetation is needed and appropriate for administrative use.

Openings

Guideline:

G-1: Permanent upland and temporary openings found in the area should be the result of natural processes only; exceptions are permitted for the vegetation management activities noted above in the vegetation section.

Special Forest Products

Standard:

S-1: Gathering of special forest products for commercial sale shall be prohibited.

Guideline:

G-1: Gathering of special forest products may be authorized provided it is consistent with Management Area emphasis and Desired Future Condition and will not threaten or diminish the character or purpose for which the MA was designated.

Range

Standard:

S-1: Livestock areas shall be prohibited.

Fisheries

Standard:

S-1: Only native fish species shall be stocked into waters within this area.

Guideline:

G-1: Changes resulting from stream restoration activities should be kept as naturally-appearing as possible.

Pests, Diseases, and Non-Native Invasive Species

Guidelines:

G-1: Chemical and biological controls may be utilized when determined to be less ecologically disruptive than the target pest.

G-2: Control actions against native insect, disease, plant, or animal pests, should only be used when the actions are necessary to protect adjacent resources or Remote Backcountry desired future conditions.

Fire Management

Guideline:

G-1: Fire use may be permitted.

Recreation

Standard:
S-1: Construction of new developed recreational facilities shall be restricted to those needed for resource protection.

Guideline:
G-1: Existing facilities may be maintained as long as they complement Remote Backcountry objectives, are needed for public health and safety, or are significant historic properties.

Trails

Standard:
S-1: Motorized recreational trail uses shall be prohibited.

Guideline:
G-1: The use of horses, pack animals, dog teams, and bicycles may be permitted on trails as long as such uses do not interfere with MA Desired Future Condition.

Transportation Analysis

Standards:
S-1: New road construction shall be prohibited unless required by law to provide access to private land.

S-2: Existing roads shall be managed to the lowest traffic service and maintenance levels possible, and shall be closed to public motorized vehicle traffic.

Guidelines:
G-1: Maintenance and relocation of existing trailheads, and construction of new trailheads, may occur only for resource protection and visitor safety.

G-2: Existing roads should be decommissioned, with the exception of those needed to provide access for resource management or facility maintenance, and access to private land.

G-3: Decommissioned roads may be demolished, dismantled, obliterated, or disposed of to eliminate the deferred maintenance needs of the fixed asset. Portions of the asset may remain if they do not cause problems nor require maintenance.

G-4: Motorized heavy equipment may be used for the purpose of road decommissioning.

Recreation Special Uses

Standard:
S-1: Permits for competitive or recreation events shall be restricted to existing trail and road systems or recreation sites.

Guidelines:
G-1: Recreational special use permits may be authorized provided they are consistent with Management Area emphasis and Desired Future Condition and they will not threaten or diminish the character or purpose for which the MA was designated.

G-2: Outfitter/guide permits should not disperse use from high- to low-use areas.

Non-Recreation Special Uses

Standards:
S-1: Development of, and designated sites for wind and communication towers shall be prohibited.

S-2: Development of new utility and pipeline corridors and associated facilities shall be prohibited.

S-3: Livestock areas shall be prohibited.

S-4: Special use permits required by law to provide access to non-federal land shall be issued.

Guidelines:

G-1: Expansion of existing facilities and corridors for utility lines and pipelines should be minimized.

G-2: Other non-recreational special use permits may be authorized provided they are consistent with Management Area emphasis and Desired Future Condition and they will neither threaten nor diminish the character or purpose for which the MA was designated.

G-3: Reconstruction, upgrading, or maintenance of existing utility lines, pipelines, and facilities should be designed and implemented to be as compatible as possible with visual quality and management objectives and the Desired Future Condition of the area.

Wood Sorrel

DIVERSE BACKCOUNTRY (6.2)

Major Emphasis

The Diverse Backcountry MA emphasizes relatively large landscapes that provide a mix of backcountry recreational experiences from low use foot trails to motorized use trails. Longer rotations for timber harvesting of 150 years or more providing a more mature appearing forest are also emphasized. The management area will also provide a mix of wildlife habitats supplied by more mature forests, early successional forests, and both permanent upland and temporary openings. A predominantly natural or natural-appearing environment characterizes the area.

Desired Future Condition

This management area will typically occur in contiguous parcels of at least 2,500 acres. Lands in this MA will have a mixture of tree species, sizes, ages, and appearances. Activities such as timber harvesting may be evident but will be scattered over time and space. Temporary openings will occur through natural disturbance and timber harvesting. When viewed from a distance, human activity will not be evident on some of the upper elevations of the more noticeable peaks and ridges. Some evidence of activity may be noticeable on lower levels, but will blend with the surrounding landscape. While these areas will be predominately natural appearing, evidence of human use may be evident, but will not dominate.

The area will be predominantly void of roads but any remaining roads will be of a low maintenance standard and unimproved. New temporary roads may be built, but will be closed and restored at project completion.

A predominately natural-appearing environment of moderate to large size trees will characterize these areas. The settings of these areas will be appropriate for a wide variety of recreational uses. Concentration of users will generally be low, but there will often be evidence of other users. Recreation facilities may be present and will complement the desired recreation opportunities. Trail systems will be present and new trails may be developed. Summer ORV trail will be limited in scope as described in the Forest-wide Standards and Guidelines. Away from trails, evidence of, and interaction with, other users will be moderate to low. Recreation management will be towards the desired ROS class of Semi-primitive Motorized.

Timber harvests will occur with constraints such as extended rotations, fewer intermediate treatments, and other modifications to benefit backcountry settings. Some stands will consist of trees of about the same age and size while other stands will have a mix of tree sizes and ages. Some areas of undisturbed forest will have many large, old trees with a few scattered temporary openings created by wind, ice, old age, or other natural forces. The primary silvicultural system will be even-aged. Uneven-aged silviculture may be used where even-aged management is incompatible with other resources and values.

This management area will provide a wider diversity of wildlife habitats than what would be expected in areas that have no vegetation management. Timber and vegetation management will provide more clearings and early successional habitats in this MA than would occur from natural disturbances. Permanent upland openings and orchard maintenance for wildlife values will be maintained.

Standards and Guidelines for Diverse Backcountry 6.2

Forest-wide standards and guidelines apply. The MA standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the MA standards and guidelines, the most restrictive standard and guideline shall apply.

Minerals

Guideline:

G-1: Subject to valid existing rights, mineral exploration and extraction that causes surface disturbance within this area may be permitted.

Timber Management

Guidelines:

G-1: Where even-aged management is appropriate, rotation ages should fall within the range of extended rotation ages provided in the Forest-wide goals and objectives for each forest type.

G-2: Primary silvicultural system should be even-aged in order to reduce the number of entries.

G-3: Uneven-aged management should be used where even-aged management is incompatible with other resources and values such as along certain roads and trails that have high visual sensitivity.

Openings

Standard:

S-1: Temporary openings resulting from even-aged management shall be less than 20 acres and in accordance with the Forest-wide standards and guidelines for Recreation and Visuals.

Guideline:

G-1: Permanent upland openings should be less than 20 acres in size. Larger openings may occur naturally.

Fire Management

Standard:

S-1: Prescribed fire may be permitted.

Recreation

Standard:

S-1: Construction of new developed recreational facilities shall be restricted to those needed for resource protection.

Transportation Analysis

Standard:

S-1: New permanent roads shall be prohibited unless required for administrative or designated special uses, or required by law to provide access to private land.

Guidelines:

G-1: Segments of old roads or skid trails, not on the Forest Service Transportation System, and that are not necessary for managed recreation, vegetation, or timber purposes, should be closed and restored.

G-2: Temporary roads may be permitted to achieve MA Desired Future Conditions. Temporary roads will be rehabilitated after management objectives are complete.

Non-Recreation Special Uses

Standards:

S-1: Development of wind and communication towers shall be prohibited.

S-2: Development of new utility corridors shall be prohibited, except for existing road edges.

S-3: Special use permits required by law to provide access to non-federal land shall be issued.

Guidelines:

G-1: New utilities should be placed underground.

G-2: Expansion of existing facilities and corridors for utility lines and pipelines should be minimized.

G-3: Reconstruction, upgrading, or maintenance of existing utility lines and facilities should be designed and implemented to be as compatible as possible with visual quality and management objectives and the Desired Future Condition of the area.

REMOTE WILDLIFE HABITAT (6.3)

Major Emphasis

The major emphasis of the Remote Wildlife Habitat MA is to provide a mix of different-aged forest habitats, from early succession to old forests, for the primary benefit of diverse wildlife species, including reclusive wildlife species. This MA creates diverse habitats, including permanent upland and temporary openings and brushy areas that complement wildlife habitat management in other management areas. Recreation uses are de-emphasized to minimize continuing disturbance to wildlife.

Desired Future Condition

The Remote Wildlife Habitat MA will create a mix of deciduous and coniferous forest stands of various types. Stands will vary in size, shape, age, height, and tree species composition. Both even-aged and uneven-aged silviculture practices will be used to meet wildlife habitat objectives. As a result, two different conditions will occur among the stands: some stands will consist of trees of similar age and size; the remaining stands will consist of a mix of tree sizes and ages ranging from seedlings to very large, old trees. Forest communities that would naturally be present, including those important to wildlife such as aspen and oak, as well as rare or important communities, will be retained and enhanced where feasible.

This MA will maintain or create suitable habitat for a variety of wildlife and plant species. Habitat at the landscape level will include a sustainable mix ranging from early-succession to old forests. Permanent upland and temporary openings will occur across the landscape in shapes and sizes that are consistent with wildlife habitat objectives. These openings and regenerating forest habitats will be critically important to many species of wildlife that are dependant on them, including reclusive species. For example, black bears and bobcats generally avoid humans, as will northern goshawks during the nesting season, but these species forage and hunt extensively in early-successional habitats. Deer wintering habitat will be emphasized within, or adjacent to, identified deer wintering areas. Timber and vegetation management activities, including maintenance of permanent upland openings and deer wintering areas, will occur as needed to achieve habitat goals.

Recreation resources management will be towards the desired ROS class of Semi-primitive Non-motorized. Recreation-related disturbances to wildlife will be minimal. Forest Service system trails will be managed primarily for access on foot and by other non-motorized means of transport, such as skis and snowshoes. Existing Forest Service System snowmobile trails will be allowed and may be relocated or closed to enhance the values of the area. Changes or additions in trail use designations may be considered where they do not compromise the values of the area**.** New roads will be built and existing roads will be maintained primarily for administrative or designated special uses. Recreation facilities may be present but will be primitive and complement remote recreation opportunities. Away from roads and trails, evidence of, and interaction with, other users will be low.

Black Bear

Standards and Guidelines for Remote Wildlife Habitat 6.3

Forest-wide standards and guidelines apply. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the management area standards and guidelines, the most restrictive standard and guideline shall apply.

Minerals

Standard:

S-1: Subject to valid existing rights, mineral exploration and extraction that causes surface disturbance within this area shall be prohibited. Exceptions for surface occupancy for any mineral-related activity may be permitted for Forest Service administrative uses.

Timber Management

Guidelines:

G-1: Timber and vegetation management should be the primary tools for habitat manipulation, including even- and uneven-aged silviculture, commercial timber sales, service contracts, volunteer activities, and partnerships.

G-2: Where even-aged management is appropriate, rotation ages should fall within the range of extended rotation ages provided in the Forest-wide goals and objectives for each forest type.

G-3: Patches of early-successional habitat should be at least 2 acres in size. Patches larger than 5 acres will be emphasized, however.

G-4: Patches of early-successional habitat smaller than 5 acres should be created only in close proximity to other patches of regeneration habitat.

Openings

Standard:

S-1: Temporary openings resulting from even-aged management shall be less than 20 acres and in accordance with the Forest-wide standards and guidelines for Recreation and Visuals.

Guideline:

G-1: Permanent upland openings should be less than 20 acres in size. Larger openings may occur naturally.

Special Forest Products

Guideline:

G-1: Gathering of special forest products may be authorized provided it is consistent with Management Area emphasis and Desired Future Condition and will not threaten or diminish the character or purpose for which the MA was designated.

Fire Management

Standard:

S-1: Prescribed fire may be permitted.

Recreation

Standard:

S-1: New recreation facilities (huts, cabins, shelters, tent platforms, and associated structures) shall be prohibited.

Guideline:

G-1: Physical and capacity expansion of existing recreation facilities should not be permitted.

Trails

Standard:

S-1: Motorized use shall be limited to winter use of designated Forest Service system trails.

Guidelines:

G-1: Designation of new trails should be prohibited, unless designation would have a neutral or beneficial effect on the values of the Management Area.

G-2: Relocation of existing trails may occur only for resource protection and visitor safety.

G-3: Incomplete segments of existing trails may be designated where other alternatives are not suitable or practical, provided they do not compromise the values for which the area was designated.

Visuals

Guideline:

G-1: Visual condition guidelines should meet Roaded Natural objectives.

Transportation Analysis

Standards:

S-1: Construction of new permanent roads shall be prohibited unless required for administrative purposes including timber harvest and designated special uses, or required by law to provide access to private land.

S-2: New roads shall be closed to motorized access by the public.

S-3: Temporary roads and skid trails shall be permitted.

S-4: Temporary roads and skid trails shall be closed at the completion of their intended uses.

Guideline:

G-1: Existing Forest Service system roads should be managed primarily for administrative or designated special uses.

Recreation Special Uses

Guideline:

G-1: Recreational special use permits may be authorized provided they are consistent with Management Area emphasis and Desired Future Condition and they will neither threaten nor diminish the character or purpose for which the MA was designated.

Non-Recreation Special Uses

Guideline:

G-1: Non-recreational special use permits may be authorized provided they are consistent with Management Area emphasis and Desired Future Condition and they will neither threaten nor diminish the character or purpose for which the MA was designated.

Moose Calf,
photo courtesy of William and Barbara Hyde

ALPINE SKI AREAS (7.1)

Major Emphasis

The major emphasis of the Alpine Ski Areas Management Area is to provide alpine winter sports opportunities and year-round recreation opportunities at the three alpine ski areas managed by the private sector under Special Use permit authority. The Alpine Ski Areas Management Area and the Appalachian Trail MA (MA 8.1) and Long Trail MA (MA 8.2) do not overlap.

Desired Future Condition

These areas will be highly developed. Bromley, Mount Snow, and Sugarbush Ski Areas are in close proximity to substantially urbanized environments on adjacent private lands. Large numbers of users may be present, sights and sounds of human activity will be readily evident, and the interaction between users will be moderate to high. Facilities will be designed for use by a large number of people. Facilities including parking lots, structures, and utilities will be evident, and will be designed to be compatible with the values that make the area attractive to the users.

Management and operating practices will be aimed at enhancing permitted recreation activities of the area while protecting the natural resources and visual characteristics. Although there is no overlap of the Alpine Ski Areas MA and the AT (8.1) or LT (8.2) MAs, management actions at the ski areas will not create adverse impacts to the Appalachian National Scenic Trail or Long Trail. Vegetation, while generally of native species, will be intensively managed to ensure compatibility with the intended use.

Recreation management will be towards the desired ROS class of Rural. In some cases, adjacent private land development can be significantly urbanized. Facilities should be designed, constructed, operated, and maintained consistent with the ROS Class. Year-round recreation use that is appropriate on NFS lands is desirable and encouraged at winter sports sites. Each alpine ski area will be authorized by Special Use permit. The permit will be a legal document that defines the area, describes management of the full range of recreation activities provided by the area, and incorporates resource protection requirements.

Standards and Guidelines for Alpine Ski Areas 7.1

Forest-wide standards and guidelines apply to the extent possible. Deviations from Forest-wide standards and guidelines may occur in order to provide for the major emphasis of the Alpine Ski Area only when the appropriate level of environmental analysis has been completed. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines.

Soil, Water, and Riparian Area Protection and Restoration

Standards:

S-1: All alpine ski area permit holders shall have a Forest Service-approved erosion control, drainage, and revegetation plan for all regular maintenance activities and special projects.

S-2: A Forest Service engineer shall approve dams for impoundments and snowmaking ponds, which shall be inspected and monitored consistent with federal and State regulations.

S-3: Design and engineering of facilities such as dams or impoundments in geologic hazard zones (such as liquefaction subsoils) shall be subject to the review and approval of a Forest Service engineer.

Guideline:
G-1: No more than approximately 600 total slope feet of contiguous exposed mineral soil should occur on any ski trail, pipeline corridor, or other utilities.

Minerals
Standard:
S-1: Subject to valid existing rights, all lands within the boundaries of ski area permits are withdrawn from disposition under all mineral laws (Omnibus Parks and Public Lands Management Act of 1996).

Timber Management
Standard:
S-1: Timber management shall be implemented within the requirements of the Special Use permit and in accordance with operation, safety, and development plans.

Guidelines:
G-1: Timber harvesting and vegetation management may be used to meet ski area desired future conditions and to manage habitat for TE&S species.

G-2: Vegetation may be intensively managed for purposes including ski area development and management, visual enhancement, and safety.

G-3: To promote forest regeneration in areas designated for tree skiing (glade skiing), the use-cycle approach should be used and protective measures implemented as described in a vegetation management plan. Regeneration areas should be protected with strong and visible barriers.

Wildlife
Guidelines:
G-1: Permanent upland or temporary openings found in Alpine Ski Area MAs should be related to operation of the alpine ski areas or the result of natural processes; exceptions are permitted for maintenance of habitat for threatened, endangered, and Regional Forester's sensitive species.

G-2: Mowing or clearing of trails and trail edges should not occur between May 1 and August 1, except where the mowing is used as part of a program to control invasive species.

Fire Management
Standard:
S-1: Prescribed fire shall be implemented within the requirements of the Special Use permit and in accordance with operation, safety, and development plans.

Recreation
Guideline:
G-1: Buildings and structures may be approved to support recreation management objectives.

Trails
Standard:
S-1: Management actions at Alpine Ski Areas (MA 7.1) shall not create adverse impacts to the Appalachian National Scenic Trail or the Long Trail.

S-2: Motorized trail vehicles except snowmobiles shall be prohibited unless required by law to provide access to private land or for administrative uses.

Guideline:
G-1: The recreation values of the Appalachian National Scenic Trail and Long National Recreation Trail should be considered in management actions at the ski areas.

Visuals
Guideline:
G-1: Agriculture Handbook 617, National Forest Landscape Management, Volume 2, (Chapter 7, Ski Areas) should be used for direction on how landscape management techniques and principles can be used in the planning, designing, and building processes to achieve and maintain desired visual conditions.

Transportation Analysis

Guideline:

G-1: Permittees may develop an on-mountain transportation plan for roads and parking on the National Forest to be approved by the Forest Engineer and line officer.

Non-Recreation Special Uses

Standard:

S-1: Special use permits required by law to provide access to non-federal land shall be issued.

Guidelines:

G-1: Designated communication sites may be permitted.

G-2: New communication use permits may be authorized on a case-by-case basis.

Winter Ski Area

APPALACHIAN NATIONAL SCENIC TRAIL (8.1)

Major Emphasis

The Appalachian National Scenic Trail (Appalachian Trail) is administered by the Secretary of Interior in consultation with the Secretary of Agriculture, and managed as a partnership between the National Park Service (NPS) AT Park Office, USDA Forest Service, local Appalachian Trail Clubs, and the Appalachian Trail Conference (ATC). The Appalachian Trail (AT) includes all trails designated by the National Trails System Act, as amended (P.L. 90-543), that occur on federal lands managed by the Forest. The AT also includes spur trails to shelters, overnight-use sites, viewpoints, and water sources.

The Appalachian National Scenic Trail has been designated as a special area because of its uncommon and outstanding values. The intent is to protect the qualities of the AT that make it a part of the National Scenic Trail System.

The major emphases of this management area are to:

1. Manage the segments of the Appalachian National Scenic Trail on federal lands that traverse the State of Vermont and the Green Mountain National Forest.
2. Provide for the conservation and enjoyment of the nationally significant scenic, historic, natural, and cultural qualities of the land through which the AT passes.
3. Provide opportunities for high quality outdoor recreation experiences, including a sense of "wildness."
4. Recognize and strengthen the level of partnership, cooperation, and volunteer efforts integral to AT management.

Within the Proclamation Boundary of the Green Mountain National Forest, the Appalachian National Scenic Trail Management Area is the National Forest land mapped as the foreground area visible from the AT footpath and associated trail shelters, overnight use sites, viewpoints, water sources, and spur trails. This MA has a minimum width of 500 feet on either side of the AT footpath for protection from social, aural, and other impacts. The minimum width will apply to areas on either side of the Appalachian Trail where the mapped foreground area is 500 feet or less. Although the AT may travel through or near the following MAs, the AT MA does not overlap with the Wilderness Management Area (MA 5.1), the Alpine Ski Areas Management Area (MA 7.1), Robert T. Stafford White Rocks National Recreation Area Management Area (MA 8.3), Ecological Special Area Management Area (MA 8.7), or Wilderness Study Management Area (MA 9.5).

Outside the Proclamation Boundary, the AT MA includes all the lands acquired by the National Park Service for the AT in the State of Vermont and administratively transferred to the USDA Forest Service under a Memorandum of Agreement. They are "… managed for the protection and enhancement of the Appalachian Trail and also in accordance with this agreement" as part of the Green Mountain National Forest, "subject to the National Trails Systems Act and laws, rules, and regulations pertaining to the National Forest System." These NPS-acquired lands are commonly referred to as "transfer lands."

This management area includes the section of the Long Trail which is co-aligned with the Appalachian National Scenic Trail. This co-aligned section begins at the Vermont-Massachusetts State border and ends at "Maine Junction," approximately one mile north of US Route 4, a distance of approximately 105 miles.

Desired Future Condition

Because of the linear nature of the AT, this management area will encompass a great variety of physical features. These will range from remote, natural-appearing settings having a mixture of tree sizes and forest types, to agricultural landscapes, to locations where developments are noticeable. Although there is no overlap of the Alpine Ski Areas

MA (7.1) and the AT MA, management actions at the ski areas will not create adverse impacts to the Appalachian National Scenic Trail. The management area will be primarily forested, with permanent upland and temporary openings and grassy areas, particularly in eastern Vermont. The AT will traverse a variety of landscapes, including higher elevation lands along the Green Mountains, and predominantly pastoral lands in the Connecticut River Valley.

This management area will retain a natural, forested, or pastoral appearance shaped by both natural and human processes. Management practices will recognize the nationally significant aesthetic and recreational values of these lands. Low-intensity vegetation management will be appropriate to maintain the long-term desired future condition of the AT Management Area. Vistas and desirable open areas will be created and preserved through management actions. Areas of high ecological value, such as high elevation ponds or sites for rare plants, occur within the corridor. Management actions will conserve and enhance the values of these places and the species which inhabit them.

Facilities will include the AT footpath itself, including trail bridges, and limited recreation facilities such as trail shelters, tent platforms, designated campsites, fire towers, privies, trailhead parking areas, and information boards. The AT and associated facilities will be designed, constructed, and maintained for foot travel only, and to wear lightly on the land. Associated structures will be in harmony with the surrounding environment. This management area will traverse a range of Recreation Opportunities Spectrum (ROS) classes. Recreation management of the AT setting will be towards the desired ROS class of Semi-primitive Non-motorized.

Recreation management will be designed to provide a variety of opportunities in the most primitive and natural recreation setting possible. Careful land acquisition and trail design will allow, and has allowed in the past, an appearance of a more primitive setting than the ROS would predict. Facilities and trailheads will be designed with sensitivity to scale and character to set a tone that is consistent with the desired ROS classification. Associated structures will be in harmony with the surrounding environment. Recreation use will be evident although the type and intensity of use may vary by season. Control and information signs may be present. The AT will provide non-motorized trail opportunities for those on foot and pedestrian means, such as skis or snowshoes.

Roads and designated motorized trail crossings will be the only evidence of motorized use. Recreation impacts will be managed to protect cultural and natural resources and to minimize visual disturbance. The minimum managerial controls necessary will be used to maintain acceptable social and ecological standards.

Standards and Guidelines for Appalachian National Scenic Trail 8.1

Forest-wide standards and guidelines apply. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the management area standards and guidelines, the most restrictive standard and guideline shall apply.

General

Standards:

S-1: Management of the AT shall follow the National Trails System Act, as amended (P.L. 90-543). This Act is implemented according to:

- *Comprehensive Plan for the Protection, Management, Development, and Use of the Appalachian National Scenic Trail*
- Various Memoranda of Agreement, Memoranda of Understanding, and policy statements between the USDA Forest Service, the National Park Service, and the Appalachian Trail Conference
- Forest Service Direction (FSM, FSH, and supplements)

S-2: Consistent with existing agreements, the Green Mountain National Forest shall consult with the Appalachian Trail Conference, the Green Mountain Club, and the Dartmouth Outing Club (local Appalachian Trail Clubs) on management actions that affect AT values.

S-3: Where the AT is within Wilderness, Alpine Ski Areas, Robert T. Stafford White Rocks NRA, Ecological Special Areas, and Wilderness Study Areas, both the AT standards and guidelines and the other Management Area standards and guidelines apply. If there is conflict in management direction, the more restrictive standards and guidelines apply.

Guidelines:
G-1: Management should conform to the following documents. When these documents are amended, they will provide updated guidance and as such will not require Forest Plan amendments.

- Appalachian Trail Conference. Appalachian Trail Design, Construction, and Maintenance (ATC Stewardship Manual, second edition, 2000)
- Appalachian Trail Conference. Overnight-Use Management Principles
- Appalachian Trail Conference. Checklist for the Location, Construction and Maintenance of Campsites and Shelters on the Appalachian Trail
- Local Management Plans for the Appalachian Trail
- The Knoxville Follow-up Report, 1992
- Appalachian Trail Conference Local Management Planning Guide (revised 1997)

G-2: The Forest Service should report law enforcement incidents on the AT to the National Park Service AT Park Office, the ATC, and local AT clubs.

Minerals

Standard:
S-1: Subject to valid existing rights, mineral exploration and extraction that causes surface disturbance within this area shall be prohibited.

Timber Management

Standards:
S-1: Commercial timber management shall be prohibited within this management area unless required by privately held outstanding timber rights.

S-2: Salvage operations shall be prohibited.

Guideline:
G-1: Vegetation management activities may be permitted to protect Threatened, Endangered and Sensitive species, provide for public safety, conduct trail reconstruction or relocations, or maintain existing fields and vistas.

Openings

Guideline:
G-1: Existing fields and permanent upland openings along the AT may be maintained as openings.

Pests, Diseases, and Non-Native Invasive Species

Standard:
S-1: Chemicals shall only be used as a last resort.

Guideline:
G-1: Control methods for Non-native Invasive Species should have the least adverse impact on AT values and should be compatible with AT management values.

Fire Management

Standard:

S-1: Prohibit heavy equipment line construction on the AT footpath.

Guidelines:

G-1: Prescribed fire may be permitted.

G-2: Wildland Fire Use may be permitted when consistent with adjacent MAs.

Recreation

Standards:

S-1: Dispersed camping shall be permitted unless restricted to address social or resource concerns. Implementation of closures shall be through Forest Supervisor's Orders. Closures shall be coordinated with the ATC and local AT clubs.

S-2: The Optimal Location Review Process in the Appalachian Trail Conference Local Management Planning Guide (1997) shall be used to initiate the decision-making process for trail relocations.

Guidelines:

G-1: Management actions such as trail relocations, improvements, or development of additional facilities, should minimize or avoid damage to threatened, endangered, or Regional Forester's Sensitive Species, or significant natural communities. These actions may be used as an opportunity to consider moving the trail to avoid these special areas or habitats.

