UNITED STATES DEPARTMENT OF AGRICULTURE

Forest Service

Region 9

Green_ Mountain

Land and Resource Management Plan for the Green_Mountain NF

- Final Environmental Impact Statement
- Final Environmental Impact Statement and Plan Maps
  - Vermont - 1975 -South Half
  - Alternative D2 - Vermont - 1986 - North Half
  - Alternative D2 - Vermont - 1986 - South Half
- Highlights of the Plan
- Management Plan
  - Part A
  - Part B

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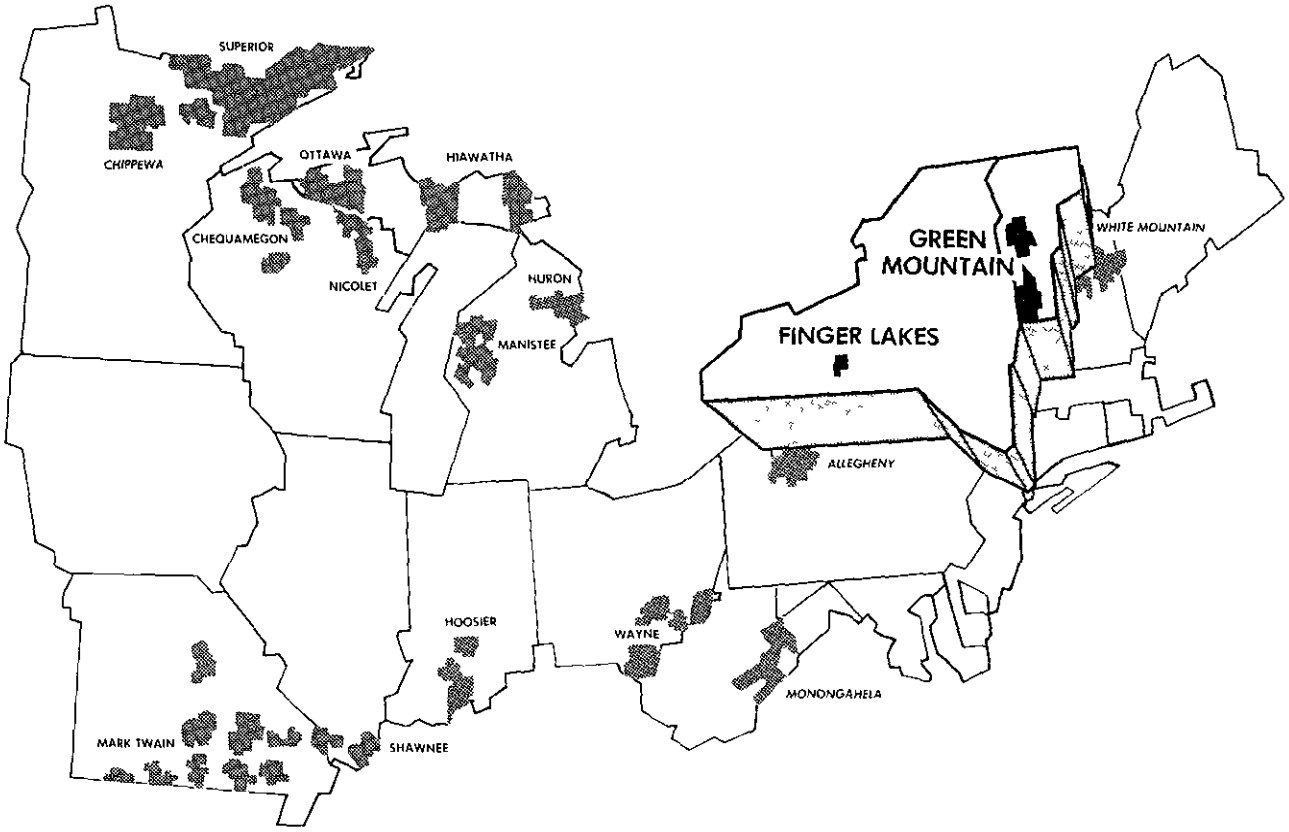
Final Environmental Impact Statement

Land and Resource Management Plan

GREEN MOUNTAIN NATIONAL FOREST

FINGER LAKES NATIONAL FOREST



FINAL ENVIRONMENTAL IMPACT STATEMENT
for the
GREEN MOUNTAIN AND FINGER LAKES NATIONAL FORESTS
LAND AND RESOURCE MANAGEMENT PLAN

Addison, Bennington, Rutland, Washington, Windham, Windsor Counties in VT
Schuyler and Seneca Counties in NY

October, 1986

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Abstract

This Final Environmental Impact Statement (FEIS) for the Green Mountain and Finger Lakes National Forests describes the refinements of the Draft Environmental Impact Statement (DEIS) and Proposed Plan, filed in November of 1985. These refinements were made in response to the public comments about the DEIS and Plan.

Less than one percent of the public commenters suggested that the Forest Service choose a different alternative. Most of the commenters endorsed the Forest Service's preferred alternative and the Proposed Plan, but suggested ways to refine and make them better (FEIS, Chapter I). The Forest Service has chosen to implement most of the suggested refinements (FEIS, Chapter I) while retaining the overall flavor of the original proposal.

The refinements in Alternative D create slight net changes in environmental effects. All refinements result in less risk of environmental damage from management activities and greater flexibility in future decisionmaking (FEIS, Chapter I).

This FEIS is an "abbreviated" document because the changes made to the DEIS proposal are so slight. This "abbreviated" form is consistent with the Council of Environmental Quality's desire to improve decisionmaking capability while reducing paperwork. The FEIS compares the effects of the preferred alternative before (D) and after (D2) refinements were made. The DEIS describes the qualitative and quantitative process and results of studying other alternatives to determine which maximized net public benefits and was overall best. All of the information in the DEIS is incorporated into the FEIS, but is not repeated here except by cross reference.

Preface

The purpose of this Final Environmental Impact Statement (FEIS) is to explain the process and results of the analysis used to determine the overall best management of the Green Mountain and Finger Lakes National Forests.

In 1974, Congress enacted the Forest and Rangeland Renewable Resources Planning Act (RPA), which directed the Forest Service to periodically assess the demand and supply of renewable resources and to develop a national program for managing them. The National Assessment is done every ten years.

The regulations implementing the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), as amended by the National Forest Management Act of 1976 (NFMA), require the preparation of a Forest Plan by each National Forest of the National Forest System. These regulations also require preparation of an Environmental Impact Statement for each of the proposed plans.

This Final Environmental Impact Statement has been prepared following procedures established by Forest Service regulations for implementing the National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) regulations (40 CFR Part 1500). Since only slight refinements have been made to the Draft Environmental Impact Statement (DEIS), this FEIS takes the form of an "abbreviated" document pursuant to the Council of Environmental Quality Regulations 40 CFR 1503.4(c).

Under these provisions, the information in the DEIS is fully incorporated in the FEIS without actually repeating it. The DEIS was filed with the Environmental Protection Agency on December 9, 1985 and the notice of its availability appeared in the Federal Register on December 20, 1985. If copies are desired contact the Forest Supervisor of the Green Mountain National Forest.

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CHAPTER I

SUMMARY OF CHANGES

I. SUMMARY OF CHANGES 1.01
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I. Summary of Changes

Introduction

As stated in the preface, this Final Environmental Impact Statement (FEIS) is in an "abbreviated" form (40 CFR 1503.4(c)) and incorporates all of the information presented in the Draft Environmental Impact Statement (DEIS) without reprinting it. Between the covers of this "abbreviated" document you will find information about the nature and effects of the refinements which were made to the alternative that was identified as preferred by the Forest Service in the DEIS (Alternative D).

After refinements, the Forest Service has chosen to select Alternative D as the basis for the Land and Resource Management Plan for the Green Mountain and Finger Lakes National Forests. The results of these refinements have been labelled as Alternative D2 so that comparisons between the draft and final versions of Alternative D can be made.

The first chapter of the FEIS describes the nature and effects of the refinements made in Alternative D so that the final version (D2) can be placed within the full context of the information presented in the DEIS. The comparisons this chapter offers between the draft and final versions of Alternative D parallels the information presented in the DEIS for all alternatives. Cross references to appropriate sections of the DEIS are given to help the reader easily find more information on each factor tracked and compared in the analysis.

Chapter One focuses on those aspects of Alternative D which are different in the draft and final versions. If more information is desired about an aspect of the alternative which has not changed you will have to read the appropriate section of the DEIS.

Chapter Two summarizes the public comments received on the DEIS and Proposed Plan, along with the Forest Service's response to those comments. When applicable, cross references are made to the sections of the FEIS and Final Plan where the refinements which were made in response to public comments can be found.

The analysis and information described in the DEIS were sufficient to fully explore and determine the overall best management of these National Forests. Other than the calculations done to determine the differences between D and D2, no additional analysis or information was needed to respond to public comments.

Management Prescriptions

Management prescriptions are the directions for managing the land and resources to achieve certain objectives. Management prescriptions specify the desired condition of an area and some ranges of appropriate types of activities.

The major emphasis of the management prescriptions analyzed are outlined in Table 1.1. The Forest Plan offers detailed explanations of the purposes and goals of each management prescription and explains the standards and guidelines which are prescribed to achieve those goals.

The objectives of each alternative were partly achieved by varying the type, amount and location of the management prescriptions (DEIS, pages 2.14 - 2.17). Alternative D was refined by slightly changing some original management prescriptions, adding some new prescriptions and slightly shifting their amounts and locations (Tables 1.2 - 1.3 and Forest Plan Management Area Map).

Prescriptions 9.2 and 9.3 are entirely new and have been added to respond to public comments about managing large tracts of land which have been newly acquired (9.2) or small tracts which have the potential to support future ski area expansion (9.3). Prescriptions 2.1A, 2.1B and 4.1 were changed and their original acreage was split to create three new prescriptions 2.2A, 2.2B and 4.2. All three will be managed to provide Semi-primitive recreation instead of Roaded Natural (Table 1.1 and 1.2).

Prescriptions 4.1/4.2, 5.1 and 8.1 have increased slightly because new lands were acquired. Other increases in the acreage of some original management prescriptions have also occurred, due to new acquisitions, but they are difficult to perceive because of shifts in acreage between prescriptions which have also occurred (Plan, Appendix M).

The biggest shift in acreage between prescriptions occurs in response to the public's desire for more Primitive and Semi-primitive recreation opportunities. The shift results in a 1,900 acre increase in 6.1, where Primitive recreation will occur, and a 33,100 acre increase in 6.2, where Semi-primitive recreation will be provided. The shift primarily resulted in a lowering of Roaded Natural recreation opportunities in 2.1B, 3.1A and 3.1B. The net increase in Semi-primitive conditions resulting from the shifts to 2.2A, 2.2B, 4.2, 6.2A and 6.2B is 61,800 acres (Table 1.2).

The combined acreage of 2.1A and 2.2A, where unevenaged silviculture will predominate, is only 1,300 acres less than the amount originally proposed as 2.1A. This reduction was necessary to logically increase 6.1 and 6.2 in certain locations of the National Forest. The net decrease of 10,600 acres in all prescriptions beginning with 2, occurs mostly in those prescriptions with a "B" suffix, where no timber cutting or roads will be allowed in the next 10 years. This change does not lower the amount of unevenaged silviculture to be practiced since policies have been changed to increase the application of unevenaged silviculture in Management Prescriptions 3.1, 4.1 and 6.1 (Plan, Chapter IV-E, Timber).

Table 1.1 Summary of Management Prescriptions

Management Prescription	Management Emphasis
1.2	Pastures where livestock graze, and opportunities for picnicking, hiking, skiing, snowmobiling and horseback riding are provided.
1.3	Shrub openings which provide vegetative diversity and habitat for many species of wildlife.
2.1A	Trees of many ages and sizes occur and Roaded Natural recreation opportunities exist. Public enjoyment, aesthetic and wildlife benefits are emphasized and unevenaged silviculture is practiced.
2.1B	Similar to 2.1A except timber will not be managed for wood production.
2.2A	Similar to 2.1A except Semi-primitive recreation is offered.
2.2B	Similar to 2.2A except timber will not be managed for wood production.
3.1A	A mosaic of vegetative conditions occur along with opportunities for Roaded Natural recreation. Evenaged silviculture will be used to produce high quality sawtimber.
4.1	Emphasizes stable habitat for deer during the winter and Roaded Natural recreation opportunities for people.
4.2	Similar to 4.1 except opportunities for Semi-primitive recreation will exist.
5.1	Wilderness designated by Congress and managed according to public laws and regulations.
6.1	Emphasizes opportunities to experience solitude in a Primitive recreation setting. There will be no roads, no timber harvesting and few people.
6.2A	Emphasizes opportunities for Semi-primitive recreation while producing high quality sawtimber by growing trees to an old age.
6.2B	Similar to 6.2A except timber will not be managed for wood production.
7.1	Includes downhill ski areas and campgrounds designed for a high level of public use.
8.1	Emphasizes special areas.
9.2	Newly acquired lands where future management options will be kept open until further study is done.
9.3	Potential to expand ski areas will be maintained until specific proposals are received and studied.

Table 1.2 Amount of Management Prescriptions for GMNF[1/]

Management Prescriptions	ALTERNATIVE (Acres x 1000) D	D2	Difference
2.1A	25.7	19.3	- 6.4
2.1B	30.5	3.4	- 27.1
2.2A	0.0	5.1	+ 5.1
2.2B	0.0	17.8	+ 17.8
Subtotal	56.2	45.6	- 10.6
3.1A	67.4	48.8	- 18.6
3.1B	4.7	0.0	- 4.7
Subtotal	72.1	48.8	- 23.3
4.1	19.4	14.5	- 4.9
4.2	0.0	5.8	+ 5.8
Subtotal	19.4	20.3	+ 0.9
5.1	57.4	58.4	+ 1.0
6.1	10.2	12.1	+ 1.9
6.2A	40.7	60.1	+ 19.4
6.2B	3.8	17.5	+ 13.7
Subtotal	44.5	77.6	+ 33.1
7.1	3.2	3.2	0.0
8.1 NRA	29.0	29.0	0.0
8.1 Other	2.0	2.5	+ 0.5
Subtotal	31.0	31.5	+ 0.5
9.2	0.0	27.3	+ 27.3
9.3	0.0	0.6	+ 0.6
Subtotal	0.0	27.9	+ 27.9
Total	294.0	325.4	+ 31.4

1/ DEIS Table 2.5, page 2.16, displays information on the other alternatives studied.

On the Finger Lakes National Forest, prescriptions 1.3, 2.1A and 8.1 were increased by a total of 1,100 acres and 3.1A was reduced by the same amount (Table 1.3). These slight shifts were made in response to the public's desire for more shrub openings (1.3), unevenaged management (2.1A) and greater protection of trails and old growth (8.1).

Table 1.3 Amount of Management Prescriptions for FLNF[1/]

Management Prescriptions	ALTERNATIVE (Acres x 1000) D	D2	Difference[2/]
1.2	4.5	4.5	- 0.0
1.3	0.8	1.4	+ 0.6
2.1A	2.0	0.4	+ 0.2
3.1A	7.5	6.4	- 1.1
8.1	0.2	0.5	+ 0.3
Total	13.2	13.2	0.0

1/ DEIS Table 2.6, page 2.17, displays information on the other alternatives studied. Table 2.6 is incorrect as printed and should be corrected by: changing the acres of Management Prescription 1.2 to 4,500 in all alternatives; adding prescription 2.1A and showing 200 acres for it in all alternatives; and showing the net difference (-300 acres) in prescription 3.1A for all alternatives.

2/ The differences reflect the corrections made in DEIS, Table 2.6 which are described in the footnote above.

Opportunities for Recreation

The major result of the refinements in management prescriptions was an increase in acreage of Semi-Primitive recreation opportunities and a decrease in Roaded Natural. Along with this shift a slight increase in Wilderness and Primitive recreation opportunities occurred. Opportunities for downhill skiing remain unchanged from the Proposed Plan (Table 1.4).

The desired recreation opportunities for 27,300 acres of newly acquired National Forest System land remains uncertain (Table 1.4). These lands have the potential to provide Primitive, Semi-primitive and Roaded Natural in the future. Further inventory and study will be needed in the next 10 years to determine what recreation opportunities these lands should provide over the long term. No options will be foreclosed on these lands (MA 9.2) until the studies are completed and a decision is made.

As a result of the increased Semi-Primitive acreage the Green Mountain National Forest will be able to easily meet projected future demands for backcountry recreation. Moreover, the option to increase the acres of both Primitive and Semi-Primitive conditions in the future is kept open by this action and by placing 27,300 acres in MA 9.2.

The decrease in the National Forest's ability to meet demands for Roaded Natural recreation visitor days (RVD) is not proportionate with the decrease in Roaded Natural acreage. The capacity for visitors days drops only slightly because the acres which went to Semi-Primitive recreation were not as well suited to provide Roaded Natural recreation as the acres which did not change (Table 1.4). Demands for Roaded Natural recreation can be met from the remaining acres (DEIS, page 2.45).

The shift towards greater Primitive and Semi-Primitive recreation opportunities causes shifts in other land and resource conditions, as well. Most shifts result directly or indirectly from the longer rotations and less intensive timber management which will occur in the Semi-Primitive portions of the National Forest.

The Finger Lakes National Forest is not able to provide Semi-Primitive, Primitive or Wilderness recreation opportunities because of its small size and heavily roaded condition. The amount, quality and character of the opportunities for recreation in a roaded, but natural appearing environment have been enhanced in Alternative D2, however. Better trail protection, more trail construction, installation of better trail gates through pastures and other measures will result in an increased capacity for recreationists on the FLNF, even though a net decrease in capacity occurs when the GMNF is added in (Table 1.4).

Table 1.4 Changes in Opportunities for Recreation 1/

Recreation Opportunity	Unit of Measure 2/	Alternative D	Alternative D2	Difference
Wilderness	MAcres	57.4	58.4	+ 1.0
	MRVD			
Primitive	MAcres	13.4	15.3	+ 1.9
	MRVD	25.9	36.6	+10.7
Semi-Primitive	MAcres	70.3	132.6	+62.3
	MRVD	192.8	260.0	+67.2
Roaded Natural	MAcres	162.9	101.8	-61.1
	MRVD	561.3	531.0	-31.3
Downhill Skiing	MAcres	3.2	3.2	0.0
	MSAOT	12.4	12.4	0.0
Uncertain 3/	MAcres	0.0	27.3	+27,3
Total	MAcres	307.2	338.6	+31.4

1/ See DEIS, pages 2.41 to 2.46, for information about the amount of recreation opportunities provided by other alternatives.

2/ MAcres = One thousand acres; MRVD = One thousand recreation visitor days; MSAOT = One thousand skiers at one time.

3/ The entire Finger Lakes National Forest (13,232 acres) provides Roaded, Natural recreation opportunities.

4/ The desired recreation opportunities of 27,300 acres of newly acquired lands (MA 9.2) have not been chosen yet. These choices will be made during the next 10 years.

Vegetation Management

The increase in total National Forest acreage and shifts in the type, amount and location of management prescriptions have slight effects on the amount and type of vegetation management that can be performed. In turn, these slight changes have a minor effect on the amount of wood that is available for cutting.

Suitability for Timber Production

The acreage of National Forest land suitable for timber production decreased by 3,534 acres even though the total acreage increased by 31,330 acres since the old analysis was done (Table 1.5, line 11 and 12). The newly acquired lands increased the total Forest land by 31,300 acres (Table 1.5, line 3), but 1,000 acres of this amount must be withdrawn from timber production because they are in Wilderness (Table 1.5, line 4).

Another 27,300 acres occur in large tracts of land which must be inventoried and studied before the appropriateness of timber production can be determined (Table 1.5, line 7). Thus, only 3,030 acres of the newly acquired lands are tentatively suitable for timber production at the present time (Table 1.5, line 8).

Refinements made in the management prescriptions reflect changes in the resource objectives and management direction for both National Forests and cause slight reductions in the tentatively suitable forest land (Table 1.5, line 8).

Timber production is inconsistent with the objectives of management prescriptions 1.3, 2.1B, 2.2B, 6.1, 6.2B, 8.1 and 9.3. Changes in the acreage of these prescriptions result in an increase of 3,880 acres of Forest land which is inappropriate for timber production (Table 1.5, line 9A). Strengthening the management direction to protect water quality, wildlife habitat and recreation opportunities near open water means that another 2,684 acres are inappropriate for timber production (Table 1.5, line 9B).

In summary, the combination of these two changes in management direction (6,564 acres) washes out the increase in tentatively suitable Forest land (3,030 acres) and results in a net decrease of 3,534 acres of land in timber production (Table 1.5).

Table 1.5 Timber Resource Land Suitability 1/ (Acres)

Classification	Alternatives D	Alternatives D2	Difference
1. Water	1,490	1,490	0
2. Non-Forest Land	13,117	13,117	0
3. Forest Land	292,695	324,025	+31,330
4. Forest Land Withdrawn from Timber Production	57,400	58,400	+ 1,000
5. Forest Land Not Producing Crops of Industrial Wood	0	0	0
6. Forest Land Physically Not Suited:			
A. Irreversible Damage Likely	14,910	14,910	0
B. Not Restockable within 5 years	0	0	0
7. Inadequate Information 2/	14,120	41,420	+27,300
8. Tentatively Suitable Forest Land (Item 3 minus Items 4, 5, 6, 7)	206,265	209,295	+ 3,030
9. Forest Land inappropriate for Timber Production:			
A. Needed to meet other resource objectives	(42,292)	(46,172)	(+3,880)
B. Needed to meet Management Requirements	(10,958)	(13,642)	(+2,684)
C. Not cost efficient in meeting Forest Plan Objectives for Timber	(21,837)	(21,837)	(0)
Total for Category 9	75,087	81,651	+6,564
10. Not Suited Forest Land (Items 4, 5, 6, 7, and 9)	161,517	196,381	+34,864
11. Total Suitable National Forest (Item 3 minus 10)	131,178	127,644	-3,534
12. Total Net National Forest (Items 1, 2, 3)	307,302	338,632	+31,330

1/ DEIS Table 2.7, page 2.31, displays information on the other alternatives studied.

2/ Lands for which current information is inadequate to project responses to timber management.

Type and Intensity of Management

The changes in management prescriptions also cause slight changes in the type and intensity of vegetation management. Unevenaged silviculture in MA 2.1A and 2.2A will be practiced on 1300 fewer acres than before (Table 1.6). The reduction is caused by the increase in Primitive and Semi-Primitive recreation in MA 6.1 and 6.2.

The acreage of unevenaged silviculture which will be practiced in all management areas will increase, however. The net increase results from new wording in the Forest Plan's standards and guidelines which directs the use of unevenaged silviculture in visually sensitive locations in Management Areas where evenaged silviculture predominates. This net increase in unevenaged silviculture results in a 245 acre increase in the annual amount of unevenaged regeneration practiced during the next 10 years (Table 1.6).

The total acreage of evenaged silviculture will decrease by 1,381 acres and a shift from high to low and moderate management intensity will occur (Table 1.6). The less intensive timber management results from increasing the acreage of management prescriptions with a Semi-Primitive recreation objective (Tables 1.1 and 1.2). Semi-Primitive conditions call for longer rotation ages and less frequent cuttings, on average, and will occur in 2.2, 4.2, 6.2 and some 8.1.

There is a slight reduction in the acreage of evenaged regeneration (Table 1.6). The reduction is a direct result of the decrease in acreage of evenaged silviculture and lower intensity of evenaged management.

The total amounts of softwoods, aspen and upland openings which will be created over the long-term have not changed. The rates of conversion to those valuable habitats have not changed either (Table 1.6). There is no change because the decrease in the annual amount of vegetation management has occurred in the portion of our program directed towards timber production, not the portion yielding direct benefits to wildlife.

Maintaining nearly the same level of vegetation management enables the Forest Service to achieve its objectives of enhancing vegetative diversity, improving wildlife habitats and improving the health and conditions of some Forest stands.

Shrub openings maintenance will be increased by 600 acres on the Finger Lakes National Forest (Table 1.6). This translates to an additional 60 to 100 acres of mowing, burning or other means of annual maintenance. Nearly all openings with young, manageable shrubs will be retained. The openings with many older trees will be allowed to follow natural succession to a forested condition. Allowing natural succession to occur will be closely monitored so that the effects on wildlife can be studied.

Table 1.6 Changes in Vegetation Management (Acres)

Vegetation Management	Alternative D	Alternative D2	Difference
Unevenaged Silviculture 1/	25,700	24,400	-1,300
Evenaged Silviculture 1/			
High Intensity	17,921	12,975	-4,946
Low to Moderate Intensity	87,560	91,125	+3,565
Unevenaged Regeneration in Decade 1 2/	500/Year	745/Year	+ 245
Evenaged Regeneration in Decade 1 3/			
Clearcut	479/Year	440/Year	- 39
Shelterwood 4/	1,421/Year	1,320/Year	- 101
Conversions to Softwoods 5/	245/Year	245/Year	0
Conversions to Aspen 6/	184/Year	184/Year	0
Conversions to Upland Openings 7/	40/Year	40/Year	0
Shrub Openings 8/	800	1400	+ 600

Information on the other alternatives studied is found in the DEIS of the following locations:

1/ Figure II-24, page 2.48
2/ Page 4.31
3/ Figure II-25, page 2.49 and page 4.25
4/ Includes regeneration and overwood removal cuts
5/ Page 4.34
6/ Page 4.37
7/ Page 4.41
8/ Figure II-39, page 2.67

Amount of Wood Cut

The slight reduction in land managed for timber production (Table 1.5), the increase in unevenaged regeneration (Table 1.6) and the shift towards less frequent evenaged regeneration and thinning (Table 1.6) causes a slight decline in the volume of wood which can be allowed for sale each year.

The total decline in the allowable sale quantity of wood is 1.3 million board feet (MMBF) per year over the next several decades (Table 1.7). The decline in the volume of harvest which could be sustained over the long term is only 1.5 MMBF (Table 1.7). Proportionate declines in the volume of sawtimber and roundwood result (Table 1.7).

The net result of these annual reductions in allowable sale quantity will only be 69 and 223 MMBF over 50 and 150 years. These reductions are insignificant to the local economy and wood industry since private forest lands are ample and well suited to meet society's demands for wood. Furthermore, the reductions do not affect the Forest Service's ability to enhance vegetative diversity or improve habitats (Table 1.6).

The reduction in the availability of fuelwood is very slight and the National Forests will be able to easily meet anticipated demands.

Table 1.7 Changes in Amount of Wood Available for Cutting

Availability of Wood	Unit of Measure	Alternative D	Alternative D2	Difference
Allowable Sale Quantity 1/	MMBF/YEAR	17.3	16.0	- 1.3
Long Term Sustained Yield 1/	MMBF/YEAR	20.5	19.0	- 1.5
Cumulative Timber Harvests 2/	MMBF			
Over 50 years		865	796	- 69
Over 150 years		2787	2564	-223
Wood Product Mix Decade 1 3/	MMBF/YEAR			
Sawtimber		8.3	7.6	-0.7
Roundwood		9.0	8.4	-0.6
Subtotal		17.3	16.0	-1.3
Wood Product Mix Decade 15 3/	MMBF/YEAR			
Sawtimber		13.1	12.1	-1.0
Roundwood		7.4	6.9	-0.5
Subtotal		20.5	19.0	-1.5
Fuelwood Available in Decade 1 4/	CORDS X 1000	28	26	-2
Land Available for Fuelwood Removal 4/	ACRES X 1000	4.5	4.1	-0.4

1/ DEIS, Figure II-2, page 2.33, compares other alternatives studied.
2/ Figures II-3 and II-4, DEIS, page 2.34, compares other alternatives.
3/ DEIS Figures II-5 and II-6, page 2.35, compares other alternatives.
4/ Figures II-7 and II-8, DEIS page 2.36, compares other alternatives studied.

Wildlife Habitats

The shifts in Management Prescriptions and vegetation management result in changes in the characteristics of wildlife habitats across the National Forests (Table 1.8). The most significant change is the 67,200 acres increase in remote habitats caused by Management Prescription shifts which create more Primitive and Semi-Primitive recreation opportunities (Table 1.4 and 1.8).

Old growth conditions are increased by 3,400 acres since 1,000 acres of land were acquired in Wilderness (MA 5.1), 1,900 were assigned to provide Primitive recreation in MA 6.1 and 500 were added to special areas (MA 8.1) where old growth conditions will be emphasized. The diversity index was enhanced by one point since Alternative D2 has more remote habitat than Alternative E (DEIS, page 2.51).

Deer wintering areas increased by 900 acres as a result of new land acquisition. Annual habitat improvements will increase by about 100 acres by the year 2030 because of added emphasis on managing for wildlife and recreation benefits (Table 1.8).

The capacity for hunting, fishing and non-game enjoyment increases as a result of increased emphasis on providing recreation access and trails to the National Forests (Table 1.8). These increased capacities far exceed projected demand, however. The actual result of improved access is likely to be enhanced enjoyment and quality of use by people visiting the National Forests.

Table 1.8 Changes Related to Wildlife Habitat Characteristics

Characteristic	Unit of Measure	Alternative D	Alternative D2	Difference
Diversity 1/	Points	40	41	+ 1
Deer Wintering Area 2/	MAcres	19.4	20.3	+ 0.9
Old Growth 2/	MAcres	96.6	100.0	+ 3.4
Remote Habitats 2/	MAcres	141.1	208.3	+67.2
Shrub Openings 3/	MAcres	0.8	1.4	+ 0.6
Habitat Improvements 4/	MAcres/Year	1.0	1.1	+ 0.1
Big Game Hunting 5/	MRVD	52.0	57.2	+ 5.2
Small Game Hunting 5/	MRVD	21.6	22.9	+ 1.3
Fishing 5/	MRVD	11.8	13.0	+ 1.2
Non Game Enjoyment 5/	MRVD	72.7	76.4	+ 3.7

1/ See page 2.51 of DEIS for discussion of diversity. Alternative D now has more remote habitat than E.
2/ See pages 2.56 and 2.57 of DEIS
3/ See Figure II-39, page 2.67 of DEIS
4/ See pages 2.58 of DEIS
5/ See pages 2.60 and 2.61 of DEIS

Roads and Skid Trails

Increased emphasis on backcountry management, decreased emphasis on timber production and the desire for more flexibility in future decision-making results in fewer skid trails and less road construction or reconstruction being needed and a shift towards building a higher proportion of infrequently used seasonal roads (Table 1.9).

Although the total reduction in new roads needed over the long term is only 2 miles, the reduction in construction and reconstruction in the first decade is 8 miles. This amounts to a 42 per cent reduction in scheduled road building over the next 10 years (Table 1.9).

Ninety per cent of the 11 miles of road scheduled for construction or reconstruction will be built for infrequent, seasonal use and will be gated to control the type and timing of use. The remaining 10 per cent will also be gated, although they will be built to a higher standard so that they can be more frequently used. No all season, ungated roads are scheduled for construction in the next decade (Table 1.9).

The reduction in total mileage, the shifts toward gated, lower standard roads and the delayed schedule for construction will allow Forest Service decision-makers and the public much greater flexibility 10 years from now, when they must again determine how best to manage the National Forests to meet society's changing needs and wants.

Table 1.9 Changes in Amounts of Roads and Skid Trails (Miles)

Construction and Reconstruction	Designation		Total		Decade 1	
	GMNF Type	Traffic Service Level (TSL)	D	D2	D	D2
Skid Trail	a	Not Applicable	786	700	39 1/	35 1/
Infrequently used, 2/ seasonal road	b	D	15	25	8	10
Frequently used, 2/ seasonal road	c	C	24	13	9	1
All Season road 2/	d	B	3	2	2	0
Total Roads	b,c,d	D,C,B	42	40	19	11

1/ The amounts of skid trails used each year are shown. The amount constructed or reconstructed each year will be far less and is impossible to predict. See DEIS page 4.08.

2/ See DEIS, pages 4.07 - 4.14 and DEIS Appendix I for more information on roads built to meet the objectives of these and other alternatives studied.

Minerals

Only slight changes result in the availability of minerals for leasing and exploration (Table 1.10). The biggest change results from the acquisition of land since the earlier analysis began in September of 1981 (Plan, Appendix M). Leasing minerals will be delayed on 27,300 acres assigned to MA 9.2. These lands must be inventoried and studied further before exploration, development or extraction can be allowed (Plan, Chapter IV-F, MA 9.2).

Lands which cannot be leased because they are in Wilderness or the White Rocks NRA increased by 1000 acres as a result of new acquisition (Table 1.10). No surface disturbance restrictions occur on an additional 3,300 acres as a result of increasing Management Prescriptions 4.1, 6.1, and 8.1 (Tables 1.2 and 1.10). As a net result, the land area which could be leased if standard restrictions governing mineral activities are met decreases by 200 acres (Table 1.10).

Table 1.10 Changes in the Availability of Minerals (M Acres)

Availability	Alternative		Difference
	D	D2	
No Leasing 1/	86.4	87.4	+ 1.0
Delay Leasing 2/	0	27.3	+27.3
Lease if:			
No Surface Disturbance 3/	78.5	81.8	+ 3.3
Standard Restrictions are met 3/	129.1	128.9	+ 0.2
Total	294.0	325.4	+31.4

1/ By law, lands in Wilderness and the White Rocks NRA are unavailable for leasing (Figure II-35, DEIS page 2.64).

2/ Newly acquired lands in MA 9.2 will not be leased until further study is done (Plan, Chapter IV-F).

3/ See DEIS pages 2.63 - 2.65, 3.10-3.11 and 3.43 for information on the availability of minerals in other alternatives.

Pastures and Shrub Openings

The refinements in management of the Finger Lakes National Forest result in a lower capacity to support livestock grazing and a higher acreage of shrub openings (Table 1.11).

The acreage of pastures to be managed for livestock remains unchanged from before. An error was made earlier when reporting pasture acreage and has been corrected in the Final EIS (Tables 1.3 and 1.11) and Plan.

The intensity of pasture management was reduced slightly in Alternative D2 because demands for livestock forage are expected to continue dropping over the next decade. Long term productivity of pastures will be maintained but pastures will not be managed to increase forage production. Lower management intensities than proposed in Alternative D will result in improved economic efficiency. These lower intensities will still be higher than what has been practiced on the FLNF over the past several years.

Shrub openings increased by 600 acres over Alternative D in response to public desires (Table 1.11). The public commented that maintained shrub openings are relatively scarce in the Finger Lakes region and a higher proportion should be retained (FEIS, Chapter II).

The 600 acre difference in shrub openings occurs on lands which are presently in conditions which are economically efficient to retain as shrub openings and are located where overall vegetative diversity and public enjoyment of them will be enhanced.

Table 1.11 Changes in Pastures and Shrub Openings

Pastures and Shrub Openings	Unit of Measure	Alternative D	Alternative D2	Difference
Pastures	ACRES	4,500 1/	4,500 1/	0
Livestock Grazing Capacity	AUM 2/	11,400	10,850	-550
Shrub Openings	ACRES	800	1,400	+600

1/ The DEIS incorrectly showed 4,777 acres of pastures. The correct acreage is 4,500 and no actual change has occurred.

2/ An Animal Unit Month (AUM) reflects a pasture's ability to provide forage for a one thousand pound livestock animal for one month.

Economic Values

The refinements made in the preferred alternative do not cause a large change in the economic efficiency of management. The total present net value only increases by 0.5 million dollars (Table 1.12).

The present value of benefits decreases slightly as a result of a 1.5 million dollar decrease in timber benefits offsetting a 1.3 million dollar increase in recreation benefits (Table 1.12). Timber benefits decrease because lower volumes are allowed for sale (Table 1.7) and recreation benefits increase because Semi-Primitive recreation demands can be met with the increased acreage of Semi-Primitive management prescriptions (Table 1.4).

The present value of priced costs improves by 0.7 million dollars since the costs of timber management, road building and range decrease by a total of 1.2 million and the costs of recreation and wildlife management only increase by 0.5 million dollars (Table 1.12).

The annual net cash flow ends up improving by 6,000 dollars because the reduction in annual costs outweighs the reduction in annual receipts (Table 1.13). Timber receipts would decrease by 18,000 dollars per year if the allowable sale quantity of timber were cut in each alternative (Table 1.13). Since the timber scheduled for cutting in the proposed Plan was below the new allowable sale quantity, reduction in receipts will not actually occur, however.

The combination of less intensive timber management (Table 1.6), a smaller and lower standard road system (Table 1.9) and less intensive pasture management (Table 1.11) results in a 34,000 dollar annual cost savings in the first decade. This savings outweighs the additional 10,000 dollars of annual expense for doing more recreation and wildlife habitat management. A net decrease of 24,000 dollars in average annual costs results (Table 1.13).

Table 1.12 Changes in Present Values[1/] (Millions of 1978 Dollars)

Present Value[2/]	Alternative D	Alternative D2	Difference
Total Present Net Value	+108.2	+108.5	+ 0.5
Present Value of Priced Benefits[3/]	+153.6	+153.4	- 0.2
General Recreation	72.3	73.6	
Wildlife	37.1	37.1	
Downhill Skiing	29.8	29.8	
Timber	13.2	11.7	
Range	1.2	1.2	
Present Value of Priced Costs[3/]	- 45.4	- 44.7	+ 0.7
Timber[4/]	9.4	8.8	
Roads	7.6	7.2	
General Recreation	7.7	7.8	
Wildlife	1.5	1.9	
Range	2.2	2.0	
Downhill Skiing	0.2	0.2	
Other[5/]	16.8	16.8	

1/ The real dollar values of all priced benefits and costs occurring over time have been discounted to the present using a rate of 4 percent.

2/ See DEIS 2.69 - 2.78 for information on the PNV of other alternatives considered.

3/ See DEIS Table 2.12 for similar information on other alternatives studied.

4/ The discounted costs of maintaining and constructing roads are shown. The values do not reflect the reductions in roading costs explained in DEIS, Appendix I.

5/ These costs do not vary between alternatives and cannot be directly associated with any of the resource categories listed. A description of these costs is given in DEIS, Appendix B, Section IV.

Table 1.13 Economic Values in Decade 1 (Excluding Ski Areas)

Average Annual Economic Value (Thousands of 1978 Dollars)	Alternative D	Alternative D2	Difference
Annual Net Cash Flow 1/	-1,454	-1,448	+ 6
Cash Receipts	+ 588	+ 570	
Non Cash Value	+3,582	+3,582	
Priced Costs	-2,042	-2,018	
Annual Cash Receipts 2/	+ 588	+ 570	- 18
Timber	+ 552	+ 534	
Range	+ 29	+ 29	
Other	+ 7	+ 7	
Annual Noncash Value 2/	+3,582	+3,582	0
Timber	0	0	
Range	+ 23	+ 23	
Other	+3,559	+3,559	
Annual Priced Costs 3/	-2,042	-2,018	+ 24
Timber	441	433	
Range	62	54	
General Recreation	361	368	
Wildlife	28	31	
Roads	310	292	
Fixed Operations & Mtce.	840	840	

1/ See pages 2.84 - 2.85 of DEIS for information on cash flows of other alternatives.

2/ See Table 2.19, pgae 2.86 of DEIS, for information on annual cash and noncash benefits of other alternatives.

3/ See Table 2.15, page 2.82 of DEIS, for information on annual priced costs of other alternatives.

Summary

In summary, the refinements made in Alternative D are minor with respect to the quantitative factors tracked and compared in our analysis. The refinements result in major qualitative enhancements, however, and have been made to respond to the publics for whom the Green Mountain and Finger Lakes National Forests are managed (FEIS, Chapter II).

The major qualitative thrusts of these refinements include flexibility, providing what private lands do not, satisfying a wide variety of choices and meeting demands. Improved economical and ecological soundness also result. The revised alternative D presents less risk of environmental harm than the earlier version, has fewer cumulative effects on the environment, fewer irreversible and irretrievable commitments of resources and fewer unavoidable adverse effects. Chapter II describes how the increased, qualitative benefits were achieved.

CHAPTER II

RESPONSE TO PUBLIC COMMENTS

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II. Response to Public Comments

Introduction

This appendix includes: 1) a summary of the analysis of public comments, 2) verbatim excerpts or paraphrased summarizations of comments from the public letters along with the Forest Service responses to those comments, and 3) a reproduction of complete letters received from government agencies, and elected officials. These letters are included to give the reader some idea of how their elected representatives and public servants responded to the proposed Plan.

Comments from all letters, even those not reproduced in their entirety, were coded and grouped into comment categories to facilitate analysis and response. Every attempt was made to accurately capture the substantive comments of each letter and display them in the appropriate category. Copies of all letters may be reviewed at the Forest Supervisor's Office in Rutland, Vermont.

Purpose and Value of Public Comments

Most commenters suggested revisions to the draft Forest Plan that they hoped would be reflected in the final Plan. The Forest Service looked at public comments to see if our land management decisions were responsive to those goals and values that the public wished to see implemented. We also examined public comments to determine if our analysis and resulting conclusions were understood by the public and were considered to be valid. Lastly, we looked for suggestions on how to improve the readability and content of the management direction in our Plan.

Forest Service decisions are based on five factors: 1) the law, 2) technical information, 3) public demand and resource capability, 4) professional judgment, and 5) public opinion. Public opinion and professional judgment enter into the decisionmaking process when there is room for interpretation in any of the first three factors. Public opinion, for example, would not be a factor in determining whether or not to comply with an existing law, but it does affect decisions about where managers should emphasize various land and resource conditions across the National Forest.

Analysis of public comments is not a vote counting process. An individual comment on a particular issue is considered just as fully by us as a group of several comments. The decisionmaker must judge each comment on its own merit and against legal, technical, and resource capability constraints.

Various types of comments about the Forest Plan and EIS were treated in the following way. Comments offering technical corrections or pointing out inconsistensies helped us to correct technical errors in the documents. Comments resulting from misunderstanding indicated areas where the documents needed clarification.

Comments requesting clarification or questioning some part of the analysis caused us to clarify our position or answer their concerns in this appendix or in the Record of Decision. In some cases, new or revised information had to be provided in the Final EIS or Plan.

Lastly, comments expressing personal preference, had to be analyzed and responded to. For example, many people preferred more backcountry recreation or less roads and timber cutting. These comments are the most important to the individual commenters and the most difficult for us to reconcile when preferences conflict. These comments pointed out additional ways to modify the Final Plan and better satisfy overall public needs and wants.

The changes recommended by the public were not always possible. The proposed changes were sometimes beyond Forest Service jurisdiction or legal bounds. For example, the Forest Service cannot establish or remove Wilderness designations, as some commenters advocated. Only the U.S. Congress can take such action.

Analyzing Public Comments

The Draft EIS and Proposed Forest Plan were available for public review and comment from December 9, 1985 to March 31, 1986. During this period and up to April 21, 642 individual communications were received at the Supervisor's Office. Upon receipt, all correspondence was given a control, or identification, number and receipt was acknowledged with a pre-printed postcard. The control number was used to keep track of the comments found in each written communication and our response to them.

All letters were read by the Forest Supervisor, Rangers, and Staff. Substantive comments were coded and entered verbatim on a computer program for later analysis. A total of 1661 individual comments were recorded. We recorded each letter's control number, the author's name and address, the state they were from, an organizational code if they were affiliated with a particular organization or government agency, and the number of signatures on the letter.

This enabled us to produce reports summarizing any combination of the information that was recorded. We used the program to compile information on the total number of respondents who were associated with each organization and from each state. We produced an address list, an alphabetical listing of names of people commenting, and a numerical listing of control numbers, along with the comment codes identified with each letter.

Lastly, we organized, counted and extracted all of the comments which had been assigned the same or related codes. This enabled us to collectively consider the substance of these comments, analyze the tradeoffs and determine the most appropriate responses.

This analysis indicated a logical grouping of comments into thirteen principal categories for the Green Mountain National Forest and five categories for the Finger Lakes National Forest (Table 2.1). A summary of the comments relating to each of these categories and our responses to them are presented later in this chapter.

The original letters we received, the codes assigned to them and the reports we created to analyze them are available for public review at the Supervisor's Office in Rutland.

Table 2.1 Principal Categories of Public Comments

National Forest	Category	Page
Green Mountain	1) Overall Reaction to DEIS/Plan	2.06
	2) Choice of Alternatives	2.08
	3) Resource Protection	2.10
	4) Land Acquisition	2.15
	5) Long Trail/Appalachian Trail Protection	2.18
	6) Backcountry Recreation	2.20
	7) Ski Area Expansion	2.26
	8) Off Road Vehicle Use	2.27
	9) Timber Management	2.29
	10) Vegetative Composition and Wildlife Habitats	2.35
	11) Minerals	2.39
	12) Road Construction & Management	2.41
	13) Monitoring and Implementation of Plan	2.43
Finger Lakes	1) Trail Management and Use	2.45
	2) Shrub Openings	2.47
	3) Vegetation	2.48
	4) Pasture Management	2.50
	5) Land Acquisitions	2.51
	6) Multiple Use Management	2.52
	7) Minerals	2.52

Profile of Commenters

A look into who responded to our DEIS and Plan provides some insight. Out of the 642 commenters who wrote, 126 were writing to us from outside New England, (107 were New York residents), 155 were from Vermont, 26 were from the rest of New England and 335 (mostly form letters) included no return address.

The total number of replies we received may be shown in the following manner:

Type of Reply	Number of Replies	Number of Signatures	Percent
Personal Letters	337	412	53
Form Letters	305	346	47

Most of the commenters (278) wrote as individuals and not as members of any organized group or agency. A high number of signatures were received from the horseback riding and snowmobile groups (71 and 305, respectively). Major state and national environmental groups responded to the documents as well as state and federal agencies concerned with land use decisions (Table 2.2).

Table 2.2 Organizations Responding to Plan

Organization	Number of Letters
Individual	278
Snowmobiler	218
Horseback Riders	72
Environmental Group	36
State and Local Official	10
University Official	8
Forest Service Employee	8
Federal Agency	8
Ski Area Management	4
Total	642

The full text of letters from government agencies and elected officials are included in accordance with Forest Service policy (Appendix A).

Index to Comments

All individuals who signed letters commenting on the DEIS and/or Plan are listed in alphabetical order (Appendix B). Adjacent to the name are the codes we assigned to their comments and the number that we gave the letter upon receipt for control of recordkeeping,

A page number follows each comment code and shows where a summary of those comments and our response to them can be found. If no page number follows, the comment was simply an observation that we wanted to keep track of, but did not need to respond. The comment codes and our discussion of them are organized around the principal categories outlined earlier (Table 2.1).

The subject covered by the comment codes are also listed (Appendix C). The two lists enable you to see who commented and what the subject of their comments were. Further reading of this chapter and cross referencing from the lists should provide you with a better understanding of the comments received and the Forest Service response to them.

Comments on the Green Mountain National Forest

1. Overall Reaction to Proposed Plan and DEIS

Comment Codes: R10, M50

Comments:

a) Public Support

The planning documents brought a wide range of praise from seventy commenters. They congratulated the Green Mountain for a quality product that could well serve as a model for other forest plans. They commended the Forest Service on a broad-minded, farsighted philosphy and proposal that was clearly written and understood. The overall analysis was considered to be comprehensive and logical. Economic analyses were considered valid and supportive of the majority of management decisions.

Most commenters felt that the Plan was sensitive to the needs of all users while offering increased emphasis on backcountry recreation, protection of wildlife habitat, aesthetics and water quality. Many were pleased to see no increase in the timber program, a greater emphasis on longer rotations and unevenaged management, a conservative road building program, and limited ski area expansion and mineral development opportunities. Many commenters agreed with the unique role of the GMNF in providing what is readily not available on private lands. They agreed that the GMNF is a scarce resource and the economic exploitation of timber and minerals does not have to be paramount. They believed the Plan promotes environmental quality.

Several respondents also expressed their appreciation for the efforts of the Forest Service to involve them in the planning process and to openly address public comments during the review period. They felt that the Forest Service officials were accessible throughout this lengthy process and actively encouraged public participation. The Forest Service was thanked for developing a set of documents that responded meaningfully to local sentiment and to actual conditions and context rather than artificial assumptions about the proper role of the Forest.

One correspondent stated that another positive dimension of the planning approach on the Green Mountain is the objective appraisal of environmental conditions and consequences. The writer was favorably impressed that the DEIS provides reasonably accurate qualitative descriptions of the impacts of various forest uses, and permits meaningful environmental comparisons among the different planning alternatives. He was pleased that the DEIS ranks the alternatives according to their cumulative impacts on specific resource areas.

b) Goals and Objectives

At several local meetings to discuss the draft Plan and DEIS, some attendees felt that the goal section of the Plan does not follow the role statement and ought to be rewritten. The goal statements put too much emphasis on timber and minerals and do not adequately cover recreation and environmental protection. This does not accurately reflect the public's perceived role of the GMNF.

Response:

The Forest Service has chosen to continue to manage according to the basic philosophy and role presented in the Draft Plan. We have made some modifications in our policies and quidelines to bring the management direction of the Final Plan in closer harmony with that philosophy and role.

The combined acreage of Primitive and Semi-primitive recreation opportunities have been increased, while timber harvest levels and road building have been slightly decreased. Stronger measures have been written to protect soil, water, air, wildlife and other basic resources. The changes result in a more economically sound Plan and management direction which should cause economically sound actions to follow.

The changes are in keeping with our philosophy of maintaining flexibility in light of an uncertain future, providing what private lands do not, providing a wide variety of choices for the public, meeting demands, and providing ecologically and economically sound management.

We have rewritten the goals and objectives in our Plan to better reflect the role of this National Forest and the philosophy behind its management (Plan, III - C and D).

2. Choice of Alternatives

Comment Codes: M02, M04, M10, M50

Comments:

a) Alternative D Support

Twenty-six commenters believed that proposed Alternative D provided a balanced mix of competing uses in managing forest resources and endorsed the alternative as written. They felt it was a well-rounded, workable, flexible plan of operation.

Alternative D Support With Modifications

Commenters were pleased that the underlying assumption of Plan was the role that the GMNF should provide what private lands cannot. Some individuals stated that they believed the Plan to be "enlightened", "flexible", and "did not unnecessarily foreclose future options".

A total of 49 people explicitly favored Alternative D if certain modifications were made to strengthen it. Of this group, several individuals mentioned that they would ideally select Alternative F if it were politically realistic. However, they felt that D was a fair attempt to balance conflicting interests and maximize the benefits to society both now and in the future. They would support D even more if the changes discussed later in this appendix were incorporated in the final Plan. Their comments centered on the categories listed in Section III, Table 1.

Implied Support for Alternative D

Several local interest groups and individual writers expressed their satisfaction with those sections of the Plan that they focused their attention on. These were groups that complimented planners on designating Lincoln Mountain as a continuous forest cover area or actively supported the use of snowmobiles in the southern half of the Forest. They were representatives of the horseback riding interests who wished to see more facilities and trails designed for horses. From their letters, support for the Proposed Plan (Alternative D) was implied.

Many individuals just commented on their particular interest area without openly stating whether or not they would endorse Alternative D if their suggestions were incorporated in the final Plan. By the nature and tone of their letters, it was assumed that they were, indeed, favoring the proposed alternative, but wished to share their ideas on how portions of the Propsed Plan should be strengthened. Using this rationale, 486 commenters implied support for Alternative D.

b) Alternative E

One individual believed that the Forest Service should adjust its management plan more toward Alternative E (backcountry emphasis). The potential of federal land as a backcountry and wild haven cannot be replicated in New England.

c) Alternative F Support

Seven individuals 1 percent) favored Alternative F as being least disruptive environmentally and offering more protection to sensitive areas. It provides more land in MA 6.1 and 6.2, has the highest PNV, and ranks lowest in terms of cumulative effects on soils, water quality, backcountry recreation, noise, and visual quality. It also is the most flexible in meeting anticipated future conditions and demands, a highly desirable characteristic for a long-term plan in rapidly changing circumstances.

d) Opposed All Alternatives

One individual opposed all of the alternatives. He recommended that the GMNF and FLNF be managed as permanent biological preserves for backcountry/wilderness recreation and wildlife habitat. Roads and commodity production would be prohibited.

e) No Specific Comments

Several respondents did not indicate where they stood on the proposed alternative. It was not prudent to group them as favoring or disfavoring it.

f) Summary

Based on this breakdown, 87% of the commenters either explicitly endorsed or indicated an implied preference for Alternative D. One percent of the respondents supported other alternatives and the remaining 12% expressed no strong preference for or against the proposal. In the case of one individual, all alternatives were opposed.

Response:

The Forest Service has chosen to modify the proposed plan (Alternative D) in ways which will retain the flavor of the original proposal while improving on the overall management of the National Forests. The modifications we have made are in the direction advocated by most respondents and move the Final Plan towards the conditions outlined in Alternatives E and F. Furthermore, changes have been made in the Final Plan which will keep open the option of moving further towards Alternative F in the future should that turn out to be desirable.

3. Resource Protection

Comment Codes: E53, F01, F10, F20, F30, F40, M60

Comments:

a) Filter Strips

Twenty-six commenters discussed resource protection. Seven individuals felt that the proposed standards in the Plan might not be adequate to protect water quality on the Green Mountain. Particular concern centered on the width of the buffer strips along streams and other bodies of water where logging, road construction, the use of chemicals, or other management activities may occur.

One author noted that the presumed purpose of a filter strip is to prevent sedimentation into the stream as well as preserve the view from the water for those who are boating. It was recommended that the final Plan set a 100 foot minimum width for stream filter strips, while continuing to base total width on factors of slope steepness and erosion potential. As a general practice, the stream side of the strip would be located at least at the 25 year flood boundary, thus including all riparian vegetation.

Another requirement should be added to the Plan: Management activities will be designed so as not to degrade stream and lake water quality standards.

Response:

We have made and will continue to make every reasonable attempt to keep waters of the Forest clean and in their natural state. All waters will be managed to meet or exceed the state standard assigned to them. A clear statement of environmental protection goals has been added to the Plan to better guide management (PLAN, IV-C).

Standards and Guidelines have been added or revised to see that at least the area 100 feet from streams will receive special management attention. Buffer and filter strip widths have been increased to further reduce the risk of stream degradation. All waters on the GMNF will be protected as though they were a source for drinking (PLAN, IV-E).

A more complete description of the present condition of waters on the National Forest and how water will be protected is provided in the Plan (PLAN, IV-E, Soil and Water; Appendix L).

b) Chemical Use

Five commenters expressed their concern over the proposed use of chemicals. One stated that he had less confidence in the use of chemicals than the authors of the Plan. He wished to see chemicals applied only if there is no other alternative. Two individuals suggested that aerial applications cannot be controlled if sprayed within 100 feet of water bodies. A 250 foot distance was recommended along with monitoring, inspection, and enforcement procedures to assure that standards are followed and that they work.

Although the Plan indicates that chemicals may be used to release timber stands, convert stands, or control pests, there is little information on the type, amount, and location of current applications on the Forest. The commenter urged that both a basic regard for the forest environment and applicable law require planners to take affirmative steps to formulate a well-crafted program to protect water quality against the misuse or accidental spill of chemicals.

One said that herbicides and pesticides should only be used as a last resort. Integrated pest management and other alternatives should be pursued with vigor. Chemicals should not be used at all in Wildernesses (MA 5.1), where Primitive recreation is provided (MA 6.1), or Special Areas (MA 8.1).

The commenter was particularly troubled by the lack of concern in the documents with respect to fertilizer used in range management. More detailed analysis and disclosure is needed, as well as a stronger standard preventing fertilizer pollution of forest lakes and streams.

Response:

We share the public's concern over the use of chemicals. We will continue to avoid using chemicals if at all possible and whenever an unacceptable risk to the environment exists. We will continue to implement a system of integrated pest management with chemicals being used only when all other methods are insufficient (PLAN IV-E, Integrated Pest Management).

In Wildernesses, primitive areas and special areas we have chosen to keep open the option of using chemicals, but only as a last resort. We recognize the incompatibility of any chemical applications with these management prescriptions, but feel that such usage could be advantageous if unforeseen situations arise in the future.

A grave danger to the conditions we are trying to protect and enhance in these or adjacent areas would have to exist before chemicals are considered. No applications will be performed prior to a thorough environmental analysis and consultation with the public.

In order to further reduce the risk of environmental damage when chemicals must be used, stricter standards and guidelines, including greater minimum distances of applications from water, have been incorporated into the Plan (PLAN IV-E, Integrated Pest Management).

c) Ski Area Expansion

Three writers mentioned the impact of ski area development on water quality. One commenter suggested that the section on ski area management and expansion contain guidelines for the management, monitoring, and siting trails, parking facilities, and wastewater treatment in existing ski areas along with enforcement of best management practices. Such direction was felt to be relevant and timely in response to Vermont's current litigation and legislation to protect near pristine headwater streams, yet accommodate the limited ski area and accompanying condominium development which is currently underway.

Another correspondent stated that the DEIS cites water quality as the leading reason to proscribe the spraying of effluent on forest land. Yet elsewhere, planners appear to limit the waste water spraying proscription to only those projects that constitute new development. Given the water quality risks, the writer recommended that the proposed standard disallowing effluent spraying on the GMNF not be compromised. The final Plan should make the standard unambiguous.

Response:

We have strengthened all of the standards and guidelines in the Final Plan so that water quality will be adequately protected no matter what type of management activity is proposed on any location of the National Forest (PLAN IV-E, Soil and Water).

Activities performed to expand existing ski areas will have to comply with all appropriate standards and guidelines in the Final Plan. Further environmental analysis and public review will be performed prior to allowing any expansion to occur (PLAN, IV-F, MA 9.3).

The standards on effluent spraying have been clarified to state that no new effluent spraying will be allowed on National Forest System lands unless no other feasible alternative exists to remedy present sewage disposal problems (PLAN, IV-F, MA 7.1). All sewage treatment will meet state water quality laws and all necessary State permits will be obtained prior to approval and operation.

d) Watershed Values and Planning

Five respondents stressed the value of watershed conservation and the need for comprehensive planning. Watershed values appear to be absent in the documents, yet watershed conservation is important in terms of flood control, municipal water supplies, water quality, wildlife habitat, and the maintenance of stream flow. Two individuals recommended that we acknowledge the relationship of good forest management practices with watershed conservation in the role of the Forest and that these values be considered in planning, managing and monitoring the Forest.

Three of these five commenters felt a watershed management plan should be developed to provide a strategy for protection of all streams, brooks, and wetland areas for both the current National Forest holdings and new acquisitions. Subjects that the authors would like to see included in a watershed plan are: continuation of stocking, edge management, aquatic vegetation control, recreation management, and compatible uses.

As part of the Plan, special protection should be given to all significant recreational streams including, but not limited to, those inventoried for Wild, Scenic or Recreational characteristics, and a system of stream classification should be undertaken. The Plan should target all streams for improving or maintaining water quality at Class A unless clearly impractical. Water quality monitoring plans should be developed. Sources of pollution should be identified. Plans to remove or abate pollution sources from new forest acquisitions should be part of the plan.

Response:

Consideration of watershed values was never absent from our management planning and analysis, but we needed to do a better job of clearly presenting it. We have added an improved statement of the goals and objectives of management which highlights the values of watershed and high water quality to the ecosystem and to people (PLAN, IV - C and D).

We agree that consideration of watershed values must be integrated with consideration of all other resources and uses on the National Forest in order to adequately protect those values.

We disagree that a separate watershed management plan should be developed. This would result in a disintegration of values rather than consideration of the ecosystem as a whole. Instead, we have chosen to make watershed considerations like other resource values, an interrelated part of the whole Forest Plan. We have added a section on management and protection of significant recreational streams (PLAN, IV - E) and have improved our description of how water quality monitoring will be performed (?).

e) Special Area Protection

One commenter recommended that two important rare plant localities be protected with an MA 8.1 prescription - Moses Pond in Weston and Blue Bank in Ripton. They further suggested modifying the boundaries of the Abbey Pond special area in Lincoln.

Another person felt that a biological inventory of the Billings Pond area would be wise since it may possess a diversity of plants and animals. If indeed it does, it would be prudent to consider the area for some form of protection.

One individual wished to see additional Research Natural Area designations for certain remote, high elevation ponds, such as those found in MA 8.1k, for research on acid rain.

Thirty-eight commenters felt the Grout Pond Special Area in MA8.1 should encompass the entire pond and surrounding lands. Many felt the special values should be protected by clearly defining the limits of motorized access. Parking should be kept away from the shoreline so that people enjoying the pond will have a sense of primitive solitude. Keep the shoreline of the pond undeveloped and identify which shelters and facilities will be maintained.

One commenter asked that planners preserve all historical landmarks and any evidence of the labors of previous generations.

Response:

Uncommon plants occur at Moses Pond, Blue Bank, and Billings Pond as well as numerous other spots. These spots are not uncommon or outstanding enough, however, to be designated as Special Areas (MA 8.1). All threatened, endangered or sensitive species will be protected, along with other uncommon species of concern, even if they do not occur in MA 8.1 (PLAN, IV - E).

The Abbey Pond special area has been enlarged and now joins with the boundary of the Beaver Meadows special area (PLAN, IV - F, MA 8.1). High elevation ponds have been added to our list of special areas to be studied to determine whether they should become Research Natural Areas (PLAN, IV - F, MA 8.1). The Grout Pond Special Area has been enlarged to encompass the entire pond and it's management prescription addresses all the concerns raised by the public (PLAN, IV - F (8.1C)).

A program for the inventory and protection of cultural resources has been underway for several years and will be continued under the approved Plan (Plan, Appendix H).

4. Land Acquisition

Comment Codes: J01, J10, J30

Comments:

a) Land Ownership Adjustments

A total of 53 commenters responded on our proposed land acquisition policy. All were in favor of the emphasis on consolidation and acquisition of public holdings. The acquisition targets were viewed as particularly commendable in light of the modest and shrinking base of natural appearing land in the East, where acquisition can benefit water quality, visual quality, and recreation opportunities.

Certain individuals recommended that we give highest priority to acquiring lands which offer protection to the rivers and streams that flow out of the Forest and, additionally, to those lands which offer the chance to consolidate holdings within the Forest. Some of the water bodies mentioned for future acquisition include the White River, Mad River, New Haven River, Middlebury River, Deerfield River and Roaring Brook, Hapgood Pond, Harriman, and Somerset Reservoirs. In addition, acquisition to protect the AT/LT and to improve public access to other Forest lands and water bodies was stressed.

One person questioned why the GMNF wasn't purchasing agricultural lands and managing them for multiple use. Another respondent believed that the Plan could be strengthened by a more positive policy concerning agriculture. He viewed the protection of agriculture as one of the Forest Service's highest priorities. The Forest Service should act to protect agricultural resources within its authorized purchase boundaries such as the Martin Farm in Rochester. The Forest Service should be willing to purchase development rights on agricultural land. This person perceived the current lack of a comprehensive agricultural policy to be the Plan's greatest flaw.

Response:

Land acquisition continues to be a high priority in the Final Plan. All of the reasons and priorities for acquiring lands that were mentioned by the public are in agreement with our policies (PLAN, IV - E, Lands).

Although not stated in the proposed plan, the Forest Service is committed to preserving agriculture in Vermont and we have taken actions to do so. In the future, acquisition priorities will include securing development rights to agricultural lands where this will help preserve agriculture and enhance adjacent National Forest resources and uses. Our Final Plan has been improved by stating this policy (PLAN, IV - E, Lands).

b) Newly Acquired Lands

Thirty of the commenters would like to see new acquisitions placed in either a primitive (MA 6.1) or special management category that would limit development opportunities until a wide range of use options could be explored. A process for studying the areas and involving the public should be described in the plan.

Response:

We created a management prescription (MA 9.2) for newly acquired lands to restrict future activities and keep options open until the areas can be fully studied to determine the most appropriate management for them (PLAN, IV - F (9.2)).

Appendix M of the EIS and MA 9.2 of the Plan describe the process for studying these lands and involving the public in future management decisions.

c) Local Approval

Three persons wanted to deny local communities the right to veto National Forest land acquisition within their boundaries.

From the opposite viewpoint, one Town Board of Selectmen was disturbed that the GMNF owns approximately 38% of the land within the Town's borders. They stated that among their traditional duties are guidance and advice in planning for the future. They do not feel that they can fulfill their responsibilities to the Town if so much of the land is restricted from their best judgment and advice. They proposed that the final Plan include provisions for formalizing local government representation in the planning processes of the GMNF.

At a public meeting, another group said that National Forest land creates a burden to local towns since the Federal government does not pay taxes.

Response:

The right of state and local approval of National Forest acquisition is part of the legislation which enables the GMNF to acquire lands in Vermont. The Forest Service has no authority to change this legislation nor any wish to do so. State and local approval of Forest Service acquisitions is part of the original agreement made between federal and state governments and is an excellent vehicle for maintaining communications.

We recognize that acquisition of private lands by the Forest Service may add to the strains on the local tax base in some towns. We are working with State and local governments to better understand all of the forces behind such strains and to help reduce them wherever possible.

We have helped some towns to understand the effects of National Forest acquisition on local revenues and to work out financial agreements with sellers to offset anticipated losses.

Denial of land acquisition by the National Forest never represents the sole solution to the problm of high property tax burdens in some towns. In fact, National Forest acquisitions usually benefit local communities even when the sale, on the surface, appears to cause a loss in local tax revenues. We will continue to work with all towns to help them fully understand the positive and negative effects of our land acquisition program.

5. Long Trail/Appalachian Trail Protection

Comment Code: A30, F50, J20

Comments:

a) Fifty-four commenters favored increasing the width of the Long Trail/Appalachian Trail (LT/AT) corridor from 400 feet to 1000 feet. According to the comments, the draft Plan does not sufficiently protect this nationally important trail system.

Some felt too much latitude for incompatible activities is evidenced in the language allowing skid trails and temporary roads to cross the trail. Suggestions for changes in the trail's management include: Prohibition of any additional road crossings of the trail or roads within the trail corridor; no skidding across or within the trail corridor; no development within the corridor of any commercial facilities including utility lines, communication or broadcasting facilities; no energy collection or generating apparatus; 'no ski lifts or terminals should be permitted within the trail corridor, nor any crossings of the LT/AT by downhill ski trails; no mineral extraction; no ORV crossings; no timber harvesting within the trail corridor except for the retention of scenic vistas and to meet other recreation or wildlife objectives; and high voltage power line crossings should be allowed. Shelters and campsites should be explicitly included in the special area.

These changes for management within the trail corridor would protect and enhance hiking trails in the Northeast. It was felt that there would be minimal impact on the GMNF timber sale program since the areas affected are principally higher elevation, less productive sites. The prohibition of skidding across the trail would only necessitate rescheduling sales to remove timber via separate east/west sales without affecting long term volume.

One person recommended that Section J., Roads, 1, be revised to state that: "Roads and skid trails within the management area be kept to an absolute minimum, occurring only where no feasible alternative exists". The writer supported Plan language that "traffic on Forest roads and skid trail crossings be limited to winter months whenever possible".

One respondent stated that special use permits along the LT/AT should be issued only: a) where there is an overriding demonstrated public need or benefit; b) where other access for privately owned property is impractical or infeasible; c) where the special use is of benefit to the trail or can accomplish trail related management purposes. Not all special uses are in conflict with the LT/AT.

Response:

The Forest Service has increased the minimum LT/AT corridor width from 400 to 1000 feet and acknowledges that management activities in some areas outside this corridor may need to be restricted to adequately protect the trails values (PLAN IV-F).

All suggestions were adopted regarding management of the trail corridor except those on road and skid trail crossings which we may allow when no other viable option exists. When allowed, their effects on the trails values will be minimized to the greatest extent possible by controlling the location and design of the crossing and the type and timing of use.

No new permanent road crossings will be constructed. Over the next 10 years we propose to build one temporary road crossing and three skid crossings, but further environmental analysis is needed prior to approval. We do not anticipate skid trail crossings in the future, but we do not wish to preclude absolutely this possibility.

We recognize that crossings may compromise the trails values for a brief period of time and that this tradeoff must only be incurred when it is in the overall public interest to do so. A thorough environmental analysis will be done prior to creating a crossing and the public will be fully involved in it. The environmental analysis will address whether or not a proposed crossing is in the overall public interest.

6. Backcountry Recreation

Comment Codes: A10, A11, A12, A20, A32, A50, A60, A61, A80, A90, B01, B10, B11, B12, B30, C02, F50

Comments:

a) Increase Primitive and Semi-primitive Areas

Backcountry recreation was given a high priority in the planning documents and generated a response from 254 commenters. Since this type of recreational opportunity is not available elsewhere in Vermont on the same scale that it is on the Green Mountain, they endorsed the Plan's proposal to increase primitive and semi-primitive areas on the Forest where commercial development activities would be prohibited or severely limited.

Most of the writers would like to see even more areas within the GMNF designated primitive and semi-primitive along the lines of Alternative F. Alternative F offers expanded protection for from a level of use and exploration that would be incompatible. One person believed that most high elevation land should be placed in management category 6.1 where it will be the most value for primitive recreation and wildlife with little impact on logging. Additional MA 6.1 or 6.2 were recommended around the following areas because of their unique or outstanding characteristics:

Wetmore Gap	1 comment
Telephone Gap	1 comment
Worth/Monastery/Romance Mountains	1 comment
Lamb Brook/Madbury Brook	1 comment
Hancock Tunnel through Pine Gap, Monastery/ Worth Mountains, and Gillespie Peak	22 comments
Branch/Stratton/Little Ponds	1 comment
Most high elevation land	1 comment
Somerset/Glastenbury area	2 comments
Area east of Chittenden Reservoir	1 comment
Brown Pond	1 comment
White Rocks NRA	33 comments
Breadloaf Wilderness	33 comments
Aiken Wilderness	33 comments
Lye Brook Wilderness	2 comments
All wildernesses	4 comments
Between MA 4.1 and Mt. Snow	1 comment
Deerfield area	1 comment

One writer believed that the Forest Service should adjust its management plan more toward Alternative E. The potential of federal land as a backcountry and wild haven cannot be duplicated in New England. One individual stated that low altitude hiking in low intensity managed areas should be provided for on a much larger scale. Not all hikers wish to hike on ridge lines or on marginally productive forest land.

Response:

We considered the general suggestions of increasing Primitive and Semi-primitive recreation opportunities and the specific suggestions of doing so in certain locations. We agreed with the benefits of increasing Primitive recreation by 1,900 acres in the areas around Hancock Tunnel, Pine Gap, Monastery and Worth Mountains and Gillespie Peak. Furthermore, we have limited road construction and scheduled timber sales so that further expansion of primitive areas will still be open 10 years from now when the Plan is revised. Newly acquired lands in MA9.2 may prove to be ideal for Primitive recreation once they are inventoried and studied further.

We also agree with the benefit of greatly increasing Semi- primitive recreation since private lands may not provide this in the future. MA6.2 has been increased by 33,100 acres and MA2.2 and 4.2 have been created to further increase Semi-primitive conditions. The areas where Semi-primitive conditions have been added coincide with most of the areas suggested by the public. Examine the recreation map accompanying the proposed plan if you wish to see where Primitive and Semi-primitive conditions will occur.

b) Economic Values of Recreation

One correspondent wrote that recreation and wildlife are the principal resources on the Forest, and the chief determinants of present net value in the proposal's economic analysis. The analysis appropriately notes that the costs of generating recreation and wildlife on the GMNF are quite modest, notwithstanding the enormous benefits yielded by these use categories. These data become even more compelling in view of the likelihood that the analysis has understated the economic importance of amenity uses of the Forest. Backcountry recreation carries a high value due to "scarcity and the large population demanding such opportunities".

He pointed out that the economic model is unable to capture unquantifiable values such as air and water quality, the health of wildlife populations, and the degree of recreational user enjoyment. In sharp contrast to recreation and wildlife, commodity programs on the GMNF contribute insignificantly, even negatively, to the Forest's economic value. Particularly important to commodity program economics is the strikingly low value of timber.

One respondent's concern was financial in nature. If the GMNF is to grow into a playground for the cities, they should be made to share in the expenses. The Forest seems to be going toward more recreation. Costs should be borne by the whole country, not just by the people who live nearby.

Response:

We feel our analysis and decision reflect a consideration of the importance of quantifiable and unquantifiable recreation and wildlife values. We fully agree with the observations made by these comments and feel that all taxpayers share in the benefits and costs of managing public lands and that these lands must be managed wisely.

c) Wilderness

Three respondents wished to designate more Wilderness on the Forest. Bourn Pond, the Glastenbury Mountain area, and the area east of Chittenden Reservoir were mentioned as potential Wilderness. Four commenters wanted buffer zones created around all Wildernesses. These buffers should be one to two kilometers wide to further protect the integrity of what little Wilderness is available in Vermont.

One person recommended that both the Finger Lakes and Green Mountain National Forests be dedicated as permanent biological preserves with a total of 164,000 acres of Wilderness. Roads and logging would be prohibited.

Another individual felt that the Forest Service should manage Wilderness as a resource and not necessarily to provide recreation opportunities. Wilderness is supposed to be managed as a place that appears to be untrammeled by man. Recreation facilities are not compatible. The Forest Service should be striving to remove all existing improvements, especially the LT shelters. The management of the LT through Wilderness needs to conform to the intent of Wilderness legislation.

A second person stated that benign Wilderness regulations such as those in force now will tend to allow the substitution of Wilderness and primitive experiences. More stringent rules such as obtaining permits long in advance, removal of shelters, or group size limits will make these areas distinct.

One commenter was unsure whether the Vermont Wilderness Act released for other uses all of the Roadless Area acreage not incorporated in the Wilderness System. If so, planners should 1) show the locations of this acreage on a map; and 2) mention that, under the Vermont Wilderness Act, they are required to reevaluate the Wilderness potential of such Roadless Areas at the first revision of the Forest Plan.