G-2: Printed public safety messages and signs (other than directional Trail signs) should be located primarily at trailheads or visitor centers; they may be used at backcountry locations in unusual or unique circumstances.

G-3: Use may be regulated to address social or resource issues.

G-4: Management actions, such as trail locations, improvements, or increasing developments, should not result in a change along the ROS scale from less to more developed. Changes from more to less developed should be permitted.

G-5: Consistent with ROS standards, sufficient signing should be provided to inform hikers of significant features and distances to major road crossings.

G-6: Where the trail is located on decommissioned roads, the tread should be permitted to revegetate to normal AT tread widths.

G-7: Use of trail structures such as steps, cribbing, and bridges should be minimized. Where necessary, the simplest rustic design, with the least disturbance, should be used.

G-8: Open surface water sources may be improved only to the minimum necessary to allow for collection of water.

Developed Recreation

Standard:

S-1: Occupancy limit for shelters shall be two consecutive nights.

Guidelines:

G-1: Maintenance and construction of backcountry facilities may include trail bridges, trail shelters, tent platforms, signage, designated campsites, fire towers, privies, trailhead parking areas, information boards, and associated amenities such as spring boxes, registers, and other facilities agreed to by the Forest, ATC, and local AT clubs.

G-2: Design and management of the backcountry facility system should consider the needs of all overnight hikers.

G-3: New shelters, tent platforms and designated campsites may be considered where there is a demonstrated need. They should be located 100 feet or more from the main trail and should not be located within two miles of an existing road open to motor vehicles.

G-4: Shelter sites that are not needed, or that cause unacceptable environmental damage and management problems, may be removed. A site's historic status should be taken into consideration.

Non-Motorized Trails

Standards:

S-1: On all NPS-acquired transfer lands, the use of horses, pack animals, dog teams, and bicycles shall be prohibited except at designated crossings.

S-2: The use of horses, pack animals, dog teams, and bicycles shall be prohibited on the AT footpath and within 500 feet of the trail except where it crosses or is located on National Forest System roads, state highways, or town roads.

Guidelines:

G-1: Horse and pack animal use in the MA may be permitted only for administrative purposes when approved in writing by the Forest Service.

G-2: New horse, pack animal, dog team, and bicycle crossings should be minimized, except as approved in consultation with the Forest, ATC, and local AT clubs.

G-3: Trail users should be informed and educated about closures and guidelines for using the trail, especially regarding horses, pack animals, dog team, and bicycles.

Hiking Trails

Standard:

S-1: Consistent with existing agreements, the Green Mountain National Forest shall consult with the Appalachian Trail Conference (ATC) and the appropriate managing trail club (either Green Mountain Club or the Dartmouth Outing Club) on management actions that affect side trails to the Appalachian and Long Trails.

Guidelines:

G-1: Side trails to the Appalachian and Long Trails (identified in the Long Trail System Management Plan and Dartmouth Outing Club Local Management Plan for the Appalachian Trail) should be managed primarily as non-motorized trails designated for foot travel. Minor exceptions, such as sharing with motorized uses, may be allowed where there are no other reasonable alternatives.

G-2: Management of side trails to the Appalachian and Long Trails should conform to the following documents:

- Long Trail System Management Plan
- Dartmouth Outing Club Local Management Plan for the Appalachian Trail

G-3: Trail facilities (trail shelters, tent platforms, trailheads, and similar facilities), located outside AT and LT Management Areas (MA 8.1, 8.2) on side and spur trails identified in the Long Trail System Management Plan are considered a component of the overall Appalachian Trail and Long Trail systems. These facilities should be managed to be consistent with direction in the Appalachian Trail Management Area (MA 8.1) and the Long Trail Management Area (MA 8.2).

Motorized Trails

Standards:

S-1: Motorized use, both recreational and non-recreational, on the AT footpath shall be limited to those portions of the AT which cross or are located on Forest system roads; state, county, or town roads; and authorized designated crossings. Motorized use on other portions of the AT footpath shall be prohibited.

S-2: Motorized use, both recreational and non-recreational, in the MA shall be limited to existing Forest system roads; state, county, or town roads; authorized designated crossings; or during the snow season on existing designated National Forest system snowmobile trails. All other motorized use within the management area shall be prohibited.

S-3: New motorized trails, including snowmobile trails, in this management area shall be prohibited except for designated crossings.

Guidelines:
G-1: Administrative motorized use, either on the AT footpath or within the MA, may be permitted only when approved in writing by the Forest Service.

G-2: New snowmobile or motorized crossings of the MA should be minimized, except as approved by the Forest Service in consultation with ATC and the local AT clubs.

Visuals

Standards:
S-1: This management area has a Viewer Sensitivity Level of High, and shall be managed following the Forest-wide standards and guidelines for the ROS class of Semi-primitive Non-motorized.

S-2: The AT is a Concern Level 1 Travelway. Refer to Forest-wide standards and guidelines for Visual Management for activities in the middleground and background as viewed from the AT.

Interpretation and Education

Guidelines:
G-1: The Forest should develop and distribute information about the AT and appropriate use of the Trail in cooperation with the ATC and local AT clubs.

G-2: Education and information delivery should be concentrated primarily in visitor centers, classrooms, guide books, and other off-Forest locations; to a lesser degree at trailheads; and to an even more limited degree at backcountry locations.

G-3: Users should be educated on Leave No Trace skills and ethics.

G-4: Trail users should be informed and educated about closures and guidelines for using the trail, especially regarding motorized use.

Lands

Guideline:
G-1: Interests in the remaining privately owned tracts of land along the AT should be acquired. A corridor at least 1,000 feet in width is desirable to manage and protect trail values.

Transportation Analysis

Standard:
S-1: New roads, permanent or temporary, shall not be constructed to cross the AT footpath unless required by law to provide access to private lands.

Guidelines:
G-1: New roads, permanent or temporary, should not be permitted within this management area unless required by law to provide access to private lands. New roads are permitted only if they are the only feasible and prudent alternative, and after impacts have been mitigated to the extent practical.

G-2: Where the AT follows National Forest System roads, road maintenance may be done as needed on drainage structures, closure devices, and the roadbed. Grass may be permitted to grow in local roads at maintenance levels I or II.

G-3: Trailhead Parking: To maintain a discrete trail experience, new parking facilities should be located where the AT can be accessed by a spur trail rather than locations where the trail footpath crosses a road.

Recreation Special Uses

Standards:

S-1: The Forest shall coordinate recreation special use permits on the AT in partnership with ATC and the local AT Clubs.

S-2: Competitive and fundraising event permits shall be prohibited.

Guidelines:

G-1: Recreation special use permits on the AT should be denied when social or resource conditions warrant (for example, if crowding or overuse negatively affects natural resources or a specific experience objective).

G-2: If monitoring and analysis of social and resource conditions determines that recreation special use capacity along the AT has been reached, a process should be developed to assign user days.

G-3: Group size may be limited when necessary to provide for safety and resource protection or to minimize the impact of large groups on others.

G-4: Outfitter Guide permits for commercial uses should be minimized, but may be considered if there is a strong educational or service component.

Non-Recreation Special Uses

Standards:

S-1: New special uses shall be issued only where there is an overriding demonstrated public need or benefit. Special use permits required by law to provide access to non-federal land shall be issued.

S-2: Designated communication sites shall be prohibited.

S-3: Commercial wind towers shall be prohibited.

S-4: New utility lines, pipelines, or rights-of-way shall be prohibited unless they represent the only feasible and prudent alternative to meet an overriding public need.

S-5: Impacts to the AT from new utility corridors shall be sufficiently mitigated to protect trail values.

Guidelines:

G-1: Communication uses to benefit trail operations, or for temporary emergency use, may be permitted on a case-by-case basis.

G-2: New approved utility lines or rights-of-way should be co-located within existing rights-of-way, for example roads and utility lines, where practical, and should be limited to a single crossing of the AT.

G-3: Agricultural special uses may be permitted only when used to maintain open spaces and only if consistent with wildlife habitat requirements, cultural needs, and visual management objectives.

G-4: Authorizations for research activities may be permitted if implemented consistent with AT values and Desired Future Condition.

Goddard Shelter

LONG NATIONAL RECREATION TRAIL (8.2)

Major Emphasis

The Long National Recreation Trail (LT) is administered by the Forest Service and managed in partnership with the Green Mountain Club. The Long Trail was designated a National Recreation Trail by the Regional Forester on October 15, 1986. The Long Trail is the oldest long-distance hiking trail in the country and is designated as a special area within the 2006 Forest Plan to protect the uncommon values associated with the trail and its history.

The major emphases of this management area are to:

1. Manage the segments of the Long National Recreation Trail on federal lands within the Green Mountain National Forest.
2. Provide for the conservation and enjoyment of the significant scenic, historic, natural, and cultural qualities of the land through which the LT passes.
3. Provide opportunities for high-quality outdoor recreation experiences, including a sense of "wildness."
4. Recognize and strengthen the level of partnership, cooperation, and volunteer efforts integral to LT management.

The Long Trail Management Area includes the Green Mountain National Forest lands within 500 feet either side of the footpath and associated trail shelters, overnight use sites, viewpoints, and water sources. Although the LT may travel through or near the following MAs, the LT MA does not overlap with the Wilderness MA (5.1), the Alpine Ski Areas MA (7.1), Alpine/Subalpine Special Area (8.4), Ecological Special Area MA (8.7), or the Wilderness Study Area MA (9.5).

The entire Long Trail extends from the Vermont/Massachusetts border north to the Canadian border. For much of the portion in southern Vermont, the trail is shared with the Appalachian National Scenic Trail. This management area includes the segment of the Long Trail that is not shared with the Appalachian Trail. This segment begins at "Maine Junction," approximately one mile north of US Route 4, and ends as it exits the Green Mountain National Forest near Mt Ellen. This trail segment is a distance of approximately 54 miles. For management direction of the Long Trail in areas coinciding with the AT, see the Appalachian Trail Management Area description and standards and guidelines.

Desired Future Condition

Because of the linear nature of the Long Trail, this special area will encompass a wide variety of physical features. These will range from remote, natural-appearing settings having a mixture of tree sizes and forest types, to locations where developments are noticeable. Although there is no overlap of the Alpine Ski Areas MA (7.1) and the LT MA, management actions at the ski areas will not create adverse impacts to the Long Trail. The LT will traverse a variety of landscapes, primarily forested, including higher elevation open lands and peaks along the main Green Mountain Ridge.

This management area will retain a natural, forested appearance shaped by both natural and human processes. Management practices will be modified to recognize the significant aesthetic and recreational values of these lands. Low-intensity vegetation management will be appropriate to maintain the desired future condition of the LT MA. Management activities needed to preserve or create vistas and desirable open areas will be a high priority.

Facilities will include the LT itself, including trail bridges, and limited recreation facilities such as trail shelters, tent platforms, designated campsites, privies, trailhead parking areas, and information boards. This management area will traverse a range of Recreation Opportunities Spectrum (ROS) classes. Recreation management of the LT setting will be towards the desired ROS class of Semi-primitive Non-motorized.

Recreation management will be designed to provide a variety of opportunities in the most primitive and natural recreation setting possible. Careful land acquisition and trail design will allow, and has allowed in the past, an appearance of a more primitive setting than the ROS would predict. Facilities and trailheads will be designed with sensitivity to scale and character to set a tone that is consistent with the desired ROS classification. Associated structures will be in harmony with the surrounding environment. Recreation use will be evident although the type and intensity of use may vary by season. Control and information signs may be present. The LT will provide non-motorized trail opportunities for those on foot and other pedestrian means, such as skis or snowshoes. Roads and designated motorized trails crossings will be the only evidence of motorized use.

Recreation impacts will be managed to protect cultural and natural resources and to minimize visual disturbance. The minimum managerial controls necessary will be used to maintain acceptable social and ecological standards.

Standards and Guidelines for Long Trail 8.2

Forest-wide standards and guidelines apply. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the management area standards and guidelines, the most restrictive standard and guideline shall apply.

General

Standards:

S-1: Management of the Long Trail shall follow the National Trails System Act, as amended (P.L. 90-543), following guidance provided for National Recreation Trails. This Act is implemented according to:

- Various Memoranda of Agreement, Memoranda of Understanding, and policy statements between the USDA Forest Service and the Green Mountain Club
- Forest Service Direction (FSM, FSH, and supplements)
- The Establishment Report for the Long National Recreation Trail dated 10/15/86

S-2: Consistent with existing agreements, the Green Mountain National Forest shall consult with the Green Mountain Club on management actions that affect LT values.

S-3: Where the LT is within Wilderness, Alpine Ski Areas, Robert T. Stafford White Rocks NRA, Alpine/Subalpine Special Area, Ecological Special Areas, and Wilderness Study Areas both the LT standards and guidelines and the other Management Area standards and guidelines apply. If there is conflict in management direction, the more restrictive standards and guidelines apply.

Guidelines:

G-1: Management should conform to the following documents. When these documents are amended, they will provide updated guidance and as such will not require Forest Plan amendments.

- Appalachian Trail Conference. Appalachian Trail Design, Construction, and Maintenance (ATC Stewardship Manual, second edition, 2000).
- Green Mountain Club, Long Trail System Management Plan, applicable sections for LT north of Maine Jct.

G-2: The Forest Service should report law enforcement incidents on the LT to the Green Mountain Club.

Minerals

Standard:

S-1: Subject to valid existing rights, mineral exploration and extraction that causes surface disturbance within this area shall be prohibited.

Timber Management

Standards:

S-1: Commercial timber management shall be prohibited within this management area unless required by privately held outstanding timber rights.

S-2: Salvage operations shall be prohibited.

Guideline:

G-1: Vegetation management activities may be permitted to protect Threatened, Endangered and Sensitive species, provide for public safety, conduct trail reconstruction or relocations, or maintain existing vistas.

Pests, Diseases, and Non-Native Invasive Species

Standard:

S-1: Chemicals shall only be used as a last resort.

Guideline:

G-1: Control methods for Non-native Invasive Species should have the least adverse impact on LT values and should be compatible with LT management values.

Fire Management

Standard:

S-1: Prohibit heavy equipment line construction on the LT footpath.

Guidelines:

G-1: Prescribed fire may be permitted.

G-2: Wildland Fire use may be permitted when consistent with adjacent MAs.

Recreation

Standards:

S-1: Dispersed camping shall be permitted unless restricted to address social or resource concerns. Implementation of closures shall be through Forest Supervisor's Orders. Closures shall be coordinated with the Green Mountain Club.

S-2: The Optimal Location Review Process in the Appalachian Trail Conference Local Management Planning Guide (1997) shall be used to initiate the decision-making process for trail relocations.

Guidelines:

G-1: Use may be regulated to address social or resource issues.

G-2: Management actions, such as trail locations, improvements, or increasing developments should not result in a change along the ROS scale from less to more developed. Changes from more to less developed should be permitted.

G-3: Consistent with ROS standards, sufficient signing should be provided to inform hikers of significant features and distances to major road crossings.

G-4: Where the trail is located on decommissioned roads, the tread should be permitted to revegetate to normal LT tread widths.

G-5: Use of trail structures such as steps, cribbing, and bridges should be minimized. Where necessary, the simplest rustic design, with the least disturbance, should be used.

G-6: Open surface water sources may be improved only to the minimum necessary to allow for collection of water.

Developed Recreation

Standard:

S-1: Occupancy limit for shelters shall be two consecutive nights.

Guidelines:

G-1: Backcountry facilities may include trail bridges, trail shelters, tent platforms, designated campsites, privies, trailhead parking areas, information boards, and associated amenities such as spring boxes, registers, and other facilities agreed to by the Forest and the Green Mountain Club.

G-2: Design and management of the backcountry facility system should consider the needs of all overnight hikers.

G-3: New shelters, tent platforms, and designated campsites may be considered where there is a demonstrated need. They should be located 100 feet or more from the main trail and should not be located within two miles of an existing road open to motor vehicles.

G-4: Shelter sites that are not needed, or that cause unacceptable environmental damage and management problems, may be removed. A site's historic status should be taken into consideration.

Non-Motorized Trails

Standard:

S-1: The use of horses, pack animals, dog teams, and bicycles shall be prohibited on the LT and within 500 feet of the trail except where it crosses or is located on National Forest System, State, or town roads.

Guidelines:

G-1: Horse and pack animal use in the MA may be permitted only for administrative purposes when approved in writing by the Forest Service.

G-2: New horse, pack animal, dog team, and bicycle crossings should be minimized, except as mutually agreed on by the Forest Service and the Green Mountain Club.

G-3: Trail users should be informed and educated about closures and guidelines for using the trail, especially regarding horses, pack animals dog teams, and bicycles.

Hiking Trails

Standard:

S-1: Consistent with existing agreements, the Green Mountain National Forest shall consult with the Green Mountain Club (GMC) on management actions that affect side trails to the Long Trail.

Guidelines:

G-1: Side trails to the Long Trail (identified in the Long Trail System Management Plan) should be managed primarily as non-motorized trails designated for foot travel. Minor exceptions, such as sharing with motorized uses, may be allowed where there are no other reasonable alternatives.

G-2: Management of side trails to the Appalachian and Long Trails should conform to the following document: Long Trail System Management Plan

G-3: Trail facilities (trail shelters, tent platforms, trailheads and similar facilities), located outside AT and LT Management Areas (MA 8.1, 8.2) on side and spur trails identified in the Long Trail System Management Plan are considered a component of the overall Appalachian Trail and Long Trail systems. These facilities should be managed to be consistent with direction in the Appalachian Trail Management Area (MA 8.1) and the Long Trail Management Area (MA 8.2).

Motorized Trails

Standards:

S-1: Motorized use, both recreational and non-recreational, on the LT footpath shall be limited to those portions of the LT which cross or are located on Forest system roads; State, county, or town roads; and authorized designated crossings. Motorized use on other portions of the LT footpath shall be prohibited.

S-2: Motorized use, both recreational and non-recreational, in the MA shall be limited to existing Forest System roads; State, county, or town roads; authorized designated crossings; or during the snow season on existing designated National Forest System snowmobile trails. All other motorized use within the management area shall be prohibited.

S-3: New motorized trails, including snowmobile trails, in this management area shall be prohibited except for designated crossings.

Guidelines:

G-1: Administrative motorized use, either on the LT footpath or within the MA, may be permitted only when approved in writing by the Forest Service.

G-2: New snowmobile or motorized crossings of the MA should be minimized, except as approved by the Forest Service in consultation with the Green Mountain Club.

Visuals

Standard:

S-1: This management area has a Viewer Sensitivity Level of High, and shall be managed following the Forest-wide standards and guidelines for the ROS class of Semi-primitive Non-motorized.

Interpretation and Education

Guidelines:

G-1: Printed public safety messages and signs (other than directional trail signs) should be located primarily at trailheads or visitor centers; they may be used at backcountry locations in unusual or unique circumstances.

G-2: The Forest Service should develop and distribute information about the LT and appropriate use of the Trail in cooperation with the Green Mountain Club.

G-3: Education and information delivery should be concentrated primarily in visitor centers, guide books, classrooms, and other off-Forest locations; to a lesser degree at trailheads; and to an even more limited degree at backcountry locations.

G-4: Users should be educated on Leave No Trace skills and ethics.

G-5: Trail users should be informed and educated about closures and guidelines for using the trail, especially regarding motorized use.

Land Ownership Adjustments

Guideline:

G-1: Interests in the remaining privately owned tracts of land within the GMNF proclamation boundary along the LT should be acquired. A corridor at least 1,000 feet in width is desirable to manage and protect trail values.

Transportation Analysis

Standard:

S-1: New roads (permanent or temporary) shall not be constructed to cross the LT unless required by law to provide access to private lands.

Guidelines:

G-1: New roads (permanent or temporary) should not be permitted within this management area unless required by law to provide access to private lands. New roads are permitted only if they are the only feasible and prudent alternative, and after impacts have been mitigated to the extent practical.

G-2: Where the LT follows National Forest System roads, road maintenance may be done as needed on drainage structures, closure devices, and the roadbed. Grass may be permitted to grow in local roads (maintenance levels I or II).

G-3: To maintain a discrete trail experience, new parking facilities (trailheads) should be located where the LT can be accessed by a spur trail rather than locations where the trail crosses a road.

Recreation Special Uses

Standard:

S-1: Competitive and fundraising event permits shall be prohibited.

S-2: The Forest Service shall coordinate recreation special use and Outfitter/Guide permits on the LT in partnership with the Green Mountain Club.

Guidelines:

G-1: Recreation special use permits on the LT should be denied when social or resource conditions warrant (for example, if crowding or overuse negatively affects natural resources or a specific experience objective).

G-2: If monitoring and analysis of social and resource conditions determines that recreation special use capacity along the LT has been reached, a process should be developed to assign user days.

G-3: Group size may be limited when necessary to provide for safety and resource protection or to minimize the impact of large groups on others.

G-4: Outfitter/Guide permits may be permitted but may be restricted to address social and environmental concerns.

Non-Recreation Special Uses

Standards:

S-1: New special uses shall be issued only where there is an overriding demonstrated public need or benefit. Special use permits required by law to provide access to non-federal land shall be issued.

S-2: Designated communication sites shall be prohibited.

S-3: Commercial wind towers shall be prohibited.

S-4: New utility lines or rights-of-way shall be prohibited unless they represent the only feasible and prudent alternative to meet an overriding public need.

S-5: Impacts to the LT from new utility corridors shall be sufficiently mitigated to protect trail values.

Guidelines:

G-1: Communication uses to benefit trail operations, or for temporary emergency use, may be permitted on a case-by-case basis.

G-2: New approved utility lines or rights-of-way should be co-located within existing rights-of-way, for example roads and utility lines, where practical, and should be limited to a single crossing of the LT.

G-3: Authorizations for research activities may be permitted if implemented consistent with LT values and Desired Future Condition.

Long Trail Sign

ROBERT T. STRAFFORD WHITE ROCKS NATIONAL RECREATION AREA (8.3)

Major Emphasis

The Robert T. Stafford White Rocks National Recreation Area (NRA) was established by Public Law 98-322 for the purpose of preserving and protecting "existing wilderness and wild values and to promote wild forest and aquatic habitat for wildlife, watershed protection, opportunities for primitive and semi-primitive recreation, and scenic, ecological, and scientific values." The Robert T. Stafford White Rocks National Recreation Area also includes the Big Branch and Peru Peak Wilderness areas. The emphasis of this management area is to attain the purpose of the public law in the lands that are not included in Wilderness.

Desired Future Condition

The Robert T. Stafford White Rocks NRA will provide a predominantly deciduous and coniferous continuous canopy cover dominated by mature to old forest. Small temporary openings will be created by various forms of vegetation management and by natural disturbances. A mix of wildlife habitats will be managed including interior areas for reclusive species and deer wintering areas.

A range of recreational opportunities will be provided in a predominantly roadless setting. These opportunities will include foot and other non-motorized means of transport such as skis, snowshoes, horses, and bicycles, as well as winter motorized uses. A number of trails, including the Appalachian Trail, side trails, and the snowmobile trail system will be maintained to provide a range of trail experiences and access to key features. Some recreational facilities may be provided to enhance the visitor experience at specific attractions, such as the Robert T. Stafford White Rocks picnic area. Wallingford Pond and other ponds will provide opportunities for summer non–motorized, water-oriented activities. Recreation management of the Robert T. Stafford White Rocks NRA will be towards the desired ROS class of Semi-primitive Motorized.

The Appalachian Trail will pass through the Robert T. Stafford White Rocks NRA. The trail will provide an opportunity for visitors to experience the NRA setting and recreational features while hiking the long distance trails. The unique characteristics and values of the Robert T. Stafford White Rocks NRA and the Appalachian Trail will be protected and maintained to the greatest extent possible. The NRA and AT setting will provide opportunities for high-quality outdoor recreation experiences, and provide for the conservation and enjoyment of the nationally significant scenic, historic, natural, and cultural qualities of the land.

The Robert T. Stafford White Rocks NRA contains a number of Ecological Special Areas not included in the Ecological Special Area MA. These are Lost Pond Bog, White Rocks Cliffs and Ice Beds, and six high elevation ponds – Griffith Lake, Big and Little Mud Ponds, Wallingford Pond, Little Rock Pond, and Fifield Pond. The unique characteristics and values of both an Ecological SA and the NRA will be protected and maintained to the greatest extent possible. The Ecological Special Areas and NRA setting will provide opportunities for high-quality outdoor recreation experiences, and provide for the conservation and enjoyment of geological, botanical, zoological, and ecological values of the Forest.

The outstanding scenic qualities of the Robert T. Stafford White Rocks NRA will be maintained and enhanced through scenic protection and vista creation and maintenance.

Standards and Guidelines for Robert T. Stafford White Rocks National Recreation Area 8.3

Forest-wide standards and guidelines apply. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the management area standards and guidelines, the most restrictive standard and guideline shall apply.

Robert T. Stafford White Rocks NRA Management Objectives and Direction (1986) provides the basis for the Robert T. Stafford White Rocks NRA S&Gs. Standards and guidelines for Robert T. Stafford White Rocks NRA do not apply to Peru Peaks and Big Branch Wilderness MAs.

Minerals

Standard:

S-1: Subject to valid existing rights, Public Law 98—322 withdraws all lands from all forms of mineral leasing or extraction, including geothermal leasing.

Timber Management

Standard:

S-1: Commercial timber sales and other vegetation management activities shall only be conducted to achieve the following:

- Maintain and enhance the recreation environment
- Maintain habitats for threatened, endangered or rare species
- Maintain or create desired wildlife habitat conditions for reclusive species in interior areas and edge species along roads and uplands
- Maintain or create vistas

Guidelines:

G-1: Changes resulting from vegetation management activities should be kept as naturally appearing as possible.

G-2: The average rotation age for managed forest stands is shown in Table 3.1-2.

Table 3.1-2: Average Rotation Length by Forest Type

Forest Type	Rotation Length
Aspen	60 years
Northern Hardwoods	120 years
Softwoods	100 years

Openings

Standard:

S-1: Temporary openings created by clearcutting shall be less than five acres in size, and narrow and irregular in shape.

Guideline:

G-1: Permanent upland openings should be maintained every 5 to 10 years.

Fire Management

Guideline:

G-1: Fire use may be permitted to develop and maintain permanent upland openings for wildlife habitat and recreational uses.

Recreation

Standard:

S-1: Boats with motors shall be prohibited on all lakes and ponds.

Trails

Standards:

S-1: The Appalachian National Scenic Trail Management Area shall be managed consistent with the standards and guidelines for that management area.

S-2: Motorized trail vehicles except snowmobiles shall be prohibited unless required by law to provide access to private land.

Transportation Analysis

Standards:

S-1: Forest Roads 10, 20, 31, 60, 253, and 301 shall be open to public travel. Forest road 30 shall be open to Lake Brook. All other roads shall be closed to public travel but may be used for administrative purposes.

S-2: New road construction shall be prohibited except for relocation of portions of existing roads for environmental reasons or building turnouts.

Non-Recreational Special Uses

Standards:

S-1: Construction of wind and communication towers or any other non-recreational facility shall be prohibited.

S-2: Construction of new utility corridors shall be prohibited.

Guideline:

G-1: Two existing pipelines within the NRA may be maintained.

Chelsea at the Green Mountain National Forest fish derby

ALPINE/SUBALPINE SPECIAL AREA (8.4)

Major Emphasis

The Alpine/Subalpine Special Area emphasizes recognition, conservation, and interpretation of the alpine and subalpine zone, and its associated ecological values, along the northern Green Mountain ridgeline. This habitat is particularly fragile and vulnerable on the National Forest. It represents the southern-most extension of these communities in Vermont, and is of limited extent.

Desired Future Condition

Low-growing alpine and subalpine plants mixed with bedrock, talus, or gravel will dominate the landscape character of this area. At elevations greater than 3,500 to 4,000 feet, the frigid climate will cause soil to be churned and rocks to break apart. Broad vegetation groupings will include heath barrens and heath-krummholz. Changes in vegetation will primarily be the result of natural processes. Species that are unique to these habitats, such as Bigelow's sedge and Bicknell's thrush, will be found here. Management of the alpine and subalpine areas will recognize and conserve the cultural values of Native Americans inherent to these lands.

Recreation management will be towards the desired ROS class of Semi-primitive Non-motorized. Evidence of human activity will primarily be limited to hiking trails. Recreation, transportation, and administrative facilities, such as ski trails, lift lines, roads, and towers, will be limited. Unique biological, cultural, and aesthetic values in this area will be managed by having goals and thresholds in place to prevent their degradation. Areas of the alpine zone with high recreation use will be managed to recognize their value as sources of inspiration for the large surrounding populations, while also having standards to mitigate their impacts. Low-use areas of the alpine zone and low-use seasons will be managed to maintain their low use. Use will not be dispersed from high to low-use areas. Evidence of human activity will primarily be limited to hiking trails and associated facilities. Away from trails and facilities, and in the winter season, evidence of and interaction with other users will be low. The Long Trail and its character and values will be maintained within this area, while recognizing the fragile nature of the alpine communities through which it passes.

The Long Trail will pass through some of the Alpine/Subalpine Special Area. The trail will provide an opportunity for visitors to experience the Alpine/Subalpine ecological values while hiking this long distance trail. The unique characteristics and values of both the Alpine/Subalpine Special Area and the Long Trail will be protected and maintained to the greatest extent possible.

Emphasis will be placed on increasing awareness and stewardship of the alpine zone through increased education and interpretation of this special environment. The focus of education and interpretation will be on alpine wildlife, plants, and communities in the Green Mountain National Forest, as well as human behaviors that minimize impacts to the alpine zone. An alpine ethic will be emphasized to promote protection of plants and proper disposal of trash and human waste.

Standards and Guidelines for Alpine/Subalpine Special Area 8.4

Forest-wide standards and guidelines apply. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the management area standards and guidelines, the most restrictive standard and guideline shall apply.

Minerals

Standard:

S-1: Subject to valid existing rights, mineral exploration and extraction that causes surface disturbance within this area shall be prohibited.

Timber Management

Standard:

S-1: Management for commercial timber products shall be prohibited.

Guideline:

G-1: Vegetation management shall be permitted only when needed to maintain the character or purpose of the area or protect and maintain the Long Trail.

Openings

Guideline:

G-1: Openings found in the area should be the result of natural processes only; exceptions are permitted for maintenance of habitat for threatened, endangered, and Regional Forester's sensitive species, or unless needed to maintain the character or purpose of the alpine/subalpine zone or existing Long Trail vistas.

Special Forest Products

Standard:

S-1: Gathering of special forest products for commercial sale shall be prohibited.

Guideline:

G-1: Gathering of special forest products may be authorized provided it is consistent with Management Area emphasis and Desired Future Condition and will not threaten or diminish the character or purpose for which the MA was designated.

Range

Standard:

S-1: Livestock areas shall be prohibited.

Rare and Unique Biological Features

Standard:

S-1: If monitoring indicates declines in alpine communities because of human use or the effects of nonnative invasive species, actions to reduce these impacts shall be taken.

Guideline:

G-1: Changes in habitat should result primarily from natural processes. Structures, such as scree walls or rock cairns, however, may be placed and habitat manipulation may occur to protect sensitive or unique habitats, and threatened, endangered, or sensitive species.

Pests, Diseases, and Non-Native Invasive Species

Guidelines:

G-1: Control actions against native insect, disease, plant, or animal pests, should only be used when the actions are necessary to protect adjacent resources or the area's values.

G-2: Chemical and biological controls may be utilized when determined to be less ecologically disruptive than the target pest.

Fire Management

Guideline:

G-1: Wildland Fire Use may be permitted.

Recreation

Standards:

S-1: Wood or charcoal fires shall be prohibited year-round.

S-2: Camping shall be prohibited unless on two feet or more of snow cover.

S-3: Construction of new recreation facilities shall be restricted to those needed for resource protection.

Guidelines:

G-1: Geocaching that does not cause surface disturbance may be permitted.

G-2: Existing recreation facilities may be maintained as long as they complement the area's Desired Future Condition, are needed for public health and safety, are significant historic properties, or are needed to maintain the Long Trail.

G-3: Physical and capacity expansion of existing recreation facilities should not be permitted.

G-4: Hikers should be encouraged to stay on trails year-round, except for specific activities authorized in Special Use permits.

Trails

Standards:

S-1: Motorized use shall be limited to emergencies unless required by law to provide access to private land. Administrative motorized use shall be timed to minimize social and ecological impacts.

S-2: Trail use by horses and pack animals, dog teams, bicycles, and other non-foot-related uses shall be prohibited.

Guidelines:

G-1: Maintenance and relocation of existing trails should occur only for resource protection and visitor safety.

G-2: Existing trails should be maintained at the lowest possible maintenance standard.

G-3: Management direction for the LT (Management Area 8.2) should apply to the LT within the alpine zone. Where direction differs, the more restrictive standards and guidelines apply.

Interpretation and Education

Guidelines:

G-1: Signing for resource protection or public safety may occur within the alpine zone but should be minimized.

G-2: The emphasis for interpretive and educational signing should be at trailheads and inside existing facilities.

G-3: The Forest should coordinate with volunteer, government, and non-government groups on alpine education.

G-4: The Forest should emphasize the use of volunteer and Forest Service alpine stewards to provide education and interpretation.

G-5: Education should be emphasized outside the Forest, reaching potential visitors before they come to the Forest.

Transportation Analysis

Standard:

S-1: Roads shall be prohibited unless required by law to provide access to private land.

Recreation Special Uses

Guidelines:

G-1: Recreational special use permits may be authorized provided they are consistent with Management Area emphasis and Desired Future Condition and they will not threaten or diminish the character or purpose for which the MA was designated.

G-2: Recreation special use permits should not be authorized for off-trail use except on two or more feet of snow.

Non-Recreation Special Uses

Standards:

S-1: Development of and designated sites for wind towers shall be prohibited.

S-2: New designated communication sites shall be prohibited.

S-3: Development of utility and pipeline corridors and associated facilities shall be prohibited.

S-4: Special use permits required by law to provide access to non-federal land shall be issued.

Guidelines:

G-1: New communication use permits may be authorized on a case-by-case basis if they are co-located with the existing facilities at Lincoln Peak, and are consistent with the area's Desired Future Conditions.

G-2: Communication use permits not attached to existing facilities may be permitted as long as they are within the confines of the existing Lincoln Peak site, and as long as there is either no change or inconsequential change in the amount of habitat occupied by communication facilities in the management area.

G-3: Other non-recreational special use permits may be authorized provided they are consistent with Management Area emphasis and Desired Future Condition and they will not threaten or diminish the character or purpose for which the MA was designated.

G-4: Existing special use permits should be phased out when feasible.

GREEN MOUNTAIN ESCARPMENT (8.5)

Major Emphasis

The Green Mountain Escarpment Management Area emphasizes management of natural communities along the Green Mountain escarpment. The Green Mountain escarpment is a landscape that falls between the eastern edge of the Champlain and Vermont Valleys and the crest of the cliffs and steep slopes that form the western edge of the Green Mountains and the Forest. Several natural communities found in this landscape are rare or uncommon, and provide habitat for trees, herbs, and ferns considered rare or uncommon on the Forest or within the State. Emphasis is on management to maintain natural community diversity and to maintain or enhance populations of rare or uncommon plant and animal populations.

Desired Future Condition

This management area will provide a diverse array of natural communities and stages of vegetation development. Steep cliffs and outcrops frequently will dominate this management area, and their scenic quality will be maintained. Oaks and hemlock mixed with northern hardwoods will form the dominant vegetation. Areas of large older trees will be interspersed with regenerating areas, as well as with small patch communities of forest, woodland, and open types, including such rare and uncommon types as pitch pine-oak-heath-rocky summits, temperate calcareous cliffs and outcrops, natural red pine forests, dry oak forests and woodlands, and dry oak-hickory-hophornbeam forests. The variety of natural communities will be reflective of the diversity in the terrain, and the mix of calcareous and acidic bedrock along the escarpment. As several rare species and uncommon habitats in this area require limited shade, vegetation management to maintain some of these communities will require the use of commercial and non-commercial tree harvesting, and fire. A variety of traditional and experimental silvicultural practices for management of the forested natural communities will be evident.

Recreation management will be towards the desired ROS class of Semi-primitive Motorized. Both non-motorized and motorized dispersed use will be permitted. Motorized trail use will be limited to the winter months, and will be confined to trail corridors. Interaction between users will vary by season. There will be obvious evidence of trail signs, grooming, and snowmobiles on motorized trails in the winter. Some evidence of motorized use, such as noise, may go beyond trail corridors. In summer, use will be concentrated on trail corridors. Away from trails and in low-use portions of this management area, evidence of and interaction with other users will be low.

Standards and Guidelines for Green Mountain Escarpment 8.5

Forest-wide standards and guidelines apply. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the management area standards and guidelines, the most restrictive standard and guideline shall apply.

Soil, Water, and Riparian Area Protection and Restoration

Guideline:

G-1: Use should be dispersed and controlled to prevent excessive damage to the thin soils in this management area.

Minerals

Standard:

S-1: Subject to valid existing rights, mineral exploration and extraction that causes surface disturbance within this area shall be prohibited.

Timber Management

Guidelines:

G-1: Emphasis in this management area should be to perpetuate natural communities including: mesic red oak-northern hardwood forests, dry oak-hickory-hophornbeam forest, mesic maple-ash-hickory-oak forest, red pine forest and woodland, dry oak forest and woodland, pitch pine-oak-heath rocky summit, and temperate cliffs, outcrops, and talus.

G-2: Silvicultural prescriptions should be designed to maintain and enhance the natural community diversity in the area. In particular, prescriptions should be designed to enhance regeneration of pine and oak-dominated communities.

G-3: Prescribed fire in association with mechanical means, including timber harvesting, should be used for regenerating oak and pine dominated natural communities, and when maintaining or establishing fire-dependent species.

G-4: During regeneration harvests within forested natural communities:

- Retention of long-lived conifers, such as hemlock and white pine, and long-lived oaks, should be emphasized.
- Four to nine live trees per acre larger than 11 inches in diameter should be reserved. Focus on the largest trees available.
- Trees larger than 24 inches in diameter should be developed and retained to increase the probability of natural gap formation and tip-up mounds. The number of reserve trees larger than 24 inches in diameter should be included within the four to nine live reserve tree total. Large white pine, hemlock, and red oak are preferred for retention.

G-5: Hazard trees may be cut but not removed.

G-6: Natural regeneration should be used to develop species composition when feasible.

Openings

Guidelines:

G-1: New openings found in the escarpment should be temporary in nature; exceptions are permitted for maintenance of habitat for threatened, endangered, Regional Forester's sensitive species, and species of local concern, and where needed to maintain the character or purpose of the escarpment.

G-2: Existing permanent upland openings should be maintained.

Special Forest Products

Guideline:

G-1: Gathering of special forest products may be authorized provided it is consistent with Management Area emphasis and Desired Future Condition and will not threaten or diminish the character or purpose for which the MA was designated.

Fisheries

Guideline:

G-1: Changes resulting from stream restoration activities should be kept as naturally appearing as possible.

Pests, Diseases, and Non-Native Invasive Species

Guidelines:

G-1: Control actions should only be employed against endemic insects, diseases, or plant and animal pests when the action is necessary to protect adjacent resources or escarpment desired future conditions.

G-2: Chemical and biological controls may be utilized when determined to be less ecologically disruptive than the target pest.

G-3: Non-native plant species should only be used when they are needed to prevent irreversible resource damage.

Fire Management

Guideline:

G-1: Fire Use may be permitted.

Recreation

Standard:

S-1: Recreational use shall complement the Desired Future Condition and management objectives of this MA.

Guidelines:

G-1: Geocaching that does not cause surface disturbance may be permitted in this area.

G-2: User-developed trails that are causing resource damage in this area should be closed and rehabilitated.

G-3: Construction of new developed recreational facilities should be restricted to those needed for resource protection.

G-4: Existing facilities may be maintained as long as they do not threaten or degrade escarpment values, or are needed for public health and safety.

G-5: On-site interpretation that increases awareness of the area's unique ecological and heritage features and management activities that are maintaining these features should be provided.

G-6: Fixed anchors for climbing routes should be prohibited unless an established route with permanent anchors is needed to mitigate resource impacts.

Trails

Standards:

S-1: New motorized trails shall be prohibited.

S-2: Motorized trail vehicles except snowmobiles shall be prohibited unless required by law to provide access to private land.

Guidelines:

G-1: Maintenance and relocation of existing trails may occur only for resource protection and visitor safety.

G-2: Construction of new trails should not be permitted except for education and interpretation enhancements or for protection of escarpment desired future conditions.

G-3: Trail use by horses, pack animals, dog teams, bicycles, and motorized vehicles may be permitted as long as such uses do not interfere with Escarpment desired future conditions. Opportunities to relocate existing motorized trails outside of the Escarpment should be considered.

Transportation Analysis

Guidelines:

G-1: National Forest System roads should be managed at the lowest traffic service and maintenance levels possible.

G-2: New roads should not be constructed unless they protect or contribute to Escarpment desired future conditions, or are required by law to provide access to non-federal land.

G-3: Maintenance and relocation of existing trailheads may occur only for resource protection and visitor safety.

G-4: Construction of new trailheads should not be permitted except for education and interpretation enhancements or for protection of Escarpment values.

Recreation Special Uses

Guidelines:

G-1: Recreational special use permits may be authorized provided they are consistent with Management Area emphasis and Desired Future Condition and they will not threaten or diminish the character or purpose for which the MA was designated.

G-2: Outfitter/guide permits and permits for recreation events should not disperse use from high- to low-use areas.

Non-Recreation Special Uses

Standards:

S-1: Development of and designated sites for wind and communication towers shall be prohibited.

S-2: Development of new utility and pipeline corridors and associated facilities shall be prohibited.

S-3: Special use permits required by law to provide access to non-federal land shall be issued.

Guidelines:

G-1: Expansion of existing facilities and corridors for utility lines and pipelines should be minimized.

G-2: Reconstruction, upgrading, or maintenance of existing utility lines and facilities should be designed and implemented to be as compatible as possible with visual quality and management objectives and the desired future condition of the area.

G-3: Other non-recreational special use permits may be authorized provided they are consistent with Management Area emphasis and Desired Future Condition and they will not threaten or diminish the character or purpose for which the MA was designated.

G-4: Existing special use permits should be phased out when feasible.

Green Mountain Escarpment

EXISTING AND CANDIDATE RESEARCH NATURAL AREAS (8.6)

Major Emphasis

The emphasis for an existing or candidate Research Natural Area (RNA) is preservation and protection of ecologically significant natural features, high-quality representative ecosystems, and/or unique areas. In combination with other RNAs in the nation, these form a national network of ecological areas for research, monitoring, education, and maintenance of biological diversity. A broad representation of natural communities is included in this MA. In this document, the term RNA will refer to both Existing and Candidate Research Natural Areas.

Desired Future Condition

RNAs will be chosen as high-quality representatives of ecological communities found on the Forest (Tables 3.1-3 and 3.1-4). In general, they will exhibit minimal evidence of past human disturbance, and will contain all or most species characteristic of that community in the region. They may range in size from less than 100 acres to thousands of acres. These management areas will be generally well buffered from incompatible activities on nearby lands in order to preserve the integrity of the area for monitoring of baseline ecological conditions. RNAs will aim to include a representation of upland, wetland, and aquatic ecological types across the Forest. Forest composition and structure will primarily be the result of natural ecological processes rather than human-caused activities. These areas will provide excellent opportunities for many kinds of long-term monitoring and non-manipulative research.

Recreation use will be incidental and will not be encouraged in RNAs. Additional hiking trails will not be added and roads will be absent within RNA boundaries. Camping will be by individual site designation, and campfires will not be permitted. Recreation management will be towards the desired ROS class of Primitive.

Existing Research Natural Areas:

Table 3.1-3: Existing Research Natural Areas	
Research Natural Areas	**Special Values**
The Cape	High quality mature and old growth enriched northern hardwood and red spruce-yellow birch forest.

Candidate Research Natural Areas:

Table 3.1-4: Candidate Research Natural Areas	
Research Natural Areas	**Special Values**
Blue Ridge Fen	High quality rich fen wetland community at a high elevation surrounded by forest.

Standards and Guidelines for Existing and Candidate Research Natural Areas 8.6

Forest-wide standards and guidelines apply. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the management area standards and guidelines, the most restrictive standard and guideline shall apply.

Minerals

Standard:

S-1: Subject to valid existing rights, mineral exploration and extraction that causes surface disturbance within this area shall be prohibited.

Timber Management

Standard:

S-1: Management for commercial timber products shall be prohibited.

Guidelines:

G-1: Vegetation management should be permitted only when needed to maintain or restore the unique feature(s) or vegetation type(s) for which the RNA was established. Management practices should approximate the vegetation and processes that govern natural succession.

G-2: Hazard trees may be cut but not removed.

Openings

Guideline:

G-1: Openings found in RNAs should be the result of natural processes only, unless they are the result of other activities permitted elsewhere in this guidance.

Special Forest Products

Standard:

S-1: The gathering of special forest products for commercial sale shall be prohibited.

Guideline:

G-1: Gathering of special forest products may be permitted for scientific use on a case-by-case basis, and for incidental gathering.

Range

Standard:

S-1: Livestock areas shall be prohibited.

Wildlife

Guideline:

G-1: Management for plant and animal habitat, including TES species, should be permitted only when species or habitat for which the area is established would be lost or degraded without treatment, or require restoration to move the area toward a more natural condition.

Fisheries

Guideline:

G-1: Management for fisheries should be permitted only when species or habitat for which the area is established would be lost or degraded without treatment, or require restoration to move the area toward a more natural condition.

Pests, Diseases, and Non-Native Invasive Species

Guidelines:

G-1: Control actions against native insect, disease, plant, or animal pests, should only be used when the actions are necessary to protect adjacent resources or RNA values.

G-2: Control actions may be permitted against non-native invasive species when such species are known to disrupt natural ecological processes, TES species, or the features for which the area was designated.

G-3: Chemical and biological controls may be utilized when determined to be less ecologically disruptive than the target pest.

G-4: RNAs should be monitored annually for non-native invasive species to ensure that new outbreaks are identified early and control methods can be implemented when they are likely to be more effective.

G-5: Use of non-native plant species for restoration or recovery purposes should only occur when needed to prevent irreversible resource damage.

Fire Management

Guideline:

G-1: Fire use may be permitted.

Recreation

Standards:

S-1: Recreational use that threatens or interferes with the objectives or purposes for which the RNA was established shall be prohibited.

S-2: Geocaching shall be prohibited.

Trails

Standard:

S-1: The use of horses, pack animals, dog teams, bicycles, and motorized vehicles on RNA trails shall be prohibited.

Guidelines:

G-1: Signs, new trails, or other improvements may be permitted only when they contribute to RNA objectives or area protection.

G-2: Existing trails should be maintained at the lowest possible maintenance standard.

G-3: Management direction for the LT (Management Area 8.2) should apply to the LT within or adjacent to RNAs. Where direction differs, the more restrictive standards and guidelines apply.

Heritage Resources

Guideline:

G-1: Archaeological excavations may be permitted only when they will not alter the long-term ecological integrity of the RNA or diminish its purposes.

Land Ownership Adjustments

Guideline:

G-1: RNA boundaries should be clearly identified in the field.

Transportation Analysis

Standard:

S-1: Construction of new roads or motorized trails shall be prohibited.

Guideline:

G-1: Decommissioned roads may be demolished, dismantled, obliterated, or disposed of to eliminate the deferred maintenance needs of the fixed asset. Portions of the asset may remain if they do not cause problems nor require maintenance.

Recreation Special Uses

Standard:

S-1: Permits for recreation special uses shall be prohibited.

Non-Recreation Special Uses

Standards:

S-1: Development of and designated sites for wind and communication towers shall be prohibited.

S-2: Development of new utility and pipeline corridors and associated facilities shall be prohibited.

S-3: Special use permits required by law to provide access to non-federal land shall be issued.

Guidelines:

G-1: Expansion of existing facilities and corridors for utility lines and pipelines should be minimized.

G-2: No additional structures should be permitted unless needed for RNA objectives.

G-3: Special use permits may be permitted for research or educational activities, or when mandated by law or agreement. Phase out existing special use permits when feasible.

Biologist Rob Hoelscher addresses Antioch students

ECOLOGICAL SPECIAL AREAS (8.7)

Major Emphasis

Ecological Special Areas (SAs) are characterized by physical or biological features of Forest-wide or regional significance. Areas that may be designated as Ecological SAs include locations that provide examples or representatives of geological, botanical, zoological, and ecological values (Table 3.1-5). Management emphasizes the protection of these values and opportunities for public use and interpretation. Ecological SAs may also provide opportunities as reference sites for research and monitoring.

Desired Future Condition

Ecological SAs will exemplify the special values for which they were designated. They will display a high level of integrity, while providing opportunities for public use and awareness. Ecological SAs will represent many physical, biological, and cultural conditions across the Forest, and therefore will include a wide variation in vegetative cover and communities. This variety of ecosystems and the quality of special values will make Ecological SAs well suited as benchmarks for research and monitoring. Some of these areas will have important recreation values in addition to their biological values for which they are designated. As a result, evidence of human activity will range from substantially unnoticeable to very evident, and road networks will vary from not evident to evident. Recreation management will be towards the desired ROS class of Semi-primitive Non-motorized.

The Appalachian Trail and Long Trail (AT/LT) will pass through some Ecological SAs. The trail will provide an opportunity for visitors to experience the Ecological SA's setting features, while hiking long distance trails. The unique characteristics and values of both the Ecological SA and the AT/LT will be protected and maintained to the greatest extent possible. The Ecological SA and AT/LT settings will provide opportunities for high-quality outdoor recreation experiences, and provide for the conservation and enjoyment of geological, botanical, zoological, and ecological values of the Forest.

Natural disturbances and occasional management activities will shape the landscape-level and site-level vegetation composition. Components of the natural disturbance regime will include individual tree throw and infrequent larger scale blowdown, ice storms, infrequent fire, native insect and disease damage, and beaver flooding. Management activities will be generally limited to light disturbances such as trail clearing and facility maintenance, as well as habitat maintenance for rare plants and animals or restoration of natural communities.

Areas Designated as Ecological Special Areas:

Table 3.1-5: Ecological Special Areas and Related Special Values

Ecological Special Areas	Special Values
Rattlesnake Point	Rare temperate calcareous cliff habitat with a large number of associated rare species, as well as representative landforms of glacial processes such as quarrying and ice plucking forested with oak forests.
Beaver Meadows and Abbey Pond	Wetland complex and pond with rare plants and great blue heron rookeries.
Grout Pond	Natural shoreline, warm water fisheries habitat, and habitat for rare or uncommon plant and animal species.

Stamford Stream Wetland Complex	Poor fens and rare plants, nested within wetland complexes.
Stamford Meadows	Dwarf shrub bog within a wetland complex
Beebe Pond	Softwater pond with several rare plants.
Stratton Mountain	Subalpine vegetation that provides habitat for several uncommon species.
Somerset Fen	Poor fen nested within a wetland complex.
Branch Pond	High elevation softwater pond
French Hollow	Old northern hardwood and hemlock forests.
Mt. Tabor Work Center Swamp	Rare calcareous red maple-tamarack swamp and associated rare or uncommon plants.
Peabody Hill	Mature northern hardwood forest with uncommon plants.
Dutton Brook Swamp	Rare northern white cedar swamp and associated rare or uncommon plants.
Bryant Mountain Hollow	Mesic and enriched oak-northern hardwood forest with an abundance of rare or uncommon plants.
Elephant Mountain	Cliffs, outcrops, and oak, northern hardwood, and hemlock forests, with associated rare species.
Texas Falls	Series of low falls and cascades flowing through a small gorge that was scoured primarily by sediment-laden glacial meltwater

Standards and Guidelines for Ecological Special Areas 8.7

Forest-wide standards and guidelines apply. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the management area standards and guidelines, the most restrictive standard and guideline shall apply.

Minerals

Standard:

S-1: Subject to valid existing rights, mineral exploration and extraction that causes surface disturbance within this area shall be prohibited.

Timber Management

Guidelines:

G-1: Vegetation management and commercial timber harvesting may be permitted only when needed to maintain the character, purpose, or desired future condition of the Ecological SA.

G-2: Timber salvage may be permitted only when there is a threat to human life, resources, structures, or adjacent lands.

G-3: Hazard trees may be cut but not removed.

Openings

Guideline:

G-1: Openings found in Ecological SAs should be the result of natural processes only; exceptions are permitted for maintenance of habitat for threatened, endangered, and Regional Forester's sensitive species, or unless needed to maintain the character or purpose of the Ecological SA, or to maintain the vista on the summit of Stratton Mountain.

Special Forest Products

Standard:

S-1: Gathering of special forest products for commercial sale shall be prohibited.

Guideline:

G-1: Gathering of special forest products may be authorized provided it is consistent with Management Area emphasis and Desired Future Condition and will not threaten or diminish the character or purpose for which the MA was designated.

Range

Standard:

S-1: Livestock areas shall be prohibited.

Fisheries

Standard:

S-1: When stocking waters within this area, only native fish shall be used.

Guidelines:

G-1: Restoration activities may be permitted when they will not alter long-term ecological integrity or diminish the character or purpose of the Ecological SA.

G-2: Changes resulting from stream restoration activities should be kept as naturally appearing as possible.

Pests, Diseases, and Non-Native Invasive Species

Guidelines:

G-1: Control actions against native insect, disease, plant, or animal pests, should only be used when the actions are necessary to protect adjacent resources or Ecological SA values.

G-2: Chemical and biological controls may be utilized when determined to be less ecologically disruptive than the target pest.

Fire Management

Guideline:

G-1: Fire use may be permitted.

Recreation

Standard:

S-1: Recreational use shall complement the desired future condition and management objectives of this MA.

Guidelines:

G-1: On-site interpretation may be provided, where appropriate, to increase awareness of the botanical, ecological, geological, and zoological resources of the areas.

G-2: Facilities should not be constructed unless they protect or contribute to Ecological SA purposes and values.

G-3: Existing facilities may be maintained, replaced, or reconstructed as long as they complement the values for which the Ecological SA was designated, are needed for public health and safety, are significant historic properties, or are needed for resource protection purposes.

Trails

Standards:

S-1: New motorized trails shall be prohibited.

S-2: Motorized trail vehicles except existing snowmobiles shall be prohibited.

Guidelines:

G-1: Development of new trails or trail systems, and relocation of existing trails may occur only for visitor safety, resource protection, or for education and interpretation enhancements.

G-2: Trail use by horses, pack animals, dog teams, bicycles, and motorized vehicles may be permitted as long as such uses do not interfere with Ecological SA objectives. Opportunities to relocate existing motorized trails outside of Ecological SAs should be considered.

G-3: Management direction for the AT (Management Area 8.1) and the LT (Management Area 8.2) should apply to the AT/LT within or adjacent to Ecological SAs. Where direction differs, the more restrictive standards and guidelines apply.

Heritage Resources

Guideline:

G-1: Archaeological excavations may be permitted under the condition that they will not alter the long-term ecological integrity of, or diminish the purposes of the Ecological SA.