Response:

According to the Vermont Wilderness Bill, no additional Wilderness can be considered for Congressional designation until the Forest Plan is revised 10 to 15 years from now.

We also feel that buffers are inappropriate around Wildernesses or any other management area because their boundaries include lands needed to achieve the desired objectives. Management activities in adjacent areas will be modified as necessary so as not to adversely affect the enjoyment of Wilderness users. The recreation map accompanying the Plan shows that Vermont Wildernesses tend to be surrounded by lands which will be managed to provide primitive or semi-primitive conditions and their management will be in harmony with the goals and objectives of Wilderness.

Dedication of the GMNF and FLNF as permanent biological preserves is inconsistent with the laws and regulations governing the multiple use management of the National Forests.

Wilderness has been and will continue to be managed as a resource and not solely to provide recreation opportunities. However, because the greatest effect on the Wilderness resource stems from public recreation we seem to devote disproportionate attention to managing that use, but do so to protect the Wilderness resource.

Wilderness management plans will be prepared over the next ten years for each of Vermont's Wildernesses. These plans will recognize the values of the Wilderness resource and outline how recreation uses will be managed to protect them. We do not anticipate that permits or limitations on group sizes will be needed for any of Vermont's Wildernesses.

Each Wilderness management plan will identify any existing facilities or improvements which are incompatible with the Wilderness values and will outline a strategy for eliminating them. Congress and the Forest Service feel that existing LT/AT shelters are compatible with Vermont Wildernesses and should be maintained. Some existing shelters may be reconstructed in better locations, but no entirely new shelter sites will be developed.

We feel that most people hiking the LT/AT primarily do so to enjoy the trail experience and the shelters are an important part of that experience. Most do not desire and are not equipped to enjoy a pure Wilderness experience. The narrow, unassuming trail corridor may be technically "incompatible" with the pure definition of Wilderness but its presence and use does little, if anything, to upset the overall Wilderness qualities of each area. Trail shelters will be carefully managed to ensure they remain clean and do not show signs of overuse or abuse.

d) Recreation Planning

Two individuals were disappointed that there was not a detailed plan listing proposed recreation and trails projects. They noted that although timber makes up only a small part of the total PNV, it is analyzed in great detail. The future road program receives an individual appendix (F) plus a schedule of projects (Table 6.11) while the trail counterpart is merely a brief list of projects (Table 6.9). Future recreation plans should contain lists of all trails and recreation facilities, research on future needs such as access/parking, proposed additions and deletions, mileages, locater maps, development of trail standards and guidelines, and discussion of possible conflicts over trail uses and their resolution.

Another person said the ten year program does not include enough development of dispersed recreation facilities, particularly parking areas and loop trails. Some felt there needs to be better access to the GMNF for year round recreational use.

One correspondent recommended that the proposed plan should contain standards adequate to protect those portions of the GMNF trail system that lie outside MA 8.1A. At present, the planning documents provide virtually no indication as to how the proposal would protect, maintain or modify the full trail system.

Another individual pointed out that the vast increase in projected demand for roaded natural recreation (DEIS, pp. B.75-76) seems to be in conflict with the reduced roading policy, especially as the development of non-government land makes other roads less natural appearing.

Two people urged the development of additional cross-country ski trails. One specified that new trails be constructed in the NRA which would be closed to snowmobiles. The other asked the GMNF to formally recognize the creation of a Wilderness cross-country ski trail corridor as a planning objective for the next decade. He hoped the final Plan would explicitly mention the effort to blaze a Catamount Trail through the Forest.

Response:

The Final Plan contains more and better information about recreation management opportunities and projects than the earlier draft. We agreed with the need to develop a more complete schedule of proposed recreation projects with an emphasis on backcountry facilities, access, parking and loop trails (PLAN, VI Appendix B).

A new map is included with the Final Plan which shows recreation opportunities on the Forest, as well as existing and proposed trails, parking areas, camping and picnic sites, special areas and other noteworthy features such as managed berrypicking sites.

New standards and guidelines have been added to the Final Plan which direct the construction, maintenance and management of an extensive integrated system of trails and travelways on the National Forest (PLAN, IV - E). This system includes cross-country ski trails and makes provisions for the Catamount Cross Country Trail corridor which is envisioned by many in the State.

Lastly, we want to clarify that projected increases in demands for recreation in a roaded, but natural appearing setting does not necessitate more roads. These demands can best be met by improving the conditions on already roaded lands. Such improvements include creating more openings for wildlife, berrypicking and picnicking opportunities, hiking and skiing trails, enhancing hunting and fishing opportunities and improving the identification of and access to National Forest lands.

e) Mt. Abraham Prescription

Forty commenters praised the Plan's allocation of the Mt. Abraham area to MA 2.1A and 2.1B providing continuous forest cover. They approved of the emphasis on providing forested stands of all ages to enhance visual quality and backcountry recreation opportunities.

Response:

We appreciate the local support for our proposed management along the west side of Lincoln Mountain. We tried very hard to listen to all publics who offered thoughts about how specific areas should be managed and tried to meaningfully respond to them. The Final Plan modifies the management in this local area as well as many others, in order to further respond to public sentiments which we feel are in line with the overall best management of the Forest. The upper portions of the west side of Lincoln Mountain will be managed to provide semi-primitive conditions while maintaining continuous Forest cover under the new management prescription of MA2.2.

7. Ski Area Expansion

Comment Codes: A25, A26, J01, J10

Comments:

a) Expanding Acreage of Existing Ski Areas (MA7.1)

Thirty-three people commented on the acreage designated for ski area expansion within the GMNF. Of these, 28 are opposed to allocating additional acreage for the development of alpine ski facilities or trails. Additional development by the six ski areas shown on page 4.05 of the Plan would create pressure on land that is not targeted for development. One commenter mentioned that it is important that state and private lands be relied upon for other forms of developed recreation, allowing NF lands to concentrate on high quality backcountry recreation.

Two correspondents did not oppose ski area development if ski developers compensated the Forest for any land taken for expansion with land of equivalent usefulness, thereby replacing lost assets.

Three commenters wanted to keep future options open where their facilities could expand. One requested that the 400 acres with alpine skiing potential be allocated to MA 7.1 as in Alternative B instead of 3.1. Another mentioned that expansion is its only hope of developing capacity to become economically viable.

Response:

The draft Plan allowed expansion of trails, lifts and other facilities within existing ski area boundaries (MA7.) but did not prescribe expanded acreage of MA7.1 or new areas to be built on the National Forest. The draft Plan did acknowledge the need to keep the option of expanding the acreage of MA7.1 open and to make the decision after thorough environmental review in the future. The areas of potential expansion were to be managed as MA3.1 in the draft, but have been designated as MA9.3, a new prescription, in the Final Plan.

MA9.3 addresses the concerns of people opposed to making the decision to expand the acreage of MA7.1 in the Plan and the concerns of those favoring expansion. MA9.3 does not approve the expansion, but does explicitly map and acknowledge which areas have potential and provides direction to the expansion option until a decision can be made in the future. We continue to feel that insufficient information exists to make the decision to approve expansion now, but agree that better protection of the option to expand is needed. The MA9.3 prescription in no way implies that future expansion approvals are "givens".

8. Off Road Vehicle Policy

Comment Codes: A40, A42, A70, A71, A72, A91, F50

Comments:

a) Management of ORV Use

Concern over off-road vehicle use was expressed by 72 commenters, 49 of which wished to confine the summer use of ORV's to the permanent road system where surfaces are adequately prepared to withstand vehicle impacts. They further recommended that all temporary roads be gated and skid trails blocked to prevent resource damage and that some form of controls over ORV use was necessary to prevent resource damage and vandalism.

One commenter was concerned that the proposal would permit motorcycles, mini-bikes, and four wheel-drive vehicles not only on permanent forest roads, but also on certain temporary roads and skid trails in several areas, making 2/3rds of the Forest accessible to ORV's. The proposed restrictions on such use are limited to the rather vague guidelines that in many cases "roads will be gated and closed to use when soil erosion and road damage could occur" and the prohibition of ORV use during part of the spring season. These guidelines are insufficiently specific and likely to be difficult to administer, especially if ORV users may be confused or surprised by the intermittent closure of roads and trails that are frequently open.

Three persons wished to prohibit ORV use altogether on the Forest, stating that their noise and character clash with the natural forested environment. There is ample opportunity for this type of activity elsewhere without degrading the quality of the GMNF.

One group (four individuals) mentioned that it was probably too early to have a specific system of horse and recreation bike trails, but planners should set up a framework for handling these user groups in the likelihood that their activities become more popular. The Plan should recognize which trails are suitable for horses/mountain bikes and eventually build such a system as the need arises. Two individuals wanted special trails for all terrain bicycles (mountain bikes) where motorized use would be excluded. One group said they should not be used on hiking trails.

Response:

The Final Plan has improved the sections addressing the management of ORV uses by restricting their use to designated roads and trails and adding more specific standards and guidelines to better protect the environment and improve the recreation experience of the ORV users (PLAN IV - E, Recreation/Visual).

We met with several organizations and individuals which expressed interest about ORVs and determined the roads and trails best suited to satisfy ORV riders while protecting the environment and the enjoyment of the National Forest by others.

ORV use is compatible with the management objectives of much of the National Forest and can be enjoyed in those areas if resource damage will not occur. We feel it would be wrong to prohibit ORV uses in such areas.

Standards and guidelines have been added to help us develop a system of designated trails which will satisfy riders of all terrain bicycles, horses and other vehicles as demands for those uses grow in the future. The standards include restrictions on where those uses may not occur as well as criteria for determining where their uses are suitable (PLAN, IV - E, Recreation/Visual).

b) ORV Use in New Acquisitions

A total of 311 people mentioned that new land acquisitions in the southern portion of the Forest should remain open to all recreational uses. Their concern was that motorized activities, especially snowmobile use, would be prohibited. National Forest land is owned by all the people and the commenters felt that they, too, had the right to use it.

Response:

Use of snowmobiles will be allowed to continue on trails which already exist in newly acquired lands (PLAN, IV - F (9.2)). Continuance of such use is unlikely to foreclose future management options for those lands.

c) Snowmobile Use

Five snowmobile groups (305 commenters) initiated a letter writing campaign to maintain the 300 plus miles of snowmobile trails that are already in use and to add more to the system. They recommended that the Forest Service maintain the present trail systems in newly purchased areas and consider using old logging roads as multi-purpose trails. They urged that: 1) A snowmobile loop trail be established to the Glastenbury tower and back to Corridor 7; 2) Establish a north-south corridor snowmobile trail through IP land; 3) Develop a loop from Little Pond to Corridor 7 through the Scott land purchase; 4) Establish a snowmobile trail system including the Rake Branch Trail; 5) Clear a logging road connecting the Yaw Pond Trail to the Bishops Road to use as a multi-purpose "loop" trail.

Response:

The Forest Service agrees with all these recommendations and have included them on the maps of approved trails which are kept in our offices. The maps will be updated as needed, but only after thorough environmental review and public involvement.

9. Timber Management

Comment Codes: C02, E10, E20, E21, E22, E30, E31, E40, E51, E52, F50, M20

Comments:

a) Amount of Timber Harvested

Commenters were equally split on this topic. Five writers supported the decision of planners to maintain timber offered for sale at the present level of 17.3 MMBF. Five others felt that timber volumes should be reduced or at least reevaluated for possible reduction in the context of their decidedly negative pull on the Forest's economic values.

The DEIS notes, at one point, that annual offerings have averaged 14.5 MMBF over the last five years, while only 10.3 MMBF, on average, have actually been harvested. This is contradicted by a disclosure elsewhere in the document that the average annual cut in recent years has been in the 14 - 18 MMBF range. This confusion should be clarified. One correspondent further urged the FS to examine the need to renew existing contracts for future sales in light of the possible danger of overcutting due to backlogged sales.

Response:

The maximum volume of timber which could be sold annually has been reduced from 17.3 MMBF in the draft Forest Plan to 16.0 MMBF in the Final Plan. This is primarily due to the increased MA 6.1 and MA 6.2. The annual volume of wood which is actually scheduled for sale, 13.5 MMBF, will remain well below the maximum, as outlined in the draft. Although volume of wood offered for sale in recent years has ranged from 14 to 18 MMBF, the average has been 14.5.

The possibility of overcutting in areas of the National Forest due to backlogged sales will be addressed by applying a new management standard which limits the maximum volume of wood which could be offered for sale in a given area (PLAN, IV - E, Soil and Water). This will reduce the risk of unsightly cutting and unacceptable changes in water quality or flows.

b) Type of Timber Management

Commenters were generally pleased with the proposed increase in the use of unevenaged timber management and the shift toward longer rotations. There was agreement that the emphasis in timber management should be on the production of high quality sawlogs, a commodity that is not readily obtained from private lands.

Forty-seven commenters responded to this topic. Most felt that the preferred alternative is generally moderate and acceptable in its approach to logging, road construction, and land allocation. Some stated that the proposal appears to identify properly land that is physically unsuited for timber production and to prescribe environmentally protective timber management. Another individual stated the GMNF should provide a majority of areas with rotations greater than 120 years and more opportunities for backcountry management. He suggested putting more 3.1A and 2.1A areas into the intensity of timber management required by 6.2A.

People were encouraged that there will be more use of unevenaged management. They believed this type of management would be more compatible with enhancing wildlife, visual, watershed, and Semi-primitive recreational values than evenaged management. From the economic standpoint, unevenaged systems are less cost effective than evenaged management only during the initial process in which the stands become composed of trees of different ages. Unevenaged management can also significantly enhance vegetative diversity, and, compared to evenaged systems, reduce the risks of erosion and stream sedimentation, and adverse impacts on forest scenery. Unevenaged management has widespread popular support. Most people want to view a landscape with a continuous forest cover.

Seven people recommended that even greater emphasis be placed on unevenaged timber management in the future. One specifically mentioned that additional unevenaged management should be encouraged in MA 3.1. Another suggested expanding its use in MA 4.1 and in areas close to the permanent roads planned in MA 6.2.

A few commenters urged timber rotations in MA 6.2 to be extended to at least 150 years. This would create more than the relatively small 20 year difference currently envisioned between regular and long rotation hardwood management.

Under evenaged management, the writers favored the reduction of clearcutting on the Forest and the increase in shelterwood cutting. Shelterwood cuts are viewed as being less damaging environmentally and more appealing visually. It is also a useful management tool to regenerate some of the more valuable tree species such as white ash, yellow birch, and sugar maple. Several persons recommended that the overstory remain on a shelterwood cut for more than the 10-15 year period currently planned. This would avoid shelterwood cuts taking on the unsightly appearance of clearcuts.

Some writers wished to lower the maximum opening size for evenaged harvesting in MA 3.1 and MA 6.2. Another correspondent urged the Forest Service to consider adopting cumulative limits within a given geographic area or time period on regeneration and final harvest cuts.

Response:

The Final Plan has further increased the acreage of unevenaged regeneration extended the average rotation length in MA 6.2 from 120 to 150 years, prescribed a system of modified shelterwood cutting to be applied in locations which are highly sensitive to visual change and reduced the maximum harvest size from 40 to 30 acres.

Modified shelterwood cutting will leave the overstory of mature trees for at least 40 to 60 years or until money could be made from cutting the newly regenerated stand. The overstory may even be left longer if it seem appropriate to do so at that time. The mature trees left in modified shelterwood will give the harvested area a park like appearance instead of looking like a shrub covered opening after they are routinely removed.

Because of the large size of many evenaged stands in poor condition, we felt it unwise to reduce the maximum harvest cut below 30 acres. The average cut in recent years has been 17 acres and we feel it will continue to average this, or less, even though larger cuts are more economical. The size of our cuts remains small because we feel recreation, wildlife and aesthetic values are better served by doing so.

c) Location of Cutting Units

Seven out of ten commenters recommended that no openings be created in the forest canopy at high elevations. While logging can be beneficial to wildlife such as deer at low elevations, it is of little value at high elevations above 2500 feet. Because of the harsh climate, poor soil, and short growing season, the high elevation areas are not of much value in terms of timber production. Logging activities should occur at low elevations where they can be of value economically and benefit various forms of wildlife. One correspondent suggested that land areas classified as ELT 21d should be removed from all logging activities.

One person stated that, although planners suggest that around 55% of the Forest is suitable for timber and 45% is unsuitable, other disclosures indicate that the percentages are actually the reverse. The planning documents do not contain sufficient evidence to establish that the proposal's "unsuitable" base captures all land where post-harvest regeneration cannot be assured within five years or where logging will cause irreversible environmental damage.

One individual expressed concern that the ban on "clear cut" high altitudes would decrease wildlife habitat.

Response:

We agree with all the concerns that people raised on this subject. Most lands above 2500 feet in elevation will not be managed for timber because of fragile environments, low productivity soils, visual sensitivity, uneconomic conditions, or management objectives which are incompatible with timber cutting.

Where cutting is environmentally safe and profitable at higher elevations we propose to do so with great care and will generally use unevenaged management. We have not banned clearcutting at high elevations, but will not use it unless it is the optimum method for achieving our management objectives and great care is taken (PLAN, IV - E, Timber and Appendix A). For example, small clearcuts are the optimum method to create strategically located visitas along trails.

A more detailed description of lands which are suitable and unsuitable for timber management is provided elsewhere (PLAN, Appendix A and FEIS, Table 1.5).

d) Timber Stand Improvement (TSI)

One commenter said there should be more specifics in the timber section of the Plan on the extent and role of timber stand improvement and reforestation activities. There is a feeling that TSI and reforestation will be significantly reduced under the Plan.

Response:

More specific information has been presented in the Final Plan on TSI and reforestation so that people will know when it is acceptable to perform those activities (PLAN, IV - E, Timber). Our analysis shows that most precommercial treatments of timber stands are uneconomical and should not be performed unless values other than timber production are at stake. This finding caused us to reduce the TSI program in the Draft greatly below what has been practiced in recent years. This level remains unchanged in the Final Plan since no new information compels us to increase it.

The Final Plan continues to ensure that adequate reforestation follows any timber harvesting practices which are performed (PLAN IV - E, Timber).

e) Timber Sale Costs

All of the nine respondents to this topic urged that all relevant costs of access and preparation be assigned to the charges for the timber. They stated that timber sales which lose money make no sense unless the sale can be explicitly demonstrated to be of value in achieving other non-timber objectives. All other below-cost timber sales should be phased out on the Forest over the next decade.

Given the substantial monetary shortfalls that characterize the Green Mountain timber program, the perpetuation of sales at their current levels must be questioned. The non-market alternative exhibits the highest benefit/cost ratio for timber of any planning alternative over the long run.

One individual stated that although the GMNF economic analysis is responsive to convervationists' concerns, he felt the projected timber prices used in the PNV analysis are of questionable validity. The 1981 data used may represent an atypical year with timber prices at a six year high. He recommended that planners review this assumption for its economic suitability on lands available for timber harvesting.

Response:

The Final Plan explicitly states that timber sales will not be performed unless benefits clearly exceed costs (PLAN IV-E).

Although the GMNF has been characterized by below cost sales in the past, the Draft and Final Plans reflect major policy shifts which change this situation. Even though we will continue to cut the same volume of timber as in the past we have shifted to cutting a higher proportion of high quality sawtimber in lieu of going specifically after sparse low quality stands. This shift results in more dollar value for the same or lower costs and should virtually eliminate the below cost sale situation. Timber sales will be made to create unevenaged stands, increase the acreage of softwood and aspen, or other wildlife vegetation needs where all benefits (priced and non-priced exceed costs.

We feel the reviewers which said the 1981 stumpage values were abnormally high and unrepresentative of average values misinterpreted the tables in the Draft Plan. The figures they cited reflect values that we projected would result from the highest intensity of management on the highest productivity sites at a time in the distant future. The stumpage values for 1981 are representative of recent years and are actually slightly lower than average.

f) Timber Marketing

Two individuals were concerned about the difficulty in marketing timber products. One suggested that we include under research needs a committment to producing a marketing study. The second correspondent stated that the effect of shifting from timber management to backcountry recreation in terms of the regional timber supply market needs to be assessed.

Response:

Studying or creating new markets for timber is not covered in this Forest Plan, but is an important aspect of the statewide Forest Plan for Vermont. The GMNF supplies about 5 percent of the wood harvested in Vermont. We are working with State officials and others to improve timber market conditions.

The Final Plan does not shift away from timber management, but shifts the focus of timber management. Instead of emphasizing the volume of wood cut we will be emphasizing the acres of vegetation which are treated to create desirable forest conditions. The amount of wood which is cut will be about the same as in the past, will mostly be a byproduct of cutting to achieve other objectives and will be increasingly high quality sawtimber. According to the Vermont Statewide Forest Resources Plan, the shift towards high quality sawtimber will enhance and not hurt the regional timber market.

10. Vegetative Composition and Wildlife Habitats

Comment Codes: C01, C20, C30, C40, C50, E50

Comments:

a) Overall Composition Objectives

Conversions of vegetative types are represented throughout the planning documents as a means to enhance wildlife habitat. To achieve its wildlife objectives, the Plan would reduce northern hardwoods and increase softwoods, aspen and openings. Twelve people commented on this subject. One individual questioned the rationale for the vegetative composition and age class distribution that were laid out in the documents. Are these the predictions of computer models? Is the objective a nebulous "healthy forest", as so many Forest Plans claim, or specific wildlife, recreation, and timber goals which the present forest composition cannot provide? One writer approved of the vegetative composition objectives outlined in the Plan.

Another commenter stated that programmed type conversions, by law, must be based on an explicit and defensible multiple-use rationale. Caution in such conversions is specifically mandated by NFMA. One individual wished to increase our percentage of softwoods to 20-35% as he felt this would more accurately recreate the original mix of trees in Vermont and provide some surplus for softwood timber. He suggested decreasing northern hardwoods to 60-70% and modifying the proportions of permanent openings and aspen/birch stands accordingly.

Response:

Enhancing the overall diversity of vegetative types and ages continues to be a priority in the Final Plan. The vegetative composition objectives stated in the Plan are not based on computer models. Forest Service biologists, in consultation with many acknowledged experts, determined the vegetative composition objectives which will meet the needs of all native wildlife species, enhance recreational enjoyment and are consistent with the other objectives which we manage for.

The objectives strive for enhanced vegetative diversity through good representation and distribution of vegetative types, ages and conditions within the biological, physical and managerial limits of the National Forest. Softwoods, aspen and openings will be increased and all other minor types maintained or increased. Unevenaged, overmature (120+ yrs) and old growth (170+ yrs) stands will be increased and the overall distribution of age classes will be balanced. Large, remote, undisturbed areas of Forest are also an objective.

b) Increase Aspen

Some writers encouraged even more acreage of aspen since it will increase grouse and woodcock populations. Some expressed their concern that Table 2.9 on page 2.54 of DEIS indicates a substantial increase in unevenaged northern hardwoods which is fairly unsuitable for grouse and woodcock habitat. They encouraged more evenaged management and shorter rotations wherever possible.

Another commenter stated that the Plan inadequately defends its conversion of northern hardwoods to aspenand birch. They asked why Alternative D contemplates more than 2.4 times the amount of conversion to pioneers as Alternative E, but yields only 1.6 times E's ruffed grouse population and less than E's woodcock population.

The commenter further noted that conversions to pioneer species entails all the environmental disruption associated with evenaged management, including soil erosion and compaction, water pollution, and diminished recreation opportunities. They urge that, if stronger justification for such conversion is lacking, it be foregone.

Response:

The Final Plan and Record of Decision better explains the benefits of making some conversion to aspen stands. No publics took issue with our reasons for other vegetative changes.

In brief, more aspen will benefit forestwide vegetative diversity, and will provide valuable habitat and food for grouse, woodcock, beaver and other species which benefit from young, densely stocked stands with much vertical and horizontal structure.

Our program of conversions to aspen will emphasize creating 1/2 to 2 acre stands, which are widely distributed on sites which are well suited to maintaining aspen and which will directly benefit beaver and other species. Maintenance and expansion of existing stands of aspen will be a prime focus. Plantations or large, natural stands of aspen will not be created since they are not as beneficial to grouse, woodcock, beaver and other wildlife as small, widely scattered areas.

c) Increase Softwoods in Deer Wintering Areas

Twenty-seven people supported enlarging deer wintering areas around the Breadloaf Wilderness and south of Philadelphia Peak. In 22 of these responses, the writers favored increasing the areas to the size specified in Alternative F. One author noted that the proposal's approach to winter habitat for deer is an appropriate extension of the viewpoint that the Green Mountain should provide what private lands cannot.

Response:

We do not feel there is a need to enlarge these deer wintering areas (MA4.1) in the Final Plan since in the next 10 years we will be unable to create the enlargements which are already proposed. Conversions of hardwoods to softwoods will require time and money, and the effects of this undertaking will be carefully measured to determine whether or not it has the intended results. We don't feel now is the best time to make the decision to fully enlarge these wintering areas since we have much to learn about creating deer wintering areas, are headed in right direction and will still be able to enlarge them to the requested size in the future if that proves to be beneficial.

d) Remote Habitats

Some correspondents are concerned that reduced timber harvesting will have an adverse impact on wildlife habitats. One person stated that large percentages of land allocated to wilderness, primitive and semi-primitive areas will be of little value to wildlife species which thrive on regenerating forest types in short rotations. The author questioned whether there is enough potential Forest users of primitive and wilderness areas to warrant the allocation of such large tracts. A second individual felt that there is too much pressure being brought to bear on the GMNF for recreational purposes. We are sacrificing our wildlife for the recreational use of the Forest.

One commenter was troubled that the Forest's bear population receives little discussion in the planning documents. Bears benefit from remote habitat which would be significantly increased in Alternative F.

Response:

The Final Plan further increases the acreage of remote, relatively undisturbed wildlife habitats and areas for backcountry recreation, but we feel this is part of our role to provide what private lands do not. Conversely, private and other public lands, which comprise 95% of Vermont, are well suited to provide ample habitats for "species which thrive on regenerating forest types in short rotations".

Although the Forest Service will not be emphasizing young, regenerating stands over a majority of the GMNF, we will be increasing their amounts. These habitats will occur in small patches near roads, will be well distributed throughout the Forest and will reflect the amount and quality of similar habitats on nearby private lands.

e) Special Wildlife Management

Several writers advised planners to consider provisions for a greater range of habitat for all wildlife. One stated that the management of birds of prey such as Cooper's Hawk and Long-eared Owl offer special problems in management which do not appear to have been fully addressed in the DEIS. Guidelines should be considered for the preservation of any tree which has a raptor or covid nest in it. There could be a need for wider buffer zones for nesting habitat around wetlands than the presently proposed range of less than 100 meters. The Forest Service should avoid creating "habitat islands" in an attempt to create diversity and ending up with a fragmentary patchwork of woods.

One correspondent suggested that a population inventory should be done for the grey-cheeked thrush to indicate the most important areas for this species and to identify its range within the National Forest.

Two respondents were pleased about the Plan's recognition of the importance of the Atlantic Salmon Restoration Project.

Two people agreed that the Plan adequately discussed endangered species. Two others believed that all species such as the mountain lion on the State of Vermont endangered, threatened, and species of special concern lists which may occur in the GMNF should be mentioned in the Plan. They suggested that a special section or appendix be included in the Plan to address these species. One individual recommended that the Forest Service reintroduce some endangered species such as the marten and lynx. Another suggested the puma and wolf.

Response:

The Standards and Guidelines for maintaining and enhancing specific wildlife habitats have been strengthened in response to public comments (PLAN, IV - E, Wildlife). Threatened, endangered and sensitive species as well as other species of concern to us have been dealt with more fully in the Final Plan (Appendix E). The Plan addresses programs to reintroduce several of the species on this list.

11. Minerals

Comment Codes: F50, G01, G10

Comments:

a) Guidelines Inadequate

Thirteen commenters addressed the proposed minerals management policy outlined by the draft Plan. All but one individual expressed concern that the guidelines contained in the planning documents were inadequate and that the environmental impacts of leasing were not sufficiently addressed. One commenter stated that, first, the probability of environmental harm in the event of actual development needs to be better recognized in the Plan.

Writers expressed their concern that protective regulations are not strong enough to prevent environmental harm from mining operations. If perfermed, mineral exploration needs to be carefully monitored and controlled. The Forest Service should further develop the framework and guidelines for environmental analysis and on-the-ground implementation should mineral exploration be proposed. The Plan should contain stipulations to prevent resource damage, or the process for developing such. One author recommended that the Standards and Guidelines (p. 4.67) specify that operating plans will only be approved if they address and resolve to Forest Service satisfaction major issues such as: 1) public safety; 2) environmental damage; and 3) restoration of surface resources.

One individual mentioned some of the minerals standards and guidelines refer to "the sensitive land categories" and that clearer references should be made to these.

Response:

The Final Plan includes additional standards and guidelines to better control mineral exploration, development and extraction activities in the unlikely event that they occur (PLAN IV - E, Minerals, and Appendix I). Existing standards and guidelines were clarified to make them less ambiguous and easier to implement. The new standards focus on describing the process to be followed when reviewing specific proposals to explore, develop or extract minerals. Since we cannot anticipate all possible proposals and answer then now, we must outline processes to thoroughly deal with whatever arises in the future.

b) Restrictions on Mineral Activities

Several people felt the Plan did not provide sufficient restrictions for areas where forest values could be seriously compromised by mineral exploration, development or extraction.
Planners were urged to adopt the approach to minerals issues taken by Alternative F. By virtue of its relatively larger acreage devoted to winter deer habitat and primitive recreation, Alternative F would protect a significantly greater area than the proposed Plan since no surface disturbing would be allowed within them. Some recommended no mineral leasing in areas designated 2.1B, 3.1B, 4.1, 6.1, 6.2, 7.1, or 8.1. They feel that would eventually lead to developing the surface even though the Plan says there would be no surface disturbance.

One individual believed that the GMNF should be a place of "last resort" for mineral activity since private land is readily available for this use. Every effort should be made to find minerals on private lands first and we should wait and see what development occurs on private land before leasing public lands.

One person said the Plan was inconsistent with the principle of multiple use because surface resources are utilized to the exclusion of subsurface resources. The Plan apparently allows routine exploration On 50% of the surface. The author urges that at least 70% of GMNF be available for surface disturbing activities.

Response:

The Final Plan prohibits surface disturbing activities from occuring on 81,800 acres of land and deters the decision to lease on 27,300 acres. The Plan does not prohibit leasing those lands or any other lands outside the Wildernesses and NRA. We feel that National Forest surface resources and uses are more important to the public than minerals and that prohibiting leasing on 29% of the Forest and prohibiting surface disturbing activities on 31% is appropriate to protect those resources. A sufficient base for exploration will exist on the remaining 40% of the the National Forest where further environmental analysis may show that activities can occur without undue harm to surface resources.

Although we considered prohibiting leasing of certain areas of the National Forest, we concluded that this prohibition was unnecessary to protect the resources or management objectives which were in question. In all cases we felt that prohibiting any surface disturbing activities would sufficiently protect those values and still allow the performance of mineral activities which could benefit the public. We have no doubts about our abilities to enforce the prohibitions on surface disturbing activities should the need ever arise.

12. Road Construction and Management

Comment Codes: C02, F50, L10, L20, M30

Comments:

a) Reduce Proposed Road Program

Road construction and road costs received significant public response. Sixty-five commenters addressed the Forest's proposed road program. Of these, 54 wished to see the program reduced. The majority favored the road building program outlined in Alternative F in order to keep the option of managing by Alternative F open for the future. This would preserve more options for future management, reduce the negative cash flow from the GMNF, and be a small contribution to reduction of the Federal deficit. Nothing should be constructed before it is actually needed for a scheduled timber sale.

Five commenters approved of the proposed road program and felt that the six miles of new construction represented an environmentally and recreationally acceptable alternative. They also agreed with the lower construction standards for these roads.

Response:

The Final Plan has further reduced the future road building program by eliminating several roads, totalling 2 miles. Rather than implementing the road building program outlined in Alternative F we have chosen to not build any roads in the next decade which will foreclose the option of prescribing the objectives of Alternative F in the future. This choice meets the intent of the majority of commenters, yet enables us to provide much better environmental protection and public access than Alternative F provides.

b) Road Costs

Some agreed with the documents' suggestion that timber be assigned the lowest priority for road development and that no roads be built in remote areas if the costs of providing new access exceed the benefits. This represents an important step toward economic rationality in road construction which is connected intimately with the Green Mountain's economically inefficient timber program.

Several commenters urged that the cost of road building be included as a factor in analyzing timber sales. Another writer mentioned that the cost/benefit ratio of each section of road should be analyzed and those roads or sections of roads that cost more to build than is realized in timber sales should be eliminated.

Response:

An economic analysis will be done prior to constructing any new permanent roads on the National Forest (PLAN, IV - E). No roads will be built unless the benefits to the public clearly outweigh the costs. Because the benefits and costs of road building are complex and interrelated, this analysis will not be limited to just the direct financial receipts from harvesting timber or the costs of timber management and roads. Whole areas will be analyzed to determine the best and most economically sound management to apply over the long term. Roadbuilding and timber management will be very important considerations along with water quality, wildlife, recreation and natural beauty.

c) Reduce Skid Trails and Post-Harvest Access

One writer urged that a reduction in skid trails be made part of a scaled-back timber program to reduce environmental disruption. A firmer statement of policy is needed that, except for limited reasons, Type B and C roads will not provide access after harvest.

Response:

The mileage of skid trails has been further reduced in the Final Plan and a clearer statement of road management policies has been stated (PLAN, IV - E). Both skid trails and Type Band C roads can serve vital roles as year round recreation travelways if properly designed and located. A major part of our new road building and management program will be to create a well integrated, highly usable system of travelways. Thus, the needs and benefits of skid trails and permanent roads should not be viewed as being limited to timber access.

d) Standards and Guidelines for Road Construction

Another commenter stated that the Standards and Guidelines to mitigate the effect of erosion from road construction are fairly general. A detailed conservation plan and schedule, and explicit procedures for inspection, monitoring, enforcement, and coordination with Vermont's Agency of Environmental Conservation would help ensure effective implementation of the Standards and Guidelines.

One person recommended that the standard for skid trail grades needs to be split into two parts to address two different concerns. He proposed a new standard to read as follows: "Skid trail grades will exceed 15% only in short pitches or where soils are well drained enough to allow erosion control structures to be maintained at all times. Log reinforced waterbars will be installed on wet, seepy soils where earthen waterbars are inadequate."

Response:

We believe the Final Plan includes very specific and detailed standards and guidelines about the design, location, construction and maintenance of roads (PLAN, IV - E). Procedures for inspection, monitoring and coordination have been added and the standards for skid trail construction have been improved (PLAN, IV - E).

13. Monitoring and Implementation of Plan

Comment Codes: M40, M41, M50, T20

Comments:

a) Monitoring

Seven respondents expressed their concern over the vagueness of the monitoring and enforcement provisions for all major elements of the Plan. "Precision" and "reliability" of monitoring should be given in quantitive terms. Not even a biologist can judge the validity and likelihood of success of the Plan's monitoring program. Planners should add a column to the monitoring requirements stating what percent deviation from Plan goals will trigger a revision (amendment) to the document.

A careful system of specific public opinion monitoring and feedback should be added.

Response:

We agree that careful monitoring of the Final Plan is crucial to its successful implementation. The validity of the policies and direction outlined in the Plan must be regularly reassessed to determine whether or not adjustments are needed. The most tragic mistake the Forest Service could make is to adhere blindly to the structure of a Plan which becomes inaccurate and outdated.

We have greatly enhanced the monitoring provisions in the Final Plan and will annually report the result of the monitoring to our public (PLAN, V - Appendix C), along with any proposals for modifying the Plan (PLAN, V).

b) Contingency Planning

Another commenter believed the Plan should provide responses to changes other than Plan revision. Contingency planning will allow the Forest to cope with dramatic changes in present assumptions and premises upon which the current Plan is based. A good plan must provide for responses to changes, at least to the extent of describing the threshold values which will dictate Plan revision.

One person said the final Plan should also build into its monitoring program instructions on how forest resources would be protected if a reduced budget is realized. A second respondent stated that the planners have wisely tested the sensitivity of the preferred alternative to a reduced budget.

The final planning documents should describe in greater detail the features of Alternative D under a reduced budget regime, displaying quantitative outputs and providing additional narrative to explain the consequences of lower funding. Chapter 5 of the Plan should include an "automatic feedback" mechanism to trigger needed adjustments to timber harvests and other outputs depending on currently unforeseeable funding levels and environmental consequences of plan implementation.

Response:

We recognize the wisdom of following these suggestions and have provided a section in the Final Plan on major contingencies, including significantly reduced funding levels (PLAN, V). This new section asks and answers some major "what if" questions since we recognize that few things ever go exactly as planned, not even National Forest plans.

Comments on the Finger Lakes National Forest

1. Trail Management and Use

Comment Codes: A10, A20, A32, A42, A95

Comments:

a) Trail Use

Twenty-two commenters wrote about the trail system on the Finger Lakes National Forest. Six commenters urged that the Finger Lakes Trail and the Interloken Trail be designated as Special Areas (MA 8.1) which would receive minimal impact from timber harvesting activities and other motorized uses, including snowmobiling. Two mentioned the Ravine Trail as a Special Area. Most commenters also felt that the use of horses on these trails were incompatible with hiking and cross-country skiing. Twelve commenters proposed separate trails for both horses, ATV's, as well as snowmobiles.

Snowmobiles were mentioned as being incompatible with cross-country skiing although some writers acknowledged that their environmental impacts were negligible compared with the use of horses and summer ATV's. Several individuals wished to see snowmobiles excluded from the Inter- loken Trail, Finger Lakes Trail, and one also mentioned the three short trails connecting Potomac Loop. Snowmobiles should be limited to existing roads, abandoned roads, and the Burnt Hill and Backbone Trails.

One author recommended that the use of horses be restricted from mid-November until May 30 (or even later if necessary) to protect the trail surfaces. Horses should also be excluded from the south end of the FLT since it is a main thoroughfare slated for inclusion in the North Country Scenic Trail.

Six commenters urged a complete ban on motorized activities within the FLNF due to the effect they have on the environment and wildlife.

Response:

The Final Plan includes better management direction for the various types of trails and trail users on the FLNF (PLAN, IV - E and F). Separate, but sometimes overlapping, systems of trails are proposed to resolve existing conflicts, increase trail opportunities, and enhance enjoyment (PLAN IV - F).

Prohibition of motorized activities on the entire FLNF seems inappropriate since the Forest is heavily influenced by existing roads and motor vehicles. Some portions of the FLNF, however, are well suited to being closed to motorized activities and the Final Plan manages them that way (PLAN IV - E, Recreation).

b) Additional Trails

Several commenters wanted to see more trails constructed for hiking, skiing, and horseback riding. This would help disperse use. A ski connector from the Blueberry Patch through the campground to the Interloken/Burnt Hill junction was desired. Some parallel trails (such as Interloken and Burnt Hill) could be worked out to separate the hikers and horses, and the skiers and snowmobilers. Skid trails could possibly be restored and converted to additional hiking and ski trails.

Response:

The Final Plan proposes the construction of additional trails, including a major north-south trail which crisscrosses the Interloken trail at logical points (PLAN III). Snowmobiles and horses will not be allowed on the Interloken trail once the new trail is built. The new trail(s) will create loops for hikers and skiers if they wish to use them, however.

c) Horse Trails/Facilities

A letter writing campaign grew out of the horsemen's interests to see more developed facilities and trails at Hector. There were 71 individual replies about this topic. The items that were commonly stressed were the need for well-marked trails, overnight facilities and outhouses, tie racks, a clean water supply, better parking for campers and horse trailers, trail maps, and trails connected with other state parks and state forests. Several people mentioned that a facility modeled after the one at Brookfield would be desirable at Hector.

Response:

The Final Plan includes many improvements to enhance the enjoyment of horseback riders. For instance, new trails, more and better gates, better signing and facilities will be built. Improved standards and guidelines will help us do a better job of managing for horseback riders in the future (PLAN, IV - E).

2. Shrub Openings

Comment Code: C10, E50

Comments:

a) Reduction in Shrub Openings

Eleven people responded to the proposed reduction of shrub openings at Hector from a current 2400 to 800 acres. Only one commenter felt that this reduction would be adequate if the openings were interspersed for maximum habitat diversity for wildlife and situated with recreational access in mind. The other commenters felt that a loss of 1600 acres of shrub openings may significantly impact wildlife populations and diversity. These openings are important habitat for ruffed grouse, deer, wild turkey, and song birds. Seeing the wildlife is one of the main reasons people come to the forest - whether hiking, skiing, riding, or hunting.

One commenter noted that the shrub openings contain aspen, a tree providing quality habitat for ruffed grouse, woodcock, and white-tailed deer. The plan for Hector makes no stated provision for the retention or expansion of a viable aspen population if shrub openings are going to be reduced. This action will result in a decrease in current grouse populations and a further reduction in the already decreasing woodcock population.

One individual urged us to conduct intensive monitoring to determine any significant impacts on wildlife populations and diversity due to a reduction in openings.

Response:

The Final Plan increases the amount of permanent shrub openings (MA 1.3) from 800 acres to 1400 acres (PLAN, III - A). Along with this, all existing aspen stands will be maintained and more will be created (PLAN, III - A).

Shrub openings have been assigned two priorities for management should insufficient funding be received to maintain them all. The higher priority openings, including the 800 acres shown in the Draft Plan, will even be maintained under reduced budgets.

Careful monitoring will be done to track the effects of reductions in shrub opening acreages on wildlife (PLAN, Appendix C). We think that less acreage in shrub openings will be more beneficial to wildlife if the size, shape and distribution of the remaining shrub openings are improved. Careful monitoring should tell us if this is right.

3. Vegetation Management

Comment Codes: E10, E20, E40, E50, E60

Comments:

a) Old Growth Stands

Twenty-two persons commented on vegetation management activities proposed for the Finger Lakes National Forest. Seven commenters suggested that a portion of the National Forest be excluded from timber harvesting for as long as possible, perhaps forever, and be allowed to go through its natural successional stages without "management". These areas (eg. the Ravine Trail) should be left permanently as old growth areas. One commenter suggested leaving a natural forest condition 1/4 mile around the camp- grounds and at least 300 feet either side of the trails to minimize visual impacts.

Response:

The Final Plan identifies twelve areas, totalling 500 acres as future old growth. No areas were prescribed in the Draft Plan. Some areas adjoining the trails will be old growth, but others will be managed as pastures, shrub openings and managed timber stands of even and unevenages. The trail corridors will receive special attention and management, no matter what vegetative conditions exist (PLAN IV - E and F).

We feel a diversity of vegetative conditions and management will enhance the public's enjoyment of the trails better than a dark, green tunnel of unmanaged trees.

b) Harvesting

One writer was pleased that the Plan did not seek to maximize short-term timber yields. He noted that planning should take into account the relative values of all resources, not just the readily extractable commodities. He is less concerned with the efficiencies of harvest/return than in preserving the resource base itself.

One person found too great an emphasis on commercial timber production and noted that the FLNF is small and will never be an important source of timber.

Five persons preferred unevenaged management. This type of timber management was favored for being less disruptive to wildlife and for its value in "ecological systems". It promotes reforestation, recreational, aesthetic, and wildlife values. Clearcutting should only be used when its optimacy can be clearly demonstrated.

Response:

The Final Plan outlines a very small timber harvesting program for the FLNF which is nearly the same as the Draft Plan.

The reduction is caused by increased acreage of old growth, increased unevenaged management and allowing trees to grow longer in some areas before cutting them.

The volume of wood resulting from vegetative treatments will continue to be a by product of management to achieve other resource goals and objectives on the FLNF.

c) Special Species

Under vegetative composition, one individual wrote that the Forest is losing the diversity of nature that makes it a very special place. The concern is over the loss of many of the unusual herbaceous materials which reside at Hector. The writer feels that a rare plant study should be conducted so that species of concern could be protected as the Plan evolves.

Response:

Vegetative diversity will be enhanced under the Final Plan by increasing old growth, unevenaged stands, older evenaged stands, and improving the size, shape and distribution of shrub openings. All rare plants will be inventoried and protected.

d) Softwoods

Three commenters mentioned the reduction of softwoods on the Forest. One felt the reduction was too much ("...why not retain the existing 900 acres or decrease slightly?"). One recognized that it was too costly to replant the red pine stands from the 1930's. The third commenter asked if there had been consideration to plant other softwood species which would be suitable to the site, such as Norway Spruce.

Response:

Pure softwood stands appear to be ecologically unsuited to the FLNF environment. Most existing plantations are in terrible condition and will be replaced by hardwoods under the Final Plan. We will try to maintain some existing softwood stands which are in good shape and will manage for natural occuring softwood trees where they are intermixed with hardwoods.

4. Pasture Management

Comment Code: J30

Comments:

a) Continued Pasture Management

There were nine comments related to this topic. Four respondents voiced their concern over the economic viability of Hector's pasture management program. Some questioned whether there is sound rationale for retaining all existing pasture. Certainly no economic imperative exists, given that grazing is a subsidized financial drain on the Green Mountain. The final EIS should at least examine critically whether maintaining the current acreage of pasture is needed for multiple uses. If such analysis cannot demonstrate a strong multiple-use justification for proposed grazing levels, environmental factors dictate that some existing pasture must be allowed to undergo natural succession.

One person said that it appears that grazing management will be a burden to taxpayers if revenues do not make up the cost difference. If existing pastures will be managed for grazing, the author proposes fees for land-use that will meet pasture management needs without placing a financial burden on the National Forest.

Some felt that the Plan is correct in seeking to more effectively manage the most productive pastures. The long-term emphasis might best be on removing grazers altogether from the National Forest.

Two writers wanted the Grazing Association preserved as is and felt that grazing fees should be affordable and pasture maintenance kept at the level set forth in the Plan.

Response:

The Final Plan directs all existing pastures to continue to be managed for grazing. Changes in policies and increasing fees will result in lower direct financial subsidies of grazing in the future, but profit making from pasture management is unlikely. We believe the vegetative diversity, education demonstration, and unique recreational settings resulting from pasture management offset the direct financial losses which are incurred.

Some existing pastures may be converted to a forested condition if grazing use continues to drop, however. An analysis of this contingency and a proposed strategy are outlined in the Final Plan (PLAN, V).

b) Management Intensity

One person supported the proposed pasture management intensity outlined in the Plan. Three others expressed concern. One stated that less frequent mowing will allow undesirable weeds to grow. Cows will then cluster to the "good grass" areas and potentially overgraze them, leading to erosion.

Another writer stated that there is no way we can lower the intensity of pasture management, including less frequent fertilization, mowing, liming, fencing, and pasture rotation without a loss of long-term productivity.

The decision to maintain a grazing capacity of 11,400 animal unit months after 1996 was questioned. From an economic standpoint, the higher quality pasturelands should be better suited to intensive management than the low productivity lands. The commenter suggested that this decision be given a thorough analysis and discussion in the Plan.

Response:

A low intensity of management will be applied to all pastures until future demands cause us to change (PLAN, III - A). This low intensity is higher than what has been applied in recent years, will be sufficient to protect all resources from damage and will not result in a loss of long term productivity. A capacity of 10,000 animal unit months will result.

Dicisions about the management of pastures after 1996 are largely dependent on future conditions and demands. Further analysis will need to be done prior to making those choices. The best time to make those choices is when the Plan is revised 10 to 15 years from now, but contingencies have been outlined should the need arise before then (PLAN, V).

5. Land Acquisitions

Comment Code: J01, J10

Comments:

Five people expressed their support to establish enabling legislation for the Finger Lakes National Forest and thereby increase the size of their public holdings.

Response:

The Forest Service is trying to get approval of legislation which will enable us to purchase lands around the FLNF and better serve the public interest.

6. Multiple Use Management

Comment Code: A92, M70

Comments:

a) Role of Finger Lakes National Forest

Three respondents commented on the role of the Finger Lakes National Forest and Forest Service management of these lands. They praised the Forest Service for their excellent example of multiple use management on the FLNF. This is an example that is necessary to show both private individuals and other government agencies what can be done. The FLNF administration has done an exemplary job of serving the public with wise and wide ranging uses for public lands. One writer would like to see an emphasis on wildlife habitat, recreation, and education.

Response:

Multiple use management direction of the Final Plan will continue to reflect the unique role and situation of the FLNF (PLAN, IV, B and C).

7. Minerals

Comment Code: G01, G10

Comments:

Three writers said that mineral leasing was acceptable on the Finger Lakes National Forest if located on pastures where there is thought to be less resource damage than in wooded areas.

Response:

Leases for the mineral rights on the FLNF were issued in 1974. The Final Plan provides direction on how mineral activities will be controlled in the unlikely event they occur, to protect the environment and meet the management objectives assigned to various areas (PLAN-IV, E and F).

CHAPTER III

APPENDICES

III. APPENDICES

A. Letters Received from Public Agencies and Elected Officials. A.01

B. List of Commenters B.01

C. Codes Assigned C.01

D. List of Recipients D.01

E. List of Preparers. E.01

Appendix A: Letters Received from Public Agencies and Elected Officials

Forest Service policy requires us to reproduce the full text of all letters received from public agencies and elected officials who commented on the Proposed Plan and Draft Environmental Impact Statement (DEIS). By reproducing these letters, we hope to display the positions taken by those who are hired or elected to represent the public interest.

We did not give any less importance to the many thoughtful letters we received from private citizens and groups that have not been reprinted in this appendix.

2

U S DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION ONE
Montpelier, Vermont 05602

December 16, 1985

IN REPLY REFER TO
1950

RECEIVED
DEC 18 1985
GREEN MOUNTAIN N F
RUTLAND, VERMONT

Mr. Stephen C. Harper
Forest Supervisor
US Forest Service
P.O. Box 519
Rutland, VT 05701

Dear Mr. Harper:

Thank you for the opportunity to review and comment on your Proposed Plan and Draft Environmental Impact Statement for the Green Mountain National Forest.

We suggest that the Final EIS indicate that roads, constructed or reconstructed for use by the general public, will be designed in accord with the 1984 AASHTO Policy on Geometric Design of Highways and Streets (Green Book). These design standards would apply to Type D and some Type C roads. The AASHTO Green Book section on rural local roads and special purpose roads would be applicable to facilities constructed in the National Forest.

Sincerely yours,

Karle L. Snyder

Karle L. Snyder
Division Administrator

cc: Regional Office
Albany, NY

Agency of Transportation
Montpelier, VT

6

ROBERT T STAFFORD
VERMONT

WASHINGTON OFFICE:
133 HART SENATE OFFICE BUILDING
TEL (202) 224-5141

VERMONT OFFICES
27 SOUTH MAIN STREET
RUTLAND TEL 775-5446

1 MAIN STREET
CHAMPLAIN MILL #45 (4TH FLOOR)
WINOOSKI TEL 951-6707

United States Senate

WASHINGTON, DC 20510

COMMITTEES
ENVIRONMENT AND PUBLIC WORKS CHAIRMAN
LABOR AND HUMAN RESOURCES
EDUCATION SUBCOMMITTEE CHAIRMAN
VETERANS AFFAIRS
NEAL J HOUSTON
ADMINISTRATIVE ASSISTANT

December 18, 1985

RECEIVED
DEC 23 1985
GREEN MOUNTAIN NF
RUTLAND, VERMONT

Mr. Stephen C. Harper
Forest Supervisor
Green Mountain & Finger Lakes
National Forests
P.O. Box 519
Rutland, Vermont 05701

Dear Steve:

Thank you for the copy of the Forest Service proposed plan and Draft Environmental Impact Statement for the Green Mountain National Forest. I appreciate your providing me with it.

I have asked Mike Francis, of my staff, to review the plan and if he has any questions I am sure he will be in touch with you.

Any time you are in Washington, I know Mike and I would appreciate a visit with any additional information that you might want to share with us on the plan.

Sincerely,

Robert T. Stafford
United States Senator

RTS:mfr

United States Department of Agriculture

Soil Conservation Service

Vermont SCS State Office
69 Union Street
Winooski, VT 05404

January 9, 1986

Stephen C. Harper, Forest Supervisor
Green Mountain National Forest
P.O. Box 519
Rutland, VT 05701

Dear Steve:

Thank you for the opportunity to review your Proposed Land & Resource Management Plan and the accompanying DEIS.

My staff has reviewed the plan and was favorably impressed. The proposed alternative provides for a balanced mix of competing uses in utilizing an important resource. The plan and DEIS are comprehensive in scope and the basis for comparing alternative futures is well explained. The importance of forest management on the quality of runoff waters was clearly explained, a subject of interest to our agency.

The Soil Conservation Service wholeheartedly supports the Proposed Land and Resource Management Plan.

If there are issues you would like to discuss at a FAC meeting, or would like further SCS input, please let me know.

Sincerely,

Richard Croft ACTING FOR

John C. Titchner
State Conservationist

RECEIVED
JAN 14 1986
GREEN MOUNTAIN N F
RUTLAND, VERMONT

017

<2/13/86>

TOWN OF MIDDLEBURY, VERMONT 05753

Municipal Building
388-4041

Public Works
388-4045

January 31, 1986

Mr. Bob Andrews
Middlebury Ranger Station
U.S. Forest Service
Middlebury, VT 05753

Dear Bob:

I am sorry I was unable to attend your meeting at the Agricultural Center last night (January 30, 1986) regarding the draft management plan for the Green Mountain National Forest.

The plan has been reviewed by the Middlebury Planning Commission with particular attention to the management prescription for the Middlebury portion and the major timber sales and road improvements in Town. The Middlebury Planning Commission had no adverse comments regarding these specific items.

Beyond our local interests, I was very impressed with the draft plan and the planning process as a whole. You and others involved in the preparation of this plan are to be commended.

Sincerely,

Fred S. Dunnington
Town Planner

FSD:mw

RECEIVED
FEB 12 1986
GREEN MOUNTAIN N
RUTLAND, VERMONT

021

L2-13-8

R.F.D.#2
Prospect St.
Brandon, Vt. 05733

February 8, 1986

Mr. Stephen C. Harper
Forest Supervisor
Box 519
Rutland, Vt. 05701

Dear Mr. Harper:

Pursuant to the public meeting held January 30, 1986, at the Agricultural Center in Middlebury, Vt. I wish to reiterate my unqualified support for the proposed ten year plan for the management of the Green Mountain National Forest

As a native Vermonter and an avid outdoorsman I have witnessed the erosion of private property for public use. Thus I find myself resorting to National Forest land for my pursuits more and more each year.
Whereas I have not always agreed with past Forest Service management practices I view the proposed plan as very comprehensive with sincere effort to address all aspects of forest management and public recreational use.

Consistent with the philosophy of multiple use a balance must be maintained among the primary activities - recreation, timber harvesting and lease arrangements with ski resorts, etc.

I have a particular concern with cross country ski resorts that as a regular practice have converted all log roads and trails to their own use, which in essence results to a major degree in an extension of their own property.

I am aware that it is seldom possible to please everyone but I believe that the proposed plan is feasable and should be acceptable to the majority of users and special interest groups.

Again I commend the Forest Service for soliciting public comment on it's proposed plan, something other Governmental agencies could emulate.

Sincerely,
Frank A. Mazza
Frank A. Mazza
Chairman Board of Selectman
Brandon, Vt.

RECEIVED
FEB 13
GREEN MOUNTAIN N F
RUTLAND, VERMONT

State of Vermont

AGENCY OF ENVIRONMENTAL CONSERVATION

Montpelier, Vermont 05602

OFFICE OF THE SECRETARY

Department of Fish and Game
Department of Forests, Parks, and Recreation
Department of Water Resources and Environmental Engineering
State Geologist
Natural Resources Conservation Council

February 18, 1986

Mr. Stephen C. Harper
Forest Supervisor
Green Mountain National Forest
P.O. Box 519
Rutland, Vermont 05701

Dear Steve:

This is to acknowledge the invitation to participate in the Green Mountain National Forest's formal consultation with the U.S. Fish and Wildlife Service. The subject of the consultation is federal endangered species protection under the GMNF Plan.

I thank you for the opportunity to take part in the consultation, and am pleased to see further planning for endangered species. I feel that any concerns our Agency has for federally-endangered species will be represented and expressed by the U.S. Fish and Wildlife Service in this matter; thus, our presence will not be necessary at the consultation. (We will be passing along some thoughts on state endangered species, later.)

Thank you again for your invitation.

RECEIVED
FEB 27 1986
GREEN MOUNTAIN N F
RUTLAND, VERMONT

Sincerely,

Leonard U. Wilson
Secretary - AEC

RC

CC Larry Henson, Regional Forester

F004
<3-

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-0001

1985 NYS Forest Preserve Centennial

Henry G. Williams
Commissioner

MAR 4 1986

Mr. Stephen C. Harper
Forest Supervisor
Green Mountain & Finger Lakes
National Forests
P.O. Box 519
Rutland, Vermont 05701

Dear Steve:

We appreciate the opportunity to review the Proposed Land and Resource Management Plan for the Green Mountain National Forest. Our comments pertain specifically to the recommendations made in the proposals for the Hector Ranger District, Finger Lakes National Forest.

The proposed changes in the distribution of vegetation in the Hector District raise a couple of concerns. Large reductions in acreage in both shrub openings and softwood forests have been recommended.

- Shrub Openings

  Although a reduction to approximately ten percent of the acreage would normally be more desirable, the proposed five to seven percent may be adequate if shrub openings are interspersed for maximum habitat diversity for wildlife and situated with recreational access in mind.

- Softwood Forest

  There is a planned reduction in acreage in red and jack pine, to gradually be converted to hardwood species. Has there been a consideration to plant other softwood species which would also be suitable to the site such as Norway Spruce? This would seem advantageous for both timber demand, wildlife and recreation, and maintain a greater level of species diversity.

RECEIVED
MAR 1 1986
GREEN MOUNTAIN N
RUTLAND, VERMONT

I hope these thoughts are helpful. Good luck in carrying forth your new management direction for these National Forests.

Sincerely,

Norman J. VanValkenburgh, Director
Division of Lands and Forests

365
L3-31-86 7

MAR 17 1986

TOWN OF ULYSSES

10 Elm Street
P.O. Box U
Trumansburg, New York 14886

607-387-5767

MARTIN A. LUSTER, Supervisor
MARSHA L. GEORGIA, Town Clerk
JAMES A. MEEKER, Highway Superintendent

JAMES E VORP, Councilman
CAROLYN J DUDDLESTON, Councilm
ROBERT A. WEATHERBY, Councilman
THOMAS F REITZ, Councilman

RECEIVED
MAR 28 1986
GREEN MOUNTAIN N F
RUTLAND, VERMONT

March 13, 1986

Hilary Dustin, District Ranger
Finger Lakes National Forest
P.O. Box W
Montour Falls, New York 14865

Dear Ms. Dustin,

On behalf of the Town Board I would like to thank you for your presentation at our board meeting.

Please find enclosed a certified resolution passed at the meeting showing the board's support.

Sincerely,

Marsha L. Georgia

Marsha L. Georgia
Ulysses Town Clerk

MLG:mg
Enc. 1

CERTIFIED RESOLUTION

WHEREAS, the Town of Ulysses is on the eastern gateway to the Hector District of the Finger Lakes National Forest and

WHEREAS, many Ulysses residents enjoy recreational opportunities of the Hector District and

WHEREAS, the Ulysses farming industry utilizes the pasture grazing benefit and

WHEREAS, timber management for lumber and firewood are valuable renewable resources which benefits the local economy and

WHEREAS, Ulysses residents utilize and benefit from the natural production of apples, blueberries, blackberries and other wildfruits and

WHEREAS, many area residents individually or as organized groups utilize the trails for education and recreation

THEREFORE BE IT RESOLVED, the Ulysses Town Board recommends the alternate plan "D" for the management of Hector District of the Finger Lakes National Forest.

FURTHER RESOLVED, that the Ulysses Town Board recommends that all terrain vehicles be prohibited from trail use and

FURTHER RESOLVED, that the District investigate the possible separation of recreational uses of the trails.

I hereby certify that the foregoing resolution was adopted by the Town Board of the Town of Ulysses at its Regular Meeting March 11, 1986.

Witness my hand and the seal of said Town this thirteenth day of March, Nineteen Hundred Eighty-six.

Marsha L. Georgia
Ulysses Town Clerk

387

C3-31-86

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J F KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203

March 26, 1986

Stephen C. Harper, Forest Supervisor
Green Mountain National Forest
Box 519
Rutland, VT 05701

RE: D-AFS-B65003-00

Dear Mr. Harper:

The Environmental Protection Agency (EPA) is pleased to submit comments on the Forest Service's proposed Land and Resource Management Plan and the Draft Environmental Impact Statement (DEIS), as requested. These comments are submitted in accordance with Section 309 of the Clean Air Act and the National Environmental Policy Act, and they fulfill our mutual responsibilities under the National Nonpoint Source Policy and Strategy and the Memorandum of Understanding between the Forest Service and EPA.

We believe that the Green Mountain National Forest (GMNF) has developed a thoughtful, clearly written Proposed Plan and DEIS. The "Highlights of the Proposed Plan" provides a lucid, interesting summary of the role of the GMNF, environmental impacts of the alternatives, and the proposal to highlight the Forest's recreational and environmental assets.

Notably, the Plan and DEIS emphasize the unique role of the Forest, which constitute 5 percent of Vermont's land area, in providing backcountry recreation, public access to the out-of-doors, and water quality protection, not as readily affordable on the preponderance of private lands. Further, the Plan and DEIS explicitly recognize the direct relationship between increased levels of surface disturbing activities and increased likelihood of degradation of water quality and other environmental values. This is recognized in the evaluation of alternatives in both the Plan (pp. 4.92, 4.98, and 4.116) and DEIS (p. 4.57, Table 4.6). Further, the General Standards and Guidelines outline mitigating Best Management Practices(BMP's), and, in turn, these are refined for application to the Management Prescriptions.

The DEIS evaluates the impact of the various management prescriptions with accompanying levels of land-disturbing activities on water quality, fish and wildlife habitat, and other environmental factors (pp. 4.22 Land Adjustments; 4.26 Even-aged Timber Management; 4.32 Unevenaged Timber Management; 4.52 Road Construction; and 4.57 overall comparative ranking, Table 4.6).

We are pleased to note the Land Acquisition priority to acquire lands and easements to bring public access water's edge to protect the shoreland along the White River, a prime fishery and recreation resource, and to protect the watershed of heavilyused Hapgood Pond.

We are also pleased that the Plan lays a framework for coordination of National Forest activities with related plans and efforts:

1. The Forest commits itself to management that will protect the recreational assets of the eleven rivers that are National Park Service candidates for Wild, Scenic or Recreation rivers (Plan p. 4.06). Standards and guidelines for high visual sensitivity will apply in the foreground zone of these rivers. (Plan p. 4.47). Presumably, these will protect high quality waters.

2. The Plan outlines a role for the Forest in support of the Vermont Forest Resources Plan. (Plan p.4.06).

3. The Plan recognizes the impact of decisions such as Special Use Permits for activities in the forest on surrounding areas; e.g., ski area expansion and windmills.

4. The Plan would invoke the Oil & Hazardous Substances Pollution Contingency Plan for the GMNF, in the event of hazardous spills (Plan p.4.76).

5. The Plan supports accelerated research on air pollution impacts and reduction (including acid rain). (Plan p.4.08).

6. The Plan includes an effort to develop a public information program to interpret GMNF timber and wildlife management practices for the public, contracting with the University of Vermont Environmental Program. This program deserves full support to make National Forest Management a model for private management. Hopefully, this will include demonstrations of Best Management Practices (BMP's) to protect water quality. EPA will be interested in being kept informed on progress here.

Our major concern lies in the vagueness or weakness of monitoring and enforcement provisions for all major elements of the Plan. We recommend that the Final Plan and EIS set forth procedures for water quality monitoring and evaluation, inspection, enforcement, and coordination with the management and regulatory programs of the State of Vermont Agency of Environmental Conservation.

Our other concerns and suggestions center around handling of water quality and other environmental degradation associated with ski area management and expansion, mineral exploration and development, roads, buffer zones, chemical use, water supplies, and water quality monitoring.

Suggestions for strengthening the Final Plan and EIS are as follows:

Ski Area Management and Expansion

The treatment of ski area management and expansion might be expanded to guide management, monitoring, and enforcement of siting and BMP's for trails, parking facilities, and wastewater treatment in ski areas and to set forth policies for consideration of any future expansion. This is relevant and timely in response to Vermont's current litigation and legislation to protect near pristine headwaters streams yet accommodate limited ski area and accompanying condominium expansion currently underway. The

Forest's proposal not to entertain additional ski areas on Forest Land will directly support the State's Water Pollution Control laws, regulations, and legislative proposals to protect headwater streams as Class A pristine waters. Significantly, the Vermont Agency of Environmental Conservation, Dept. of Water Resources and Environmental Engineering, found that the headwaters of the Mad River suffered fish kills and pollution from parking area runoff.

We have the following specific suggestions:

1. Plan, p. 4.128 - Inspect ski trails for erosion after each major storm and quarterly. Set forth Forest Service oversight, inspection and enforcement procedures. Outline coordination with Vermont Agency of Environmental Conservation; consider a Memo of Understanding.

2. Plan, p.4.19 #G5 - Same inspection, monitoring and enforcement provisions apply to on-site application of Ski Trail Maintenance, Development and Rehabilitation Guidelines Reports.

3. Plan, p.4.05 - The Plan recognizes off-site impacts of ski areas. Perhaps elaboration here would emphasize the relationship between Special Use Permits for ski trails and facilities on Forest Land and secondary development of lodges, condominiums, parking, and traffic on nearby lands and communities, all of which in turn impact the forest.

4. Plan, p.4.19 - Ski trails and parking cause on-site erosion and sedimentation as well as other water quality impacts such as water withdrawals.

5. EIS, p.2.74 - Though downhill skiing provides high marginal dollar benefits per acre on the small acreage in question among the alternative levels, the on and off-site detriments to water quality, air quality, noise and other recreation activities/amenities can be significant.

Mineral Exploration, Development and Extraction

We recommend that the Forest Service further develop the framework and guidelines to strengthen environmental analysis and on-the-ground implementation. Site-specific water quality impacts from roads, drilling muds, runoff and escaping hydrocarbons should be discussed, and BMP's should be considered.

Plan, p.4.66 - Though reasons for closure to land-disturbing activities must, indeed, be documented, perhaps Item A.2 could be rephrased to play down any burden of proof on the Forest Service.

Plan, p.4.68 - We suggest adding an item B.d to require a monitoring and inspection program.

Roads, Skid Trails, and Parking

The DEIS states that the most significant potential water quality problem is sediment runoff from the construction of new roads. According to the Proposed Plan, six miles of new permanent roads are planned to be constructed and eleven miles of existing

roads are planned to be reconstructed during the next decade, as well as construction of an additional nine miles of permanent roads in the following decade. However, the standards and guidelines to mitigate the effect of erosion from road construction activities are fairly general. A detailed conservation plan and schedule, we assume, would be included in the subsequent specific road construction plans and specifications. Explicit procedures for inspection, monitoring, enforcement, and coordination with Vermont's Agency of Environmental Conservation would help to insure effective implementation of the Standards and Guidelines.

Erosion and sedimentation should be considered in siting and design of parking areas, such as trailhead parking.

Plan, p.4.15 - Would wheel logging equipment be used on slopes approaching 50 percent?

Plan, p.4.46 - Clarify any use of skid trails by ORV's. What about impacts on erosion, sedimentation, and water quality?

Plan, 4.62 - Could seeding time be shortened?

Buffer Zones

Provision for buffer zones might be strengthened through consideration of wider buffer zones, especially near critical water bodies.

Plan, p.4.138 - Would distances for camping of over 100 feet (instead of 50 feet) from trails and 250 feet (instead of 100 feet) from waterbodies afford better protection?

Plan, p.4.20 - Slope factor for buffer width is useful; consider combining with minimum distance, such as 100 feet and up to 250 feet, depending on intensity and potential impact of activity.

Plan, p.4.75 - Consider increasing distance of areal application of pesticides from 100 feet to 250 feet from waterbodies.

Chemical Use

Again, outline monitoring, inspection, and enforcement procedures to assure that the standards are followed and that they work.

Specify adherence to instructions for application in label, under EPA registration.

DEIS, p. 4.46 - Outline measures to minimize chances of accidental spills.

Water Supplies

The DEIS indicates that ten municipalities derive a portion of their drinking water from surface waters that run off 13,450 acres of GMNF land (Plan p.3.09). What percentage of the total supply do these surface waters represent for each of those ten communities?

In addition, according to the DEIS (Plan p.3.08), the surface water quality in the GMNF is high. However, other than the fact that the dissolved nutrient levels are low, there are limited surface water quality data to support this. The DEIS states that there are no known sources of contamination that exist in the Forest. However, the existence of beaver colonies/dams is a potential source of contamination. Beavers have been implicated in a number of giardiasis outbreaks in several states (e.g. Pittsfield, Massachusetts).

The DEIS indicates that there are 17 non-community wells supplying water to the public utilizing the Forest. However, there is no discussion of any of these public water supply wells, other than a list in Table F.04 of Appendix F of the DEIS. The existing water quality of these wells is not addressed, nor are their locations indicated on a detailed map. In addition, it is not clear whether any of these wells are downgradient from or immediately adjacent to existing or planned recreational roads, or whether recreational roads are salted during winter months. We are primarily concerned with the potential contamination of any of these wells from road runoff.

Because of the expected increase in future recreational use, future water supply needs of the Forest should also be discussed. It would be useful to know where new wells would be needed or installed, and what protection measures will be required.

The DEIS ranks the cumulative effects of the various alternatives on soils and extrapolates that ranking to their effects on water quality. However, it is difficult to assess the actual impacts on existing and future water supply sources in the Forest because construction details associated with each alternative go beyond the scope of the Plan.

Based on the criteria of the speculated amount of road construction and of evenaged regeneration, it does not appear that Alternative D, the preferred alternative, would pose a significant problem from a water supply perspective, as long as erosion from road construction activities into nearby tributaries is minimized to the greatest extent possible and that existing and future public groundwater supplies are protected from contamination sources, such as road runoff. We recommend that a water supply protection and management plan be part of the overall Land and Resource Management Plan.

Water Quality Monitoring

We recommend that the final Plan and EIS outline the water quality monitoring and evaluation program as well as summarize the types of surveys, parameters, analyses, and feedback mechanisms. Also, it should indicate how the monitoring plan will be changed to comply with the Forest Plan - in the Plan," Monitoring and Evaluation", p.5.03 and Appendices C and D, and in the DEIS, "Monitoring Requirements", p.4.80.

Overall, we believe that the GMNF Plan and DEIS represent a step forward by the Forest Service in recognizing the unique environmental role of a National Forest and the relationship between the level of land-disturbing activity and environmental quality.

In accordance with our national rating system, we have rated this DEIS 'LO' (Lack of Objection - see enclosure).

We appreciate the continuing opportunity to work with the Green Mountain National Forest on environmental issues. If you would like to discuss these comments or if we can assist in any way, please give us a call at 617/223-3917 (Bart) or 617/223-4963 (Betsy). We would appreciate receiving three copies of the Final EIS and Plan when they become available, and request that they be sent to Betsy Higgins.

Sincerely,

Bart Hague, Chief
Environmental Studies
Water Management Division (WAA-2103)

Elizabeth A. Higgins, Assistant Director
for Environmental Review
Office of Government Relations
and Environmental Review (RGR-2203)

Attachments

cc: Leonard Wilson, Secretary
VT Agency of Environmental Conservation

SUMMARY OF RATING DEFINITIONS AND FOLLOW-UP ACTION

Environmental Impact of the Action

LO--Lack of Objections
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal

EC--Environmental Concerns
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts

EO--Environmental Objections
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative) EPA intends to work with the lead agency to reduce these impacts

EU--Environmentally Unsatisfactory
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality EPA intends to work with the lead agency to reduce these impacts If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ

Adequacy of the Impact Statement

Category 1--Adequate
EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2--Insufficient Information
The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3--Inadequate
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and that should be formally revised and made available for public comment in a supplemental or revised draft EIS On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ

OFFICE OF THE GOVERNOR

OFFICE OF POLICY RESEARCH AND COORDINATION
AREA CODE (802) 828-3326

368
(3-31-86)

STATE OF VERMONT
MONTPELIER, VERMONT 05602

March 26, 1986

RECEIVED
MAR 31 1986
GREEN MOUNTAIN NF
RUTLAND, VERMONT

Mr. Stephen C. Harper, Forest Supervisor
Green Mountain National Forest
P. O. Box 519
Rutland, VT 05701

Dear Mr. Harper:

This is in response to your request for comments on the proposed Plan and Draft Environmental Impact Statement (DEIS) for the Green Mountain National Forest. This will provide a consolidated state response from several state agencies that have reviewed the Plan and the DEIS. I have attached memoranda from the Agency of Environmental Conservation which provide detailed comments and recommendations.

Your efforts to involve state agencies in the planning process has produced very supportive and positive comments from state reviewers. The reactions to your Plan reflect a belief that the Green Mountain National Forest management policies will complement state efforts to protect and enhance our natural environment.

I want to call your attention to the recommendations contained in the attached memoranda from the Agency of Environmental Conservation. These recommendations should be considered in drafting the final Plan and final EIS. I suggest that you contact Stephen Sease at AEC to discuss the concerns and recommendations contained in his memo of March 13, 1986. I refer in particular to the recommendations concerning the Somerset and Harriman Reservoirs, the proposed Catamount Trail system, the Long Trail/Appalachian Trail, and the specific and general comments from the Department of Water Resources and Environmental Engineering.

I appreciate your efforts to keep state government involved and informed in your planing process. We look forward to the continued contribution of the U. S. Forest Service in helping Vermont maintain its high quality environment.