Interpretation and Education

Guideline:

G-1: Research may be permitted if it does not compromise the values for which the area was designated.

Transportation Analysis

Guidelines:

G-1: New roads should not be constructed or relocated unless they protect or contribute to Ecological SA values, or are required by law to provide access to non-federal land.

G-2: Construction of new trailheads and parking areas, and relocation of existing trailheads and parking areas, may occur only for visitor safety, resource protection, for education and interpretation enhancements.

G-3: National Forest roads should be managed at the lowest traffic service and maintenance levels possible.

G-4: Decommissioned roads may be demolished, dismantled, obliterated, or disposed of to eliminate the deferred maintenance needs of the fixed asset. Portions of the asset may remain if they do not cause problems nor require maintenance.

Recreation Special Uses

Guidelines:

G-1: Permits for recreation events or facilities may be permitted as long as the activity supports MA objectives.

G-2: Outfitter/guide permits and permits for recreation events should not disperse use from high- to low-use areas.

Non-Recreation Special Uses

Standards:

S-1: Development of and designated sites for wind and communication towers shall be prohibited.

S-2: Development of new utility and pipeline corridors and associated facilities shall be prohibited.

S-3: Special use permits required by law to provide access to non-federal land shall be issued.

Guidelines:

G-1: Expansion of existing facilities and corridors for utility lines and pipelines should be minimized.

G-2: Reconstruction, upgrading, or maintenance of existing utility lines and facilities should be designed and implemented to be as compatible as possible with visual quality objectives and management objectives of the area.

G-3: Special use permits may be permitted for research or educational activities, or when mandated by law or agreement. Existing special use permits should be phased out when feasible.

Texas Falls

RECREATION SPECIAL AREAS (8.8)

Major Emphasis

Recreation Special Areas (RSAs) are characterized by recreational values that require special management prescriptions to sustain (Table 3.1-6). Management emphasizes the protection of these values and opportunities for public use.

Desired Future Condition

RSAs will provide opportunities for public use focused on the specific special value or values identified. The public will use these areas for a variety of recreational activities.

Management activities will focus on maintaining the character of these areas and providing high-quality recreation opportunities for the public. Management activities may include, but are not limited to:

- Trail and recreation facility construction and maintenance
- Maintenance of vegetation to provide for both species diversity and a variety of vegetation types via prescribed fire, mowing, limited tree harvesting, or other methods compatible with the character of the area
- Construction and maintenance of roads, parking areas, and other facilities that are compatible with the area
- Interpretation for recreational purposes.

Recreation management will be towards the desired ROS class of Semi-primitive Motorized.

Recreation Special Areas 8.8:

Table 3.1-6: Recreation Special Areas and Related Special Values

Recreation Special Areas	Special Values
Blueberry Lake	Opportunity for water-based recreation in an easily accessible area that is largely unimpacted by motorized trail uses or timber harvesting.
Robert Frost Interpretive Trail	National Recreation Trail that passes through serene, wooded and open places often evoked in Robert Frost's poems. The special area includes 60 acres that preserve the foreground appearance and include a variety of vegetation communities and successional stages.

Standards and Guidelines for Recreation Special Areas 8.8

Forest-wide standards and guidelines apply. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the management area standards and guidelines, the most restrictive standard and guideline shall apply.

Minerals

Standard:

S-1: Subject to valid existing rights, mineral exploration and extraction that causes surface disturbance within this area shall be prohibited except for administrative purposes.

Timber Management

Guidelines:

G-1: Vegetation management and commercial timber harvesting should be permitted only as needed for recreation or to maintain the character or purpose of the RSA.

G-2: Timber salvage should not be permitted unless there is a threat to human life, RSA resources or structures, or adjacent lands.

G-3: Native plant species should be used for restoration activities. Use non-native plant species only if they are needed to prevent irreversible resource damage.

G-4: The vegetation in the forested area of Robert Frost Interpretive Trail RSA should be managed in an uneven-aged condition.

Openings

Guideline:

G-1: Permanent upland openings may be maintained if needed for recreation or to maintain the character of the RSA.

Special Forest Products

Standard:

S-1: Gathering of special forest products for commercial sale shall be prohibited.

Fisheries

Guideline:

G-1: Restoration or enhancement activities may be permitted when they will not diminish the character or purpose for which the RSA was designated.

Fire Management

Guideline:

G-1: Prescribed fire may be permitted.

Recreation

Standard:

S-1: Geocaching shall be prohibited in the Robert Frost Interpretive Trail RSA.

Guideline:

G-1: Facilities may be maintained or constructed if they complement the values for which the RSA was designated and are needed for public recreation.

Trails

Standard:

S-1: Motorized use of trails shall be prohibited except for administrative uses approved in writing by the Forest Service.

Guideline:

G-1: Trails, trailheads, and associated facilities may be maintained, constructed, or relocated if they complement the values for which the RSA was designated and are needed for public recreation.

Non-Recreation Special Uses

Standard:

S-1: Development of wind and communication towers shall be prohibited.

S-2: Special use permits required by law to provide access to non-federal land shall be issued.

Guideline:

G-1: New utility lines and pipelines should be buried unless ground conditions do not allow.

MOOSALAMOO RECREATION AND EDUCATION AREA (8.9)

Major Emphasis

Recreation and Education Special Areas have uncommon or outstanding recreational, scenic, cultural, or historical significance. The intent of this management area is to emphasize the educational and recreational values for present and future generations.

The Moosalamoo Recreation and Education Area is characterized by an outstanding combination of outdoor recreation opportunities, aesthetic attractions, and the proximity to potential users. The area has historical, archaeological, pastoral, wildlife, and other values contributing to public enjoyment. Due to easy access, the Moosalamoo area provides numerous opportunities to provide on-site education and interpretation of the natural environment and resource management activities.

Management emphasizes public use, interpretation, and education, and the protection of the special values and attributes of the area that contribute to public enjoyment. General objectives include: 1) Providing a showcase for National Forest multiple use management, 2) Providing outstanding educational and interpretation opportunities in the areas of ecological processes and forest management, 3) Providing for public enjoyment of the area for outdoor recreation and other benefits, and 4) Managing for the other resource values present in the area, in a manner that is consistent with public recreation values and other special attributes of the area.

Desired Future Condition

The Moosalamoo Recreation and Education Area (REA) will exemplify the special values of recreation, interpretation, and education. The Moosalamoo REA will provide a unique opportunity to educate visitors and local residents, including school children, through service learning and other volunteer programs, and through demonstration of sustainable forest management, wildlife habitat enhancement, and other practices. Research has found that the way to encourage people to take conservation actions is by bringing them first to the resource, and once they have discovered and appreciated the resource, they will want to conserve what they have come to value.

Recreation and trail opportunities will be diverse in the Moosalamoo REA. Trail opportunities will range from hiking and bicycling to snowmobiling and cross country skiing. A number of trails, including the Long Trail, side trails, and the snowmobile trail system, will be maintained to provide a range of trail experiences and access to key features. Motorized trail use will be limited to the winter months and will be confined to trail corridors. Recreational facilities may be provided to enhance the visitor experiences at specific attractions. Recreation management will be towards the desired ROS objectives of Roaded Natural.

Management practices will be designed to provide opportunities for high quality outdoor recreation experiences, preserve and strengthen the role of volunteers and volunteer organizations, and provide for the conservation and enjoyment of the recreational, scenic, historic, and natural qualities of the area. Where consistent with management area values, on-site interpretation of activities will be completed using a variety of methods.

The landscape character in the Moosalamoo REA will be a mix of agricultural and open lands, and deciduous and coniferous forest stands of various types. The stands will vary in size, shape, height, and tree species. Along road and trail corridors, large diameter trees of diverse species will predominate. Vistas of landscapes with a mosaic of vegetative patterns will be provided along roads and trails. All forest communities that would naturally be present, such as aspen, paper birch, and oak, will be retained and enhanced where feasible. Activities such as timber harvesting may be evident but will be scattered over time and

space. When viewed from a distance, human activity will not be evident on some of the upper elevations of the more noticeable peaks and ridges. Some evidence of activity may be noticeable on lower levels, but will blend with surrounding landscape.

Management practices will include both even-aged and uneven-aged silvicultural systems. As a result, two different conditions will occur among the stands: some stands will consist of trees of about the same age and size, while the remaining stands will consist of a mix of tree sizes and ages ranging from seedlings to very large mature trees. Silvicultural practices will be used to meet timber, ecological, visual, and recreation objectives.

Suitable habitat will be provided for a variety of wildlife and plant species, including Peregrine Falcons on cliff faces. Deer wintering habitat will be emphasized within, or adjacent to, identified deer wintering areas. Habitat at the landscape level will include a sustainable mix of young and mature forests. Permanent upland and temporary openings will occur across the landscape in shapes and sizes that are consistent with visual objectives in an area. Views, ecological processes, and management practices will be interpreted at vista sites.

The foreground of the Long Trail (LT) will encompass a portion of this management prescription. Within the foreground of the LT, management practices will be designed to protect the LT experience. Activities within the LT foreground will be planned and carried out in cooperation with the appropriate LT management partner(s).

Standards and Guidelines for Moosalamoo Recreation and Education Area 8.9

Forest-wide standards and guidelines apply. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the management area standards and guidelines, the most restrictive standard and guideline shall apply.

Minerals

Guideline:

G-1: Subject to valid existing rights, mineral exploration and extraction that causes surface disturbance within this area may be permitted.

Timber Management

Standard:

S-1: Forested lands within this management area shall be part of the suitable timber base.

Guideline:

G-1: Native plant species should be used for restoration activities. Use non-native plant species only if they are needed to prevent irreversible resource damage.

Wildlife

Guideline:

G-1: Vegetation may be managed to provide both species diversity and a variety of major vegetation types, such as grasslands, shrublands, and forests.

Fisheries

Guideline:

G-1: Restoration or habitat improvement activities may be permitted when they will not diminish the character or purpose for which the Moosalamoo REA was designated.

Pests, Diseases, and Non-Native Invasive Species

Guideline:

G-1: Chemical and biological controls may be utilized when determined to be less disruptive to recreational and educational values than the target pest.

Fire Management

Guideline:

G-1: Prescribed fire may be permitted.

Recreation

Guidelines:

G-1: Recreational use shall complement the management objectives and desired future conditions of this MA.

G-2: On-site interpretation should be encouraged.

G-3: Facilities may be maintained or constructed as long as they do not threaten or degrade the values for which the Moosalamoo REA was designated and are needed for public education, recreation, or are significant historic properties.

Trails

Standard:

S-1: Motorized trail vehicles except snowmobiles shall be prohibited unless required by law to provide access to private land.

Interpretation and Education

Guideline:

G-1: The recreational and educational values for which this area was designated should be interpreted where this can be done without causing damage to the values.

Transportation Analysis

Guidelines:

G-1: Roads may be closed to public motorized use. The types of vehicles or season of use may be restricted for public safety, to prevent resource damage, and to protect wildlife.

G-2: New road construction may be allowed when needed to meet MA objectives.

G-3: Decommissioned roads may be demolished, dismantled, obliterated, or disposed of to eliminate the deferred maintenance needs of the fixed asset. Portions of the asset may remain if they do not cause problems or require maintenance. This may include blocking the entrance, revegetating and installing waterbars, removing fills and culverts, establishing drainage ways, and removing unstable road shoulders or full obliteration, recontouring, and restoring to natural slopes.

Recreation Special Uses

Guideline:

G-1: Permits for recreation events or facilities may be allowed as long as the activity supports MA purposes and values.

Non-Recreation Special Uses

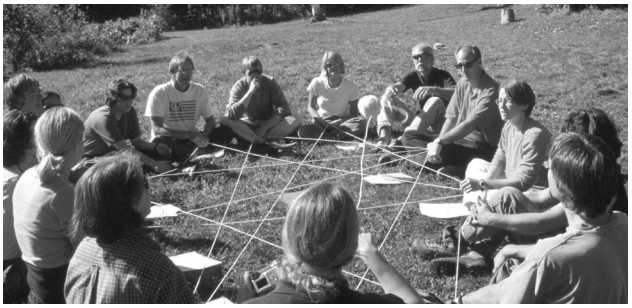
Standard:

S-1: Special use permits required by law to provide access to non-federal land shall be issued.

Guidelines:

G-1: Expansion of existing facilities and corridors for utility lines and pipelines should not be encouraged.

G-2: Reconstruction, upgrading, or maintenance of existing utility lines and facilities should be designed and implemented to be as compatible as possible with visual quality objectives, management purposes, and values for the area.



Teachers involved in a Forest for Every Classroom

ALPINE SKI AREA EXPANSION (9.3)

Major Emphasis

The Alpine Ski Area Expansion Management Area recognizes the potential need for ski area expansion, and manages the land so as not to preclude future ski area development.

Desired Future Condition

Although adjacent to heavily developed alpine ski areas, these lands will generally appear natural, with little evidence of management. Existing roads and trails may provide access. If specific proposals for ski area expansion were approved consistent with the National Environmental Policy Act, the ultimate desired condition would be the same as for Alpine Ski Areas (Management Area 7.1). These lands will be contiguous to existing ski areas and range in size from 40 to 1,000 acres.

Recreation management will be towards the desired ROS class of Rural. A variety of land characteristics will occur in ski area expansion lands. In the lower and middle elevations, extensive stands of northern hardwoods will dominate the landscape. Conifers, such as red spruce and balsam fir, will be mixed with hardwoods at mid- to low-elevations and dominate at higher elevations. The stands in this management area will include a mix of tree sizes and ages and will tend to be visually dominated by large mature trees.

Standards and Guidelines for Alpine Ski Area Expansion 9.3

Forest-wide standards and guidelines apply. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the management area standards and guidelines, the most restrictive standard and guideline shall apply.

Minerals

Standard:

S-1: Subject to valid existing rights, mineral exploration and extraction that causes surface disturbance within this area shall be prohibited.

Timber Management

Guideline:

G-1: Forested lands within this management area shall not be part of the suitable timber base; however, trees may be removed to meet management area desired future conditions.

Openings

Guideline:

G-1: Existing permanent upland openings may be maintained for wildlife.

Fire Management

Guideline:

G-1: Prescribed fire may be permitted.

Recreation

Standard:

S-1: Campgrounds and day-use areas shall not be constructed.

Guidelines:

G-1: Dispersed recreation activities may occur within this management area as long as the activity is compatible with the overall purpose of potential alpine ski area expansion.

G-2: Existing foot trails may be maintained until alpine ski area development of the area.

G-3: Existing motorized trails may be maintained until alpine ski area development of the area. No new motorized trail construction is permitted.

Transportation Analysis

Guideline:

G-1: Existing roads unnecessary for management area objectives and desired future conditions should be closed and re-vegetated.

Recreation Special Uses

Standard:

S-1: Any special use facility development shall be prohibited until an area is assigned to a different management area.

Guideline:

G-1: Outfitter/guide permits may be permitted.

Winter Landscape

ELIGIBLE WILD, SCENIC, AND RECREATIONAL RIVERS (9.4)

Major Emphasis

The emphasis of this management area is to protect and enhance the "outstandingly remarkable values" (ORVs) that led those rivers and streams within this management area to be determined as eligible Wild Scenic, and Recreational Rivers. Included in this MA are river segments and their associated corridors that are eligible to be further considered for addition to the National Wild and Scenic River System (Table 3.1-7). Once determined eligible, river segments are tentatively classified for study as either wild, scenic, or recreational based on the degree of access and amount of development along the river. Management under this MA retains a river's eligibility for the stated potential classification. River corridors contained within this Management Area are one-quarter mile on each side of the stream.

River classifications as defined by the Wild and Scenic Rivers Act are:

Wild River Classification – Rivers, or sections of rivers, that are free of impoundments and generally inaccessible except by trail, with watershed or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

Scenic River Classification – Rivers, or sections of rivers, that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

Recreational River Classification – Rivers, or sections of rivers, that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundments or diversions in the past.

Desired Future Condition

The Eligible Wild, Scenic and Recreational Rivers MA will protect classification characteristics and ORVs for each of the identified stream segments located on federal land. All eligible rivers will be essentially free flowing. Desired Future Conditions for each River classifications are:

Wild Segments

Eligible river segments with a potential classification of wild are primarily found within existing Wilderness MAs. Wild segments will be primarily managed for the same values that are found within designated wilderness, will be undeveloped, and will show little sign of human activity.

Wild segments within this management area may contain a few campsites or trail shelters, but these will be limited. Natural forces will dominate. The natural range of flooding, beaver dams, wind throw, and meandering stream channels will occur. Vegetation will be influenced only by natural processes and existing ecological components. Visitors will normally encounter few other people, and the setting will provide habitat for wildlife needing remote areas. Recreation management will be towards the desired ROS class of Semi-primitive Non-motorized.

Scenic Segments

Eligible river segments with a potential classification of scenic usually will be more developed than wild and less developed than recreational. Scenic segments will be accessible by road, but they generally will not include long stretches of conspicuous and well-traveled roads closely paralleling the riverbank.

Management will be towards the desired ROS class of Semi-primitive Motorized. Visitors may see sights and sounds of human activities, but these will not dominate the area. Encounters with others may be higher on weekends, but few encounters will be expected mid-week, off-season, or away from trails. The landscape character will be "natural appearing" with predominantly high scenic integrity. Facilities will be minimal and primarily for visitor safety

and access, and to protect river resources. Facilities may include parking areas, trailheads, rustic campgrounds, interpretive kiosks, rest rooms, motorized and non-motorized trails, and signs. Facilities will be understated in appearance and will be designed to complement the natural environment in scale, character, and color.

Management of vegetation may be evident within the river corridor. Existing fields or permanent upland openings may be present and maintained for wildlife, but no expansion of openings or creation of new permanent upland openings of this type will be encouraged. Density of open roads will remain near the current level throughout the planning period.

Recreational Segments

Eligible river segments with a potential classification of recreational usually will be more developed than scenic segments. Recreational segments will often have parallel or crossing roads, railroad accesses, or transportation facilities that parallel the river for long stretches.

Management will be towards the desired ROS class of Roaded Natural. The sights and sounds of others will be evident, and opportunities to encounter other visitors will be moderate to high. Visitors seeking solitude may find that difficult to achieve, particularly in peak-use seasons. Trails may be highly developed, including hardened trail surfaces.

The landscape character may range from natural appearing to transitional-mixed use. There may be substantial evidence of human activity along the shores of these rivers. Visitors will encounter a natural-appearing setting with a range of human-made developments.

These river corridors will provide for a diversity of habitats and successional stages for a wide variety of species that favor, or are tolerant of, habitat edges and human disturbances.

Vegetation will be influenced by both natural processes and humans. Management of vegetation may be evident within the river corridor. Existing fields or permanent upland openings may be present and maintained for wildlife. Density of open roads will remain near the current level throughout the planning period with only small increases or decreases.

Rivers Eligible as Wild, Scenic, and Recreational Rivers

Table 3.1-7: Rivers Eligible as Wild, Scenic, and Recreational Rivers

Name	Potential Classification	Description	ORV
Battenkill River	Recreational	From NY/VT state line to Arlington	Historic, Geologic, Scenic
Battenkill River	Recreational	Arlington to Manchester	Fish, Historic, Wild
Big Branch	Scenic	Confluence of Otter Creek to Ten Kilns Brook	Heritage
Bolles Brook	Scenic	From last bridge to headwaters	Wildlife
Bolles Brook	Recreational	From Roaring Branch Walloomsac Brook to last bridge crossing	Wildlife
Bourn Brook	Wild	From wilderness boundary to headwaters	Botanical/ Ecological
Bourn Brook	Recreational	From confluence of Otter Ck to wilderness boundary	Botanical/ Ecological
City Stream	Recreational	Confluence Roaring Branch Walloomsac Brook to Woodford	Wildlife
Deerfield River	Scenic	Searsburg Reservoir to headwaters	Hydrologic, Wild
Leicester Hollow Brook	Scenic	End of FS Rd 243 to headwaters	Botanical/ Ecological
Leicester Hollow Brook	Recreational	Neshobe River to end of FS Rd.	Botanical/ Ecological

		243	
Lye Brook	Wild	From wilderness boundary to headwaters	Fish, Historic, Wild
Lye Brook	Recreational	Confluence of Battenkill to wilderness boundary	Fish, Historic, Wild
Mad River	Recreational	From Folsom Brook to headwaters	Recreation
North Branch Middlebury River	Recreational	From confluence of Middlebury River to confluence of Alder Brook	Botanical/ Ecological
New Haven River	Recreational	Within proclamation boundary	Geologic
Ottauquechee River	Recreational	From Woodstock to the headwaters	Recreation
Otter Creek	Recreational	From Emerald Lake to East Ck in Rutland	Hydrologic
Roaring Branch (including a section of Warm Brook and Branch Pond Brook)	Recreational	Confluence of Battenkill River to Branch Pond	Fish, Historic, Wild
Rock River	Scenic	End of Sherman Road (TH-18), in Dover, to headwaters	Geologic, Recreation, Scenic,
Rock River	Recreational	Confluence of West River to the end of Sherman Road (TH-18), in Dover, to headwaters	Geologic, Recreation, Scenic,
Stamford Stream	Recreational	Confluence of City Stream to Woodford and Stamford town line	Botanical/ Ecological
Wardsboro Brook	Scenic	Confluence of West River to first bridge upstream on VT100 in Jamaica Town	Recreation, Scenic
Wardsboro Brook	Recreation	First bridge upstream on VT100, in Jamaica, to headwaters	Recreation, Scenic
West River	Scenic	Bridge on VT100 just east of JCT VT155/VT100, in Weston, to headwaters	Recreation, Scenic
White River	Recreational	Stony Brook, in Stockbridge, to headwaters	Fish, Historic, Scenic,
Winhall River	Wild	End of Kendall Farm Road to headwaters	Recreation, Scenic
Winhall River	Scenic	Confluence of West River to end of Kendall Farm Road	Recreation, Scenic

Standards and Guidelines for Eligible Wild, Scenic, and Recreational Rivers 9.4

Forest-wide standards and guidelines apply. The management area standards and guidelines are to be applied in addition to Forest-wide standards and guidelines. In case of a conflict between the Forest-wide standards and guidelines and the management area standards and guidelines, the most restrictive standard and guideline shall apply.

Management of Eligible Wild Scenic and Recreational Rivers follows FSH 1909.12 Chapter 8.12 *Interim Management of Study Rivers.*

Minerals

Standard:

S-1: Subject to valid existing rights, mineral exploration and extraction that causes surface disturbance within this area shall be prohibited.

Fire Management

Guidelines:

G-1: Prescribed fire may be permitted when compatible with the outstanding remarkable values for each river.

G-2: Wildland fire use may be permitted

Standards and Guidelines for Eligible Wild River Segments

Timber Management

Standard:

S-1: Commercial timber harvest and non-commercial felling of trees shall be prohibited except when needed to maintain a primitive recreation experience, such as clearing trails for user protection, or to protect the environment, such as for fire control.

Wildlife and Fisheries

Guideline:

G-1: Fish and wildlife habitat improvements may be permitted provided they do not affect the free-flowing characteristics of the river and are consistent with the Desired Future Condition of Eligible Wild Rivers.

Recreation

Guideline:

G-1: New trail bridge crossings may be restricted for resource protection and visitor safety.

Trails

Standard:

S-1: New motorized trails shall be prohibited.

Visuals

Standard:

S-1: Vistas and permanent upland openings shall not be maintained.

Utilities

Standard:

S-1: New corridors for utility lines or pipelines shall be prohibited. Expansion of existing facilities and corridors shall be prohibited.

Roads

Standard:

S-1: New permanent and temporary roads shall be prohibited unless required by law to provide access to non-federal land.

Standards and Guidelines for Eligible Scenic River Segments

Timber Management

Guidelines:

G-1: A wide range of silvicultural practices may be conducted, as long as water and visual quality and other management objectives of the corridor are met.

G-2: Uneven-aged management should be emphasized to maintain an essentially unbroken canopy of trees and a natural-appearing river corridor.

Wildlife and Fisheries

Guideline:

G-1: Fish and wildlife habitat improvements may be permitted provided they do not affect the free-flowing characteristics of the river and are consistent with the Desired Future Condition of Eligible Scenic Rivers.

Recreation

Guideline:

G-1: Facilities should not be visible from the river.

Trails

Guideline:

G-1: New summer off-road vehicle use should be limited to trails needed to cross the river segment and corridor.

Utilities

Standard:

S-1: New corridors for utility lines or pipelines shall be prohibited. Expansion of existing facilities and corridors shall be prohibited.

Roads

Guideline:

G-1: New roads may be allowed, as long as they are well-screened from the river and are short and inconspicuous.

Standards and Guidelines for Eligible Recreational Classification Segments

Timber Management

Guidelines:

G-1: A wide range of silvicultural practices may be conducted, as long as the water quality and other management objectives of the corridor are met.

G-2: The choice of even-aged or uneven-aged silvicultural systems will depend primarily on the objectives of the Management Areas through which the stream passes.

Wildlife and Fisheries

Guideline:

G-1: Fish and wildlife habitat improvements may be permitted provided they do not affect the free-flowing characteristics of the river and are consistent with the Desired Future Condition of Eligible Recreational Rivers.

Recreation

Guideline:

G-1: Public use facilities such as campgrounds may be permitted provided they do not affect the outstandingly remarkable values for which that river segment was determined eligible.

Utilities

Standard:

S-1: New corridors for utility lines or pipelines shall be prohibited. Expansion of existing facilities and corridors shall be prohibited.

Fishing in the GMNF

Chapter 4 Monitoring and Evaluation

Rain Gauge Monitoring in Lincoln, Vermont

Bat Monitoring

4.1 MONITORING AND EVALUATION

4.1.1 Introduction

The Green Mountain National Forest Land and Resource Management Plan (Forest Plan) provides management direction in terms of desired conditions, goals, objectives, and standards and guidelines at the Forest and Management Area scales. Monitoring and evaluation are separate, sequential activities required by the National Forest Management Act (NFMA) to determine how well this management direction is being met, and to provide a basis for the periodic evaluation of the Forest Plan. The Green Mountain National Forest Monitoring Program (Chapter 4 of the Forest Plan) describes what will be monitored and what Forest Service staff expect to learn from that monitoring and subsequent evaluation.

Monitoring is the systematic collection of information about resource conditions, management actions, and emerging issues in a way that will reflect changes in conditions and relationships over time and space. The objective of a plan monitoring program is to:

1. Enable the Responsible Official to determine if a change in Forest Plan components or other Forest Plan content may be needed.
2. Inform the management of resources through means such as testing relevant assumptions, tracking relevant changes, and measuring management effectiveness and progress toward achieving or maintaining the Forest Plan's desired conditions or objectives.
3. Support an adaptive land management planning process that includes social, economic, and ecological evaluations.

Evaluation is the analysis and interpretation of the information collected during monitoring. Evaluation results form the basis for adaptively managing National Forests because they:

1. Evaluate the validity of assumptions used in Forest Plan development,
2. Verify the effectiveness of Forest Plan standards and guidelines,
3. Assess program and project effects on resource conditions in relation to management goals and desired conditions, and
4. Determine when goals, objectives, desired conditions, standards, or guidelines need to change.

The Forest Plan Monitoring Program falls into three general areas of focus, depending on whether they examine the *implementation* or *effectiveness* of management actions, or the *validity* of the underlying assumptions on which management is founded (Table 4.1-1).