Sincerely,

S. W. Kimbell

Stephen W. Kimbell
Director

SWK:nmp

State of Vermont

AGENCY OF ENVIRONMENTAL CONSERVATION

Montpelier, Vermont 05602

OFFICE OF THE SECRETARY

Department of Fish and Wildlife
Department of Forests, Parks, and Recreation
Department of Water Resources & Environmental Engineering
State Geologist
Natural Resources Conservation Council

MEMORANDUM

TO: Bernie Johnson, Policy Research

FROM: Stephen B. Sease, Director of Planning

DATE: March 13, 1986

SUBJECT: Review of USFS/GMNF Plan

The elements of the Agency have reviewed the GMNF plan. I have attached the remarks of the principal commenters: Commissioner Mollie Beattie; Larry Garland; and Richard Czaplinski--hereto. Comments of individual reviewers are included as well but the principal comments should be considered the voice of each Department.

In summary, this Agency finds the GMNF plan to be quite satisfactory. It is the result of a lengthy and very accessible process in which this Agency participated. The USFS/GMNF deserves great credit for their efforts to insure widespread public involvement and coordination.

We feel the emphasis on provision of opportunities which are unavailable on small public holdings and private lands is particularly commendable. There is obviously a tiered delivery system for recreation, wildlife management, and forestry management techniques in this state. We fully support the GMNF's role in the array of opportunities offered to the public. The GMNF philosophical commitment to wilderness and "back country" opportunities, research, scenic quality and stewardship of land is admirable.

There will always remain differences of opinion on details. Some of the issues we have identified are as follows:

The Department of Fish and Wildlife expresses concern that the GMNF in general seeks to maximize habitat diversity rather than to single out particular species. In the Agency's general view, however, the emphasis on habitat diversity is desirable, as the GMNF, by virtue of its large holdings, can achieve wider diversity than may be possible on smaller state holdings--some of which, for instance, were purchased for characteristics desirable only to a single species. We feel the GMNF wildlife

management role is complementary to state efforts. The GMNF staff has always cooperated with us in wildlife management issues and, if communications remain good, we will have no real concern for the GMNF's program.

The Department of Forests, Parks and Recreation registers concern for acquisition and protection of Somerset and Harriman Reservoirs. To the extent that purchase boundaries may need to be adjusted to accomplish those goals, it is obvious that such action may be a long way off. We would recommend, however, that these water bodies be addressed in the plan.

We would also recommend that the proposed Catamount Trail system and the existing snowmobile corridor trail be recognized in the plan.

The Department of Water Resources and Environmental Engineering has chosen to comment in line-by-line style. Their comments primarily address management issues rather than policy or planning concerns. In general the Agency feels that protection and enhancement of water quality should be emphasized throughout the plan. On large public land holdings, consideration should be given to maintaining ground and surface water in its highest possible natural quality. This goal would, to some extent, require revision of standards for logging, extraction and other land uses on the GMNF.

Finally, the standard for Long Trail/Appalachian Trail protection (a 400' corridor) is at odds with a 1000' corridor protection plan recommended to the state for its lands by the Appalachian Trail Conference/ Green Mountain Club. The plan which state managers are considering is a 200' primary protection zone on either side of the trail; a secondary protection zone of 300'; and a visual quality analysis of activities beyond the 500' corridor on either side. We recommend that the plan be amended to include ongoing management consultation with the Appalachian Trail Conference/Green Mountain Club and state land managers in order to help carry out the emphasis on volunteer management contained in the national Appalachian Trail legislation.

If you have any questions on this, please give me a call.

SBS/tc

cc: Mollie Beattie
Jonathan Lash
Steve Wright

State of Vermont

AGENCY OF ENVIRONMENTAL CONSERVATION

Montpelier, Vermont 05602

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Water Resources & Environmental Engineering
State Geologist
Natural Resources Conservation Council

DEPARTMENT OF FORESTS, PARKS AND RECREATION

MEMORANDUM

To: Stephen Sease, Director of EC Planning

From: Mollie H. Beattie, Commissioner of FP&R Mollie

Re: Comments on Green Mountain National Forest Plan

Date: March 11, 1986

We reviewed the Plan in a general way and also for specific ways in which it complements, duplicates or conflicts with various plans, standards or programs at the state level.

In general, we think the Green Mountain National Forest staff should be commended for developing an outstanding plan and for a thorough effort to involve the public from the beginning.

We found the Plan to be complementary or compatible with state efforts in all areas; for instance, pesticide policy, Appalachian Trail/Long Trail corridor management, ski area administration, and forest management standards. We are also very glad to see the emphasis on river recreation.

Three minor shortcomings, in our opinion are: the exclusion of planning for acquisition and protection of Somerset and Harriman Reservoirs; no mention of either the Snowmobile Corridor Trail System or the proposed Catamount Trail System; and a shortage of maps within the Plan to clarify the existing and proposed trails, campsites, etc.

Copies of individual responses to the Plan which I have tried to summarize above are attached. Please let us know if you have further questions.

MHB:jn
Encs.

State of Vermont

AGENCY OF ENVIRONMENTAL CONSERVAT

Montpelier, Vermont 05

DEPARTMENT OF FISH AND WILDL

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Water Resources & Environmental Engineering
State Geologist
Natural Resources Conservation Council

TO: Steve Sease, Director of Planning

FROM: Lawrence Garland, Assistant Director of Wildlife

DATE: February 18, 1986

SUBJECT: Green Mountain National Forest Proposed Land and Resource Management Plan

The U.S. Forest Service manages wildlife habitat under the concept of specie diversity. That concept makes the assumption that if plant communities are varied by species and ages of plants, a maximum amount of niches (habitats) will be available and a maximum number of wildlife species will occur. This is a reasonable assumption but it leaves out quality of habitats. Under the concept of diversity many niches (habitats) are available but few are optimised. Numbers of species maybe high but not necessarily population numbers. The concept makes no judgements of the relative values of wildlife species to man. Unfortunately, men do make judgements and they attach more values to some species than to others.

The Vermont Fish and Wildlife Department does not operate its state land management program under the concept of species diversity because we prefer to optimise habitat conditions for species that the public has judged to be important economically and socially. The proposed Forest Service plan does a fine job of accomplishing their objective but it does not match our objectives nor those of the public (hunters at least, who to date have been the only ones willing to pay the bill). There is not enough cutting proposed to optimise habitats of game species and there is too much acreage devoted to passive management (primitive, backwoods and wilderness) in Alternative D. I prefer Alternative C especially if deer winter range were managed as under Alternatives E or F.

The plan adequately addresses endangered species. Peregrine Falcon are the only species on the Forest that are in that category.

vs

Regional Offices Barre/Essex Jct./Pittsford/N. Springfield/St. Johnsbury

State of Vermont

AGENCY OF ENVIRONMENTAL CONSERVATION

Montpelier, Vermont 05602
Department of Water Resources
and
Environmental Engineering

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Water Resources & Environmental Engineering
Natural Resources Conservation Council
State Geologist

WATER QUALITY DIVISION

MEMORANDUM

TO: Thomas Willard, Environmental Engineering Supervisor

FROM: Richard M. Czaplinski, Chief of Water Resources Planning

SUBJECT: Green Mountain National Forest Management Plan Draft Environmental Impact Statement

DATE: February 12, 1986

I have reviewed the subject Plan and Draft Environmental Impact Statement and have the following comments. Please combine these with other Division comments and forward them as may be appropriate.

I. Plan

1. Page 3.03 Wildlife Habitats - This section should discuss stream buffer strips to protect against thermal pollution and erosion and sedimentation.

2. Page 4.03. Goals for Wildlife Habitats - One goal in this section should be the protection of water quality.

3. Page 4.17, C.8 - The use of "dips" as well as water bars should be mentioned here. Water bars are often not effective, certainly not without constant maintenance. Dips can withstand many passes by skidders and still be effective.

4. Page 4.19, G.5 - Who reviews the "Ski Trail Maintenance, Development and Rehabilitation Guidelines Reports" for adequacy and effectiveness, and to see if they are being effectively implemented?

5. Page 4.128, F.3 - This paragraph is not adequate. All erosion problem should be corrected immediately. There should be inspections after major storms.

Regional Offices Barre/Essex Jct /Pittsford/N Springfield/St Johnsbury

6. Page 5.03 - This section should include specific monitoring and evaluation procedures to assure that water quality standards violations do not occur.

II. Draft Environmental Impact Statement

1. Page 3.08 - Paragraph 3 states there are no known sources of pollution on National Forest Land. What about erosion from roads and ski trails and skidding?

2. Page 4.08 - Paragraphs one and four are inconsistent. Paragraph one says there is usually no lasting evidence of skid trails, paragraph four says evidence is abundant.

   Paragraph two - How about the use of "dips"?

   Paragraph three - What is "incidental soil erosion"?

   Paragraph four - What are the environmental problems alluded to?

   Paragraph six - Give the reference for standards and guidelines.

3. Page 4.10 Water Quality - What are "acceptable levels of stream sedimentation". Vermont Water Quality Standards in Sections 3-01(4) and (6) indicate that there shall be virtually no sedimentation. This paragraph should make clear that water quality will be detrimentally affected unless good temporary and permanent erosion control measures are installed and maintained.

4. Page 4.19 Ski Area Expansion - This section should mention that significant effects can occur on-site due to such activities as parking (erosion and sedimentation), and water withdrawal for snowmaking (effect on aquatic habitat).

5. Page 4.20 Water Quality and Quantity - The discussion of spraying of effluent should include the swapping of land to get around the prohibition of spraying on National Forest land.

6. Page 4.22, Water Quality - The first paragraph, last sentence indicates that following standards and guidelines should ensure that no significant harm occurs. The question is will such practice in fact avoid harm?

7. Page 4.32 and page 4.52 Water Quality - Same comment as #6 above.

8. Page 4.46 Water Quality - What about spills of pesticides. Is there any procedure to minimize spills into surface waters.

9. Page 4.58 Water Quality - A statement is made on this page that "soil disturbing practices ... can positively influence water quality". This statement should be explained with real life examples.

10. Page 4.61 Wildlife Habitats - This section and the whole "cumulative effects" section do not discuss the effects of the alternative plans on stream/fish habitat/aquatic habitat.

RMC/rh
cc Stephen B. Sease, Director,
Environmental Conservation Planning

MAR 2 ? 198?

542

C4-7-8

ONTARIO COUNTY

Soil and Water Conservation District

482 North Main Street
Canandaigua New York 14424
Telephone (716) 394-1341

DIRECTORS
Andrew Burt Jr Chairman
Dennis McNamara Vice Chairman
Myron Green
John Malyj
Raymond Barend

Sherwood G. Pierce
District Manager

Donna Miller
Secretary Treasurer

Stephen Lewandowski
Conservation District Educator

March 20, 1986

Hector Ranger District
Finger Lakes National Forest
Box W
Montour Falls, NY 14865

GREEN MOUNTAIN NF
RUTLAND, VERMONT

Dear Finger Lakes National Forest Supervisors:

I am responding to the Draft Plan Summary for the Finger Lakes National Forest. Because I have only the Summary to study, I am somewhat limited in specifics, but I do have some concerns based on my experience in conservation in upstate New York.

I am an employee of the Ontario County Soil & Water Conservation District. Along with USDA SCS, we are currently emphasizing rotational and other high-management grazing systems for use on otherwise marginal private lands. There may be a future for beef production in New York, particularly on these marginal areas, if proper management decisions are made. In my view, the Hector Grazing Cooperative arrangement is antiquated and out of place here in the Northeast. In our area, there is currently lots of land growing to shrubs which might be better used to graze sheep or cattle. According to your own figures, the present net value of pasture management at FLNF is negative. I don't see any additional benefits to recommend its continuation. I believe your plan is correct in seeking to more effectively manage the most productive pastures, but I believe the long-term emphasis should be on removing grazers altogether from the National Forest.

Though I realize that there are technical difficulties to doing so, I believe the Finger Lakes National Forest should be managed for 1) mature hardwood forest, 2) a diversity of wildlife and 3) recreation appropriate to the other aims. I believe, because of its uniqueness and location, the Finger Lakes National Forest will produce more of value when managed for recreation than when managed for grazing. I see management for grazing and management for aesthetic and recreational values as somewhat exclusive of one another. Mature hardwood forests and diverse wildlife would set the 'tone'for

566
4-7-86

United States Department of the Interior

NATIONAL PARK SERVICE
APPALACHIAN TRAIL PROJECT OFFICE
HARPERS FERRY CENTER
HARPERS FERRY, WEST VIRGINIA 25425

IN REPLY REFER TO

March 31, 1986

RECEIVED
GREEN MOUNTAIN NF
RUTLAND, VERMONT

Stephen C. Harper
Forest Supervisor
Green Mountain National Forest
P.O. Box 519
Rutland, Vermont 05701

Dear Steve:

We appreciate the opportunity to review and provide comments on the Proposed Land and Resource Management Plan for the Green Mountain National Forest (GMNF). You and your staff are to be commended for your recognition of the growing public need for back-country recreation and the important role of GMNF in providing it.

Although I am pleased by the Plan's identification of the Appalachian and Long Trails as Special Areas, I believe protection of Trail values would be more secure by increasing this special management area to include lands within 500 feet of either side of the treadways. As you know, a 1000' corridor standard is implied by the National Trails System Act, and represents the level of protection the National Park Service has been seeking for the Trail where it crosses private lands. This change would be consistent, as well, with the Plan's statements on p. 4.140 that interests in the remaining privately owned tracts of land along the LT/AT will be acquired, and "a corridor at least 1000 feet in width is desirable to manage and protect the trail's values."

I would again like to commend you on a thoughtful planning document that reflects appropriate sensitivity to the unique recreational values of the Appalachian Trail.

Sincerely,

David A. Richie
Project Manager

cc: Proudman
Sternberg
Jette
Bristow

DEPARTMENT OF THE AIR FORCE
REGIONAL CIVIL ENGINEER, EASTERN REGION (HQ AFESC)
526 TITLE BUILDING 30 PRYOR STREET S.W
ATLANTA, GEORGIA 30335-6801

RECEIVED
APR - 1986
GREEN MOUNTAIN
RUTLAND, VERMONT

REPLY TO ATTN OF ROV2

28 March 1986

SUBJECT Air Force Review of the Draft Environmental Impact Statement (DEIS) and Proposed Land and Resource Management Plan (PLRMP) for the Green Mountain National Forest in Vermont and New York

TO

Green Mountain National Forest
Attn: Forest Supervisor
P.O. Box 519
Rutland, VT 05701

1. As the official Air Force single point of contact with state and federal regional agencies on environmental matters in the eastern United States, we have been tasked by Headquarters Air Force to conduct the Air Force review of and provide comments on the subject DEIS and PLRMP.

2. We have reviewed these documents and find that implementation of the plan will not adversely impact on Air Force operations in Vermont or New York. However, the Air Force operates three air training routes, identified as SR-823, SR-825 and SR-826 in the vicinity of the New York section of Green Mountain National Forest. These routes are contained in corridors ranging from 5 to 10 miles wide; are flown at altitudes ranging from 300 feet above ground level (AGL) to 1,500 feet AGL; and are operated on a daily basis from 10:00 A.M. to 10:00 P.M., Eastern Standard Time. Aircraft flying these training routes may have a noise impact on forest areas. We request you consider the possible impact of military training routes in your planning process.

3. Thank you for the opportunity to review the DEIS and PLRMP. We support your efforts to conserve our natural resources. If you need additional information, our point of contact is Mr. Winfred G. Dodson at FTS number 242-6821/6776, or commercial telephone number (404) 331-6821/6776.

THOMAS D. SIMS
Chief
Environmental Planning Division

cc: HQ USAF/LEEV

634
4-8-86

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM MASSACHUSETTS 02254-9149

REPLY TO
ATTENTION OF

March 28, 1986

Planning Division
Impact Analysis Branch

RECEIVED
GREEN MOUNTAIN NF
RUTLAND, VERMONT

Mr Stephen C Harper, Forest Supervisor
Green Mountain National Forest
P O Box 519
Rutland, Vermont 05701

Dear Mr Harper:

We have reviewed the Draft EIS for the Land and Resource Management Plan - Green Mountain National Forest Our comments are as follows:

1 The Resource Management Plan should recognize wetlands as "special areas" which have a high value for wildlife habitat, water storage and purification We endorse the concept that surface disturbances should be avoided or minimized

2 Logging road construction through wetlands and across streams may come under Corps of Engineers regulatory jurisdiction Alternatives to wetlands fill should be discussed Wetland crossings should be avoided or minimized and Best Management Practices should be employed

3 Construction activities associated with mineral, oil and gas development in wetlands may come under Corps of Engineers regulatory jurisdiction. We endorse the special restrictions placed on wetlands for mineral development (no surface disturbance allowed)

If you have any questions, please contact Mr Raymond Francisco of our Regulatory Branch staff at FTS 839-7373, or 617-647-8373.

Sincerely,

Joseph L. Ignazio
Chief, Planning Division

644
<5-7-86>

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Project Review
1500 Custom House
165 State Street
Boston Massachusetts 02109

IN REPLY REFER TO

ER 85/1752

April 18, 1986

Stephen C. Harper
Forest Supervisor
Green Mountain National Forest
Box 519
Rutland, Vermont 05701

Dear Mr. Harper:

This is in reply to an earlier request for the review comments of this Department on the draft environmental statement and proposed land resource management plan for the Green Mountain National Forest.

Summary Comments

The plan is written in a clear style and presented in a manner that reflects a concern that it be understood by the general public and not just professionals. Its authors are to be commended for shedding unnecessary professionalism and preparing a plan which encourages public review.

The Green Mountain National Forest managers have excelled in their efforts to encourage participation in the review of this plan and the product reflects this concern for its broad regional constituent base.

Fish and Wildlife Resources

The plan addresses the need to preserve trees for various wildlife species on page 4.26. We recommend that the list be expanded to include trees with nests of migratory birds. All migratory birds; their parts, nests or eggs; are protected under the Migratory Bird Treaty Act 16 USC 703. Migratory birds are vulnerable to timber harvesting operations during their breeding season in the spring-early summer period. Therefore, special precautions as well as time-of-year restrictions on certain silvicultural practices should be developed and implemented in the Forest Management Plan. Timber harvesting (cutting) and skidding activities should be prohibited during the primary bird nesting season of May-July. In addition, since some species such as raptors nest early in the spring, we recommend that areas proposed for timber harvesting activities during this period be surveyed for raptor nests. Timber harvesting activities should be excluded from a zone of 100 meters around any raptor nest tree during the breeding-brood rearing season. We have enclosed a copy of a Fish and Wildlife Service research bulletin to assist in surveying woodland raptors.

RECEIVED
APR 23 1986
GREEN MOUNTAIN N F
RUTLAND, VERMONT

Appendix E contains a list of species of concern that may occur on the GMNF. We recommend that management plans be developed for each of these species on the GMNF. These species are much more likely to receive special consideration if management plans are developed for each of them as opposed to simply listing them in an appendix. We fail to understand how these spcies of special concern would be adequately protected or enhanced on the GMNF without first identifying their habitat requirements and management needs.

In addition to the migratory birds listed in Appendix E as species of special concern, other species could potentially be added based on breeding bird survey data. A Fish and Wildlife Service report, currently in press, entitled The Breeding Bird Survey; Its first 15 years 1965-1979, Resource Publication Number 157, 194 pages, will be available in the near future. Among the bird groups most commonly experiencing long-term decreasing trends in their populations in the northeast are those associated with open agricultural lands, old fields and farmland reverting back into shrubland. Opportunities appear to be available on the GMNF in New York (Hector) and at lower elevations in Vermont to maintain or increase the acreage of these habitat types by making appropriate changes in the preferred management plan. We recommend that full consideration be given to this group of birds even though some of them may not be in trouble on a population basis at this time.

On pages 4-20, a sliding scale buffer strip concept is proposed to protect streams and wetlands from unidentified construction activities and roads. On page 4-21 a statement is made that construction material will not be stockpiled in the 25-year floodplain. We are concerned that these proposed measures for riparian areas may not be in compliance with Executive Order 11988 on floodplain protection. This normally requires roads and other construction activities to be located outside of the 100-year floodplain. In addition, it is not clear what silvicultural practices would be allowed in the buffer zone near streams or lakes adjacent to or inside wetlands. We generally recommend that a minimum 100-foot buffer zone of undisturbed vegetation be maintained on both sides of streams, around the edge of ponds or lakes and wetlands unless some specific silvicultural or other practice is necessary for habitat management purposes. The proposed sliding scale system is much less rigorous on slopes less than 20 percent.

On page 4.29 a statement is made that wildlife management would be emphasized for 500 feet around permanent ponds greater than 5 acres including surrounding wetlands. We encourage this practice but question why the 5 acre limitation is employed. We recommend that the proposal be changed to include wildlife management for 500 feet around all permanent lakes and ponds and all wetlands.

We recognize that the selection of a single alternative plan in the DEIS cannot provide optimum conditions for all resources or all legitimate anthropogenic uses of the GMNF. Alernative D, the selected plan, appears to address many of the tradeoffs necessary to

achieve a balanced approach to resource management. However, we encourage the Forest Service to elevate unevenaged management to a level at least equal with evenages management. Selectively cutting groups of trees under the unevenaged alternative can create a mosaic of different age classes in the forest resulting in a greater diversity of habitat for plant and animal species. Unevenaged management is much less aesthetically intrusive than clear cutting and is therefore, much more compatible with many of the recreational objectives of the GMNF. Additionally, unevenaged management causes less disturbance to the forest soil resulting in less erosion and sedimentation than can normally be expected with clear cutting.

Table B.39 on page B-137 provides a summary of proposed road construction activity for the various alternative management plans. The type A roads or skid trails are conspicuously absent from this summary table. While roads from earlier logging operations may not completely meet the needs of future timber sales, it is unclear why an extensive system of additional permanent roads is needed. It seems reasonable to assume that the existing type A roads would substantially meet future timber sale needs. If these roads in large part met earlier needs then it appears that they could serve the same purpose again. We strongly favor the reuse of existing type A facilities or the development of new ones as opposed to the construction of type B, C or D roads. The benefits in terms of wildlife, erosion control, maintenace of timber acreage and general cost effectiveness are believed to be strong arguments for supporting this approach in the development of a transportation plam.

The type A roads disturb the least amount of the forest of any of the roads, they can be revegetated shortly after use and can be managed for wildlife or to support timber production. Erosion and sedimentation problems assosiated with type A roads are generally short term events. This is generally not the case for the more permanent roads, types B, C and D. Stream alterations are also more commonly associated with the permanent roads. Therefore, we recommend that the selected plan de-emphasize the proposed construction of permanent roads and emphasize the utilization of temporary and seasonal roads with particular attention to the reuse of those that already exist.

Mineral Resources

In general, the areas with no surface occupancy (NSO) are small and scattered amd will probably not create undue restriction on mineral development. The only exception to this is the Bennington watershed which is restricted to NSO. This is the largest of NSO areas and contains 6,420 acres, or 2 percent of the forest. Because of its large size, the NSO restriction may in effect render most of this area completely closed to mineral exploration and development. This area is not identified on any of the maps.

The plan does include a good summary of the mineral inventory and development potential. Overall, the mineral potential on the Forest is low to moderate.

However, in the interest of fairness and balance, we recommend that the sentence in paragraph 3 of page 4.51 in the DEIS should be presented more in the vein of a similar statement in paragraph 3 of page 4.25. Namely, that "drilling one or more exploratory wells would involve temporary openings in the forest canopy of several acres to allow for the construction of drill pads plus whatever is needed for access roads".

Mineral resources and exploration and development activities are described briefly in the DEIS (pp. 3.06, 3.10-11). Although specific data about the quality, quantity, or location of mineral deposits is not given, other studies cited in the DEIS have rated minerals on the forest moderately important compared to other Eastern national forests and assigned local importance ratings to lands in the forest. The potential for metals deposits, however, is not discussed.

To assist you, we have listed below recent U.S. Geological Survey (USGS) and Bureau of Mines (USBM) studies of wilderness and roadless areas in the forest. Most of the information also is summarized in USGS Professional Paper 1300.

Breadloaf Wilderness - USGS Map MF-1625-A and USBM Report MLA 65-82
Bristol Cliffs Wilderness - USGS Map MF-1593-B
Devils Den Roadless Area - USGS Map MF-1626-A and USBM Report MLA 34-82
Lye Brook Wilderness - USGS Map MF-1609-C and USBM Report MLA 17-81

The USBM has not, as yet, studied the three remaining designated wilderness areas in the forest.

These studies identified areas of probable mineral-resource potential for copper-lead-zinc deposits in parts of the Breadloaf Wilderness and adjacent forest. Similar geologic environments and anomalous metal concentration were noted in other areas, as well, but areas having substantiated or probable potential were not identified. Nevertheless, this potential for metal deposits on the forest should be addressed, and data on lands having mineral potential should be revised accordingly in the DEIS.

Assessment of mineral-related impacts (DEIS pp. 2.64-65, 4.51-54, 4.70-71, App. J) is remarkably well done. Information about land availability and restrictions on mineral activities, (i.e., the principal effects of forest management on minerals), are described in appropriate parts of the DEIS. Under all aternatives, about 86,400 acres (29.4% of the forest) of wilderness and national recreation area are unavailable for leasing. Special restriction prohibiting surface disturbance (no surface occupancy?) would apply to at least 66,700 acres (22.7%), plus additional areas that would vary by alternative. Standard restrictions would apply to the rest of the forest (up to 136,600 acres or 47.8%). Availability would be somewhat less under the preferred alernative.

Comparison of availability and mineral importance (i.e., mineral favorability) is the key measure of impact assessment. While we commend the thorough analysis of mineral-related impacts, we note (DEIS, fig, III-3) that areas favorable for minerals on the Green Mountain National Forest are mostly unavailable or highly restricted for mineral activities. Of the areas rated high importance (high mineral favorability?), one-half is unavailable for mineral leasing, and one-quarter is subject to special restrictions (no surface disturbance). Areas rated medium in importance are but slightly more available, and ironically, areas rated low in importance are mostly available.

Recreation Resources

Section 8.1A Long Trail/Appalachian Trail does an excellent job establishing guidelines for their management. It calls for ample participation by the Green Mountain Club and the Appalachian Trail Conference and for the most part is consistent with their operating policies. The Special Area defined for the Appalachian Trail is defined by the plan as "at least 200 feet" on either side of the footpath. This standard establsihes a minimum level of protection for the Trail, but should be increased to 500 feet to be consistent with the level of protection established under Section 8.1A Part F. This increase in the width of the Special Area to 1,000 feet would also be consistent with the level of protection sought by the National Park Service of the Appalachian Trail (AT). In the past the Green Mountain National Forest has done an admirable job acquiring land to protect the AT. The priority given by the plan to protecting trail resources is to be commended.

Sincerely,

William Patterson

William Patterson
Regional Environmental Officer

Copy: Larry Henson, Regional Forester

RESEARCH INFORMATION BULLETIN

No. 84-110 Date December 1984

INCREASED EFFICIENCY FOR DETECTING WOODLAND-INHABITING RAPTORS

Birds of prey attract public interest because of their relative rareness, vulnerability to disturbances, and position at the top of food chains. However, it is often difficult to obtain adequate data on the occurrence of these species for management purposes. During the breeding season, the dispersion of nests and often reclusive behavior of raptors in forested habitats make it difficult to determine their presence. Locating nests on foot is time consuming and casual sightings or road counts may not detect birds of prey in woodlands.

Using tape recordings and broadcasting the vocalization of target species along road transects, we found that detection rates were increased significantly by up to 84 percent for Red-shouldered Hawks, 367 percent for Cooper's Hawks, and 49 percent for Barred Owls. Broad-winged Hawks were detected only after broadcasting vocalizations. Goshawks responded to broadcasts within 300 m of nests, but topographic relief in the study area limited detection over greater ranges. Experiments to obtain these results were conducted by Patuxent Wildlife Research Center biologists and contractors at the University of Maryland Appalachian Environmental Laboratory.

Counts were conducted throughout the breeding season at 10 stops, each spaced at 1/2 mile (.8 km) intervals along roads in study areas in Wisconsin, Maryland, New York, Connecticut, and New Hampshire. Counts were begun about 30 minutes after sunrise (hawks) or at sunset (owls). "Control" data were obtained at each stop by getting out of the vehicle and looking and listening for all raptors for 5 minutes. After this period, tape-recorded vocalizations were broadcast for 5 minutes. During the broadcast and during the 5-minute post-broadcast period, all detections of birds of prey were noted. A Superscope C-205 tape recorder powered by a primary, NiCd, or 12 V battery, was connected to a 10 inch (25 cm) 8 ohm trumpet speaker. Target species' vocalizations were broadcast for about 15 seconds to one side of the road, followed by 45 seconds of silence during which time the speaker was turned 180°. A second series of the recorded calls was broadcast, followed again by 45 seconds of silence and returning the speaker to the original orientation. A total of six 15-second vocalizations were played at each of the 10 stops, alternating the direction of broadcast by 180° after each series. Vocalizations used were from "A Field Guide to Bird Songs," (The Peterson Field Guide Series) and from National Geographic Society LP records. The procedure (except the 5-minute "control period") is recommended for increasing efficiency in detecting woodland raptors.

This technique may also prove useful for obtaining indices to densities of nesting raptors. Study areas encompassing 1 mile (1.6 km) on either side of the road transects were intensively searched for nests. These studies revealed that the number of nesting pairs in the 12.5 mi^2 (30 km^2) study areas of eastern forest varied

This bulletin is an interim report for information only. The data are considered provisional pending completion of the research and analysis and interpretation of final results. Use of trade names does not imply U.S. Government endorsement of commercial products.

from 0 to 5 depending on species and study area. A significant correlation was found between the total number of responses to the tape-recorded calls and the density of nesting pairs on all the intensively searched areas. These data used in conjunction with mapping of detections can be useful for locating nest sites. Longer or more numerous transects can be established when large areas of land need to be surveyed.

For further information, contact:

Dr. Mark Fuller
Patuxent Wildlife Research Center
Laurel, Maryland 20708
FTS: (8) 937-7282
Commercial: (301) 498-0282

DEC 4 1985
ECOLOGICAL SERVICES
CONCORD, N. H.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
P O BOX 1518
CONCORD, NEW HAMPSHIRE 03301

RECEIVED
OCT 23 1985
GREEN MOUNTAIN N F
RUTLAND, VERMONT

Mr. Stephen C. Harper, Forest Supervisor
Green Mountain National Forest
P.O. Box 519
Rutland, Vermont 05701

OCT 2 1985

Dear Mr. Harper:

This responds to your September 17, 1985 request for information on the presence of Federally listed and proposed endangered or threatened species in conjunction with the Forest Service's Land and Resource Management Plan and Environmental Impact Statement for the Green Mountain National Forest in Vermont and New York.

To facilitate compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, Federal agencies are required to obtain from the Fish and Wildlife Service (FWS) information concerning any species, listed or proposed to be listed, that may be present in the area of a proposed action. Therefore, we are furnishing you with the following list of species that may be present in the area concerned:

Category	Common Name	Scientific Name
Endangered	Peregrine falcon	Falco peregrinus
Endangered	Indian bat	Myotis sodalis

Section 7(c) also requires the Federal agency proposing a project significantly affecting the quality of the human environment (therefore requiring an EIS) to conduct and submit to the FWS a biological assessment to determine the effects of the proposal on listed and proposed species. The biological assessment shall be completed within 180 days after the date on which initiated or a time mutually agreed upon between the agency and the FWS. If the biological assessment is not begun within 90 days, you should verify this list with us prior to initiation of your assessment. We do not feel that we can adequately assess the effects of the proposed action on listed and proposed species without a complete assessment. A biological assessment shall include at a minimum:

1. A scientifically sound and detailed survey of the area to determine if listed species are present or occur seasonally, and whether suitable habitat exists within the area for either expanding the existing population or potential reintroduction of populations;

2. Coordination with recognized experts on the species at issue including those within the FWS, State conservation agencies, universities and others who may have data not yet found in scientific literature;

3. A review of the literature and other scientific data to determine the species' distribution, habitat needs and other biological requirements;

4. An analysis of the effects of the action on the species, in terms of individuals and populations, including consideration of the cumulative effects of the action on the species and habitat;

5. An evaluation of alternative actions that may provide conservation measures;

6. Any studies necessary to fulfill the requirements of (1) through (5) above;

7. Any other relevant information.

For technical assistance on items (1) through (3) above, we suggest you contact:

Mr. Rene Bollengier
U.S. Fish and Wildlife Service
Wildlife Assistance
P.O. Box 1518
Concord, New Hampshire 03301
FTS 334-4780
Comm. (603) 225-9621

Dr. Harold Ditchcock
1 Locust Lane
Middlebury, Vermont 05753

After your agency has completed and reviewed the assessment, it is your responsibility to determine if the proposed action "may affect" either of the listed species or if it is likely to jeopardize their continued existence. If the determination is "may affect" for listed species, and this finding is concurred with by the FWS, you must request in writing formal consultation from the Regional Director, U.S. Fish and Wildlife Service, One Gateway Center, Newton Corner, Massachusetts 02158. Along with your request you should provide a copy of the biological assessment and any other relevant information that assisted you in reaching your conclusion.

Your attention is also directed to Section 7(d) of the Endangered Species Act, as amended, which underscores the requirement that the Federal agency shall not make any irreversible or irretrievable commitment of resources during the consultation period which, in effect, would deny the formulation or implementation of reasonable and prudent alternatives regarding their actions on any endangered or threatened species.

If you have any questions regarding this response, please contact Mr. Gordon Russell at FTS 834-4797 or Mr. Roger Hogan at FTS 829-9316.

Sincerely yours,

Gordon E. Beckett

Gordon E. Beckett
Supervisor
New England Area

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
100 Grange Place
Room 202
Cortland, New York 13045

October 9, 1985

RECEIVED
OCT 11 1985
GREEN MOUNTAIN N F
RUTLAND, VERMONT

Mr. Stephen C. Harper, Forest Supervisor
Green Mountain National Forest
U.S. Dept. of Agriculture
P.O. Box 519
Rutland, VT 05701

Dear Mr. Harper:

This responds to your letter of September 17, 1985, requesting information on endangered or threatened species within the Hector Ranger District of the Green Mountain National Forest, Schuyler and Seneca Counties, New York.

Except for occasional transient individuals, no federally listed or proposed endangered or threatened species under our jurisdiction are known to exist in the project impact area. Therefore, no Biological Assessment or further Section 7 consultation under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) is required with the Fish and Wildlife Service. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered. A compilation of federally listed endangered and threatened species in New York is enclosed for your information.

This response relates only to endangered species under our jurisdiction. It does not address other fish and wildlife concerns under the Fish and Wildlife Coordination Act or other legislation.

The following comments are intended as technical assistance only and do not constitute the report of the Secretary of the Interior within the meaning of Section 2(b) of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

Since development is limited to the immediate property, it would not appear that any significant habitats are involved. We suggest, however, that you check with the U.S. Army Corps of Engineers and the New York State Department of Environmental Conservation regarding the need for any specific permits or license.

Should you have further questions, please do not hesitate to contact Mr. Mike Stoll of my staff (607-753-9334) for further assistance.

Sincerely,

Douglas A. Ryan

A.42 Douglas A. Ryan
Acting Field Supervisor

Enclosure

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES
IN NEW YORK

Common Name	Scientific Name	Status	Distribution
FISHES:			
Cisco, longjaw	Coregonus alpenae	E	Lake Erie-probably extinct
Pike, blue	Stizostedion vitreum glaucum	E	Deep water of Lake Erie & Lake Ontario - probably extinct
Sturgeon, shortnose*	Acipenser brevirostrum	E	Hudson River and other Atlantic Coastal rivers
REPTILES:			
Turtle, green*	Chelonia mydas	T	Oceanic summer visitor coastal waters
Turtle, hawksbill*	Eretmochelys imbricata	E	Oceanic summer visitor coastal waters
Turtle, leatherback*	Dermochelys coriacea	E	Oceanic summer resident coastal waters
Turtle, loggerhead*	Caretta caretta	T	Oceanic summer resident coastal waters
Turtle, Atlantic ridley*	Lepidochelys kempii	E	Oceanic summer resident coastal waters
BIRDS:			
Eagle, bald	Haliaeetus leucocephalus	E	Entire state
Falcon, American peregrine	Falco peregrinus anatum	E	Entire state - re-establishment to former breeding range in progress
Falcon, Arctic	Falco peregrinus tundrius	E	Entire state migratory - no nesting
MAMMALS:			
Bat, Indiana	Myotis sodalis	E	Entire state
Cougar, eastern	Felis concolor cougar	E	Entire state - probably extinct
Whale, blue*	Balaenoptera musculus	E	Oceanic
Whale, finback*	Balaenoptera physalus	E	Oceanic
Whale, humpback*	Megaptera novaeangliae	E	Oceanic
Whale, right*	Eubalaena spp. (all species)	E	Oceanic
Whale, sei*	Balaenoptera borealis	E	Oceanic
Whale, sperm*	Physeter catodon	E	Oceanic

Except for sea turtle nesting habitat, principal responsibility for these species is vested with the National Marine Fisheries Service.

1. Region 5 - 5/12/80 - 2 pp.

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES
IN NEW YORK (Cont'd)

Common Name	Scientific Name	Status	Distribution
MOLLUSKS:			
Snail, chittenango ovate amber	*Siccinea ovalis chittenangoensis*	T	Madison County
PLANTS:			
Monkshood, northern wild	*Aconitum noveboracense*	T	Ulster County
Pogonia, small whorled	*Isotria medeoloides*	E	Entire State
BIRDS, ADDITION			
Plover, piping	*Charadrius melodus*	Proposed E & T	

Appendix B: List of Commenters

The individuals who signed letters commenting of the Proposed Plan and Draft Environmental Impact Statement are listed below. Beside each name is the number assigned to the letter for control of record keeping and the codes assigned to the comments found in the letter. A listing of the comment codes and the subjects they relate to is found in Appendix C.

Table B.1 List of Commenters

Name	Control Number	Comment Codes (See Appendix C for Definitions)
Acciavatti, Bruce	067	A11, A12, A30, A40, A50, B11, B12, E10, J10, L10, R10
Adams, Dwayne	242	A72, A91
Alden, Peter D.	035	A30, M02, S10, E30
Anderson, Jean B.	184	A71
Anderson, L. E., Sr.	196	A71
Anderson, Lester	122	A61, R10
Anderson, Lester	123	A61, R10
Anderson, Robert V.	200	A71
Archer, Evan C.	150	A25, A30, A40, L10, R10
Armstrong, Frank H.	014	M02
Arnold, Alan D.	337	A72, A91
Arrowsmith, Jean	082	A61
Arthur, Gary M.	212	A91
Arthur, Minnie A.	211	A91
Arthur, Roy G.	335	A91
Atherton, Bick	415	J01
Atwood, Donald	228	A72, A91
Audette, Creighton	001	C02
Austin, Charles	510	C02
Austin, Maurice	302	C02, A91
Austin, Paul	052	A40, L10, M04, R10
Babcock, Charlotte	315	A72, A91,
Babcock, Donald J.	314	A72, A91
Babcock, Elizabeth	313	A72, A91
Babcock, Wayne	193	A72
Babcock, Wayne	273	A72, A91
Bacon, Stuart B.	290	A72, A91
Bacon, Thomas	342	A72, A91
Baggette, June	115	A61
Bahr, Joseph	024	A90, B10, C30, E20, E40, E50, R10
Baker, Ben	622	A91
Baldi, Ronald	366	A72, A91
Baler, William	476	A91
Ball, Ken	276	A72, A91
Banfield, Crystal	530	A95
Banner, Frank J.	020	F10
Bannister, Bill & M.	524	A95
Barber, Don	550	A32, A42, C10, E21, E50, F01, G01, J01, J30, M04
Beck, F.	569	A91
Becker, Judy	588	A95

Table B.1 List of Commenters (continued)

Name	Control Number	Comment Codes (See Appendix C for Definitions)
Beckwith, Lee	068	A61
Beebe, Harold	564	A91, M02
Bellora, Ronald A.	345	A72, A91
Benfield, F. Kaid	506	A25, A30, A32, A40, A90, C01, E10, E20, E21, E22, E30, E40, E50, E53, E60, F01, F30, G01, J01, J30, L20, M04, M10, M10F, M20, M20F, M30, M40, M50, M70, R10
Bergland, J. V.	005	R01
Bergman, Robert L.	475	A91
Berkman, Ellen	525	A95
Bernard, Frank E.	161	A72, A91
Bernard, Ronald	132	A72, A91
Bernstein, Robert	361	M50, T10
Betzler, Robert	541	A70, M04
Bierwirth, B. & G.	414	A91
Bigelow, Randy	635	A72, A91
Blake, Theresa	054	A30, A40, L10, M04
Bleiwise, Charles	141	A91, M02
Bleiwise, Harry R.	140	A91, M02
Bleiwise, June	142	A91, M02
Blondin, Edith	280	A72, A91
Boardman, David	283	A72, A91
Bolton, Harry W. J.	104	A72, A91
Borden, Joe	533	A95, C02, E53
Boulger, James D. Jr.	110	A11, A12, A30, A40, A50, B11, C20, E20, J10, L10, L20
Brachett, Bill	264	A72, A91
Bradel, Robert A.	373	A61
Brador, David	274	A72, A91
Brakeley, Davis	222	A61
Brammall, Harold M.	148	A61, R10
Briggs, Jeff	075	A11, A25, A30, A40, A90, B12, C01, E10, E21, E50, J01, J10, L20, R10
Bristow, Preston J.	153	A30, A32, J20, R10
Brooks, Richard D.	025	M04, M40
Browe, William	489	A91
Brown, Deborah	418	A91
Brown, Dennis L.	227	A72, A91
Brown, Donald	071	A61
Brown, Donald D.	071	E40
Brown, Sally & Terry	515	A95
Brubaker, Jack	545	E20
Bryan, Debbie	639	A95
Buckler, Edwin R.	520	A95
Buker, Steven	114	A25, A61, R10
Bumps, Alfred	339	A72, A91
Bumps, Kim J.	344	A72, A91
Burch, William	236	A72, A91
Bushee, Donna	419	A91
Butler, Charles	523	A95

Table B.01 List of Commenters (continued)

Name	Control Number	Comment Codes (See Appendix C for Definitions)
Campbell, Walt	248	A72, A91
Cann, Roald	046	A11, A25, A30, A40, E30, M04, L10
Cannavan, Debbie	206	A71
Cannon, Michael	597	A95
Cannon, Sue	599	A95
Capen, David E.	642	C01, E50
Carangie, P.	468	M02
Caron, Louise	263	A72, A91
Carpino, F. et.al.	368	A72, A91
Carroll, James & N.	207	A61
Case, Marilyn	338	A72, A91
Cavalure	469	M02
Cedar, David & D.	552	A95
Chicoine, Maurice	113	A61
Christianson, Brian	443	A91
Clark, Eugene	383	A72, A91
Clark, Sally	554	A95
Clark, Susan	563	A95
Clark, Mr./Mrs. Kenneth	185	A71
Clauss, Ed & Shawn	518	A95
Close, Ellen L.	394	S10
Cofield, Charles J.	179	A72, A91
Cofull, Brad	399	A72. A91
Cofull, Joy	400	A72, A91
Cofull, Pat	408	A72, A91
Cohen, Nicholas B.	464	A26, A30, A32, C01, E30,,J01, R10
Colegrove, Reed L.	221	A91
Collett, Charles & C.	134	A72, A91
Com, Joel	256	A72, A91
Cone, Michelle M.	435	A91
Cone, Richard	575	A91
Cone, Rosemary	574	A91
Confer, George, Jr.	613	A95
Corrigan, Catherine	548	S11
Covey, Larry	297	A72, A91
Cruickshank, B. et.al.	223	A72, A91
Cuattm, Russ	363	C01, E50
Cueman, John S.	026	A25
Cummings, Ben	442	A91
Cummings, Rose Ann	421	A91
Cutler, Alton L.	198	A71
Cutler, Joseph H.	201	A71
Cutler, Robert	094	A71
Dall, Benjamin P.	112	A72, A91
Dalton, Judy	590	A95
Danforth, Fred & Judy	138	A61
Daniel, Clarence	193	A71
Daniell, Marc K.	202	A71
Davis, Irv	637	J30
Davis, Larry E.	497	A91

Table B.1 List of Commenters (continued)

Name	Control Number	Comment Codes (See Appendix C for Definitions)
Deaquair, Dwight	271	A72, A91
Deforest, Harriet	050	A11, A12, A40, A50, B11, B12, C20, L10, M04, R10
Delaney, Morgan E.	216	A72, A91
Della-Gustina, John	116	A71
Diamond, Christopher	023	A25
Dickic, George G.	485	A91
Doughty, B. & R.	357	A72, A91
Downer, Jonothan H.	630	J01, M20, R10
Downing, Bernard Jr.	268	A72, A91
Doyle, Brenda J.	284	A72, A91
Ducham, Jack	318	A72, A91
Ducharm, John	277	A72, A91
Dunican, Kevin R.	488	A91
Dunn, Larry	225	A91
Dunn, Theodore	474	A91
Dunnington, Fred S.	017	M02, R10
Dupree, Cheryl	425	A91
Duroche, Kevin C.	617	A91
Duske, Donald D.	496	A91
Eastman, B. & B.	332	A72, A91
Eastman, Ervine	291	A72, A91
Eastman, Harold	331	A72, A91
Edelman, Clark	178	A72, A91
Edelman, Norma	404	A72, A91
Edwards, Bill	100	A30, E20, E40, J01, L10
Elton, Wallace	374	A10, A11, A25, A30, A32, A40, A50, A90, B11, B12, C30, E20, E22, J01, L20, M04
Engman, Ronda	364	J20
Eno, Dianene	428	A91
Esposita, Barbara	527	A95
Fahner, Fred C.	151	A61
Fals, Vicki	555	A95
Farmer, Margaret	501	S10
Farnham, David	246	A72
Farnham, Sam	288	A72, A91
Feathers, N. & M.	167	A72, A91
Fini, John	109	A71
Fiori, Adelle	106	A72
Fiori, Dina E.	107	A71
Fiori, Laura M.	108	A71
Fischel, Margaret	098	A61
Fischer, Montgomery	631	A30, A40, E53, J01, L10, M50, R10
Fish, Robert E.	571	A95
Fisher, Bill	146	A91, M02
Fisher, Donald	424	A91
Fisher, Doris, J.	420	A91
Fisher, William C.	417	A91
Flackman, Robert	372	A61
Fleck, Emma C.	105	A61

Table B.1 List of Commenters (continued)

Name	Control Number	Comment Codes (See Appendix C for Definitions)
Flood, Peter	128	A25, A42, A80, B01, E60, F20, L10, M02
Ford, P. V. Mrs.	455	A11, A30, A40, B11, B12, C20, J10, L10, R10
Foster, Jeffrey	016	A42, A70, A80, B30, C01, E50, E60, J30, M10, M70, R10, T10, T20, W10, B01, F01, M20, M40
Foster, Katie	529	A95
Foster, Leon A.	127	A72, A91
Fragdich, Roxanne B.	362	E50
Freeman, John	392	A72, A91
Frey, Jeffrey	589	A91
Frey, Terry	055	E20, E52, L20
Gagliarducci, George	111	A71
Galucka, Vivian	573	A71
Gandung, Roger D.	604	A95
Garrow, Diana L.	343	A72, A91
Gatti, Mario	042	A11, A12, A30, A40, A50, B11, B12, C20, J10, L10, M04, R10
Gauthier, Armand	237	A72, A91
Genice, Leo J.	614	A95
Georgia, Marsha L.	365	A42, M02
Gervais, Marcel	426	A91
Glodowski, Jane Q.	454	A32, A80, C01, E20, E50, M10, M30, R10, T10, T20
Godfrey, Bernard	309	A72, A91
Gonda, Ray	498	A40, A92, C01, C02, E31, F01, F10, J01, M30
Good, George	240	A72, A91
Goodyear, Paul	359	A61
Gray, Donald M.	502	A25, A30, A40, A50, E10, L10, R10
Green, Jim	171	A72, A91
Greene, Sue	487	A91
Griggs, Stephen	285	A72, A91
Grimmke, John J.	611	A95, C02
Grimmke, Pamela	612	A42, A91
Griswold, Brenda	514	A95
Grotty, Gerald	008	R01
Grove, Clay	535	C10
Grover, Bruce C.	618	A91
Grover, Harold E.	494	A91
Gulley, Edward	624	A91
Hadbein, James H.	369	A72, A91
Hague, Bart	387	A92, E53, G01, J01, M40, R10
Hague, B. & Higgins,EA	387	F01, L20
Hall, Albert B.	195	A71
Hall, Dennis	130	A91
Hammond, Paul F.	251	A72, A91
Hanlin, Judy	562	A95
Harmon, Robert S.	367	A72, A91
Harrington, Leo	447	A91
Harrington, Mabel	481	A91
Harrington, Phil	478	A91
Harrington, Raymond	480	A91
Harrington, Virginia	486	A91

Table B.1 List of Commenters (continued)

Name	Control Number	Comment Codes (See Appendix C for Definitions)
Harris, Stephen B.	208	A61
John Harrison	334	A72, A91
Hatch, Ralph	333	A72, A91
Hatfield, Debra J.	159	A72, A91
Hatfield, Lee S.	160	A72, A91
Hatfield, Lee S., Jr.	336	A72, A91
Haviland, Howard	347	A72, A91
Hawkes, Betsy	402	A72, A91
Hawley, Patrick	493	A91
Hazelton, Robert H.	465	C10, M04
Heaps, Dick	032	A11, A12, A30, A40, A50, B11, B12, C20, J10, L10, M04
Heath, Donna Rae	266	A72, A91
Henry, Hugh H.	462	A32, B10, J10, M02
Higgins, James	393	A60, A90, B01, C01, F01, M70
Hill, Michael	444	A91
Hodge, Chester	093	A71
Holly, Joseph W.	587	A95
Hooper, Don	007	R10
Hoover, Anne	056	M02, R10
Hoskins, Davis	633	A30, A40, A90, A92, E10, E20, F01, F10, F20, G01, J01, L20, M20, M70, R10
Houghton, George E.	186	A71
Houghton, Jeffrey E.	499	A71
Houghton, Nancy R.	500	A71
Houghton, Patricia	187	A71
Howard, Blanche F.	097	A61, R10
Howell, Harry M.	377	A61
Howorth, Walter	267	A72, A91
Hoyt, Connie	433	A91
Hubbard, Sarah G.	528	A95
Hudspeth, Thomas R.	456	A92, M41, R10
Humphrey, Anne	561	A95
Hunphrey, Donald W.	411	A91
Hurt, Willis	620	A91
Ignazio, Joseph L.	634	F01
Illegible	209	A72, A91
Illegible	279	A72
Illegible	312	A72
Illegible	316	A72
Illegible	279	A91
Illegible	312	A91
Illegible	316	A91
Inzerillo, Donna M.	351	A72, A91
Inzerillo, Richard	350	A72, A91
Inzerillo, Richard J.	358	A72, A91
Jacks, J. B.	015	G01
Jacobs, Pauline	471	A71
Jacques, Don	260	A72, A91
Janes, Harold	457	J10

Table B.1 List of Commenters (continued)

Name	Control Number	Comment Codes (See Appendix C for Definitions)
Jeffry, Charles	294	A72, A91
Jeffry, Polly	295	A72, A91
Jenks, Roger	308	A72, A91
Jenks, Ruth	307	A72, A91
Jette, E. & Sternberg	389	A30, A32, A40, J01, R10
Johnson, Bill	305	A72, A91
Johnson, Carol	304	A72, A91
Johnson, David	340	A72, A91
Johnson, Jenny	244	A72, A91
Johnson, Johnny	301	A72, A91
Johnson, Lucille	328	A72, A91
Johnson, Philip	296	A72, A91
Jones, Barbara	606	A95
Jones, Cindy	519	A95
Kaminsky, Jack	546	A32, C10, E20, E21, G01, J30, R10, S11
Kapinos, Stanley	386	A70, A72, A91
Keller, Tho., Mr./Mrs.	182	A72, A91
Kelley, Lisa	088	A71
Kellogg, Deross	103	A11, A12, A25, A40, A50, B11, B12, C20, E20, J10, L10, M04
Kennell, Arthur C.	262	A72, A91
Keough, Olena	490	A91
Kimbell, Stephen W.	388	A30, A70, C01, C30, F01, F40, R10
King, Sarah M.	511	A95
King, Susan B.	513	A95
Kingsley, Alvina	467	E22
Kinnary, John	241	A72, A91
Kinsley, Alvina	467	A90, E21, M10
Kinsley, William C.	466	E22, M20
Klein, Lisa Kristen	037	C01, R10
Kloss, Ted	521	521
Korner, Renzo L.	578	A32
Korotek, John	096	A72
Koski, Sharon	532	A95
Krassner, Linda	121	A25, J10, L10, R10
Krassner, Lowell	463	A11, A30, A32, A40, B10, C20, E20, E22, E30, E60, G01, J10, L10, L20, R10
Kreisz, Glenda R.	243	A72, A91
Kupferman, Harriet	049	A11, A12, A25, A30, A40, A50, A90, B11, B12, C20, E20, J10, L10, R10
Kupferman, Valerie	063	A11, A12, A25, A30, A40, A50, B11, B12, C20, E20, J10, L10, R10
La Tores, J.	129	A91
La Tores, William J.	156	A91
Lafayette, Ed	074	A61, R10
Lamberton, Milton	330	A72, A91
Langlois, David	484	A91
Larsen, Don	003	A10, A11, A90, B11, B12, E60
Larson, Brenda	432	A91
Larson, Ronald H.	430	A91

Table B.1 List of Commenters (continued)

Name	Control Number	Comment Codes (See Appendix C for Definitions)
Laubacker, Ann	598	A95
Laughlin, Sarah	380	C40, C50
Laughlin, Sarah B.	380	A10, B10, C01, C30, M04, R10
Lavoie, A. L., Jr.	173	A72, A91
Lawrence, Blake L.	057	M02
Lawson, Kenneth	628	A70
Leard, Joanne	626	A91
Leard, Richard	625	A91
LeBlanc, Ida	086	A71
Lemeri, Dennis	230	A72, A91
Lemieux, Fred	405	A72, A91
Lemieux, Jeannie M.	641	C01
Lemieux, Kenneth	258	A72, A91
Lemieux, Leonard	257	A72, A91
Lemieux, Loretta	406	A72, A91
Lemieux, Mike	175	A72, A91
Lennon, J. Mark	102	A11, A12, A25, A30, A40, A50, B11, B12, C20, E20, J10, L10, M04, R10
Leonard, Wm. H.	139	A91, M02
Lettre, Michael	627	A91
Lewandowski, Stephen	542	A90, C01, E10, E20, E21, E22, F01, F40, J30, L20
Lewis, Edwin	581	A95
Lewis, Judy	585	A95
Liepmann, Sue	060	A40, A50, B11, B12, E51, J10, L10, M04, M20
Lindsey, Ronald	479	A91
Linell, Thomas A.	460	A30, A32, A40, A60, A80, A90, C01, E20, J01, J20, J30, L10, R10
Littre, Jacques A.	619	A91
Lochmann, Robert E.	261	A72, A91
Lund, Chester D.	072	A61, M02
Lust, Marianne	124	A61
Lyford, Douglas	286	A72, A91
Lyon, Jim	254	A72, A91
MacDonald, Alexander	073	A61
Martin, Brewster	311	A72
Martin, Karl	083	A72
Martinka, Anita	445	A91
Martinka, Henry	446	A91
Martinka, Henry M.	449	A91
Masiar, Joan	556	A95
Mater, Dick	516	A95
Mattison, Philip A.	422	A91
Mayo, Diana	214	A61
Mazza, Frank A.	021	A20, M02
Mc Cann, Wm., Mr./Mrs.	172	A72, A91
Mc Gurn, Dennis M.	163	A72, A91
McAllister, Ken	199	A71
McAllister, Norm	192	A71

Table B.1 List of Commenters (continued)

Name	Control Number	Comment Codes (See Appendix C for Definitions)
McAllister, Wayne	194	A71
McCormack, Curt	009	R01
McCullough, Beverly	265	A72, A91
McCullough, John E.	310	A72, A91
McDermott, Daniel W.	629	A91
McGuire, Laura	213	A32, M02
McGuire, Laura	540	A32, A42, A95
McKenna, Mike	090	A72
McKinley, Cheryl	322	A91
McKinley, Glenn	319	A72, A91
McShea, Roger	397	A61
Mears, Phil	275	A72, A91
Meixell, Mary E.	559	A95
Meixell, Mary Ellen	560	A95
Menge, Jeanne A.	601	A95
Merrick, A. H.	039	A11, A40, L10, M04
Michaels, Gary	084	A72
Milhorat, John H.	043	A11, A12, A30, A40, A50, B11, B12, C20, J10, L10, M02, M04
Militzer, Karl W.	095	A42, A70, C02, E40, G10, L20, R20
Miller, David	164	A72, A91
Miller, Don	407	A72, A91
Miller, Judy	353	A72, A91
Millette, Edward	247	A72, A91
Mitchell, Bernard	166	A72, A91
Mitchell, M. L.	135	A30, A42, B10, E40, G01, L10, R10
Molloy, Lawrence	492	A91
Monroe, Charles H.	119	A70, A90, A91, C01, E20, M60
Monroe, Sandy	610	A91
Monteith, Douglas B.	010	A60, C10, M40, R10
Monteith, Douglas B.	576	E20, E22, J01, J30, M04
Moore, Reg	293	A72, A91
Morgan, Myra Jones	219	A30, A40, L10, M04, R10
Morlino, Robert J.	565	A91, M02
Mornier, John H.	429	A91
Moses, Beverly	323	A72, A91
Moses, Gardner, II	320	A72, A91
Moses, Scott	324	A72, A91
Muckele, Renelle	217	A72, A91
Mulliner, Joellen	607	A95
Muyskens, Sarah E.	507	A11, A12, A25, A30, A42, A50, B11, B12, C20, E10, E21, E22, E30, F30, G01, J01, L10, M04, M20, M30, R10
Nice, Lloyd	231	A72, A91
Nichols, Herbert L.	030	A30, A40, M04
Noah, Bernice M.	077	A61
Norman, Robert Z.	376	A11, A12, A25, A26, A32, A40, A50, A60, A80, B11, B12, C20, E50, J01, L10, M04, R10
Not Signed	558	A95
Noyes, Dianne E.	593	A95

Table B.1 List of Commenters (continued)

Name	Control Number	Comment Codes (See Appendix C for Definitions)
Nuquist, Andrew S.	379	A42, L20, M04
Oles, Barbara	189	A71
Oles, Dale W.	203	A71
Orr, Laura T.	306	A72, A91
Owens, Donald E.	450	A91
Owens, Terri L.	439	A91
Paddock, David N.	040	A10, A11, A25, A30, A42, A50, B11, B12, L10, M04
Parent, Charles D.	058	A11, A12, A25, A30, A40, A50, B11, B12, C20, J10, L10, M04, R10
Parent, Charles D.	395	A11, A12, A25, A30, A40, A50, B11, B12, C20, J10, L10, M04
Parfer, John	255	A72, A91
Parker, Alfred B.	371	A61
Parker, Pershing	059	A12, A30, A40, A50, B11, B12, J10, L10, M04
Parren, Steven G.	390	A25, A42, R10
Paskwich, William J.	133	A91
Paton, Louise	282	A72, A91, A91
Patsellis, Shelly	557	A95
Patwiri, Nelson H.	233	A72, A91
Pemberton, Charles	303	A72, A91
Perkins, Robert	292	A72, A91
Perrce, Michael	570	A91
Perron, Brenda	168	A72, A91
Perutz, Lette	041	A11, A30, A40, A50, L10, M04
Peters, Rob	396	A11, A12, A30, A42, B11, B12, C20, L20, M04
Peters, William	591	A95
Pfue, John	403	A72, A91
Phelps, Ina	061	A11, A12, A30, A40, A50, B11, C20 J10, L10, M04
Phillips, Arlyn	458	A42
Pierce, Patrick	234	A72, A91
Pineau, William C.	162	A72, A91
Piper, Trield	321	A72, A91
Plant, Henri T.	204	A61
Pobb, Samuel	346	A72, A91
Poole, Donald	205	A61
Poplawski, Karl S.	065	A61, M02
Poulen, John	158	A91
Powers, Mary F.	329	A72, A91
Pratt, Lee	238	A72, A91
Preston, Dennis D.	341	A72, A91
Puck, Judith	398	A32, A40, A42, L10, M04, R10
Puhett, L.	249	A72, A91
Purdy, Thomas	087	A71
Putnam, Fred, Jr.	615	A42, B30, M30
Quellette, Dan	623	A91
Quinn, James R.	356	A72, A91
Radl, Richard	603	A95
Rainville, Luthera B.	070	A61

Table B.1 List of Commenters (continued)

Name	Control Number	Comment Codes (See Appendix C for Definitions)
Rantin, Ken	453	A91
Ratte, Charles	011	T10, W10
Rawlinson, James H.	027	M30
Raymond, Alice	131	A91
Rech, Joan	375	A10, A11, A20, A25, A30, A32, A40, A42, A50, A80, B12, C10, C20, E20, E20, E53, E60, G01, L10, M04, R10
Reed, Frank C.	505	F01, F10, R10
Rehbein, R. G.	197	A71
Reimers, Tom	538	A32, A95, M04
Reiter, Donald L.	544	A32, A42, E20, G01
Reno, Rebecca	062	A11, A12, A30, A40, A50, B11, B12, C20, M02, M04
Ruea, Phil	155	A91
Rhodes, Barlow	537	C10, E20, J01, J30, M02, M70
Rhodes, Barlow N.	536	A42, C10, E20, J01, J30, M04, M70
Rhodes, Tom	047	A30, A80, A90, B01, E20, E40, J10, L10, M04
Richardson, Peter	461	A42, A90, E53, F01, F10, F20, G01, M40, R10
Richie, David A.	566	A30, R10
Rihbein, Adele A.	188	A71
Roark, Norman & B.	117	A72
Rob, Chris	079	A71
Robinson, Gilman	232	A72, A91
Rodrique, Al	101	A72, A91
Rodrique, B. & C.	170	A72, A91
Roe, Tim	584	A95
Rogers, Wally	044	A30, A40, E10, E30, M04
Rooney, Michael W.	152	A72, A91
Rose, A. & L., Sr.	354	A72, A91
Rose, A. & T., Jr.	355	A72, A91
Rose, Ben	391	A20, A30, J10, M04
Ross, Keith	018	A90, B01, E20, R10
Rothman, Robin	126	A25, R10, S10
Rudolph, Elizabeth	080	A61, L20
Salter, Lyle H.	423	A91
Santelli, Mark C.	621	A91
Sargood, Jerome Jr.	495	A91
Sauer, Charles A.	409	A60, C02, E50, E60, E60, T10
Savlov, John	034	A25, M02
Saxton, Everett	352	A72, A91
Sayre, William R.	643	E31, M02, M10
Schencke, Alice E.	215	A61
Schubart, William H.	081	A61, E20
Schumacher, George	048	M04, R10, S10
Schweiker, Roy R.	028	M20
Schwelker, Roy R.	459	A32, A90, B30, M20, R10
Scott, James	509	A20, A32, A42, A70, A95, J01, L20
Scott, Jim	577	A32
Scribner, Bryan A.	125	A91
Scribner, Joyce C.	053	A70

Table B.1 List of Commenters (continued)

Name	Control Number	Comment Codes (See Appendix C for Definitions)
Scribner, Joyce C.	137	A71, A91
Send, H. W.	118	A61, E20
Servoss, Gene, Sandy	534	A95
Shappy, Clayton E.	438	A91
Shedd, E. Warner	504	M04, R10
Sherman, Dave	012	R10
Shields, Leonard	586	A95
Shields, Rosemary	325	A72
Shute, Kevin	325	A72, A91
Sims, Thomas D.	567	F50
Skinger, Constance	038	A11, A12, A25, A30, A40, A50, B11, B12, C20, J10, M04
Skinner, Ralph	416	A91
Smith, Alton W.	210	A10, A30, A50, B10, B11, B12, L20, M02, R10
Smith, Peter B.	503	A11, A40, A95, B11, B12, G01, L20, M04
Smith, Peter D.	503	J10
Snow, Bill	252	A72, A91
Snow, Kevin B.	218	A71, A91
Snyder, Karle L.	002	L20
Snyder, Loraine	582	A95
Sorgood, Loraine	491	A91
Spencer, Molly	385	A11, A12, A30, A40, A50, B11, B12, C20, J10, L10, R10
Spinella, S. S.	278	A72, A91
Spofford, James	616	A91
Stafford, Robert T.	006	R01
Stannard, Jean	434	A91
Steuder, David	245	A72, A91
Stewart, Charlie	143	A91, M02
Stiles, Ann	605	A95
Stiles, Bradley	596	A95
Stoffle, J. E.	568	A91
Stokes, Katrina R.	036	A11, A12, A25, A30, A40, A50, B11, B12, C20, E40, J10, L10, M04
Stone, Clifford B.	437	A91
Stone, Stan B.	436	A92
Stratton, Smith	220	A71
Streeter, Doris	412	A91
Streeter, Robert	413	A91
Stroemder, Richard	180	A72, A91
Stroffino, Richard	427	A91
Stroffoleno, George	440	A91
Stroffoleno, Karen	441	A91
Strosnider, Richard	092	A72
Sullivan, Jeanne E.	177	A72, A91
Sullivan, Pauline	299	A72, A91
Sullivan, Richard	370	A91Y
Sullivan, Ted	300	A72, A91
Surgood, Nancy	473	A91
Swanson, Carl, et.al.	317	A72, A91

Table B.1 List of Commenters (continued)

Name	Control Number	Comment Codes (See Appendix C for Definitions)
Swanson, John R.	069	B01
Swanson, Larry, et.al.	326	A72, A91
Sweet, David	298	A72, A91
Sweet, Walter	327	A72, A91
Switzer, R. & J.	382	A72, A91
Sym, William	269	A72, A91
Szekeres, Dorothy	452	A91
Taft, William	448	A91
Taplin, Elizabeth	272	A72, A91
Taylor, Hugh R.	360	A61
Tbaczyk, William J.	224	A71
Teagle, Frank H., Jr.	066	A11, A12, A30, A40, A50, B11, B12, C20, J10, L10, M04, R10
Tester, Laura	609	A91
Thaczzle, Jolenne M.	183	A71
Thomas, Marie	190	A71
Thompson, Elizabeth	636	A11, A80, B01, C30, E20, M41, R10
Tidd, Wayne	253	A72, A91
Titchner, John C.	013	F01, M02
Tobin, R. C.	157	A91
Tremblay, Marc	259	A72, A91
Trombley, Neil W. Jr.	089	A71
Tucker, Sharon	091	A72
Underwood, Wynn	099	A61
Uptegrove, Bill	381	A50, A90, B10, M04, R10
Van Orman, Sandra L.	270	A72, A91
Vandam, Nick	551	A32, R10, S11
Vanderchick, Elizabeth	580	A95
Vanvalkenburgh, Norm	579	C10, E50
Verburgh, Dennis	154	A70
Vermette, Gene	410	A70, A91
Vickerman, Michael	508	A30, B10, R10
Viereck, Ellen E.	078	A11, A12, A25, A30, A40, A50, B11, B12, C20, E10, J10, L10, M04 R10
Villa, Bell	401	A72, A91
Villarosa, Heather	553	A95
Vislosky, James F.	384	A72, A91
Waggoner, Hyatt	051	S10
Wagner, John	594	A95
Waibel, Debbie	145	A91, M02
Waibel, Robert	147	A91, M02
Wallace, Mr. & Mrs. Lynn	144	A91
Walters, Dorothy	531	A95
Wanner, Robt. L. II	547	A60, A90, C01, C02, C10, C40, E20, L20, M41
Watson, Charles E.	120	A72, A91
Watson, James S.	226	A70
Watson, James S.	239	A72, A91
Watson, Lynda	250	A72, A91
Watson, Pauline E.	539	A91, E20, E40, J30, L20
Weirbel, Robert	600	A95

Table B.1 List of Commenters (continued)

Name	Control Number	Comment Codes (See Appendix C for Definitions)
Wendell, Gary S.	477	A91
Werhof, Peter, et.al.	174	A72, A91
Wrmer, Eugene	064	A11, A12, A30, A40, A50, B11, B12, C20, J10, L10, M04
White, Mary L.	512	A95
Whited, Dick	583	A95
Whitehouse, Sally F.	165	A72, A91
Wiesner, J. & C.	181	A72, A91
Wiesner, Robert	595	A70, A95
Wilcox, Charles	289	A72, A91
Wilcox, Gilbert E.	472	A91
Wilcox, Mary Lee	176	A72, A91
Wilkins, Hal	632	A25
Wilkinson, James	640	B30, J01, L20
Wilkinson, James E.	022	M02
Williams, David W.	031	A10, A11, A12, A25, A30, A40, A50, B11, B12, C20, E20, J10, L10
Williams, Harold	482	A91
Williams, Jay	483	A91
Wilmer, Henry Bond, Jr.	149	A61, E40
Wilson, Leonard	004	R01
Winston, Dr./Mrs. Geo.	045	R10, S10
Wisniewski, Elaine	526	A95
Wood, Allen Jr.	229	A72, A91
Wood, Marie	431	A91
Wood, Mark D.	076	A11, A25, A40, E30, R10
Woodard, Delores	572	A91
Woodard, Floyd	571	A91
Woods, Kay	638	A32, A42, A90, E21, E50, F40, L20, M40, M70
Woodward, Daniel	348	A72, A91
Woodard, Joyce	349	A72, A91
Woolmington, Robert	029	A90, E10, J01
Wright, Harold B. Jr.	235	A72, A91
Wright, Harry	608	A95
Wright, Reid C.	169	A72, A91
Wuasnik, Danny	085	A72
Wylie, Angela F.	378	A25, A30, E30, R10
Wynne, Carolyn	033	A11, A12, A30, A40, A50, B11, B12, C20, J10, L10, M04
Yager, Judy	602	A95
Yager, Mrs. Judy	522	A95
Zandy, Phil	451	A91
Zatz, Martin	470	M02
Zecker, Stan	136	A42, M02
Zkaczyk, Michael	191	A71

Appendix C: Codes Assigned to Public Comments

The public comments received on the Proposed Green Mountain and Finger Lakes National Forest Plan and Draft Environmental Impact Statement were assigned subject codes to help us track and analyze them.

This appendix is an alpha-numeric list of comment codes and the subject of the comment, along with the FEIS page numbers where more information can be found on the comments and the Forest Service response to them.

Table C.1 List of Comment Codes

Code	Subject of Comment	Page
A10	Add buffer zones adjacent to sensitive areas.	2.20, 2.45
A11	Designate buffer around Grout Pond area.	2.20
A12	Designate land from Hancock Tunnel through Pine Gap, Monastery Mtn., Worth Mtn., and Gillespie Peak as MA 6.1	2.20
A20	Cross-country skiing.	2.20, 2.45
A25	Favors no additional development of alpine ski facilities or trails.	2.26
A26	Ski area expansion.	2.26
A30	Favors 1000 foot buffer along AT/LT with no logging, skidding, or roads within it.	2.18
A32	Trails.	2.20, 2.45
A40	Confine summer use of ORV's to permanent road system and gate all temporary roads and skid trails to prevent ORV damage.	2.27
A42	ORV program.	2.27, 2.45
A50	Place land on eastern boundary of White Rocks NRA in MA 6.2 (as in Alternative F).	2.20
A60	Visual resources.	2.20
A61	Lincoln Ridge, supports MA prescription 2.1A and 2.1B, Alternative D.	2.20
A70	Snowmobiling.	2.27
A71	Supports snowmobiling in Woodford area.	2.27
A72	Supports form letter proposals from Woodford Snowbusters.	2.27
A80	Special Areas management.	2.20
A90	General Recreation.	2.20

Table C.1 List of Comment Codes (continued)

Code	Subject of Comment	Page
A91	Supports multiple-use management for various user groups	2.27
A92	Signing, I and E.	2.52
A95	Use of horses and facilities.	2.45
B01	Wilderness.	2.20
B10	Add buffer zones adjacent to wilderness.	2.20
B11	Designate lands adjacent to Breadloaf Wilderness as MA 6.1 and 6.2.	2.20
B12	Aiken Wilderness buffer.	2.20
B30	Wilderness management.	2.20
C01	Wildlife.	2.35
C02	Hunting, fishing, and trapping.	2.20, 2.29, 2.41
C10	Wildlife openings.	2.47
C20	Enlarge Deer Wintering Areas around Breadloaf Wilderness and south of Philadelphia Peak (to the size specified in Alternative F).	2.35
C30	Threatened and endangered species.	2.35
C40	Pond habitat populations.	2.35
C50	Mountain habitat populations.	2.35
E10	Amount of timber cut.	2.29, 2.48
E20	Type of timber management.	2.29, 2.48
E21	Uneven-aged management.	2.29
E22	Even-aged management.	2.29
E30	Timber sale costs.	2.29
E31	Timber sale contracts.	2.29
E40	Location of timber cutting units.	2.29, 2.48
E50	Vegetative composition.	2.35, 2.47, 2.48
E51	Prescribed burning.	2.29

Table C.1 List of Comment Codes (continued)

Code	Subject of Comment	Page
E52	TSI/Reforestation.	2.29
E53	Chemical uses.	2.10
E60	Management Prescriptions.	2.48
F01	Water quality.	2.10
F10	Management of watershed.	2.10
F20	River management.	2.10
F30	Acid rain.	2.10
F40	Soils.	2.10
F50	Impact of noise.	2.18, 2.20, 2.27, 2.29, 2.39, 2.41
G01	Minerals.	2.39, 2.52
G10	Opposes nuclear waste disposal on Forest.	2.39, 2.52
J01	Land acquisition.	2.26, 2.51
J10	Classify recent land acquisitions as MA 6.1 or 9.2.	2.26, 2.51
J20	Use of National Forest land by private individuals/ companies.	2.18
J30	Grazing/pasture management.	2.50
L10	Limit road construction (to those roads included in Alternative F). Include road costs in timber sale cost calculations.	2.41
L20	Forest road program.	2.41
M02	Favors alternative A, B, C, D, E, or F.	2.08
M04	Favors alternative (A, B, C, D, E, or F) with modifications.	2.08
M10	Management alternatives.	2.08
M20	Economics.	2.29
M30	Standards and Guidelines.	2.41
M40	Monitoring Plan/Contingency Planning.	2.43
M41	Research needs.	2.43

Table C.1 List of Comment Codes (continued)

Code	Subject of Comment	Page
M50	Planning process.	2.06, 2.08, 2.43
M60	Cultural resources.	2.10
M70	Comments on FS management of Forests/role statements.	2.52
R01	Acknowledgment only.	N/A
R10	Praises Plan; Kudos for Planning Team.	2.06
S10	Supports Sierra Club, et. al., newsletter, See Table 3, Krassner, Lowell	
S11	Supports Sierra Club position for FLNF. See Table 3, Barber, Don	
T10	References to Tables.	N/A
T20	References to Appendices.	2.43
W10	References to maps.	N/A

Appendix D: List of Recipients

Copies of the Final Environmental Impact Statement (EIS), Record of Decision, Forest Plan and Highlights of the Forest Plan have been mailed to the same people who were sent the Draft EIS and Proposed Plan (DEIS, Chapter IV).