Table 4.1-1: Monitoring Categories

Monitoring Focus	Purpose
Implementation	Is the overall direction in the Forest Plan being implemented? This includes goals and objectives, desired conditions, standards and guidelines, and management area direction. ***Or***, Did we do what we said we were going to do?
Effectiveness	Are the standards and guidelines working? Are there significant changes in productivity of the land? ***Or*** Did it work?
Validation	Are the assumptions and predicted effects used to formulate the Forest Plan accurate? ***Or*** Were we right in our initial understanding of the situation? Did we look at the right things?

These three areas of focus are interwoven within the monitoring and evaluation plan as a means of measuring the Forest

Service's success in achieving Forest Plan goals and objectives, and applying Forest Plan standards and guidelines. Monitoring design and data collection follow accepted national standards. Monitoring is not performed on every activity, nor is most of it expected to meet the statistical rigor of formal research.

Implementation monitoring is done primarily at the project level and is completed on a day-to-day basis. It occurs hundreds of times each year and includes activities such as timber sale inspections, interdisciplinary project reviews, backcountry observations by Wilderness rangers, and construction inspections. Effectiveness and validation monitoring are more programmatic which entails Forest-wide monitoring that is done annually or every few years to track long-term progress and effects.

4.1.2 Adaptive Management

Knowledge gained through monitoring, evaluation, and associated research provides the basis of adaptive management. The process creates a feedback mechanism (Figure 4.1-1) whereby Forest Service staff can compare observed results and trends with desired goals and outcomes, or examine or test the scientific appropriateness and validity of assumptions used in the development of the Forest Plan.

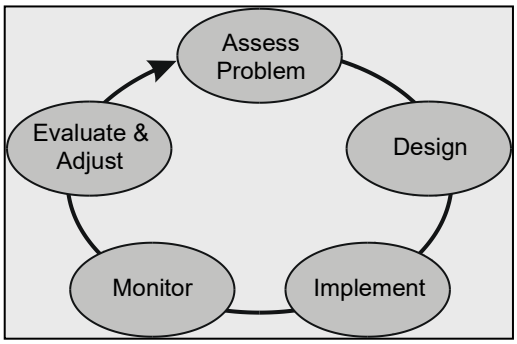


Figure 4.1-1: Monitoring, Evaluation, and Adaptive Management

Using results from monitoring and evaluation as a guide, the Forest Service can develop amendments to management direction as necessary. In this way, monitoring and evaluation help keep the Forest Plan dynamic, relevant, and responsive to changing issues.

4.1.3 Monitoring and Evaluation Components

An integrated and comprehensive monitoring and evaluation program includes four phases or components:

1. Monitoring Plan
2. Monitoring Implementation Guide
3. Annual Monitoring Schedule
4. Biennial Monitoring and Evaluation Report

Monitoring Plan

The *Monitoring Plan*, which is contained in this chapter, provides the conceptual framework for specific monitoring and evaluation elements. It establishes questions to be answered, timeframes for reporting, and indicators for required monitoring topics. Monitoring Plan direction is broad and ties directly to decisions made in this Forest Plan.

Monitoring items and questions included here are intended to provide the basis for more specific and focused monitoring items to be included in the *Monitoring Implementation Guide*. Changing the Monitoring Plan requires an Administrative Change to the Forest Plan (36 CFR 219.13).

Monitoring Implementation Guide

The *Monitoring Implementation Guide* (Guide), sometimes referred to as the *Monitoring Guide* or the *Implementation Guide*, is a procedural document that is external to the Forest Plan. It describes the Forest Service's monitoring program in its entirety. The Monitoring Guide is founded on guidance contained in the Monitoring Plan, expanded into greater detail. The Monitoring Guide contains specific monitoring elements, along with methods, protocols, and analytical

procedures to be followed. The Monitoring Guide incorporates direction found in the Forest Service handbook, technical manuals, scientific literature, or other sources.

Program managers responsible for Forest Plan implementation are involved in updating the Monitoring Guide. The list of monitoring items is beyond that normally funded; final selection of the items to be monitored in a given year is primarily based on available funding and staffing, and the priorities and timing provided in the Monitoring Guide.

The Monitoring Guide is intended to be a flexible component that can change as new methodologies and techniques are developed, or to be more responsive to changing needs and new information. The Monitoring Guide can be modified without an Administrative Change to the Forest Plan.

Annual Monitoring Schedule

The *Annual Monitoring Schedule* outlines monitoring items, time frames, roles, and locations for the upcoming year. The annual monitoring schedule will be linked directly to both the Forest Plan and the Monitoring Implementation Guide. The Forest Service will prepare and revise this schedule annually as part of the annual work planning process. Some elements of the Guide will be performed or measured annually, whereas others will be scheduled with other time intervals that are determined necessary or appropriate for timely and effective evaluation. The Forest Service's annual work planning process also will establish or revise priorities for the monitoring schedule.

Biennial Monitoring and Evaluation Report

Every two years, Forest Service staff will produce and make available a *Biennial Monitoring and Evaluation Report* that shares new information gathered through the Monitoring Program and relevant information from the broader-scale strategy. The purpose of the biennial report is to:

1. Make the information obtained from monitoring available to the public in a form that is readily understandable.
2. Transform monitoring data into information that supports adaptive management so the Responsible Official can determine whether changes to the Forest Plan, management activities, or the Monitoring Program are warranted.

4.1.4 Monitoring Plan

The Green Mountain National Forest Monitoring Plan consists of a set of required monitoring questions (Table 4.1-2). Evaluation of information collected to answer each monitoring question provides the Responsible Official the basis to determine whether changes are needed to Forest Plan components (goals, objectives, desired conditions, and standards and guidelines). These changes can be made through the amendment process to ensure the Forest Plan remains current by adapting to new information and changed conditions.

The Monitoring Plan also provides information to track resource trends, and measure management effectiveness and progress toward achieving Forest Plan goals, objectives, and desired conditions. Lastly, evaluation of monitoring information may provide the basis for design changes to management activities to better meet overall Forest Plan direction.

4.1.5 Required Monitoring

The National Forest System Land Management Planning Rule (36 CFR 219.12(a)(5)) requires the Forest Plan Monitoring Plan to include at least one monitoring question and associated indicator(s) for each of eight monitoring elements. Table 4.1-2 shows the monitoring questions and associated measurement indicators selected to address each element.

Table 4.1-2: Required Monitoring Elements

Required Element	Monitoring Question	Measurement Indicator(s)
1. Status of select watershed conditions.	To what extent are management activities maintaining or restoring watershed functions?	• Number of sub-watersheds in each watershed condition class • Number of essential projects completed in priority watersheds per year
2. Status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems.	To what extent are management activities and natural processes leading to increased structural diversity within forested stands and across forested landscapes, moving areas toward desired objectives identified under Goal 2 of the Forest Plan?	• Number of acres and proportion of each forest type in each age class • Number of acres and proportion of harvest acres treated with uneven-aged management • Number of acres treated explicitly to enhance early successional characteristics • Number of acres treated explicitly to enhance late successional characteristics • Number of acres treated with various methods to explicitly enhance health, longevity, and/or structural diversity of forested stands at the stand and landscape scales
	To what extent are management activities conserving or improving water quality?	• Miles of stream and acres of lake/ pond on National Forest System lands by Vermont water quality classification • Ambient Biomonitoring Network stream reach score for a representative subset of stream reaches across GMNF • Implementation and effectiveness monitoring for Best Management Practices (BMPs)
3. The status of focal species to assess the ecological conditions required under § 219.9.	Does the headwater streams ecosystem provide a full array of riparian and aquatic communities and stream channel types supported by the varied physiographic conditions across the Forest?	• Number of wild brook trout (*Salvelinus fontinalis*) per stream mile
4. The status of a select set of the ecological conditions required under § 219.9 to contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern.	What are the population trends for sensitive plants (increasing, decreasing, or stable)? To what extent are management activities affecting conditions for sensitive plant populations?	Population trends for plants listed as Regional Forester Sensitive Species: • Number of ramets or genets • Percent reproductive • Spatial extent of population • Number of populations of a species • Ranked condition of populations

Required Element	Monitoring Question	Measurement Indicator(s)
5. The status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives.	To what extent are management activities providing high quality recreation services that meet the expectations of the public?	• Percent Meets Expectations (PMEs) in National Visitor Use Monitoring (mean visitor satisfaction compared to mean importance). PME data reported for developed facilities, access, services, and feeling of safety in developed sites, undeveloped areas, and designated wilderness. • Trend in number of visitors, visitor satisfaction and changes in visitor participation by activity over 5-year NVUM reporting periods.
6. Measurable changes on the plan area related to climate change and other stressors that may be affecting the plan area.	Within site plots how are soil/site quality and productivity changing over the long term in response to factors such as acid deposition, climate change, invasive species, and other environmental problems? How are management activities potentially mitigating or exacerbating changes in soils? More specifically: Are soil nutrient levels changing, and are the changes affecting soil/site productivity? What toxins exist in the soil (such as from the atmosphere), and how are they changing in quantity and type over time? Is this affecting productivity?	Within site plots established in wilderness areas measure changes over time for: • Soil quality - Soil nutrient levels, soil organic matter, total soil carbon, and toxins by major horizon • Soil productivity - Forest health • Soil climate - Soil temperature and moisture, depth of freezing, correlated with selected meteorological parameters
	To what extent are insects and disease organisms impacting forest conditions?	Insect or disease infestations: • Number of outbreaks by species • Acres affected by species • Trends in outbreak persistence, spread, and associated tree mortality
7. Progress toward meeting the desired conditions and objectives in the plan, including for providing multiple use opportunities.	How do actual resource and service accomplishments compare to those projected in the Forest Plan Appendix D, Proposed and Probable Practices?	• Actual annual resource and service accomplishments for management activities listed in the Forest Plan, Appendix D, Table D-5.
8. The effects of each management system to determine that they do not substantially and	To what extent are management activities impacting soil quality and productivity?	Within the Forest Service Soil Disturbance Monitoring Protocol sampling and monitoring areas including select areas where timber harvest, prescribed fire, and

Required Element	Monitoring Question	Measurement Indicator(s)
permanently impair the productivity of the land (16 U.S.C. 1604(g)(3)(C)).		other management activities have been implemented: • Amount of forest floor impacted • Amount of topsoil displacement • Severity of rutted, burned or compacted soil • Severity of platy/massive soil structures, or puddled soil

4.1.6 Other Monitoring

In addition to the monitoring questions selected to address the eight required elements listed in Table 4.1-2, other monitoring questions have been developed to assist in determining how well management activities are meeting Forest Plan direction. While none of these questions have been selected to address any of the required elements and are not part of the formal Monitoring Plan, Forest Service staff can use them to supplement the monitoring and evaluation plan to improve the Forest Plan or refine management activities pending budget and staffing capacity. The details for these other monitoring questions can be found in the Monitoring Guide including the Forest Plan component they address, associated measurement indicators, monitoring protocol and methodology, and reporting frequency.

4.1.7 Biennial Monitoring and Evaluation Report

Information derived from the monitoring and evaluation of required and other monitoring questions forms the basis for continuous improvement of the Forest Plan needed for consideration for adaptive management strategies. Biennial monitoring and evaluation reporting is key for the Responsible Official to determine if and where changes are needed in Forest Plan components, other Forest Plan content, and projects and activities. Monitoring also provides feedback to prioritize and improve the Monitoring Program and broader-scale monitoring strategy provided by other monitoring questions.

The biennial evaluation of monitoring is intended to collect, evaluate, and report on new data or results. The report does not need to evaluate all questions or indicators on a biennial basis but must focus on new data and results that provide new information for adaptive management.

Every two years, the Forest Service will summarize what monitoring has been completed and the most recent evaluation results. At a minimum, the evaluation should:

1. Enable the Responsible Official to assess if there have been changes in the condition of the land that indicate a need for changes to Forest Plan components, the Monitoring Program, or management activities.
2. Be used to inform adaptive management of the plan area.
3. Provide a basis for determining the accuracy of management effects.
4. Consider how well goals, objectives, and desired conditions have been met and how closely standards and guidelines have been applied.

Chapter 5 Literature Cited

Stone Farm Cemetery

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6.1 GLOSSARY

Abbreviations and Acronyms

AA	Analysis Area
AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
AMP	Acceptable Management Practice
AMS	Analysis of the Management Situation
APE	Area of Potential Effects
ASQ	Allowable Sale Quantity
AT	Appalachian National Scenic Trail
ATC	Appalachian Trail Conservancy
ATV	All-Terrain Vehicle
BA	Biological Assessment
BE	Biological Evaluation
CE	Cumulative Effects
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMAI	Culmination Mean Annual Increment
cRNA	Candidate Research Natural Area
CUA	Concentrated Use Area
DBH	Diameter at Breast Height
DEIS	Draft Environmental Impact Statement
DFC	Desired Future Condition
EIS	Environmental Impact Statement
ELT	Ecological Land Type
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FR	Forest Road
FS	Forest Service
FSH	Forest Service Handbook
FSM	Forest Service Manual
FY	Fiscal Year
GFA	General Forest Area
GIS	Geographic Information System
GMNF	Green Mountain National Forest
GPS	Geographic Positioning System
I&E	Information and Education
IDT	Interdisciplinary Team
LAC	Limits of Acceptable Change
LNT	Leave No Trace
LRMP	Land and Resource Management Plan (“Forest Plan”)
LT	Long Trail
LTA	Land Type Association
MA	Management Area
MBF	One Thousand Board Feet
M&E	Monitoring and Evaluation
MMBF	One Million Board Feet
MIS	Management Indicator Species
MUSY	Multiple-Use and Sustained-Yield Act
NEPA	National Environmental Policy Act
NF	National Forest
NFMA	National Forest Management Act
NFS	National Forest System
NNIS	Non-native Invasive Species
NOI	Notice of Intent
NRA	National Recreation Area
NRHP	National Register of Historic Places
ORV	Off-Road Vehicle
PAOT	People At One Time
PILT	Payment in Lieu of Taxes
PNV	Present Net Value
RAP	Roads Analysis Process
RARE	Roadless Area Review and Evaluation
RD	Ranger District
RFSS	Regional Forester Sensitive Species
PPM	Parts Per Million
RN	Roaded Natural
RNA	Research Natural Area
ROS	Recreation Opportunity Spectrum
ROD	Record of Decision
RSA	Recreation Special Area

S&Gs	Standards and Guidelines
SA	Special Area
SHPO	State Historic Preservation Office
SMS	Scenery Management System
SPM	Semi-primitive Motorized
SPNM	Semi-primitive Non-motorized
SUP	Special Use Permit
SVE	Species Viability Evaluation
TES	Threatened, Endangered, and Sensitive
TEPS	Threatened, Endangered, Proposed, and Sensitive
TSI	Timber Stand Improvement
TDD	Telecommunication Device for the Deaf
TTY	Teletype
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USFS	United States Forest Service
USFWS	USDI Fish and Wildlife Service
USNPS	USDI National Park Service
VIS	Visitor Information Services
VMS	Visual Management System
VQO	Visual Quality Objective
WFU	Wildland Fire Use
WSR	Wild and Scenic River
ZOI	Zone of Influence

Terms

The following definitions and/or descriptions clarify terminology used in the 2006 Forest Plan and Final Environmental Impact Statement. References are cited within parentheses. Where a reference is cited, it served as the primary source of the definition/description for that particular term. Where no reference is cited, the definition/description was developed for this Plan Revision from a variety of sources.

The descriptions and definitions are in alphabetical order.

[A]

ABIOTIC – Non-living. Climate is an abiotic component of ecosystems.

ACCEPTABLE MANAGEMENT PRACTICES (AMPs) – AMPs are a set of measures implemented during the course of logging, to prevent or minimize discharges such as mud, petroleum products, and woody debris, from getting into streams, ponds, lakes, and rivers. They are also meant to maintain natural water temperatures by requiring that trees be left along streams and other water bodies. Vermont has 14 AMPs. (Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont)

ACQUISITION – Obtaining land through purchase, exchange, and donation.

ADAPTIVE MANAGEMENT – A type of natural resource management that implies decisions are made as part of an on-going process. Monitoring the results of actions will provide a flow of information that may indicate the need to change a course of action. Scientific findings and the needs of society may also indicate the need to adapt resource management to new information.

ADMINISTRATIVE USE – Use of National Forest land, interests in land, or other resources, by the Forest Service, or an individual or entity authorized by the Forest Service, for purposes incidental to the protection, administration, or management of the National Forest.

AERIAL LOGGING – Removing logs from a timber harvest area by helicopter. Fewer roads are required, so the impact to an area is minimized.

AFFECTED ENVIRONMENT – The natural environment that exists at the time an area is being analyzed.

AGE CLASS – An age grouping of trees according to an interval of years, usually 20 years. A single age class would have trees that are within 20 years of the same age, such as 1-20 years or 21-40 years.

AIRSHED – A geographic area that shares the same air.

ALL-TERRAIN VEHICLE (ATV) – Any motorized, off-highway vehicle 50 inches or less in width, having a dry weight of 600 pounds or less that travels on three or more low-pressure tires with a seat designed to be straddled by the operator. Low-pressure tires are 6 inches or more in width and designed for use on wheel rim diameters of 12 inches or less, utilizing an operating pressure of 10 pounds per square inch (psi) or less as recommended by the vehicle manufacturer.

ALLOWABLE SALE QUANTITY (ASQ) – The amount of timber that may be sold within a certain time period from an area of suitable land. The suitability of the land and the time period are specified in the Forest Plan.

ALPINE ZONE – Elevated slopes above timberline, characterized by low, shrubby, slow-growing woody plants and ground cover of boreal lichens, sedges, mosses, and grasses.

ALTERNATIVE – Alternatives provide options for meeting the purpose and need of a Plan revision process by emphasizing reasonable ways to resolve management issues as though each alternative were a separate Forest Plan. While all alternatives provide a wide range of multiple uses, goods and services, they respond to the issues needing change in different ways and describe a different desired future condition.

AMERICANS WITH DISABILITIES ACT (ADA) – Law requiring that persons with disabilities not be denied access to the programs provided to all other people by state and local governments, public accommodations, public transportation, and commercial establishments, solely because of their disability. The ADA does not apply to the programs and facilities of federal agencies with the exception of designated wilderness (ADA Title V Sec. 507(c)).

ANADROMOUS FISH – Species of fish that mature in the sea and migrate into streams to spawn.

ANALYSIS OF THE MANAGEMENT SITUATION (AMS) – Using Resource Assessments and the existing Forest Plan as background, the AMS determines the ability of the area covered by the Forest Plan to supply goods and services in response to societal demands. The AMS speculates on the expected results or potential problems should the existing Forest Plan direction continue; discusses whether or not these problems need to be resolved; and determines the potential to resolve them in a Plan revision. If the Plan revision can resolve potential problems, the AMS proposes a range of values within which a possible solution may occur.

ANNUAL MAINTENANCE – Work performed to maintain serviceability or repair failures during the year in which they occur. Includes preventive and/or cyclic maintenance performed in the year in which it is scheduled to occur. Unscheduled or catastrophic failures of components or assets may need to be repaired as a part of annual maintenance.

APPROPRIATE MANAGEMENT RESPONSE – Specific actions taken in response to a wildland fire to implement protection and fire use objectives (Zimmerman 1998).

AQUIFER – A body of rock that is saturated with water or transmits water. When people drill wells, they tap water contained within an aquifer.

AREA OF POTENTIAL EFFECT (APE) – The spatial extent of a proposed project's possible impact/effect, including non-contiguous areas like borrow pits, log landings, or equipment storage areas, within which significant Heritage Resources should be identified and protected. This term was established in the regulations pertaining to the National Historic Preservation Act.

ASPECT – The direction a slope faces. A hillside facing east has an eastern aspect.

ASSESSMENT (Resource Assessment) – A compilation of background material on the status of a particular resource area, on a local, regional, or national scale. A Resource Assessment describes the present condition of a particular resource and speculates on the future condition of the resource based on

current and expected trends. Assessments address management problems, new policy and direction, monitoring results, and the existing condition of the resource on the forest.

[B]

BACKGROUND – A term used in the management of visual resources or scenery. It refers to the visible terrain located four miles to infinity from the viewer.

BASAL AREA – The cross-section area of a tree stem including bark, in square feet, and commonly measured at breast height (4.5 feet above ground). This parameter is often used in silvicultural equations and/or models for determining growth and yield of forest stands.

BENCHMARKS – (benefits, costs, and values) Benchmarks define the maximum and minimum levels of output. These limits take into account land capability, projected resource demands, and cost efficiency. The benchmark process demonstrates the Forests' ability to respond to timber harvesting issues and management concerns represented in the problem statements.

BENEFIT – Inclusive term used to quantify the results of a proposed activity, project, or program; expressed in monetary or non-monetary terms.

BIG GAME – Large mammals, such as deer and moose, that are hunted for sport.

BIOLOGICAL CONTROL – The use of natural means to control unwanted pests. Examples include introduced or naturally occurring predators such as wasps or hormones that inhibit the reproduction of pests. Biological controls can sometimes be alternatives to mechanical or chemical means.

BIOLOGICAL DIVERSITY (biodiversity) – The variety of life forms and processes within an area. Included in the consideration of diversity are genetic variation, number and distribution of species, and the ways in which the variety of biologic communities interact and function.

BIOLOGICAL EVALUATION (Threatened, Endangered, Proposed, and Sensitive Species) – The use of a variety of tools, including review of existing literature and data, field survey, and data gathering and analysis, to determine the presence of, and effects of activities on, threatened, endangered, proposed, and sensitive species (FSM 2670).

BIOMASS – The total weight of all living organisms in a biological community.

BIOME – The complex of living communities maintained by the climate of a region and characterized by a distinctive type of vegetation. Examples of biomes in North America include the tundra, desert, prairie, and the western coniferous forest.

BIOTA – The plant and animal life of a particular region.

BIOTIC – Living; for example, green plants and soil microorganisms are biotic components of ecosystems.

BOARD FOOT – A measurement term for lumber or timber. It is the amount of wood contained in an unfinished board 1 inch thick, 12 inches long, and 12 inches wide. Often used variations are MBF (thousand board feet) and MMBF (million board feet).

BROADCAST BURN – A prescribed fire that burns a designated area. These controlled fires can reduce wildfire hazards, improve forage for wildlife and livestock, or encourage successful regeneration of trees.

BROWSE – Twigs, leaves, and young shoots of trees and shrubs that animals eat. Browse is often used to refer to the shrubs eaten by big game, such as moose and deer.

BUFFER – A land area that is designated to block or absorb unwanted impacts to the area beyond the buffer. Buffer strips along a trail could block views that may be undesirable. Buffers may be set aside next to wildlife habitat to reduce abrupt change to the habitat.

[C]

CABLE LOGGING – Logging that involves the transport of logs from stump to collection points by means of suspended steel cables. Cable logging reduces the need for the construction of logging roads.

CANDIDATE RESEARCH NATURAL AREA (cRNA) – An area that has high potential for designation as a research natural area, and is being recommended for protection until it has undergone formal evaluation and it has been decided whether to designate it as an RNA (this authority rests with the Regional Forester, with concurrence of the Research Station Director) or to manage the area under another management area prescription.

CANOPY – The part of any stand of trees represented by the tree crowns. It usually refers to the uppermost layer of foliage, but it can be use to describe lower layers in a multi-storied forest.

CAPABILITY – The potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at a given level of management intensity. Capability depends upon current conditions and site conditions such as climate, slope, landform, soils, and geology, as well as the application of management practices, such as silviculture or protection from fire, insects, and disease.

CAPITAL IMPROVEMENT – The construction, installation, or assembly of a new fixed asset, or the significant alteration, expansion, or extension of an existing fixed asset, to accommodate a change of purpose.

CAPITAL INVESTMENT – An input that increases the stock of natural or manmade resources (assets) needed to maintain or increase the flow of outputs in the future. Benefits resulting from capital investments are normally recouped in excess of one year.

CAVITY – A hole in a tree often used by wildlife species, usually birds, for nesting, roosting, and reproduction.

CHEMICAL CONTROL – The use of pesticides and herbicides to control pests and undesirable plant species.

CLASS 1 TREE – Those species of trees most likely to exhibit exfoliating bark, either as living trees or when dead, that are most likely to provide suitable roost sites for Indiana bats, as defined by Rommé et al. (1995). Class 1 trees include silver maple, shagbark hickory, shellbark hickory, bitternut hickory, green ash, white ash, eastern cottonwood, red oak, post oak, white oak, slippery elm, and American elm.

CLASS 2 TREE – Those species of trees of lesser value than Class 1 trees, but that may provide potential roost sites for Indiana bats, as defined by Rommé et al. (1995). Class 2 trees include sugar maple, shingle oak, and sassafras.

CLEANING – Form of release cutting that removes trees the same age as the young stand (FSM 2470).

CLEARCUT – Even-aged cutting method in which the entire standing crop of trees from an area is removed at one time (FSM 2470).

COARSE FILTER MANAGEMENT – Land management that attempts to address the needs of a majority of native species through management of natural landscapes and communities (*see* also fine filter management).

COHORT – A population of plants or animals having approximately the same age.

COLLECTOR ROADS – These roads serve small land areas and are usually connected to a Forest System Road, a county road, or a State highway.

COMMERCIAL FOREST LAND – Forest land that has not been withdrawn by the Congress, the Secretary of Agriculture, or the Chief of the Forest Service, and is producing, or is capable of producing, crops of industrial wood without irreversible damage to soils, productivity, or watershed conditions, and with reasonable assurance that adequate restocking can be

attained within five years after final harvesting.

COMMERCIAL OPERATIONS (SALES) – Using timber sales for cost effective vegetation management on lands that are not part of the timber base.

COMMERCIAL THINNING – Thinning operation where the material cut can be sold on the market as opposed to a pre-commercial thinning.

COMMERCIAL USE (SPECIAL USES) – Any use or activity on National Forest System land where (a) an entry or participation fee is charged, or (b) the primary purpose is the sale of a good or service, and in either case, regardless of whether the use or activity is intended to produce a profit (36 CFR 251.51).

COMMON VARIETY MINERALS – Earth construction materials including rock or stone, sand and gravel, pumice aggregate, pumicite, cinders, and soil materials suitable for compacted earth structures.

COMMUNITY (Natural Community) – An interacting assemblage of organisms, their physical environment, and the natural processes that affect them (Thompson and Sorenson).

COMMUNICATION SITE – A developed area with a structure sufficient for placement of antennas for the transmission or reception of electronic intelligence at the proper height; a building or cabinet, a power line or onsite power supply, and an access route. Most are served by telephone or fiber optic lines.
COMPOSITION – The types of organisms and environmental features present in a particular area.

CONCENTRATED USE AREA – A relatively undeveloped area, outside of developed recreation sites, where management is invested because recreation use there leaves evident impacts.

CONCERN LEVEL – Similar to Viewer Sensitivity in the Visual Management System. Concern levels are a measure of the degree of public importance placed on landscapes viewed from travelways and use areas. Concern levels are divided into three categories: levels 1 (high), 2 (moderate), and 3 (low).

CONCOMITANT – Events that are coincident in time and so clearly related that one probably is a direct result of the other.

CONGRESSIONALLY DESIGNATED WILDERNESS – *see* Wilderness.

CONIFER – A tree that produces cones, such as a pine, spruce, or fir tree.

CONNECTIVITY (of habitats) – A condition in which the spatial arrangement of land cover types allows organisms and ecological processes (such as disturbance) to move across the landscape. Connectivity is the opposite of fragmentation.

CONSTRAINT – A qualification of the minimum or maximum amount of an output or cost that could be produced or incurred in a given time period.

CONSUMPTIVE USE – Resource use that reduces the supply, such as logging and mining.

CONTOUR – A line drawn on a map connecting points of the same elevation.

CONVERTIBLE PRODUCTS – Timber products that can be measured in cubic feet of solid wood (FSH 2409.18, Section 87).

CORRIDOR – A landscape feature that allows animal movement between two patches of habitat or between habitat and geographically discrete resources.

COVER – Any feature that conceals wildlife or fish. Cover may be dead or live vegetation, boulders, or undercut streambanks. Animals use cover to escape from predators, rest, and/or feed.

COVER FORAGE RATIO – The ratio of hiding cover to foraging areas for wildlife species.

COVER TYPE (Forest Cover Type) – A descriptive classification of forestland based on existing tree species in a given land area (Eyre 1980).

CRITICAL HABITAT – Areas designated for the survival and recovery of species listed as threatened or endangered under the federal Endangered Species Act.

CROWN HEIGHT – The distance from the ground to the base of the crown of a tree.

CULMINATION MEAN ANNUAL INCREMENT (CMAI) – The point in the growth of a tree where mean annual increment (total tree volume at any point in time divided by total age) is at a maximum. This "culmination point" for mean annual growth is regarded as the ideal harvesting or rotation age in terms of most efficient volume production.

CULTURAL RESOURCE – *see* Heritage Resource.

CUMULATIVE EFFECTS – Effects on the environment that result from separate, individual actions and that, collectively, become significant over time.

[D]

DECISION CRITERIA – The rules and standards used to evaluate alternatives to a proposed action on National Forest land. Decision criteria are designed to help a decision maker identify a preferred choice from the array of alternatives.

DECOMMISSION – Demolition, dismantling, removal, obliteration and/or disposal of a deteriorated or otherwise unneeded asset or component, including necessary cleanup work. This action eliminates the deferred maintenance needs for the fixed asset. Portions of an asset or component may remain if they do not cause problems or require maintenance.

DEER WINTERING AREAS (deer yards) – Land parcels that include two basic habitat components required by white-tailed deer during winter: shelter and browse.

- Softwood stands with high crown closure create cover, which provides shelter and protection from snow depth, wind, and cold temperatures.
- Mixed hardwood and softwood regeneration should provide accessible browse for food.

The quality of deer wintering areas is determined by elevation, slope, aspect, soil types, and forest stand characteristics, including species composition, maturity, canopy closure and height. Deer wintering areas may be classified as primary or secondary sites:

- Primary sites typically are in forests with poorly drained silt or loam soils that are high in organic matter on flat or gently rolling terrain.
- Secondary sites typically are in upland forests or abandoned agricultural lands with well-drained, sands, gravels, or tillable soils on gentle slopes, rolling terrain, or side hills.

DEFERRED MAINTENANCE – Maintenance that was not performed when it should have been or when it was scheduled and which, therefore, was put off or delayed for a future period. When allowed to accumulate without limits or consideration of useful life, deferred maintenance leads to deterioration of performance, increased costs to repair, and decrease in asset value. Deferred maintenance needs may be categorized as critical or non-critical at any point in time. Continued deferral of non-critical maintenance will normally result in an increase in critical deferred maintenance.

DELAYED SHELTERWOOD – Even-aged cutting method in which most of a stand of trees is removed through a cutting designed to regenerate a new crop with seed and protection provided by a portion of the stand. No removal cut is implemented. The remaining portion of the stand is retained at least for 20 percent into the rotation of the new stand, but usually 40-60 years.

DEME – A locally interbreeding population of organisms.

DEN TREE – A live or dead tree, at least 10 inches dbh, containing a natural cavity in the main stem or with exfoliating bark used by wildlife for nesting, brood rearing, hibernating, roosting, daily or seasonal shelter and escape.

DEPARTURE – A schedule which deviates from the principle of non-declining flow by exhibiting a planned decrease in the timber sale and harvest schedule at any time in the future. A departure can be characterized as a temporary increase, usually in the beginning decade(s) of a planning period, over the base sale schedule that would otherwise be established, without impairing the future of a Forest's long-term sustained-yield capacity.

DESIGNATED COMMUNICATION SITE (SPECIAL USES) – An area of National Forest System land designated through the forest planning process. It may be limited to a single communications facility but most often includes more than one. A designated communication site provides the leaseholder more flexibility to manage other communication facilities on the site.

DESIRED FUTURE CONDITION – Land or resource conditions that are expected to result if goals and objectives are fully achieved.

DEVELOPED RECREATION – Recreation activities that are dependent on the presence of constructed features or facilities. Examples include camping in a campground or using a picnic area.

DEVELOPED RECREATION SITE – An area with a concentration of constructed features or facilities managed primarily for the enhancement of recreation activities. Examples include campgrounds, picnic areas, interpretive sites, and trailheads.

DIAMETER AT BREAST HEIGHT (dbh) – The diameter of a tree 4 and 1/2 feet above the ground on the uphill side of the tree.

DISPERSED RECREATION – Recreation that does not occur in a developed recreation site, such as hunting, backpacking, and scenic driving.

DISTURBANCE – Any relatively discrete event in space and time that disrupts ecosystem, community, or population structure and changes resources, substrate, or the physical environment (White and Pickett 1985).

DIVERSITY – The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.

DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS or Draft EIS) – The draft version of the Environmental Impact Statement that is released to the public and other agencies for review and comment.

[E]

EARLY SUCCESSIONAL FOREST – The biotic (living) community that develops immediately following the removal or destruction of forest vegetation in an area. For instance, grasses may be the first plants to grow in an area that was burned.

EARLY SUCCESSIONAL SPECIES – Those plant or animal species characteristic of early successional forest stages.

EASEMENT – The right of use over the property of another owner.

ECOLOGICAL APPROACH – An approach to natural resource management that considers the relationships among all organisms, including humans, and their environment.

ECOLOGICAL LAND TYPE (ELT) – An area of land hundreds to low thousands of acres in size, with a well-known succession of forest species on unique soil materials. Ecological Land Type classification is based on geomorphic history, nature of soil substrata, and potential natural vegetation.

ECOLOGY – The interrelationships of living things to one another and to their environment, or the study of these interrelationships.

ECOREGION – An area over which the climate

is sufficiently uniform to permit development of similar ecosystems on sites that have similar properties. Ecoregions contain many landscapes with different spatial patterns of ecosystems.

ECOSYSTEM – A dynamic arrangement of living organisms interacting with each other and their non-living environment. Living organisms include plants and animals. The non-living environment includes soils, landforms, weather, and disturbances.

ECOSYSTEM MANAGEMENT – An approach to the management of natural resources that strives to maintain or restore the sustainability of ecosystems and to provide present and future generations a continuous flow of multiple benefits in a manner that is harmonious with ecosystem sustainability.

ECOSYSTEM RESTORATION – The process of reestablishing, to the extent possible, the structure, function, and composition of ecosystems.

ECOTONE – The transition zone between two biotic communities, such as between a wetland and adjacent forest, or between a northern hardwood forest type and a spruce-fir forest type.

EDGE – The margin where two or more vegetation patches meet, such as a permanent or temporary opening next to a mature forest stand, or a northern hardwood stand next to an aspen stand.

ELEMENT (of ecosystems) – An identifiable component, process, or condition of an ecosystem.

ELIGIBILITY – Qualification of a river for possible inclusion in the national Wild and Scenic River system through determination that it is free-flowing and with its adjacent land area possesses at least one outstandingly remarkable value.

ENDANGERED SPECIES – A plant or animal that is in danger of extinction throughout all, or a significant portion, of its range. Endangered species are identified by the Secretary of the Interior in accordance with the Endangered Species Act of 1973.

ENDEMIC PLANT/ORGANISM – A plant or animal that occurs naturally in a certain region and whose distribution is relatively limited geographically.

ENVIRONMENTAL ANALYSIS – An analysis of alternative actions and their predictable long and short-term environmental effects. Environmental analyses include physical, biological, social, and economic factors.

ENVIRONMENTAL ASSESSMENT – A brief version of an Environmental Impact Statement.

ENVIRONMENTAL IMPACT STATEMENT (EIS) – A statement of environmental effects of a proposed action and alternatives to it. The EIS is released to other agencies and the public for comment and review.

EPHEMERAL STREAM – A stream, or portion of a stream, with a recognizable streambed, typically consisting of stones, cobbles, or bedrock, that flows only in direct response to precipitation and receives little or no water from springs and no long-continued supply from melting snow or other sources. Its channel is at all times above the water table.

ERICACEOUS – Pertaining to or like plants of the heath family, which are low growing woody plants with small evergreen leaves and small, bell-shaped, pink or purple flowers, common in nutrient-poor environments like bogs. Examples include heather or cranberry.

EROSION – The wearing away of the land surface by wind, water, ice, or other geological agents.

ESCAPE COVER – Vegetation of sufficient size and density to hide an animal, or an area used by animals to escape from predators.

EVALUATION PLANTATION – A planting of genetically superior trees to compare the performance of trees or families of trees, and to provide a source for future reforestation efforts.

EVEN-AGED SYSTEM – Silvicultural system that produces stands in which all trees are about the same age; that is, the difference in age between trees forming the main crown canopy level will usually not exceed 20 percent of the rotation length (FSM 2470).

EXPLORATION (MINERALS) – Establishing the location, size, grade, or reserves of a mineral or energy resource by gathering direct evidence of the resource. Direct data gathering techniques may include drilling holes or digging pits to sample or test a known suspected zone of interest.

EXTANT – Still in existence; not extinct, destroyed, or lost.

EXTIRPATE – Eradicate, or cause the extinction of, a plant or animal species on a local or regional scale. For example, eastern cougars and gray wolves were extirpated from Vermont by 1900 because of loss of habitat and directed killing for predator control.

EXTIRPATION – Eradication or extinction of a plant or animal species on a local or regional scale.

EXTRACTION – The process of mining or removing mineral deposits, oil, or gas from the earth.

[F]

FAUNA – The animal life of an area.

FEATHERING – Partial cutting of trees along an edge to create a transition in heights between areas and/or a transition in stand density between stands of different densities (FSH 559).

FELLING – Cutting down trees.

FINAL CUT – The removal of the last seed bearers or shelter trees after regeneration of new trees has been established in a stand being managed under the shelterwood system of silviculture.

FINE FILTER MANAGEMENT – Management that focuses on the welfare of a single species, or only a few species, rather than the broader habitat or ecosystem (*see* Coarse Filter Management).

FIRE CYCLE – The average time between fires in a given area.

FIRE MANAGEMENT PLAN – A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans (Zimmerman 1998).

FIRE REGIME – The characteristics of fire in a given ecosystem, such as the frequency, predictability, intensity, and seasonality.

FIRE USE – The combination of wildland fire and prescribed fire application used to meet resource objectives (Zimmerman 1998).

FISHERIES HABITAT – Streams, lakes, and reservoirs that support, or have the potential to support, fish.

FIXED ASSET – A constructed feature such as a building, dam, bridge, road, campground, trail, or other item of infrastructure. Real property improvements. Facilities in the general sense. These are things for which we have a responsibility.

FLOOD PLAIN – A lowland adjoining a watercourse. At a minimum, the area is subject to a one percent or greater chance of flooding in a given year.

FLORA – The plant life of an area.

FORAGE – All browse and non-woody plants that are eaten by wildlife.

FORB – A broadleaf plant that has little or no woody material in it.

FOREGROUND – A term used in management of visual resources or scenery. The part of a

scene or landscape that is nearest to the viewer, generally found from the observer up to one-half mile away.

FOREST – When used with a capital "F," this term refers to the Green Mountain National Forest.

FOREST COVER TYPE – *see* Cover Type.

FOREST HEALTH – A measure of the robustness of forest ecosystems. Aspects of forest health include biological diversity; soil, air, and water productivity; natural disturbances; and the capacity of the forest to provide a sustainable flow of goods and services for people.

FOREST MATRIX – The least fragmented, most continuous pattern element of a landscape; the vegetation type that is most continuous over a landscape.

FOREST PLAN – *see* Land and Resource Management Plan.

FOREST PLAN REVISION – A formal modification of an existing Forest Plan used to address changes in the natural, social, and economic environment. The Plan Revision takes into account new information and scientific knowledge about resources on and off national forests that shed new light on the assumptions of the existing Plan, and make the predicted impacts of the existing Plan less accurate and/or acceptable.

FOREST ROADS – A road wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources (36 CFR 212.1).

FOREST TRAILS – Trails under the jurisdiction of the Forest Service.

FOREST SUPERVISOR – The official responsible for administering National Forest System lands on an administrative unit, usually one or more national forests. The Forest Supervisor reports to the Regional Forester.

FOREST VEGETATION SIMULATON (FVS) – A national computer model used for growth and yield projections.

FRAGMENTATION – The physical division of contiguous areas into progressively smaller patches of increasing degrees of isolation from each other.

FROST HEAVE – A land surface that is pushed up by the accumulation of ice in the underlying soil.

FUELS – Plants and woody vegetation, both living and dead, that are capable of burning.

FUELS MANAGEMENT – The treatment of fuels that would otherwise interfere with effective fire management or control. For instance, prescribed fire can reduce the amount of fuels that accumulate on the forest floor before the fuels become so heavy that a natural wildfire in the area would be explosive and impossible to control.

FUELWOOD – Wood cut into short lengths for burning.

FUNCTION – All the processes within an ecosystem through which the elements interact, such as succession, the food chain, fire, weather, and the hydrologic cycle.

[G]

GAME SPECIES – Any species of wildlife or fish that is harvested according to prescribed limits and seasons.

GENERAL FOREST AREA – National Forest System lands outside of Developed Recreation Sites and trails, and excluding designated wilderness, that typically contain a wide spectrum of recreation settings and opportunities.

GEOCACHING – A sport where individuals or organizations set up caches, using Global Positioning System (GPS) coordinates, and share the locations of these caches on the

Internet. GPS users can then use the location coordinates to find the caches.

GEOMORPHIC PROCESSES – Processes that change the form of the earth, such as volcanic activity, running water, and glacial action.

GEOMORPHOLOGY – The science that deals with the relief features of the earth's surface.

GEOGRAPHIC INFORMATION SYSTEMS (GIS) – GIS is both a database designed to handle geographic data as well as a set of computer operations that can be used to analyze data.

GLOBAL POSITIONING SYSTEM (GPS) – a navigational system using satellite signals to fix the location of a receiver on or above the earth's surface.

GOAL – A concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principle basis from which objectives are developed. Goals serve as a blueprint for the Forest Plan and lay the groundwork for the rest of the Plan.

GOODS AND SERVICES – The various outputs, including on-site uses, produced by forest and rangeland resources (36 CFR 219.3).

GROUND FIRE – A fire burning along the forest floor that does not affect trees with thick bark or high crowns.

GROUND WATER – The supply of fresh water under the earth's surface in aquifers and soils.

GROUP SELECTION CUTTING – Uneven-aged cutting method in which small groups of trees, usually no more than one acre in size, are removed to meet a predetermined goal of size distribution and species in the remaining stand.

GUIDELINE – A guideline is a preferred or advisable course of action that promotes the achievement of Forest Plan goals and objectives. A project-level analysis and a signed decision (by the responsible official) are required in order to deviate from an established guideline.

GUIDING – Providing services or assistance (such as supervision, protection, education, training, packing, touring, subsistence, interpretation, or other assistance) to individuals or groups, in their pursuit of a natural resource-based outdoor activity, for pecuniary remuneration or other gain. The term "guide" includes the holder's employees, agents, and instructors.

[H]

HABITAT – The area where a plant or animal lives and grows under natural conditions.

HABITAT CAPABILITY – The ability of a land area or plant community to support a given plant or animal species.

HABITAT DIVERSITY – The number of different types of plant or animal species habitat within a given area.

HABITAT DIVERSITY INDEX – A measure of improvement in habitat diversity.

HARD SNAG – Snags composed essentially of sound wood on the outside.

HAZARDOUS FUELS – Naturally occurring vegetation, both live and dead, that given a wildfire occurrence would present a higher than normal resistance to control. Hazardous fuels may be measured by tons per acre, fuel arrangement, and/or continuity or burning characteristics.

HEALTHY FOREST – A condition wherein a forest has the capacity, across the landscape, for renewal, for recovery from a wide range of disturbances, and for retention of ecological resiliency, while meeting current and future needs of people for desired levels of values, uses, products and services.

HERITAGE RESOURCE – Historic landscapes, archaeological sites, buildings, structures, features, artifacts, Native American Traditional Cultural properties, and/or related clusters of these (referred to as "districts"). They are deemed "significant" if they meet, or may meet, the criteria for eligibility to the National and State Registers of Historic Places (NR). Any Heritage Resource that is considered significant (NR-eligible) may be referred to as a "historic property."

HIBERNACULA – Plural form of hibernaculum.

HIBERNACULUM – A shelter, such as a cave or abandoned mine, occupied during the winter by a hibernating animal, such as an Indiana bat. A known Indiana bat hibernaculum is one in which Indiana bats have been found hibernating during any winter since 2000/2001.

HIGH RISK STAND – Stand that will not survive another ten years or will have a net loss of timber volume in the next ten years.

HORIZONTAL DIVERSITY – The distribution and abundance of different plant and animal communities, or different stages of plant succession, across an area of land; the greater the numbers of communities or successional stages in a given area, the higher the degree of horizontal diversity.

HYDROLOGIC CYCLE – Also called the water cycle, this is the process of water evaporating, condensing, falling to the ground as precipitation, and returning to the ocean as run-off.

HYDROLOGY – The study of water on the surface of the land, in the soil and underlying rocks, and in the atmosphere.

[I]

IGNEOUS ROCK – Rocks formed when high temperature, molten mineral matter cools and solidifies.

IMPLAN® – An economic impact assessment modeling system. IMPLAN allows the user to easily build economic models to estimate the impacts of economic changes in their states, counties, or communities.

IMPOUNDMENTS – Structures used to collect and confine water, as if in a reservoir.

IMPROVEMENT CUTTING – Intermediate cutting made in stands that are past the sapling stage, for the purpose of improving the composition and quality by removing trees of undesirable species, form, or condition, from the main canopy (FSM 2470).

INDIANA BAT POTENTIAL MATERNITY ROOSTING HABITAT – lands where Indiana bat maternity roost sites are likely to occur, including:

- Lands adjacent to the Champlain Valley or in the Valley of Vermont (adjacent to Route 7) that are below 800 feet elevation (after Watrous et al., *in press*), and
- Other areas specifically identified by the US Fish and Wildlife Service.

INDICATOR SPECIES – A plant or animal species related to a particular kind of environment. Its presence indicates that specific habitat conditions are also present.

INDIGENOUS (species) – Any plant or animal species native to a given land or water area by natural occurrence.

INDIVIDUAL TREE SELECTION – Uneven-aged cutting method in which selected trees from specified size or age classes are removed over the entire stand area to meet a predetermined goal of size or age distribution and species composition in the remaining stand (FSM 2470).

INFRA – An integrated data management tool where Forest managers enter, manage, and report accurate information and associated financial data in an inventory of constructed features on the land (such as buildings, dams, bridges, water systems, roads, trails, developed recreation sites, range improvements, administrative sites, heritage sites, general forest areas, and wilderness). The database also includes information on permits and

contracts that alter Forest land.

INSTREAM FLOW – The quantity of water necessary to meet seasonal stream flow requirements to accomplish the purposes of the national forests, including, but not limited to, fisheries, visual quality, and recreational opportunities.

INTEGRATED PEST MANAGEMENT (IPM) – A process for selecting strategies to regulate forest pests in which all aspects of a pest-host system are studied and weighed. The information considered in selecting appropriate strategies includes the impact of the unregulated pest population on various resources values, alternative regulatory tactics and strategies, and benefit/cost estimates for these alternative strategies. Regulatory strategies are based on sound silvicultural practices and ecology of the pest-host system and may consist of a combination of tactics such as timber stand improvement plus selective use of pesticides. A basic principle in the choice of strategy is that it be ecologically compatible or acceptable.

INTERDISCIPLINARY TEAM – A team of individuals with skills from different disciplines that focuses on the same task or project.

INTERIOR FOREST – An area of late successional or old growth forest that is large enough, and of an appropriate shape, to provide conditions that minimize predation, parasitism, and microclimate fluctuations associated with forest edges. These interior forest conditions provide habitat for a diversity of wildlife and plant species.

INTERMEDIATE CUT – The removal of trees from a stand sometime between the beginning or formation of the stand and the regeneration cut. Types of intermediate cuts include thinning, release, and improvement cuttings (FSM 2470).

INTERMITTENT STREAM – A stream that flows: 1) part of the time, such as after a rainstorm, during wet weather, or during part of the year; 2) only at certain times, when it receives water from springs (spring fed) or from some surface source (surface fed), such as melting snow in mountainous areas.

INTERPRETATION – Communication and education that forges emotional and intellectual connections between the interests of the audience and the inherent meanings in the resource.

INTRADEME INTERACTIONS – Interactions like breeding and dispersal within a locally interbreeding population of organisms or deme.

INVASIVE SPECIES – A species that is: 1) non-native (or alien) to the ecosystem under consideration, and 2) whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health.

INVASIVE SPECIES, APPROACHES:

- Contain – Prevent the spread of the invasive species beyond the perimeter of patches or infested areas. Tolerate invasive species within established infestation areas, but suppress or eradicate outside those areas.
- Eradicate – Totally eliminate an invasive species from the Forest or location. Eradication methods may include the following, either individually or in combination:
- Suppress – Prevent reproduction throughout the target area and reduce the area coverage of the invasive species. Prevent the invasive species from dominating the area, but accept low levels.
- Tolerate – Accept the continued presence of established infestations and the probable spread to ecological limits for certain invasive species. Use preventive practices to preclude new infestations.

INVASIVE SPECIES, METHODS OF CONTROL:

- Biological – The deliberate introduction and establishment of natural enemies to reduce the target species' competitive or reproductive capacities. Includes, but is not limited to, insects and pathogens such as fungi. The purpose is not

eradication, but to reduce densities and rate of spread to an acceptable level.
- Chemical – Direct and broadcast application of approved herbicides, following EPA label requirements, USDA policy, and Forest Service policy and direction (FSM 2150, FSH 2109.11, FSH 2109.12, and FSH 2109.13).
- Cultural/Land Use – Practices that discourage initial infestation of invasive species. Includes, but is not limited to, seeding, planting, and retaining brush and tree canopy cover, and minimizing the extent and duration of exposed soil during management actions.
- Physical/Mechanical – Hand or mechanical labor to physically remove all or any part of the plant. Includes, but is not limited to, hand digging, mowing, tilling, and burning.

IRRETRIEVABLE – One of the categories of impacts mentioned in the National Environmental Policy Act to be included in Environmental Impact Statements. An irretrievable effect applies to losses of production or commitment of renewable natural resources. For example, while an area is used as a ski area, some or all of the timber production there is irretrievably lost. The loss of timber production during that time, however, is not irreversible, because it is possible for timber production to resume if the area is no longer used as a ski area.

IRREVERSIBLE – A category of impacts mentioned in statements of environmental impacts that applies to non-renewable resources, such as minerals and archaeological sites. Irreversible effects can also refer to effects of actions that can be renewed only after a very long period of time, such as the loss of soil productivity.

ISSUE – A subject or question of wide-spread public discussion or interest regarding management of National Forest System land.

[L]

LADDER FUELS – Vegetation located below the crown level of forest trees that can carry fire from the forest floor to tree crowns. Ladder fuels may be low-growing tree branches, shrubs, or smaller trees.

LAND ADJUSTMENT – Changing National Forest System land ownership through acquisition, exchange, or disposal of land or interest in land.

LAND ALLOCATION – The commitment of a given area and its resources to the compatible combination of goods, services, and uses specified by a regional management goal or by a past management prescription.

LAND CAPABILITY – Tendency of a land area to grow a particular natural community (such as hardwoods, spruce-fir) due to various environmental factors like soil or climate, if management were not applied. In many places on the Forest, the current community is different from land capability (as indicated by the Ecological Landtype) for the same area because past management altered the vegetation on the site. Given enough time without additional management, the vegetation may revert to the community indicated by land capability.

LANDFORM – A natural feature of the surface of the land; includes such features as slopes, valleys, plateaus, and ridges.

LANDING – Any place where cut timber is assembled for further transport from the timber sale area.

LANDLINE – National Forest System boundary lines.

LANDSCAPE – A large land area composed of interacting ecosystems that are repeated due to factors such as geology, soils, climate, and human impacts. Landscapes are often used for coarse filter analysis.

LAND AND RESOURCE MANAGEMENT PLAN (LRMP) – Formal name for the Forest Plan, the LRMP is a document that guides all long-range natural resource management activities for a national forest. It is a roadmap and tool for reaching a collective vision for the

future. It is a living, flexible document and can be amended to a variety of changing conditions over time. The Plan establishes goals and management standards and guidelines for all management programs and practices, resource uses, and resource protection measures.

LAND USE PLANNING – The process of organizing the use of lands and their resources to best meet people's needs over time, according to the land's capabilities.

LAND TYPE ASSOCIATION (LTA) – Areas of common ecosystem characteristics that generally number in the thousands of acres. LTAs are defined by similarities in general topography, geomorphic processes, geology, soil, and potential plant community patterns.

LATE SUCCESSIONAL FOREST – A forest beyond the age of economic maturity, generally beyond 100 years of age. These forests are older, have larger trees, and have more structural complexity than mature forest, and they are either in the process of or have developed old growth characteristics. They may exhibit evidence of past human or natural disturbances. These forests may exist as entire stands or as smaller patches within younger stands. (*see* Succession)

LEASABLE MINERALS – These include coal, oil, gas, phosphate, sodium, potassium, oil shale, and geothermal steam (FSM 2811.2).

LEAVE NO TRACE – A program supported by the non-profit Leave No Trace Center for Outdoor Ethics, in partnership with public and private land managers, to promote and inspire responsible outdoor recreation through education and research. Four federal land management agencies, including the USDA Forest Service, actively promote the Leave No Trace principles of responsible, low-impact use to build awareness, appreciation, and respect for our wildlands.

LIBERATION CUTTING – Form of release cutting that removes older, larger trees that overtop a more desirable younger stand (FSM 2470).

LIFE HISTORY – The sequence of changes making up the span of an organism's life.

LIMITS OF ACCEPTABLE CHANGE (LAC) – A planning framework that established explicit measures of the acceptable and appropriate resource and social conditions in recreation settings, as well as the appropriate management strategies for maintaining and/or achieving those conditions.

LITTER (forest litter) – The freshly fallen, or only slightly decomposed, plant material on the forest floor. This layer includes foliage, bark fragments, twigs, flowers, and fruit.

LOGGING RESIDUE (slash) – The residue left on the ground after timber cutting. It includes unutilized logs, uprooted stumps, broken branches, bark, and leaves. Certain amounts of slash provide important ecosystem roles, such as soil protection, nutrient cycling, and wildlife habitat.

LONG-TERM SUSTAINED YIELD – The highest uniform wood yield from lands being managed for timber production that may be sustained under a specified management intensity consistent with multiple-use objectives.

LOW-QUALITY STAND – Stand made up of trees that have a poor potential to produce timber products.

[M]

M – Thousand. Five thousand board feet of timber can be expressed as 5M board feet.

MACRO-CLIMATE – The general, large-scale climate of a large area, as distinguished from the smaller scale micro climates within it.

MAINTENANCE – The act of keeping fixed assets in acceptable condition. It includes preventive maintenance, normal repairs, replacement of parts and structural components, and other activities needed to preserve a fixed asset, so that it continues to provide acceptable service and achieves its expected life. Maintenance excludes activities aimed at expanding the capacity of an asset or

otherwise upgrading it to serve needs different from, or significantly greater than, those originally intended.

MANAGEMENT ACTION – Any activity undertaken as part of the administration of the National Forest.