In addition, copies of some or all of the final documents have been mailed to people who commented on the Draft EIS and Proposed Plan (FEIS, Appendix B). At the very least, each of them has been sent a copy of the Highlights of the approved Forest Plan and a letter explaining the availability of the other documents should they wish to receive them.

Appendix E: List of Preparers

The same people who prepared the Draft Environmental Impact Statement (DEIS) and Proposed Plan have prepared the Final EIS and Forest Plan (DEIS, Chapter V).

* U S GOVERNMENT PRINTING OFFICE 1986 742-109/20080

USDA UNITED STATES DEPARTMENT OF AGRICULTURE

Forest Service

Document Descriptition

Lead Agency	Forest Service		
State	VT	Region	9
National Forest	Green Mountain		
Document Da	Month: 10	Year:	1986
Document Title	Land and Resource Management Plan for the Green Mountain NF		
Sub-Title	FEIS and Plan Maps		

Documents in Case 4

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
JOHN R. McGUIRE, CHIEF

GREEN MOUNTAIN NATIONAL FOREST
(SOUTH HALF)
VERMONT

1975

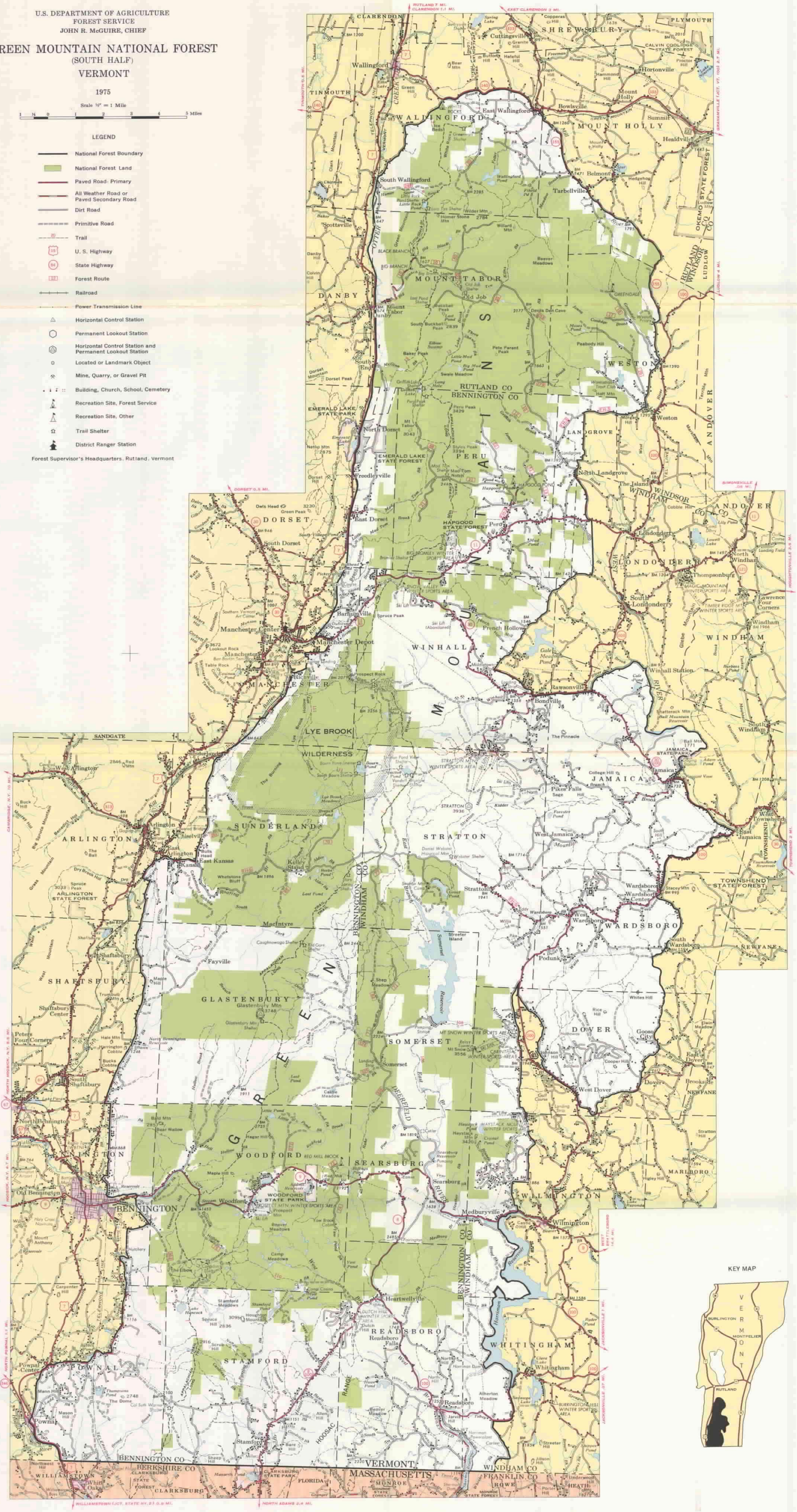
Scale ½" = 1 Mile

1 ½ 0 1 2 3 4 5 Miles

LEGEND

- National Forest Boundary
- National Forest Land
- Paved Road- Primary
- All Weather Road or Paved Secondary Road
- Dirt Road
- Primitive Road
- Trail
- U. S. Highway
- State Highway
- Forest Route
- Railroad
- Power Transmission Line
- Horizontal Control Station
- Permanent Lookout Station
- Horizontal Control Station and Permanent Lookout Station
- Located or Landmark Object
- Mine, Quarry, or Gravel Pit
- Building, Church, School, Cemetery
- Recreation Site, Forest Service
- Recreation Site, Other
- Trail Shelter
- District Ranger Station

Forest Supervisor's Headquarters, Rutland, Vermont



FOREST SERVICE MAP CLASS A

Compiled at the Regional Office Milwaukee, Wisconsin, 1974
from U.S. Geological Survey Quadrangles
Minor revisions added from 1974 field examinations **Limited Revision 1981**

Polyconic Projection
1927 North American datum

73°00' Longitude west from Greenwich

☆ U.S. GOVERNMENT PRINTING OFFICE: 1982-554-624

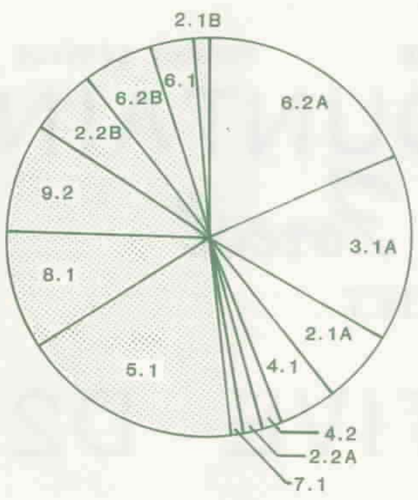
U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE

GREEN MOUNTAIN *National Forest* VERMONT

ALTERNATIVE D2

APPROVED PLAN

FORESTWIDE MIX OF MANAGEMENT AREAS



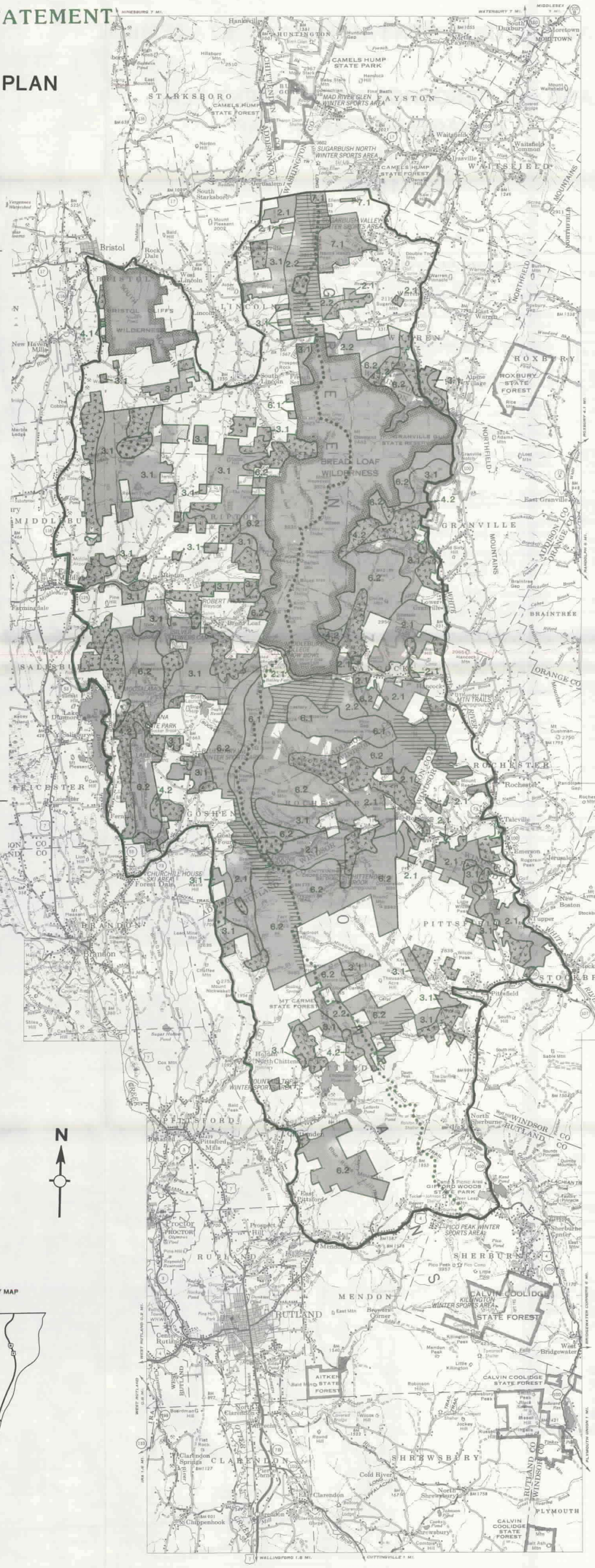
SHADED MANAGEMENT AREAS (52%) WILL RECEIVE LITTLE OR NO VEGETATIVE MANIPULATION AND VERY LIGHT RECREATION DEVELOPMENT.

FINAL ENVIRONMENTAL IMPACT STATEMENT

LAND and RESOURCE MANAGEMENT PLAN
MANAGEMENT AREA MAP
(NORTH HALF)
1986

Management Area		Management Emphasis	Acres (Percent)
2.1A	2.1	Trees of many ages and sizes occur and Roaded Natural recreation opportunities exist. Public enjoyment, aesthetic and wildlife benefits are emphasized and unevenaged silviculture is practiced.	19,300 (6%)
2.1B		Similar to 2.1A except timber will not be managed for wood production.	3,400 (1%)
2.2A	2.2	Similar to 2.1A except Semi-primitive recreation is offered.	5,100 (2%)
2.2B		Similar to 2.2A except timber will not be managed for wood production.	17,800 (5%)
3.1A	3.1	A mosaic of vegetative conditions occur along with opportunities for Roaded Natural recreation. Evenaged silviculture will be used to produce high quality sawtimber.	48,800 (15%)
4.1		Emphasizes stable habitat for deer during the winter and Roaded Natural recreation opportunities for people.	14,500 (4%)
4.2	4.2	Similar to 4.1 except opportunities for Semi-primitive recreation will exist.	5,800 (2%)
5.1		Wilderness designated by Congress and managed according to public laws and regulations.	58,400 (18%)
6.1	6.1	Emphasizes opportunities to experience solitude in a Primitive recreation setting. There will be no roads, no timber harvesting and few people.	12,100 (4%)
6.2A	6.2	Emphasizes opportunities for Semi-primitive recreation while producing high quality sawtimber by growing trees to an old age.	60,100 (18%)
6.2B		Similar to 6.2A except timber will not be managed for wood production.	17,500 (5%)
7.1	7.1	Includes downhill ski areas and campgrounds designed for a high level of public use.	3,200 (1%)
8.1		Emphasizes protection of special areas.	31,500 (10%)
9.2	9.2	Newly acquired lands where future management options will be kept open until further study is done.	27,300 (8%)
9.3	9.3	Potential to expand ski areas will be maintained until specific proposals are received and studied.	600 (< 1%)
Total			325,400 (100%)

The management areas identified on this map and the management directions defined in the EIS and Forest Plan apply to National Forest system lands only. They do not apply to any lands in state, private or other ownerships.



Scale 1:126,720

1 ½ 0 1 2 3 4 5 Miles

1 ½ 0 1 2 3 4 5 Kilometers

LEGEND

- National Forest Boundary
- Purchase Unit Boundary
- National Forest Land
- Primary Highway
- Secondary Highway
- Improved Light Duty
- Unimproved Dirt
- Trail
- U.S. Highway
- State Highway
- Forest Route
- Railroad
- Power Transmission Line
- Recreation Site, Forest Service
- Recreation Site, Other than Forest Service
- Trail Shelter
- District Ranger Office
- Forest Supervisor's Headquarters

KEY MAP

464

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE

GREEN MOUNTAIN *National Forest* VERMONT

ALTERNATIVE D2

FINAL ENVIRONMENTAL IMPACT STATEMENT

LAND and RESOURCE MANAGEMENT PLAN MANAGEMENT AREA MAP (SOUTH HALF) 1986

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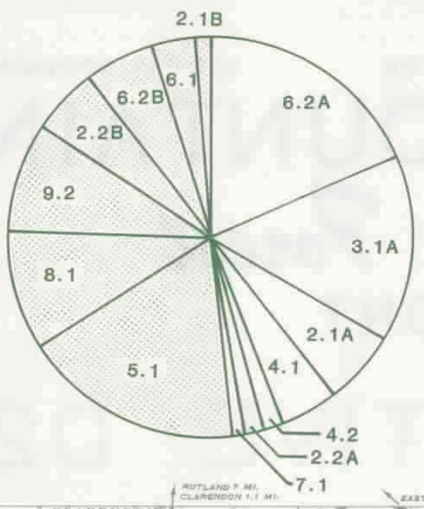
APPROVED PLAN

FORESTWIDE MIX OF MANAGEMENT AREAS



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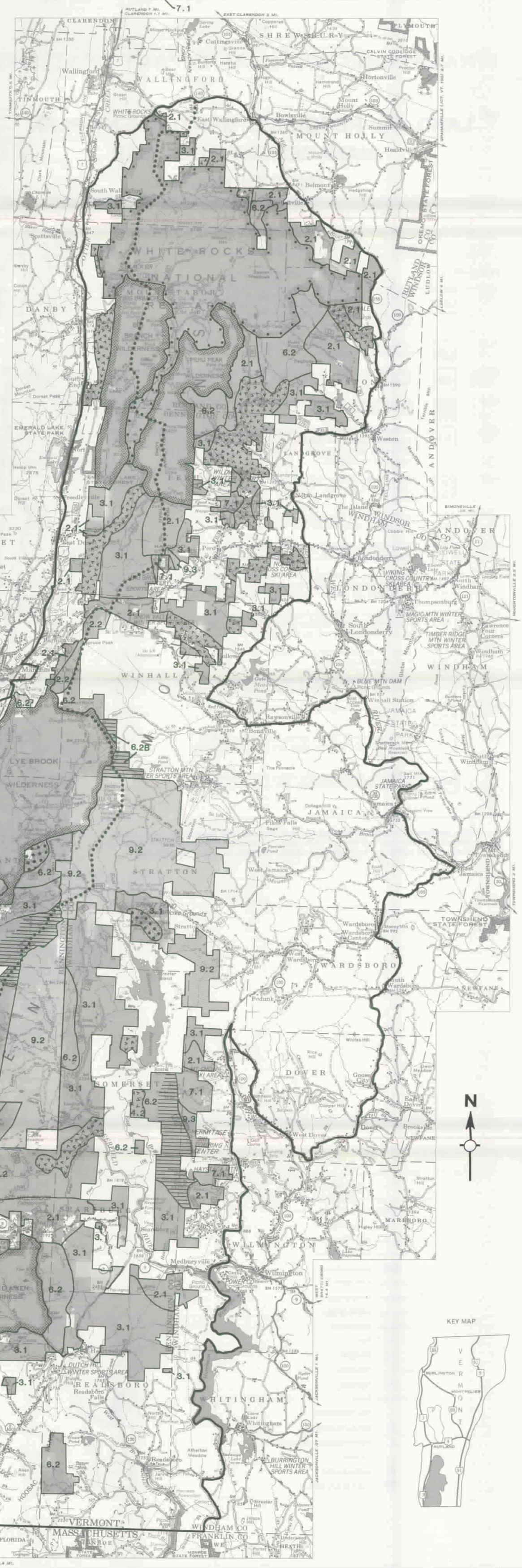
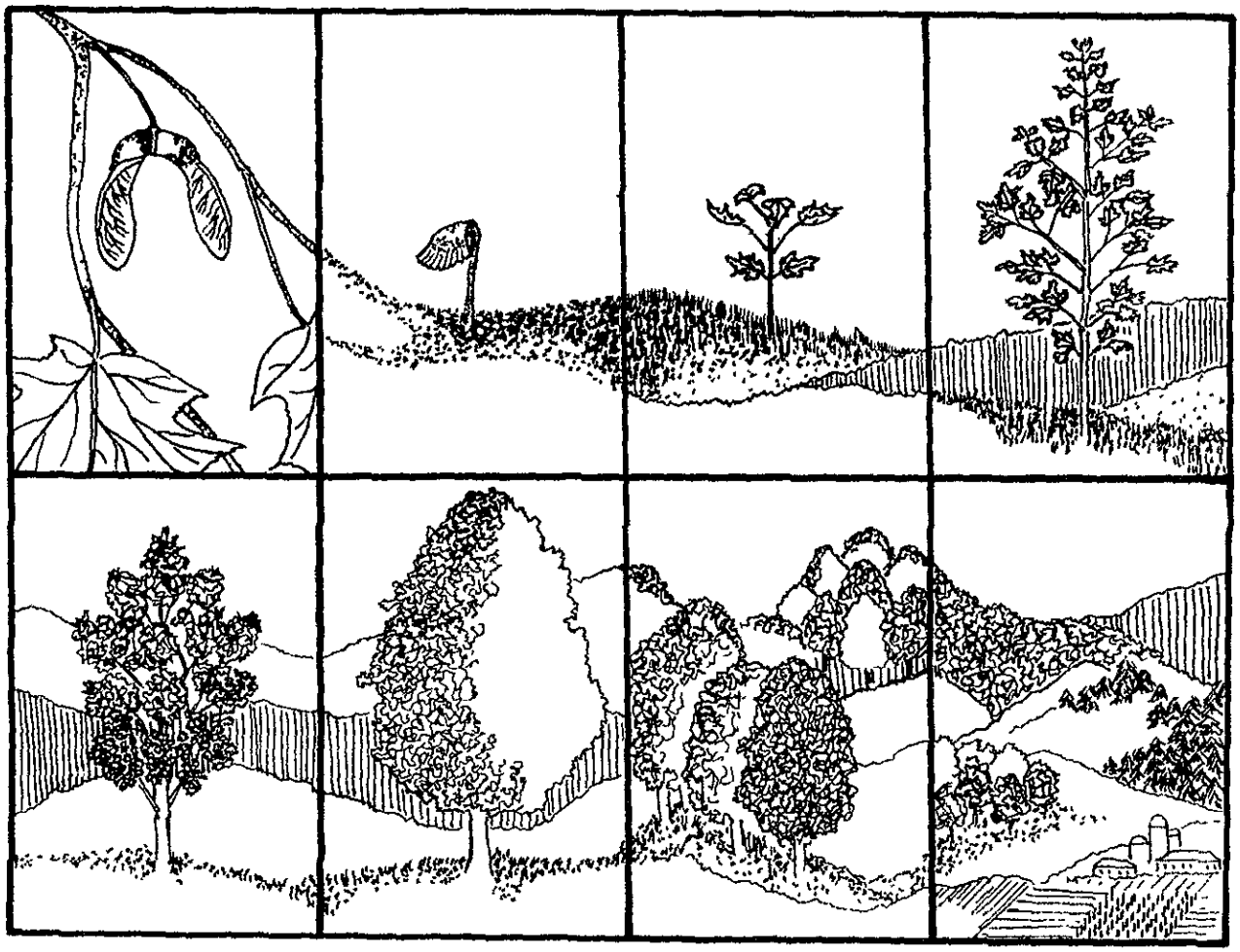




Highlights of the Forest Plan

Green Mountain National Forest

Highlights of the Forest Plan

Introduction

We have prepared a Plan which will guide the management of the Green Mountain National Forest for the next ten years. In the past we have had plans which have guided us well, but if you have followed our policies and actions over the years, you will see that our latest Forest Plan will bring about major changes in our management.

The Forest Plan is a lengthy book and contains detailed information about how different localities and resources on the Forest will be managed over the next 10 to 15 years. This document merely highlights the key policies and actions described in the Forest Plan.

We have given a lot of consideration to how people feel about this Forest. This comes from many day to day contacts, a number of organized meetings, and dialogue about past issues such as the Sugarbush master plan, the Vermont Wilderness Act, the windmill controversy and many individual timber sales and roads. Based on our dialogue with the public, we have described a picture of what the Forest should ultimately be like, and have developed our Forest Plan to take us a few steps in that direction.

We looked at four possible futures for the year 2035, and, recognizing that each was equally likely or unlikely, we attempted to write a Plan which would be flexible enough to allow future generations to cope with the presently unknown unknowns which might occur. Yet we also recognized that good management direction could help us create a desirable future, rather than just have us accept that trend is our destiny.

We did not attempt to prescribe specific actions we would take over the next 50 years. We used our analysis of the long range possibilities as a broad guide. The Forest Plan represents only the immediate actions we will take as first steps on the long trail toward the desired future.

We will monitor how well we are doing and the changes that are occurring. We look forward to your comments and ideas throughout the next ten years as part of this monitoring. Then it may be time to redefine this ultimate picture of the Green Mountain National Forest and write another Forest Plan to carry management yet another step forward.

Role of the Green Mountain National Forest

The Green Mountain National Forest is only 5% of the land in Vermont. In contrast to some of the regions in the western United States where two-thirds of the land is in public ownership, public land makes up only 4% of the land base in New England. While this area of public land is extremely small, it must serve all the people in a region where the population density is more than twice the national average.

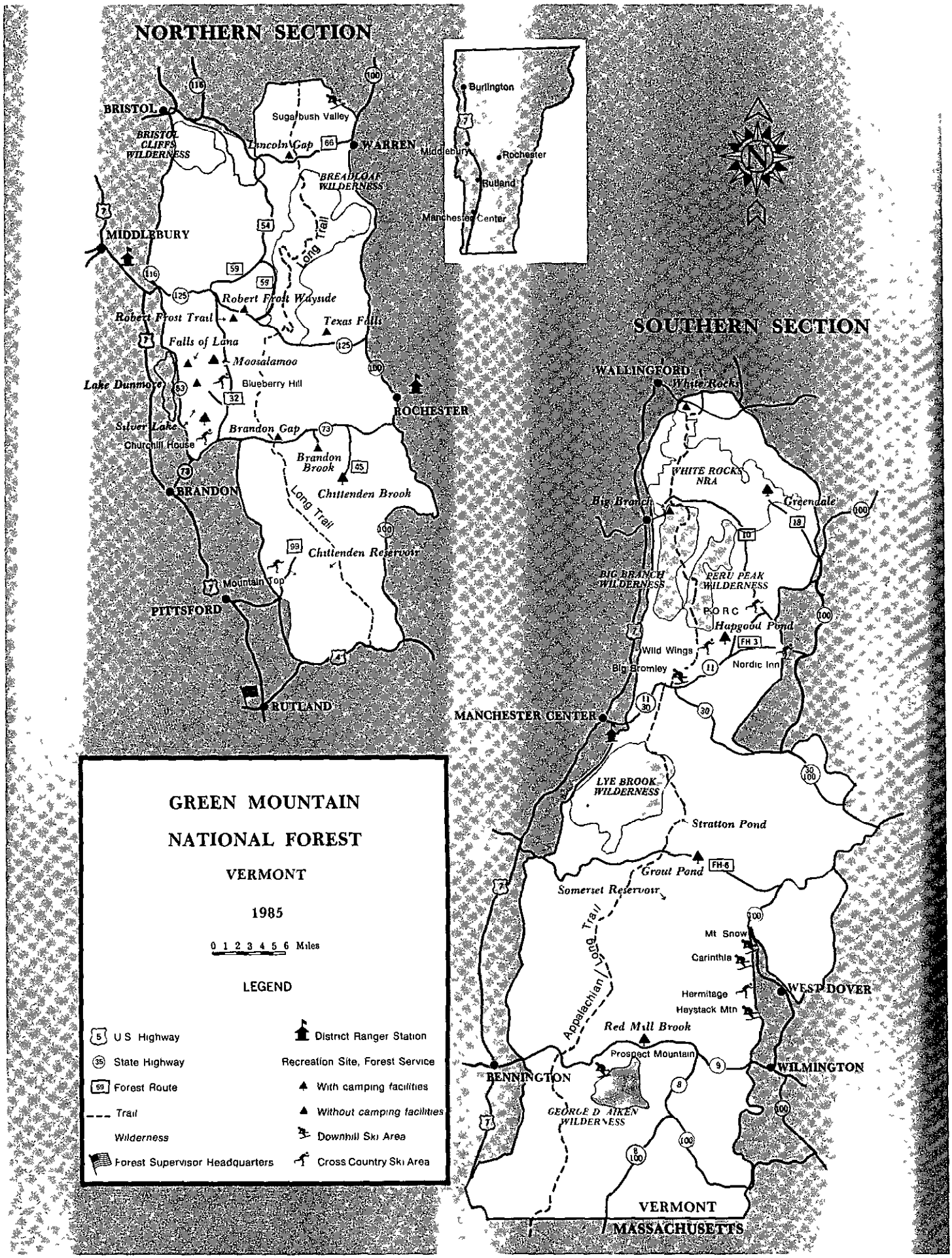
We believe that public land in New England is scarce and precious; our management philosophy reflects that belief. The Green Mountain National Forest should be managed to provide benefits that private land does not, and to maintain options and opportunities for future, as well as present generations.

With its large blocks of land in remote areas, the GMNF is particularly well suited to provide opportunities for backcountry recreation and Wilderness. This will become even more important as the population increases and land in New England becomes further subdivided and developed. In conjunction with our role in outdoor recreation, we must preserve or enhance National Forest scenery and seek to provide a wide variety of wildlife and fish.

As stewards of public land for present and future generations, we must be particularly careful to maintain the productivity of the soil, to keep streams free of sediments and pollutants, and to maintain vegetative diversity and viable populations of wildlife species.

On more productive and accessible lands, timber management will be directed at producing high quality sawtimber. Well managed older trees have a high proportion of large sawtimber, and, because of the guaranteed long tenure of ownership, public land is more likely than private land to let trees grow longer.

The Green Mountain National Forest should be used for research, and for demonstration of various types and techniques of management.


NORTHERN SECTION
SOUTHERN SECTION
BRISTOL
BRISTOL CLIFFS WILDERNESS
Sugarbush Valley
Lincoln Gap
WARREN
BREADLOAF WILDERNESS
MIDDLEBURY
Long Trail
Robert Frost Wayside
Robert Frost Trail
Texas Falls
Falls of Lana
Moosalamoo
Lake Dunmore
Blueberry Hill
ROCHESTER
Silver Lake
Churchill House
Brandon Gap
Brandon Brook
Chittenden Brook
BRANDON
Chittenden Reservoir
Mountain Top
PITTSFORD
RUTLAND
Burlington
Middlebury
Rochester
Rutland
Manchester Center
WALLINGFORD
White Rocks
WHITE ROCKS NRA
Big Branch
Greendale
BIG BRANCH WILDERNESS
PERU PEAK WILDERNESS
RORC
Happgood Pond
Wild Wings
Big Bromley
Nordic Inn
MANCHESTER CENTER
LYE BROOK WILDERNESS
Stratton Pond
Grout Pond
Somerset Reservoir
Appalachian Trail
Mt Snow
Carinthia
Hermitage
Haystack Mtn
WEST DOVER
Red Mill Brook
Prospect Mountain
BENNINGTON
WILMINGTON
GEORGE D AIKEN WILDERNESS
VERMONT
MASSACHUSETTS
GREEN MOUNTAIN
NATIONAL FOREST
VERMONT
1985
0 1 2 3 4 5 6 Miles
LEGEND
U S Highway
State Highway
Forest Route
Trail
Wilderness
Forest Supervisor Headquarters
District Ranger Station
Recreation Site, Forest Service
With camping facilities
Without camping facilities
Downhill Ski Area
Cross Country Ski Area

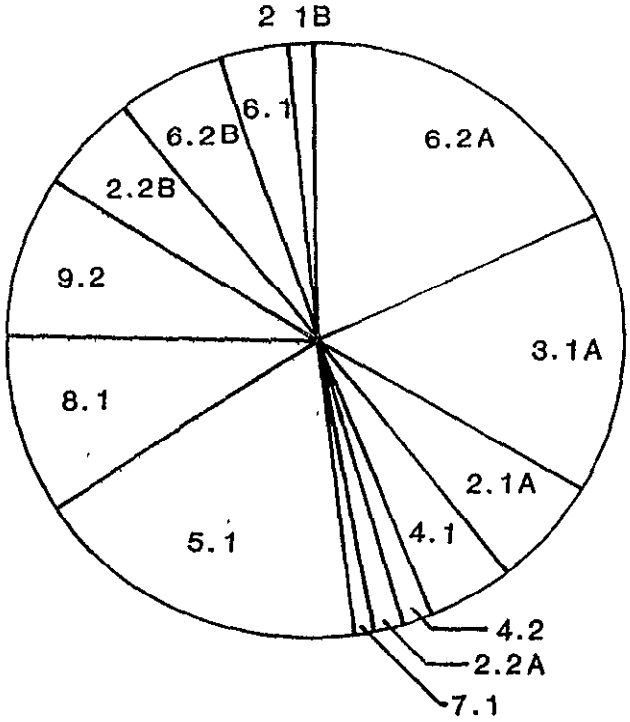
Desired Future Condition

Fulfilling the role of this National Forest and meeting the varied demands of the public require a variety of different land and resource conditions and a variety of different management techniques to achieve them. Our Forest Plan reflects that areas of different physical characteristics and capabilities cannot sustain the same uses or provide the same benefits. For our Forest Plan to be successful, we must carefully match the management and public use of the land to the natural characteristics and suitability of the land.

The future Forest we envision will actually be a mosaic of areas, each individually achieving different combinations of objectives and contributing to fulfill this Forest's role. We have identified 15 basic categories of future land and resource conditions we would ultimately like to see on the Forest. We have also specified fifteen management "prescriptions" which we feel are necessary to change the land from its present conditions to the desired future conditions.

The map of the Forest Plan identifies the locations of each of these 15 desired future land conditions, called Management Areas. We believe that the locations and the acreage assigned to each Management Area, and the Management Prescriptions which will be applied to achieve those future conditions, will result in the overall best management of the Green Mountain National Forest.

Combination of Management Areas



Shaded Areas Will Receive Little or No Vegetative Management and Very Light Public Use.

Management Areas

Management Area Number	Description of Desired Future Condition and Appropriate Management	Acreage	Per cent of GMNF
2.1A	**Trees of many ages and sizes** where **Roaded recreation** is offered Recreation, aesthetic and wildlife benefits will be emphasized Unevenaged management of timber will be used	19,300	6
2.1B	Similar to 2 1A except **no commercial timber management** will occur	3,400	1
2.2A	Similar to 2 1A except **Semi-primitive recreation** will be offered	5,100	1
2.2B	Similar to 2 2A except **no commercial timber management** will occur	17,800	5
3.1	**Mosaic of vegetative conditions,** wildlife, high quality sawtimber and roaded natural recreation	48,800	15
4.1	**Deer winter** areas where **roaded recreation** opportunities exist Predominantly softwoods Managed to provide suitable, stable habitat for deer	14,500	4
4.2	Similar to 4.1 except **Semi-primitive recreation** opportunities will exist	5,800	2
5.1	**Wilderness** is managed according to the provisions of the Wilderness Act of 1964	58,400	18
6.1	**Primitive areas** provide opportunities to experience **solitude and remoteness.** The areas will appear **entirely natural.** They will have **no roads and no timber harvesting.**	12,100	6
6.2A	**Semi-Primitive** areas have **few open roads,** and **appear almost entirely natural.** Wildlife and timber management activities are selected, scheduled and located to ensure that the setting is maintained for backcountry recreation	60,100	18
6.2B	Similar to 6 2A except **no commercial timber management** will be performed	17,500	5
7.1	**Highly developed recreation areas,** include downhill ski areas and high density campgrounds	3,200	1
8.1	**Special areas** have uncommon or outstanding biological, geological, recreational, cultural, or historical significance Acreage does not include speccial trail corridors	31,500	9
9.2	**Newly acquired lands** where future management options will be kept open until studied	27,300	8
9.3	**Potential ski area expansion** will be kept open on the lands until specific proposals are received and studied	600	1
Total		325,400	100

Basic Environmental Protection

Standards and Guidelines

All projects and activities will comply with the standards and guidelines set forth in the Forest Plan. In our new Plan, strongly worded standards and guidelines have been written to ensure that the environment will be adequately protected, while we are taking actions to achieve the desired future conditions of the Forest.

For instance, the standards and guidelines written to protect soil and water describe specific restrictions on the type, timing and location of surface disturbing activities. They provide instructions for how and where to construct skid trails, log landings, roads and hiking trails. The standards and guidelines include information about waterbars, stream crossings, riparian areas, and stabilization methods for various soil types and topographies. Logging, road building and other surface disturbing activities are prohibited in areas where significant, long-term environmental damage could occur.

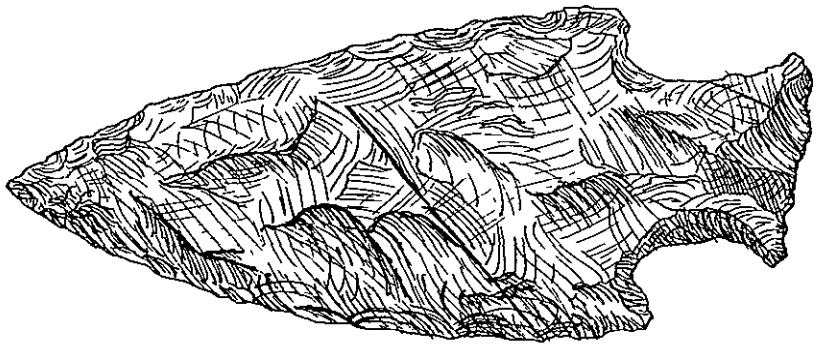
Endangered, Threatened and Sensitive Species

The Peregrine Falcon, which is being reintroduced, is the only endangered species presently found on the GMNF. All known historical falcon nesting sites are being protected.

In addition, 35 species of wildlife and 48 species of plants are being protected because they are sensitive or particularly unusual in our part of Vermont. For example, several nesting areas of the Great Blue Heron and occurrences of the fragrant fern are being protected from disturbance.

Cultural Resources

The Green Mountain National Forest will make every effort to protect sites with evidence of prehistoric and historic cultures. Prior to any planned land disturbing activities, we will conduct a survey to locate cultural resources. Any sites determined to be significant, either according to Federal criteria (36 CFR 60.6) or by State or local evaluation, will be untouched, or any adverse effect of the planned activities will be prevented.



Scenery in the Green Mountains

Much of the Green Mountain skyline is very attractive and can be seen from towns, roads and trails throughout the National Forest. Several years ago a proposal to consider wind-powered electric generators on Lincoln Ridge caused considerable controversy. Because proposals like this could occur most anywhere in the National Forest, we developed a process for evaluating proposals for these types of highly visible facilities.

To make a decision we must consider the compatibility of the proposed project with our management objectives for the surrounding land. We must also consider how visible the structure would be and from where it would be seen. Based on these considerations, certain parts of the Forest have already been eliminated from future consideration. The rest of the National Forest is categorized as areas where visually prominent facilities will have high, moderate or low impact on our management objectives, including those for scenery.

Close-up views of the National Forest are also important for people traveling our roads and trails. In our timber sales and other projects, we have significantly bolstered our slash disposal requirements. The Forest Plan also directs us to make our openings smaller and more irregular, and to be more careful about the appearance of snags and other trees left in openings.

Special Areas

All areas known to have uncommon or outstanding biological, geological, recreational, cultural, or historical significance on the Green Mountain National Forest are protected under the direction of the new Forest Plan.

The values which make these areas special will be preserved for the education and enjoyment of present and future generations. Public lands and resources are well suited to this since long-term management and protection can be assured.

Five special areas are candidate Research Natural Areas - the Cape, Mount Horrid, Beaver Meadows/Abbey Pond, other Remote Ponds, and Blue Ridge Cranberry Bog. Further evaluation must be done before these areas can be established as official Research Natural Areas by the Forest Service.

Evaluations of these sites are scheduled to occur over the next few years. Interested publics will be involved in their evaluation and in the protection and management of all Special Areas in this National Forest.

Special Areas on the Green Mountain National Forest

Name	Location
Long Trail/Appalachian Trail	Length of National Forest
White Rocks NRA	Mt Tabor, Wallingford
Grout Pond	Stratton
The Cape	Chittenden, Goshen
Mount Horrid	Goshen, Rochester
Texas Falls	Hancock
Crystal Brook Glacial Kettle	Hancock
Robert Frost Interpretive Trail	Ripton
Beaver Meadows/Abbey Pond	Bristol, Middlebury, Ripton
Mount Abraham	Lincoln
Remote or High Elevation Ponds	Sunderland, Mt Tabor, Peru Wallingford, Ripton, Middlebury
Rattlesnake Point	Goshen
Cranberry Bog	Chittenden

Acid Rain

The effects of air pollution on the vegetation and water of the Green Mountain National Forest concern us greatly. We believe that air pollution, commonly referred to as acid rain, is adversely affecting these resources, and yet we are not able to quantify or be very specific about the damage, nor do we know what we can do about it.

We are working with the State's Acid Precipitation Program, collecting information about twelve lakes and ponds. We fully support continuing and accelerating various research projects on the effects of air pollution. We further urge continuation of steps to reduce the amount of pollutants reaching this Forest and other areas of the Northeast.

Nuclear Waste Disposal

The United States Department of Energy is currently studying areas in the eastern United States to find a site which is suitable for the disposal of high level radioactive waste. Several potential sites were considered on the Green Mountain National Forest and elsewhere in Vermont. Preliminary studies indicated that none of the Vermont sites were suitable for nuclear waste disposal. Other sites in New England are presently being studied in more detail. We will continue to monitor this issue until it is fully resolved.

Integrated Pest Management

The effects of disease, damaging insects and undesirable plant species which hinder the growth of desirable species will be controlled through a program of integrated pest management. An integrated combination of techniques which prevent the occurrence of damaging pests will be employed when appropriate.

The Plan insists that the full range of nonchemical techniques to control pests be considered prior to considering chemicals.

Public Uses of the GMNF

Recreational use of the Green Mountain National Forest is one of our most important values. The whole Forest is open to recreational use and a wide variety of experiences and opportunities are available.

Most people want the National Forest to be a place that is more natural than the rest of the world they live in. They want to find fewer people, hear fewer motor vehicles and have a minimum of "don'ts". They want to forget the things they have to do and enjoy the things they want to do.

The Green Mountain National Forest is precious to both local people and tourists. Many parts of this National Forest are presently hard to find so we are going to provide more identifiable access points by acquiring right-of-ways and putting up more and better signing.

Various Recreational Settings

Recreational Setting	Management Areas	Typical Situation
Roaded Natural (27% of GMNF)	3 1 2 1 4 1	Dirt roads, open in dry weather, places to walk, a variety of trees and openings Good places to pick berries, enjoy birds and flowers, picnic, fish and hunt
Semi-Primitive (40% of GMNF)	2 2 4 2 6 2 8 1	Trails through a variety of trees and openings, but less evidence of management than above. Woods roads will be usually closed to vehicles A wide variety of things to do with fewer people around
Primitive (7% of GMNF)	6 1 8 1	Area is more than 1 mile from an open road, has few trails and you will not see other people very often
Wilderness (18% of GMNF)	5 1	Parts of National Wildnerness System We will keep trails open, but otherwise nature will determine vegetative conditions No motors or machines are used
Uncertain (8% of GMNF)	9 2	Until further study is done, we are uncertain what recreation settings newly acquired lands are best suited to provide
White Rocks National Recreation Area	8 1	Established by Vermont Wildnerness Bill of 1984 The area will be managed for Primitive and Semi-Primitive recreation and wildlife species that like remote woods
Long Trail and Appalachian Trail	8 1	The trail covers 125 miles on GMNF and is managed in a natural setting for the enjoyment of hikers Management of nearby areas will be modified so it will not detract from the desired setting

Various Recreational Settings

Recreational Setting	Management Areas	Typical Situation
Campgrounds and Picnic Areas	2 1 3 1	We will fix up the ones we have, but will not construct any new ones State Parks and private campgrounds are doing a good job of filling the need
Backcountry Facilities	2 2 5 1 6 1 6 2 8 1	Toilets, shelters and tent sites of appropriate design will be constructed in backcountry areas
Downhill Ski Areas	7 1 9 3	No new ones, but the existing areas may expand *if* further study and review of specific proposals determine it to be desirable
Cross-country Ski Areas (Commercial)	3 1 2 1 6 2	Various Inns and Towns cooperate with us to provide 10 ski touring areas They provide groomed trails and other conveniences Any changes or expansion will depend on owners desires and compatability with other users
Cross-country Ski Areas (Non-commercial)	All	Plenty of non-commercial XC ski opportunities are available on unplowed roads and trails throughout the Forest
Snowmobile Trails	3 1 2 1 2 2 6 2 4 1 4 2	300 miles of trails will be maintained under a cooperative agreement with the Vermont Association of Snow Travelers
Summer Off Road Vehicles (ORV)	3 1 2 1	A few areas with suitable soils will be open for summer ORV use Presently ORV use is very light and will be monitored If damage begins to occur to the soil or water quality, those areas will be closed
Blueberry Areas	3 1 2 1	More blueberry patches will be managed to provide berry picking opportunities for people and valuable habitats and foods for wildlife
Fuelwood Gathering	2 1 3 1 4 1	Opportunities for fuelwood cutting along roadsides will be continued Cutting will be done to improve stand conditions and to better utilize the wood left after commercial timber sales

Management of Vegetation

The type and intensity of vegetative management on the Green Mountain National Forest will vary considerably from place to place. The intensities chosen will reflect differences in soils, topography, recreation, scenery, wildlife and road access. Management of vegetation will range from doing nothing, as in Wilderness, to fairly intensive activities in Management Areas 2.1A and 3.1.

Intensity of Vegetative Management

Intensity	Management Area	Acres	Per cent
Intensively managed **unevenaged** stands	2 1A 2 2A	24,400	8
Intensively managed **evenaged** stands	3 1 4 1	63,300	19
Less intensively managed even-aged stands· **longer rotations and more time between thinnings**	6 2A 4 2	65,900	21
Special vegetative management —in White Rocks NRA —ski areas & campgrounds —trailsides —stream sides	8 1 7 1 9 3	13,900	4
No vegetative management this next decade and probably much longer	2 1B 2 2B 6 2B	38,700	12
No vegetative management until newly acquired lands are studied	9 2	27,300	8
No vegetative management in Wildnerness, areas providing Primitive recreation, and most areas of the White Rocks NRA	5 1 6 1 8 1	91,400	28

Currently 83% of the National Forest is northern hardwood (beech, birch and maple) and most of this is 60 to 100 years old. In areas where vegetation will be actively managed we have specified the desired composition of vegetative types and ages that we would ultimately like to occur. Our objective is to increase the diversity of vegetative types and ages to benefit wildlife and the health of the ecosystem.

Various species of birds and animals like different conditions. Some prefer to hop around in the leaves of a northern hardwood stand, others prefer the sunlight of a recent cutting or the weeds in a permanent opening. Some like holes in large, old rotten trees. In all, an estimated 325 species of birds and animals inhabit the Green Mountain National Forest and we want to maintain and enhance the amount and distribution of the conditions in which they thrive.

The vegetative composition objectives for various localities on the Forest will guide our vegetation management practices in ways which should enhance diversity and benefit wildlife. These composition objectives will vary depending on the conditions and other resource objectives in each Management Area.

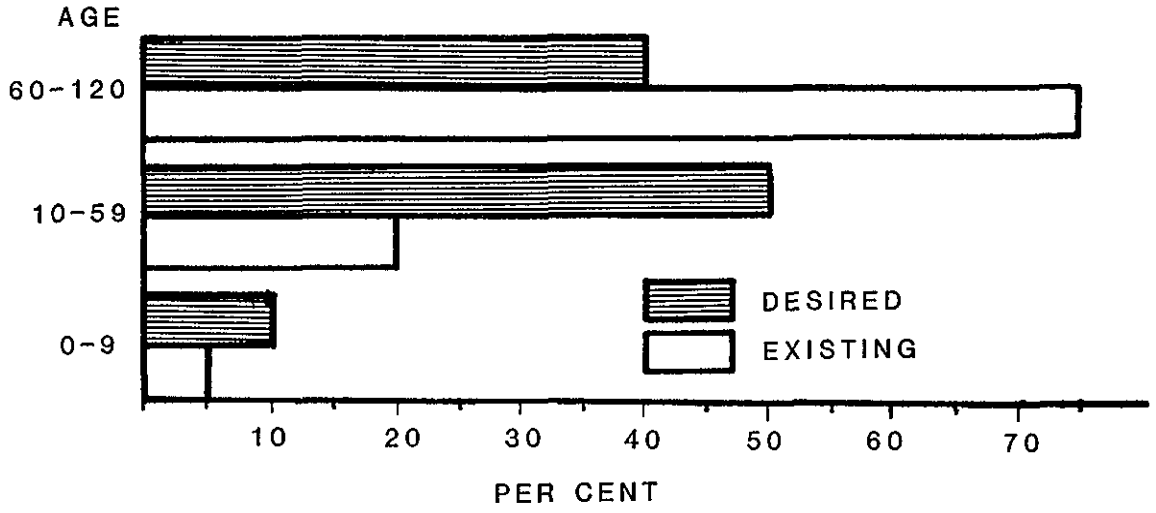
For example, in Management Area 3.1, the following composition objectives have been established. The vegetative composition objectives differ in other Management Areas in order to reflect the conditions which are desired in those areas.

Vegetation	Per Cent
Northern Hardwoods	61-78
Softwoods	12-30
Aspen and Birch	5-10
Oak	1-3
Permanent Openings	3-5
Wetlands	1-1

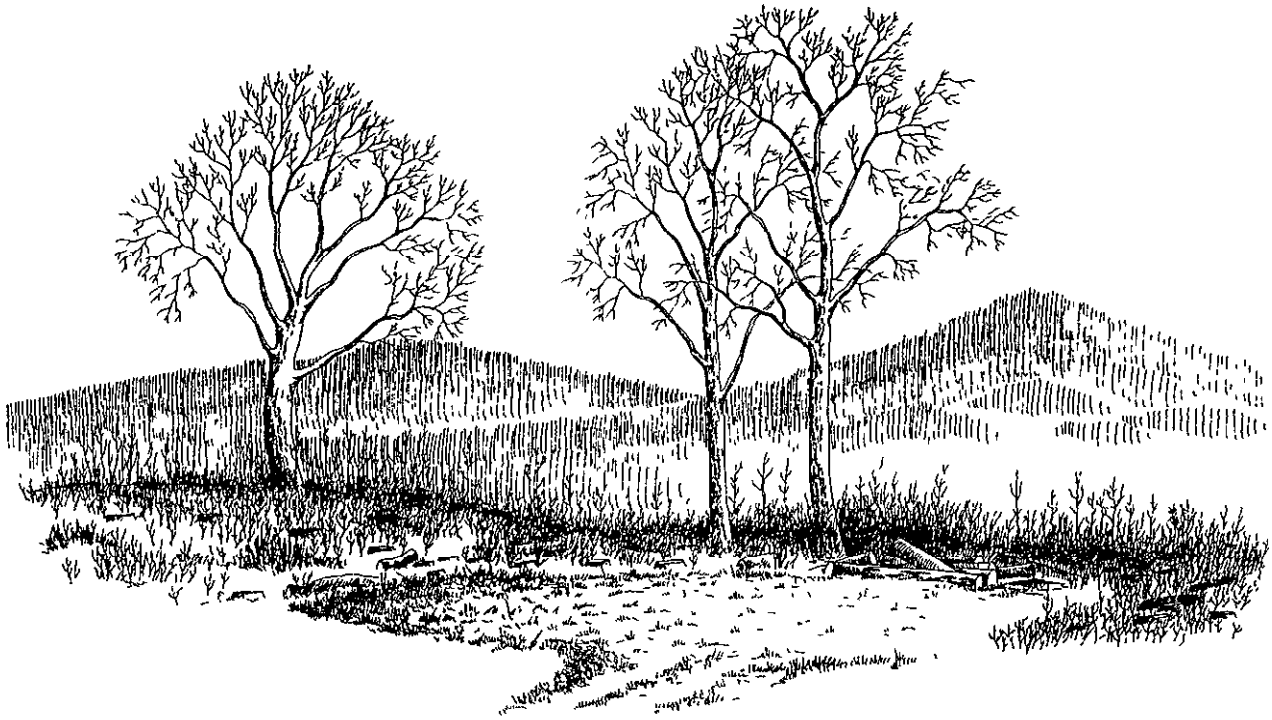
We also need to consider the distribution of vegetative age classes. Areas having a single age class of a particular forest type are called stands. The stands on the Green Mountain National Forest range from a few acres to a few hundred acres. Our objective will be to increase the variety of managed stands, reduce their average size, and make their shapes more irregular and natural appearing.

We will work to achieve a more balanced age class distribution than we have presently. For example, most existing northern hardwood stands are over 60 years old and in Management Area 3.1 we will try to increase the proportion of younger stands in the future.

Existing and Desired Age of Hardwoods in Management Area 3.1



We believe it will take 100 or more years to reach the desired composition of vegetative types and ages on this National Forest. This is because the management of trees is a long term proposition and changes cannot be made suddenly without causing unacceptable harm to the environment and other benefits the National Forest provides. Our ten year Forest Plan will only take us a small step in the direction of the future vegetative conditions we ultimately desire to see.



Timber sales are the most efficient way to accomplish our vegetative composition objectives. In addition, timber sales can provide jobs and very positive benefits to our economy.

In a timber sale, trees to be cut are clearly designated and a list of requirements for slash disposal, erosion control and a myriad of other things are determined before a contract is made with a logger.

The maximum volume of timber that can be offered for sale each year to accomplish our objectives is 15.6 million board feet. Over the past five years the timber offered for sale on the GMNF has varied from 14.0 to 18.7 million board feet per year.

Both evenaged and unevenaged management will be used depending on the management objectives and the characteristics of the tree species desired. Evenaged management will be used to regenerate species which are intolerant of shade and to meet various wildlife habitat objectives. Unevenaged management will be used when a continuous forest canopy is desired and tree species tolerant of shade are to be grown.

A variety of cutting methods will be used including clearcutting, shelterwood cutting and selection cutting. The method chosen will depend on the overall objectives for an area. Clearcutting will only be used when it is the optimum method to reach desired conditions and no other cutting method is adequate.

Harvested areas will vary in size from as small as 1-2 acres to a maximum of 30 acres. Most areas will be in the range of 5-20 acres. Harvest size will be influenced by a variety of factors including topography, scenery, and wildlife habitat needs.

Loggers will be required to treat logging slash to protect scenery and reduce fire hazard. Special attention will be given to areas adjacent to roads, trails and private lands.

Capital Expenditures

Trails

The Plan directs that 17 miles of recreation trails be built in the next 10 years to meet growing demands. Most of this trail construction will occur in the White Rocks National Recreation Area since this area is expected to receive greatly increased use due to its recent Congressional designation.

Wherever possible, new trails will be built to connect with existing trails and create "loops" which begin and end at the same point. These trail loops will make it easier for people to plan short trips into the National Forest. Unfortunately, few good trail loops presently exist.

During the same 10 year period, 29 miles of trails will be rehabilitated or reconstructed to improve them for many types of recreation uses as well as to protect the resource environment.

Recreation Facilities

New backcountry campsites will be built at twenty locations, accommodating a total of 120 people at one time. Many of these sites are located in the White Rocks National Recreation Area. All new sites are intended to provide better opportunities for overnight use of backcountry areas on the National Forest.

Rehabilitation work is planned for 60 existing recreation areas, ranging from reconstruction of a shelter and bridge on the Long Trail to refurbishing of campgrounds. This work will address the maintenance of recreation facilities so essential to protecting investments.

Visitor Information Services

People visiting the National Forest for the first time need to have access to information about their public lands and resources. Three separate information sites are planned for widely separated parts of the Forest. They comprise our initial effort at providing useable information to the visiting public along well traveled State roads and at popular sites.

Parking Areas

People wishing to enjoy different areas of the National Forest must be able to find nearby parking for their cars. Many localities lack adequately designed and identifiable parking lots, particularly in the winter. The Plan calls for construction of 13 parking lots over the next 10 years. These areas include some for winter use only, some summer use only and several designed for year round use. Many sites will intermittently serve as wildlife openings and log landings, as well as parking lots.

Roads

Roads will be built to meet the objectives of the Forest plan by providing public access to areas of the National Forest which are currently inaccessible, preventing resource damage, providing for certain recreation opportunities, and allowing Forest Service access for resource management and removal of wood. Our first priority for road building will be to provide adequate public access to National Forest lands.

In the next ten years, we plan to build about 5 miles of new permanent roads. We will do major reconstruction of 6 miles of existing roads and minor restoration of an additional 16 miles. If the direction of this new Plan is carried forward beyond this next decade, then another 7 miles of new roads would ultimately be built.

The Final Plan reflects a change in the Green Mountain National Forest road building policy. Fewer miles of roads will be built than called for by past plans. Most of these will be short roads of lower standards and less cost.

Most new roads will be controlled with gates to provide backcountry recreation, protect remote wildlife habitats, or protect roads from damage during wet times of the year such as spring breakup. While roads may be closed to vehicular traffic, generally they will remain open for hiking, ski touring, snowmobiling, and/or horseback riding.

Land Ownership Adjustments

The Forest Plan contains guidelines and priorities for adjustments in the pattern of public land ownership. At this time we cannot list specific tracts or easements that we will exchange or acquire over the next 10 years because our program is dependent on both land and funding becoming available.

Our highest priority in the next few years will be given to tracts which include the Appalachian Trail and the Long Trail, tracts which include frontage on the White River, tracts which would protect uncommon special areas or habitats, and tracts which would help consolidate the forest and increase backcountry recreation opportunities.

Having public land adjacent to the trails would protect public enjoyment of the trails and help meet the goals of the National Scenic Trail program. The White River has been identified as a major spawning stream in the Connecticut River Atlantic Salmon reintroduction program. To achieve the objectives of this program we are considering acquiring the rights of property with frontage on the river, rather than acquiring the parcels in fee simple. Tracts which would consolidate public ownership would enable us to manage more efficiently. They would also help us fulfill our role of providing large contiguous areas of public land for backcountry recreation and wildlife.

Conclusion

The highlights presented in this document are intended to help you see how we will manage your National Forest over the next decade. We will continue to work with local and State officials, organizations, universities and individuals to protect and improve your National Forest, using management actions which are in tune with the needs of all peoples.

If you have comments or questions, please get in touch with one of us at any of the addresses on the following page.

Local Forest Service Officials

Stephen C. Harper Forest Supervisor	Box 519 Rutland, Vt. 05701 (802) 773-0300
Paul Lundburg District Ranger	R. D. #3 Middlebury, Vt. 05753 (802) 388-4362
Wolf Schumann District Ranger	Box 1940, R. R. #1 Manchester Center, Vt. 05255 (802) 362-1251

United States
Department of
Agriculture

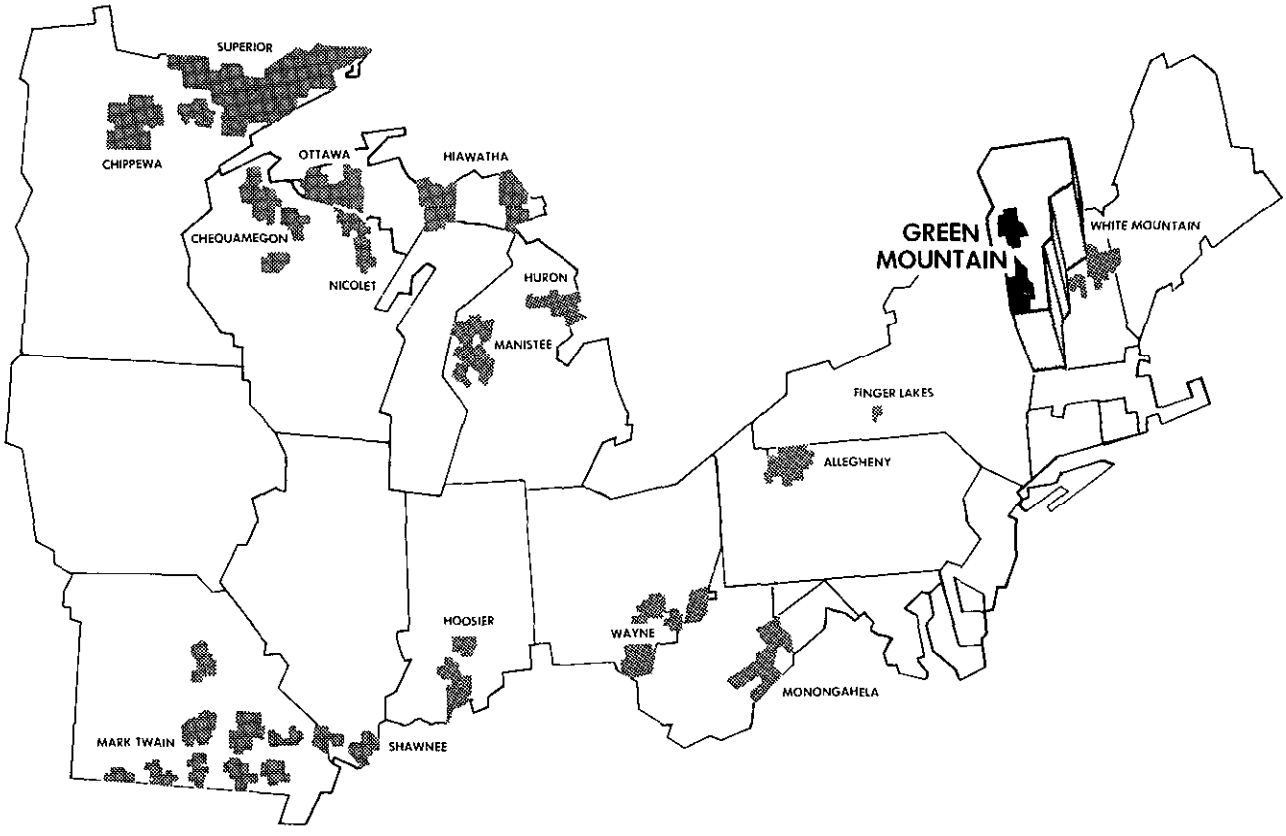
Forest
Service

**Eastern
Region**

1986

Land and Resource Management Plan

GREEN MOUNTAIN NATIONAL FOREST



Preface

This document outlines the overall best management of the Green Mountain National Forest. We have attempted a thorough analysis of what the forest could supply. We also asked people what they want, and don't want, the Forest to be. This is our plan to manage all the Forest's resources to best meet the varying, and often conflicting, wishes of our citizens, while fulfilling our responsibilities as stewards of the land and trustees of the environment for future generations. The Regional Forester has reviewed this material and approved this Forest Plan.

Planning Process

The National Forest planning process was initiated by The Forest and Rangeland Renewable Resources Planning Act, and amended by the National Forest Management Act (NFMA). Assessment of the environmental impacts of the plan is conducted in accordance with the National Environmental Policy Act (NEPA). Further direction for the process is contained in regulations: Title 36, CFR, Part 219 (NFMA regulations) and Title 40, CFR, Part 1500 (NEPA regulations).

The process takes place on three broad levels - National, Regional and Forest. At the National level, the Forest Service assess the supply and demand of renewable resources every ten years. In response to this assessment, a National Program is developed, recommending what must be done to best meet the nation's demands.

The Eastern Region, which includes the Green Mountain National Forest, prepared a guide to the National Forests for meeting the national objectives. The Regional Guide provides general management direction as well as specific assignments to produce certain public benefits which were considered as tentative targets during the Forest planning process.

An Environmental Impact Statement explains the planning process, the analysis, and the comparison of alternatives. In addition, there are many unpublished papers which further document some of the technical information, data, references, and assumptions. These papers are available for review at the Supervisor's Office in Rutland, Vermont.

This approved plan sets out the goals, objectives, and standards and guidelines for management of specific land areas. Specific projects will be directed by this plan, but they may be modified, delayed or cancelled due to environmental analysis or budget limitations.

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CHAPTER I

INTRODUCTION

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I. Introduction

A. Organization of the Forest Plan

Although this document is a condensation of the volumes written during the planning process, it in itself is long enough to require direction to help you find what you are interested in.

Chapter II looks at some of the major outputs and benefits associated with the forest. It compares the potential supply to the anticipated demand. Early in the planning process, we asked people to tell us what they wanted, and did not want, the forest to be.

Chapter III explains some of the policies which have been incorporated in the plan in an attempt to respond to public requests, and to resolve conflicts. This chapter also lists the types of research which we feel should be conducted to help us manage the forest to meet the public's wishes.

Chapter IV contains the meat of the plan. It explains the goals, objectives and other initiatives we have set, and the management we have planned to achieve them. It lists specific management practices and the standards and guidelines which direct the way in which each practice is carried out. By following this direction we hope to achieve the future conditions that are desired.

Chapter V discusses how we will go about implementing the plan, and what monitoring we feel is important to check how well the results match our projections.

Also included at the end of the document are a glossary, an index, and various technical appendices. The maps which show where the different types of management will take place are included in a separate folder.

B. Forest Location

The Green Mountain National Forest is one of seventeen National Forests in the twenty state Eastern Region of the Forest Service. The Forest has three administrative units, called Ranger Districts located in Middlebury, Rochester and Manchester, Vermont. The Green Mountain National Forest also administers the Hector District of the Finger Lakes National Forest in New York State. A separate documents describes the Plan for the Finger Lakes National Forest.

The Green Mountain National Forest follows the backbone of the Green Mountain range in south central Vermont.

The Green Mountain National Forest was formally established by Presidential Proclamation on April 25, 1932. The proclamation boundary establishing the National Forest in Vermont set forth certain lands that could be bought and managed by the United States Department of Agriculture, Forest Service.

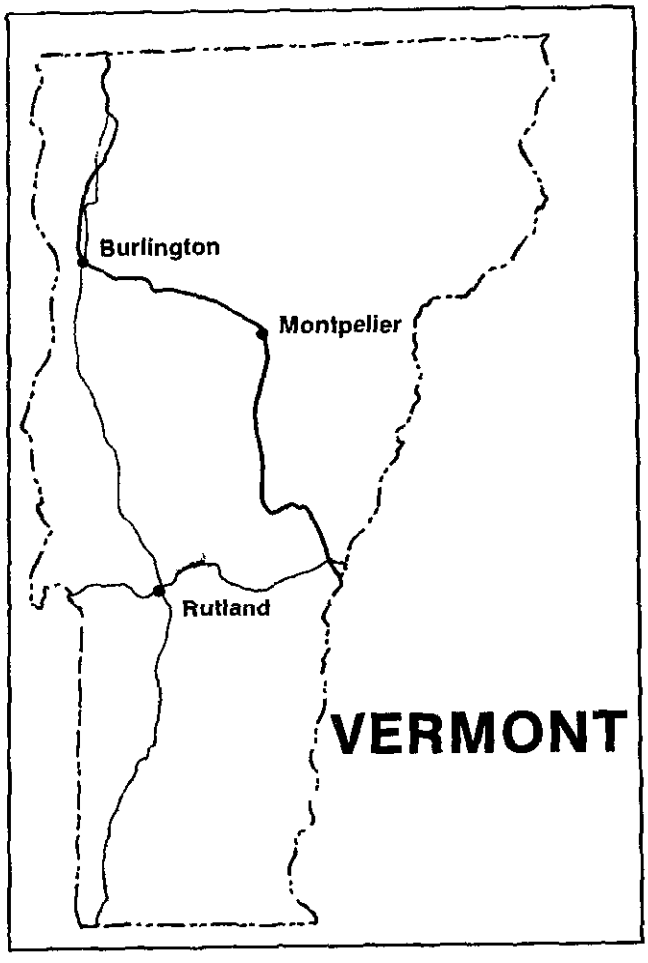
This proclamation boundary in Vermont breaks the National Forest into two distinct areas. A mixture of public and private lands exists within these two areas.

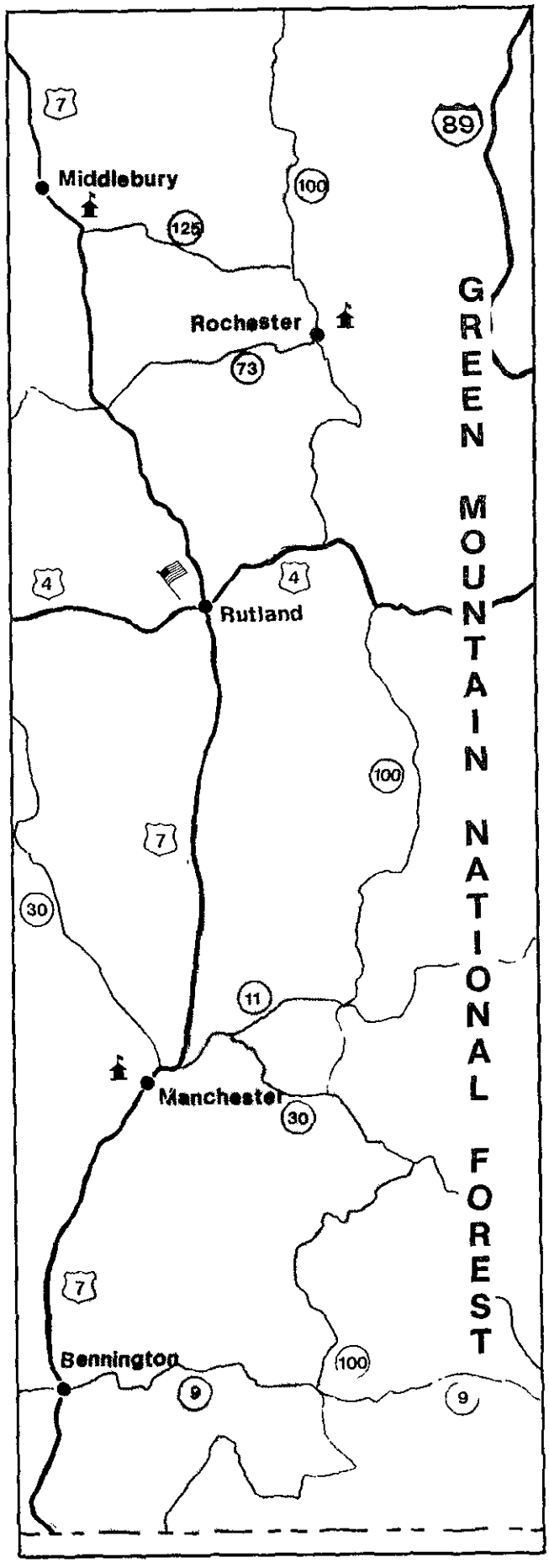
As of September 30, 1986, the Green Mountain National Forest includes about 325,400 acres. This is roughly 5 per cent of the total land in Vermont and 50 per cent of all public lands in the state.

Major highways provide the people of Vermont and the Northeast easy access to the National Forest. Some nearby urban areas include Montreal, Boston, Hartford, Albany, Syracuse and New York City.

The principal travelways serving the Vermont Districts include U.S. 4, an east-west route and U.S. 7 and Interstate 89 which go north-south. The Long Trail and Appalachian Trail follow the main ridge running north-south.

EASTERN REGION
USDA Forest Service


Burlington
Montpelier
Rutland
VERMONT


7
89
Middlebury
100
125
Rochester
73
GREEN MOUNTAIN NATIONAL FOREST
4
4
Rutland
100
7
30
11
Manchester
30
7
Bennington
100
9
9

CHAPTER II

MANAGEMENT SITUATION

II. Management Situation 2.01

II. Management Situation

As part of the analysis, we tried to assess the potential supply of, and the demand for, various forest outputs or benefits.

For each, we looked at the maximum amount that could be produced, given legal and biological constraints. We compared this maximum amount to the amount produced in 1981, and the amount that would be produced if we were to continue our present management into the future. (Table 2.1)

We also tried to assess demand for these outputs and benefits. Recognizing that we cannot predict the future, we developed four alternative futures, each with its own set of demand projections. For more information, see "Alternative Futures for Vermont".

In creating the Forest Plan, we attempted to choose an alternative which would:
- be within the capabilities of the area as determined by the analysis
- enable us to best meet the demands of any of the futures which might occur
- help us create a desirable future.

The chart of supply and demand may help you assess how well the plan would provide these quantifiable goods and benefits. (Table 2.1)

In addition, there are several outputs and benefits which we did not quantify and display, but which were considered in the planning process. These include downhill skiing, camping, and mineral extraction.

Downhill skiing, which occurs on a very small percentage of GMNF land, resulted in 292,000 recreation visitor days in 1984. Specific estimates of anticipated demand and capacity were not included in this plan mainly because any ski area development would be designed and undertaken by the private sector, and extensive analysis of public demands as well as environmental consequences will be conducted for any proposed project before it can be permitted.

Demands and capacity for "developed recreation", that is recreation which takes place in areas which have been developed to accommodate many people picnicking, swimming, or camping, have been included in the general recreation figures.

At the present time, we do not anticipate any campground development. The existing facilities on the GMNF are not used to full capacity. In addition, the state and the private sector can more appropriately meet any increased demand for campgrounds.

Demands for and supply of minerals are not displayed in Table 2.1. First, the extent of mineral deposits is highly speculative. And, as in the case of ski area expansions, any proposals for extraction would come from the private sector and would be thoroughly analysed at that time.

Table 2.1 SUPPLY AND DEMAND

Output/Benefit	Use in 1981	Projected Demand	Maximum Potential	Projection of Current Direction	Plan
Wilderness General Recreation 2/					
MRVD/Year	29.3				
1986-1995		37.0		37.0 4/	37.0 4/
1996-2005		52.3		52.3	52.3
2006-2015		67.8		67.8	67.8
2016-2025		83.1		83.1	83.1
2026-2035		98.4	124.7	98.4	98.4
Backcountry General Recreation 3/					
MRVD/Year	68.1				
1986-1995		83.0		83.0	83.0 4/
1996-2005		113.0		94.9	113.0
2006-2015		143.0		105.9	143.0
2016-2025		173.2		106.7	173.2
2026-2035		203.1	516.5	107.5	203.1
Wildlife Pecreation 3/ Big Game Recreation					
MRVD/Year	20.3				
1986-1995		21.1		21.1 4/	21.1 4/
1996-2005		22.7		22.7	22.7
2006-2015		24.4		24.4	24.4
2016-2025		26.0		26.0	26.0
2026-2035		27.6	91.2	27.6	27.6
Small Game Recreation 3/					
MRVD/Year	7.6				
1986-1995		7.9		7.9 4/	7.9 4/
1996-2005		8.5		8.5	8.5
2006-2015		9.2		9.2	9.2
2016-2025		9.8		9.8	9.8
2026-2035		10.4	44.4	10.4	10.4
Nongame Wildlife Recreation 3/					
MRVD/Year	20.3				
1986-1995		21.5		21.5 4/	21.5 4/
1996-2005		23.9		23.9	23.9
2006-2015		26.3		26.3	26.3
2016-2025		28.7		28.7	28.7
2026-2035		31.1	138.1	31.1	31.1

Table 2.1 SUPPLY AND DEMAND

Output/Benefit	Use in 1981	Projected Demand	Maximum Potential	Projection of Current Direction	Plan
Fishing 3/					
MRVD/Year	5.0				
1986-1995		5.4		5.4 4/	5.4 4/
1996-2005		6.2		6.2	6.2
2006-2015		7.0		7.0	7.0
2016-2025		7.8		7.8	7.8
2026-2035		8.6	16.5	8.6	8.6
Amount of Timber Harvested MMCF					
Hardwood sawtimber	0.8				
1986-1995		0.9		1.4	1.2
1996-2005		1.8		1.3	1.2
2006-2015		2.7		1.3	1.2
2016-2025		3.5		1.3	1.2
2026-2035		3.5	1.8	1.4	1.2
Softwood sawtimber	0.6				
1986-1995		0.6		0.05	0.05
1996-2005		0.6		0.1	0.1
2006-2015		1.0		0.1	0.1
2016-2025		1.4		0.1	0.1
2026-2035		1.8	0.2	0.3	0.2
Total timber harvest (Sawtimber and roundwood)	2.9				
1986-1995		2.9	3.9	3.1	2.7
1996-2005		2.9	3.9	3.1	2.7
2006-2015		4.2	3.9	3.1	2.7
2016-2025		5.5	3.9	3.1	2.7
2026-2035		6.8	3.9	3.1	2.7

1/ From the demand projections of four possible futures, we estimated projections for the "most likely" future.
2/ General recreation includes all recreation activities not directly dependent on wildlife or fishing. It does not include downhill skiing.
3/ Wildlife recreation includes only those activities directly focused on wildlife or fish.
4/ Although the capacity is greater, the supply at least equals demand.

Other Public Expectations

The Green Mountain National Forest intends to satisfy several public expectations in addition to the projected demands for those quantifiable public benefits listed on the previous pages. We intend to fulfill the role the public expects of this National Forest (page 4.03), as well as achieve the goals and objectives which are consistent with that role (pages 4.04 to 4.14).

The amount and intensity of the public's desires for such qualities are essentially immeasurable, but they are more important than the demands we were able to quantify. The desire for this National Forest to fulfill its stated role and achieve its goals provides the fundamental context within which all other projections of public demand must be placed and future decisionmaking must be based upon.

Some actions we have initiated to satisfying certain public expectations deserve to be mentioned in this chapter, as well as under the goals and objectives described in Chapter IV. These expectations were emphatically voiced by many people we talked with while preparing this Plan.

LAND OWNERSHIP ADJUSTMENT

This plan contains immediate priorities for land ownership adjustment, as well as long range direction for evaluating and prioritizing possible future adjustments. The landownership pattern can be adjusted by gaining full or partial interest in private lands by purchasing or exchanging them for National Forest System lands. At this time we cannot list specific tracts or easements that we hope to gain over the next 10 years because our program is dependent on both land and funding becoming available in the future.

Our highest priority in the next few years will be given to tracts which include the Appalachian National Scenic Trail and the Long Trail, tracts which include frontage on the White River and other significant recreational streams, tracts in or near Wilderness and other backcountry areas, and tracts which would help consolidate the forest.

Public lands adjacent to the trails would protect public use of the trails and help meet the goals of the National Scenic Trail program. The White River has been identified as a major spawning stream in the Connecticut River Atlantic Salmon reintroduction program. To achieve the objectives of this program we are considering acquiring rights in property with frontage on the river, rather than acquiring the parcels in fee simple. Tracts which would consolidate public ownership would enable us to manage more efficiently. They would also help us fulfill our role of providing large contiguous areas of public land for backcountry recreation and wildlife habitats.

The process for evaluating and prioritizing future land adjustment possibilities is outlined in the general Standards and Guidelines for lands in Chapter IV, Section E and specifically for each Management Prescription in Chapter IV, Section F.

BERRY PICKING

In Goshen, we have 30 acres of blueberries for public picking. Although these berry bushes are wild, we do manage the area by burning it periodically to improve the blueberries and to keep other trees from taking over the site.

The area is extremely popular. In 1984 signs and a brochure were prepared to show people the way to the area.

Other areas on the Forest are now being identified and managed to grow blueberries, blackberries, raspberries, apples and other wild fruits.

CAMPING SITES AND FACILITIES

The seven existing National Forest campgrounds will be maintained at their present size, with improvements as needed to make them more attractive and ecologically sound. White Rocks picnic area will be modified to facilitate some camping. The Grout Pond Area at the end of the Stratton Town road will have limited improvements to provide sanitation and vehicle control. No other campgrounds will be developed because adequate potential exists in nearby State Parks and privately owned campgrounds.

Grout Pond - Stratton VT
Hapgood Pond - Peru VT
Red Mill Brook - Woodford VT
Chittenden Brook - Chittenden VT
Moosalamoo - Goshen VT
Greendale - Weston VT
Silver Lake - Leicester VT

Several new backcountry sites and trails will be built in the next several years. All of the existing backcountry facilities will receive routine maintenance to protect the resources and provide for user safety.

DOWNHILL SKI AREAS

Five downhill ski areas are partly on GMNF occupying 3170 acres. These areas all have approved master plans which allow specified development within their permit boundaries. It is likely that requests will be made in the future to either expand one of these areas on the Forest, expand an area adjacent on private land, or develop an entire new area on GMNF.

Such proposals can have considerable impact on surrounding communities and National Forest areas. The following decisions relate to these potential proposals:

No new ski areas will be permitted.

Expansion of existing ski areas will be considered on a case by case basis with additional study and public involvement. At this time lands adjacent to existing ski areas that have good downhill ski potential will be managed so that future expansion will not be precluded. These areas are Haystack, Carinthia, Mt. Snow, Bromley, Sugarbush and Middlebury Snow Bowl.

WINDMILLS, ELECTRONIC SITES, ETC.

Several years ago a proposal to consider wind-powered electric generators on Lincoln Ridge caused considerable interest and opposition. Because proposals like this could occur most anywhere in the National Forest, we developed a process for evaluating proposals for these types of highly visible facilities.

To make a decision we must consider the compatibility of the proposed project with our management objectives for the surrounding land. We must also consider how visible the structure would be and from where it would be seen. Certain parts of the forest are eliminated from future consideration. The rest of the forest is categorized as high, moderate or low impact. The process and a summary map are in Appendix G.

FINDING THE FOREST

People traveling in the area of the GMNF can easily go by without realizing that public land is there for them to enjoy. This is because much of the Forest is located off the main highways and often behind private land which is posted. A Forest initiative began in 1984 to increase the signs and other information that will allow people to more easily find the various part of the Forest. Together with this, we are increasing the acquisition of rights- of-way so that people can comfortably and freely pass through the areas of private land to get to the Forest.

EXPLAINING AND DEMONSTRATING GOOD FOREST MANAGEMENT

We believe that we have not adequately informed the public about our management activities and are taking steps to improve the situation.

A University of Vermont graduate student recently researched and recommended appropriate media to inform visitors about GMNF attractions and about our management activities.

In a related effort, we are attempting to explain how and what trees are cut on the GMNF. This involves mostly timber and wildlife management and their relationship to recreation, watershed and visual management. The Forest Service has contracted with the University of Vermont's Environmental Program to develop a program of brochures, tours of projects, signing of activities to tell people what they are looking at, why it's being done, and the results to be expected.

VERMONT STATE FOREST RESOURCE PLAN

GMNF personnel have worked closely with the State Agency of Environmental Conservation to develop a plan for the forest resources of Vermont. The GMNF is about 5% of the State land area and about 50% of the public lands in the state, so it is an important part of the State's resource. The State Resource Plan recommends a role for the GMNF and we believe that this Forest Plan is consistent with their recommendations. We participated actively in the Governor's Conference on Vermont forests on September 12 and 13, 1985 and will follow the recommendations for Federal lands made by the conference participants.

ACID RAIN

The effects of air pollution on the vegetation and water of the Green Mountain National Forest concern us greatly. We believe that air pollution, commonly referred to as acid rain, is adversely affecting these resources, and yet we are not able to quantify or be very specific about the damage nor do we know what we can do about it. We fully support continuing and accelerating research on the effects of air pollution and urge continuation of steps to reduce the amount of pollutants reaching this Forest.

The Green Mountain National Forest is coordinating with the State of Vermont's Acid Precipitation Program. This program collects chemical and biological data on lakes and ponds located in low alkalinity (acid sensitive) regions of the State.

Twelve lakes and ponds on the Green Mountain National Forest are included in the study. Big and Little Mud Ponds, Branch Pond, Beebe Pond, Grout Pond and Haystack Pond are considered critically acidified. Griffith Lake, Bowen Pond, and Stamford Pond are extremely sensitive. Wallingford and Little Rock Ponds are moderately sensitive.

Data collected from this study and from our Forestwide monitoring of the growth and vitality will improve our knowledge on the effects of acid precipitation and help us determine the appropriate actions to be taken.

CHAPTER III

RESPONSE TO PROBLEMS

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III. Response to Problems

A. Introduction

Early in the planning process, citizens helped us identify important issues that they would like to see resolved by the Forest Plan. At the same time employees of the Forest Service described resource management concerns. These issues and concerns represent what people want and don't want the Forest to be.

However, the Forest cannot simultaneously provide all the benefits to the extent that all people desire. When management to produce benefits for some people would decrease the benefits enjoyed by others, we identified what we called a management problem. This chapter is an overview of the ways that the plan responds to these problems. More detailed information is included in Chapter IV and in the EIS.

B. Management Problems

Problem One (Amount of Wood Cut)

Problem One is determining the best amount of timber to harvest from the Green Mountain National Forest. Helping to meet the growing demands for wood could result in more roads constructed, fewer back country recreation opportunities, fewer undisturbed habitats, and a less natural appearing landscape. These are significant effects in New England where remote lands are already scarce.

Positive or negative effects of different harvest levels on wildlife habitats, soil and water depend on the location, timing and intensity of cutting, as well as the overall amount. Increased timber cutting and road construction could boost the local economy, but they could also add to the National debt if the costs exceed revenues.

RESOLUTION

The plan does not call for any increase in the amount of timber offered for sale in the next 50 years. Because no timber management will occur in 203,400 acres which are unsuitable for timber harvesting, including lands which are dedicated to Wilderness, The National Recreational Area, or primitive recreation, this volume will come from 122,000 acres (Table A.01 and A.02). This does not meet the estimated demand in 2035, nor the "target" assigned in the Regional Guide. This plan recognizes, however, that increased timber volumes can be removed from private land, while large, remote areas can only be provided by the Green Mountain National Forest.

Most of the people who expressed concern over the amount of wood that would be cut from the GMNF were more interested in the effects that timber harvesting would have on the recreation or backcountry potential of the forest than they were about timber production itself. This plan recognizes that large areas of backcountry recreation and wilderness can only be provided by the GMNF, and that it is important for us to do so. There will be 19% of the Forest in Wilderness, an additional 4% dedicated to provide primitive recreation opportunities, 32% managed for semi-primitive recreation opportunities, and 10% in other special areas, including the White Rocks NRA.

Of the 40 miles of roads planned for construction or reconstruction in the next 50 years, only 14 miles are primarily intended to provide access for timber harvesting. Many of these are short spurs less than 0.2 miles in length. The Standards and Guidelines, presented in Chapter IV, will be applied to harvesting practices to coordinate timber management practices with other objectives, and to mitigate adverse effects.

Problem Two (Type of Timber Management)

Problem Two is determining the appropriate type of timber management on the GMNF. First, we must decide whether evenaged or unevenaged management would be more suitable. If evenaged management is chosen, we must decide on the frequency of cutting and whether to harvest by shelterwood cutting or by clearcutting.

The reasons this is a difficult problem to resolve relate to the public perception of evenaged harvesting; foresters' concerns about proper management to maximize merchantable growth and to regenerate the existing low quality stands, and to provide habitat valuable to certain species; and the economics of various management and harvesting methods. The resolution of this problem will affect the annual growth and cut of timber, the type of timber products yielded, the costs of management and the visual condition of the Forest.

RESOLUTION

The plan calls for unevenaged management to be practiced primarily on 19,400 acres, or 16% of the land suited for timber management (Table A.02). Since at present less than 1% of the Forest is unevenaged, this calls for a significant amount of conversion from evenaged to unevenaged stands.

Evenaged management will be primarily practiced on about 102,600 acres. Of this area, at least one half will be managed on long rotations with the harvest age averaging about 150 years (Table A.02). These stands will be thinned 0 to 3 times in 150 years. Most of the remaining land managed for timber production will be managed on 100 year rotations with more frequent thinnings.

Clearcutting will be used considerably less than it has in the past 20 years. The plan calls for clearcutting a total of 440 acres per year. This compares with 960 acres clearcut in 1985 and even more in past years.

There are only four situations on productive sites designated for timber management in which the foresters feel clearcutting is necessary: 1) to regenerate aspen or paper birch which cannot tolerate shade, 2) to salvage and remove high risk or diseased trees, 3) to prepare an area which is sparsely stocked for a new stand which more fully occupies the site and 4) to maintain or increase stable deer wintering areas by clearcutting small patches of softwoods. In addition, clearcutting will be used to enhance vegetative diversity and wildlife habitats by converting hardwood stands to softwoods, aspen or permanent upland openings.

The plan assigns the type of timber management to be done in a certain areas based on the stand conditions, the productivity of the site, and, most importantly, the other uses of the area. No timber management will occur in backcountry areas where we would like to offer opportunities for primitive recreation. Long rotations and less frequent timber management activities would be encountered in areas that are slightly less remote.

The more intensive management would occur in areas that are well roaded, where the evidence and effects of management would be more compatible with wildlife and with the recreation experience.

For any type of cut, Standards and Guidelines (Chapter IV) will be applied to coordinate activities and to mitigate adverse effects.

Problem Three (Wildlife Habitats)

The third problem is providing the best quality and combination of habitats for wildlife on the Forest. The difficulty comes in integrating the desired conditions and methods for achieving them with other objectives.

Some species prefer remote habitats where there is little, if any, human disturbance. Other species need openings or young forests which are generally provided through timber harvests.

In addition, the diversity of vegetative types and ages is important to the wildlife community and the ecosystem as a whole. At present, much of our Forest is one type and age. It will take management to maintain or increase the acreage of minor vegetative types such as oak or pioneer species. Timber cutting is also required to provide patches of vegetation of different ages.

RESOLUTION

Although diversity is difficult to measure, in the plan we have attempted to increase diversity by increasing the amount and distribution of old growth, by protecting special habitats and areas, by maintaining stands of minor vegetative types, by converting some stands of northern hardwoods to softwoods, aspen and openings by converting some evenaged stands to unevenaged stands, and by managing some stands to reach an older (150) age.

In addition, the plan calls for 208,300 acres of remote habitat, at least 100,000 acres of which will be old growth in 2030. The acreage of deer wintering habitat will be increased from the present 14,500 (6 per deer) to 20,300 (8 per deer). Other specific wildlife habitat improvements, such as construction of nesting boxes for wood ducks and mergansers or burning of marshes for songbirds, will be undertaken.

Timber harvests will be planned and prioritized to provide a mosaic of areas of different aged vegetation, and to achieve the objectives of conversion to different vegetative types as quickly as possible.

Problem Four (Special Areas)

Problem Four is determining how to best manage and protect the White Rocks National Recreation (NRA) and other special areas of the National Forest. Because of their uncommon and outstanding characteristics, these areas tend to draw much public attention and use to them. However, the type, timing and intensity of some management activities and public uses could damage the characteristics which make these areas special. In order to protect their special characteristics we must first identify the areas, and then write and apply management direction which will protect them.

RESOLUTION

All known special areas with uncommon or outstanding characteristics have been protected in the Plan. Thirteen categories of special areas were identified covering about 31,500 acres Forestwide. The management direction written to protect each area can be found in Chapter IV. Their location is displayed on the Forest Plan Maps.

In addition, we recommend that five areas, Mount Horrid, The Cape, Blue Ridge Cranberry Bog, Abbey Pond/Beaver Meadows and high elevation ponds, receive further study to see if they should be designated Research Natural Areas. Management of special areas will protect these qualities until the study is completed and a decision can be made.

Problem Five (Important Minerals)

Meeting the growing needs for minerals while continuing to provide for other resources and their uses is a problem addressed in planning. The combination of increased utilization of surface resources, extraction of non-renewable minerals, intermingled land ownership patterns within the Forest, and the prospects of discovery of valuable minerals make decisions affecting the availability of minerals very complex.

National Forests throughout the United States are generally open to exploration and extraction, except for areas such as Wilderness in which extraction is specifically prohibited by public law. However, mineral activities must be compatible with the other purposes for which the lands are being managed. Since the private sector, and not the Federal government, would actually explore, develop and extract the minerals, the compatibility is ensured through various types of lease stipulations.

RESOLUTION

To ensure compatibility with the use and management of surface resources, four categories of restrictions were established. In the first category, the minerals will not be touched. As required by legislation, the 87,400 acres of land in the Wildernesses and in the National Recreation Area will be in this category.

The second category includes the 27,300 acres of land which have been newly acquired. Decisions on minerals beneath the areas must be deferred until further study is done and a decision for how best to manage these lands is made.

In the third category, no exploration or extraction would be allowed which would disturb the surface. However, the oil, gas or other minerals could be removed through off site directional drilling. There are 81,800 acres in this category, including areas managed for primitive recreation, ecologically sensitive areas, and the softwood component of deer wintering areas.

In the fourth category, limited occupancy for exploration and extraction of minerals would be allowed. Stipulations will be established to ensure resource protection, and additional NEPA review of any proposed project would be required before any earth disturbance could begin. There are 128,900 acres in this category.

Problem Six (Pastures and Shrub Openings)

Problem Six is determining how best to manage existing grazing lands and shrub openings. These open lands primarily occur on the Hector Ranger District of the Finger Lakes National Forest in New York State and are significant to the role the Forest plays there. More information on this problem is provided in the Plan for the Finger Lakes National Forest.

C. Research Needs

Introduction

In order to manage the Green Mountain National Forest as efficiently as possible and to be ready to respond to future conditions and demands, we would benefit from research on many questions. The most important questions, concerning ecological, economic, and technological aspects of management, are listed below. This is just a wish list, and we anticipate adding more questions to the list as we proceed with implementation of the plan and monitoring.

Unevenaged Management

A great deal of research and years of experience in evenaged management give foresters confidence in that type of management. However, we know very little about unevenaged management: how much will it cost to convert to unevenaged management, how can we convert most economically, what is the best way to mark the trees to be cut to balance the age class distribution of the residual stand and the economic viability of the cut, what quality and volume of timber could we expect to harvest?

The plan calls for converting about 25,000 acres of evenaged northern hardwood to unevenaged stands. The process should be carefully directed, and documented, and its results monitored, so that we can better assess the methodology and effects of unevenaged management in the future.

Acid Rain

Many people are concerned about the effects of acid rain on the forest. Two research questions of particular importance to us are the effects of acid deposition in our streams and ponds, and on vegetation. The most significant damage seems to be found in high elevations, where much of the GMNF is located.

The growth calculations which we have used to estimate the timber harvest which could be sustained in perpetuity may have to be adjusted if it is found, as suspected, that the growth rates have declined.

Regenerating Oak

Oak is a minor component of our forest, and we would like to maintain or increase its presence. It is valuable for wildlife as well as for wood.

In most mature oak stands, there are very few young oak trees in the understory. Ongoing research indicates fire plays an important role in establishing oak regeneration. The use of prescribed fire on the Forest also indicates oak can be established after burning. Results at this time, however, are inconclusive and further research is needed in developing techniques for successful regeneration of oak.

Succession in Old Growth Communities

We have very little area of old growth in Vermont. The forest plan calls for reserving large, remote areas from timber harvesting and roading.

While we recognize the value of these areas for recreation and as an important component in regional diversity of vegetation and wildlife habitat, we do not have accurate estimates of what plant and wildlife communities will be established. The areas will give us an opportunity to study wildlife species sensitive to disturbance from human activities, and the communities which result from natural changes.

Stand Growth Models

The plan calls for an annual timber harvest of 16.0 million board feet. This is calculated as a harvest volume which could be sustained in perpetuity on the acres of land which have been designated for timber management. The calculations are based on the present stand age and condition, the productivity of the site, and the type of management prescribed in the plan.

In order to be sure that we can sustain this harvest with the management we are undertaking, it is important to be sure we are accurately predicting how stands will grow and how they will respond to thinning and harvest cuts. These models should be developed for both evenaged and unevenaged management.

Economical Roading and Skidding for Timber

As we progressed through the planning process, we questioned some of our previously held assumptions about the standards necessary for roads, and the cost efficiency of road building and of timber skidding over certain distances. The plan calls for 75% of the construction mileage, and a significantly lower construction cost than we would have estimated five years ago.

However, questions still remain about the economics of road building, and how we should incorporate economic analysis into the planning of local projects. We would like to be able to determine at what distance skidding is no longer economical, and how to best compare and evaluate the economic efficiency of roading choices.

Genetics

Until about 1968 the forest was harvested under a "selective" cutting system. Essentially this meant cutting large trees and leaving small ones to grow. This tended to remove specimens that displayed desirable characteristics in terms of size, form, and stem quality from the population, leaving the less desirable to reproduce. Many foresters and geneticists believe this practice was detrimental to the genetic quality of many tree species.

This belief is the basis for our tree improvement program. Geneticists tell us that research methods exist that could prove scientifically if the present day forest is genetically inferior to its predecessors. This research could also tell the true potential gain in terms of tree growth, size and quality that could be realized through tree improvement.

The most significant benefit of this knowledge would be to help determine what importance and priority we should assign to the tree improvement program. If we find that trees of better quality can be produced, we can direct our management to include appropriate tree improvement activities. The resulting forest is likely to be able to produce more wood more quickly, and also to be more vigorous and resistant to insects, disease, and competition.

Alternative Futures for the Region

All across the region, at both the state and national levels, plans similar to this one are being written and implemented. Each plan responds to certain assumptions about the future; each plan charts a course to reach a desired future. It seems as though we are all planning for different futures, and our courses may block those of others.

It would be valuable to review plans in a region, which would be defined by its distinct biological, social and economic characteristics. The purpose of the review would be to determine where the directions are compatible, where they conflict, what different futures they anticipate, and what the effects might be if various different future conditions were to occur. This would help us all look at our efforts and resource supply and demand in a bioregional context before our plans are revised.

Remote Habitat

The White Rocks NRA represents a large remote habitat in the Green Mountains. This habitat is important to bobcat, black bear and fisher. These species require varying degrees of remoteness for food, denning, and rearing of young.

The Green Mountain ecosystem is being impacted by primary and second home development and by recreational development. The quality of remoteness is being downgraded rapidly. We do not know precisely when disturbance exceeds the tolerance of deep woods species. The NRA provides a stable environment where research results are needed to forecast habitat trends for deep woods species on the National Forest and throughout the mountains of Vermont.

CHAPTER IV

FOREST MANAGEMENT DIRECTION

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IV. Forest Management Direction

Introduction

This chapter contains the heart of the plan. It outlines the role of this National Forest in New England, the goals we have set for ourselves, and the objectives which translate these goals into time-specific and measurable results. To achieve these goals and objectives, we have developed management prescriptions, which are lists of activities, or management practices, to be applied on the ground. This chapter also lists the management practices to be undertaken, and the associated standards and guidelines which are the rules we will follow to assure that management is consistently and appropriately carried out.

As soon as we had identified the six major problems, we recognized that they were so interrelated that we could not set goals or objectives to resolve one without affecting the resolution of the others. We also realized that, although we made extensive use of computers in our planning process, no computer program would tell us which way of responding to these problems resulted in the overall best management of the Forest as a whole. It became obvious that we needed to summarize our philosophy of the National Forest's role in order to evaluate the alternative possibilities and formulate this plan.

GREEN MOUNTAIN NATIONAL FOREST
A LEGACY FOR THE FUTURE

B. Role of the Green Mountain National Forest

The Green Mountain National Forest is only 5% of the land in Vermont. In contrast to some of the regions in the western U.S. where two-thirds of the land is in public ownership, public land makes up only 4% of the land base in New England. While this area of public land is extremely small, it must serve all the people in a region where the population density is more than twice the national average.

We believe that public land in New England is scarce and precious; our management philosophy reflects that belief. The Green Mountain National Forest should be managed to provide benefits that private land does not, and to maintain options and opportunities for future, as well as present, generations.

With its large blocks of land in remote areas, the GMNF is particularly well suited to provide opportunities for backcountry recreation and Wilderness. This will become even more important as the population increases and land in New England becomes further subdivided and developed. In conjunction with our role in outdoor recreation, we must preserve the scenery in areas which are visible to visitors, and seek to provide a wide variety of wildlife and fish.

As stewards of public land for present and future generations, we must be particularly careful to maintain the productivity of the soil, to keep streams free of sediments and pollutants, and to maintain vegetative diversity and viable populations of wildlife species.

On more productive and accessible lands, timber management will be directed to producing high quality sawtimber. Well managed older trees have a high proportion of large sawtimber, and, because of the guaranteed long tenure of ownership, public land is more likely than private land to let trees grow longer.

The Green Mountain National Forest should be used for research, and for demonstration of various types and techniques of management.

C. Goals

The goals were established by examining the issues identified by the public, the capabilities of the forest, and the role that the Green Mountain National Forest can, or should, play in meeting demands or resolving the problems outlined in Chapter III. The goals are all interrelated, but have been grouped in the following categories to improve their readability.

GOALS FOR RESOURCE PROTECTION

- Nurture and protect the complex, interrelated, natural systems which are part of the GMNF and affected by its management. Recognize the many interrelationships and interactions between resources and uses when making decisions which could be detrimental to the ecosystem as a whole.

- Maintain flexibility in the ability of the GMNF to respond to an uncertain future. Flexibility will allow decision makers to make shifts in policy and land use as time passes and situations change. Maintaining flexibility will be an advantage to future generations who have the most to gain or lose from decisions made today.

- Meet all applicable federal, state and local laws and regulations which pertain to the management of the GMNF. These include but are not limited to the National Forest Management Act, National Environmental Policy Act, Clean Air Act, Clean Water Act, Safe Drinking Water Act, and the Multiple Use and Sustained Yield Act.

- Manage watersheds in order to protect municipal water supplies, provide adequate flood control, ensure high water quality, sufficient quantity, and benefit important fish and wildlife habitats.

- Supply the finest quality water that can naturally occur within the nine municipal watersheds on the Green Mountain Forest while managing these 17,530 acres for multiple uses. Do not allow water quality to be unacceptably compromised by any management activities or public uses.

- Stabilize and enrich the soils on the GMNF by fixing sources of erosion, preventing future problems from occurring and protecting the nutrients which cycle through the Forest ecosystem.

- Respect the quality of air passing over the GMNF and encourage others to do the same. Protect the forest ecosystem which purifies the air that we see and breathe.

- Learn more about the effects of air pollution on the forest ecosystem and adjust our management to buffer any ill effects.

- Preserve and enhance the diversity of plant and animal communities on the GMNF so that it is at least as great as that which would be expected in a natural forest.

- Maintain adequate quality, amount and distribution of habitats to support viable populations of all existing native and desired non-native vertebrate species on the National Forest.

- Protect all threatened, endangered and sensitive species, as well as other species of concern on the National Forest.

- Preserve all important physical remains of prehistoric and historic human activity since they are non-renewable, and belong to the public. Interpret and explain some cultural resource sites to improve the public's understanding and appreciation of the past.

- Protect all uncommon or outstanding biological, geological or recreational areas which are special to the GMNF. Ensure that the qualities which make these areas special are preserved for the education and enjoyment of present and future generations.

- Coordinate this plan and future activities with the plans goals and activities of the State of Vermont, regional planning commissions, town governments, conservation groups and neighboring landowners.

GOALS FOR PUBLIC USE AND ENJOYMENT OF THE GMNF

- Provide the greatest good, for the greatest number over the long run.

- Manage the GMNF to provide what private land does not so that the public select from the widest variety of choices. Anticipate the changes which are likely to occur on private lands over time and recognize the interrelated roles of private and public lands.

- Provide present and future generations with a wide range of choices on National Forest lands in order to satisfy an equally wide range of needs and wants. People should be able to choose from among a multitude of recreation opportunities, game and non-game wildlife uses, timber products, and other benefits which are available. Providing a wide range of choices will help to maintain flexibility in future decision making.

- Provide a full range of high quality recreational opportunities which are in harmony with the other resources and uses which we manage.

Recreational Opportunity	Acres	% of GMNF
Wilderness	58,400	19
Primitive	15,400	5
Semi-Primitive	134,750	35
Roaded Natural	86,600	35
Highly Developed	3,200	1
Undecided (New Acquisitions)	27,300	4
Total	325,400	100%

- Emphasize backcountry settings where Wilderness, Primitive, and Semi-primitive recreation experiences can occur since they are not likely to be provided on private lands in the future.

- Provide ample opportunities for recreationists who desire roaded access to the National Forest while recognizing that such opportunities can also be provided on private lands if the landowners allow . A roaded, but natural appearing environment will satisfy people looking for places to hunt, fish, pick berries, picnic and drive, ride, hike or ski through the woods.

- Continue to provide opportunities for downhill skiing in partnership with the managers of Sugarbush, Bromley Mountain, Mount Snow and Haystack Ski Areas. Ensure that the expansion of approved lifts, trails and related facilities occurs in an environmentally and socially sound manner. Work with the ski areas, state and local governments and interested citizens to decide whether future proposals for expanding these existing ski areas should be approved.

- No new ski areas will be built on NFS lands.

- Provide for parking and legal, identifiable public access to all areas of the GMNF so that people will be able to safely and easily enjoy the lands and resources which we are entrusted to manage for them.

- Increase the use of signs and other information that will help people to find various parts of the National Forest.

- Offer special protection and management of significant recreational streams, so that the values which are enjoyed by recreationists will not be diminished by other forest activities (Appendix J).

- Protect the outstanding natural beauty for which Vermont and the GMNF are known by designing and conducting management activities which will fit naturally on the landscape and will reflect the expectations of the people who see them.

- Better inform the public about the benefits to be enjoyed on the National Forest and help them to better understand the reasons for our management activities.

- Maintain the nine existing National Forest campgrounds at their present size but improve their attractiveness and ecological soundness where needed.

- Allow the state parks and privately owned campgrounds to satisfy increased future demands for car based camping and manage the National Forest to provide less developed forms of recreation opportunities.

- Maintain existing areas which provide blueberries for picking and valuable habitats for wildlife. Identify other areas of the National Forest which will be managed to grow blueberries, blackberries, raspberries, apples, and other wild fruits for people and wildlife to enjoy.

- Construct or reconstruct single lane, local roads where the overall benefits to society outweigh the costs, using the following priority: 1) eliminate resource damage which is occurring due to location or standard of existing roads, 2) provide legal public access for use and enjoyment of parts of the National Forest that are presently separated from roads by private land, 3) meet demands for roaded recreation activities and 4) gain access for timber management on the land designated for timber management.

GOALS FOR VEGETATION MANAGEMENT

- Provide a well distributed variety of vegetative conditions and types on the GMNF in order to enhance diversity, meet the habitat needs of wildlife and to provide wood products and recreational opportunities for people.

- Increase the amount of softwoods in areas which will provide needed winter habitat for deer. Maintain all existing winter habitats on the Forest.

- Increase the amount of small, aspen stands on the Forest, in order to enhance overall vegetative diversity, provide habitats for grouse and other wildlife and improved opportunities for game and non-game recreation.

- Increase permanent upland openings for a variety of songbirds, other wildlife and recreationists.

- Maintain and protect all wetland areas.

- Increase or maintain the existing amounts of oak and other less common vegetative types on the Forest wherever possible.

- Dedicate 22% of the forest in large, remote areas, to Primitive or Wilderness recreation and do not commercially harvest timber in these areas. Manage an additional 10% of the Forest as special areas, including the White Rocks National Recreation Area, where timber will be managed only where needed to provide or maintain specific wildlife habitat. Do not harvest trees where lands are physically, biologically or economically unsuitable for timber management.

- In areas designated for timber management, this management should be compatible with other uses of the forest. Intensive evenaged management (100 year rotations, 20 year thinning cycles) or unevenaged management should occur only in areas which are fairly well roaded and where that evidence of human activity wouldn't conflict with the recreation experience. In areas which are slightly more remote and are managed to provide opportunities for Semi-primitive recreation, the only timber management which would be allowed is less intense (150 year rotations, 0 - 3 thinnings).

- In areas designated for timber management, emphasize production of high quality sawlogs.

- Provide continuous forest cover on 66 per cent of the Forest. Of this land, at least 7% will be in unevenaged timber management and the remaining 59% will not be managed for timber.

- Minimize the use of clearcutting when managing timber by only applying it to:
  - increase and maintain some areas of aspen, paper birch, and openings.
  - create very small patches of browse for deer, snowshoe hare, and other species.
  - salvage and remove damaged or diseased stands.
  - prepare an area which is sparsely stocked for a new stand which more fully occupies the site.

GOALS FOR LANDOWNERSHIP ADJUSTMENT

- Aggressively acquire rights-of-way which provide public access to the National Forest.

- Adjust landownership within the National Forest boundary in accord with plans of other owners, the towns and State. Highest priority will be given to tracts which: are near the Appalachian and Long Trails; are within or adjoining Wildernesses and Management Area 6.1, where Primitive recreation is emphasized; have uncommon or outstanding qualities which make them special; adjoin significant streams; have important wildlife habitats; or consolidate public ownership.

D. Objectives

Objectives are the time specific and measurable results we expect to achieve once we begin to implement the forest plan. The anticipated average annual amount for the first decade is shown below.

Resource Protection Objectives:

Many of the measurable objectives for resource protection goals of this National Forest cannot be quantified in a meaningful way. Nevertheless, these objectives are among the most important ones we have and they deserve to be set out now and kept track of over the next decade. A major reason objectives for resource protection goals cannot be quantified is that achieving the goals results in the absence of measurable negative effects. For instance, we cannot measure the number of Forest fires prevented or streams not muddied.

Table 4.1 Objectives for Resource Protection (1987 - 1996)

Result	Expected Amount
Clean Water	No Confirmed Problems
Clean Air	No Confirmed Problems
Prevent Fires	No Unplanned Fires
Extinguish Fires	Unknown
Protect Special Areas	31,000 Acres/Year
Follow Standards & Guidelines	No unapproved exceptions to S/G Unknown # of approved exceptions
Cultural Resource Protection	
Inventory	2,370 Acres/Year
Evaluation	Unknown
Protection	Unknown
T, E & S Species	
Inventory for rare plants	Entire Forest within 10 years
Falcon Reintroduction	Until Northeast Region goal is met
Mark Boundaries	60 Miles/year
Law Enforcement	Maintain Agreements w/Towns

Table 4.2 Objectives for Public Use and Enjoyment (1987 - 1996)

Result	Unit of Measure	Amount
Wilderness		
Management	Acres	58,400/Year
Site Construction/Rehab.	Sites	6 Total
Trail Construction/Rehab.	Miles	4 Total
Primitive Recreation		
Management	Acres	15,400/Year
Site Construction/Rehab.	Sites	3 Total
Trail Construction/Rehab.	Miles	2 Total
Semi-Primitive Recreation		
Management	Acres	134,500/Year
Site Construction/Rehab.	Sites	50 Total
Trail Construction/Rehab.	Miles	30 Total
Roaded Natural Recreation		
Management	Acres	86,600/Year
Site Construction/Rehab.	Sites	50 Total
Trail Construction/Rehab.	Miles	10 Total
Roadside Camping and Day Use		
Maintenance	Areas	20 Total
Improvements	Variable	10 Total
Downhill Skiing		
Special Use Permit	Acres	3,200/Year
Trail Maintenance	Miles	480/Year
New Parking Areas		
Winter Only	Spaces	6/Year
All Seasons	Spaces	15/Year
Access	Rights-of-Way	40 Total
Identification	Signs	10 Total
Interpretation	Sites	20 Total
Demonstration	Sites	20 Total
Local Roads		
Maintain	Miles	285/Year
Restore	Miles	16 Total
Reconstruct	Miles	6 Total
Construct	Miles	5 Total
Arterial and Collector Roads		
Maintain	Miles	25/Year

Table 3. Objectives for Vegetation Management (1987 - 1996)

Result	Unit of Measure	Average Annual Amount
Hardwood Management		
Selection Cuts	Acres	470
Shelterwood Regeneration	Acres	950
Shelterwood Removal	Acres	320
Clearcut	Acres	100
Thin	Acres	885
Stand Improvement	Acres	265
Softwood Management		
Selection Cut	Acres	260
Clearcut	Acres	35
Thin	Acres	100
Stand Improvement	Acres	70
Conversion to Softwood		
Release	Acres	170
Plant	Acres	50
Clearcut Hardwoods	Acres	90
Aspen Management		
Clearcut	Acres	110
Conversion to Aspen		
Clearcut Hardwoods	Acres	60
Release	Acres	110
Upland Opening Management		
Mow	Acres	200
Burn	Acres	500
Conversion to Upland Openings		
Clearcut Hardwoods	Acres	40
Reseed	Acres	40
Habitat Improvements		
Burn Marshes	Acres	25
Other Improvements	Acres	45
Total Vegetative Treatments		
Selection Cut	Acres	730
Shelterwood Regeneration Cut	Acres	950
Shelterwood Removal Cut	Acres	320
Clearcut	Acres	435
Thin	Acres	985
Stand Improvement	Acres	335
Release	Acres	280
Plant	Acres	85
Mow	Acres	200
Burn	Acres	525
Other Habitat Improvements	Acres	45

Table 4.3 Objectives for Vegetation Management (1987 - 1996) (cont'd)

Result	Unit of Measure	Average Annual Amount
Total Wood Cut		
Hardwood Sawtimber	MMBF	7.1
Hardwood Roundwood	MMBF	8.1
Hardwood Subtotal	MMBF	15.0
Softwood Sawtimber	MMBF	0.3
Softwood Roundwood	MMBF	0.1
Softwood Subtotal	MMBF	0.4
Combined Sawtimber	MMBF	7.2
Combined Roundwood	MMBF	8.2
Combined Total	MMBF	15.4

Table 4.4 Other Objectives (1987 - 1996)

Result	Unit of Measure	Average Annual Amount
Landownership Adjustment	Acres	Unknown
Provide for Mineral Exploration		
Special Restrictions 1/	Acres	184,600
Standard Restrictions	Acres	123,100
Wildlife Structure Maintenance	Structures	50

1/ No surface disturbances are allowed.

More specific information and direction on attaining our stated goals and objectives is contained throughout this Plan. Section E of this chapter describes the standards and guidelines which should generally be followed when managing all of the resources on the Forest. Section F describes the more specific directions to be followed in locations which have particular goals and objectives. Following the directions in both sections will help us fulfill our role and achieve the overall goals and objectives we have set out.

Chapter V Describes the process we will follow when implementing, monitoring and amending the Plan in order to achieve our goals and objectives.

Chapter VI contains several appendices which provide detailed background information on several resources, as well as a schedule of planned management activities and a glossary of terms which were used.

E. General Standards and Guidelines

To achieve the goals listed in Section C, we could not treat all acres of the Green Mountain National Forest in the same way. We developed 15 different management strategies, called management prescriptions, each achieving a different subset of the goals (Table 4.2, page 4.78). We hope that the way that we have decided how much and which land should be allocated to these 15 management prescriptions is the overall best management of the forest.

Because the management prescriptions are means to achieve different goals, they also vary in the desired land conditions that they aim to create, in the management practices which would bring about that desired land condition, and in the uses and benefits which would result.

"Standards and Guidelines" are the rules which govern how and where management activities can take place. These rules are presented here in two sections. Section E lists standards and guidelines which would apply to practices called for in more than one of the management prescriptions. Section F explains each management prescription and lists the practices that would be appropriate in each prescription, and additional standards and guidelines to be applied. Section F does not repeat the general standards and guidelines; it further refines them by providing additional considerations, restrictions, activities and rules that are to be applied, to meet the specific objectives of each of the 15 Management Prescriptions.

It is important to refer to both the general guidelines (Section E) and the guidelines specific to a management prescription (Section F) before determining whether or not an activity would be undertaken in a certain area, and, if so, which standards would be applied.

Subject	Pages
Standard and Guideline Index for Common Practices	4.16
Administration	4.18
Soil and Water	4.19
Air	4.27
Wildlife and Fish	4.28
Recreation/Visual	4.39
Timber	4.59
Openings	4.74
Roads	4.76
Land Acquisition	4.79
Corridors	4.80
Minerals	4.81
Cultural Resources	4.84
Public Health	4.86
Fire	4.86
Integrated Pest Management	4.88
Law Enforcement	4.90

STANDARDS AND GUIDELINES INDEX
FOR SELECTED PRACTICES

MINERAL EXPLORATION DEVELOPMENT OR EXTRACTION

Archaeology, 4.84
Integrated Pest Management 4.88
Cut and Fill Slopes 4.24
Corridors, 4.80
Erosion Control, 4.19 - 4.26
Leasable Minerals, 4.81
Oil and Hazardous Substances, 4.90
Recreation and Visual Quality, 4.50
Riparian Areas, 4.19
Roads, 4.22 - 4.24

ROAD CONSTRUCTION

Archaeology, 4.84
Bridges and Culverts, 4.20
Buffer Strips, Filter Strips, Riparian Areas, 4.19
Corridors, 4.80
Cut and Fill Slopes, 4.24
Deer Wintering Areas, 4.107 - 4.116
Design, 4.77
Ecological Land Types, 4.22 - 4.24
Erosion Control, 4.19 - 4.26
Sand and Gravel, 4.83
Slash and Stumps, 4.52
Seeding and Fertilizing, 4.23 - 4.24
Transportation Analysis, 4.76
Visual Quality Objectives, 4.47
Waterbars, 4.17

SKI LIFTS AND TRAIL CONSTRUCTION

Archaeology, 4.84
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Cut and Fill Slopes 4.24
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TIMBER SALE PREPARATION

Archaeology, 4.84
Buffer Strips, Filter Strips, Riparian Areas, 4.19
Composition Objectives, 4.28 - 4.29
Deer Wintering Areas, 4.107 - 4.116
Den Trees, Reserve Trees, 4.33
Erosion Control, 4.19 - 4.26
Ground Disturbing Activities, 4.22 - 4.24
Landings, 4.23
Logging Roads (See Road Construction Above)
Reforestation, 4.70 - 4.71
Rotation Ages, 4.63
Scarification, 4.25
Silviculture, 4.61 - 4.69
Slash and Stumps, 4.52
Snags, 4.33
Timber Stand Improvement, 4.66 - 4.67
Visual Quality Objectives, 4.47

ADMINISTRATION

A. INFORMATION SERVICES

1. Work to achieve informed public consent during development of land and resource management plans and programs prior to their implementation.

2. Implement a public information and education program in coordination with other public and private organizations to reduce the number, intensity, and cost of conflict producing and resource damaging situations.

B. HUMAN AND COMMUNITY DEVELOPMENT

1. Identify forest related opportunities that will help individuals and local communities enhance their self-sufficiency and their feeling of social well-being.

2. Identify opportunities in which individuals and volunteer organizations can assist in management of the National Forest.

A. RIPARIAN AREAS

1. A riparian area is the zone between seasonally dry land and surface waters, as well as the waterbody. The soils are wet are usually are saturated for a portion of the year. Vegetation is dominated by wet site species.

2. Resources that depend on a riparian area will be given preferential consideration over other resources when there are conflicts between them. (FSM 2526.03)

3. Special attention shall be given to land and vegetation for approximately 100 feet from the edges of all streams, lakes, and other bodies of water. This area shall correspond to at least the recognizable area dominated by the riparian vegetation. No management practices causing detrimental changes in water temperature or chemical composition, blockages of water courses, or deposits of sediment shall be permitted within these areas which seriously and adversely affect water conditions or fish habitat. (63 CFR 219.17e)

4. Filter-Buffer Strips

   a. A strip of undisturbed soil, or filter strip, will separate roads, log landings, construction, and other earth disturbing activities from streams, lakes, and other bodies of water. The filter strip will be designed and maintained to prevent siltation and to protect the soil's infiltration capacity.
   The root mat within this strip will be protected.
   The strip will be wide enough to filter out sediment, surfacing materials, oil, trace chemicals, and other potential pollutants generated on roads or other activity sites. Filter strip width will be based on slope and erodability of soil according to the following table.

Filter Strips

Slope (%)	1	10	20	30	40	50	60
Width* (Feet)	50	65	95	125	155	185	215

* Add 20% to the width where soils are severely erosive (ELT's ending in a or c).

   b. Wider filter strips will be designed during an environmental analysis for large earth disturbing activities (e.g. highway and parking lot construction, and mining activities).

A. RIPARIAN AREAS (Cont'd)

4. Filter-Buffer Strips (Cont'd)

c. Should there not be sufficient area to leave an adequate strip, other measures will be used such as sediment traps and settling basins. These other measures and their specifications, will be determined during an environmental analysis.

d. Vegetation within the strip that provides shade to the stream will be maintained (Buffer Strip). If vegetation outside the strip prescribed in 3b also is providing shade, the strip will be widened to include the shading vegetation.

e. See Management Requirements for Deer Wintering Habitat (Management Prescription 4.1) concerning filter-buffer strips along streams in deer yards.

5. Machinery will cross riparian areas at designated locations. Approved structures will be installed where machinery crosses stream courses including those of intermittent streams. The number of crossings will be kept to the minimum needed for access. Crossings should be perpendicular to the streamcourse and the approach grade should be gentle (less than 8%). Wet areas or seeps will be avoided or crossed at the narrowest points possible.

6. Remove slash, dislodged stumps and spoil generated on 25-year flood plains by road construction, timber activity, or other activities unless an alternative method such as burning or burying is approved in an environmental analysis. Construction material will not be stockpiled in the 25-year flood plains.

7. Sites for servicing and refueling equipment will be located away from riparian areas.

8. Skidders may only operate in riparian areas when soils are frozen.

9. The need for diverting flowing water around bridge construction sites will be identified in an environmental analysis. As soon as construction is finished, the natural streamcourse will be restored. Temporary detours around construction sites and other bypass roads will be properly located. They also will be obliterated and stabilized when they are no longer needed.

10. Temporary structures, fill, debris, and slash resulting from management activities will be removed from watercourses. Streambanks will be restored to their original elevations, and stabilized.

Code	Definition
02	Subglacial scouring was the dominant process. Landforms are steep and rocky, soils are shallow, and few intermittent streams occur.
03	Subglacial deposition was the dominant process. A firm, greyish layer occurs, known as "basal till", at 1.5 - 2.5 foot depth. Basal till restricts internal drainage especially during spring melt or intense storms. Landforms are smooth and convex. Clay content is low, but higher than soils within 05. Low order stream channels are shallow.
05	Superglacial processes were dominant. This means major processes were down wasting or stagnation of the glacier. Parent material is coarse textured, pockets of sand and gravel occur because moving water associated with glacier stagnation sorted or washed the fine material from the ablation till. The internal restricting layers associated with 03 are not present within 05. Landforms are smooth and convex to hummocky and/or undulating. Low order streams can be deeply entrenched.
10	Late Glacial Recessional Processes - Fast moving water, otherwise known as outwash. Parent material is stratified, or at least partly sorted sand and gravel. This type is found at valley bottom to mid-slope positions, usually near streams.
11	Late Glacial Recessional Process - Slow moving water. Parent material is stratified fine sand with very little gravel. This unit is also found near streams, but 11 lacks the large hummocks of sand and gravel deposits associated with 10.
12	Post Glacial Fluvial Processes - Parent material is alluvial. These are flood plains.
14	Cryoplantation is an alpine climatic zone. In other words, soils show signs of mixing from freeze-thaw cycles. This occurs on mountain tops above 3,000 feet in elevation.
20,21	Sharp structural features occurring either before or after the Pleistocene epoch. Very steep slope due to geologic structural process (20) or stream process (21).
a	Wet soils are seasonally or permanently saturated. Drainage classes are somewhat poorly, poorly, and very poorly drained.
b	Shallow to bedrock. Soil depth ranges from 1 - 10 feet, usually 3 - 5 feet deep. Bedrock outcrops are present, but can be inconspicuous as on ELT 3b and 5b. Bedrock outcrops dominate the landscape of ELT's 2b and 13b.
c	Dissected by numerous intermittent streams. This makes unit appear like an alluvial fan on 1:42,000 leaf-off photography. Usually associated with ELT 3.
d	Modal, land area fits the definition of the process.

B. INSTREAM FLOW

1. Water withdrawals may be permitted subject to the U. S. Fish and Wildlife Service lowflow policy. No diversions will be allowed if the resulting streamflow would ever be less than 0.5 cubic feet per per second per square mile of watershed.

2. No more than 20% of the basal area may be removed from any watershed larger than 1,000 acres in any 10 year period.

C. USING GROUND DISTURBING EQUIPMENT

1. Construction and logging equipment will not be operated when ground conditions are such that excessive damage to the soil and water resource will occur.

2. a. Equipment operation on hardpan soils (Ecological Land Types ending in 3) must be carefully monitored following summer and fall storms to prevent excessive erosion and stream siltation.

   b. Timber stands on seepy, poorly drained soils or areas dominated by intermittent and permanent stream will be logged on frozen ground only. These areas include Ecological Land Types ending in "a", "c", or 21d.

   c. Timber stands that are accessible only across poorly drained soils or areas dominated by streams (ELTs ending in "a" or "c") will be logged when the ground is frozen.

   d. Slopes 50% or greater will not be logged with wheel logging equipment. These steep areas are usually found within Ecological Land Types ending in 2b or 2d.

3. Constraints on operating periods for logging activities in other areas will be identified by an interdisciplinary team.

4. Favor native species when restoring disturbed areas or providing vegetative screening.

5. Vegetation management and road construction activities proposed in Ecological Land Types 2d, 20d, 21d, 014d, 202b, and 602b will be reviewed on the ground by a Soil Scientist prior to implementation to determine feasibility of the activity and to identify mitigating measures.

C. USING GROUND DISTURBING EQUIPMENT (Cont'd)

6. Skid trail and temporary road systems and landings will be

   a. laid out systematically to reduce the number and length of trails and roads needed and to improve the efficiency of the system;

   b. designed and laid out to be suitable for future use;

   c. mutually agreed to by the Forest Service and contractor in advance of timber cutting.

7. Before use begins, Forest Service approved structures (bridges or closed culverts) will be installed where temporary roads and skid trails cross stream courses:

   a. Two to three times the average number of stream crossing structures is needed on roads within ELTs ending is 3 because of the numerous intermittent streams. Timber sale planning, layout, and appraisal should reflect the added costs of building and maintaining crossing structures on these ELTs.

   b. Soil exposed because of bridge construction will be seeded with a fast germinating grass, such as rye grass and a soil conservation mix to stabilize the soil and prevent stream siltation.

   c. Logs that are large enough to prevent mud from falling into a stream as equipment passes will be placed on each side of a bridge deck.

8. Temporary roads and skid trails will include revegetation as part of their design. Grass seed will be applied to stabilize the soil as soon as practical, but not to exceed one year, following the termination of the contract, lease, or permit allowing vehicular use of the road.

9. Landings will be located outside of riparian areas and designed so that sediment will settle out before runoff reaches watercourses. Landings on wet, seepy soils will be used only when the ground is frozen (ELTs ending in a).

10. The cleared size of landings will not exceed that needed for safe and efficient skidding and loading operations except for those managed as permanent wildlife openings.

11. Landings will be seeded during the current seeding season and as soon as is practical after equipment use has ceased (June - October 15). Landings should be seeded with grasses and legumes to benefit wildlife.

C. USING GROUND DISTURBING EQUIPMENT (Cont'd)

12. Nonstructural erosion control measures will be emphasized when laying out skid trails. Locate skid trails:

    a. along or diagonally across the contours;

    b. on side hills, knolls, ridges, or other convex shaped topography.

13. Waterbars and other erosion control structures will be located to dissipate runoff and to prevent sediment from being channeled into stream courses.

14. Waterbars and other erosion control structures will be kept in working order.

15. Skid trail grades will exceed 15% only in short pitches where soils are drained well enough to allow erosion control structures to be maintained in working order at all times. Log reinforced waterbars will be installed when routine use of logging equipment would probably remove earthen waterbars (eg. wet, seepy soils, such as ELTs and with 3a and 3d) or during rainy periods).

16. Skidding will not be allowed in water courses.

17. Downhill skidding will be favored over uphill skidding to reduce soil disturbance.

D. ROAD CONSTRUCTION

1. Place road cross drains to minimize runoff concentrations.

2. Design of cut and fill slopes on permanent roads will be based on

    a. environmental consequences of a failure;

    b. road and/or resource management objectives including visual quality, life of road, type and amount of use;

    c. cost of construction compared to cost of maintenance.

3. Cut and fill slopes in soils underlain by hardpans (ELTs ending in 3) or sand and gravel are prone to slumping. Cut and fill slopes in these soils, especially near streams, will be designed to ensure stability.

4. Road cutbanks, ditches, stump dumps, borrow areas, and utility corridors will be revegetated during the construction process. Seeding and fertilizing will be completed prior to October 15.

E. SOIL SCARIFICATION FOR PREPARING SEEDBED

1. To prevent erosion and loss of soil productivity, soil scarification for seed bed preparation

   a. will not be done on poorly drained soils and riparian areas. Avoid Ecological Land Types ending with "a" or "c";

   b. will mix but not remove surface litter and the upper mineral layers of the soil;

   c. will be done on the contour, but not on slope gradients exceeding 20% when using tractor blades.

F. RECREATION TRAILS AND CAMPSITES

1. Construct/reconstruct and maintain trails according to Appalachian Trail Conference Stewardship Manual: Trail Design, Construction and Maintenance (1981), and the Trails Management Handbook (FSH 2309.18).

2. Construction standards for off-road vehicle and horse trails and maintenance standards for all trails will be developed during the project planning.

3. On new trails, avoid constructing steep (15%) grades for more than 200 feet.

4. The tree canopy at camping and other recreation sites outside Wilderness will be managed to allow sufficient light to reach the ground to establish and to maintain a cover of native grasses, forbs, and shrubs.

5. Camping will be discouraged at locations where such use could initiate mortality in the tree canopy. These areas include heavily stocked, high elevation stands of Balsam fir or Red Spruce on northerly slopes exposed to high winds.

6. Pit toilets will be located:

   a. where soils are well drained, more than four feet deep to bedrock, and on knolls, ridges, or other convex shaped land areas;

   b. at least 100 feet away from surface waters.

7. Erosion control and ski trail management on alpine ski areas will be done according to the Ski Trail Maintenance, Development and Rehabilitation Guidelines Reports for each major ski area. Maintenance development and rehabilitation guidelines for other developed recreation areas will be written as needed.

G. RANGE MANAGEMENT

1. Tillage and seeding activities in pastures and other openings will be conducted along the contour. Practices that minimize tillage will be encouraged.

2. Widths of untreated strips needed to prevent fertilizers from being washed into streams will be determined through an environmental analysis.

H. PRESCRIBED FIRE

1. Firelines will be located and constructed to prevent concentration of runoff, or channeling of runoff into stream courses.

2. Prescribed fires will be conducted without control lines where fuel conditions permit this to be done safely.

I. MINERAL DEVELOPMENT

1. Natural gas exploration and development will be located and conducted to prevent contamination of surface and ground water by drilling wastes, brine or gas.

2. No surface disturbance activities will be allowed where sensitive environmental conditions exist (General Standards and Guidelines for Minerals, A.2.).

AIR

A. Identify present and potential impairment of National Forest resources attributable to air pollution. Forests shall coordinate with regulatory agencies and seek to have emisions reduced as needed to protect National Forest resources.

B. Class 1 Air Quality - See Section F, Standards and Guidelines for Lye Brook Wilderness (Management Prescription 5.1).

A. COMPOSITION OBJECTIVES

1. Long Range Vegetative Composition Objectives

   a. To ensure that vegetative diversity is maintained or increased and that habitat is available to maintain viable populations of all vertebrates presently found in the forest, we will maintain or increase acreage of the following vegetative types on the portion of the Forest where vegetation is managed within the ranges specified.

Type	Percent
Northern Hardwood	61-78
Softwoods	12-20
Aspen and Birch	5-10
Oak	1- 3
Permanent Opening	3- 5
Wetlands	1- 1

2. These ranges, called Vegetative Composition Objectives, apply to the Forest as a whole. In small areas the composition objectives may vary from the Forest averages because of the individual characteristics of the area, such as need for deer winter cover or the suitability of the sites. The specific composition objectives for each opportunity area of the Forest will be set as the Forest Plan is implemented.

3. In addition to achieving the desired amounts and distribution of vegetative types we must work toward the desired amounts and distribution of various age classes within those types.

   To do so we will vary the amount of even and unevenaged stands and vary the rotation lengths of the evenaged stands. Some areas will managed old growth and no cutting will occur.

A. COMPOSITION OBJECTIVES (cont'd)

Forest Type	Age Class	Rotation Age 60	80	100	120	150	UE
Northern Hardwood	R 1/ 0-9			10	8	6	
	Y 2/ 10-59			50	40	30	
	M 3/ 60-119			40	47	36	5/
	O 4/ 120+			--	5	28	
Softwoods	R 0-9		12	10	8	6	
	Y 10-39		36	30	24	18	
	M 40-99		52	55	48	36	5/
	O 100+		--	5	20	40	
Pioneers							
Aspen	R 0-9	16					
	Y 10-39	48					
	M 40-59	31					
	O 60+	5					
Birch	R 0-9		12				
	Y 10-49		48				
	M 50-79		35				
	O 80+	--	5				
Oaks	R 0-9			10	8	6	
	Y 10-59			50	40	30	
	M 60-99			35	32	24	
	O 100+			5	20	40	

1/ R = Regenerating
2/ Y = Young
3/ M = Mature
4/ O = Overmature
5/ UE = Unevenaged stands will have a mixture of three or more age classes occurring on each acre. The distribution of unevenaged stands across the Forest will mostly be influenced by recreational and visual concerns. Unevenaged and mature stands will provide similar benefits to wildlife.

A. COMPOSITION OBJECTIVES (cont'd)

4. Uncommon Vegetative Types

a. Uncommon Vegetative types will be maintained or increased where practical. These include hemlock, aspen, black cherry, alder, oak-hickory, black spruce, white pine, white oak, hedgerows, and orchards.

b. Mast species will be managed to increase or expand mast productivity where practical. Mast species are nut and fruit producers such as hop hornbeam, grape, juniper, barberry, cherry, apple, plum, oak and beech.

5. Old Growth Communities

a. Old growth communities will be self-perpetuating, biologically mature stands that have reached a dynamic, steady state condition.

These areas should be at least 170 years old and will be larger than 500 acres in size on the GMNF. They should not be silviculturally treated.

b. These areas should include sites of all productivity classes, elevations and vegetative types representative of the Forest.

Old growth will be provided in Management Prescriptions 5.1, 6.1, 8.1B and 8.1D.

6. Overmature Forest Stands

a. Overmature evenaged stands will have trees older than the normal rotation age for the type and provide important habitat conditions not found in younger stands.

Northern hardwoods and oak stands are overmature if between 120 and 170 years while the minimum age of other types will vary.

b. Each opportunity area will be managed to provide a minimum of 5% overmature vegetation.

B. WILDLIFE RESERVE TREES

7. Snags, den trees, nest trees and mast trees will be reserved during timber management activities in sufficient quality, quantity, and distribution to maintain well dispersed, self-sustaining populations of all snag, den, nest, and mast dependent wildlife indigenous to the Green Mountain National Forest.

   a. See 10 for Snag Standards
   b. See 11 for Den Tree Standards
   c. See 12 for Mast Tree Standards

8. Definitions

   a. Snag - Includes standing dead or partially dead trees which are at least 6" in diameter at breast height (dbh) and 20 feet tall.
   b. Hard Snag - Trees composed essentially of sound wood on the outside and usually marketable.
   c. Soft Snag - Trees with wood, especially sapwood, in an advanced stage of decay and generally not merchantable.
   d. Replacement Trees - A live or partially dead tree left to become a hard snag and eventually a soft snag replacement.
   e. Den Tree - A live tree at least 15" dbh containing a natural cavity used by wildlife for nesting, brood rearing, hibernating, daily or seasonal shelter and escape from predators.
   f. Mast Trees - Species which provide nuts and fruits. These include the oak group, American beech, hop hornbeam, and black cherry.
   g. Nest Trees - Trees containing large nests built by crows, and hawks that resemble a platform of sticks from the ground (2-3 feet diameter). These may be used by owls which do not build nests or they may be re-used by hawks.

9. General

   a. The number of wildlife reserve trees per acre is determined by hard snag and replacement tree requirements necessary to support cavity nesters. This goal may be accomplished by any combination of snag, den, nest and mast trees. All soft snags should be left.

   b. When possible, mast trees will be selected since they may fill several functions, providing mast and potentially den and snag habitats simultaneously.

B. WILDLIFE RESERVE TREES (cont'd)

c. Retain clumps of wildlife reserve trees especially around nest trees, in preference to scattered individual trees.

d. Timber sale contracts will provide for retention and protection of wildlife reserve trees.

e. Wildlife reserve trees, except soft snags, will be marked for retention prior to activities that could cause their removal. Standing dead trees will not be cut except where designated.

f. Within the foreground of moderate to highly sensitive recreation areas, wildlife trees will be reserved to the extent that visual quality objectives can still be met.

g. Within clearcuts and other cutting units, wildlife trees will be visually subordinate to the surrounding area. Those that silhouette against the sky may need to be removed to achieve visual acceptability.

h. Trees reserved for wildlife during all timber management activities:

1. leave most soft snags,

2. leave 2 hard snags, 1 den tree, and 1 replacement tree per acre. Mast trees may be substituted for hard snags, den trees, or replacement trees. Nest trees should always be retained.

   - If no hard snags, den trees, or mast trees are available, leave 2 replacement trees.

3. leave all soft and hard snags, den trees, and 2 mast trees:

   - Within 300 feet of permanent openings, ponds, lakes, beaver ponds, and wetlands greater than 5 acres.

   - Within riparian zones of all streams as shown on U. S. Forest Service 1:24,000 topographic maps.

   - Within 100 feet of beaver ponds less than 5 acres.

   - If hard snags, mast and den trees are not available in these areas, leave at least 6 replacement trees per acre.

10. Snags

    a. Always select the largest diameter hard snags available in a stand since snags 20" dbh and larger will meet the habitat needs of all species. If hard snag requirements are met, their gradual deterioration will provide sufficient soft snags.

    b. All soft snags that do not pose a safety hazard will be retained.

    c. When selecting snags, priority may be established by evidence of wildlife use for feeding, roosting, stick nests, or cavity nesting and denning.

11. Den Trees

    a. Den trees should be 15 or more inches in diameter at breast height with a cavity opening.

    b. Select trees with cavities or openings that are not prone to collecting water.

12. Mast Trees

    a. Leave large mast trees because they can provide mast, cavities, and dens at the same time. Species to be considered will be oaks, bear clawed beech, hop hornbeam, and black cherry.

    b. During silvicultural activities where species other than beech are to be favored, groups of beech showing bear use will be retained in favor of single trees. Single trees showing repeated use will be retained where clumps are absent.

    c. Oaks will be maintained and increased whenever possible to improve their distribution on the National Forest. White oaks will be retained in preference to all other reserve trees due to their potential for annual mast crops and preference by wildlife. Individual and clumps of oak trees will be retained when available. Oak trees and stands will be released and thinned to encourage crown development for mast production.

13. Dead and down material will be left following the whole tree harvesting to provide habitat for small mammals, amphibians, and reptiles.

C. WETLANDS

1. Manage ponds and wetlands to favor natural ecosystems and indigenous species.

2. When constructing ponds, see GMNF Excavated Pond Report and Potential Pond Site Inventory.

3. Emphasize wildlife management for 300 feet around permanent lakes and ponds greater than five acres including their surrounding wetlands.

4. Hardwoods will be favored around active and inactive beaver ponds for a distance of 300 feet from the water's edge. Exceptions are in deer winter areas where softwoods will be maintained.

5. Manage margins of beaver meadows to create a mixture of small diameter (2-8" dbh) hardwoods and herbaceous vegetation.

D. ENDANGERED AND THREATENED SPECIES

Endangered and threatened species include only those listed under the authority of the Endangered Species Act. (See Appendix E).

1. Peregrine Eyries Management

a. 0-660 Foot Buffer Zone

- No recreation activities, including hiking, skiing, and snowshoeing, will be permitted in the buffer zone between March 15 and September 30 for active nesting sites, and from about June 14 through August 15 for active hacking sites. Such activity may be allowed sooner if it is determined the birds have left a specific date.

- Prohibit activities which will significantly change or destroy potential peregrine falcon habitat.

b. 0-330 Foot Buffer Zone

- All disturbing land uses will be prohibited except as necessary to protect the site (FSM 2633.4-14).

D. ENDANGERED AND THREATENED SPECIES (cont'd)

c. 330-660 Foot Buffer Zone

- Permit only activities which would not make significant changes to the buffer zone.

- 330-660 feet may not be sufficient in some instances due to land form or vegetative condition. In these situations, the buffer zone distance may be extended on a case by case basis.

- Activities may be allowed within the zone or during these periods if it has been determined on a site-by-site basis that such activity will not disturb the birds.

E. SENSITIVE SPECIES

Sensitive Species which are known, reported or suspected to occur in the Eastern Region are designated by the Regional Forester and included on the Eastern Regions Sensitive Species List. The list will include species which require special management attention to maintain viable populations within the Eastern Region.

1. Common Loon

a. The common loon is nominated by the GMNF for inclusion on the Eastern Regions Sensitive Species List.

b. Specific Management standards and guidelines will be developed on a site by site basis.

- Prohibit disturbing activities around loon nests from March 15 to August 30.

F. SPECIES OF CONCERN

Species with declining populations included on State lists, but not on the Federal Threatened and Endangered list or the Eastern Regions Sensitive Species list are also of concern to the GMNF. Appropriate management standards and guidelines will be followed to reflect that concern for species known to occur on the National Forest.

Species of concern to us which are not presently known to occur on this National Forest are listed in Appendix E. Some characteristics, considerations of habitats are also described in this Appendix. If these species are encountered then appropriate standards and guidelines for management of their habitat will be written. After public review and comment, these new guidelines will be incorporated into this section of the Forest Plan.

1. Heron Rookeries

   a. 0-660 Foot Buffer Zone

      - No recreation activities, including hiking, skiing, and snowshoeing, will be permitted in the buffer zone between March 15 and August 1 for active rookeries. Such activity may be allowed sooner if it is determined the birds have left a specific date.

      - Prohibit activities which will significantly change or destroy potential heron rookeries.

   b. 0-330 Foot Buffer Zone

      - All disturbing land uses will be prohibited except as necessary to protect the site (FSM 2633.4-14).

   c. 330-660 Foot Buffer Zone

      - Permit only activities which would not make significant changes to the buffer zone.

      - 330-660 feet may not be sufficient in some instances due to land form or vegetative condition. In these situations, the buffer zone distance may be extended on a case by case basis.

        Activities may be allowed within the zone or during these periods if it has been determined on a site-by-site basis that such activity will not disturb the birds.

F. SPECIES OF CONCERN (cont'd)

2. Rare plant communities

a. Develop individual site plans on a case-by-case basis to provide specific habitat needs for each rare plant community.

b. Until specific site plans are developed, manage the area within 100' as follows:

- Permit only land uses which will not significantly change the site.

- Build no new roads or trails.

c. Any potential site will be investigated before any other activity at the site is begun. Potential sites have been identified by Jenkins (1982).

3. Other Species of Concern

Management guidelines for habitats and reproduction sites will be developed on a species by species basis if analysis or monitoring shows that management activities might have a negative impact on other species of concern (Appendix E).

G. FISHERIES

1. Fisheries management will be coordinated with the Vermont Fish and Wildlife Department or the New York State Department of Environmental Conservation.

2. A balanced fish population will be maintained, to the extent practical, through habitat and access manipulation.

3. We will cooperate with the efforts of the U.S. Fish and Wildlife Service and other agencies to re-establish Atlantic salmon in the tributaries of the Connecticut River that originate on this Forest. We will protect spawning habitat and provide access for fishing.

4. Vegetation canopy in and along streams should be manipulated to provide water temperatures within the prescribed ranges.

5. Fish passage in streams should not be blocked or prevented, unless done in conjunction with prescribed fish management.

H. FRUIT AND BERRY MANAGEMENT

1. Maintain and increase the number of apple and other fruit trees which are desirable for wildlife and people.

   Keep fruit trees productive and vigorous by eliminating competing vegetation, pruning and fertilizing fruit trees when needed.

2. Maintain and increase the acreage of managed blueberry patches across the National Forest.

   a. Burn 1/3 of each patch every 3 years to keep blueberries productive and their sugar content high.

   b. Maintain 2/3 of each patch in vigorous fruit production each year.

   c. Locate new blueberry patches to be convenient to public access. Clearly identify their locations to the public.

A. PRIMITIVE RECREATION OPPORTUNITY (MA 5.1, 6.1, and some 8.1)

1. Travelways

a. Footpaths will primarily appear to be result of repeated use and not construction, except for the Long Trail/Appalachian Trail (LT/AT).

b. Density of trails will typically be less than three miles per 1000 acres.

c. Only non-motorized and non-mechanical types of activities are compatible with this recreation opportunity. Limited administrative use of motors and machines may be allowed, as well as limited use of snowmobiles on approved, existing trails in MA 6.1.

2. Use and Control

a. The following measures of the optimum use will guide our programs:

.overall capacity is 14 to 30 people at one time per 1000 acres

.except on the LT/AT, there should be, on the average, less than 3 people at one time per mile on any travelway. There should be little or no contact between parties.

.No more than 3 other parties should be visible at overnight sites or at areas which have natural attractions.

b. So that recreation use does not exceed these optimum amounts, we will attempt to design trails and access to the Forest and to provide maps and information that will encourage people to spread out and use a variety of trails.

c. On-site user controls should not be apparent except on the LT/AT where rustic appearing signs and blazes can be used. To aid, disperse and control use, provide information to users before they enter the areas.

Additional means of dispersing or limiting use will be applied if needed.

A. PRIMITIVE RECREATION OPPORTUNITY (cont'd)

3. Permitted Changes

a. Native materials will be emphasized to build and maintain trails and recreation facilities except along the LT/AT.

- Treated logs and planks that look like native material may be used for bridges, pungeon and steps for public safety and erosion prevention.

- Campsites and travelways will appear to be the result of repeated use.

B. SEMI-PRIMITIVE RECREATION OPPORTUNITY (MA 6.2, 8.1)

1. Travelways

a. Roads and trails will form an interconnected travelway network. Trails and single lane local roads should appear visually subordinate to surrounding natural appearing landscape.

Most local roads will receive infrequent motorized use and have few permanent drainage structures and only native surfacing. A few local roads will be of a higher standard, having permanent drainage structures and gravel surfacing throughout. Road alignment will be designed to minimize visual impact.

b. Density of all roads and trails will typically be less than four miles per 1000 acres. Of these, 20 per cent will be roads - most of which will be closed to wheeled, motorized vehicles.

c. Non-motorized and non-mechanical types of activities will predominate.

- In some areas, motorized activities will be allowed in a manner and amount consistent with the area's semi-primitive values.

- Wheeled recreational off-road vehicles will only be allowed on designated roads and trails.

  Snowmobiles may be used off-trails in designated areas.

- In other areas, no motorized activities will be allowed except those required for administration.

B. SEMI-PRIMITIVE RECREATION OPPORTUNITY (cont'd)

2. Use and Control

a. The following measures of optimum use will guide our programs:

.overall capacity is 20 to 60 people at one time per 1000 acres.

.on the average, there should not be more than 6 people at one time per mile on any travelway.

.at natural attractions and overnight camping sites, visitors may expect to see several other parties.

.away from the travelways and areas which have special attractions, there would be little contact between groups of users, and less than 10 people at one time per 1000 acres.

b. So that recreation use does not exceed these optimum amounts, we will design trails, designate Forest access points, and locate camping sites to disperse the use. We will also provide maps and information that will encourage people to use a variety of trails and sites.

c. Road use will be controlled primarily to meet travelway objectives but also for user safety to limit road damage and to prevent resource damage, and to provide certain wildlife habitats.

Access to some areas will be limited by road characteristics. In other areas, road use will be regulated by means of a gate or other structure.

d. Rustic appearing signs and blazes can be used to direct and control use.

e. Law Enforcement activities will be conducted in a subtle manner, becoming visible only when it is necessary to correct problems or protect public health and safety."

f. Design designated overnight sites to minimize visual contact. They may be clustered and slightly visible to one another.

B. SEMI-PRIMITIVE RECREATION OPPORTUNITY (cont'd)

3. Permitted Changes

a. Use of native materials will be emphasized to build and maintain trails and recreation facilities.

- Milled logs and planks can be used.
- Metal, glass, and plastic should not appear to be major parts of any structure.
- Culvert pipes should be concealed with rock or soil.
- Motorized or mechanized equipment or facilities are incompatible, but may be permitted where the impact can be reduced.

b. Shelters and other plank or pole structures usually less than 200 square feet in area will be allowed. Examples are cabins, observation platforms and toilet buildings.

Structures should not draw the attention of users moving through the area and should be rare and isolated.

c. Temporary non-conforming activities such as construction and logging will be scheduled to minimize conflict with recreation.

C. ROADED NATURAL RECREATION (MA 2.1A, 2.1B, 3.1, 4.1, 7.1, SOME 8.1, 9.3)

1. Travelways

a. All types of local and arterial roads will be found. Road width will range from one or two lanes, surfacing will include natural soil and gravel, black top, and permanent drainage will vary from waterbars and log culverts to concrete bridges and metal culverts.

b. Density of all roads and trails will typically be less than eight miles per 1000 acres. Of these, 30 per cent will be roads - many of which will be open for vehicular use.

c. Motorized use of roads and trails is allowed.

d. Recreational off-road vehicles will only be allowed on designated roads and trails or in approved areas.