MANAGEMENT AREAS – Areas of the National Forest designated in the Forest Plan as having similar management objectives. Similar to city planning zones.

MANAGEMENT DIRECTION – A statement of multiple-use and other goals and objectives, the associated management prescriptions, and standards and guidelines for attaining them.

MANAGEMENT INDICATOR SPECIES (MIS) – A wildlife species whose population will indicate the health of the ecosystem in which it lives and, consequently, the effects of forest management activities to that ecosystem. MIS species are selected by land management agencies (*see* also Indicator Species)

MANAGEMENT PRACTICE – A specific activity, measure, course of action, or treatment.

MANAGEMENT PRESCRIPTION – Management practices and intensity selected and scheduled for application on a specific area to attain multiple-use and other goals and objectives.

MASS MOVEMENT/WASTING – The down-slope movement of large masses of earth material by the force of gravity. Also called a landslide.

MAST TREES – Species that provide nuts and fruits. These include the oak group, American beech, hop hornbeam and black cherry.

MATURE TIMBER – Trees that have attained full development, especially height, and are in full seed production.

MEAN ANNUAL INCREMENT OF GROWTH – The total increase in size or volume of individual trees. Can also refer to the increase in size and volume of a stand of trees at a particular age divided by that age in years.

MECHANIZED VEHICLES – Any contrivance which travels over ground, snow, or water on wheels, tracks, skids, or by floatation, and is propelled by a living power source contained, or carried on or within, the device.

MESIC – moderately moist

METAPOPULATION – A group of locally interbreeding populations, or demes, each isolated in a patch of habitat. The persistence of the metapopulation is dependent on the persistence of the demes and movement of animals among demes to exchange genes.

MICRO-CLIMATE – The climate of a small site. It may differ from the macro-climate of the area due to aspect, tree cover (or the absence of tree cover), or exposure to winds.

MIDDLEGROUND – A term used in the management of visual resources, or scenery. It refers to the visible terrain between the foreground and background in a landscape. The area is located from one-half to four miles from the observer.

MINERAL – Inorganic material that includes sand, gravel, and stone.

MINERAL MATERIALS, COMMON VARIETY – Also referred to as Salable Minerals or Mineral Materials; includes construction and landscaping materials (cinders, sand, gravel, boulders, loose rock, and common clay) and minerals of similar occurrence commonly used as aggregate, rip-rap, ballast, borrow, or fill.

MINERAL RIGHTS – Owning minerals beneath the surface of the ground; often it is someone other than the owner of the surface.

MINERAL SOIL – Soil that consists mainly of inorganic material, such as weathered rock, rather than organic matter.

MINIMUM TOOL ANALYSIS (MINIMUM TOOL CONCEPT) – The second step in the Forest Service process, Minimum Requirements

Decision Guide (MRDG) that is used to identify, analyze, and select management actions that are the minimum necessary for wilderness administration. The Minimum Tool Analysis and the MRDG are applied to decisions that involve the 'prohibited uses' listed in Section 4(c) of the Wilderness Act. The concept is frequently referred to as determining the minimum "tool" but includes any type of activity, method, or equipment.

MISSION (of the USDA Forest Service) – "To Care for the Land and Serve the People." As set forth in law, the Forest Service mission is to achieve quality land management under the sustainable multiple-use management concept to meet the diverse needs of people.

MITIGATION – Actions taken to avoid, minimize, or rectify the impact of a land management practice.

MIXED STAND – A stand consisting of two or more tree species.

MONITORING AND EVALUATION – The periodic evaluation of forest management activities to determine how well objectives are met and how management practices should be adjusted (*see* also Adaptive Management)

MORTALITY – Trees that were merchantable and have died within a specified period of time. The term mortality can also refer to the rate of death of a species in a given population or community.

MOSAIC – Areas with a variety of plant communities over a landscape, such as areas with trees and areas without trees, occurring over a landscape.

MOTORIZED VEHICLES – Any contrivance which travels over ground, snow, or water on wheels, tracks, skids, or by floatation and is propelled by a non-living power source contained or carried on or within the device.

MULTIPLE USE – Managing national forest resources in a manner to best meet the needs of the American people, recognizing that not all uses can occur on all acres and that changing needs and conditions over time will change the combination and intensity of use. Productivity of the land and sustainability of ecosystems is maintained, and the interrelationships among resources and the effects of use are monitored and evaluated. Multiple-use management does not necessarily prescribe the combination of uses that will give the greatest dollar return or the greatest unit output.

[N]

NATIONAL AND STATE REGISTERS OF HISTORIC PLACES (NR) – Listings of historic properties (or heritage resources) that meet the criteria of significance established by the National Historic Preservation Act and the Vermont State Historic Preservation Act.

NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (NEPA) – Congress passed NEPA in 1969 to encourage productive and enjoyable harmony between people and their environment. One of the major tenets of NEPA is its emphasis on public disclosure of possible environmental effects of any major action on public lands. Section 102 of NEPA requires a statement of possible environmental effects to be released to the public and other agencies for review and comment.

NATIONAL FOREST MANAGEMENT ACT OF 1976 (NFMA) – NFMA is the primary statute governing the administration of national forests. NFMA requires the Secretary of Agriculture to assess forest lands, develop management programs based on multiple-use and sustained yield principles, and implement a Land and Resource Management Plan for each national forest.

NATIONAL FOREST SYSTEM ROADS – A Forest Road other than a road which has been authorized by a legally documented right-of-way held by a State, county, or other local public road authority (36 CFR 212.1).

NATIONAL FOREST SYSTEM TRAILS – Those trails wholly or partly within, or adjacent to and serving, the national forests and other areas administered by the Forest Service that

have been included in the Forest Transportation Atlas (36 CFR 212.1 and 261.2).

NATIONAL PARK SERVICE (NPS) – The agency of the US Department of the Interior responsible for the administration of National Parks, Monuments, and Historic Sites. The NPS is distinct from the USDA Forest Service both administratively and by mission.

NATIONAL RECREATION AREA – Congressionally designated areas that have outstanding combinations of outdoor recreation, aesthetic attractions, and proximity to potential users. They may also have cultural, historical, archaeological, pastoral, wilderness, scientific, wildlife, and other values contributing to public enjoyment.

NATIONAL QUALITY STANDARDS – The level of quality the Forest Service expects to provide the public at recreation sites and trails. These standards form the baseline for estimating the total cost of providing quality opportunities for recreation visitors and customers' desires.

NATIONAL TRAIL SYSTEM (National Recreation Trail System/National Scenic Trail System) – A national system of recreation, scenic and historic trails established in order to provide for the ever-increasing outdoor recreation needs of an expanding population and in order to promote the preservation of, public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas and historic resources of the Nation. The Appalachian Trial and Long Trail are components of this system.

NATURAL BARRIER – A natural feature, such as a dense stand of trees or downfall, that will restrict animal travel.

NATURAL DISTURBANCE – *see* Disturbance.

NATURAL INTEGRITY (a.k.a. ecosystem integrity) – The capability of an ecosystem to support and maintain the structure and function characteristic of its particular location.

NATURAL RANGE OF VARIATION – *see* Range of Variability.

NEST SURVEY – A way to estimate the size of a bird population by counting the number of nests in a given area.

NEST TREE – Tree containing large nests, built by crows, herons, or hawks, that from the ground resemble a platform of sticks and are two to three feet in diameter. These may be used by owls, which do not build nests, or they may be re-used by crows, herons, and hawks, among other species.

NET PUBLIC BENEFITS – An expression used to signify the overall long-term value to the nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs) whether they can be quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria rather than a single measure or index. The maximization of net public benefits to be derived from management of the National Forest units is consistent with the principles of multiple-use and sustained-yield management.

NO-ACTION ALTERNATIVE – The most likely condition expected to exist in the future if management practices continue unchanged.

NON-COMMERCIAL VEGETATIVE TREATMENT – The removal of trees for reasons other than timber production.

NON-CONSUMPTIVE USE – The use of a resource that does not reduce the supply. For instance, bird watching is a non-consumptive use of wildlife. Boating and fishing are non-consumptive uses of water.

NON-CONVERTIBLE PRODUCTS – Timber products that do not have a common standard conversion to cubic feet of solid wood (FSH 2409.18).

NON-DECLINING YIELD – A level of timber production planned so that the planned sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade.

NON-GAME – Wildlife species that are not hunted for sport.

NON-NATIVE INVASIVE SPECIES (NNIS) – An organism that has been purposefully or accidentally introduced outside its original geographic range, and that is able to proliferate and aggressively alter its new environment, causing harm to the economy, environment, or human health (Executive Order 13112).

NON-POINT SOURCE POLLUTION – Pollution whose source is not specific in location. The sources of the discharge are dispersed, not well defined, or constant. Rain storms and snowmelt often make this type of pollution worse. Examples include sediments from logging activities and runoff from agricultural chemicals.

NON-RECREATION SPECIAL USE PERMITS – A general definition other than the recreation class of special uses. These include agriculture, community and public information, energy generation and transmission, communications, feasibility, research, training, cultural resources, and historical classes, among other uses.

NON-RENEWABLE RESOURCE – A resource whose total quantity does not increase measurably over time, so that each use of the resource diminishes the supply.

NORTHERN HARDWOODS – Primarily sugar maple, yellow birch, and beech. May include red maple, white ash, black cherry, red spruce, and hemlock.

NOTICE OF INTENT (NOI) – A notice in the federal register of intent to prepare an environmental impact statement on a proposed action.

NOXIOUS WEED – A plant species generally considered detrimental to the environment, crops or other desirable plants, livestock, land, or other property, or to be injurious to public health. Noxious weeds can be native or exotic, invasive or non-invasive.

NUTRIENT CYCLE – The circulation of chemical elements and compounds, such as carbon and nitrogen, in specific pathways from the non-living parts of ecosystems into the organic substances of the living parts of ecosystems, and then back again to the non-living parts of the ecosystem. For instance, nitrogen in wood is returned to the soil as the dead tree decays. The nitrogen again becomes available to living organisms in the soil and, upon their death, the nitrogen is available to plants growing in that soil.

[O]

OBJECTIVE – A concise, time-specific statement of measurable and planned results that respond to pre-established goals. An objective forms the basis for further planning by defining both the precise steps to be taken and the resources to be used in achieving identified goals. Objectives identify quantities of items within the 15-year Forest Plan time frame.

OFF-ROAD VEHICLE (ORV) – Any motorized vehicle designed for or capable of cross-country travel on, or immediately over, land, water, sand, snow, ice, marsh, swampland, or other natural terrain; except that such term excludes (A) any registered motorboat, (B) any fire, military, emergency, or law enforcement vehicle when used for emergency purposes, and any combat or combat support vehicle when used for national defense purposes, and (C) any vehicle whose use is expressly authorized by the respective agency head under a permit, lease, license, or contract.

OFF SITE VIEWS – A term used in management of visual resources. The view beyond foreground, includes middleground and background views.

OLD GROWTH FOREST – A patch of relatively old forest of at least 5 to 10 acres that has escaped catastrophic or stand-replacing disturbance associated with the prevailing natural disturbance regimes of the Forest. Such old growth stands exhibit a long history of continuity and a demonstrated future via replacement dynamics.

ON-SITE VIEW – A term used in management

of visual resources (*see* also Foreground).

OPENING – An area where crown closure of vegetation is less than 50 percent and height of vegetation is less than 20 percent of that of the surrounding trees. See also “permanent upland opening,” “temporary opening,” and “wetland opening.”

OPERATIONS – Activities related to the normal performance of the functions for which a fixed asset or component is intended to be used. Includes tasks such as janitorial services, vault toilet pumping, grounds upkeep, and law enforcement patrols.

ORGANIC SOIL – Soil at least partly derived from living matter, such as decayed plant material.

OUTFITTING – Providing, through rental or livery, any saddle or pack animal, vehicle or boat, tents or camp gear, or similar supplies or equipment, for pecuniary remuneration or other gain. The term "outfitter" includes the holder's employees, agents, and instructors.

OUTSTANDING MINERAL RIGHTS – Rights owned by a party other than the surface owner at the time the surface was conveyed to the United States.

OUTSTANDINGLY REMARKABLE VALUES – The identification of outstandingly remarkable values is one of the primary bases for determining Wild and Scenic River eligibility. The Wild and Scenic Rivers Act defines these values as those characteristics that make the river worthy of special protection. Outstandingly Remarkable Values can include scenery, recreation, fish and wildlife, geology, history, culture, and other similar values.

OVERMATURE TIMBER – Trees that have attained full development, particularly in height, and are declining in vigor, health, and soundness.

OVERSTORY – The upper canopy layer; the plants below comprise the understory.

[P]

PARENT MATERIAL – The mineral or organic matter from which the upper layers of soil are formed.

PARK-LIKE STRUCTURE – Stands with large scattered trees and open growing conditions, usually maintained by ground fires.

PARTIAL RETENTION – A visual quality objective which, in general, means human activities may be evident but must remain subordinate to the characteristic landscape.

PASSERINE – A bird of the very large and diverse taxonomic order Passeriformes, sometimes referred to as perching birds or, less accurately, as songbirds. More than half of all living species of birds are passerines, including species as varied as chickadees, crows, jays, wrens, thrushes, swallows, warblers, and sparrows.

PATCH – An area of vegetation that is similar in structure and composition.

PATCH CUT – A clearcut that creates small temporary openings in a stand of trees, usually between 1 to 15 acres in size.

PEOPLE AT ONE TIME (PAOT) – A recreation capacity determination expressed as the number of people a recreation site, facility, or area can accommodate at one time.

PERCOLATION – Downward flow or infiltration of water through the pores or spaces of rock or soil.

PERENNIAL STREAM – A stream that contains permanently present surface water and where water flows occur throughout the year except possibly during extreme drought or during extreme cold when ice forms (FSM 2526.05).

PERMANENT SYSTEM ROAD – A Forest Road or National Forest System Road that is designated as a permanent part of the forest transportation system.

PERMANENT UPLAND OPENING – An opening dominated by perennial grasses, forbs, sedges, and shrubs, that has less than 16 percent stocking of trees and less that 10 percent tree cover. Vegetation in permanent upland openings is periodically cut or burned to prevent vegetative succession and tree growth. Most permanent openings on the GMNF are one-half to ten acres. Permanent upland openings may be designed primarily for single or multiple uses, including but not limited to wildlife habitat, recreational uses, or scenic vistas.

PERSONAL USE – The use of a forest product, such as firewood, for home use and not for commercial use.

PERSONAL USE OF MINERALS – Recreational mineral activities which contribute to the personal enjoyment of mineral collecting as a leisure activity and not for the purpose of realizing personal financial gain either through the sale of the material or through an exchange for other goods or services. The exchange of mineral specimens, and/or the fabrication by the collector of functional or decorative items from the collected material, and the disposal of same, are not considered to constitute a commercial activity as long as the motive for doing so is the further enjoyment of a leisure activity and not for profit.

PEST – A plant, animal, or environmental stress which the land manager determines to be detrimental to achieving resource management objectives

PLANNING AREA – The area of National Forest land covered by a Regional Guide or Forest Plan.

PLANNING PERIOD – The time frame for which goods, services, and effects were projected in the development of the Forest Plan.

PLANTATION – A forest crop or stand raised artificially, either by seeding or planting of young trees.

POINT SOURCE POLLUTION – Pollution traceable to a discharge of pollutants from a discernable, confined, and discrete conveyance, such as a discharge from a sewage treatment plant.

POLE/SAPLING – The stage of forest succession in which trees are between 3 and 7 inches in diameter and are the dominant vegetation.

POLE TIMBER – Trees at least 5 inches in diameter, but smaller than the minimum size for sawtimber.

PRE-COMMERCIAL THINNING – Removing some of the trees from a stand that are too small to be sold for lumber or house logs, so that the remaining trees will grow faster.

PREDATOR – An animal that lives by preying on other animals. Predators are at or near the tops of food chains.

PRE-EXISTING USE – Land use that may not conform to a zoning ordinance but existed prior to the enactment of the ordinance.

PREFERRED ALTERNATIVE – Chosen from among the alternatives developed to address the range of solutions to the Forest's management problems. The Regional Forester, using the Decision Criteria, selects the preferred alternative that he/she feels best resolves management problems within the context of the mission and priorities of the Forest Service. This Alternative then becomes the basis for the Forest Plan and Final Environmental Impact Statement.

PREPARATORY CUT – The removal of trees near the end of a rotation to open the canopy and allow the crowns of seed-bearing trees to enlarge. Improves seed production and encourages natural regeneration. (*see* Rotation)

PREPAREDNESS – Activities that lead to a safe, efficient, cost-effective fire management program in support of land and resource management objectives through appropriate planning and coordination (Zimmerman 1998).

PRESCRIBED FIRE – Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist and NEPA requirements must be met prior to ignition (Zimmerman 1998).

PRESCRIPTION – Management practices selected to accomplish specific land and resource management objectives.

PRESENT NET VALUE (PNV) [a.k.a. Net Present Value (NPV) or present net worth] – The difference between the discounted value (benefits) of all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area.

PROCLAMATION BOUNDARY – National Forest boundary as proclaimed by the President of the United States.

PRODUCTIVE – The ability of an area to provide goods and services and to sustain ecological values.

PROTECTIVE STRIP – A portion of land that provides largely undisturbed soil to separate soil-disturbing activities from streams, ponds, wetlands, and seasonal pools. The purpose of the protective strip is to protect the soil's infiltration capacity and to filter out sediment.

PUBLIC LAND – Land for which title and control rests with a federal, State, regional, county, or municipal government.

PUBLIC INVOLVEMENT – The use of appropriate procedures to inform the public, obtain early and continuing public participation, and consider the views of interested parties in planning and decision making.

PULPWOOD – Wood suitable for manufacturing into wood pulp for paper products.

[R]

RANGE – Land on which the principle natural plant cover is composed of native grasses, forbs, and shrubs that are valuable as forage for livestock and big game.

RANGE MANAGEMENT – The art and science of planning and directing range use; intended to yield the sustained maximum animal production and perpetuation of the natural resources.

RANGE OF VARIABILITY (a.k.a. natural range of variation, range of natural variability, historic range of variability) – The variability in composition, structure, and dynamics of ecosystems before EuroAmerican influence, including the variation of physical and biological conditions within an area due to climatic fluctuations and disturbances of wind, fire, and flooding.

RANGER DISTRICT – The administrative sub-unit of a National Forest that is supervised by a District Ranger who reports directly to the Forest Supervisor.

RAPTOR – A bird of prey, such as an eagle or hawk.

RARE OR UNCOMMON (NATURAL) COMMUNITIES – Natural communities defined by the Vermont Nongame and Natural Heritage Program (VNNHP, Thompson and Sorenson 2000), which are assigned ranks of "S1," "S2," or "S3" by VNNHP. These ranks represent the State or "subnational" conservation status of each community, and are defined by NatureServe (http://www.natureserve.org).

S1 - critically imperiled
S2 - imperiled
S3 - vulnerable to extirpation or extinction

RECHARGE – The addition of water to ground water by natural or artificial processes.

RECORD OF DECISION (ROD) – An official document in which a deciding official states the alternative that will be implemented from a prepared Environmental Impact Statement.

RECREATION EVENTS SPECIAL USE PERMITS – A special use designation within the Recreation Special Use category of "Facility Related Activities." Recreation events include organized events of a temporary nature, such

as animal, vehicle, or boat races; fishing contests; rodeos; adventure games; and fairs

RECREATION OPPORTUNITY SPECTRUM (ROS) – A formal Forest Service classification system designed to delineate, define, and integrate outdoor recreation opportunities in land and resource management planning. ROS classes are used to describe all recreation opportunity settings, from natural, undisturbed, and undeveloped to heavily used, modified and developed. ROS designations attempt to describe the kind of recreation experience one may expect to have in a given part of the National Forest. The ROS classes include:

- Urban – This setting is characterized by a substantially urbanized environment, although the background may have natural-appearing elements. Affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. Large numbers of users can be expected, both on-site and in nearby areas. Facilities for highly intensified motor vehicle use and parking are available. Regimentation and controls are obvious and numerous.
- Rural – This setting is characterized by a substantially modified natural environment. Sights and sounds of humans are readily evident and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people and are often provided for special activities. Facilities for intensified use and parking are available. Motorized use may be present on designated roads and trails and off-road (where not restricted). In this setting the probability for experiencing affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. Opportunities for challenges, risk taking, and use of outdoor skills are generally unimportant. Management activities and designed roads or highways may dominate the natural landscape. Structures are readily apparent.
- Roaded Natural – This setting is characterized by a predominately natural appearing environment with moderate evidence of the sights and sounds of people. Interaction between users may be low to moderate, but with evidence of other users prevalent. Opportunities for both motorized and non-motorized forms of recreation are possible. Motorized use may be present on designated roads and trails, and off-road (where not restricted). In this setting there is an equal probability of experiencing affiliation with other user groups and experiencing isolation from sights and sounds of humans. Challenge and risk opportunities associated with more primitive types of recreation are not very important. Natural settings may have modifications that range from being easily noticed to strongly dominant; roads and/or highways present; structures readily apparent.
- Semi-primitive Motorized – This setting is characterized by a predominately natural or natural-appearing environment of moderate to large size (generally greater than 2,500 acres). Interaction between users is low, but there is often evidence of other users. Motorized use may be present on designated roads and trails and off-road (where not restricted). In this setting there is a moderate probability of experiencing isolation from the sights and sounds of humans and self-reliance through the application of outdoor skills in an environment that offers challenge and risk. Management activities mimic natural occurrences. Primitive roads may be present, but structures are rare and isolated. Snowmobile use is possible.
- Semi-primitive Non-motorized – This setting is characterized by a predominately natural or natural-appearing environment of moderate to large size (generally greater than 2,500 acres). Interaction between users is low, but there is often evidence of other users. Motorized use is generally not present. In this setting there is a high probability of experiencing isolation from

the sights and sounds of humans and self-reliance through the application of outdoor skills in an environment that offers challenge and risk. Management activities mimic natural occurrences. Primitive roads may be present and structures are rare and isolated.

- Primitive – A classification of wilderness and recreation opportunity. It is characterized by an essentially unmodified environment where trails may be present, but structures are rare, and where it is highly probable to be isolated from the sights and sounds of people.

ROS CLASS, DESIRED – Management tool used to describe the desired array of recreation settings across the Forest. Desired ROS classes guide recreation management and describe the desired condition of the Forest in the future. All management areas have an associated Desired ROS class to guide recreation management.

ROS CLASS, INVENTORIED – An inventory tool used to describe the existing array of recreation settings for lands within the Forest boundary. Inventoried ROS describes the existing condition of the Forest (*see* also Recreation Opportunity Spectrum (ROS) and Desired ROS Class.)

RECREATION RIVER – Wild and Scenic Rivers Act Usage: Classification applied to rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

RECREATION SPECIAL USE PERMITS – A class of special use permits for recreation uses that serve the public, protect public health and safety, and protect the resource. These include such categories as outfitting and guiding, group use, facility related activities, and winter recreation. Within each of these categories there could be several “designations” of special use permits (FSM 2720).

REFORESTATION – The restocking of an area with forest trees, by either natural or artificial means, such as planting.

REGENERATION – The renewal of a tree crop by either natural or artificial means. The term is also used to refer to the young crop itself.

REGENERATION CUTTING (Harvest Cut) – Includes four basic cutting methods used to regenerate a forest: clearcut, seed-tree cut, shelterwood cut, and selection cut. Trees are removed from the stand to create conditions that will allow the forest to renew or reproduce itself. This is accomplished under either an even-aged management system or an uneven-aged management system.

REGIONAL FORESTER – The official of the USDA Forest Service responsible for administering an entire region of the Forest Service.

REGIONAL FORESTER’S SENSITIVE SPECIES – Those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by:

- Significant current or predicted downward trends in population numbers or density.
- Significant current or predicted downward trends in habitat capability that would reduce a species existing distribution (FSM 2670.5).

RELEASE TREATMENT – Intermediate treatment or cutting designed to free a young stand (not past the sapling stage) of desirable trees from the competition of undesirable trees that threaten to suppress them. Cleaning and liberation cutting are types of release (FSM 2470).

REMOVAL CUT – The removal of the last seed bearers or shelter trees after regeneration is established.

REPAIR (OF ASSETS) – Work to restore a damaged, broken, or worn-out fixed asset, component, or item of equipment to normal operating condition. Repairs may be done as annual maintenance or deferred maintenance

activities.

REHABILITATION (OF ASSETS) – Renovation or restoration of an existing fixed asset or any of its components in order to restore the functionality or life of the asset. Because there is no significant expansion or change of purpose for the fixed asset, the work primarily addresses deferred maintenance.

REPLACEMENT (OF ASSETS) – Substitution or exchange of an existing fixed asset or component with one having essentially the same capacity and purpose.

REPLACEMENT TREE – A live or partially dead tree left to become a hard snag and eventually a soft snag replacement.

RESEARCH NATURAL AREA (RNA) – A physical or biological unit in which current natural conditions are maintained insofar as possible. These conditions are ordinarily achieved by allowing natural physical and biological processes to prevail without human intervention. Under unusual circumstances, however, deliberate manipulation may be used to maintain the unique feature that the RNA was established to protect. Research natural areas are part of a national network of ecological areas designated in perpetuity for research and education and/or to maintain biological diversity on National Forest System lands. RNAs are intended for non-manipulative research, observation, and study (FSM 4060).

RESERVE TREES – Trees left for wildlife in areas where timber is being cut. See snag, den, and mast trees.

RESIDUAL STAND – The trees that remain standing after an event such as selection cutting or thinning.

RESILIENCE – The degree, manner, and pace of restoration of the structure and function of the original ecosystem after disturbance (Westman 1978).

RESOURCE ASSESSMENT – A compilation of background material on the status of a particular resource area, on a local, regional and national scale. The Resource Assessment describes the present condition of a particular resource and speculates on the future condition of the resource based on current and expected trends.

RESPONSIBLE OFFICIAL – The Forest Service employee who has been delegated the authority to carry out a specific planning action.

RESTORATION (of ecosystems) – *see* Ecosystem Restoration.

REVEGETATION – The re-establishment and development of a plant cover by either natural or artificial means, such as re-seeding.

RIPARIAN AREAS – Riparian areas are three-dimensional ecotones (an ecological transition zone) where functional and process interactions take place between terrestrial and aquatic ecosystems. Riparian areas extend down into the groundwater, up above the canopy, outward across the floodplain, and up the near-slopes draining water from the terrestrial ecosystem, and along the water course or feature. Riparian areas are geographically delineable, highly variable in width, and include the water feature: stream, wetland, pond, or seasonal pool (Paraphrased from *Riparian Management in Forests of the Continental Eastern United States*, p.29).

RIPARIAN ECOSYSTEM – A transitional ecosystem between the aquatic ecosystem and the adjacent terrestrial ecosystem; identified by soil characteristics or distinctive vegetation communities that require free or unbound water.

ROAD – A general term denoting a facility for purposes of travel by vehicles greater than 50” in width. Includes only the area occupied by the road surface and cut and fill slopes (FSM 2355.05).

ROAD DECOMMISSIONING – Activities that result in the stabilization and restoration of unneeded roads to a more natural state.

ROAD DENSITY – Quantity of road mileage per unit area, commonly measured as miles of road per square mile of land area.

ROAD IMPROVEMENT – Activity that results in an increase of an existing road's traffic service level, expansion of its capacity, or change in its original design function.

ROAD MANAGEMENT OBJECTIVE (RMO) - Defines the intended purpose of an individual road based on management area direction and access management objectives. Road management objectives contain design criteria, operation criteria, and maintenance criteria (FSH 7709.55).