2. Use and Control

a. The following measures of optimum use will guide our programs:

.overall use may range from 100 to 500 people at one time per 1000 acres.

.on the average, there should not be more than 12 people at one time per mile on any travelway.

.most use will be concentrated along travelways and at developed sites where contact with other visitors will be frequent.

.away from travelways and developed sites, there should be less than 22 people at one time per 1000 acres.

C. ROADED NATURAL RECREATION OPPORTUNITY (cont'd)

2. Use and Control (Cont'd.)

b. So that recreation use does not exceed these optimum amounts, we will attempt to design trails, designate Forest access points, and locate facilities needed to avoid overuse of any one area. We will also provide maps and information that will encourage people to use a variety of trails and sites.

c. Road use will be controlled with gates for user safety and to prevent resource or road damage.

d. Signs having reflective materials, and high visibility colors or shapes may be used if necessary to direct use.

e. Law enforcement should only be occasionally visible.

3. Permitted Changes

a. Use of wood and stone masonry for building materials will be preferred over concrete and asphalt.

- Metal, glass, and plastic should not appear to be major parts of any structure.

- Steel culverts, signs, guardrails, cables, etc. are acceptable along most roads.

- Structures may be readily apparent and may range from scattered to small dominant clusters.

b. Buildings shall generally occupy less than 1000 square feet.

D. RURAL RECREATION OPPORTUNITY (MA 7.1)

1. Travelways

a. All types of local and arterial roads will be found. Road width will range from one or two lanes, surfacing will include natural soil and gravel, black top, and permanent drainage will vary from waterbars and log culverts to concrete bridges and metal culverts.

Paved roads, 24 to 36 feet wide designed for highway speeds of 40 to 55 MPH are compatible. These will generally be part of the State Highway system.

b. Density of all roads and trails will generally not exceed 20 miles per 1000 acres.

c. Recreational off-road vehicles will only be allowed on designated roads and trails or in approved areas.

2. Use and Control

a. Design for a range of 500 to 2000 people at one time per 1000 acres.

b. Most recreation opportunities will take place within a 400 foot wide corridor encompassing the permanent maintained travelways.

Immediately beyond this corridor, roaded natural opportunities will be available and those standards and guidelines applied.

c. Use should be directed and controlled as needed with a minimum number of signs having reflective materials, and high visibility colors or shapes.

Law enforcement may be visible.

3. Permitted Changes

a. Culturally accepted activities are permissible subject to visual quality constraints.

E. VISUAL QUALITY OBJECTIVES for VIEWS from ON the SITE

1. Visual Quality Objectives will be mapped when implementing the Plan on specific areas.

2. Manage for visual quality on the site appropriate to the sensitivity of the location and the recreation opportunity being provided there.

3. Sensitivity depends primarily on the amount and expectation of viewers at a location and can be determined for all areas of National Forest using the guidelines described below.

4. The following locations are highly sensitive:

   a. U. S. or State highways;

   b. roads averaging at least 150 vehicles per day;

   c. roads primarily providing access to highly sensitive recreation sites;

   d. National Scenic or Recreation Trails;

   e. Long Trail;

   f. heavily used seasonal trails through areas with recognized scenic attractions;

   g. significant recreational streams (Appendix J).

   h. waterbodies with heavy fishing, boating, swimming, and other uses highly dependent on viewing scenery;

   i. Wilderness, (Management Prescription 5.1); Primitive Areas, (Management Prescription 6.1); and the White Rocks NRA (Management Prescription 8.1b).

   j. town centers or concentrations of residences;

   k. developed recreation sites, including Management Prescription 7.1, designed for use by many parties at one time;

   l. single family dwellings along highly sensitive travelways;

   m. observation sites along highly sensitive travelways.

E. VISUAL QUALITY OBJECTIVES for VIEWS from ON the SITE (Cont'd.)

5. 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:

   a. roads and trails shown on National Forest recreation maps except those described as least sensitive;

   b. individual private residences, single party recreation sites, and observation sites along moderately sensitive travelways;

   c. waterbodies receiving low to moderate use which is double that of adjacent undeveloped lands.

6. Least sensitive locations are all areas not qualifying as having high or moderate sensitivity. They include

   a. travelways constructed primarily for non-recreation purposes such as timber access roads and utility line clearings;

   b. areas where use primarily has little dependence on scenic viewing. Examples are hunting or gathering fuelwood, Christmas trees, or berries.

F. DEFINITIONS OF VISUAL CONDITIONS

1. Preservation - Alterations are caused by ecological changes only.

2. Retention - Alterations made by people are not visually evident.

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.

6. Permanent - A visual condition is being maintained over time.

7. Temporary - A visual condition is allowed to recover over time.

8. Enhancement - A visual condition is improved by increasing desirable variety in the landscape.

9. Rehabilitation - A visual condition is improved by removing existing visual impacts.

G. RELATIONSHIPS

The tables on the next two pages display the relationships between recreation opportunity and visual condition, and between timber management activities and visual quality.

VISUAL CONDITION STANDARDS GREEN MOUNTAIN NATIONAL FOREST

RECREATION OPPORTUNITY	VIEWER SENSITIVITY	VISUAL CONDITION ON SITE (within ½ mile) and DISTRIBUTION per mile (50 acres) of travel corridor or per 1000 acres of other lands	VISUAL CONDITION AS SEEN from OFFSITE at MORE THAN ½ MILE
Primitive	High	Up to 1% of travel corridor may be RETENTION At least 99% of travel corridor will be PRESERVATION 100% of area outside of travel corridor will be PRESERVATION	Appears completely natural and unchanged by humans (RETENTION)
Semi-Primitive	High	Up to 4% of travel corridor may be PERMANENT PARTIAL RETENTION At least 96% of travel corridor will be RETENTION	Semi-primitive areas appear natural with only occasional evidence of human change On the upper part of the more noticeable peaks and ridges change is not evident. (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 will 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% will be RETENTION.	When viewing these lands from a distance, some changes 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 must 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 will 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% will be RETENTION Temporary alterations should meet RETENTION	Rural areas reflect considerable change 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 must 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

All lands seen from HIGH SENSITIVITY AREAS,

a Will appear natural, or
b Change will be noticeable occasionally, but be subordinate to the natural appearing surroundings

TIMBER HARVESTING AND VISUAL CONDITIONS

ACTIVITY	VISUAL SENSITIVITY (foreground)	VISUAL QUALITY AND TIME	*PERCEIVED SIZE AND SHAPE	EDGES	**Additional Requirements Exceeding Standard Practice for SNAGS, LEAVE TREES and OTHER CONTRASTING [illegible]
INDIVIDUAL TREE SELECTION OR THINNING	High	Retention upon completion of project	Not significant	Not significant	Stumps cut within six inches of ground. Any soil disturbance revegetated to a natural appearance
	Moderate or Low	Partial Retention within 1 year Retention within 3 years	Not significant	Not significant	None
GROUP SELECTION	High	Retention upon completion of project	Openings up to 1/10 acre Irregular shape	Feathered edges	Stumps cut within 6 inches of ground. Any soil disturbance revegetated to a natural appearance Trees which do not appear typical of openings will not be left.
	Moderate	Partial Retention within 1 year Retention within 3 years	Openings up to 1/2 acre Irregular shape	Feathered edges	Snags which dominate the surroundings will be removed. Any soil disturbance will be revegetated to a natural appearance
	Low	Modification within 1 year. Partial Retention in 3 years Retention in 5 years.	No geometric shapes	Not significant	Snags which dominate the surroundings will be removed.
THREE CUT SHELTERWOOD (final cut)	High	Retention upon completion of project	Up to 3 acre removal/cut. Roadside opening up to 200 feet. At least 1000 feet between openings Irregular shape.	Feathered edges	Stumps cut within 6 inches of ground. Any soil disturbance revegetated to a natural appearance. Trees which do not appear typical of openings will not be left.
TWO CUT SHELTERWOOD (final cut)	Moderate	Partial Retention 1 year Retention in 15 years from regeneration cut.	Up to 10 acre removal cut. Roadside opening up to 400 feet, with at least 1000 feet between openings. Irregular shapes.	Feathered edges	Snags which dominate the surroundings will be removed Any soil disturbance will be revegetated to a natural appearance.
	Low	Modification in 1 year Partial Retention in 3 years. Retention in 15 years from regeneration cut.	Up to 20 acre removal cut No geometric shapes	Not significant	Snags which dominate the surroundings will be removed
CLEARCUT	High	Enhancement. Must be designed by landscape architect. Timber production is a secondary objective	Normally not more than 1 acre Must relate to the surrounding landscape character.	Special design w/Landscape Arch.	Special design w/Landscape Arch.
	Moderate	Partial Retention within 1 year. Retention within 15 years.	Up to 5 acres with islands and irregular shape. Roadside opening up to 200 feet with at least 1000 feet between openings.	Feathered edges	Snags which dominate the opening will be removed. Any soil disturbance will be revegetated to a natural appearance.
	Low	Modification in 1 year Partial Retention in 3 years. Retention in 15 years	Up to 15 acres with and irregular shapes.	Not significant	Snags which dominate the opening will be removed
LANDINGS AND ACCESS ROADS	Will be considered openings as per the above standards.				

*Perceived size and shape as seen from the sensitive viewing locations. Actual size may be larger.

**Also see next page Slash, Stumps, Rootwads and Other Construction Debris TREATMENT and VISUAL GUIDELINES FOR SNAGS

H. TREATMENT OF SLASH, STUMPS, ROOT WADS AND OTHER DEBRIS

1. Highly Sensitive Viewing Areas:

   Debris must appear consistent with amount found under natural conditions. If practical, landings should not be visible from roads of high sensitivity.

2. Moderately Sensitive Viewing Areas:

   Must appear subordinate to the natural surroundings as soon as possible but at least within one year. For example, slash will be lopped and scattered to lie no higher than the average height of regeneration after one year. If regeneration is less than 3 feet in height, slash will be kept under 3 feet high.

3. Least Sensitive Viewing Areas

   Must become subordinate to the natural surroundings within 3 years. Slash is dispersed throughout the site and may dominate the foreground view for the first few years.

4. All slash will be removed from streams, trails, and the cleared area of permanent roads.

5. Coniferous slash will be lopped and scattered to lie within 24" of the ground in deer wintering areas.

I. VISUAL GUIDELINES FOR SNAGS WITHIN OPENINGS

More Subordinate (looks better)	More Dominant (looks worse)
Short broad snag	Tall skinny snag
Near edge of opening	Towards middle of opening
Blends in with others	Stands alone
Has vegetative background	Silhouetted against sky
Located in depression	Located on high point
Clustered throughout the opening	Evenly spaced or peppered
Has vegetation around to tie it to the ground visually	Vegetation left around it is very small or nonexistent.

J. OFFSITE VIEWS

When a seed tree cut or a clearcut is applied and retention or partial retention is the objective for offsite viewers, emphasize the following guidelines:

1. carefully design narrow units running along the contours with the sequence of cutting the units progressing downslope;

2. newer units that abut units having small trees, such as 10 to 20 years old, look better;

3. site prep work, such as the removal of stems down to one inch, should be delayed for at least one growing season and done during leaf off;

4. do not remove small to medium size trees along the upper edge of a unit during site preparation.

K. TRAILS

1. General

   a. Recreation opportunities provided will be consistent with the ROS level being managed.

   b. Trails and roads should form an interconnected travelway network.

   c. Loop systems will be encouraged over linear trail systems.

   d. Limits of acceptable change will be established in order to monitor the physical and social resources and achieve the management objectives of the trail systems.

   e. Users will be informed and educated on closures and guidelines for using trails through brochures, signing, and personal contacts.

   f. User groups will be encouraged to participate in the maintenance of trail systems through cooperative agreements.

   g. Trails will be inventoried.

K. TRAILS (Cont'd.)

2. Trail Construction, Operation and Maintenance

a. Document resource management objectives and rationale used to determine design standard for the types of trails described in FSM 2353.4 (FSM 7723).

b. Trails will be constructed, reconstructed, and maintained according to Green Mountain standards for the type of trail. (See General Soil and Water standards and guidelines Section F).

3. Shelters

a. No new trail shelters will be constructed unless analysis has determined it to be the best alternative and user group/Forest Service maintenance responsibilities have been agreed to.

4. Trailhead Parking

a. Trailhead parking will be provided where feasible.

b. The following factors will be considered in location and design:

1. Dispersion of use
2. Safety of user
3. Reduce traffic problems
4. Local maintenance jurisdiction
5. Year-round use
6. Vehicle parking needs

5. Trail Proposals

a. We recognize the Catamount Trail as a winter cross-country trail system. We will work with the Catamount organization to develop management objectives, formulate design standards, locate the trail, and develop operating policies.

b. We will work with other user groups to provide trail opportunities where Management Area objectives, site conditions and timing of use allow.

1. User groups will be encouraged to participate in the maintenance of trail systems through cooperative agreements.

2. User groups and Forest Service will meet annually prior to April 15 to update trail system maps and to prepare maintenance plans.

K. TRAILS (Cont'd.)

6. Vegetative Management

a. Vegetative management will be used to enhance visual and vegetative diversity along trail corridors.

b. User groups will be kept informed of all vegetative management activities which will affect the enjoyment of users.

c. Seasonal restrictions on vegetative management activities will be used to minimize impacts.

d. Alternate trail routes will be provided when management activities cause trails to be closed.

e. All slash and other debris will be removed from trail corridors. Trailside slash will be treated in accord with Recreation/Visual standards and guidelines, Section H.

7. Saddle and Pack Animals

a. Saddle and pack animals will only be permitted on trails designated for their use by the Forest Service.

b. Saddle and pack animals are prohibited from the Long and Appalachian Trails.

L. OFF ROAD VEHICLES

1. Off-road vehicle plans, maps, and signing will be consistent with State of Vermont laws, policies, and definitions.

2. Off-road vehicle plans will differentiate between kinds of vehicles allowed.

3. Jeeps, 4-wheel drive vehicles, and similar vehicles are limited to open permanent roads.

4. Provide for the recreational enjoyment of motorized, off-road vehicles (ORVs) where Management Area objectives, site conditions, and timing of use allow.

5. Summer ORV Use:

   a. No ORVs will be allowed in the spring between the time snow disappears until Memorial Day weekend.

   b. ORVs will be limited to designated roads and trails during the period Memorial Day through December 1st annually.

   c. A map of travelways open to ORVs will be kept at all Forest Service offices.

   d. Where ORV trails cross open roads, the Forest Service will sign as to the type of ORV allowed and any restrictions on that use.

   e. Roads will be closed to all vehicle use when soil erosion and surface damage could occur.

   f. Some roads will be closed to all motor vehicles during the summer months in order to enhance the quality of backcountry recreation.

L. OFF ROAD VEHICLES (Cont'd.)

6. Winter ORV Use:

a. ORVs will be limited to an approved system of travelways comprised of a combination of trails and roads.

b. The travelway system may only be used when there is a protective covering of snow.

c. Some travelways will be designated for snowmobiles only and some for shared use between snowmobiles and wheeled ATV's. Wheeled ATV's are defined as having 3 or 4 balloon, low-pressure tires and capable of carrying an operator who straddles the vehicle.

d. Roads provide the best opportunities for shared use because their wide width allows concurrent but separate trails.

e. We recognize the Vermont Association of Snow Travellers (VAST) Corridor Trail System as an integral part of the winter ORV trail system. We will assist VAST in creating a continuous trail through the Forest by acquiring rights-of-way and easements where possible.

f. Maps of the approved winter ORV trail system will be maintained at all Forest Service offices.

7. Non-Motorized Off-Road Vehicle Use

a. Non-motorized off-road vehicles such as mountain bikes and other bicycles will be limited to an approved system of travelways. Maps will be maintained at all Forest Service offices.

b. The Long and Appalachian Trail, its side trails, Wildernesses (MA5.1), Primitive areas (MA6.1) and Special Areas (MA8.1) are closed to bicycle use. Bicycle use will not be encouraged on hiking trails.

N. INTERPRETIVE SERVICES

Information and interpretive programs will explain the correlation of resource management direction and activities with public interests and concerns. Programs will be based on audience analysis, as well as on land managers' needs.

O. SIGNIFICANT RECREATION STREAMS

1. The recreation, water quality and aesthetic values which make certain sections of streams significant to people will be protected and enhanced (Appendix J).

2. Inventory and study all stream corridors during the next ten years while implementing the Plan. Determine specific management guidelines and appropriate actions to enhance the values of each stream.

3. Any management activity along a significant stream will be designed to complement and not detract from the stream's values.

4. Standards and guidelines appropriate to areas of high visual sensitivity will be applied to management of lands which appear in the foreground when standing on top of the banks of all significant streams (See pages 4.47 to 4.50.

5. Because of the "wild" characteristics of the Deerfield River along and upstream from Forest Road 83 avoid any management practices which can be seen when standing on top of the stream bank.

6. Access will be provided in accordance with the desired recreation opportunities along the stream.

7. National Forest management activities will maintain or improve water quality in these streams.

8. The vegetation will be managed to enhance the desired recreation experience and to provide desired wildlife habitats.

9. Fish habitat is an important stream value and recreation/visual management will consider fish habitat needs especially on Atlantic salmon streams.

TIMBER

A. GENERAL

1. Timber will be managed to maintain and enhance vegetative diversity, wildlife habitats, vistas, to improve the health and condition of the forest ecosystem, and to produce high quality sawtimber.

2. Timber cutting will be done if it helps to achieve the recreation, visual, wildlife. timber, and other objectives assigned to Management Areas and if the environment can be adequately protected.

3. Timber will be offered for commercial sale so that the revenues can be used to offset the financial costs of achieving the desired priced and nonpriced benefits. This will result in lower net financial costs to achieve desired non-priced benefits.

4. Do not sacrifice water quality, recreation, aesthetic, wildlife and other non-priced values in order to maximize financial revenues from the sale of timber. Instead, modify timber sale activities to maintain or enhance those values.

5. Timber will be cut where financial revenues fall below financial costs when the public desires the resulting nonpriced benefits and the Forest Service decides they clearly justify cutting (Appendix A).

   Such decisions will involve the public and will be adequately analyzed and clearly documented so that they can be shown to be in the best public interest.

6. The costs of timber cutting presently appear to exceed financial revenues in the following locations:

   a. Management Areas 2.1B, 2.2B and 6.2B

   b. Northern hardwood with Site Index of 45 or below.

   Cutting will only be performed in these locations when justified by resulting nonpriced benefits.

A. GENERAL (Cont'd.)

7. The following non-priced benefits are major elements of the Forest's stated Goals and Objectives (Chapter IV, Sections C and D). Timber sales should be used to achieve these and other nonpriced benefits which are identified, so long as the sales can be shown to be in the overall best public interest.

   a. conversion of hardwoods to softwoods to increase deer wintering areas and enhance vegetative diversity.

   b. conversion of hardwoods to aspen to increase habitat for grouse, beaver and enhance vegetative diversity.

   c. conversion of hardwoods to upland openings, vistas and/or parking areas to enhance habitats, scenic views, vegetative diversity and public access.

   d. conversion of evenaged stands to unevenaged stands in order to maintain continuous forest cover, provide unevenaged habitats, enhance vegetative diversity, achieve desired recreation and visual quality objectives and to create a more economic timber management situation in the future.

   e. ensure adequate regeneration of softwoods following harvests in deer wintering areas.

8. The selection of methods for accomplishing vegetation management activities will be based on a least cost analysis.

B. SELECTION OF APPROPRIATE SILVICULTURE

1. Silviculture is the application of principles underlying the growth and development of single trees, and of the forest as a biological unit, when controlling forest establishment, composition, structure and growth.

2. Appropriate silviculture creates and maintains the kind of forest conditions that best fulfill the stated resource objectives of an area.

3. When selecting the most appropriate silviculture for an area first determine whether evenaged or unevenaged stands will best fulfill the objectives over time.

   a. Evenaged stands are contiguous groups of trees which have nearly the same age. Evenaged stands result from natural disturbances or timber harvesting which removes all or nearly all of the trees from a site at one time.

   b. Unevenaged stands contain three or more age classes of trees which are so intermingled that the cannot practically be separated into three or more, evenaged stands.

B. SELECTION OF APPROPRIATE SILVICULTURE (Cont'd)

4. Evenaged silviculture should be used to achieve the following objectives:

   a. diversity of type and age classes among stands (MA 3.1A, 4.1, 4.2, 6.2A).

   b. regenerate species which are intolerant or intermediately intolerant of shade such as aspen and paper birch.

   c. regenerate high risk and sparse stands.

   d. prevent the spread of insects and disease

   e. simultaneously produce Semi-primitive conditions and high quality sawtimber by infrequently entering areas to harvest big, old trees (MA 4.2 and 6.2A).

   f. produce high quality sawtimber and other wood products.

5. Unevenaged silviculture should be used to achieve the following objectives:

   a. diversity of types and age classes within a stand (primarily used in MA 2.1A, 2.2 and secondarily used in MA 3.1, 4.1, 4.2, 6.2);

   b. maintain continuous forest cover in areas with highly sensitive views (MA 2.1, 2.2, along roadsides, trails and other locations listed in Section E of the Forest-wide Recreation/Visual Standards and Guidelines);

   c. maintain continuous deer winter cover (MA 4.1, 4.2);

   d. maintain shade along streams;

   e. meet resource objectives in environmentally sensitive locations, such as riparian areas;

   f. regenerate tree species which are tolerant of shade;

   g. produce high quality sawtimber and other wood products.

C. APPLICATION OF EVENAGED SILVICULTURE

1. When evenaged silviculture is to be applied to a stand then match the best size and age to which trees should be grown, the best method for regenerating a new stand and the type and frequency of intermediate cuts with the resource objectives for each area.

2. On average, select the following rotation ages for each forest type to help achieve the resource objectives in the Management Areas shown below:

AVERAGE ROTATION AGES:

Forest Type	Management Area 3.1	4.1	4.2	6.2A
Northern Hardwoods	100	100	100	150
Oak	100	100	150	150
Red and White Pine	100	120	150	150
Paper Birch	80	80	80	80
Red and White Spruce, Larch	80	110	110	110
Balsam Fir	60	80	80	80
Aspen	50	50	50	50
Jack and Scotch Pine	50	50	50	50
Hemlock	100	140	140	140

Departures above and below these averages will be necessary to balance the forestwide age class distribution and maintain a non-declining yield of timber.

C. APPLICATION OF EVENAGED SILVICULTURE (Cont'd)

3. REGENERATION CUTS:

Select the method for regenerating an evenaged stand which best meets all the resource objectives for an area:

a. Standard Shelterwoods will typically be applied in two, closely timed cuts to regenerate species which are somewhat tolerant of shade and to regenerate spruce on wind firm sites.

1. The first, or preparatory, cut will be a commercial cut and will leave 30-50 percent crown cover depending on the shade tolerance of the desired species, the visual quality objectives if the site and the condition of the stand before cutting.

2. Trees left, other than wildlife reserve trees, should be of good quality, wind firm and of sufficient size to permit a commercial second, or removal, cut within ten years.

3. Post sale treatment to remove all other remaining ing stems over 1 inch in diameter which are not wildlife trees at breast height should be done within 1 year after the first cut.

4. After 6 to 7 years, if reproduction has reached a height of 5-8 feet, the remaining overstory will be removed if compatible with visual objectives.

b. Delayed Shelterwoods will be used to regenerate shade tolerant species in areas where the second cut of a standard shelterwood should be delayed for 40 to 60 years in order to:

1. maintain the appearance of big trees in locations of high visual sensitivity or to eventually create unevenaged stands where evenaged stands with insufficient stocking to perform economical, selective cutting within the next 20 years occur (See Application of Unevenaged Silviculture.

2. trees left should be of good quality, wind firm and of sufficient number, size and distribution to maintain a pleasing overstory of big trees.

C. APPLICATION OF EVENAGED SILVICULTURE (Cont'd)

3. The overstory should be left at least until the regenerated stand is thinned at an age when financial revenues exceed costs or justifiable because of non-priced benefits.

   At the same time, determine whether removal of some or all of the overstory should be performed or further delayed. Consider health and vigor of the overstory, condition of the entire stand and other resource objectives for the area.

c. Clearcutting will only be used when it is the optimum harvest method for achieving resource objectives. Clearcutting removes virtually all of the existing trees from a site in order to salvage trees or create an opening where shade intolerant trees can naturally regenerate, different types of trees can be planted or the open condition is maintained overtime.

   Clearcutting is the optimum method and will be used to:

   1. salvage stands damaged by insect, disease or climatic catastrophe stop the spread of an insect or disease outbreak.

   2. 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.

   3. regenerate aspen and paper birch stands which are intolerant of shade and valuable for wildlife habitat and vegetative diversity.

   4. convert hardwood stands to softwoods or aspen to enhance vegetative diversity and habitat for deer, grouse, beaver and other wildlife.

   5. create permanent upland openings for better vegetative diversity and improved wildlife habitat.

   6. create vistas and parking areas to enhance public use and enjoyment of the National Forest.

C. APPLICATION OF EVENAGED SILVICULTURE (cont'd)

4. INTERMEDIATE CUTS:

When appropriate, tend the evenaged stand during it's development by matching the proper type and timing of intermediate cuts which improve the existing stand, regulate it's growth and provide for early financial returns with the site's productivity and the area's overall resource objectives.

a. Release desirable species or individual trees in some very young stands. Release operations cannot be done profitably because the trees cut are too young to yield financial revenues, but they will be used to achieve the following nonpriced benefits:

1. increase the proportion of softwoods to improve deer wintering areas.

2. enhance the survival of oak stands on all sites where they occur since their continued presence maintains vegetative diversity;

3. enhance the size, number and distribution of desirable hardwoods in stands with site index greater than 45 where more than 50 percent of the stocking is comprised of striped maple or other "weed" trees.

b. Thinnings may be prescribed to improve the growth and quality of desirable trees in overstocked stands (stocking half way or more between A and B levels) as determined by silvicultural guides for each timber type. Thinnings will not be done until the financial revenues from the trees removed will exceed the financial costs unless the public desires the resulting non-priced benefits and the Forest Service decides they clearly justify cutting.

C. APPLICATION OF EVENAGED SILVICULTURE (cont'd)

c. The frequency of thinnings will be the most economical as determined by the type of trees being managed, the productivity of the site and the overall resource objectives for the area. Use the following guidelines for thinning when determining the most appropriate schedule to meet objectives and conditions:

1. Northern hardwoods may be thinned every 20 years in MA 3.1A and every 50 years in MA 6.2A where site index is 45 or greater. Normally these will be commercial thins beginning at age 40.

2. Softwoods will be thinned every 20 years where site index is 35 or greater. No thinnings will be done between harvests where site index is lower.

3. Aspen will not be thinned between harvests.

4. Paper Birch may receive commercial thins every 20 years when site index exceeds 65, but no thins will be performed on sites with a lower site index.

5. Oak will receive pre-commercial or commercial thinnings every 20 years in order to ensure it's survival on all sites.

5. Pre-commercial thinnings will be done to achieve the following non-priced benefits:

a. maintain vegetative diversity by ensuring the survival of oak in stands where a commercial thinning is not feasible within 20 years;

b. maintain vegetative diversity and improve deer winter habitats by thinning softwood stands having a site index of 35 or more where a commercial thinning is not feasible in 20 years.

D. APPLICATION OF UNEVENAGED SILVICULTURE

1. When unevenaged silviculture is to be applied, the type of cutting will be matched to the conditions of the existing stand, the species desired and other resource objectives for the area.

2. Unevenaged silviculture will normally be applied by selecting and cutting individual trees, small groups of trees or a combination of individual trees and groups.

   a. Individual tree selection will be used in:

      1. northern hardwood stands where shade tolerant species are desired.

      2. hemlock stands

      3. areas receiving high public use

   b. Group selection will generally result in cuts of less than 1 acre and will be used in:

      1. northern hardwood stands where species which are intermediately tolerant to intolerant of shade are desired.

      2. white pine and spruce stands

      3. the removal of high risk and low quality stems

      4. areas needing small temporary openings to meet wildlife or visual quality objectives

      5. order to facilitate the conversion of some evenaged stands to unevenaged.

   c. Both individual and group selection will be used when a combination of factors requiring each method occur.

D. APPLICATION OF UNEVENAGED SILVICULTURE (Cont'd.)

3. Selection cutting will usually occur every 15 to 20 years and be designed to achieve the following distribution of size classes:

	Hardwood Stands 1/		Softwood 2/	
Diameter Class (DBH)	Trees per Acre	Basal Area	Trees per Acre	Basal Area
6" - 10"	93	30	135	40
12" - 16"	28	28	35	35
18"+	8	17	7	15
Total	129	75	177	90

1/ Uneven-aged Management of Northern Hardwoods in New England, NE 322, quotient between number of trees in successive 2-inch DBH classes = 1.5; maximum tree size 22" DBH.

2/ The Selection System of Silviculture in Spruce-fir Stands, NE-425; quotient between number of trees in successive 2-inch DBH classes = 1.6; maximum tree size = 20" DBH.

4. Improve timber stands by converting the existing evenaged structure to three or more ages.

5. Conversion of evenaged stands to unevenaged stands will often result in timber sales with financial costs exceeding revenues, but these conversions should be made where the public desires the resulting non-priced benefits.

6. Attempt to make cost effective conversions to unevenaged stands by considering these approaches:

   a. do not cut sparse or low quality stands until a profitable selection cut can be applied.

   b. when treatment of sparse or low quality stands should not be postponed then perform a delayed shelterwood cut, but manage the regenerated stand using selection cuts.

E. REFORESTATION

1. Reforestation of cut over areas will be accomplished within five years after the regeneration cut by either natural or artificial means.

2. Reforestation will primarily occur by natural regeneration, but planting may be beneficial at times. In most cases, the site will be prepared for reforestation following regeneration cuts.

3. Site preparation may be done by hand, mechanical means or by prescribed burning:

   a. Conduct hand site preparation by eliminating unmerchantable vegetation where necessary to regenerate a timber stand.

   b. Conduct mechanical site preparation where a mineral soil is required for seedbed and cannot be adequately achieved by summer logging.

   c. Conduct prescribed burning for site preparation where needed to ensure oak regeneration. Consider using prescribed burning as site preparation for planting.

4. Survey all regenerated stands to ensure adequate stocking.

   a. Stocking surveys will be conducted following the first and third growing seasons after even and unevenaged regeneration cuts. Sample stands using 1/700th acre plots (4.45 raduis). A minimum of 10 plots will be taken in stands up to 20 acres, with an additional plot taken for every 2.5 acres over 20:

   b. Minimum stocking levels will vary for even and unevenaged stands:

      1. Evenaged stands - At least 60% of the plots should be stocked with 1 or more acceptable seedlings of a tree species which contributes to the attainment of the desired cover type.

      2. Unevenaged stands - At least 35% of the plots should be stocked with attainment of the desired cover type.

E. REFORESTATION (Cont'd)

c. Any stand not meeting minimum desired stocking levels after the third growing season will be scheduled for a survey following the 5th growing season. Any stand not meeting them after the fifth growing season will be inspected by a certified silviculturist and a detailed plan will be developed on how to achieve desired stocking levels.

d. Planted trees will be surveyed by checking 20 staked trees, established at the time of planting. This will be in addition to the above survey for total stocking.

5. The non-priced benefits of planting may jusitfy the net financial loss in some situations.

a. Plant softwood where natural regeneration is inadequate and unlikely to occur and softwoods are needed to provide deer wintering areas and enhance vegetative diversity.

b. Genetically improved yellow birch may be planted on ELTs which are good to excellent for yellow birch, as part of an ongoing effort to learn more about planting hardwoods in a forested area.

6. Prescriptions for artificial regeneration will specify seedling spacing, acceptable stocking levels and, growing stock depending on objectives for the area to be planted or seeded and the environmental conditions.

F. TREE IMPROVEMENT

1. A tree improvement program will be carried on to produce genetically improved growth stock to supplement natural regeneration.

2. Yellow Birch and Sugar Maple have been selected for genetic improvement. Superior Paper Birch and White Ash trees will be located and protected for use in tree improvement programs on the White Mountain and Allegheny National Forests.

3. A White Spruce clonal seed orchard will be maintained.

4. The objectives of the Tree Improvement Program will be to produce trees which are fast growing, high quality, resistant to insect and disease attacks, better adapted to specific sites, and high quality seed producers.

5. Methods to develop genetically superior trees will vary by species, but will generally be as follows:

   a. Selection - Identification and protection of superior phenotypes

   b. Evaluation plantings - Planting of off-spring from superior phenotypes to test superiority

   c. Seed orchard development - Production of trees for breeding program from grafted scions of selected superior phenotypes

   d. Breeding program - Controlled pollination of grafted superior phenotypes

   e. Evaluation plantings of breeding program - Planting and testing of trees produced by the breeding program

   f. Seedling production - Controlled pollination of proven superior trees to produce seedlings with improved genetic qualities.

6. All species planted for reforestation will be from the best seed source available that is economically efficient, but not less than a level I program as defined in Forest Service Manual 2475.3.

G. SILVICULTURAL GUIDES

1. Following is a list of silvicultural guides to be used in implementing these management requirements:

   a. Northern Hardwoods - A Silvicultural Guide for Northen Hardwoods in the Northeast. NE-143, with Green Mountain Supplemental Prescription Key, 2470.

   b. Paper Birch - A Silvicultural Guide for Paper Birch in the Northeast. NE-535.

   c. Spruce-Fir - A Silvicultural Guide for Spruce-Fir in the Northeast. NE-6, with Green Mountain Supplemental Key, 2470.

   d. White Pine - A Silvicultural Guide for White Pine in the Northeast. NE-41.

   e. White Pine Management, A Quick Review. NA-FR-27.

   f. Red Pine - Manager's Handbook for Red Pine in the North Central States. NC-33.

   g. Oak - Evenaged Silviculture for Upland Central Hardwoods 1968. Agricurtural Handbook 355. Manager's Handbook for Oaks in the North Central States. NC-37.

   h. Northern Hardwoods - Establishing Evenaged Northern Hardwood Regeneration by the Shelterwood Method - A Preliminary Guide. NC-99, 1973.

   i. Unevenaged Management of Northern Hardwoods in New England. NE-332.

   j. The Selection System of Silviculture in Spruce-Fir Stands. NE-425.

   k. Managing Eastern Hemlock, A Preliminary Guide. NA-FR-30.

OPENINGS

A. GENERAL

1. Openings are areas where crown closure of vegetation is less than 50 percent and height of vegetation is less than 35 percent of that of the surrounding trees.

2. Openings should have irregular shapes to provide more interspersion with forested lands and to improve visual quality.

B. TEMPORARY OPENINGS

1. Size of temporary openings will be limited to 30 acres or less as set by the standards for each management prescription and by concerns for aesthetics. Individual exceptions to the maximum size of temporary openings may be granted if they are in the public interest but only after review by the Regional Forester and appropriate public notice is given.

   Such exceptions may include salvage of timber resulting from from natural catastrophies caused by fire, insects, diseases, ice or windstorms.

2. Openings should be separated by manageable stand(s) at least 500 feet wide. Exceptions to this will include areas where small strip or patch cutting is used.

C. PERMANENT OPENINGS

1. Permanent upland openings should be located:

   a. on 3 to 5 percent of the nonwilderness upland portion of the forest;

   b. where there are less than 30 acres of open land per 1000 acres of forest;

   c. where tree reproduction is slow, such as frost pockets, poorly drained or excessively drained soils. This includes Ecological Land Types ending with 10d, 11, 12d, and "a";

   d. where on-going management activities maintain an open or semi-open character, such as log landings, utility rights of way, road or trail rights of way, grazing lands;

   e. to be usable in future management activities such as for log landings, vistas, etc.;

   f. near streams, ponds, lakes, and wetlands, if possible. Location and use of these openings are subject to riparian area considerations.

C. PERMANENT OPENINGS (cont'd)

2. Optimal size of openings is between 0.5 and 10.0 acres, although beaver flowages, raptor areas, and others may require larger openings. Pastures and hay fields can be much larger.

3. Maximum sinlight is available when permanent openings are oriented NE-SW.

4. Openings should have a mixture of vegetation types, including shrubs, clumps of trees, grasses, forbs, and woody perennial plants.

5. Log landings maintained as openings can be expanded beyond the size needed for logging operations.

6. A minimum of 100 feet around openings should be managed to provide vertical diversity and a gradual transition between the opening and mature forest.

A. TRANSPORTATION ANALYSIS

1. Analysis will be done to determine the transportation systems which best support the integrated needs and objectives of all resources and uses in each Opportunity Area. The analysis will:

   a. specify road management objectives (FSM 7701 and NFMA), direct road design criteria (FSM 7720), and operation and maintenance criteria (FSM 7730.3);

   b. consider all reasonable alternatives;

   c. identify a cost efficient transportation network using concepts and methodology for analyzing alternative long-term permanent transportation facilities from FSM 1971 and FSH 1909.17;

   d. direct the obliteration of roads not needed to meet the management objectives of the Forest Plan;

   e. direct the addition of uninventoried existing roads, needed to meet the management objectives, to the Forest Development Transportation Plan (FSM 7711);

   f. direct the management of transportation facilities including gates.

2. The following items will be considered in evaluating site specific transportation project proposals:

   a. the accessibility of National Forest lands to the public by appropriate means;

   b. the relationship of the transportation facility to long and short-term land management objectives;

   c. the types and amount of traffic intended to use the transportation facility;

   d. the effects of the transportation facility on soil and water quality;

   e. the timber and wildlife management and recreation opportunities foreclosed due to locations of transportation facilities;

   f. the economic and environmental effects of the total transportation system to determine the most desireable mix of permanent roads, temporary roads, skid trails, and landings in timber harvest areas.

B. ROAD DESIGN AND CONSTRUCTION

1. All new road construction will be limited to single lane, local roads.

2. Preconstruction and construction activities will be conducted in accordance with FSM 7720.

3. Roads will be located, designed and constructed to provide stability and durability appropriate for their intended service life and uses.

4. Design elements and standards will permit maximum economy while meeting management direction for resource and environmental protection and user safety (FSM 7721.1).

5. Road designs will receive a technical review, including a plans-in-hand field review by the District Ranger and the appropriate interdisciplinary team.

6. Use the service-wide specifications, EM 7720-100R, EM 7720-100B, and EM 7720-100LL for Forest Service construction of roads and bridges. Abbreviated specifications may be used with the 2400-9T Timber Sale Contract.

   Incorporate changes or additions that are necessary to identify the specific requirements of an individual project into contracts as special project specifications.

7. Develop and document cost estimates in accordance with FSH 7709.56.

8. New road alignment will follow the natural lay of the land. If this is not possible, then the road must be designed to minimize any negative effects the alignment could have on visual quality or other resources.

9. Road grades will generally be between 2 and 20 percent. Grades greater than 10 percent will be considered if other alternatives are too expensive and mitigating measures such as additional drainage control are possible.

10. Roads constructed or reconstructed for use by passenger cars will be designed in accord with the 1984 AASHTO Policy on Geometric Design of Highways and Streets section on rural roads and special purpose roads.

11. Temporary roads and skid trails will include revegetation as part of their design. Grass seed will be applied to stabilize the soil as soon as practical, but not to exceed one year, following the termination of the contract, lease, or permit allowing vehicular use of the road. (See General Management Requirements for Soil and Water, Section C, Ground Disturbing Equipment).

C. ROAD OPERATION AND MAINTENANCE

1. Public use of roads will be controlled to meet the Forest Plan management objectives such as achieving desired recreation opportunities (see General Management Requirements for Recreation/Visual) and protecting wildlife habitats (see General Management Requirements for Wildlife and Fish).

2. While Forest roads may be closed to wheeled, motorized vehicles, generally they will remain open for hiking, ski touring, snowmobiling, and horseback riding--depending on the recreation opportunities and resource management activities in a specific area.

3. Access will also be controlled to prevent resource damage and to protect roads from damage by use during critical times of the year, such as spring breakup.

4. Known users will be informed of closures through signing and personal contact.

5. Forest local roads will be maintained at the levels identified under each management prescription. The general relationship of maintenance levels to local road vehicular use is shown below:

Local Road Vehicular Use	Traffic Service Level	Maintenance Level
Infrequent	D or C	I or II
Seasonal	C or B	II or III
All Season	B	III or IV

6. Arterial and collector roads will be maintained at level III or higher.

LAND OWNERSHIP ADJUSTMENT

A. Landownership Adjustment must satisfy one or more of the following purposes:

1. accomplish objectives of public law or regulation;

2. meet demand for National Forest System resources;

3. result in more efficient landownership patterns or;

4. result in lower resource management cost.

B. In addition, the adjustment program will be directed towards:

1. protection of existing National Forest values and benefits;

2. full, free and unencumbered access for the public and National Forest permittees and users;

3. meet identified management needs in soil and water protection, scenery preservation, wildlife habitat improvement, timber production, special areas and dispersed recreation;

4. resolving occupancy trespass and encroachment onto Federal land.

C. In addition to the above, but of lower priority, consider lands, or partial interest in lands which would provide a buffer between existing National Forest land and privately owned residential or recreational developments if needed to:

1. to achieve high priority resource needs such as threatened and endangered habitats, deer wintering yards, uncommon or outstanding features, etc.;

2. to protect important existing National Forest lands or uses.

D. Land adjustment techniques include but may not be limited to:

1. exchange, acquisition by purchase, or donation either in full fee or partial interest;

2. easement for scenic protection and access;

3. small tract sales or changes to resolve boundary concerns;

4. partial interest acquisition when land management objectives can be met and mutually agreeable terms can be reached with the proponent. Advantages to local towns in maintaining open land, preserving farm lands and protecting the local tax base will be important considerations.

E. Locate and mark National Forest boundary linest to avoid trespass and increase management efficiency.

F. Subsurface ownership - Consider subordination or acquisition of subsurface rights where all of the following are met:

1. conflict between surface values and subsurface activities cannot be mutually resolved;

2. the public benefits from the surface values exceed the cost of acquiring subsurface rights;

3. the cost is consistent with budget priorities.

CORRIDORS

A. Use existing corridors for utility lines, pipelines, etc. unless the applicant can show that it is in the public interest to do otherwise.

B. All proposals will follow the guidelines in U.S.D.A. Handbook 478, National Forest Landscape Management, Volume 2, Chapter 2, Utilities.

MINERALS

A. LEASABLE MINERALS - OIL, GAS, AND HARD ROCK DEPOSITS

1. All lands will be available for exploration that does not disturb the land surface.

2. The reasons for closing an area to surface disturbing mineral activities must be supportable and documented. Lands with sensitive environmental conditions will be closed to surface disturbing activities in order to protect those conditions from harm (Appendix I).

   a. Open water; streams; riparian areas; wet, steep and shallow soils; municipal watersheds; administrative sites; range; Wilderness (MA 5.1); Primitive recreation areas (MA 6.1); Special Areas (MA 8.1); developed recreation areas; and Special Use areas.

   b. Within 200 feet of all designated trails and permanent roads unless temporary occupancy is approved for a specific proposal.

   c. Softwoods managed to provide deer winter cover.

   d. Areas of MA 4.1 not providing winter cover from December 1 to April 30 unless approved for a specific proposal.

3. No surface disturbing mineral activities will be allowed in areas which are tentatively open to them until the Forest Supervisor has approved a site specific environmental analysis of the proposed operations.

4. If limited surface disturbance is allowed the effects will be mitigated by requiring the operator to use the best available technology.

5. Forest Service and Bureau of Land Management will jointly review all hardrock prospecting permits and drilling applications.

6. Consenting to hardrock prospecting will not convey any preferential lease or development rights until an appropriate environmental analysis has been performed.

7. Management decisions must allow the owners of outstanding subsurface rights to make reasonable use of the surface in exercising their subsurface rights.

A. LEASABLE MINERALS - OIL, GAS, AND HARD ROCK DEPOSITS (Cont'd)

8. All mineral leases which are issued will include the following stipulations:

   a. Standard Stipulations for Lands under the jurisdiction of the Department of Agriculture (FSM2822.42 and 2822.43). These stipulations provide for protection of timber resources, special uses, fire protection, existing facilities (including roads), watershed protection, range uses, and compliance with all agency rules and regulations (including Forest Plan).

   b. Surface Disturbance Stipulations (USDI - BLM Form 3109-5). These stipulations require Bureau of Land Management and Forest Service approval prior to any surface disturbing activities. Approval will be based on an environmental analysis.

   c. Forest Service Standard Stipulations (Form R9-2800-6) reiterate the necessity for NEPA review and Forest Service approval of any operating plans prior to any earth disturbing activities.

9. Operating plans are approved based on information about (1) public safety, (2) environmental damage, and (3) protection for surface resources. Operating plans will contain the following items:

   a. steps taken to provide public safety;

   b. location and extent of areas to be occupied during operations;

   c. operating methods, including size and type of equipment;

   d. capacity, character, standards of construction, and size of all structures and facilities to be built;

   e. location and size of areas where vegetation will be removed and where soil will be disturbed;

   f. steps to protect soil stability and water quality;

A. LEASABLE MINERALS - OIL, GAS, AND HARD ROCK DEPOSITS (Cont'd)

g. a description of explosives to be used, including type, amount, time of use, and safety precautions;

h. requirements for rehabilitation and revegetation of disturbed land;

i. copies of all permits obtained from State or Federal agencies;

j. archeological studies, if required.

10. The Forest Supervisor may temporarily suspend or may modify operations due to emergency forest conditions such as high fire danger or other unsafe situations.

11. The lessee/permittee must keep the District Ranger informed about operations. This is especially important with geophysical inventory and testing activities because of their mobile nature. District Ranger will alert lessee/permittee to circumstances which may affect safe and efficient conduct of work activities.

B. COMMON VARIETY MINERALS (SAND AND GRAVEL)

1. All activities and resulting conditions must be compatible with the management prescription for the area.

2. An operating plan will be prepared before a site is developed. The plan will include at least the following items:

a. a schedule of activities;

b. an estimate of the amount of material to be removed;

c. rehabilitation measures for stabilizing soil, protecting water quality, restoring vegetation, and protecting visual quality.

3. The fair market value of all mineral materials will be determined before they are sold. A record will be maintained of the quantity and type of material used or sold.

A. INVENTORY AND PROTECTION

1. The GMNF will comply with the letter and spirit of all peritinent Federal Laws, Regulations and Presidential Executive Orders. The Forest will work closely with the Vermont Historic Preservation Offices and comply with all of the items in the Memorandum of Agreement signed with the office.

2. Prior to planned land disturbing activities, a cultural resource survey will be conducted and all identified sites will be inventoried. Surveys will reflect the forestwide inventory completed in 1978 by the Institute for Conservation Archaeology.

   Those sites that meet 36CFR60.6 criteria will be nominated for inclusion in the National Register of Historic Places. All qualified and unevaluated sites will be protected and/or adverse effects will be mitigated in accordance with 36CFR800.

3. The GMNF will make every effort to protect cultural resources not meeting the 36CFR60.6 criteria if it is determined they are locally significant, or have research or interpretive value. Site specific standards will be developed in such cases.

4. The GMNF will make every effort to consult with appropriate genetic and cultural Native American groups concerning the management of Native American sites and cultural resources. An ethnographic overview of the National Forest will be prepared before 1996.

5. The nature and degree of damage to cultural resources caused by vandalism, visitor use, and natural deterioration will be assessed and protective measures will be implemented.

6. Opportunities for both onsite and offsite interpretation of cultural resources, considering significance, accessibility, and protection needs, will be identified.

7. Available data and predictive models using Ecological Land Types, maps, overview and site files will be used to structure cultural resource surveying.

8. Opportunities for research for professionals and for graduate students attending qualified colleges and universities will be identified.

B. RECORDS

1. Historic and Cultural Resource data will be preserved.

   a. Files will be maintained on all districts and a master file at the Supervisor's Office of all surveys, identified cultural resources and all available information relating to the history and archeology of the sites and region.

   b. All artifacts will be cataloged, curated, and made available for research by qualified individuals and organizations.

PUBLIC HEALTH

A. Drinking water from developed sources must meet Federal and State regulations and will be protected to ensure continued quality. A source found not to meet these standards will be closed until the standards can be met.

1. In compliance with State of Vermont standards, sources of drinking water will be tested for total coliform bacteria at a State approved lab once prior to the beginning the use season and once during peak use. If microbiological contaminant levels are exceeded, follow up action will be taken in accordance with FSM 7421.26.

2. Each drinking water source will be tested for nitrates once every three years.

3. Any new source of drinking water will be tested for all compounds identified in State and Federal laws.

B. Refuse generated or deposited on National Forest System lands should be disposed of through community or areawide systems that include facilities that meet Federal regulations.

C. Special use permits will not be issued for spray application of effluent on National Forest land for projects that are substantially new development.

D. Swimming Water. See Section F, Standards and Guidelines for Hapgood Pond, Management Prescription 7.1B.

FIRE

A. PRESCRIBED FIRES

1. Prescribed fires may be used in Management Areas where fire is an acceptable management tool to create and maintain desired vegetative composition, scenic vistas, and wildlife habitat, and to reduce fire hazards, control forest pests, and accomplish other management objectives.

2. A prescribed fire and smoke management plan must be approved by the Forest Supervisor prior to ignition.

3. Appropriate local and state officials will be notified in advance of all prescribed fires.

B. PREVENTION

1. Specific direction is contained in the Green Mountain National Forest Fire Management Action Plan. This plan will be reviewed and updated annually.

2. Agreements for fire detection and suppression on National Forest System lands by cooperating firefighting agencies must define suppression action that will be commensurate with established resource management prescriptions and fire suppression action plans.

3. Slash, and other dead woody vegetation, resulting as a by-product of vegetation management will be managed at a level commensurate with the allowable fire intensity and rate of spread that meets resource objectives in management prescriptions. Treatment along highways and adjacent properties will meet applicable State laws and visual quality objectives.

C. DETECTION

1. Wildfire detection and suppression will be commensurate with the resource values to be protected. Detection and suppression will be planned based on an anlysis of probable fire locations, expected fire intensities, potential net resource value change, and potential threat to health, safety, and adjacent properties.

2. Detection will rely primarily upon reporting by the general public and upon state detection flights.

3. High hazard areas will be patrolled during periods of extreme fire danger.

D. SUPPRESSION

1. Action will be taken to suppress wildfires on all National Forest land.

2. Cooperative agreements will be maintained with local fire departments for initial attack.

A. STRATEGY

1. The integrated pest management program will include a variety of forest management practices and activities to prevent, limit and suppress pest damage.

2. Pests include disease, damaging insects, and plant species which hinder regeneration or growth of desired species, and people pests.

3. Techniques which prevent the occurrence of damaging pests will be incorporated into management as appropriate to the objectives of the Management Prescription.

4. The full range of nonchemical alternatives to control pests will be evaluated before considering chemicals. These pest management activities include:

   a. maintaining healthy, vigorous stands
   b. selecting superior seedlings or seed source
   c. altering stand conditions (eg, reducing density, removing older trees)
   d. altering species composition
   e. harvesting while trees are still vigorous
   f. removing damaged, diseased or risk trees;
   g. avoiding logging damage to residual trees
   h. removing alternate hosts
   i. insuring prompt revegetation with a good seed source
   j. removing all infested material
   k. prescribed burning
   l. release of parasites or predators
   m. biological pesticides

5. Pesticides will only be used when other methods are not adequate. They will only be used as as a last resort in Management Prescriptions 5.1, 6.1, and 8.1, including the NRA.

   a. Interested state and local agencies, private organizations and individuals will be contacted and involved in any decision to use pesticides or herbicides.

A. STRATEGY (Cont'd.)

b. Pesticides will only be used for those sites and applications specified in the EPA Pesticide Label Guide. Additional information is available from the Pesticide Specialist at the following address:

USDA Forest Service, NE
State & Private Forestry
370 Reed Road
Broomall, PA 19008

c. Only pesticides registered by the Environmental Protection Agency, except as provided in regulations, orders, or permits issued by EPA, will be used.

d. The minimum pesticide dose rate and the least persistent chemical that will achieve objectives will be used.

e. Pesticide formulations that minimize vapor loss and drift, and that have the lowest toxicity necessary to control a pest will be selected.

f. Application equipment, operating conditions, solvents, carriers, and additives will maximize the amount of applied chemicals reaching the intended target.

g. Pesticides will not be applied within 50 feet of open water during direct wick and brush applications; 100 feet during ground foliar applications; and 250 feet for aerial applications, unless the chemical is registered for water course, bank, or instream use.

h. Pesticides will not be applied within 100 feet of other ownerships during ground foliar applications and 250 feet for aerial applications without written permission.

i. Application operations will be stopped whenever weather or other conditions may cause applied pesticides to leave the target area.

j. Those who use and apply pesticides will be properly trained.

k. Restricted-use pesticides shall be used only by State Certified Applicators or those under their direct supervision.

A. STRATEGY (Cont'd.)

l. Pesticides will be transported and stored in accordance with Federal, State and local laws and regulations.

m. In the event of hazardous materials spills, including petrochemicals, actions will be taken in accordance with the Oil and Hazardous Substances Pollution Contingency Plan for the Green Mountain National Forest.

LAW ENFORCEMENT

A. Cooperative Law Enforcement agreements will be made in accordance with tri-year evaluations of Forest law enforcement needs and quality of service available.

B. Law enforcement will be commensurate with frequency, severity and types of violations committed.

C. At all facilities, security measures will be taken that are cost efficient in relation to risk and value of potential loss.

F. Management Prescriptions and Their Standards and Guidelines

Section E listed standards and guidelines which would apply to management practices called for in more than one management prescription. However, since each of the 15 management prescriptions has unique objectives and desired land conditions (Table 4.2), each also has some unique management practices, standards and guidelines to achieve its goals. This section is organized by management prescription, and outlines the standards and guidelines which are unique to each.

Because this section only refines, but does not repeat, the general standards and guidelines (Section E), it is important to refer to both sections before determining which activities may be undertaken in a certain area and which standards and guidelines will apply.

Table 1 Management Prescriptions

Management Area Number	Description of Desired Future Condition and Appropriate Management	Acreage	Per cent of GMNF
2.1A	Trees of many ages and sizes where Roaded recreation is offered. Recreation, aesthetic and wildlife benefits will be emphasized. Unevenaged management of timber will be used.	19,300	6
2.1B	Similar to 2.1A except no commercial timber management will occur.	3,400	1
2.2A	Similar to 2.1A except Semi-primitive recreation will be offered.	5,100	1
2.2B	Similar to 2.2A except no commercial timber management will occur.	17,800	5
3.1	Mosaic of vegetative conditions, wildlife, high quality sawtimber and roaded natural recreation.	48,800	15
4.1	Deer winter areas where roaded recreation opportunities exist. Predominantly softwoods providing stable deer habitat. for deer.	14,500	4
4.2	Similar to 4.1 except Semi-primitive recreation opportunities will exist.	5,800	2
5.1	Wilderness. Managed according to the provisions of the Wilderness Act of 1964.	58,400	18
6.1	Primitive Areas provide opportunities to experience solitude and remoteness in a primitive setting. The areas will appear entirely natural, will have no roads, no timber harvesting, and few visitors.	12,100	6
6.2A	Semi-Primitive Areas have few open roads, and appear almost entirely natural. Wildlife and timber management activities are selected, scheduled and located to ensure that backcountry recreation is protected.	60,100	18
6.2B	Similar to 6.2A except no commercial timber management will be performed.	17,500	5
7.1	Highly developed recreation areas, include downhill ski areas and high density campgrounds.	3,200	1
8.1	Special areas have uncommon or outstanding biological, geological, recreational, cultural, or historical significance. Acreage does not include special trail corridors.	31,500	10
9.2	Newly acquired lands where future management options will be kept open until inventories can be done.	27,300	8
9.3	Potential ski area expansion will be kept open on the lands until specific proposals are received and studied.	600	1
Total		325,400	100

Management Prescription 2.1A

PURPOSE

MANAGEMENT PRESCRIPTION 2.1A emphasizes CONTINUOUS FOREST COVER and roaded natural recreation opportunitites. This prescription provides areas having trees of many ages and sizes, where no large clearings will be created. This management prescription intends to help maintain a balanced mosaic of ecological communities across the forest; to help us learn more about the benefits and costs of unevenaged management and reduce soil and nutrient loss on sensitive lands, such as riparian areas.

In some situations, continuous forest cover may greatly enhance recreational uses and visual quality. The intention is also that unevenaged timber management be demonstrated to interested publics.

PHYSICAL DESCRIPTION

This management prescription could be applied in areas ranging in size from 40 to 2500 or more acres. There will be a relatively unbroken mixture of trees of different ages and sizes. Trees which tolerate shady conditions will dominate since no large, sunny openings will be created. Beech, sugar maple, and hemlock are examples.

From a distance, timber management activities will not be very evident since a continuous forest cover will be maintained. The greatest effect on distant views may be the road system needed for large areas managed under this option. The amount seen will mostly depend on terrain.

Within these areas, trees can range in age from seedlings to very old growth. Timber management will be apparent by the cut stumps, piled brush, road system and the type, size and age of trees.

Some permanent openings will be maintained, but timber management will be less noticeable than in Management Prescriptions 3.1.

Roads will provide access to many of these areas. Forest local roads will be surfaced with either soil and grass or gravel. Trails may be constructed to form links between roads. Because of the less drastic appearance of timber harvesting activities and the extensive road/trail system, these areas will be very popular with many recreationists.

LOCATION

Although this management prescription can be applied on any lands suitable for timber production, it is particularly appropriate in areas which are important for their recreation uses and scenic views or areas which are environmentally sensitive. This management prescription is also applied wherever continuous forest cover or old growth forest conditions are desired.

GOODS AND SERVICES

Areas managed under this management prescription will provide low to moderate amounts of wood for lumber, furniture, bowls and other products such as pulp, fuel and fiberboard.

The varied height and age of vegetation will provide a moderate to high diversity of habitats over a small area. These habitats will be very stable due to the limited vegetative disturbance which will occur.

Most wildlife will benefit, particularly birds and small mammals. Some which will not benefit are those preferring a clear forest understory or openings.

Recreation opportunities in a roaded, natural environment will be available. Road and trail oriented uses will be common as will hunting, fishing and bird watching.

2.1A Standards and Guidelines

A. TIMBER

1. Primary silvicultural system will be unevenaged management.

   Exceptions may include areas managed for aspen or deer wintering areas.

B. OPENINGS

1. Maintain 3% of area in permanent openings.

C. FISH AND WILDLIFE

1. Provide for fish and wildlife needs consistent with management emphasis; protect special habitats.

D. RANGE

1. Provide grazing when it is compatible with other resource values and a demand for forage exists.

E. RECREATION/VISUAL

1. Roaded natural opportunities will be available.

2. Views from greater than 1/2 mile will meet the visual quality objectives of Partial Retention or Retention (See General Standards and Guidelines for Recreation/Visual).

3. Do not allow openings or facilities in highly visible locations would interfere with the objective of maintaining the appearance of continuous forest cover.

F. FIRE

1. Fire is an acceptable management tool.

G. INTEGRATED PEST MANAGEMENT

1. Chemicals may be used.

H. PERMANENT ROADS

1. The surface width of new Forest local roads will range from 8 to 13 feet, with turnouts for passing. Additional width may be necessary on turns to accommodate larger vehicles.

2. Permanent drainage structures will be used at all streams. Structures include bridges, culverts, and waterbars. These may be constructed using native, as well as man-made materials.

3. Maintenance will keep vegetation safely trimmed, roadbeds stable, drainage structures and all safety-related items functional (Maintenance Levels II, III, or IV).

4. Generally, local road maintenance will not be provided solely to enhance aesthetics.

I. CORRIDORS

1. Above ground utility lines should be discouraged. Pipelines will be buried.

J. FACILITIES

1. Structures necessary for management, such as gates and signs, should be designed according to current Forest Service Standards. Modifications may be necessary to accommodate recreational use, visual quality objectives, or to reflect new technology.

K. LANDS

1. Acquire interests in visually sensitive lands to protect and enhance the scenery.

2. Acquire highly productive forest land for unevenaged timber management to help meet demands for wood.

3. Provide public access to these areas of high recreational value.

L. MINERALS

1. Surface disturbing mineral activities appear to be acceptable on all areas under this Management Prescription except:

   a. the sensitive land categories listed in Chapter IV, Section E, General Standards and Guidelines for Minerals.

   b. other site specific locations where detailed review of project proposals indicate that surface disturbance is likely to unacceptably compromise the management objectives of the area.

2. Consent to oil and gas leasing and mineral exploration in this Management Area if the restrictions on surface disturbance stated above (L.1) are followed and standard environmental restrictions can be met.

3. USDA consent on mineral development and extraction will be reserved until site specific proposals are received. If consent is given, mineral development and extraction activities will follow the restrictions on surface disturbance described above (L.1) unless the findings from exploration and further environmental analysis clearly show that changes in those restrictions are in the public interest.

   When reviewing development and extraction proposals, consider the relative value of surface and subsurface resources to society and the consistency of the proposed actions with the management objectives, standards and guidelines of this prescription.

Management Prescription 2.1B

The purpose, physical description, and benefits of 2.1B are the same as 2.1A except trees will not be managed for timber production until the economic conditions change or technologies improve.

MANAGEMENT PRESCRIPTION 2.1B may be applied where soils are predominantly thin and low in productivity, slopes are predominantly steep and increasing roaded access is cost prohibitive.

2.1B Standards and Guidelines

FOLLOW THE STANDARDS AND GUIDELINES FOR 2.1A EXCEPT FOR THE REVISIONS LISTED BELOW.

A. TIMBER

1. Trees will not be managed primarily for timber production. Trees may be cut to:

   a. reduce fire, pest, or flood damage to private or National Forest lands;
   b. maintain habitats for threatened, endangered, or rare plants;
   c. maintain or create desired wildlife habitat conditions;
   d. maintain or create vistas.

B. RANGE

1. There will be no domestic livestock grazing.

C. PERMANENT ROADS

1. Most public use of Forest local roads will be non-motorized.

2. No new roads will be built.

3. Road maintenance will be done as needed on drainage structures, closure devices and the roadbed. Grass may be allowed to grow in local roads (Maintenance Levels I, II, or III).

D. LANDS

1. Focus land adjustment priorities on providing high water quality, protecting wildlife habitats and meeting demands for recreation.

Management Prescription 2.2A

The purpose, physical description, and benefits of 2.2A are the same as 2.1A except Semiprimitive recreation opportunities will be provided instead of Roaded Natural.

2.2A Standards and Guidelines

FOLLOW THE STANDARDS AND GUIDELINES FOR MANAGEMENT PRESCRIPTION 2.1A EXCEPT FOR THE REVISIONS AND ADDITIONS LISTED BELOW.

A. RECREATION/VISUAL

1. Follow the Forestwide standards and guidleines for Semi-Primitive recreation.

B. ROADS

1. The surface width of local roads will range from 8 to 13 feet.

2. Most public use of Forest local roads will be non-motorized.

3. Road maintenance will be done as needed on drainage structures, closure devices and the roadbed. Grass may be allowed to grow in local roads (Maintenance Levels I, II, or III).

C. LANDS

1. Conduct land adjustment to provide a consolidated ownership of 2500 acres or more.

2. The following lands are a high priority for acquisition:

   a. areas within or nearby MA 2.2 which could also provide Semi-primitive opportunities.

   b. lands supporting or with the potential of supporting activities conflicting with semi-primitive recreation.

D. MINERALS

1. Consent to surface disturbing exploration activities to the extent that they do not unacceptably interfere with the Semi-primitive setting and other management objectives.

Management Prescription 2.2B

The purpose, physical description and benefits of 2.2B are the same as 2.1B except Semi-primitive recreation opportunities will be provided instead of Roaded Natural.

2.2B Standards and Guidelines

Follow the Standards and Guidelines for Management Prescription 2.1B except for the revisions and additions listed below:

A. RECREATION/VISUAL

1. Follow the Forestwide Standards and Guidelines for Semi-primitive recreation.

B. TIMBER

1. Trees will not be managed primarily for timber production. Trees may be cut to:

   a. reduce fire, pest, or flood damage to private or National Forest lands;
   b. maintain habitats for threatened, endangered, or rare plants;
   c. maintain or create desired wildlife habitat conditions;
   d. maintain or create vistas.

C. PERMANENT ROADS

1. Most public use of Forest local roads will be non-motorized.

2. No new roads will be built.

3. Road maintenance will be done as needed on drainage structures, closure devices and the roadbed. Grass may be allowed to grow in local roads (Maintenance Levels I, II, or III).

D. RANGE

1. There will be no domestic livestock grazing.

E. LANDS

1. Conduct land adjustment to provide a consolidated ownership of 2500 acres or more.

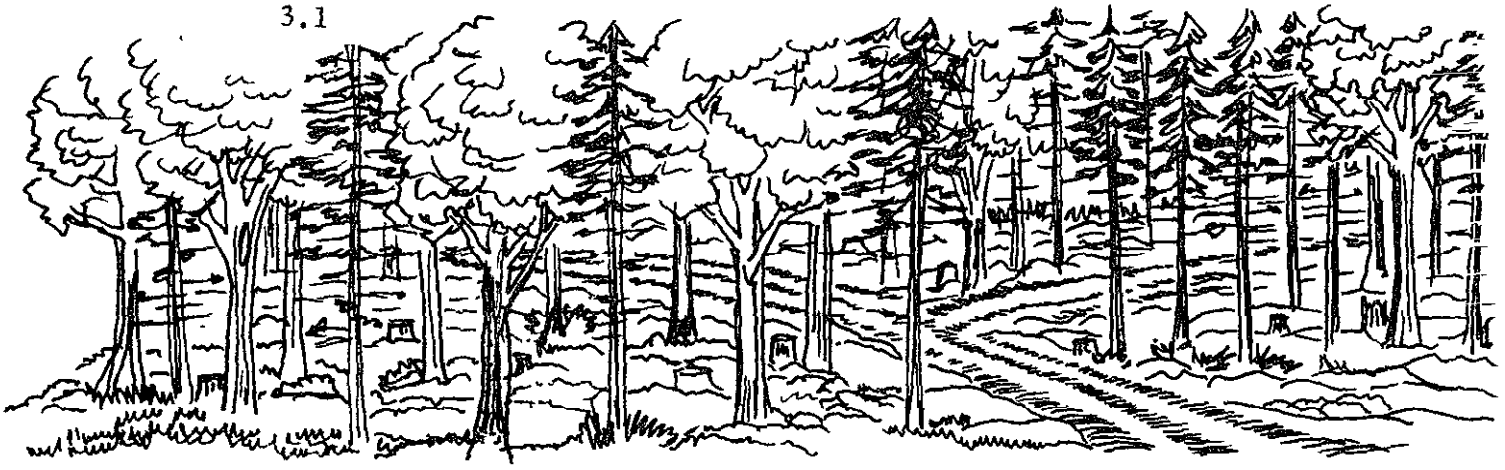
2. The following lands are a high priority for acquisition:

   a. areas within or nearby MA 2.2 which could also provide Semi-primitive opportunities.

   b. lands supporting or with the potential of supporting activities conflicting with semi-primitive recreation.

D. MINERALS

1. Consent to surface disturbing exploration activities to the extent that they do not unacceptably interfere with the Semi-primitive setting and other management objectives.



Management Prescription 3.1

PURPOSE

MANAGEMENT PRESCRIPTION 3.1 emphasizes a MOSAIC OF VEGETATIVE CONDITIONS in a roaded, intensively managed, but natural appearing environment. A careful blend of timber stands of various types and ages will benefit diversity, certain wildlife species, roaded recreational experiences and visual quality. Practicing evenaged silviculture for high quality sawtimber fits well with these objectives and will be used to help achieve them.

Visitors will find abundant opportunities to drive and walk in the forest which will gradually grow back to stands of large trees. Many different wildlife species will benefit from the food and cover which occur as the vegetation changes from grasses to shrubs to saplings to poles and back to large trees. This pattern of vegetative conditions across the landscape will be visually attractive to people visiting the Forest.

Because of the intensity of vegetative management in 3.1, we will be particularly careful to perform activities which are compatible with the needs of nearby landowners.

PHYSICAL DESCRIPTION

This management prescription could be applied to small or large areas, ranging from 40 to more than 2500 acres. There will be many evenaged stands interspersed with small areas of unevenaged stands, old growth stands and openings. These stands will be distributed so as to provide a diversity of age classes and forest types.

Trees will include sugar maple, yellow birch, white ash and red spruce as well as some red maple, aspen, paper birch, oaks, black cherry, beech, balsam fir, hemlock and white pine.

From a distance, timber management activities may or may not be evident depending upon the terrain and the amount of disturbance to the vegetation. Stands and cutover areas will be irregular in shape and size to provide good habitat for wildlife and soften the visual impacts.

Regeneration of trees will be rapid and cutover areas will quickly become less noticeable.

Within areas managed under this management prescription, timber harvesting, roads and recreation uses will be very evident. The size and age of trees within stands will be about the same ranging from tiny seedlings to large, mature trees.

Roads will be located to provide access for public enjoyment and management activities. Forest local roads will be surfaced with native soil or gravel. When not used for timber management activities, some roads may be closed to vehicular traffic and used as recreation trails. Other roads will remain open and be maintained for public motorized recreation uses and administration of the Forest. Trail uses may occur on abandoned roads and may form connecting links between maintained and abandoned roads.

LOCATION

This management prescription can be applied on lands capable of producing sawtimber trees within a rotation age of 100 years. Generally, these areas will have a hardwood Site Index 45 and above and spruce-fir Site Index 35 and above. Sites having hardwood Site Index 60 or above are preferred.

GOODS AND SERVICES

The area will provide opportunities for recreation in a roaded natural environment. Activities include hiking, berrypicking, camping, viewing scenery, fishing, hunting, trapping, cross-country skiing, snowmobiling and other forms of motorized and non-motorized recreation.

Wildlife habitat will exist for species which are tolerant of human activity and require openings mixed with evenaged stands. A moderate to high diversity of habitats will be provided.

Moderate to high amounts of wood for lumber, furniture, bowls and other products such as pulp, fuel, and fiberboard will be produced.

3.1 Standards and Guidelines

A. TIMBER

1. Primary silvicultural system will be evenaged.

2. Unevenaged management will be used where evenaged management is incompatible with other resources and values such as along certain roads that have high visual sensitivity.

B. OPENINGS

1. Maintain 3-5% of area in permanent openings.

C. FISH AND WILDLIFE

1. Provide for fish and wildlife habitat consistent with management emphasis; protect special habitats.

D. RANGE

1. Grazing may be used to maintain openings. Protect high quality timber production sites from grazing animals.

E. RECREATION/VISUAL

1. Roaded natural recreation opportunities may be provided.

F. FIRE

1. Fire is an acceptable management tool.

G. INTEGRATED PEST MANAGEMENT

1. Chemicals may be used.

H. PERMANENT ROADS

1. The surface width of new Forest local roads will range from 8 to 13 feet, with turnouts for passing. Additional width may be necessary on curves to accommodate larger vehicles.

H. PERMANENT ROADS (cont'd)

2. Maintenance will keep vegetation safely trimmed, roadbeds stable, drainage structures and all safety related items functional (Maintenance Levels II, III, or IV).

3. Generally, local road maintenance will not be provided solely to enhance aesthetics.

I. CORRIDORS

1. Utility lines may be either above or below ground depending on visual quality objectives. Pipelines will be buried.

J. FACILITIES

1. Structures necessary for management, such as gates and signs, should be designed according to current Forest Service Standards. Modification may be necessary to meet recreational needs, visual quality objectives, or to reflect new technology.

K. LANDS

1. Acquire lands which are suitable for demonstration of good timber management to produce high quality sawtimber.

2. Acquire highly productive forest land for management to meet society's demands for high quality sawtimber.

3. Consolidate ownership to facilitate a cost effective system of roads and management.

L. MINERALS

1. Surface disturbing mineral activities appear to be acceptable on all areas under this Management Prescription except:

   a. the sensitive land categories listed in Chapter IV, Section E, General Standards and Guidelines for Minerals.

   b. other site specific locations where detailed review of project proposals indicate that surface disturbance is likely to unacceptably compromise the management objectives of the area.

2. Consent to oil and gas leasing and mineral exploration in this Management Area if the restrictions on surface disturbance stated above (L.1) are followed and standard environmental restrictions can be met.

3. USDA consent on mineral development and extraction will be reserved until site specific proposals are received. If consent is given, mineral development and extraction activities will follow the restrictions on surface disturbance described above (L.1) unless the findings from exploration and further environmental analysis clearly show that changes in those restrictions are in the public interest.

   When reviewing development and extraction proposals, consider the relative value of surface and subsurface resources to society and the consistency of the proposed actions with the management objectives, standards and guidelines of this prescription.

Management Prescription 4.1

PURPOSE

MANAGEMENT PRESCRIPTION 4.1 emphasizes DEER WINTERING AREAS and provides suitable, stable habitat to meet deer needs during the winter. This must be considered because of the importance of deer to Vermont's economy and lifestyle, the severity of winter weather, and the increasing pressures for hunting and land development.

It is also the purpose of this management prescription to provide timber and recreational opportunities in a roaded natural environment. These and other goods and services will be offered in a manner which insures the primary purpose of maintaining suitable, stable deer winter habitat.

PHYSICAL DESCRIPTION

Areas managed under this management prescription will appear as a series of stands with a high proportion of conifer surrounded by hardwoods. Conifers will include hemlock, balsam fir, white pine, and red spruce. Plantations of white spruce, Norway spruce, red pine, or Scotch pine may also be present.

Trees within wintering areas will vary in age and size, ranging from seedlings to large, overmature trees. A majority of the stands will have trees of 7" or more in diameter at breast height (4.5 ft.). Stands will be dense, with branches covering 50% to 70% of the area overhead. Stands will be irregular in shape and size.

Most stands will be accessible by a combination of truck roads and skid trails. Many of these roads will be closed to public vehicle use on either a permanent or seasonal basis. Facilities will be kept to the minimum required for administrative or management purposes.

Evidence of humans will be obvious on site. Roads, logging debris, gates, and other signs of logging will be occasionally present. However, activity will not be widespread throughout the deer yard at any one time.

Recreationists may be present in the area although the type of use will vary by season. Winter recreation activities in these areas will be minimized. Control and informational signs may be present. Developments such as trail heads and campgrounds will not be located within the area.

Offsite, the appearance of the area will be natural. Manmade changes will be unnoticeable or subordinate to the overall landscape.

LOCATION

These areas presently occur on less than 10% of the Green Mountain National Forest, and it will be expanded to meet the needs of the deer herd. The areas will generally be located at elevations below 2500 feet and will be associated with three basic situations:

1. Flat to gently rolling terrain near or along streams. These areas usually have dense conifer cover.

2. Steep (40%+), southerly and westerly-facing sidehills, having relatively low snow depths throughout the winter. The areas are usually a mixed hardwood-softwood forest. Oak and white pine are common in this situation.

3. Moderate to steep (average 30%+), southerly and westerly-facing sidehills. Other aspects or elevations may also be used.

GOODS AND SERVICES

This management prescription will primarily provide stable, suitable habitat for deer as well as other wildlife species associated with conifer or mixed conifer-hardwood forests. A low to moderate diversity of habitat will be found.

A moderate amount of forest products, such as sawtimber, pulp, and fuelwood will also be provided. These products will result from management direction to retain a high proportion of conifer, healthy conditions, and a balance of age classes to ensure stability.

A low to moderate amount of primarily non-motorized recreation will be possible. During winter, recreation use will be discouraged.

During summer, driving for pleasure, camping, horseback riding and hiking may occur. These activities will primarily occur in vicinity of better developed roads. Hunting and trapping may occur during fall and winter months.

4.1 Standards and Guidelines

A. FISH AND WILDLIFE

1. Adequate cover will be provided to meet the needs of wintering deer.

2. Deer winter habitat of adequate size and width will be provided for protection from predators and natural elements.

   A minimum cover width of 400 to 500 feet should be maintained to reduce snow depth and provide good travelways.

   Large stands of trees having the same age are undesirable since little browse is available and risk of disease would be high.

3. At least 60 percent of the area should have adequate tree size and density to provide thermal cover and snow interception. Generally, this would be trees 40 years of age and older in moderate to well-stocked stands.

4. Activities that would significantly affect deer winter areas require consultation with respective State Fish and Wildlife Departments.

5. The management priority for deer wintering areas should be as follows:

   a. Maintain and perpetuate cover in existing deer winter areas.
   b. Improve cover within existing deer wintering areas through conifer release and planting.
   c. Use conifer release or planting where suitable to expand cover within and adjacent to existing deer winter areas to increase the size or to provide access to other wintering areas.
   d. Develop softwood stands in areas not used by wintering deer, but with potential to support deer during the winter.
   e. Develop browsing areas within or adjacent to existing deer winter areas.

6. Provide other wildlife habitat consistent with primary emphasis. Protect special habitat.

B. TIMBER

1. Stand composition should be designed to provide stable high quality shelter. A mixture of species within stands is desirable. Depending on site conditions, the following tree species priority is suggested: (1) hemlock, (2) red spruce, (3) balsam fir and, (4) white pine.

2. Design and schedule timber harvest and other management so that at least 6 tree age classes are represented within a deer wintering area.

3. Consider the needs of the deer and the tree species to be regenerated when choosing the timber harvesting system and schedule to use.

4. No more than 10% of a deer winter area should be regenerated in any ten-year period.

5. Evenaged and unevenaged silvicultural systems can be used.

6. Red Spruce should be regenerated using the following guidelines since it is most subject to Armillaria.

   a. Some form of clearcutting is advised due to the threat of Armillaria outbreaks unless the stand is healthy and vigorous. In this case, unevenaged management could be used.

   b. Group selection could also be used in some situations, such as on stream sides.

   c. Sanitation treatments such as slash removal or burning should be used where needed.

7. Hemlock can be successfully regenerated using evenaged or unevenaged management.

8. Evenaged Management: Rotation age in deer winter habitat will be lengthened to provide suitable cover for longer periods and less disturbance from timber harvesting.

   a. Hemlock 140 years or more

   b. Red Spruce 110 years

   c. Balsam Fir 80 years

   d. White Pine 120 or more

B. TIMBER (cont'd)

9. Evenaged stands in deer winter areas will not exceed 20 acres to ensure good interspersion of forage and cover.

10. Avoid concentrated cutting or removal of large blocks in the center of wintering areas.

11. Unevenaged management can be used in visually sensitive areas, along streams, and when stands are healthy and vigorous.

12. Where several patch clearcuts are made in a stand, their individual size should not exceed 2 acres.

13. Consider increasing the proportion of conifer by removing undesirable hardwood species 8-10 years after regeneration. Hemlock, red spruce, balsam fir and white pine should be retained.

14. Thin young stands about every 20 years starting at age 25 to maintain stocking control and retain tree vigor.

    Do not thin stagnated, low vigor spruce stands especially if stand age exceeds 60 years.

15. Retain maximum cover by removing the minimum necessary basal area at each thinning. The lower end of the following ranges should be used wherever possible:

    a. On primary softwood sites, thin 10-40% of total basal area.

    b. On secondary softwood sites, thin 30-50% of total basal area.

16. To aid regeneration, summer logging is recommended to scarify the soil.

17. Plant to augment natural regeneration where needed.

C. OPENINGS

1. Permanent openings having grasses and forbs are desirable adjacent to deer winter areas to provide forage in early spring.

2. Permanent openings created within deer winter areas should not exceed 10 acres.

3. Design openings in deer summer habitat to have a large perimeter to area ratio, i.e., irregular edges. This will help provide maximum "edge effect".

   Achieve maximum edge effect by baying and feathering, clearing boundaries to prevent an abrupt vegetation change, designing narrow, winding cuts instead of compact blocks, leaving islands of vegetation within openings to provide travelways and cover.

D. RANGE

1. Where it does not conflict with management of deer wintering areas, grazing of domestic livestock may be permitted. Protect and improve the range resource to optimize grazing. Existing grazing allotments in fields near deer wintering areas do not pose a conflict.

E. RECREATION/VISUAL

1. Roaded natural recreation opportunities will be provided.

2. Recreation use may be restricted seasonally or by area to ensure protection of habitat.

3. Non-motorized recreation, and recreation requiring low levels of development should be emphasized in deer winter habitat.

F. SOIL AND WATER

1. Maintain a buffer strip of 70% canopy closure along both sides of streams used as travelways for at least 400 feet with an optimum of 500 feet to provide wind protection, snow interception, and cover. The buffer strip may be made narrower where steep ravines result in a type change to hardwoods which do not provide cover or wind protection.

G. FIRE

1. Fire is an acceptable management tool.

H. INTEGRATED PEST MANAGEMENT

1. Chemicals may be used.

I. PERMANENT ROADS

1. Road density will be less than 3.0 miles per 1,000 acres.

2. Most roads will only be used for management of the habitat. Roads which pass through the area to provide access to lands managed under another option may need to remain open.

3. New Forest local road width will range from 8-13 feet.

4. Drainage structures may be permanent or temporary, depending on site conditions and frequency of road use. If permanent drainage structures are needed, these will consist of bridges, culverts, and waterbars, made of native or manmade materials.

5. Grass may be allowed to grow in Forest local roads. Maintenance procedures will keep the roadbed stable and drainage and closure structures functional (Maintenance Levels I, II, or III).

J. CORRIDORS

1. No new additional above ground utility lines will pass through deer wintering areas, unless demonstrated to be in the public interest. Pipelines will be buried.

K. FACILITIES

1. Structures necessary for management such as gates and signs should be designed according to current Forest Service Standards. Modifications may be necessary to accommodate compatible recreation uses, visual quality objectives, or to reflect new technology.

L. LANDS

1. Lands and interest in land required to ensure protection and stability of existing deer winter habitats or with high potential to support deer wintering areas will be given high priority for acquisition.

M. MINERALS

1. Surface disturbing mineral activities appear to be acceptable from May 1 to November 30 on all areas under this Management Prescription except:

   a. the softwoods managed for deer cover,

   b. the sensitive land categories listed in Chapter IV, Section E, General Standards and Guidelines for Minerals.

   c. other site specific locations where detailed review of project proposals indicate that surface disturbance is likely to unacceptably compromise the management objectives of the area.

2. Consent to oil and gas leasing and mineral exploration in this Management Area if the restrictions on surface disturbance stated above (M.1) are followed and standard environmental restrictions can be met.

3. USDA consent to mineral development and extraction will be reserved until site specific proposals are received. If consent is given, mineral development and extraction activities will follow the restrictions on surface disturbance described above (M.1) unless the findings from exploration and further environmental analysis clearly show that changes in those restrictions are in the public interest.

   When reviewing development and extraction proposals, consider the relative value of surface and subsurface resources to society and the consistency of the proposed actions with the management objectives, standards and guidelines of this prescription.

Management Prescription 4.2

The purpose, physical description, and benefits of 4.2 are the same as 4.1 except Semi-Primitive recreation opportunities will be provided instead of Roaded Natural.

4.2 Standards and Guidelines

FOLLOW THE STANDARDS AND GUIDELINES FOR MANAGEMENT PRESCRIPTION 4.1 EXCEPT FOR THE REVISIONS AND ADDITIONS LISTED BELOW:

A. RECREATION/VISUAL

1. Follow the forestwide Standards and guidelines for Semi-Primitive recreation.

B. ROADS

1. Most public use of Forest local roads will be non-motorized.

C. TIMBER

1. Temporary openings resulting from evenaged management will be less than 20 acres and in accordance with the charts on pages 4.50 and 4.51.

2. Rotations will be lengthened to the ages shown in the Forestwide Standards and Guidelines for Timber.

3. All activities must be within the limitations set by the Forestwide Recreation/Visual Management Requirements for Semi-Primitive opportunities.

D. LANDS

1. Conduct land adjustment to provide a consolidated ownership of 2500 acres or more.

2. The following lands are a high priority for acquisition:

   a. areas within or nearby MA 4.2 which could also provide Semi-Primitive opportunities.

   b. lands supporting or with the potential of supporting activities conflicting with wintering deer or semi-primitive recreation.

E. MINERALS

1. Surface disturbing mineral activities appear to be acceptable from May 1 to November 30 on all areas under this Management Prescription except:

   a. the softwoods managed for deer cover,

   b. the sensitive land categories listed in Chapter IV, Section E, General Standards and Guidelines for Minerals.

   c. other site specific locations where detailed review of project proposals indicate that surface disturbance is likely to unacceptably compromise the Semi-primitive setting or other management objectives of the area.

2. Consent to oil and gas leasing and mineral exploration in this Management Area if the restrictions on surface disturbance stated above (E.1) are followed and standard environmental restrictions can be met.

3. USDA consent on mineral development and extraction will be reserved until site specific proposals are received. If consent is given, mineral development and extraction activities will follow the restrictions on surface disturbance described above (E.1) unless the findings from exploration and further environmental analysis clearly show that changes in those restrictions are in the public interest.

   When reviewing development and extraction proposals, consider the relative value of surface and subsurface resources to society and the consistency of the proposed actions with the management objectives, standards and guidelines of this prescription.

Management Prescription 5.1

PURPOSE

MANAGEMENT PRESCRIPTION 5.1 emphasizes WILDERNESS and will be applied to Bristol Cliffs, Lye Brook, Breadloaf, Peru Peak, Baker Peak and George D. Aiken Wildernesses. These areas will be "managed to promote and perpetuate the wilderness character of the land and its specific values of solitude, physical and mental challenge, scientific study, inspiration and primitive recreation..." (Eastern Wilderness Act, P.L. 93-622).

PHYSICAL DESCRIPTION

There will be extensive areas of old growth vegetation. Stands will be large, mature or overmature hardwoods and conifers. Some younger trees and openings will occur after disturbance from natural forces.

There will be no evidence of human development except old roads, stonewalls, cellar holes and the like which have been overgrown and dilapidated by natural forces.

LOCATION

The Green Mountain National Forest contains six Wildernesses

Wilderness Area	Area (Acres)	Ranger District
Big Branch 1/	6,720	Manchester
Breadloaf	21,480	Rochester & Middlebury
Bristol Cliffs	3,738	Middlebury
George D. Aiken	5,060	Manchester
Lye Brook 1/	15,680 2/	Manchester
Peru Peak 1/	6,920	Manchester
Total	59,598	

1/ Big Branch and Peru Peak Wildernesses are within the White Rocks National Recreation Area, which is described in Management Prescription 8.1B.

2/ This figure includes the original Lye Brook Wilderness, 14,600 acres, and the Lye Brook Addition, 1,080 acres.

GOODS AND SERVICES

These areas will provide an opportunity to experience high degrees of solitude while practicing quiet types of recreation activity in a primitive setting away from the sights and sounds of more intensive human activity.

Wilderness will be brought to a pristine visual character and preserved in that state for both onsite and offsite viewers.

These areas will provide habitat for wildlife requiring large, old growth forests with remoteness from human activity. Species may include black bear, pileated woodpecker, golden eagle, common loon, pine marten, goshawk, and Cooper's hawk.

5.1 Standards and Guidelines

A. RECREATION

1. Manage to provide Primitive Recreation Opportunities.

2. Whenever practical, campsites outside of the LT/AT corridor should be managed in ways which make them barely recognizable as camping areas.

   Only minimal physical changes and structures should exist at most sites (eg. simple, rock fire rings).

3. Frequently visited campsites can be managed in ways which make them readily identifiable as campsites (eg. ground vegetation may be worn away around fire rings and gathering areas).

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

   Monitor frequently visited sites carefully to detect and prevent excessive site deterioration.

4. Waterbars and other hand built structures may be used as necessary to control erosion.

5. Temporarily close, rehabilitate or permanently close and relocate any sites which show signs of advanced deterioration (eg. bare mineral soil is widespread, soil erosion is obvious, tree roots are exposed and vegetation is reduced in vigor or dying).

6. Communicate a strong Wilderness ethic in all contacts with the publics using M.A. 5.1.

7. Apply high visual sensitivity standards to all portions of Wilderness.

8. Manage the LT/AT corridor within Wilderness according to the Standards and Guidelines of M.A. 8.1A.

B. VEGETATION

1. Vegetative changes will be left to the forces of nature except as needed to build and maintain trails.

C. FISH AND WILDLIFE

1. Threatened, endangered and rare species will be protected.

2. Fish stocking may continue in lakes where it has historically been done.

3. Habitat will be the result of natural forces.

D. SOIL AND WATER

1. Erosion from excessive recreation use or other man-caused action will be corrected.

E. AIR

1. Review and evaluate air quality permit applications for proposed sources of major pollution emissions that may directly affect Lye Brook, the only Wilderness with a Class I designation.

2. Air quality related values in the Lye Brook Wilderness will be identified. Those values that are sensitive to changes in air quality and can be measured will be monitored to assess changes over time.

F. PUBLIC HEALTH

1. Drinking water sources will not be developed.

2. Emphasize and promote use of the carry-in/carry-out method of disposal.

G. FIRE

1. Wildfires will be supressed. Preference will be given to methods and techniques which least alter the landscape and disturb the surface.

2. Normally suppression will be accomplished using hand tools. Chainsaws, portable pumps and other mechanized equipment will only be used after approval by the Forest Supervisor.

3. The use of motorized vehicles must be approved by the Regional Forester.

4. Evidence and damage caused by human intervention will be obliterated or repaired as a cost of the fire.

H. INTEGRATED PEST MANAGEMENT

1. Perform an Environmental Analysis before implementting actions to control outbreaks of insects and disease. Carefully weigh the effects of the outbreak on Wilderness values and resource values outside the Wilderness against the effects of any proposed actions.

2. Only use those methods of Integrated Pest Management which have the least adverse impact on Wilderness values and are most compatible with Wilderness Management objectives.

3. Chemicals would only be used as a last resort.

I. ROADS

1. There will be no roads built or maintained.

J. CORRIDORS

1. There will be no utility corridors allowed.

K. FACILITIES

1. There will be no facilities except for those needed for the protection of Wilderness values and to improve the health, safety and enjoyment of Wilderness recreationists.

L. LANDS

1. High priority will be given to acquiring lands or interest in lands:

   a) within and adjacent to Wildernesses in order to protect and enhance Wilderness values.

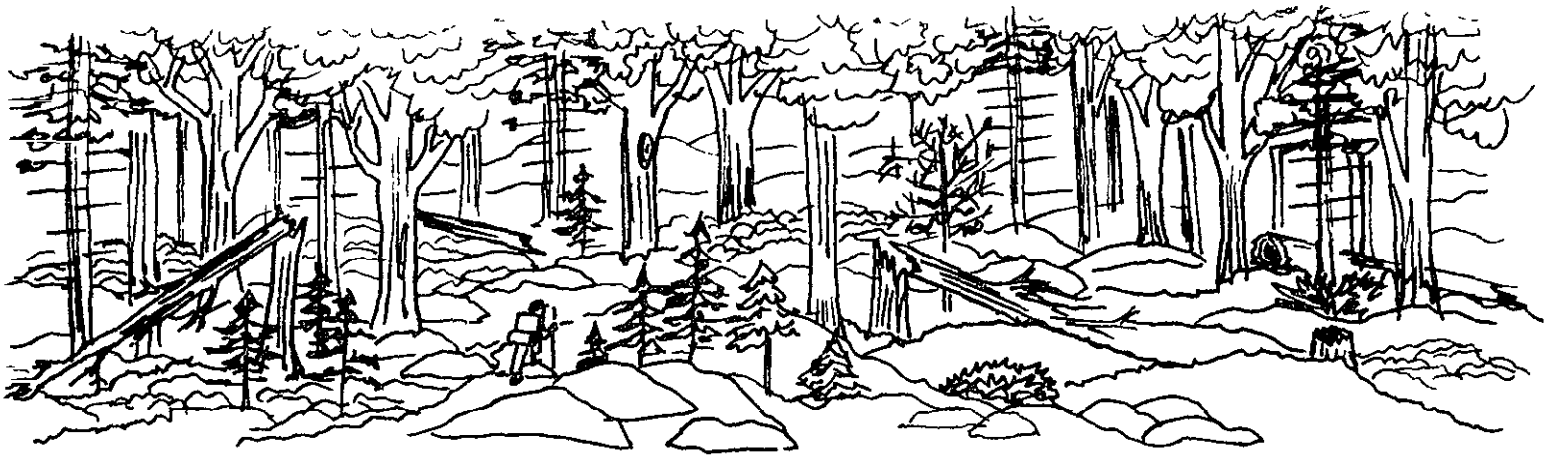
   b) providing an improved system of access to Wildernesses, including lands which will enable better dispersion of recreationists entering Wilderness.

2. Give medium priority for acquisition or partial interest in lands within one-half mile of Wildernesses in order to protect and enhance Wilderness values.

M. MINERALS

1. Consent to mineral exploration activities which do not disturb the surface or compromise Wilderness values in any way.

2. Minerals in Wilderness are unavailable for lease.



Management Prescription 6.1

PURPOSE

MANAGEMENT PRESCRIPTION 6.1 emphasizes PRIMITIVE RECREATION opportunities, habitat for animals that are intolerant of people, and pristine visual conditions.

This type of management usually must be done on public land, due to the large area needed and the severe limitations on types and intensities of land uses permitted.

PHYSICAL DESCRIPTION

There will be extensive areas of old growth vegetation. Stands will be large, mature or overmature hardwoods and conifers. Some younger trees and openings will occur after disturbance from natural forces.

There will be little evidence of current human development. Some historic evidence of humans is acceptable including old roads, stonewalls, cellar holes and the like which have been overgrown and dilapidated by natural forces.

Facilities which are obvious works of man will be inconsistent with this option and will occur as rare exceptions of a temporary nature.

Mechanical equipment may be used for administrative purposes. Also, long standing snowmobile trails in Glastenbury will be allowed to remain in that part of 6.1.

LOCATION

Few areas of the National Forest can support this management prescription without major adjustments in land ownerships and land uses, including the existing road system.

This condition will normally require at least 2500 acres of consolidated landbase. Access will be by foot on a primitive network of travelways, appearing to be the result of repeated use, and not human construction.

GOODS AND SERVICES

These areas will provide an opportunity to experience high degrees of solitude while practicing quiet types of recreation activity in a primitive setting away from the sights and sounds of more intensive human activity.

Primitive areas will be brought to a pristine visual character and preserved in that state for both onsite and offsite viewers.

These areas will provide habitat for wildlife requiring large, old growth forests with remoteness from human activity. Species may include black bear, pileated woodpecker, golden eagle, pine marten, goshawk, and Cooper's hawk.

Minerals will be available, but to protect the primitive values, no surface disturbance will be allowed.

6.1 Standards and Guidelines

A. RECREATION

1. Manage to provide Primitive Recreation Opportunities.

2. Whenever practical, campsites outside of the LT/AT corridor should be located, designed and managed in ways which make them barely recognizable as camping areas.

   Only minimal physical changes and structures should exist at most sites (eg. simple, rock fire rings).

3. Manage the LT/AT corridor under the Standards and Guidelines of MA 8.1A.

4. Frequently visited campsites can be designed and managed in ways which make them readily identifiable as campsites (eg. ground vegetation may be worn away around fire rings and gathering areas).

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

   Monitor frequently visited sites carefully to detect and prevent excessive site deterioration.

5. Temporarily close, rehabilitate or permanently close and relocate any sites which show signs of advanced deterioration (eg. bare mineral soil is widespread, soil erosion is obvious, tree roots are exposed and vegetation is reduced in vigor or dying).

   Allow natural processes to repair damage at the site by temporarily redirecting recreation use. If the pattern of use cannot be changed, then consider restoration work to speed recovery.

6. Communicate a strong wildlands ethic in all contacts with the publics using M.A. 6.1.

7. Apply high visual sensitivity standards to all portions of MA 6.1.

8. Limited use of motors and machines may be allowed for the administration of the area, as well as, limited public use of snowmobiles on approved, existing trails in MA 6.1 in Glastenbury. No unauthorized use of motors or machines will be allowed.

B. TIMBER

1. Vegetation changes will be left to the forces of nature, with little modification by man. Exceptions include minor rehabilitation work to protect soil and water, and to maintain overlooks or vistas.

2. Changes resulting from man's influence will be kept as naturally appearing as possible.

C. OPENINGS

1. Openings in the area will be the result of the forces of nature only.

D. FISH AND WILDLIFE

1. Management emphasis will be on endangered, threatened, sensitive, and non-game species.

2. Habitats provided will be the result of natural forces with little or no modification by man. Exceptions may include fish stocking in some lakes or reintroduction of species that were eliminated from their historic habitats.

E. RANGE

1. There will be no domestic grazing.

F. SOIL, WATER AND AIR

1. Disperse and control use to prevent excessive damage to soil and water. If needed, rehabilitate soil and water resources damaged by overuse.

G. FIRE

1. Wildfires will be supressed. Preference will be given to methods and techniques which least alter the landscape and disturb the surface resources. Normally suppression will be accomplished using hand tools. When necessary motorized equipment, including tractors may be used. Evidence and damage of human intervention will be obliterated as a cost of the fire.

H. INTEGRATED PEST MANAGEMENT

1. Perform an Environmental Analysis before implementting actions to control outbreaks of insects and disease. Carefully weigh the effects of the outbreak on Primitive recreation values and resource values outside M.A. 6.1 against the effects of any proposed actions.

2. Only use those methods of Integrated Pest Management which have the least adverse impact on Primitive values and are most compatible with M.A. 6.1 Management objectives.

3. Chemicals would be used as a last resort.

I. PERMANENT ROADS

1. There will be no roads. Existing roads will be closed and revegetated. Culverts will be removed and replaced with waterbars.

J. CORRIDORS

1. Expansion of existing facilities and corridors for utility lines and pipelines should be discouraged. No new corridors will be allowed.

2. Reconstruction, upgrading, or maintenance of existing lines and facilities will be designed and implemented to be as compatible as possible with visual quality objectives and management objectives of the area.

K. FACILITIES

1. No additional non-recreation structures will be built.

L. LANDS

1. Conduct land adjustment to provide a consolidated ownership of 2500 acres or more.

2. The following lands are high priority for acquisition or partial interest:

   a. lands within or nearby M.A. 6.1 which qualify for management under this prescription.

   b. lands supporting or with the potential of supporting uses conflicting with primitive values.

3. Medium to low priority for acquisition or partial interest are lands within one-half mile around M.A. 6.1 to help maintain or achieve the desired integrity, size, and management emphasis of the area.

M. CULTURAL

1. Cultural resources with significant research or interpretive values will be protected through dispersal, control, and limitations on recreation use.

N. MINERALS

1. Surface disturbing mineral exploration, development and extraction activities would unacceptably compromise the objective for Primitive conditions in this area.

2. Consent to oil and gas leasing and mineral exploration in this Management Area if no surface disturbance occurs and standard environmental restrictions can be met.

3. USDA consent on mineral development and extraction will be reserved until site specific proposals are received. If consent is given, mineral development and extraction activities will not disturb the surface unless the findings from exploration and further environmental analysis clearly show that surface disturbing activities are in the public interest.

   When reviewing development and extraction proposals, consider the relative value of surface and subsurface resources to society and the consistency of the proposed actions with the management objectives, standards and guidelines of this prescription.

Management Prescription 6.2A

PURPOSE

MANAGEMENT PRESCRIPTION 6.2A emphasizes SEMI-PRIMITIVE RECREATION and creates a physical setting which provides an opportunity for solitude and a feeling of closeness to nature. This setting will also provide habitat for animals which are intolerant of the sights and sounds of people.

Public lands play an important role in providing for these opportunities due to the strict controls and large land areas which are needed. With increasing pressures on both public and private lands for developments, it's important to recognize and provide for values associated with large, remote, undeveloped areas.

Forest products will be produced in harmony with this semi-primitive setting.

PHYSICAL DESCRIPTION

This management prescription generally requires a large land area of 2,500 or more acres in a remote natural appearing setting having a mixture of tree sizes and types. This acreage does not have to be all National Forest System lands if the adjacent lands are expected to continue to be managed in a compatible way. In general, alterations by humans will hardly be evident to most people.

In areas used little by recreationists, activities such as timber harvesting may be evident but will be scattered over time and space to soften the effects.

When viewed from a distance, human activity will not be evident on the upper elevations of sensitive peaks and ridges. Some evidence of activity may be noticeable on lower levels, but will blend well with the surrounding landscape.

Areas managed under this option will have some evidence of timber harvesting, road construction and other recreation uses.

Some stands will have trees of about the same age and size while other stands will have a mixture of these. Some areas of undisturbed forest will have many large, old trees with a few scattered openings created by wind, ice, old age or other natural forces. Permanent openings will be maintained.

LOCATION

This management prescription may be applied anywhere an area of about 2500 acres can be realistically managed for remoteness and high visual quality.

The higher elevation lands will be likely candidates due to their inherent remoteness and lack of development caused by shallow soils, steep slopes and shorter growing seasons. The area will generally be at least one half mile from roads which are regularly used by through traffic.

GOODS AND SERVICES

Opportunities for recreation activities and wildlife requiring moderate to high degrees of solitude in Semi-primitive settings will be provided.

Both motorized and non-motorized uses will be possible, but will be separated geographically or seasonally.

Wildlife habitats will support moderate populations of both game and non-game species, and animals requiring extensive areas of remote, undisturbed forest will be present.

These areas will primarily be natural appearing, but will display some degree of human alteration. Views of surrounding lands from within these areas will be a mixture of landscapes ranging in appearance from natural and unaltered to rural or urban settings.

Wood fiber will be available, but with some constraints such as extended rotations, fewer intermediate cultural treatments, and other modifications to benefit Semi-primitive recreation values.

6.2A Standards and Guidelines

A. RECREATION

1. Semi-Primitive recreation opportunities will be provided.

B. TIMBER

1. Primary silvicultural system will be evenaged.

2. Unevenaged management will be used where evenaged management is incompatible with other resources and values such as along certain roads that have high visual sensitivity.

3. Average rotation age will be 150 years for evenaged Northern hardwood stands.

4. All activities must be within the limitations set by the Recreation/Visual Management Requirements for Semi-Primitive opportunities.

C. OPENINGS

1. At least 3% of the area will be in permanent openings generally less than 5 acres in size. Larger openings may occur naturally.

2. Temporary openings resulting from evenaged management will be less than 20 acres and in accordance with the General Standards and Guidelines for Recreation/Visual, Section G.

D. FISH AND WILDLIFE

1. Emphasize management for endangered, threatened, and non-game species.

F. RANGE

1. Grazing will not be permitted.

G. FIRE

1. Fire is an acceptable management tool.

H. INTEGRATED PEST MANAGEMENT

1. Chemicals would be used as a last resort.

I. PERMANENT ROADS

1. The surface width of New Forest local roads will range from 8-13 feet.

2. Most public use will be non- motorized.

3. Road maintenace will be done as needed on drainage structires, closure devices and the roadbed. Grass may be allowed to grow in local roads (Maintenance Levels I or II).

J. CORRIDORS

1. New above-ground utility lines and pipelines should not be allowed unless they can use existing corridors.

2. Expansion, reconstruction upgrading, or maintenance of existing lines and facilities will be designed and implemented to be as compatible as possible with recreation/visual quality objectives.

K. FACILITIES

1. New structures and facilities should meet the Recreation/Visual Management Requirements for Semi-Primitive.

L. LANDS

1. Conduct land adjustment to provide a consolidated ownership of 2500 acres or more.

2. The following lands are high priority for acquisition or partial interest:

   a. lands within or nearby M.A. 6.2 which qualify for management under this prescription.

   b. lands supporting or with the potential of supporting uses conflicting with semi-primitive values.

3. Medium to low priority for acquisition or partial interest are lands within one-half mile around semi-primitive areas to help maintain the integrity, size and management emphasis.

M. MINERALS

1. Surface disturbing mineral activities appear to be acceptable on all areas under this Management Prescription except:

   a. the sensitive land categories listed in Chapter IV, Section E, General Standards and Guidelines for Minerals.

   b. other site specific locations where detailed review of project proposals indicate that surface disturbance is likely to unacceptably compromise the Semi-primitive setting or other management objectives of the area.

2. Consent to oil and gas leasing and mineral exploration in this Management Area if the restrictions on surface disturbance stated above (M.1) are followed and standard environmental restrictions can be met.

3. USDA consent on mineral development and extraction will be reserved until site specific proposals are received. If consent is given, mineral development and extraction activities will follow the restrictions on surface disturbance described above (M.1) unless the findings from exploration and further environmental analysis clearly show that changes in those restrictions are in the public interest.

   When reviewing development and extraction proposals, consider the relative value of surface and subsurface resources to society and the consistency of the proposed actions with the management objectives, standards and guidelines of this prescription.

Management Prescription 6.2B

The purpose, physical description and benefits of 6.2B are the same as 6.2A except trees will not be managed for timber production until the economic conditions change or technologies improve.

Management Prescription 6.2B may be applied where soils are predominately thin and low in productivity, slopes are predominately steep and increasing roaded access is cost prohibitive.

6.2B Standards and Guidelines

FOLLOW THE STANDARDS AND GUIDELINES FOR 6.2A EXCEPT FOR THE CHANGES LISTED BELOW:

A. TIMBER

1. Trees will not be primarily managed for timber production. Trees may be cut:

   a. to reduce fire, pest, or flood damage on private and National Forest lands;

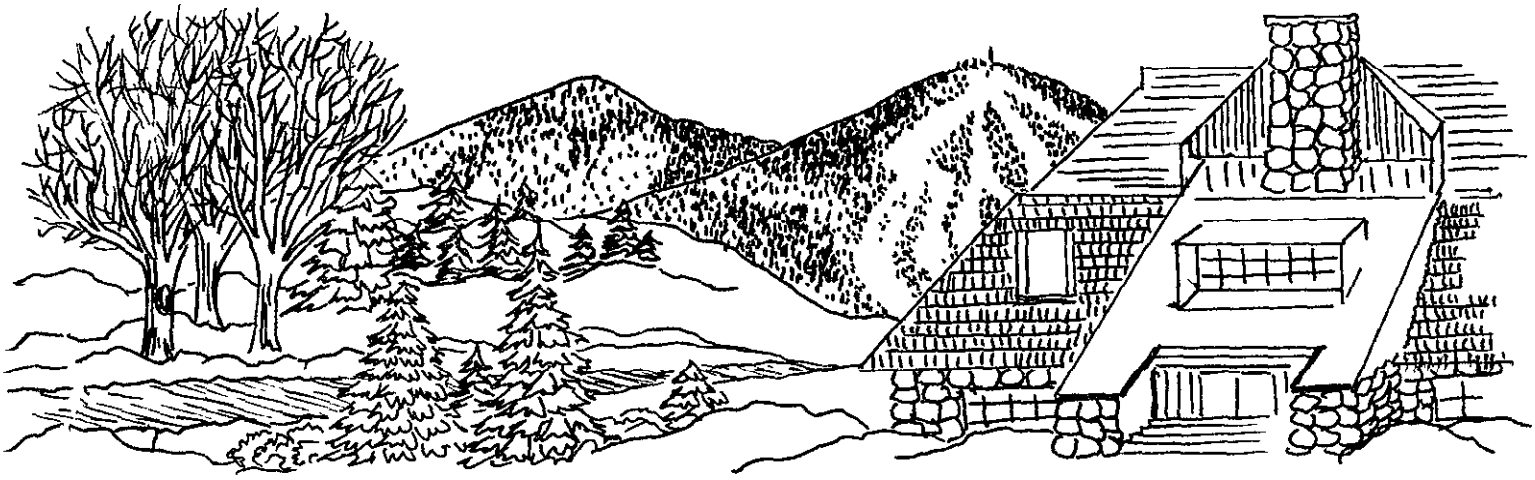
   b. to maintain habitats for threatened, endangered, or rare plants;

   c. to maintain or create desired wildlife habitat conditions;

   d. to maintain or create vistas.

C. PERMANENT ROADS

1. No new roads will be built.



Management Prescription 7.1

PURPOSE

MANAGEMENT PRESCRIPTION 7.1 emphasizes HIGHLY DEVELOPED AREAS and includes lodges, campgrounds, downhill ski areas and other high density developments on or intermingled with National Forest lands. It provides opportunities for recreation requiring highly developed structures and facilities, maintains a visually appealing landscape, and manages for other resources and uses in a compatible way.

Such areas affect and are affected by management of nearby lands.

PHYSICAL DESCRIPTION

These areas will usually be a mixture of public and private lands which are small to moderate in total size. Developments will be very noticeable having characteristics ranging from rural to somewhat urban.

From a distance, the layout and design of these areas will blend with the landscape to the extent possible. It's likely there will be much open land intermingled with forest and highly developed facilities, roads, power lines and parking lots.

Up close, human sights and sounds will be very evident with large numbers of people interacting with one another. Automobiles will be in use or parked nearby. Facilities to handle high numbers of people will be available. Signs to direct and control uses may be numerous.

Mostly native, but also exotic vegetation will be used for landscaping the area to provide an attractive setting. A mixture of ages and sizes of trees will be seen in most stands, although an open forest floor may be desirable in some cases. Little physical evidence of timber management will be seen.

LOCATION

This Management prescription could be managed wherever terrain, soils and local interests are compatible with the level and type of development being considered. Generally, such development should be located on private lands and National Forest lands should only be considered when a proven demand for the use cannot be met elsewhere. In this plan, we do not call for establishing any new areas for developed recreation.

GOODS AND SERVICES

This Management prescription will primarily provide for recreation opportunities requiring highly developed structures and facilities on or directly adjacent to National Forest lands. Included are alpine ski areas, some Nordic ski centers, campgrounds, picnic and day use areas, as well as some resorts or inns.

Timber outputs will be very low and only when consistent with recreation objectives. Timber products may range from high quality sawtimber to wood fiber.

Habitat will support a low to moderate population and variety of wildlife species tolerant of a high level of human activity and development.

Most roads will be capable of supporting moderate to high numbers of passenger vehicles.

STANDARDS AND GUIDELINES

This Management Prescription has one set of Standards and Guidelines which is appropriate to alpine ski areas on the GMNF (7.1A) and another set which which is applicable to the Hapgood Pond Recreation Area (7.1B).

7.1A Alpine Ski Area Standards and Guidelines

A. TIMBER

1. Primary silvicultural method will be unevenaged. Evenaged silviculture may be used if compatible with the major uses of an area.

2. Avoid cutting in wind prone areas.

3. Coordinate cutting with the affected ski area.

B. TRAILS

1. Periodically debrush trails too steep to mow. Young trees encroaching on the edge of the trails will be cut rather than pruned.

2. After cutting, leave small piles of slash on the forested edge of trails.

3. In wind swept areas keep new ski trails as narrow as possible to avoid wind sweeping.

C. FISH AND WILDLIFE

1. Provide wildlife habitat consistent with major uses of the area; protect special habitats.

2. Mow and clear trails and edges after July 15 each year to allow various birds to complete their nesting activities.

D. RANGE

1. If demand exists, provide domestic grazing compatible with major uses of area.

E. RECREATION/VISUAL

1. To avoid the sharp edges created by ski trail construction, vary the height of vegetation and the width of alignment of trails.

2. Earth colors (such as gray, tan, brown, and some shades of green) should be used for structures and facilities. Use of natural materials should be encouraged.

3. New construction which is visible from distant points and does not appear natural or blend well with the existing landscape will not be allowed.

F. SOIL AND WATER

1. Establish a temporary grass/legume ground cover on disturbed soils. Allow this ground cover to revert to native species where feasible as described in existing Soils Reports for the Ski Areas or as determined on-the-ground on those areas without Soil Reports.

2. New trails and other areas of disturbed soil should be revegetated within 2 weeks, and before September 15 of each year, with a prescribed blend of seed. Lime, fertilizer, and mulch must be applied in prescribed amounts.

3. Permittees will inspect ski trails for erosion at least annually. When erosion problems are found, incorporate them into the annual trail maintenance program. Correct severe, active erosion problems immediately.

4. Stumping and grading of new trails will be staged so that no more than 200 linear feet of trail has exposed soil at any one time.

5. Project construction plans will identify additional, site specific measures needed to protect soil and water.

6. Water withdrawals and stream impoundments will be managed to comply with State of Vermont instream flow requirements.

G. FIRE

1. Slash generated from ski trail construction and maintenance activities may be burned provided that: (a) local, State and Federal authorities are notified; (b) a fire line around each pile is established prior to ignition (c) a source of water is available on-site when any fire is used and (d) a contingency plan has been prepared to facilitate response to an escaped fire.

H. INTEGRATED PEST MANAGEMENT

1. Chemicals would be used as a last resort.

I. PERMANENT ROADS

1. Construction standards for new Forest local roads will vary depending on the specialized needs of each area.

2. Roadbeds will be stabilized. Permanent drainage structures will be used at all live streams. Other drainage structures will be constructed as appropriate to the road's characteristics.

3. Maintenance will keep vegetation safely trimmed, keep roadbeds stable to prevent damage through use, and keep drainage structures and safety-related features functional as designed. Considerable attention will be given to user comfort on main public access roads and parking areas (Management Levels III or IV).

4. Maintenance may also be provided to meet visual quality objectives.

J. CORRIDORS

1. Discourage above-ground utility lines. Pipelines will be buried.

K. MINERALS

1. Surface disturbing mineral activities appear to be unacceptable on all areas under this Management Prescription:

2. Consent to oil and gas leasing and mineral exploration in this Management Area if no surface disturbance occurs and standard environmental restrictions can be met.

3. USDA consent on mineral development and extraction will be reserved until site specific proposals are received. If consent is given, mineral development and extraction activities will not disturb the surface unless the findings from exploration and further environmental analysis clearly show that such disturbances are in the public interest.

   When reviewing development and extraction proposals, consider the relative value of surface and subsurface resources to society and the consistency of the proposed actions with the management objectives, standards and guidelines of this prescription.

L. LANDS

1. Encourage mutually beneficial land exchanges at existing or proposed special use sites when public benefits and National Forest objectives can be enhanced.

7.1B Hapgood Pond

A. TIMBER

1. Manage vegetation to maintain healthy stands and to maintain deer wintering areas. Manage vegetation under an unevenaged system. Plantations will be conveted over time, to an unevenaged condition by encouraging natural understory reproduction.

B. OPENINGS

1. Openings will be managed to be compatible with visual quality objectives of the area.

C. FISH AND WILDLIFE

1. Provide wildlife habitat consistent with major uses of the area; protect special habitats.

2. Retain apple trees and other mast producing vegetation.

3. Maintain snags and den trees unless they present a hazard.

D. RANGE

1. No livestock grazing will be allowed.

E. RECREATION/VISUAL

1. Roaded natural and rural recreation opportunities will be provided depending on the location and timing of activities in the Management Area.

2. Use signs and other communications tools to explain cultural resources and management objectives.

F. SOIL AND WATER

1. Test swimming water for fecal coliform at least weekly. Close the beach if coliform counts exceed 200 per 100 milliliters of water sampled.

G. FIRE

1. Allow campfires only in firegrates, firerings, or similar devices.

2. Prescribed fire is acceptable.

I. INTEGRATED PEST MANAGEMENT

1. Chemicals may be used.

J. PERMANENT ROADS

1. The surface width of new Forest local roads will range from 8-13 feet.

2. Roadbeds will be stabilized. Permanent drainage structures will be used at all live streams. Other drainage structures will be constructed as appropriate to the type of road built.

3. Maintenance will keep vegetation safely trimmed, keep roadbeds stable to prevent damage through use, and keep drainage structures and safety related features functional as designed. Considerable attention will be given to user comfort (Maintenance Levels II, III, or IV).

4. Maintenance may also be provided to meet visual quality objectives.

K. CORRIDORS

1. Utility lines and pipelines will be buried.

L. FACILITIES

1. Structures necessary for management such as gates, signs, and ski lifts, should be designed according to current Forest Service Standards. Attractiveness and safety should be emphasized. Modifications may be necessary to accommodate recreational use, visual quality objectives, or to reflect new technology.

M. MINERALS

1. Gravel from the source south of Forest Road 3 may be used for administrative purposes or sold.

2. All other surface disturbing mineral activities appear to be unacceptable on all other areas under this Management Prescription:

3. Consent to oil and gas leasing and mineral exploration in this Management Area if no surface disturbance occurs and standard environmental restrictions can be met.

4. USDA consent on mineral development and extraction will be reserved until site specific proposals are received. If consent is given, mineral development and extraction activities will not disturb the surface unless the findings from exploration and further environmental analysis clearly show that such disturbances are in the public interest.

   When reviewing development and extraction proposals, consider the relative value of surface and subsurface resources to society and the consistency of the proposed actions with the management objectives, standards and guidelines of this prescription.

N. LANDS

1. Give high priority to acquiring lands in the watershed of Hapgood Pond to protect the pond's water quality.

Management Prescription 8.1

PURPOSE

MANAGEMENT PRESCRIPTION 8.1 emphasizes SPECIAL AREAS and protects areas having uncommon or outstanding biological, geological, recreational, cultural, or historical significance on the Green Mountain National Forest. This ensures that the values which make these areas special are preserved for the education and enjoyment of present and future generations. Public lands and resources are well suited to this since long-term management and protection can be assured.

Five special areas are candidate Research Natural Areas - The Cape, Mount Horrid, Beaver Meadows/Abbey Pond, other remote ponds and the Blue Ridge Cranberry Bog. Further evaluation must be done before they can be established as RNAs by the Chief of the Forest Service.

PHYSICAL DESCRIPTION

The size of the area, type of vegetation, wildlife and recreation depends on the uncommon or outstanding characteristics to be protected. A natural appearing condition exists although evidence of humans is occasionally noticeable.

Special areas have one or more of the following features:

- plant communities with unique qualities, such as those found in acid bogs, wetlands, or high elevations
- threatened or endangered plant and animal species habitats
- scenic waterfalls, cascades, and other uncommon geologic attractions
- significant historic or cultural sites
- the special features of the area are uncommon on the Green Mountain National Forest

LOCATION

Sites were determined by using information from Forest Service personnel, State Agencies, and "Natural Areas" inventories done by others. See the map on the next page for general locations

NUMBER	NAME	LOCATION
8.1A	Long Trail/Appalachian Trail	Length of National Forest
8.1B	White Rocks NRA	Mt. Tabor, Wallingford
8.1C	Grout Pond	Stratton
8.1D	The Cape	Chittenden, Goshen
8.1E	Mount Horrid	Goshen, Rochester
8.1F	Texas Falls	Hancock
8.1G	Crystal Brook Glacial Kettle	Hancock
8.1H	Robert Frost Interpretive Trail	Ripton
8.1I	Beaver Meadows/Abbey Pond	Bristol, Middlebury, Ripton
8.1J	Mount Abraham	Lincoln
8.1K	Remote or High Elevation Ponds	Sunderland, Mt. Tabor, Peru Wallingford, Ripton, Middlebury
8.1L	Rattlesnake Point	Goshen
8.1M	Cranberry Bog	Chittenden

GOODS AND SERVICES

The uncommon or outstanding values are the primary outputs from areas managed under this management prescription. Other resource values and uses are secondary to the protection of the area's special values for public education and enjoyment.

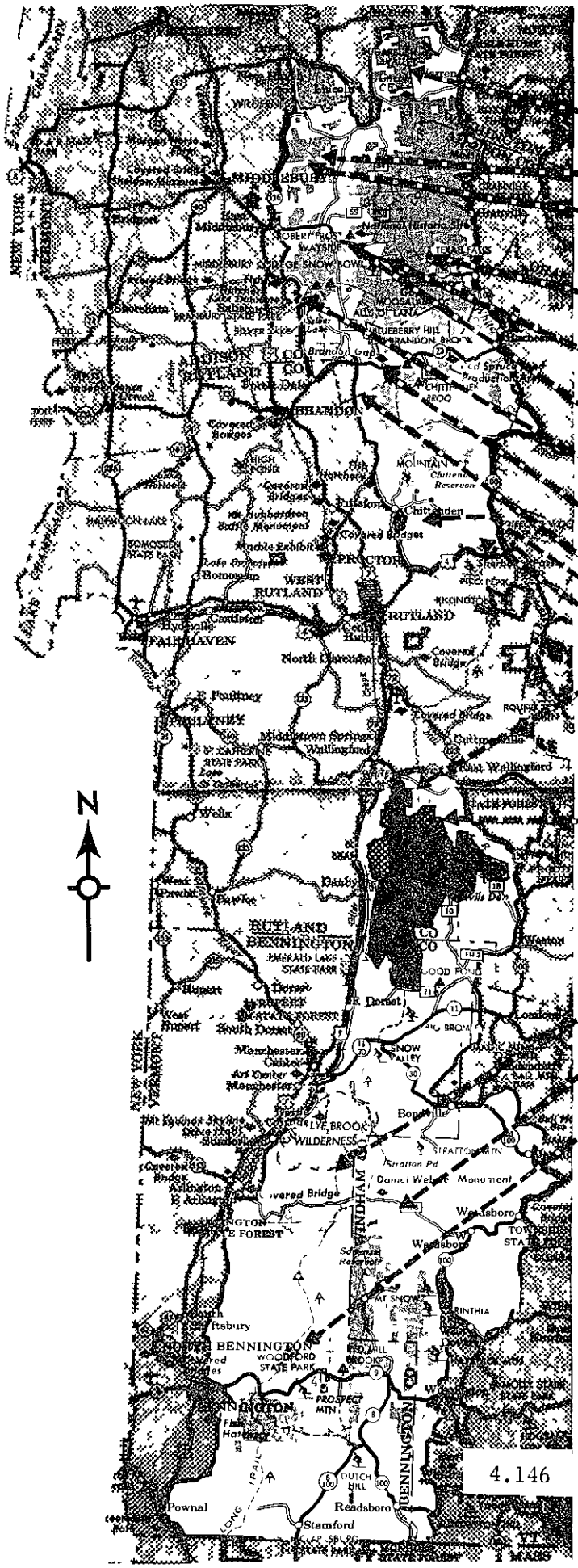
Standards and Guidelines for All Special Areas

1. Specific descriptions and management requirements are outlined for each Special Area on the following pages.

2. All resource management will be limited to activities which maintain the character and outstanding values of the area.

3. Surface disturbing mineral activities appear to be unacceptable on all areas under this Management Prescription. Consent to oil and gas leasing and mineral exploration in this Management Area if no surface disturbance occurs and standard environmental restrictions can be met.

4. Give high priority to acquiring full or partial interest in lands which enhance the protection of each area's special values and to other areas with uncommon or outstanding values which can be purchased.



8.1J MOUNT ABRAHAM

8.1I BEAVER MEADOWS

8.1I ABBEY POND

8.1F TEXAS FALLS

8.1G CRYSTAL BROOK GLACIAL KETTLE

8.1H ROBERT FROST TRAIL

8.1L RATTLE SNAKE POINT

8.1E MOUNT HORRID

8.1D THE CAPE

8.1M CRANBERRY BOG

8.1A LONG/APPALACHIAN TRAIL

8.1B WHITE ROCKS NATIONAL RECREATION AREA

8.1K BRANCH POND

8.1C GROUT POND

8.1K LITTLE POND

SPECIAL AREAS 8.1

GREEN MOUNTAIN NATIONAL FOREST

VERMONT

0 1 2 3 4 5 6 Miles

8.1A Long Trail/Appalachian Trail

PURPOSE

The Long Trail and the Appalachian Trail (LT/AT) have been included as Special Areas because of their uncommon and outstanding recreational values. Our intent is to protect the qualities of the LT/AT which make it a part of the National Scenic Trail System and to nominate the portion of the LT between the LT/AT junction at Sherburne Pass to the northern boundary of the GMNF as a National Recreation Trail.

PHYSICAL DESCRIPTION

Because of the linear nature of the Long Trail and Appalachian Trail, the special area encompasses a great variety of physical features. These range from a remote, natural-appearing setting having a mixture of tree sizes and forest types, to locations where developments will be very noticeable. With few exceptions, the trail corridor is forested. The trails are located mostly on higher elevation lands along the main Green Mountain Ridge.

Within this special area, there will be little evidence of timber harvesting. Roads within the area will be constructed to minimize impacts. Recreation use will be evident although the type and intensity of use may vary by season. Control and information signs may be present. Developments such as shelters, trailheads, campsites, bridges, and toilets will be evident.

LOCATION

The Long Trail extends from the Vermont/Massachusetts border north to the Canadian border. The Appalachian Trail coincides with the Long Trail for the first 97 miles north of the Vermont/Massachusetts state line. At a junction one-half mile north of Route 4 in Sherburne, the Long Trail turns north away from the Appalachian Trail, continuing on through the forest.

The Special Area includes National Forest lands within at least 500 feet of either side of the Long Trail and Appalachian Trail. It may be necessary to increase this distance in areas where long-term management goals on surrounding land conflict with the LT/AT values.

GOODS AND SERVICES

Opportunities for trail recreation in a generally semi-primitive, non-motorized setting will be available. Wildlife will benefit as a result of recreation management. Opportunities for research include:

- Backcountry Recreation Management
- Management of Solid Human Waste
- Trail Use
- Treadway Design
- Shelters vs. Off-Trail Tenting
- Profiles of Trail Users

8.1A Long Trail/Appalachian Trail Standards and Guidelines

A. GENERAL

1. The management philosophy of the Long Trail/Appalachian Trail Special Area is contained in the "Comprehensive Plan for the Protection, Management, Development, and Use of the Appalachian National Scenic Trail" and FSM 2353 R-9 Supplement No. 59 & 62. February 1984.

2. Study and, if appropriate, nominate the Long Trail (54 miles) and its side trails (22 miles) north of the LT/AT junction and south of the northern boundary of the GMNF as a National Recreation Trail.

B. RECREATION

1. The Long Trail and Appalachian Trail are closed to motorized vehicles, saddle and pack animals and bicycles.

2. Semi-primitive non-motorized recreation opportunities are emphasized.

3. No new recreation facilities will be constructed in this area unless it is the only feasible alternative and that measures have been taken to minimize impacts on the Long Trail/Appalachian Trail. This does not apply to trail shelters, tent pads, or on-site waste disposal, and other facilities agreed to by the Appalachian Trail Conference and the Green Mountain Club.

4. Overnight camping will be allowed at trail shelters, designated tenting areas, and in suitable areas more than 50 feet from the trail's edge and 100 feet from surface waters.

   a. Warming and cooking fires will be permitted at the discretion of the hiker.

   b. Hikers will be encouraged to use gas camp stoves or one central fire at shelters and campsites.

5. Users will be informed and educated about the motor vehicle closure and guidelines for using the trail.

6. Trails will be constructed, reconstructed, and main- tained according to standards in the Appalachian Trail Conference manual, "Trail Design, Construction, and Maintenance". Motorized tools may be used.

7. Within Wildernesses, hand held power tools may be used for trail maintenance from 5/1 - 5/25 and from 10/20 - 11/10 when no reasonable alternative exists for removal of large trees and logs.

8. Wilderness will be managed in accordance with the appropriate legislation and Wilderness management prescriptions (MA 5.1).

9. Where appropriate, interpret interesting cultural sites through maps, guidebooks, and signs.

C. TIMBER

1. Vegetation changes that will improve the enjoyment of the hiker will be permitted. This may include work to enhance wildlife habitat, to protect soil and water, to control insects and disease, to maintain or create vistas, or openings, and to meet trail construction and maintenance needs.

2. The timber sales will be used to meet the above objectives when they are the most efficient means. Commercial timber production is not included in the objectives. See Visual Management Requirement for highly sensitive areas

D. OPENINGS

1. Existing openings along the LT/AT will be maintained as openings.

2. To create more visual and vegetative diversity, additional openings may be created having a size generally less than two acres. When desirable, these should be located in the wet areas in the saddles between peaks because these areas tend to have a natural semi-open condition, and will require little maintenance.

E. SOIL AND WATER

1. Natural water sources safe for drinking, after treatment, will be identified at not greater than three mile intervals, if possible, or at other appropriate locations.

2. Water source development will be kept to a minimum including minor modifications to improve the collection of water. At these sites, a sign will state: "Water Should be Boiled Before Use".

3. The identification of water sources will be kept to an absolute minimum in Forest Service information methods, guidebooks, signs along the Trail, or on blazed trails.

4. Locate all shelters, toilets, and primitive camps in such a way that they cannot pollute drinking water sources. Educate users on low impact camping methods that protect drinking waters (See FSM 2353.4--6e, R-9 Supplement No. 62, 8/84).

F. LANDS

1. Interests in the remaining privately owned tracts of land along the LT/AT will be acquired. A corridor at least 1000 feet in width is desirable to manage and protect the trails values.

2. Acquisition priorities should also be focused on the management and protection of side trails and trail-heads.

G. MINERALS

1. Mineral exploration and extraction which disturb the surface will not be allowed.

H. TRAILHEADS

1. Additional trailhead parking will be located and designed with the following factors in mind:

   a. hiking distance between access points for pickup and departure;

   b. dispersion of use;

   c. safety of the user;

   d. concealed parking lots some distance off the Trail may encourage vandalism;

   e. use by non-hikers;

   f. appropriate size;

   g. reduce traffic problems;

   h. ability to access the LT/AT by a short spur trail.

I. TRAIL RELOCATION

1. Reasons for moving trails include the following:

   a. to increase visual variety;

   b. to avoid human activity, existing roads, driveways, and powerlines;

   c. to avoid unacceptable damage to soil or water resources;

   d. to protect threatened special or unique plant or wildlife species;

   e. to protect important cultural resources;

   f. to reduce conflict with other recreational experiences (e.g. snowmobiling and horseback riding);

   g. to reduce cost of maintenance;

   h. to improve the safety of users.

2. Any proposed change in the trail will be coordinated with the Green Mountain Club and the Appalachian Trail Conference.

3. Make relocation decisions from Optimal Trail Location Review and follow procedures described in FSM 2353, R-9 Supplements 59 & 62.

J. ROADS

1. No new roads or skid trails will be built within the management area except where no reasonable alternative exists. Only allow road locations that are the sole feasible and prudent alternative and after all impacts have been minimized (See FSM 2353.4--3e, R-9 Supplement No. 62, 8/84).

2. All proposed roads crossing or paralleling the Trail within one mile of the Trail will be analyzed for their potential undesireable impacts on the hiker and documented as appropriate.

3. Roads crossing the LT/AT will be at right angles to the trail wherever possible and will be designed to keep sight distance along the road to a minimum.

4. The length of road within the zone will be kept to a minimum subject to sight distance requirements and terrain limitations.

5. Road construction will include the following items:

   a. seeding of all disturbed soil within the area;

   b. restoration of the LT/AT trail tread;

   c. Treat all slash according to requirements for highly sensitive viewing areas.

6. Road maintenance will be done as needed on drainage structures, closure devices and the roadbed. Grass may be allowed to grow in local roads (Maintenance Levels I, II, or III).

K. FACILITIES

1. New structures and facilities will meet the Recreation/Visual Management Requirements for Semi-Primitive.

2. Diversity in appearance of facilities will be welcome within established standards.

3. Trail shelters are aids to long-distance hikers and should not serve as independent destinations. Trail shelters should provide trail users with places to eat and sleep after a day of walking.

4. New shelters will be located and maintained only at locations where there is a demonstrated need. These will be located away from the main trail and will not be accessible by road. New shelters should not be located closer than 2 miles to an existing road.

5. Shelter sites that are not needed or that cause unacceptable environmental damage and management problems will be removed.

6. Occupancy limit for shelters will be two nights.

7. Manage existing or proposed trail shelters and facilities as stated in the responsible Appalachian Trail Club's permit and/or local management plan.

8. Construct/reconstruct and maintain trails according to Appalachian Trail Conference Stewardship Manual: Trail Design, Construction and Maintenance, 1981. Signing will be consistent with the Sign Handbook FSH (7109.11), except mileage to important features should be shown to the nearest tenth of a mile.

9. Existing facilities within Wildernesses may be maintained, but new facilities will not be constructed. See FSM 2353.4--6f(1). R-9 Supplement No. 62.

L. SPECIAL USES

1. Issue new special uses, only where there is an overriding demonstrated public need or benefit. Permit access to privately owned property only when other access is impractical or infeasible.

2. Apply full mitigating measures to protect the Trail values and environment.

M. INTEGRATED PEST MANAGEMENT

1. Perform an Environmental Analysis before implementing actions to control outbreaks of insects and disease. Carefully weigh the effects of the outbreak on LT/AT values and resource values outside the Wilderness against the effects of any proposed actions.

2. Only use those methods of Integrated Pest Management which have the least adverse impact on LT/AT values and are most compatible with LT/AT management objectives.

3. Chemicals would only be used as a last resort.

N. VISUAL

1. Visual Quality Objectives (VQO) will be as shown for Semi-primitive ROS and highly sensitive viewing.

   Hiker enjoyment is the principle objective.

   See the Recreation/Visual Standards and Guidelines in Section E for more information.

8.1B White Rocks National Recreation Area

PURPOSE

The White Rocks National Recreation Area (NRA) was established by Public Law (PL) 98-322 for the purpose of preserving and protecting "existing 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." (PL 98-322, Sec. 201(b)).

PHYSICAL DESCRIPTION

White Rocks NRA covers 36,400 acres and includes the Big Branch (6720 acres) and Peru Peak (6920 acres) Wildernesses. The management direction for the two Wildernesses is found under M.A. 5.1. The direction contained here applies to the non-Wilderness lands only.

The non-Wilderness lands in the White Rocks NRA "...are of a predominantly roadless nature and possess outstanding wild values that are important for Primitive and Semi-primitive recreation, watershed protection, wildlife habitat, ecological, study education, and historic and archaeological resources and are deemed suitable for preservation and protection..." (PL 98-322, Sec. 201(a)(4)).

LOCATION

In southern Vermont, the White Rocks NRA includes land in the towns of Dorset and Peru, Bennington County; Towns of Mt. Holly, Mt. Tabor, and Wallingford, Rutland County; and the Town of Weston, Windsor County.

8.1B White Rocks NRA Standards and Guidelines

A. RECREATION/VISUAL

1. Management Objectives:

   a. Primitive and Semi-primitive non-motorized recreation opportunities during the summer season.

   b. Primitive and Semi-primitive motorized and non-motorized opportunities during the winter season.

   c. Big Branch and Peru Peak Wildernesses will be managed consistent with the direction in Goal 5.1.

2. Wheeled recreational vehicles will only be allowed on roads designated in PL 98-322. Snowmobiles may be used off-trails in designated areas. In other areas, no motorized activities will be allowed except those required for administration.

3. Boats with motors are prohibited from all lakes and ponds as designated in PL 98-322.

4. Motorized equipment and motorized hand tools may be used to maintain the LT/AT system.

5. The AT/LT will be managed consistent with the direction in Goal 8.1A.

6. The following locations have high visual sensitivity:

   a. Forest Road 10

   b. Long Trail/Appalachian Trail

   c. Little Rock Pond, Griffith Lake, Wallingford Pond, Fifield Pond

   d. Big Branch and Peru Peak Wildernesses

7. All other areas are considered moderately sensitive to visual attractions.

8. The existing amount of vistas will be maintained along Forest Road No. 10.

C. FISH AND WILDLIFE

1. Emphasize management for deep woods species and their habitats in the interior of the NRA.

2. Emphasize management for edge species along roads and upland openings.

3. Use management practices that maintain remote habitat qualities in the NRA.

4. Vermont Fish and Wildlife is permitted to manage fish and game at locations and intensities of their program prior to PL 98-322.

D. OPENINGS

1. Permanent openings will be maintained every 5 to 10 years using methods compatible with the NRA objectives.

2. Treatments will include mowing, prescribed fire, hand debrushing and crews with chainsaws.

E. TIMBER

1. Trees will only be cut for the following reasons:

.Maintain, improve, or increase the recreation environment;

.Maintain habitats for threatened, endangered, or rare plants;

.Maintain or create desired wildlife habitat conditions for deep woods and edge species;

.Maintain or create vistas.

2. Evenage management will be the primary silvicultural system.

3. Commercial logging may be used to achieve recreation and wildlife management objectives.

4. Fuelwood and Christmas tree cutting may occur in designated roadside areas.

5. Temporary openings created by clearcutting will be less than 5 acres in size, narrow and irregular in shape.

6. Average rotation age for managed forest stands:

Aspen	60 years
Hardwood	120 years
Softwoods	100 years

F. FIRE

1. Fire is an acceptable management tool.

G. INTEGRATED PEST MANAGEMENT

1. Perform an Environmental Analysis before implementing actions to control outbreaks of insects and disease. Carefully weigh the effects of the outbreak on NRA values and resource values outside the NRA against the effects of any proposed actions.

2. Only use those methods of Integrated Pest Management which have the least adverse impact on NRA values and are most compatible with NRA Management objectives.

3. Chemicals would only be used as a last resort.

I. PERMANENT ROADS

1. Roads open to vehicular public travel are Forest Roads 10, 20, 31, 60, 253, and 301. Forest Road 30 is open to Lake Brook. All other roads are closed to public vehicular travel, but may be used for management purposes.

2. No new roads are to be constructed, except for relocating portions of existing roads for environmental reasons or building turnouts and turn-arounds.

3. All inholders and special use permittees have traditional, conventional means of access, including motorized access.

4. Road maintenance will be done as needed on drainage structures, closure devices and the roadbed. Grass may be allowed to grow in local roads (Maintenance Levels I, II, or III.

J. CORRIDORS

1. Two pipeline corridors within the area will be allowed to continue. No new utility corridors will be permitted.

2. Reconstruction, upgrading, or maintenance of existing lines and facilities will be designed and implemented to be as compatible as possible with visual quality objectives and management objectives of the area.

K. FACILITIES

1. No additional non-recreation structures will be built.

L. LANDS

1. Full or partial rights to land in and around the NRA will receive a high priority for acquisition if they enhance the specific objectives of the area.

M. CULTURAL

1. Cultural resources with significant research or interpretative values will be protected through dispersal, control, and limitations on recreation use.

N. MINERALS

1. Public Law 98-322 withdraws all lands from all forms of mineral leasing or extraction, including geothermal leasing.

O. LOST POND BOG

1. The area is located in Mt. Tabor, Vermont, elevation 2700 feet, and comprises 25 acres.

   The area includes lands seen from the margins of the pond. This boundary was selected to protect the natural appearance of the area. Most of the land outside the bog is covered with ledges and boulders.

   Several plant species on the bog margins could be easily eliminated by trampling and picking. Unless recreation use increases, the following management requirements should be sufficient.

   a. Recreation use will not be encouraged because of the scarcity of some of the unusual and sensitive plants. Trails will not be built to Lost Pond Bog.

   b. Vegetation manipulation will not be allowed.

   c. Facilities and developments will not be allowed.

   d. Pesticides and fire will not be used as management tools.

P. WHITE ROCKS CLIFFS AND ICE BEDS

1. The Cliffs and ice beds are located in Wallingford, Vermont, elevation 1100-1900 feet, 105 acres. The special area includes the top of the cliffs, the cliff face, and the Ice Beds. The requirements below should be followed to protect the area.

   a. Vegetation management will not be allowed except as needed for Peregrine Falcon hacking.

   b. Some sections will be closed to the public to protect nesting Peregrine Falcons when necessary.

   c. Facilities and developments other than footpaths and Peregrine Falcon hacksites will not be allowed.

   d. Pesticides will not be used.

Q. REMOTE OR HIGH ELEVATION PONDS

1. The ponds to receive special attention in the NRA include:

   -Griffith Lake, elevation 2600 feet, 50 acres.
   -Big and Little Mud Ponds, elevation, 2580 feet, 90 acres.
   -Wallingford Pond, elevation 2165 feet, 310 acres.
   -Little Rock Pond, elevation 1854 feet, 52 acres.
   -Fifield Pond, elevation 2180 feet, 20 acres.

2. The boundaries of these ponds include all water area and much of the area seen from each pond's shoreline. The requirements below should be followed to protect the area.

   a. The area around each pond will be managed to provide a healthy, natural-appearing landscape.

   b. Facilities other than those necessary to provide semi-primitive recreation opportunities will not be allowed.

8.1C Grout Pond

PURPOSE

The environmental quality and natural appearing landscape around Grout Pond will be maintained and Semi-primitive recreation opportunities will be emphasized.

DESCRIPTION

Grout Pond is an easily accessible body of water. A town road provides summer access directly to the north shore of the pond. In the winter, the town road is plowed to within 2 miles of the pond.

Grout Pond has been a popular recreation site for many years. Until 1979, it was owned by the Boy Scouts of America who ran a summer camp with shelters and boat access scattered around the pond's edge. Presently, the pond receives summer recreational use by hikers, campers, anglers, and picnickers, and winter use by cross-country skiers and snowmobilers.

Grout Pond has a natural shoreline of 2.12 miles and it is 79 acres in size. Eighty-eight percent of the pond is less than 20' deep. It is managed as a warm water fisheries for small mouth bass, chain pickerel and yellow perch.

Two rare, threatened or endangered plant species were reported in the 1800's at Grout Pond; tuckerman pond weed (Potamogeton confervoides) and bladderwart (Utricularia resupinata). Grout Pond may provide potential loon nesting habitat. It is not a deer wintering area, but deer, grouse, hare, woodchucks, beavers, squirrels, raccoons, bear and wildcat all may be found near the pond.

Grout Pond offers a unique recreational opportunity. The pond and its surrounding environment provide a natural shoreline in a backwoods setting with good access in close proximity to population centers.

LOCATION

Grout Pond is located in the town of Stratton at an elevation of 2,225 feet approximately 3 miles WNW of Stratton. It is accessed by the Kelly Stand Road (Forest Highway 6).

The special area management unit includes the entire pond and a buffer of surrounding lands. Because of the need to protect rare, threatened or endangered plants and provide for loons as well as low density recreation, management of the 415 acres special area is divided into two zones. The north half (250 acres) will provide for rustic camping and access in a roaded natural setting. The south half (165 acres) will be managed to provide an undisturbed woods experience in a Semi-primitive setting.

8.1C Grout Pond Standards and Guidelines

A. RECREATION

1. In the southern portion of Grout Pond, new recreation facilities (shelters, trails, lake access points, etc.) will not be built. Existing facilities within 200 feet of the shore will not be replaced. Shoreline camping will be discouraged.

2. At the north end of Grout Pond, Town Road access will be maintained. However, the access road and parking will be moved at least 150 feet away from the shoreline. Parking, toilets and water source will be provided.

3. Only nonmotorized or electrically powered boats are allowed on the pond.

4. Existing shelters may be maintained or replaced.

B. VEGETATION MANAGEMENT

1. Except for improving or creating vistas from the trail shelter site, no vegetation management will take place within 200 feet of the shore. Only unevenaged management may occur on all other lands seen from Grout Pond.

C. MONITORING

1. Common Loons have been observed on Grout Pond. Reoccurrence will be monitored and steps taken to protect nesting sites.

2. Rare and endangered plant communities will be protected and monitored to determine impacts of recreation activities.

8.1D "The Cape" Big Tree Community

PURPOSE

A "big tree" forest community, will be preserved as an example of an area disturbed only by natural processes and events. The area will be evaluated and considered for designation as a Research Natural Area.

PHYSICAL DESCRIPTION

This is a mature northern hardwood stand. The average diameter of the trees in the community is about 18 inches. One 18 inch diameter sugar maple was determined to be 127 years old. Scattered throughout the area are numerous large diameter red spruce (up to 24 inches), yellow birch (up to 38 inches), and several other species. These trees are much older.

In the understory, there are about 1400 seedlings per acre, mostly sugar maple. This indicates that the community is approaching or has reached the climax stage in its development. Shade tolerant sugar maple is reproducing under an often dense forest canopy. Where the soils are very rocky, mountain maple dominates the understory.

The sugar maple site index is 72; the community is highly productive. Slope gradients are very steep, 55-85 percent. This community is unusual in several ways: the trees are large and the community is much older than most plant communities on this Forest. Disturbance by humans appears to be insignificant. The area is relatively large.

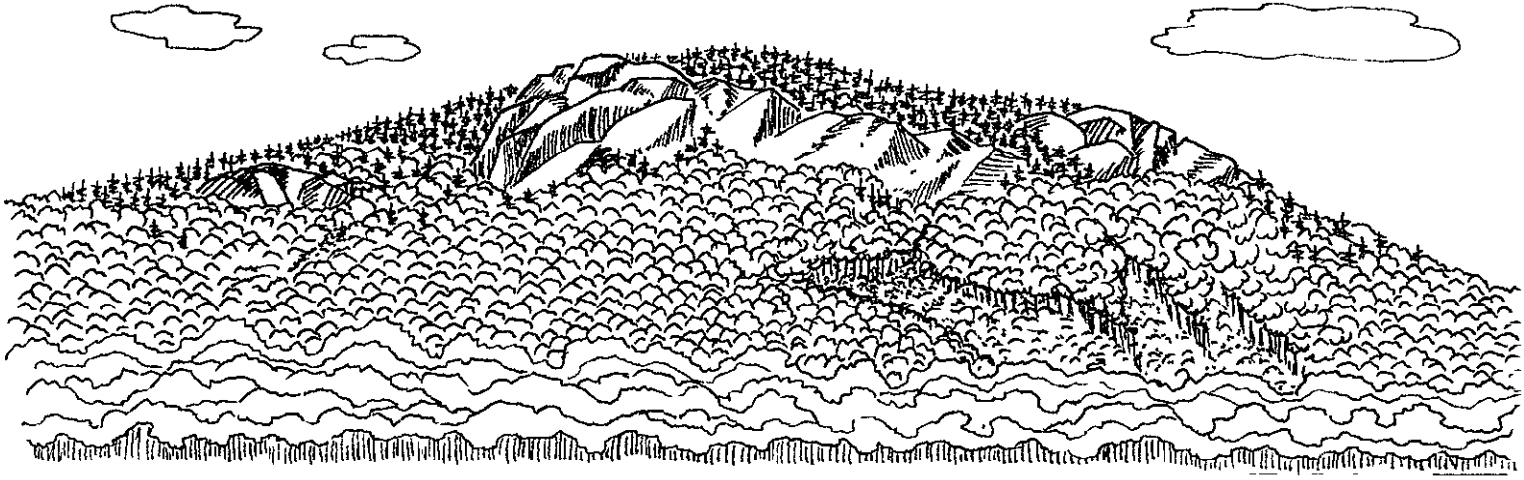
LOCATION

The big tree stand occupies 118 acres in the towns of Goshen and Chittenden, Vermont.

STANDARDS AND GUIDELINES

1. Vegetation management, developments, and facilities of all kinds, other than foot trails, will not be allowed. Foot trails will be designed and located to minimize soil disturbance.

2. Provide an opportunity for Semi-primitive recreation.



8.1E Mount Horrid

PURPOSE

For both the spectacular scene of the cliffs from State Highway 73 and its habitats for rare plants and bird species. Mount Horrid will be protected as a special area. In addition, it will be evaluated and considered for designation as a Research Natural Area.

DESCRIPTION

Mount Horrid is an unusually good example of a glacial process called quarrying or ice plucking. Glacial ice, by one of several possible processes, removes large blocks of rock from the "down-ice" or lee side of some mountains or hills. This often leaves a very steep "plucked" rock face or cliffs on one side of the mountain and a less steep "scoured" slope on the "up-ice" or stoss side of a mountain. Subsequently, a rock talus slope is formed. This talus slope holds winter's ice well into each summer thus creating a refrigerated micro-climate around the talus.