ROADLESS AREA REVIEW AND EVALUATION II (RARE II) – A national inventory of roadless and undeveloped areas within the National Forests and Grasslands that was completed in 1979.

ROAD MAINTENANCE – The ongoing upkeep of a road necessary to regain or restore the road to the approved road management objective (FSM 7712.3).

ROAD OBLITERATION – Process of removing a road from the landscape. Obliterations are used on system and temporary roads, which are to be removed from service (decommissioned). Obliteration can include removing evidence of any access points; removing any structures from the roadbed (such as culverts, bridges, signs, guide rails, etc.); and restoring wetlands and riparian areas.

ROAD OPERATION MAINTENANCE LEVEL (ROML) – Levels of service provided by, and maintenance required for, a permanent system road. Maintenance levels must be consistent with road management objectives and maintenance criteria (FSH 7709.59, Road System Operations and Maintenance Handbook, Chapter 60, Section 62.3).

- Level 1: These are roads that have been placed in storage between intermittent uses. The period of storage must exceed 1 year. Basic custodial maintenance is performed to prevent damage to adjacent resources and to perpetuate the road for future resource management needs. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Appropriate traffic management strategies are "prohibit" and "eliminate" all traffic. These roads are not shown on motor vehicle use maps.
- Roads receiving level 1 maintenance may be of any type, class, or construction standard, and may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at level 1, they are closed to vehicular traffic but may be available and suitable for nonmotorized uses.
- Level 2: Assigned to roads open for use by high clearance vehicles. Passenger car traffic, user comfort, and user convenience are not considerations. Warning signs and traffic control devices are not provided with the exception that some signing, such as W-18-1 “No Traffic Signs,” may be posted at intersections. Motorists should have no expectations of being alerted to potential hazards while driving these roads. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level. Appropriate traffic management strategies are either to:
  a. Discourage or prohibit passenger cars, or
  b. Accept or discourage high clearance vehicles.
- Level 3: Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. The Manual on Uniform Traffic Control Devices (MUTCD) is applicable. Warning signs and traffic control devices are provided to alert motorists of situations that may violate expectations. Roads in this maintenance level are typically low speed with single lanes and turnouts.

Appropriate traffic management strategies are either "encourage" or "accept." "Discourage" or "prohibit" strategies may be employed for certain classes of vehicles or users.

- Level 4: Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated. Manual on Uniform Traffic Control Devices is applicable. The most appropriate traffic management strategy is "encourage." However, the "prohibit" strategy may apply to specific classes of vehicles or users at certain times.
- Level 5: Assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate surfaced and dust abated. Manual on Uniform Traffic Control Devices is applicable. The appropriate traffic management strategy is "encourage."

ROAD, PRIVATE – A road under private ownership authorized by a Special-Use Authorization, or a road that provides access pursuant to a reserved or private right.

ROAD, PUBLIC – Any road or street under the jurisdiction of and maintained by a public authority and open to public travel.

ROAD, TRAFFIC SERVICE (LEVELS) –

- A: Free-flowing, mixed traffic; stable, smooth surface; provides safe service to all traffic.
- B: Congested during heavy traffic, slower speeds and periodic dust; accommodates any legal-sized load or vehicle.
- C: Interrupted traffic flow, limited passing facilities, may not accommodate some vehicles. Low design speeds. Unstable surface under certain traffic or weather.
- D: Traffic flow is slow and may be blocked by management activities. Two-way traffic is difficult, backing may be required. Rough and irregular surface. Accommodated high-clearance vehicles. Single purpose facility.

ROAD, UNCLASSIFIED – Roads on National Forest System lands that are not managed as part of the forest transportation system, such as unplanned roads, abandoned travelways, and off-road vehicle tracks that have not been designated and managed as a trail. Includes those roads that were once under permit or other authorization and were not decommissioned upon the termination of the authorization (36 CFR 212.1).

ROTATION – The number of years required to establish and grow timber crops to a specified condition of maturity.

ROUNDWOOD – Pulpwood and fuelwood prepared in the round state.

RUN-OFF – The portion of precipitation that flows over the land surface or in open channels.

[S]

SALVAGE CUTTING – Intermediate cutting made to remove trees that are dead or in imminent danger of being killed by injurious agents (FSM 2470).

SANITATION CUTTING – Intermediate cutting made to remove dead, damaged, or susceptible trees to prevent the spread of pests or pathogens (FSM 2470).

SAPLING – A general term for a young tree more than a few feet tall and an inch or so in diameter that is typically growing vigorously.

SAWTIMBER – Trees that are nine inches in diameter at breast height or larger that can be made into lumber.

SCALE – In ecosystem management, it refers to the degree of resolution at which ecosystems are observed and measured.

SCENERY MANAGEMENT SYSTEM (SMS) – A systematic approach for determining the

relative value and importance of scenery in a national forest. SMS is to be used in the context of ecosystem management to inventory and analyze scenery in a national forest, to assist in establishment of overall resource goals and objectives, to monitor the scenic resource, and to ensure high-quality scenery for future generations.

SCENIC RIVER – Wild and Scenic Rivers Act Usage: Classification applied to rivers, or sections of rivers, that are free of impoundments, where shorelines or watersheds are still largely primitive and shorelines are largely undeveloped, but accessible at places by a road.

SCOPING – The ongoing process to determine public opinion, receive comments and suggestions, and determine issues during the environmental analysis process. It may involve public meetings, telephone conversations, or letters.

SEASONAL POOL (a.k.a. vernal pool) – A seasonal pool is a contained basin depression lacking a permanent above-ground outlet. In the Northeast, it fills with water with the rising water table of fall and winter or with the melt-water and runoff of winter and spring snow and rain. Many vernal pools in the Northeast are covered with ice in the winter months. They contain water for a few months in the spring and early summer. By late summer, a vernal pool is generally, but not always, dry.

A seasonal pool, because of its periodic drying, does not support breeding populations of fish. Many organisms have evolved to use a temporary wetland where they are not eaten by fish. These organisms are considered connected to, or indicative of, vernal pools because they use a vernal pool for various parts of their life cycle. In New England and New York, the easily recognizable connected species are the fairy shrimp, the wood frog, and salamanders of the genus *Ambystoma* (for example, spotted, Jefferson, marbled, and blue-spotted). The Green Mountain and Finger Lakes National Forests will define Seasonal Pools as those seasonally filled basins that are occupied for breeding purposes by one or more of these connected species (Kellogg et al. 2004).

SECOND-GROWTH FOREST – An area of forest that has established after some kind of human intervention that has removed some or all of the previous forested area.

SEED TREE CUTTING – Even-aged cutting method in which most of the mature timber from an area is removed in one cut except for a small number of desirable trees retained to provide seed or shelter for regeneration.

SEEP – A common but small wetland community associated with groundwater seepage. They occur on benches, in coves, and on or near the bases of slopes in upland forests. A layer of bedrock or hardpan often forces groundwater to flow horizontally rather than down, discharging water at the ground surface and creating the wetland conditions associated with seeps.

SENSITIVE SPECIES – *see* Regional Forester Sensitive Species.

SERAL – Any stage of the sequence of changes in plant and animal communities on a site over time (*see* also Succession).

SHADE TOLERANT SPECIES – Term used to describe plants that prefer to grow in the shade (for example, sugar maple or hemlock).

SHADE INTOLERANT SPECIES – Term used to describe plants that prefer to grow in sunny, open conditions (for example, aspen or paper birch).

SHELTERWOOD CUTTING – Even-aged cutting method in which a stand of trees is removed through a series of cuttings designed to establish a new crop with seed and protection provided by a portion of the stand (FSM 2470).

SHELTERWOOD WITH RESERVES – *see* also Delayed Shelterwood.

SIDE TRAIL (SPUR TRAIL/CONNECTING TRAILS) – Side trails and connecting trails

provide additional points of public access to national recreation, national scenic or national historic trails and connections between such trails. Spur trails may intersect a national trail and provide passage to points of interest or facilities within the trail corridor.

SILVICULTURAL SYSTEM – Entire process by which forest stands are tended, harvested, and replaced. It includes all cultural practices performed during the life of the stand, such as regeneration cutting, fertilization, thinning, improvement cutting, and use of genetically improved sources of tree seeds and seedlings.

SILVICULTURE – Application of principles underlying the growth and development of single trees and of the forest as a biological unit, to control forest establishment, composition, structure, and growth. The selection of an appropriate silviculture system for a management area depends on the stated resource objectives.

SINGLE TREE SELECTION – *see* Individual Tree Selection.

SITE PREPARATION – The general term for removing unwanted vegetation, slash, roots, and stones from a site before reforestation. Naturally occurring wildfire, as well as prescribed fire, can prepare a site for natural regeneration.

SIZE CLASS – One of the three intervals of tree stem diameters used to classify timber in the Forest Plan database. The size classes are: Seedling/Sapling (less than five inches in diameter); Pole Timber (five to seven inches in diameter); Sawtimber (greater than seven inches in diameter).

SKID ROADS (a.k.a. tractor roads) – Roads constructed for the purpose of transporting cut trees to a landing. They are ordinarily constructed by ground clearing and/or excavation (FSH 2409.15, Timber Sale Administration Handbook, Chapter 60, Section 61.32b).

SKID TRAILS – Trails constructed for the purpose of transporting cut trees to a skid road or landing. The resultant ground disturbance created by skidding logs on the ground by all skidding and yarding methods. Skid trail construction normally does not include ground excavation or clearing (FSH 2409.15, Timber Sale Administration Handbook, Chapter 60, Section 61.32b).

SKIDDING – Hauling logs by sliding with a cable, not on wheels, from stump to a collection point.

SKIJORING – A winter sport in which a person wearing skis is drawn over snow or ice by a dog.

SLASH – The residue left on the ground after timber cutting or after a storm, fire, or other event. Slash includes unused logs, uprooted stumps, broken or uprooted stems, branches, bark, among others.

SLUMP – A landslide where the underlying rock masses tilt back as they slide from a cliff or escarpment.

SMALL GAME – Birds and small animals normally hunted or trapped.

SNAG – Includes standing dead or partially dead trees that are at least six inches in diameter at breast height (dbh) and 20 feet tall (*see* also Hard Snag and Soft Snag).

SNOWMOBILE – A motor vehicle that is designed exclusively for use over snow and that runs on a track or tracks and/or a ski or skis.

SOFT SNAG – Snags with wood, especially sapwood, in an advanced stage of decay.

SOIL COMPACTION – The reduction of soil volume. For instance, the weight of heavy equipment on soils can compact the soil and thereby change it in some ways, such as in its ability to absorb water.

SOIL PRODUCTIVITY – The inherent capacity of a soil to support the growth of specified plants, plant communities, or a sequence of plant communities. Soil productivity may be expressed in terms of volume or weight/unit

are/year, percent plant cover, or other measures of biomass accumulation (FSM 2509.18, 2.05; Effective 9/3/91).

SOIL QUALITY – The capacity of the soil to function within ecosystem boundaries to sustain biological productivity, maintain or enhance water and air quality, and support human health and habitation.

SOUND WOOD – Timber that is in solid, whole, good condition. Sound wood is free from damage, decay, or defects.

SPECIAL AREA (SA) – National Forest System lands (except wilderness) that contain outstanding examples of plant and animal communities, geological features, scenic grandeur, or other special attributes. SAs can be designated by the Forest Service or by legislation. SAs are managed to emphasize recreational and other specific related values. Other uses are permitted within SAs to the extent that they are in harmony with the purpose for which the area was designated.

SPECIAL FOREST PRODUCTS – Products or natural resources that are not the traditional timber and fiber products. Examples include such products as floral greenery, Christmas trees and boughs, mushrooms, transplants (trees, shrubs or herbaceous plants), cones, medicinal plants, cuttings, herbs, fuelwood, tree sap, nuts, berries, lichen, fungi, decorative wood, and pitch.

SPECIAL USE AUTHORIZATION – An authorization issued to an individual or group by the USDA Forest Service for use of National Forest land for a special purpose. Examples might be a Boy Scout Jamboree, a water system serving private land, or a bicycle race. Authorizations can be in the form of permits, easements, or leases.

SPECIES OF LOCAL INTEREST – Species having State, or local, importance. These may be species with declining populations, appearing on State lists but not Federal Threatened and Endangered or Eastern Region's Sensitive Species lists; they may be locally abundant species presenting extraordinary opportunities.

SPECIES VIABILITY EVALUATION (SVE) – A qualitative process for gathering information on species for which viability may be a concern now or during the next 10 to 20 years. The process includes identifying at-risk species, compiling literature and unpublished information on those species, and using that information to develop and analyze Forest Plan revision alternatives.

SPECIFIED ROAD – A road shown on a timber sale area map for the purchaser to construct as part of a formal timber sale contract. These roads are usually added to the National Forest road system as a permanent road and are subject to Forest Service engineering survey and design as specified in the timber sale contract.

SPECTRUM – A specific linear program model designed for Forest Service planning.

STAND – A group of trees that occupies a specific area and is similar in species, age, and condition.

STANDARD – A required course of action, or level of attainment, that promotes the achievement of forest plan goals and objectives. Standards found in a forest plan impose limits on natural resource management activities, generally for environmental protection.

STATE HISTORIC PRESERVATION OFFICE(R) (SHPO) – The National Historic Preservation Act establishes an oversight role for this office/position vis-à-vis federal agencies operating within the states. Thus, the SHPO must concur with federal agency decisions which have the potential to affect NR-eligible properties (a.k.a. "significant Heritage Resources").

STEWARDSHIP – Caring for the land and its resources to pass healthy ecosystems on to future generations.

STOCKING LEVEL – The number of trees in an area as compared to the desirable number of

trees for best results, such as maximum wood production.

STRUCTURE – How the parts of ecosystems are arranged, both horizontally and vertically. Structure might reveal a pattern, mosaic, or total randomness of vegetation.

SUCCESSION – The sequence of changes in plant and animal communities on a site over time.

SUCCESSIONAL STAGE – *see* Seral.

SUITABILITY – The appropriateness of certain resource management to an area of land. Suitability can be determined by environmental and economic analysis of management practices.

SUITABLE FOREST LAND – Forest land that constitutes the land base for determining the allowable sale quantity (ASQ) and is managed for timber production on a regulated basis. Also see Unsuitable Lands.

SUMMER OFF-ROAD VEHICLE – All off-road vehicles except snowmobiles (*see* Off-Road Vehicle).

SURFACE RESOURCES – Renewable resources that are on the surface of the earth, such as timber and forage, in contrast to ground water and minerals which are located beneath the surface.

SURFACE RIGHTS – Ownership of the surface of the land only; right to use the surface of the land.

SUSTAINABILITY (ecosystem sustainability) – The ability of an ecosystem to maintain its structure and function, and to remain resilient, in order to continue to support its biological diversity and productivity over time (*see also* Resilience).

SUSTAINABILITY (general) – The ability of an ecological, economic, and/or social system to maintain structure and function, and to remain resilient, in order to continue to support biological diversity (including humans and their social and economic organization) and system productivity over time.

SUSTAINABLE – The yield of a natural resource that can be produced continually at a given intensity of management is said to be sustainable.

SUSTAINED YIELD – The yield that a renewable resource can produce continuously at a given intensity of management.

[T]

TARGET – A National Forest's annual accomplishment goals for natural resource programs. Targets represent the commitment the Forest Service has to the Congress to accomplish the work that the Congress has funded and are often used as a measure of the agency's performance.

TAXON (TAXA) – A group of organisms at any level of the taxonomic hierarchy. The major taxa are the species and genus and the higher taxa, including the family, order, class, phylum, and kingdom. Minor taxa include subspecies and varieties.

TEMPORARY OPENING – An opening created by silvicultural treatment (for example, clearcut or shelterwood cut) or natural event (for example, wind throw, ice damage, pest outbreak), that is intended and allowed to be reoccupied by young trees. Temporary openings are dominated by tree seedlings and saplings and, with time, will grow into a wooded stand.

TEMPORARY ROAD – Road needed only for short-term use authorized by contract, permit, lease, other written authorization, or emergency operation, not intended to be part of the forest transportation system and not necessary for long-term resource management. It is a minimum-standard road needed for land management inaccessible by the existing transportation network and is decommissioned following its use.

A temporary road is typically 14 feet wide with four additional feet on either side for ditches or

fill slope but strive for the minimum width needed to allow for the passage of equipment. Temporary road decommissioning includes:

- Placing organic material, berms, or barriers to prohibit motorized vehicle access,
- Removing bridges, culverts, and crossing structures, and
- Returning road template to pre-use conditions as needed to stabilize soil and maintain natural stream hydrology.

TEMPORARY ROAD (FOLLOWING EXISTING ROAD OR TRAIL LOCATIONS) – A temporary road constructed in the same location as an existing non-system legacy woods road or trail, or a National Forest System trail.

THERMAL COVER – Cover used by animals against weather.

THINNING – Intermediate cutting made to stimulate the growth of the trees that remain and to increase the total yield of useful material from the stand (FSM 2470).

THREATENED, ENDANGERED, AND SENSITIVE (TES) SPECIES – Plant or animal species that are federally listed under the Endangered Species Act as Threatened or Endangered, or are listed by the Regional Forester for Region 9 and the Green Mountain National Forest as Sensitive.

THREATENED SPECIES – Those plant or animal species likely to become endangered throughout all or a specific portion of their range within the foreseeable future as designated by the US Fish and Wildlife Service under the Endangered Species Act of 1973.

TIMBER CLASSIFICATION – The classification of forested lands into land management alternatives according to how the land relates to management of the timber resource there.

TIMBER STAND IMPROVEMENT (TSI) – Actions to improve growing conditions for trees in a stand, such as thinning, pruning, prescribed fire, or release cutting.

TRACTOR LOGGING – A logging method that uses tractors to carry or drag logs from the stump to a collection point.

TRAIL – A designated path or travelway of varying width which is maintained for varied recreational uses.

TRAIL VEHICLE – Vehicles designed for trail use, such as bicycles, snowmobiles, trail bikes, trail scooters, and all-terrain vehicles (ATVs).

TREATMENT AREA – The site-specific location of a resource improvement activity.

TREE IMPROVEMENT – The science of dealing with the causes of resemblances and differences among trees related by descent. It considers the effects of genes and the response to environmental factors.

TYPE CONVERSION – The conversion of the dominant vegetation in an area from forested to non-forested or from one species to another.

[U]

UNDERBURN – A burn by a surface fire that can consume ground vegetation and "ladder" fuels.

UNDERSTORY – The trees and woody shrubs growing beneath the overstory in a stand of trees.

UNEVEN-AGED SYSTEM – Silvicultural system involving manipulation of a forest to simultaneously maintain: a) continuous high-forest cover, b) recurring regeneration of desirable species, and c) orderly growth and development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Cutting methods that develop and maintain uneven-aged stands are single-tree selection and group selection (FSM 2470).

UNREGULATED HARVEST – Tree harvest that is not part of the allowable sale quantity (ASQ). It can include the removal of cull or dead material or non-commercial species. It also includes volume removed from non-suitable areas for research, to meet objectives other

than timber production (such as wildlife habitat improvement), or to improve administrative sites (such as campgrounds).

UNSUITABLE LANDS – Forest land that is not managed for timber production because: (a) the land has been withdrawn by the Congress, the Secretary of Agriculture, or the Chief of the Forest Service; (b) the land is not producing or capable of producing crops of industrial wood; (c) technology is not available to prevent irreversible damage to soils, productivity, or watershed conditions; (d) there is no reasonable assurance that lands can be adequately restocked within five years after final harvest, based on existing technology and knowledge, as reflected in current research and experience; (e) there is at present, a lack of adequate information to respond to timber management activities; or (f) timber management is inconsistent with or not cost efficient in meeting the management requirements and multiple-use objectives specified in the forest plan.

USE-CYCLE APPROACH – Periodically moving users between ski areas; the use cycle approach involves generally allowing much of the overstory to grow and mature naturally, concentrating management on the intermediates (thinning to enable tree skiing), while protecting and encouraging reproduction. Use-cycling would be dependent on the desired timing of regeneration as well as the health of the overstory. With this approach, it appears possible to achieve the continuous uneven-aged forest cover and desired stocking level objectives by working primarily with the intermediate height class.

UTILITY CORRIDOR – A linear tract of land of varying width, forming a passageway through which various commodities such as oil, gas, electronic intelligence, and electricity may be transported.

[V]

VARIETY CLASS – A way to classify landscapes according to their visual features. This system is based on the premise that landscapes with the greatest variety or diversity have the greatest potential for scenic value.

VEGETATION MANAGEMENT – Activities designed primarily to promote the health of forest vegetation for multiple-use purposes.

VEGETATION TYPE – A plant community with distinguishable characteristics.

VERNAL POOL – *see* Seasonal Pool.

VERTICAL DIVERSITY – Stand diversity that results from different canopy layers or tiers of vegetation.

VIABLE POPULATION – A population that has the estimated numbers and distribution of reproductive individuals to ensure the continued existence of the species throughout its existing range within the planning area (FSM 2670.5).

VIEWER SENSITIVITY – Amount and expectation of viewers determined for all areas of the National Forest using the definitions described below:

- High Viewer Sensitivity Locations: federal or State highways; Roads averaging at least 150 vehicles per day; Roads primarily providing access to highly sensitive recreation sites; National Scenic or National Recreation trails including side trails; Heavily used seasonal trails through areas with recognized scenic attractions; eligible and designated Wild, Recreational, and Scenic Rivers that provide outstanding or substantial scenic values; Riparian areas with heavy fishing, boating, swimming, and other uses highly dependent on viewing scenery; Wilderness; Recreation Special Areas; Ecological Special Areas with unique scenic features; Town centers or concentrations of residences; Developed recreation sites except for trailheads within moderately sensitive locations; White Rocks Cliffs and Ice Beds in the Robert T. Stafford White Rocks NRA; Observation sites along highly sensitive travelways.
- Moderately sensitive locations do not qualify as highly sensitive but get more

than twice as much use as general undeveloped areas that provide the same recreation opportunity. Moderately sensitive locations include the following areas: Roads and trails shown on National Forest recreation maps except those described as least sensitive; Concentrated use areas and observation sites along moderately sensitive travelways; Eligible and designated Wild, Recreational and Scenic Rivers that provide locally common scenic values; Riparian areas receiving low to moderate use which is double that of adjacent undeveloped lands;

- Least sensitive locations are all areas not qualifying as having high or moderate sensitivity. They include: Travelways maintained primarily for non-recreation purposes such as timber access roads and utility line clearings; Areas where use primarily has little dependence on scenic viewing. Use examples include hunting or gathering of fuelwood and Christmas trees.

VISUAL CONDITIONS:

- Permanent – A visual condition is being maintained over time. Permanent alterations include but are not limited to wetland and permanent upland openings, scenic vistas, parking areas, roads, trails, signs, ski facilities, towers, and other structures.
- Temporary – A visual condition is allowed to recover over time. Temporary alterations include but are not limited to timber harvest.
- Enhancement – A visual condition is improved by increasing positive scenic attributes in the landscape.
- Rehabilitation – A visual condition is improved by removing existing visual impacts.

VISUAL QUALITY OBJECTIVE (VQO) – A desired level of excellence based on physical and sociological characteristics of an area. Refers to degree of acceptable alteration of the natural-appearing landscape. The five levels of VQO are:

(1) Preservation – Alterations are caused by ecological changes only.
(2) Retention – Alterations made by people are not visually evident to the casual forest visitor
(3) Partial Retention – Alterations made by people must appear subordinate within the surrounding natural appearing landscape.
(4) Modification – Alterations may dominate the original surrounding landscape, but constructed facilities must be compatible with the landscape.
(5) Maximum Modification – Alterations dominate the original surrounding landscape to a high degree, and do not relate completely to natural-appearing form, line, color, or texture.

VISUAL RESOURCE – A part of the landscape important for its scenic quality. It may include a composite of terrain, geologic features, or vegetation.

[W]

WATCH LIST – A list of plant and animal species that may be of concern to the Forest Service, but which do not meet criteria for inclusion in the Regional Forester's Sensitive Species list. These species could include those that are not known to occur now on the Forest although they may have historically been here; species that may not be of viability concern on the Forest but are rare or listed in the State; species that are exhibiting population trends that are starting to be of concern, but not to the point where viability on the Forest is at moderate or high risk; or species that are new to the Forest and have not yet been evaluated for viability.

WATERSHED – The entire region drained by a waterway or into a lake or reservoir. More specifically, a watershed is an area of land above a given point on a stream that contributes water to the streamflow at that point.

WATER TABLE – The upper surface of groundwater. Below it, the soil is saturated with water.

WATER YIELD – The runoff from a watershed, including groundwater outflow.

WETLAND – Those areas that under normal circumstances are inundated by surface or ground water with a frequency sufficient to support a prevalence of vegetation or aquatic life that requires saturated or seasonally-saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as seeps, sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds (FSM 2527.05).

WETLAND OPENING – Includes open and shrub wetland areas dominated by mosses, herbaceous plants, and shrubs of varying heights. Trees are absent or sparse, generally representing less than 25 percent of the cover. Wetland openings on the GMNF include beaver meadow complexes, shrub swamps, open peatlands (including bogs and fens), marshes, sedge meadows, wet upland meadows, and wet shores. Most open wetlands on the GMNF are associated with rivers and are influenced by recent beaver activity; few are old and stable wetlands like peatlands. See also “wetland.”

WHOLE TREE LOGGING – The process of felling and transporting the trimmed bole in one piece to a landing. The bole is then separated into wood products at the landing that include sawlogs, pulpwood, firewood, and/or tops for wood chips.

WILD RIVER – Wild and Scenic Rivers Act Usage: congressionally designated rivers, or sections of rivers, that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted.

WILDERNESS – The Wilderness Act of 1964 defined a wilderness as an area of undeveloped federal land designated by the Congress that has the following characteristics: (1) It generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable; (2) It has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) It has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) It may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value (Wilderness Act, Sec. 2(c)).

WILDLAND FIRE – Any non-structure fire, other than prescribed fire, that occurs in the wildland (Zimmerman 1998).

WILDLAND FIRE SUPPRESSION – An appropriate management response to wildland fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire. All wildland fire suppression activities provide for firefighter and public safety as the highest consideration, but minimize loss of resource values, economic expenditures, and/or the use of critical firefighting resources (Zimmerman 1998).

Prescribed Burn

WILDLAND FIRE USE – The management of naturally ignited wildland fires to accomplish

specific pre-stated resource management objectives in predefined geographic areas outlined in Forest Fire Management Plans. Operational management is described in the Wildland Fire Implementation Plan. Wildland fire use is not to be confused with “fire use,” which is a broader term encompassing more than just wildland fires (Zimmerman 1998). (*see* Fire Use)

WILDLIFE HABITAT DIVERSITY – The distribution and abundance of different plant and animal communities and species within a specific area.

WINDTHROW – Trees uprooted by wind.

WIND TOWERS – Includes individual wind towers for wind energy testing and monitoring facilities (small individual site-specific meteorological towers and instrumentation facilities) as well as wind energy development projects (includes wind turbine facilities, as well as access roads, electrical and transmission facilities, and other support facilities).

WOOD FIBER PRODUCTION – The growing, tending, harvesting, and regeneration of harvestable trees.

[Z]

ZONE OF INFLUENCE (ZOI) – The area influenced by Forest Service management activities.

7.1 INDEX

This index contains a list of key words used throughout the document. While it is not an exhaustive list, it is a tool for using this document. For each term, pages are listed on which either the term is used substantively or the topic is discussed substantively even though the term is not used. A range of pages may indicate a long discussion or separate uses of the term on each page.