The Mount Horrid Special Area is also known habitat for at least 17 rare, threatened, or endangered animal and plant species. A few of these are Peregrine Falcons, Showy Mountain Ash, Large-leaved Avens, and White Mountain Saxifrage.

LOCATION

The Mount Horrid Special Area includes the rock face, the rim of the cliffs and a basin-shaped area adjacent to State Route 73 in the towns of Rochester and Goshen, Vermont. The 105 acre Special Area includes most of the foreground scene of the cliffs from an observation point on Route 73. It abuts the Long Trail Special Area and provides an opportunity for Semi-primitive recreation.

STANDARDS AND GUIDELINES

1. New facilities and vegetative manipulation will not be allowed except for the powerline outstanding rights and Peregrine falcon hacking sites.

2. Portions of the area may be closed to public use as needed to protect rare plants and birds.

8.1F Texas Falls

PURPOSE

Listed on the State's register of Fragile Areas, the gorge area will be managed to protect its unique geologic and scenic features.

DESCRIPTION

Texas Falls are a short series of low falls and cascades flowing through a small gorge scoured out primarily by sediment-laden glacial meltwater. The proportionately large size of some of the potholes in the stream channel are evidence of the torrential volumes of glacial meltwater that occasionally raged down the stream valley.

LOCATION

The Texas Falls special area is in Hancock, Vermont, at an elevation 1300 of feet.

The 10 acres of the Special Area include enough forest land to preserve the scenic appearance of the Falls area.

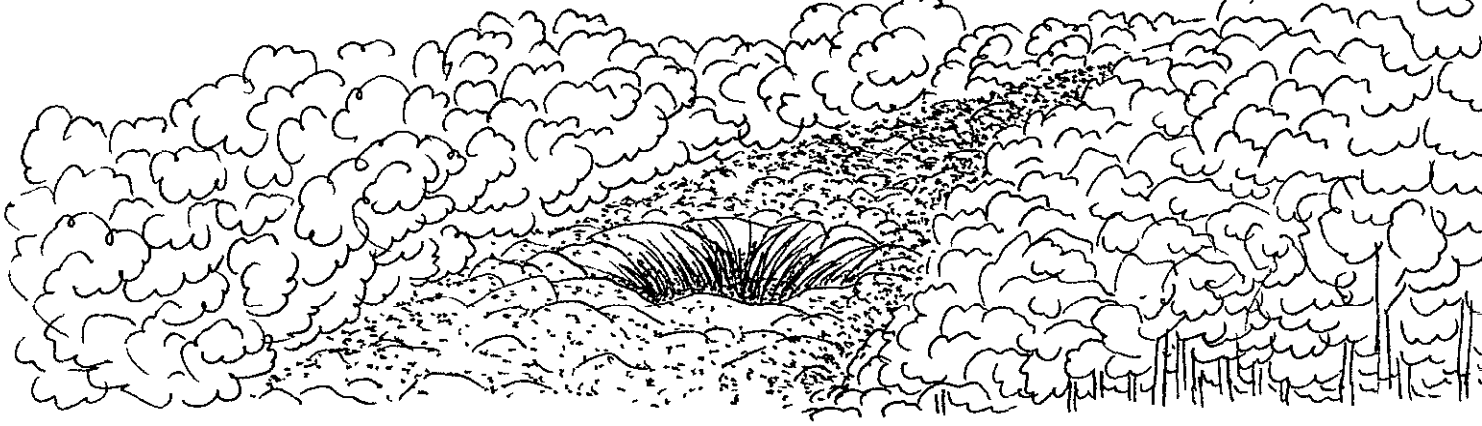
STANDARDS AND GUIDELINES

1. Trees will only be cut for recreation purposes and to maintain a healthy natural appearing stand.

2. Only those developments that protect the area and provide for visitor enjoyment and safety will be allowed.

3. An opportunity for roaded natural recreation will be provided.

4. Give high priority to acquiring the private lands northwest of the picnic area.



8.1G Crystal Brook Glacial Kettle

PURPOSE

This area will be presented as an example of a late glacial process and its resulting landscape features.

PHYSICAL PRESCRIPTION

As the glacial ice pack stagnated and began to recede, glacial sands and gravels, or outwash were deposited around or over a large block or small lobe of ice. As the ice melted from beneath the outwash, a large hole formed in an otherwise flat area. This hole is called a glacial kettle.

There are occasional glacial kettles on private lands, but they occur in only two locations on the National Forest. Since glacial kettles often occur in commercially valuable deposits of sand and gravel, they are gradually disappearing. This glacial kettle and some of its technical features would primarily interest educators and students in earth science or surficial geology.

LOCATION

The special area is located between Crystal Brook and Vermont Route 125 across from Middlebury College Snow Bowl in Hancock, Vermont. The 4 acre Special Area includes the one acre kettle and enough land to depict its normal appearance and prevent encroachment from future adjacent gravel cut banks.

STANDARDS AND GUIDELINES

1. Roads, facilities, and developments will not be allowed.

2. Gravel or fill excavation will not be allowed.

3. Vegetation will be managed to provide a healthy wind-firm overstory and a relatively open view under the forest canopy. During logging, trees will be removed by cable from outside the Special Area.

4. An opportunity for roaded, natural recreation will be provided.

8.1H Robert Frost Interpretive Trail

PURPOSE

The Robert Frost Interpretive Trail was designated as a National Recreation Trail in 1979 as a tribute to Robert Frost.

It will be managed to provide the serene, wooded, and open appearance often evoked in Robert Frost's poems.

PHYSICAL DESCRIPTION

The trail is 0.8 miles long and passes over or near three attractive sections of the South Branch of the Middlebury River. The trail also passes through vegetative communities in various stages of forest succession. designed to maintain the natural appearance of the area.

LOCATION

The trail is in Ripton, Vermont. The Special Area includes 60 acres which were chosen to preserve the foreground appearance and to include a variety of vegetation communities and successional stages.

STANDARDS AND GUIDELINES

1. A variety of vegetative successional stages will be maintained.

    a. The vegetation in openings and alder swamps will be managed to perpetuate their existing appearance.

    b. The vegetation in the forested area will be managed in an unevenaged condition.

    c. Roads, facilities, and developments other than those associated with the trail or needed to manage vegetation in the forested part of the Special Area, will not be allowed.

2. A vegetation management plan will be developed.

3. An opportunity for roaded, natural recreation will be provided.

8.1I Beaver Meadows and Abbey Pond

PURPOSE

The isolated character of the meadows and ponds will be preserved to protect existing Great Blue Heron rookeries, rare plants and to preserve the remote recreation experience associated with the area.

PHYSICAL DESCRIPTION

Beaver Meadows is a relatively large bog and open water community. Sphagnum Moss, Labrador Tea, Mountain Laurel, Sheep Laurel, Black Spruce, Pitcher Plants, Bog Birch, and Tamarack are some of the species that occur in the area. Local birders indicate that it is an excellent birding area. More than one breeding pair of the Great Blue Heron nest around Beaver Meadows. Habitat for the heron is not common on the forest.

The bog and open water area is large enough to provide beautiful views toward Breadloaf Mountain. Because there is little evidence of man's activities and because the area is about one-half mile from the nearest driveable road, there is a definite feeling of solitude in the area.

Abbey Pond is a small marshy water body where the rare plants Green Wood Orchis, Round-leaved Orchis, and Mrs. Cornelius Van-Brunt's Jacobs Ladder (Polemonium Van-Bruntiae Britt) have been found.

LOCATION

The special area is in the towns of Bristol, Ripton, and Middlebury, Vermont. The boundaries of this Special Area encompass 470 acres and were established to preserve the area's natural appearance and remote setting.

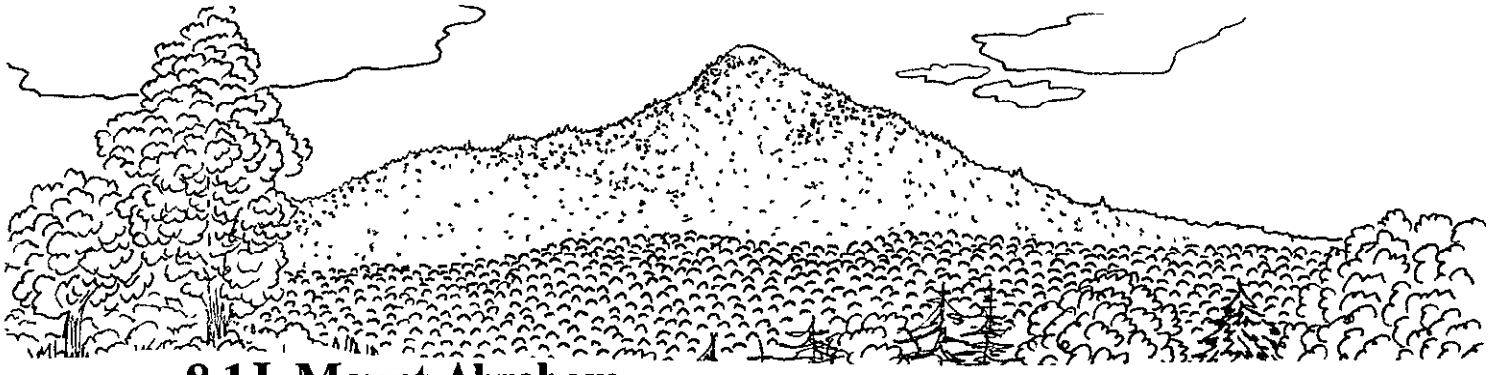
STANDARDS AND GUIDELINES

1. Recreation use will not be encouraged because of the scarcity of some of the uncommon sensitive plants and birds. New trails will not be built to the Special Area. Existing skid trails will be obliterated. A Semi-primitive setting will be maintained.

2. Timber stands surrounding the Meadows will be managed by 150 year rotations and evenaged silviculture. Do not allow logging within 200 feet of the Meadows.

3. Chemicals and fire will not be used as management tools.

4. Roads closer than one-half mile to the Special Area boundary will be closed to public vehicles during snow-free seasons.



8.1J Mount Abraham

PURPOSE

Rare plant species and the sub-alpine environment in the vicinity of the summit of Mount Abraham will be protected.

PHYSICAL DESCRIPTION

The summit of Mount Abraham, elevation 4006 feet, borders between the sub-alpine and alpine vegetation zones. It is very close to tree line and the elevation makes growing conditions so severe that trees cannot survive. The trees near the summit, called krummholz, are slow-growing prostrate, matted, and wind-sheared. Krummholz vegetation is quite rare in Vermont and can be easily eliminated by trampling.

Several rare alpine plant species also survive on the summit of Mount Abraham - Three-toothed Cinquefoil, Bog Bilberry, and Carex brunescen. Bigelow Sedge, Mountain Cranberry, Mountain Sandwort, Mountain Willow, and Juncus trifidus may occur, but their presence has not been confirmed.

Because it is one of the highest mountain peaks in Vermont, and because the summit vegetation is usually less than two feet tall, Mount Abraham affords one of the most spectacular and beautiful views of a large portion of Vermont, New Hampshire, and New York. This area is very popular with day-hikers. There is heavy foot traffic around the summit. Recreationists use krummholz vegetation for fuel. If this continues, the krummholz and surviving rare plants will be eliminated.

LOCATION

Mt. Abraham, elevation 3700-4006 feet, is in Lincoln, Vermont. The 75 acre Special Area includes the summit and a portion of the surrounding krummholz vegetation.

STANDARDS AND GUIDELINES

1. Indiscriminate foot traffic and damage to vegetation will be discouraged. Interpretive and informative signs will be placed on the Long Trail, north and south of the summit, to inform hikers of the fragile nature of the Special Area. Acceptable summit travel routes will be identified by marking trails with paint spots on rocks.

2. Open campfires, roads, facilities, and developments other than footpaths will not be allowed.

3. An opportunity for Semi-primitive recreation will be maintained.

8.1K Remote, High Elevation Ponds

PURPOSE

Because of their uncommon recreational and scenic values, as well as their biological significance, two remote, high elevation ponds will be designated and maintained as Special Areas. These ponds are: Branch Pond and Little Pond.

Eight other remote high elevation ponds will also be given special management considerations. Skylight Pond, Griffith Lake, Big and Little Mud Ponds, Wallingford Pond, Little Rock Pond, Fifield Pond and Abbey Pond are located in the Breadloaf Wilderness (MA 5.1) White Rocks NRA and Beaver Meadows Special Area (MA 8.1) so they do not require individual designation as Special Areas. Abbey Pond occurs within MA 8.1I.

The area around all of these ponds will be managed according to the Standards and Guidelines stated below. All ponds will be protected so that future designations as Research Natural Areas will remain possible.

PHYSICAL DESCRIPTION

All of these ponds are undeveloped. They have natural-appearing shorelines and settings. The ponds are occasionally summer habitat for boreal birds such as the black-backed three-toed woodpecker and rusty blackbird. Undeveloped, privately owned ponds are becoming increasingly scarce. The maintenance of the Forest Service ponds would assure that a remote, undeveloped pond experience is always available. Some of the Forest ponds, such as Little Pond, are easily accessible by Forest Service roads. Rare plants occur around some of these ponds.

LOCATION

- Branch Pond, Sunderland, Vermont, elevation 2552 feet, 250 acres.
- Little Pond, Woodford, Vermont, elevation 2602 feet, 145 acres.

The boundaries of these Special Areas include all water and much of the land seen from each pond's shoreline.

STANDARDS AND GUIDELINES

1. If timber cutting is allowed apply unevenaged management in order to provide a healthy, natural-appearing landscape and Semi-primitive recreation opportunities. Do not offer the timber within 200 feet of the ponds for commercial sale.
2. Facilities and developments other than those necessary to manage the vegetation or to provide Semi-primitive recreation opportunities will not be allowed.
3. To protect any existing rare and endangered plant species such as Tuckerman Pond Weed (Potamogeton confervoides) and Bladderwort (Utricularia resupinata), no new developments will occur within 200' of the shoreline. As present developments deteriorate, efforts will be made to move them outside this zone.
4. Determine whether some or all of these ponds should be nominated as Research Natural Areas.

8.1L Rattlesnake Point and Falls of Lana

PURPOSE

The spectacular scene from Rattlesnake Point and from the cliffs near the Falls of Lana will be preserved. Habitats for rare plants and bird species potentially occupying this area would be protected.

PHYSICAL DESCRIPTION

Rattlesnake Point is an unusually good example of a glacial process of quarrying or ice plucking. Glacial ice, by one of several possible processes, removes large blocks of rock from the "down-ice" or lee side of some mountains or hills. This leaves a very steep "plucked" rock face and cliffs on one side of the mountain and a less "scoured" slope on the "up-ice" or stoss side of the mountain. Subsequently, a rock talus slope is formed. This talus slope holds winter's ice well into each summer thus creating a "refrigerated" micro-climate around the talus.

The Falls of Lana are unusually good examples of waterfalls and cascades with plunge pools surrounded by sheer cliffs.

From cliffs near the Falls of Lana there are good views to the Champlain Valley and Lake Dunmore. From Rattlesnake point there is an outstanding 270° view. On the west are the Adirondacks and Champlain Valley, toward the south is Lake Dunmore, Silver Lake, and the Rutland Valley, and toward the east are several peaks on the main ridge of the Green Mountains.

The Rattlesnake Point/Falls of Lana Special Area is a known habitat for nine rare plant species including purple clematis and the endangered/threatened American beggar's lice, as well as a potential habitat for the Peregrine Falcon.

LOCATION

Rattlesnake Point is in Salisbury, Vermont. The Special Area is 130 acres and includes most of the foreground scene from Rattlesnake Point and the Falls of Lana.

STANDARDS AND GUIDELINES

1. Allow only facilities and developments consistent with Semi-primitive recreation needed to provide public safety, to manage vegetation, and to promote falcon hacking.
   Maintenance of trails will not disturb rare plant populations.

2. Vegetation will be managed to provide continuous forest cover. Logging will not be permitted within 50 feet of any rare plant population.

3. Protection of rare plants and animals may require closure of portions of this special area to the public. The trail at the base of the cliff may require closure.

8.1M Blue Ridge Mountain Cranberry Bog

PURPOSE

Protect the uncommon, high-elevation, cranberry bog community and isolated, Semi-primitive character.

PHYSICAL DESCRIPTION

Little is presently known about the flora in this Special Area, except that a 5 to 10 acre community of bog cranberry grows there.

LOCATION

The area encompasses the bog and the entire watershed draining into the bog and occurs at elevations 2770 to 3050 feet for a total of about 50 acres on Blue Ridge Mountain in Chittenden, Vermont.

STANDARDS AND GUIDELINES

1. Field check the Special Area to better characterize plant communities and outline more specific management direction to protect these communities and the remote, Semi-primitive setting in which they occur.

2. Allow no management activities in this Special Area until it is thoroughly studied and appropriate standards and guidelines are established for its protection.

Management Prescription 9.2

PURPOSE

Management Prescription 9.2 will protect the natural resources and management options of newly acquired lands until studies are done to determine the desired future conditions for these valuable areas. Management activities will be limited to the protection and inventory of existing resources and facilities until such studies are complete and a sound decision can be made.

Management Prescription 9.2 will give the Forest Service time to work with the public in studying how newly acquired lands should be managed. The time needed to complete these studies will be influenced by the location, size and complexity of each area. While some newly acquired lands may be assigned to another management prescription rather quickly, others may remain under prescription 9.2 until the next time the whole Forest Plan is revised (Chapter 5).

PHYSICAL DESCRIPTION/LOCATION

For these purposes, "newly acquired lands" include any areas in the Green Mountain or Finger Lakes National Forests where full or partial interest in land is acquired by the Federal government after September 30, 1981 (Appendix M).

GOODS AND SERVICES

The goods and services available from newly acquired lands will vary considerably from area to area. Public access and recreational use of these areas will be allowed unless there are conflicts with other management objectives. Until future studies are completed, the harvest of timber or minerals, wildlife habitat, recreation or trail development will not be allowed in newly acquired areas where the Federal government controls the rights to timber and minerals.

9.2 Standards and Guidelines

A. GENERAL

1. Analysis will be done to determine the desired future condition of newly acquired lands. This analysis will comply with the National Environmental Policy Act, will fully involve any interested publics and will begin as soon as practical.

2. The analysis will begin by identifying public issues and management concerns regarding the tract and inventorying the land and resource conditions of the tract.

   Particular attention will be paid to collecting information to help address the issues and concerns regarding the tract.

3. The breadth and intensity of the remaining steps in the analysis will depend on the results of this preliminary review. Relatively small tracts or portions of larger tracts which clearly fit within existing management area boundaries and make logical additions to those areas will generally not require much analysis.

   An environmental assessment will document decisions when the issues, concerns and inventory indicate that management of the area will not significantly change the management goals and objectives of the Forest Plan.

   If a significant change is anticipated, then the analysis will proceed in the same manner as other revisions of the Forest Plan (Chapter 5) and an environmental impact statement will be prepared.

   a. Appropriate actions will be taken if the issues, concerns or inventory indicate an immediate need to protect fragile resources or maintain future management options.

   b. Alternatives to future management of all or part of the tract will include, but not be limited to, the Management Prescriptions described in the Forest Plan.

c. Development and evaluation of alternative management prescriptions for the tract will at least reflect:

1. a full range of responses to the identified issues and concerns;
2. continuing to manage the area under Prescription 9.2 until the Forest Plan is revised;
3. the full range of major goods, services and amenities that could be provided;
4. the National Forest's role in meeting projected demands for goods and services especially providing what private lands do not;
5. the flexibility to change management direction in response to unanticipated future conditions and demands;
6. the juxtaposition of management prescriptions assigned to other lands in the vicinity;
7. ecological and economic soundness;
8. acceptability to interested publics.

4. Further evaluation of the prescriptions already assigned to surrounding areas will be appropriate when the newly acquired lands create management options which were not possible prior to acquisition. In such cases, the environmental analysis will be expanded to address new alternatives for previously prescribed areas of the National Forest.

B. INVENTORY

1. Information about newly acquired lands and resources will be collected and stored in ways which logically tie it to existing data bases.

   As a minimum, newly acquired lands will be mapped and information will be stored according to the opportunity area(s) and compartment(s) which occur within them.

2. Other agencies and groups will be contacted for information they may already have about the area.

C. SOIL & WATER

1. Any areas found to be eroding significantly or resulting in sedimentation of streams will be stabilized.

D. WILDLIFE

1. Endangered, threatened or sensitive wildlife habitats will be protected (Appendix E).

2. Existing habitats, such as openings, which require periodic maintenance will receive necessary maintenance.

3. No habitat improvement work will be carried out.

E. RECREATION

1. Recreation activities will be allowed to occur as long as they do not harm other resources or compromise future management options for the area.

2. Trails and other recreation facilities will be maintained.

3. New recreation facilities or trails will not be developed.

F. TIMBER

1. Commercial timber sales, other than for salvage, will not occur.

G. ROADS

1. Roads that have a history of public use and are safe for travel at the time of their acquisition will remain open to motorized vehicles. Existing roads may be gated and closed to motorized vehicles if road conditions are unsafe or use will result in damage to the road or the resources in the area.

2. Existing roads that have been closed to the public by the previous owner, will remain closed.

3. No new roads will be built. Maintenance or restoration of existing roads will be permitted if necessary to prevent road or resource damage or to provide public safety. Road users with outstanding rights to roads and adjacent National Forest lands, may maintain and improve roads with their own funds under a Forest Service Road Use Permit.

4. The condition and signing of existing gates will be improved to meet Forest Service standards if necessary.

H. MINERALS

1. Allow no new surface disturbing mineral exploration, development or extraction. Continued removal of sand and gravel from existing sources will be allowed.

2. USDA consent of all other mineral development and extraction will be reserved until the analysis to determine the desired future condition of the tract has been completed and site specific proposals for mineral development and extraction are received.

Management Prescription 9.3

PURPOSE

Management prescription 9.3 maintains the potential of certain lands for expansion of existing alpine ski areas while protecting and managing other resources and uses. The lands assigned to Management prescription 9.3 were identified in discussions with the managers of the existing ski areas as potentially being important to their future growth, but detailed analysis of expansion at this time would be premature.

A decision to permit the expansion and redesignate the MA 9.3 lands to MA7.1 cannot be made until after specific and detailed proposals are received and studied. Without such proposals, we cannot perform sufficient environmental analyses or meaningfully involve State and local officials and citizens in reaching a proper decision. The possible social, economic, biological and physical effects of the specific proposals will dictate the scope of the environmental analyses which must be performed.

Because of their relatively small size and close proximity to existing ski area development the future redesignation of MA 9.3 to MA 7.1 is conceptually compatible with the overall role of the forest and the objectives of adjacent Management Areas. Thus, the redesignations will only constitute a minor change in the direction of the Forest Plan.

PHYSICAL DESCRIPTION AND LOCATION

Management prescription 9.3 has been assigned to approximately 500 acres of land between Mount Snow and Haystack, 50 acres south of Haystack and about 80 acres next to Bromley Mountain.

Management Area 9.3 rises to the height of land in the Cold Brook drainage between Mount Snow Ski Area and Haystack Ski Area in the towns of Somerset and Dover (Forest Plan Map). The MA 9.3 lands near Bromley Mountain occur east of Hapgood State Forest and the existing special use permit boundary in the Town of Peru (Forest Plan Map).

Most of the land in MA 9.3 is steep, highly visible and forested. No uncommon wildlife or plant habitats, deer wintering areas, cultural resource sites or other special conditions are known to occur. Some recreation trails presently exist.

GOODS AND SERVICES

The goods and services available from MA 9.3 will remain essentially unchanged from what is presently being provided. Any goods, services or uses which do not hinder the possibility of expanding the ski area in the future will be allowed.

9.3 Standards and Guidelines

A. RECREATION/VISUAL

1. Allow hunting, hiking, cross country skiing and other pedestrian forms of recreation which presently occur in the area.

2. Trails for motorized and nonmotorized recreation activities will be maintained. No new trails will be constructed.

3. All management activities will meet the Visual Quality objective of partial retention, and will appear subordinate within the surrounding, natural appearing landscape.

B. FISH AND WILDLIFE

1. Inventory the area for the presence of threatened, endangered, and sensitive species or other species of concern prior to any surface disturbing activities.

2. Do not make investments in habitat improvements in these areas.

C. TIMBER

1. No cutting is presently planned for these areas over the next 10 to 15 years.

2. If cutting is needed, coordinate all proposals for vegetative management with the ski area.

3. The primary silvicultural method will be unevenaged, although limited evenaged silviculture may be used.

D. PERMANENT ROADS

1. No road construction is presently planned in these areas over the next 10 to 15 years.

2. If roads are needed, coordinate proposals to build permanent or temporary roads with the ski area.

E. INTEGRATED PEST MANAGEMENT

1. Chemicals would be used as a last resort.

F. CORRIDORS

1. Discourage above ground utility lines. Pipelines will be buried.

G. MINERALS

1. Do not consent to surface disturbing exploration.

2. USDA consent on mineral development and extraction will be reserved until site specific proposals are received. When reviewing proposals consider the relative value of the surface and subsurface resources and the consistency of proposed actions with the management objectives, standards and guidelines of this prescription.

H. STUDY REDESIGNATION TO MANAGEMENT AREA 7.1

1. Additional environmental analysis will be performed to assess the effects of specific proposals for ski area expansion that would result in a redesignation of National Forest System lands from MA 9.3 to MA 7.1. The effects of the proposal on National Forest lands and resources will be analyzed along with the social, economic, biological and physical effects on nearby communities and lands.

2. The environmental analysis will comply with the National Environmental Policy Act, and will fully involve any interested publics.

   The request for expansion should include detailed descriptions and maps of the type, size, location and timing of construction for all lifts, trails and facilities which are directly or indirectly related to the proposed development on National Forest System lands. Such descriptions must include similar information for short term and long range developments on private lands which are dependent on approval of the expansion request.

3. In accord with the goals of the National Environmental Policy Act (NEPA) we will attempt to work with ski area managers, the State of Vermont, Regional Planning Commissions, Towns and other affected parties to minimize duplication of efforts in complying with federal, state and local requirements.

   Successful coordination will result in a single forum for analysis and decisionmaking on the entire expansion proposal that will apply to and satisfy the same or similar purposes and requirements of all levels of government and public interest.

H. STUDY REDESIGNATION TO MANAGEMENT AREA 7.1 (cont'd)

4. Soon after receipt of the request for expansion the affected parties should meet to review and discuss the proposal for expansion, to identify related issues and concerns and to develop a memorandum of understanding regarding the roles, responsibilities and mechanisms for a coordinated environmental review (See H.3 above).

5. The extent of additional information which is needed and the scope of the entire environmental analysis will be based on the breadth and intensity of issues and concerns which are raised.

6. The costs of collecting additional information which may be needed to assess the effects of the proposed expansion and address the issues and concerns which are raised will be paid for by the ski area. Control over the quality and accuracy of that information will be maintained by the Forest Service, however.

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H. Proposed Management Activities

The management prescriptions call for management activities to achieve their goals. In our plan, we have estimated the activities which will be needed in the next 50 years.

This section lists major activities, and some measurement of the amount of each, which we have proposed for the first decade. The listing is a summary of what is proposed to occur in the next 10 years and what will probably occur ten years after that. A more specific description of the Forest's management objectives during the next 10 years is provided in Section D of this chapter. Specific projects are listed in Appendix B.

Our plan was actually developed after dividing the forest into several opportunity areas which were delineated on the basis of physical features (such as watersheds), administrative boundaries (such as timber compartments), and management considerations (such as an area which could be logically managed as one unit). Presently the activities listed for the entire forest have been assigned by Management Area (Table 4.3) even though their specific location and timing for many of the activities have not been determined. Within two years we will have completed a ten year action program for each opportunity area by specifically listing, scheduling and locating all of the projects and activities which will take place (Chapter V).

Although the plan is fairly specific in prescribing the management activities which will take place and the rules which will be followed, a decision to implement any proposed action that could affect resources, land uses, and environmental quality will be preceded by an environmental analysis. This analysis will be used to determine if any additional review is required by the National Environmental Policy Act.

In addition, we are committed to using the most efficient methods possible that are consistent with the standards and guidelines. For example, we would use cost effectiveness as a criteria in deciding between paying a contractor, giving a contractor salvage rights, holding a commercial timber sale, or using Forest Service crews to enlarge the softwood component of a deer wintering area.

Table 4.3 Proposed (1987-1996) and Probable (1997-2007) Management Activities

Management Activity	Unit of Measure	Management Area	Proposed Average Annual Amount	Probable Average Annual Amount 2/
Protect the Environment	Acres	All	325,400	325,400
Protect Special Areas	Acres	8.1	31,500	31,500
Land Acquisition 1/	Acres	All	Unknown	Unknown
Backcountry Management:				
°Wilderness	Acres	5.1	58,400	58,400
°Primitive	Acres	6.1	12,100	12,100
		8.1	3,300	3,300
		Total	15,400	15,400
°Semi-Primitive	Acres	2.2	22,900	22,900
		4.2	5,800	5,800
		6.2	77,600	77,600
		8.1	25,700	25,700
		Total	134,500	134,500
Backcountry Campsites:				
°New Construction	Sites	Many	2	3
°Rehabilitation	Sites	Many	6	8
Roaded Natural Recreation	Acres	2.1	22,700	22,700
		3.1	48,800	48,800
		4.1	14,500	14,500
		9.3	600	600
		Total	86,600	86,600
Trail Construction	Miles	Many	1.6	2.4
Trail Rehabilitation	Miles	Many	2.6	3.6
Downhill Skiing	Acres	7.1	3,200	3,200
Parking Area Construction				
°Winter Only	Spaces	*	6	4
°All Seasons	Spaces	*	15	20
Local Roadwork				
°Maintenance	Miles	*	285	296
°Restoration	Miles	*	1.6	1.6
°Reconstruction	Miles	*	0.6	0.6
°Construction	Miles	*	0.5	0.5
Selection Cuts	Acres	2.1	370	370
		2.2	95	95
		3.1	40	40
		4.1	125	125
		4.2	50	50
		6.2	50	50
		Total	730	730

Table 4.3 Proposed (1987-1996) and Probable (1997-2007) Management Activities

Management Activity	Unit of Measure	Management Area	Proposed Average Annual Amount	Probable Average 2/ Annual Amount
Shelterwood Cuts:				
°Regeneration	Acres	2.1	74	74
		2.2	18	18
		3.1	540	540
		6.2	318	318
		Total	950	950
°Overwood Removal	Acres	3.1	145	145
		6.2	175	175
		Total	320	320
Clearcuts 3/	Acres	3.1	225	225
		4.1	78	78
		4.2	32	32
		6.2	100	100
		Total	435	435
Thinning	Acres	3.1	570	570
		4.1	115	115
		6.2	300	300
		Total	985	985
Stand Improvement	Acres	2.1	50	50
		3.1	130	130
		6.2	155	155
		Total	335	335
Release	Acres	3.1	75	75
		4.1	125	125
		4.2	45	45
		6.2	35	35
		Total	280	280
Plant Softwoods	Acres	4.1	35	35
		4.2	15	15
		Total	50	50

* These activities will cross several Management Areas. Appendix B lists individual projects and their locations by Management Area.

1/ Lands will be acquired to better achieve the objectives of all management areas on the National Forest. The exact amount is highly dependent on funding and cannot be predicted.

2/ Probable amounts do not reflect increases in land ownership, but will be affected by them.

3/ Clearcuts will annually be used to convert hardwoods to 90 acres of softwoods in deer wintering areas, 60 acres of aspen and 40 acres of upland openings to enchance diversity and wildlife. About 110 acres of existing aspen must also be regenerated each year if aspen is to be retained. In addition, 135 acres of clearcutting will be used primarily to treat high risk and sparsely stocked stands.

CHAPTER V

IMPLEMENTATION, MONITORING AND EVALUATION

V. Implementation, Monitoring and Evaluation 5.01
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B. Monitoring and Evaluation . . 5.03
C. Amendments and Revisions. . . 5.04
D. Contingency Strategies. . . . 5.05

V. Implementation, Monitoring and Evaluation

Approval of this plan changes the way we do business. We must now be sure that, subject to valid existing rights, all permits, contracts, and agreements are consistent with the goals, objectives, standards and guidelines of the plan. We must also design, schedule, and propose budgets for the projects identified in the plan.

In addition, we will begin monitoring how closely our results match those projected in the plan. We can then make recommendations on improving the plan to reflect changed conditions or unanticipated results.

This chapter explains the process for implementing the plan, for monitoring the results, and for improving the plan by amending or revising it.

A. Implementation

The next step in implementing the Forest Plan will be to complete an action program for the first ten years for each of the opportunity areas on the Forest. The plan gives us a great deal of direction for each area. It shows us where the various management prescriptions will be applied. Inherent in each management prescription is the desired future condition of the land, and the management practices, standards and guidelines which are appropriate. The plan establishes the desired proportions of various types of vegetation. It determines the types of recreation opportunities (ROS class) to be provided. It also classifies the land according to visual quality objectives and assigns appropriate standards to be applied to achieve those objectives. Finally, it describes the desired road system for each area, and determines whether or not any new road construction would be necessary.

The action program for each opportunity area is, essentially, a formulation of site specific projects and activities which will carry out the plan's directions. The projects will be interdisciplinary, coordinating management practices affecting many resources, and achieving integrated resource management for the opportunity areas objectives.

Implementation through Integrated Resource Management (IRM) is the step in the planning process which brings the plan to the ground. The individual programs for the opportunity areas will infuse the plan's many promises and objectives with real-life viability. The site specific projects will be conceived to take advantage of unique opportunities and to consider local issues and concerns. They will be developed to recognize the complexities and interrelationships of all the resources.

Integrated Resource Management is the stage in the planning process that will be the most challenging. It is also where the significant changes in policy which have been stated in this plan will begin to become obvious. Designing on the ground projects which will meet the multiple objectives and follow all the standards and guidelines assigned to the area by the plan will require more interdisciplinary thinking and teamwork than we have ever benefited from before.

To give an example of how we might incorporate vegetative composition objectives into three projects which were proposed to also create wildlife openings, to create vistas for recreation, and to harvest timber, the following chart was made for an actual 2300 acre area of the forest.

-SAMPLE-

VEGETATIVE COMPOSITION OBJECTIVES FOR AREA X -- 2300 ACRES

	Existing		Objective		Desired Change			
Type	%	Acres	%	Acres	Total Acres	Decades To Reach	First Decade Acres	Project
Aspen	1.2	28	5	114	+86	2	+43	A, B, C
No. Hdwds	92.1	2158	70	1604	-554	6	-110	A, B
Hemlock Spr/Fir	3.5	89	20	456	+376	6	+38	A, B
Upland Openings	1.2	28	5	114	+86	3	+29	B, C

The above composition objectives are within ranges established in the Forest Plan. They are specifically tailored to a sub-unit (opportunity area) of the Forest based on local wildlife habitat needs and opportunities. The primary means of accomplishing these vegetative composition objectives will be through commercial timber sales.

Wildlife openings, vistas, recreation trails, and habitat improvements are examples of resource improvements that can be accomplished as part of carefully planned timber sales in addition to improved silvicultural conditions. Accomplishment of these vegetative composition goals will be done in harmony with other major objectives, such as visual quality objectives, recreation objectives and fully considering local public issues and concerns. The projects incorporate the standards and guidelines assigned by the Plan.

Multi-year budget proposals will be worked up to identify and plan needed expenditures. The Forest's annual proposed budget will be the official request for funding necessary to implement the plan each year. The final budget which is approved will determine the annual program of work which we will be able to carry out. As each project is designed, we will conduct an environmental analysis. The analysis will begin with this Plan and with its EIS. These documents will help us determine the appropriateness of the project and the extent of environmental analysis which may be required.

A project which is compatible with the plan will require environmental analysis, and documentation if the proposed action will significantly affect the human environment. This documentation will reference, rather than repeat, information included in the Plan and the EIS. It will focus on issues, alternatives and environmental consequences unique to the project. NEPA requirements for documentation and public review will be met.

A project which is compatible with the plan, and which both prior experience and environmental analysis indicate will have no significant effect on the human environment, will not require an environmental assessment.

However, those people who have indicated interest in this type of activity will be notified of the decision. A record of the analysis will be available for public review. A project which is not compatible with the Plan may not be approved without an amendment to the plan. The process required to amend the plan is outlined on page 5.04.

B. Monitoring and Evaluation

Monitoring and Evaluation are conducted to determine how well our performance and the forest conditions match those expected, and to recommend changes which may be needed in the plan.

The National Forest Management Act specifically requires monitoring for the following:

a) to compare actual and planned outputs (219.12k(1))
b) to compare actual and planned costs (219.12k(3))
c) to compare actual practices and effects with planned practices and effects (219.12k(2))
d) to determine significant changes in productivity (219.12k(2))
e) to reevaluate the suitability of land for timber production (219.12k(4))
f) to determine if land is adequately restored following harvest (219.12k(4))
g) to determine if harvest area size limits should be continued (219.12k(4))
h) to assure that insect and disease problems do not increase to a damaging level (219.12k(4))
i) to determine population trends of indicator species (219.19)
j) to evaluate relationships between GMNF and adjacent land (219.7(f))
k) to identify research needs (219.18)
l) to determine whether land conditions or demands of the public have changed significantly (219.10(g))

In addition, the GMNF has included other monitoring to see if the anticipated future conditions actually occur, and to see how well our actions actually resolve the management problems outlined in Chapter III. We have listed the monitoring which we would like to accomplish, as well as the monitoring frequency and expected reliability (Appendix C). We also recognize that many groups are interested in specific characteristics, outputs, or conditions and we would encourage cooperative monitoring projects to help us evaluate our progress.

Monitoring will be done routinely, some on a sample basis and some based on record keeping and reporting as activities are completed. The specific monitoring action program will be included in the multi-year budget proposals.

If an evaluation of the monitoring results indicates there is a significant difference between the conditions expected by the plan and the actual conditions, we may recommend changes in our performance to meet the plan requirements, changes in our funding program, or changes in the Forest Plan.

C. Amendments and Revisions

Amendments to the Forest Plan may be recommended if we find that the prescribed activities are not resolving the problems, that new and more important problems have been identified that should be addressed, that there are significant changes in demands, that some basic assumptions of the Plan are not valid, or that activities prescribed by the plan seriously affect other resources or uses.

The Forest Supervisor would determine whether an amendment to the plan would be significant. Amendments would not be considered significant if they only adjust the implementation schedule to reflect differences between proposed and appropriated funding, or if they modify an allocation, a prescription, or a standard which is found to be unproductive, inefficient, unnecessary, or damaging, if this change does not affect the intent of the Plan. In this case the Forest Supervisor may implement the amendment following public notification and completion of the NEPA procedures.

If the proposed amendment is found to be significant, or if a complete revision of the plan is recommended, the new plan could only be implemented by following the same procedure required for development and approval of this Forest Plan.

Annually, by 30 September, a summary of Forest Plan amendments will be prepared, incorporated into this Plan as an addition, and made available to the public. This is to insure that the plan is kept current.

The Forest Plan will be revised no later than 15 years from the date it is approved. It also may be revised when the Forest Supervisor determines that changes in conditions of the land, in public demands, or in RPA policies, goals or objectives would have a significant effect on the forest program. This revision would go through the same process required for development and approval of this Forest Plan.

D. Contingency Strategies

One of the important lessons we learned while preparing a Plan for this National Forest was that the future cannot be predicted. We learned the Plan must remain flexible to change while it is guiding us toward the future conditions that we presently desire.

The role we have defined for this National Forest and the goals for its management are among the most fundamental and important decisions that were made. Because of their fundamental nature, the role and goals of this National Forest are the least likely parts of the Plan to require change in the future and should be what any proposed changes are measured against.

An unknown number of unknown unknowns could prompt us to consider amending or revising the Plan in the future (Chapter V, Section C). The Plan cannot tell us how to deal with every contingency, but it should put us in the best possible position to deal with them when the time comes. Our Plan does that by creating a sound balance of diverse conditions on this National Forest. the Plan emphasizes those conditions which keep the greatest number of options open and can adapt to new pressures most readily while satisfying present and anticipated public demands. Furthermore, the Plan directs the achievement of those conditions in the most naturally suited locations for each condition and arranges them so that there is harmony among conditions.

Some contingencies are worth considering now, even though no decision can be made until the event occurs and more is known about it. The most commonly asked "what if" questions that we heard during the planning process dealt with inadequate funding, discovery of important minerals, changing market conditions for timber, acid precipitation and the overall health of the forest environment.

<u>What if inadequate funding is received to implement the program outlined in the Forest Plan?</u>

If the Forest Plan is not fully funded during the next 10 years then some scheduled management activities will have to be delayed, but the overall objectives stated in the Plan will not change. Likewise, no cheap, shortcuts will be taken which will compromise environmental protection and force us to lose sight of our role as stewards of the land and its resources.

If we must accept budget cutbacks in particular program areas, such as timber, roads, recreation or wildlife, then the least important activities in those areas will be delayed until adequate funding is received. We will not attempt to do the scheduled amount of activities at a lower standard of quality.

For instance, if forced to make a choice we will adequately maintain existing trails and facilities before building new ones. In this event, achieving the objectives stated in the Plan will be slowed, but not changed.

If we are able to determine how the reduced budget is to be divided among the programs on the Forest then we should consider cutting back first in the areas of vegetation management and roadbuilding.

The vegetation management projects and roads which have the least important benefits to the public should be deferred until full funding is received. In most cases, this would involve timber sales and roads which are principally intended to meet society's demand for wood. Private lands should easily be able to meet that demand, if necessary.

On the other hand, private lands are less well suited to meet demands for recreation and wildlife benefits so those programs should be fully funded, if possible.

What if important minerals, such as oil and gas, are discovered beneath the National Forest?

In the unlikely event that important minerals are discovered, we will analyze the specific effects of any proposals to develop or extract minerals before decisions are made.

The role of this National Forest in providing all of the benefits it is capable of providing will be considered in those decisions. The scarcity of the discovered minerals and the benefits which would be compromised by the development or extraction of those minerals will be considered and their relative importance will be weighed. If possible, private lands should provide the first avenues to the mineral resources in Vermont, while minerals and other scarce, precious resources on public lands are held in trust for future generations.

In the event minerals must be extracted, the restrictions on surface disturbing activities stated in the Plan may need to be changed in order to reflect the relative values of minerals and the management objectives and resources those restrictions are intended to protect. In some cases, the restrictions may need to be expanded, while in other cases, it may be appropriate to relax them.

The public will be fully involved in any analysis which is done and decisions which are reached. The central issues will be the importance of minerals to society and the effects of mineral activities on the role of this National Forest and the achievement of the Plan's goals and objectives, including protection of the environment.

What if the market conditions for timber change?

The demand for wood and the prices paid for it could change dramatically during the life of the Forest Plan. Increased demand or higher prices would help us achieve the goals and objectives of the Plan while decreased demand and lower prices could have the opposite effect.

The average annual wood harvest from the GMNF will not exceed 15.6 million board feet during the 10 year life of this Plan.

Increased demand for timber would have to be satisfied by private and other public forest lands. Greatly increasing the annual harvest from the GMNF at any time during the next 70 to 80 years would prevent us from maintaining a nondeclining yield of timber.

Even if the law should change, timber production on this National Forest should not be greatly expanded because of the role we have in providing backcountry recreation, uncommon wildlife habitats, scenic beauty and other benefits which private lands cannot be relied on to provide. Private forest lands are more numerous, better able and better suited to meet timber demands.

Increased prices for timber, especially low quality timber, will improve the opportunities we have for achieving the goals and objectives of the Plan through vegetation management. Areas needing vegetation management, which we presently avoid because of their high costs and poor economic returns, might be entered if prices rise or costs should drop. This would allow us to disperse our vegetation management activities better and take additional measures to further soften the visual effects of timber harvesting, while maintaining revenues in excess of costs.

Conversion to unevenaged management will also become more affordable if prices paid for timber increase. If so, accelerating or increasing the total amount of conversion to unevenaged stands should be considered.

If demand or prices for wood drop, then the vegetation management scheduled in the Plan might be reduced. The timber sales which provide the least important benefits to the public should be dropped first. If additional sales must be dropped and they provide equally important benefits then first drop those which will have the poorest economic returns.

The publics interested in this National Forest will be involved in any decisions to reduce and redirect the vegetation management program by indicating which benefits from vegetation management they desire most.

What if acid precipitation slows the growth of trees, makes them more susceptible to harm and endangers other parts of the environment?

We will need to work with others to carefully monitor the effects of acid precipitation and to determine if certain areas of the National Forest should not be disturbed by timber harvesting or other surface disturbing activities.

We believe that areas at high elevation, with thin soils and low buffering capacity are most prone to harm from acid precipitation, but other areas are being harmed as well. Few surface disturbing activities are scheduled in the most vulnerable locations and banning all such activities will be considered if necessary to protect the already delicate natural balance in these locations.

If the growth of trees is slowed by acid precipitation we may have to reduce the annual volume of timber scheduled for harvest. Cutting of softwoods, especially spruce, may have to be curtailed because of their know susceptibility to acid rain.

Presently, this issue is highly speculative and the best approach is to watch carefully and be ready to change our Plan in any ways that seem appropriate to protect the environment from harm.

CHAPTER VI

APPENDICES

VI. Appendices . . . . . .

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APPENDIX A: ADDITIONAL INFORMATION ON VEGETATION MANAGEMENT

*A-1 SUMMARY

There are very specific directions in the regulations concerning additional information which must be displayed for the timber outputs:

°Only 38% of the GMNF land is suitable to be managed for timber production. We have explained why the other 62% will not be managed for timber production based on its legal, physical, biological, economic, and management constraints (Tables A.01 and A.02). We have also listed the situations in which harvesting might take place on some of this land (Table A.03).

°Allowable sale quantity and long term sustained yield capacity.

The timber volume which is sold each year cannot exceed the volume which could be sold annually in perpetuity. The annual allowable sale is 2.7 million cubic feet (MMCF) or 15.6 million board feet (MMBF). The annual harvest that could be sustained in perpetuity given the land and management methods we have prescribed is 3.2 MMCF (19.0 MMBF) (Tables A.07 and A.08).

° Timber Management Practices and Timber Volume.

Because of the concern with types of timber cutting, we have included explanations of the reasons for selecting various silvicultural methods (Section A-2). It should also be noted that, of the timber that will be regenerated annually using evenaged silviculture in the first decade, 80% will be harvested with a shelterwood cut, 20% will be harvested through clearcutting. We expect to remove 73% of our total timber volume (1.9 MMCF/Year) in shelterwood regeneration cuts, 14% (0.38 MMCF/Year) in clearcuts, and 7% (0.2 MMCF/Year) in thinning cut (Table A.07).

Because most of the 24,400 acres which we plan to manage as unevenaged are presently evenaged and need conversion, we only expect to harvest 6% (0.17 MMCF) from the 730 acres cut annually in the first decade. (Figure A-1 and Table A.07).

° Planned Timber Sales

We have listed the tentatively planned timber sales for the next few years, with estimates of the harvest volume (Appendix B). Within two years from the date the plan is approved, we will develop a specific schedule for future timber sales and other projects needed to meet the Plan's goals and objectives in a well integrated fashion.

° Timber Productivity Classification

GMNF land was classified according to its ability to grow timber (Table A.04).

° Present and Future Condition

We have compared the present acreage in each category of vegetative type and in each age class with that which we expect to achieve in the future as a result of this plan. (Figures A-2, A-3 and Table A.05).

*A-2 CHOICE OF VEGETATION MANAGEMENT PRACTICES

INTRODUCTION

The National Forest Management Act and common sense direct us to choose vegetation management practices appropriate to the goals, objectives and requirements of the Forest Plan. Since the appropriateness varies according to the existing and desired conditions of different areas on the Forest, we have prescribed what vegetative, wildlife and recreation, management should be done in each Management Area (PLAN, Chapter IV, Section F).

The National Forest Management Act also states that clearcutting must only be used if it is the optimum harvest method. This appendix explains when clearcutting has been determined to be the optimum harvest method. It also explains the other vegetative management practices, and the species and conditions for which each practice would be appropriate.

Additional information can be found in the following references

- -Silvicultural Systems for Major Forest Types in the U.S. Agricultural Handbook 445
- -Silvics of Forest Trees of the U.S. Agriculture Handbook 271
- -Final Environmental Impact Statement for the Regional Guide - Eastern Region, Appendix D.

Silvicultural guides for the various forest types describe silvicultural characteristics and management practices appropriate for various management objectives and site conditions including those relating to soils, water, recreation, timber, wildlife and insect and disease management.

SILVICULTURAL SYSTEMS AND HARVEST METHODS

The principal reason for harvesting timber is to meet resource management objectives. These include desired conditions for scenery, vegetative composition, wildlife habitat, timber product mix and integrated pest management. Achieving the management objective is foremost in selecting the harvest method. Although there are many harvest methods used in managing forest lands, there are only two silvicultural systems, evenaged and unevenaged management.

Within the evenaged silvicultural system, there are three basic harvest methods recognized by the Society of American Foresters: clearcutting, shelterwood, and seed tree. For purposes of this plan, clearcut and seed tree will be considered the same because of the similarity of their effects on scenery, recreation experiences and wildlife habitats. Shelterwood, however, has been split into two categories - the standard two cut shelterwood and a delayed shelterwood - because of their different effects on scenery and recreation.

The unevenaged silvicultural system only employs the selection method of harvest. Principal variations are individual tree and group selection.

EVENAGED MANAGEMENT SYSTEM

The application of a combination of actions that result in the creation of stands in which trees of essentially the same age grow together. The difference in age between trees forming the main canopy level of a stand usually does not exceed 20 percent of the age of the stand at maturity. Regeneration in a particular stand is obtained during a short period at or near the time that a stand has reached the desired age or size for regeneration, and is harvested.

The rotation age under an evenaged management system is the number of years between establishment of a stand of timber and when it is considered ready for harvesting and regeneration. If a forested area is being managed on 100-year average rotation, about 10 percent of the area would be regenerated each decade, or 1 percent per year. During a rotation, there may be one or more periodic thinnings prior to the next regeneration harvest. Evenaged management offers many opportunities for a wide range of vegetative diversity and vegetative cover type composition in terms of species mixtures and also in terms of age classes, ranging from old mature forest to open conditions.

Three harvest methods may be used in an evenaged silvicultural system; clear-cutting, shelterwood, and seed tree. Under this plan, clearcutting will be reduced from past levels, shelterwood will be increased significantly, and seed tree cutting will have limited application and be considered the same as clearcuting.

Shelterwood Method

In the shelterwood method, the stand is harvested in a series of two, three or more cuts. The early cuts are designed to improve vigor and seed production of the remaining trees while preparing the site for new seedlings. When a sufficient amount of desirable reproduction has become established and before the regeneration has reached 20 percent of its rotation age the remaining tree are harvested with the exception of trees left for wildlife or visual purposes. This is called the removal cut. By regulating the density of trees held between the early cuts and the removal cut the species composition of the new stand can be regulated. Leaving a denser stocking after the early cuts will tend toward more shade tolorant species a lighter stocking more shade intolerant species.

The shelterwood method provides conditions favorable to regeneration of a wide variety of hardwood and conifer tree species, such as yellow birch, eastern hemlock, paper birch, white pine, red oak, and white ash to name only a few. The individual species favored depends on several physical and biological factors, such as seed source, soil conditions, seedbed conditions, amount of shade, and microclimatic conditions at the forest floor.

Delayed Shelterwood

In the delayed shelterwood method no removal cut is planned. The shelterwood trees are held well into the rotation of the new stand. The new stand will grow up around the shelter wood trees, the shelterwood trees will be harvested as a thinning of the new stand. The delayed shelterwood must be applied starting with the initial cut, it is not simply the application of a standard shelterwood without a removal cut. Shelterwood trees of adequate health and vigor to live for at least another 40 years must be left. These trees should have sufficiently small crowns to allow the new regeneration to grow up around them.

Clearcut Method

With the exception of trees left for wildlife, visual purposes, or as seed trees, all merchantable trees on an area are harvested at one time in clearcutting. Unmerchantable trees are often also felled to eliminate competition with the regeneration. Regeneration of tree species develops from natural seeding and/or sprouting or artificial seeding or planting, but is often in place prior to the application of the clearcut method. This regeneration method favors the establishment and development of shade-intolerant species, such as yellow birch, aspen, and paper birch.

Clearcutting provides vegetation in an early successional stage. In an unmanaged situation this sucessional stage could be caused by wildfire, insects, diseases, or windthrow. Without manmade or natural disturbances, the forest tends to move toward a condition dominated by shade tolorant, late successional vegetation such as sugar maple, beech or striped maple.

UNEVENAGED MANAGEMENT SYSTEM

The application of a combination of actions needed to simultaneously maintain continuous forest cover (canopy), recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes.

Two harvest methods may be used in an unevenaged silvicultural system, individual tree selection and group selection. Under this plan, the individual tree selection method will be the predominant unevenaged harvest method. However, in some cases, the group selection may be used to more effectively meet the management objective on a particular site.

Individual Tree Selection Method

Individual tree selection entails the periodic removal of individual trees. The goal is to maintain a given number of trees per acre in several diameter classes. This practice should not be confused with "high grading" where only large trees are cut. In order for the practice to work, some trees must be cut or killed within most, or all, diameter classes to maintain the desired distribution of diameter classes in the residual stand. This method favors shade tolerant tree species.

Shade tolerance is a term that refers to the ability of a tree to survive and grow in shaded conditions. The primary species in this area that are shade tolerant are sugar maple, american beech, and balsam fir.

The visual resource is minimally affected by harvesting with the individual tree selection method. This method provides for retaining a large-tree character in the landscape. Repeated harvest operations, on a 15 to 20 year cycle, and an extensive road system are necessary to use this method.

Group Selection Method

This cutting method removes trees periodically in small groups resulting in openings that do not exceed an acre or two in size. This leads to the formation of an unevenaged stand in the form of a mosaic of age class groups in the same stand.

In the group selection method, the management area is treated as a single stand and the portion of the stand to be harvested each cutting cycle determines the number of openings to establish. For example, a forty acre stand on a twenty year cutting cycle and a 100 year rotation would have 8 acres cut each entry (100/20=5;40/5=8). This could be four 2 acre openings, eight 1 acre openings or some combination in between.

The objective of this method is to establish desirable regeneration at each harvest cycle, thereby producing an unevenaged stand. Because the removal of groups will permit more light to reach the forest floor than with individual tree selection, group selection can be used to encourage a higher proportion of species which are intolerant of shade.

When group cuts are made of a maximum size, often considered to be 2 acres, they resemble small clearcuts. The aesthetic and wildlife benefits of using group selection depend largely upon group size and spacing.

SELECTION OF SILVICULTURAL SYSTEM

Evenaged Management May Be Selected And Applied To Accomplish One Or More Of The Following:

- manage aspen for wildlife;
- manage paper birch for recreation and visual enjoyment;
- accomplish conversions to softwood for winter deer cover or habitat diversity;
- meet wildlife habitat composition objectives;
- provide a variety of age and type classes among stands;
- regenerate shade intolerant species such as yellow birch and oak;
- meet visual quality objectives;
- regenerate high-risk and sparse stands;
- prevent the spread of insect and disease damage or salvage losses from it.

Unevenaged Management May Be Selected and Applied To Accomplish One or More of The Following:

- to provide continuous forest cover;
- meet wildlife habitat composition objectives;
- to provide vertical diversity within the stand;
- provide a variety of age and type classes among stands;
- to manage certain stands that are visually sensitive.
- meet visual quality objectives;
- regenerate shade intolerant species, such as sugar maple and hemlock.

SELECTION OF HARVEST METHOD

Shelterwood will be the primary evenaged harvest method used. Shelterwoods will be used to regenerate hardwoods, softwoods, and oak. The density of residual stocking will be determined by: species composition objectives (tolerant vs.intolerant), visual quailty objectives and condition of the stand before cutting.

Delayed shelterwood may be employed to regenerate stands that are in visually sensitive areas where evenaged management is the preferred silvicultural system. Delayed shelterwoods may also be used to regenerate high-risk, sparse, and low-quality stands in Management Prescription 2.1, where none of the selection cuts are feasible within 20 years. Follwoing the delayed shelterwood regeneration cut, the stand will be placed under unevenaged management.

Clearcuts will only be used when they are the optimum harvest method to achieve our stated management objectives.

Clearcuts will be used when the habitats provided by pioneer species are prescribed in the vegetative composition objectives. This plan calls for an increase in this community, which is important to many forms of wildlife. Aspen and paper birch, the primary species that make up this community are shade intolerant species and require full sunlight to regenerate.

Clearcuts will be used when hardwood to softwood conversions are prescribed to increase winter deer cover and this conversion cannot be accomplished by the shelterwood method. This will occur on a limited basis on areas that display a sucessional tendency toward softwoods, yet are currently dominated by hardwoods. Clearcutting, accompanied by supplemental planting of softwoods and site preparation, will provide the fastest, most efficient means of achieving the desired future condition.

Clearcuts will be used to create openings and vistas, where potential for such areas exists and the vegetative composition and visual quality objectives can be met by such management.

Clearcuts will be used to remove high risk and sparse stands and create vigorous, healthy young stands which will enhance overall age-class diversity. These stands can usually not be regenerated by any other means because they lack sufficient numbers of acceptable trees. Many of these stands are on good sites (site index 55 or higher) and are in their current condition due to past cutting practices. Once regenerated, they will provide improved wildlife habitat, scenic beauty and high quality timber.

Clearcutting will also be used in areas so degraded by insects, disease or weather related damage that retaining any residual portion of the stand would be futile. Clearcutting will be used to reduce the spread of insect or disease outbreaks.

Individual tree selection will be used in Northern hardwood and hemlock stands where shade tolerant species and continuous forest cover are desired.

Group selection will be used when continuous forest cover is desired in stands that have a vigorous understory of at least sapling sized stems of acceptable species and quality, in Northern hardwood stands where shade intolerant species are desired and in white pine and spruce stands.

*A-3 OTHER INFORMATION

Table A.01 Land Suitability For Timber Production

	Classification	Acres
1.	Water	1,420
2.	Non-forest	8,340
3.	Forest land	315,640
4.	Forest land withdrawn from timber production. This land is in Congressionally designated Wildernesses.	58,400
5.	Forest land not capable of producing crops of industrial wood	0
6.	Forest land physically not suited for timber production because:	
	a) irreversible damage likely	14,890
	b) not restockable within 5 years	0
7.	Forest land for which current information is inadequate to project responses to timber management	41,420
8.	Tentatively suited forest land	200,930
9.	Forest land not appropriate for timber production because it is:	
	a) Assigned to other resource objectives such as primitive recreation, the National Recreation Area, special areas.	44,292
	b) Needed to meet management requirements for protecting resources. Includes wet areas, stream banks, steep slopes, etc.	12,966
	c) Not cost efficient in meeting Forest Plan objectives.	21,837
10.	Total forest land not suited for timber production (Items 4,5,6,7,9)	193,805
11.	Total GMNF land suited for timber production (Item 3 minus Item 10)	121,835
12.	Total National Forest Land (Items 1,2,3)	325,400

Table A.02 Management Area Suitability for Timber Production[1/]

Management Area	Total (Acres)	Suited (Acres)	Not Suited (Acres)
2.1A	19,300	15,300[2/]	4,000
2.1B	3,400	0	3,400
2.2A	5,100	4,100[2/]	1,000
2.2B	17,800	0	17,800
3.1A	48,800	38,800[3/]	10,000
4.1	14,500	11,500[3/]	3,000
4.2	5,800	4,600[4/]	1,200
5.1	58,400	0	58,400
6.1	12,100	0	12,100
6.2A	60,100	47,700	12,400
6.2B	17,500	0	17,500
7.1	3,200	0	3,200
8.1	31,500	0	31,500
9.2	27,300	0	27,300
9.3	600	0	600
TOTAL	325,400	122,000	203,400

1/ See Table A.01 for categories of suitability.
2/ Unevenaged timber management is primarily practiced.
3/ Evenaged timber management is primarily practiced.
4/ Evenaged timber management which employs long rotations and infrequent thinnings will primarily be used to treat vegetation.

Table A.03 - Vegetation Management Activities on Lands Determined to be Unsuitable for Timber Production

Category of Unsuitable Land	Situations in Which Removal of Trees Might Occur
Wilderness (58,400 acres)	- to protect safety of users only
NRA, developed recreation Areas, special areas, primitive areas (47,400 acres) or land unsuitable because irreversible damage is likely to occur (15,000 acres)	- to protect safety of users - to remove damaged timber in order to slow spread of disease or insect infestation - to open scenic vistas - to meet wildlife habitat objectives
Lands under Management Prescription 9.2 will be considered unsuitable for timber production until a decision is made about their characteristics and long term objectives.	- to protect safety of users - to remove damaged timber in order to slow spread of disease or insect infestation
Land under Management Prescriptions 2.1B, 2.2B or 6.2B (38,700 acres)	- situations listed above, plus - if enconomic conditions change considerably and it looks as these lands could be economically be managed for timber, a plan amendment or revision might be proposed to allow timber management in these categories.

Table A.04 Timber Productivity Classification

Productivity	Growth Capability		Percent
	Sugar Maple Site Index	Cubic Feet/Acre/Year	
High	60 and above	50 or more	26%
Medium	45 - 59	37 - 49	50%
Medium-low	35 - 44	20 - 36	18%
Low	less than 34	less than 20	6%

Table A.05 Present and Future Forest Conditions

	Unit of Measure	Suitable Land	Unsuitable Land
PRESENT FOREST			
growing stock	MMCF	226.8	210.9
annual net growth	MMCF	5.33	3.43
annual mortality	MMCF	2.12	3.10
FUTURE FOREST			
growing stock	MMCF	221.05	
annual net growth	MMCF	4.06	
AVERAGE ROTATION AGES			
northern hardwoods	YEARS	100 to 150	
softwoods	YEARS	60 to 120	
aspen	YEARS	50	

Figure A-1

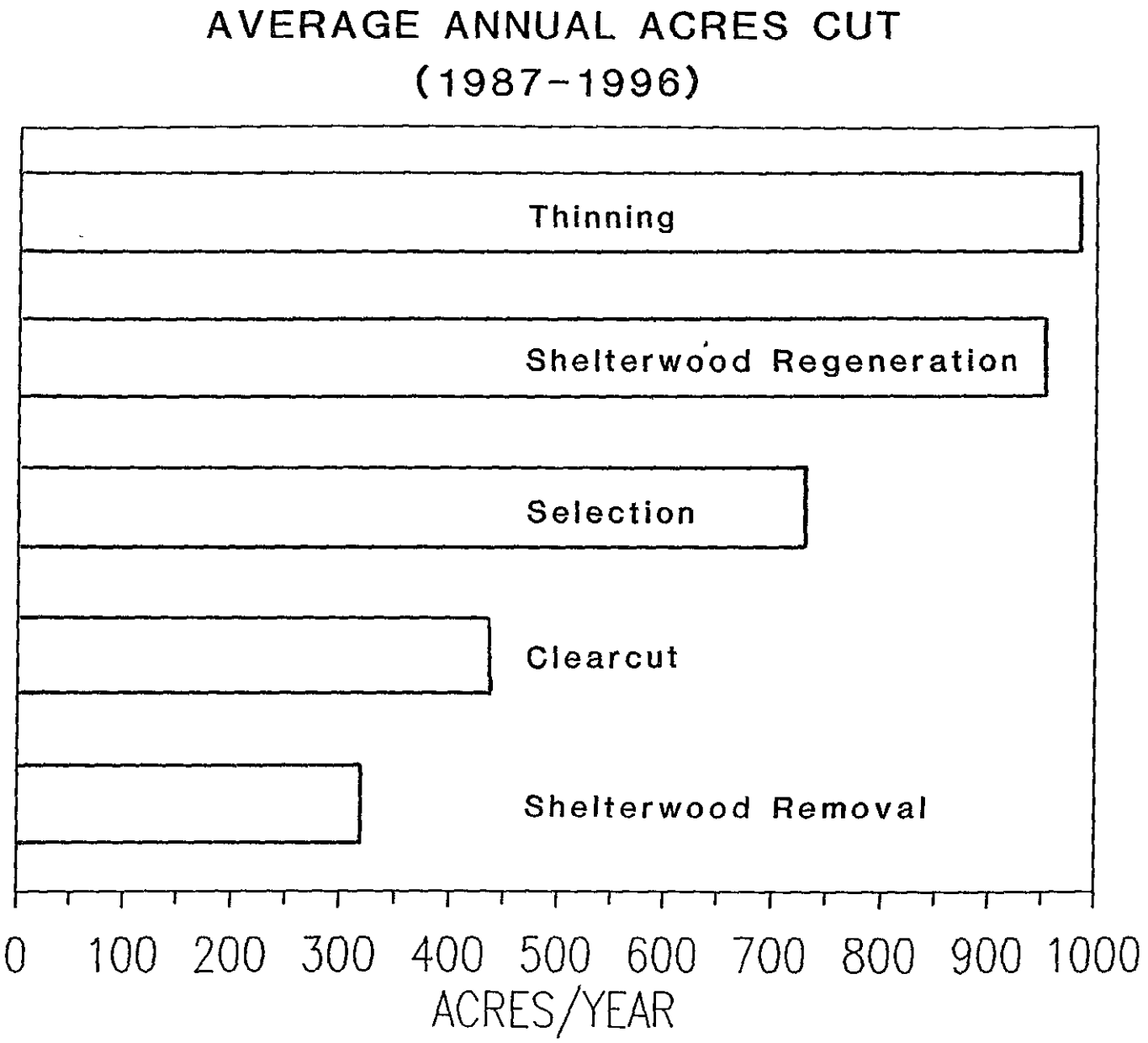
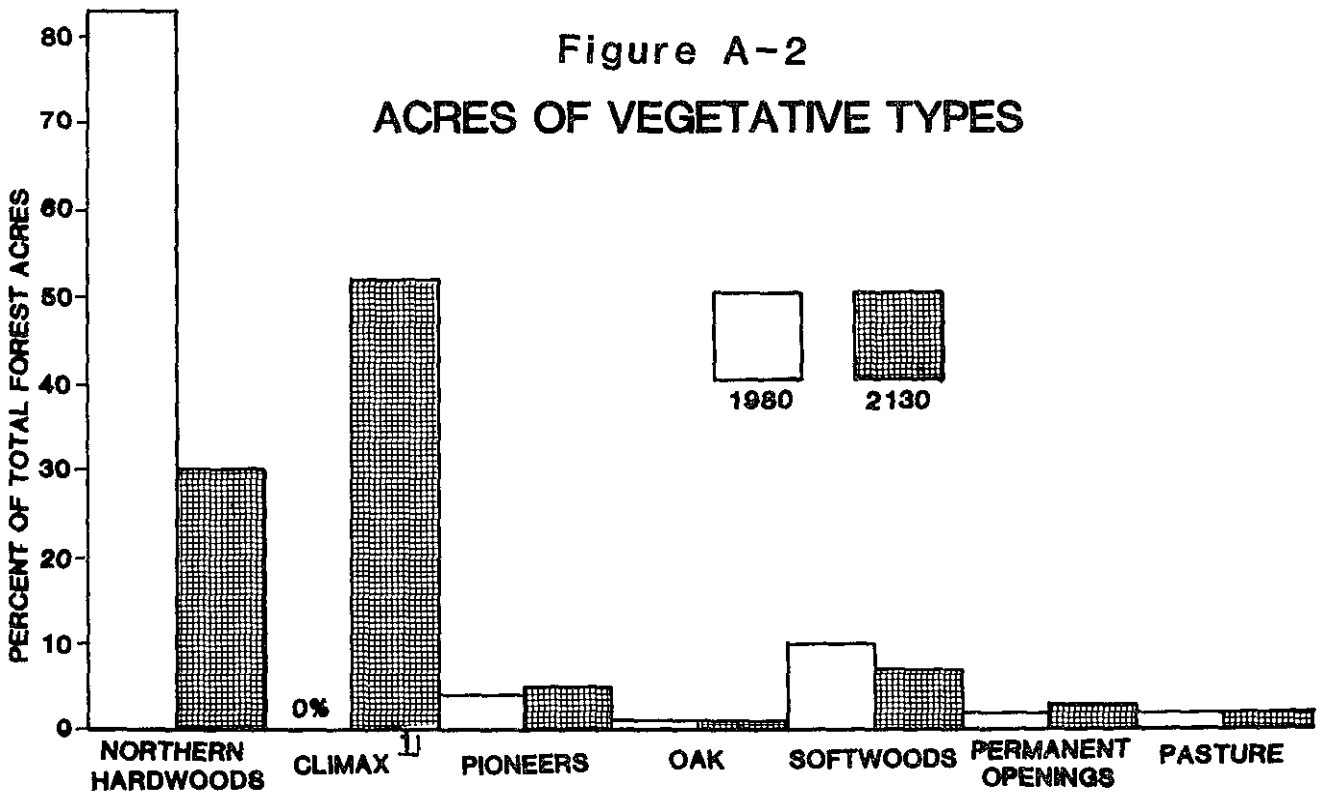

AVERAGE ANNUAL ACRES CUT
(1987-1996)
Thinning
Shelterwood Regeneration
Selection
Clearcut
Shelterwood Removal
0
100
200
300
400
500
600
700
800
900
1000
ACRES/YEAR

Figure A-2

ACRES OF VEGETATIVE TYPES



1/ This is land unmanaged for lumber. In 150 years this will generally be northern hardwoods with spruce and fir in higher elevations.

Figure A-3

AGE CLASSES OF MANAGED FOREST STANDS

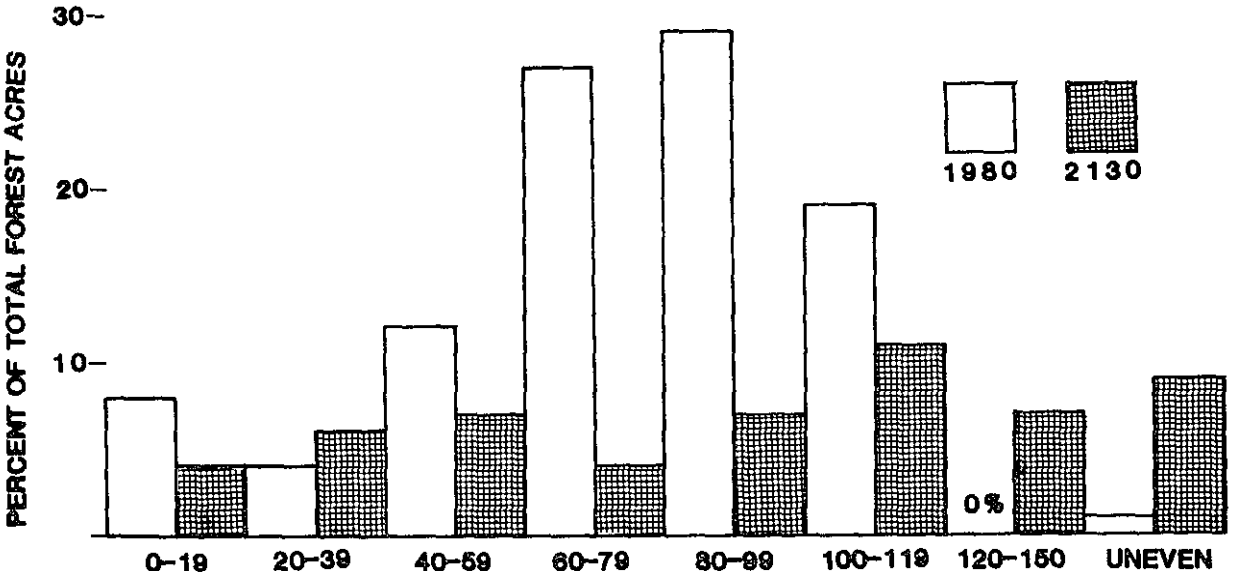


Table A.06 MANAGEMENT PRESCRIPTION AND ASSOCIATED RESOURCE MANAGEMENT[1/]

MANAGEMENT PRESCRIPTION	ACRES X 1000 FLNF	GMNF	RESOURCE MANAGEMENT
1.2	4.5	0.0	.No timber management occurs. .Roaded natural recreation is limited to the non-grazing seasons. .Pasture management intensities vary:
1.3	1.4	0.0	.Scattered patches of trees are clearcut every 30 years and sold as fuelwood. .Shrub openings are debrushed on 5 to 10 year cycles. .Roaded natural recreation occurs at a moderate level. .Other habitat improvements are specified.
2.1A	0.4	19.3	.Evenaged management for all oaks & pioneers. .Unevenaged management for other types on sites which do not have low site productivity. .Roaded natural recreation capacity is limited by each zone's characteristics. .A mix of habitat improvements occurs appropriate to the prescription. 24 acres habitat improvement/1000 acres.
2.1B	0.0	3.4	.Evenaged management for all oaks & pioneers. .Other types are not managed. .Roaded natural recreation capacity is limited by each zone's characteristics. .A mix of habitat improvements occurs appropriate to the prescription. 24 acres habitat improvement/1000 acres.
2.2A	0.0	5.1	.Similar to 2.1A except Semi-Primitive recreation will be provided.
2.2B	0.0	17.8	.Similar to 2.1B except Semi-Primitive recreation will be provided.

Table A.06 MANAGEMENT PRESCRIPTION AND ASSOCIATED RESOURCE MANAGEMENT (cont)

MANAGEMENT PRESCRIPTION	ACRES X 1000 FLNF	GMNF	RESOURCE MANAGEMENT
3.1A	6.7	48.8	.Evenaged management for all oaks and pioneers. .Unevenaged management to maintain unevenaged stands. .Evenaged management for stands which do not have low site productivity. .Hardwoods get 100-150 year rotations and high to low intensity. Precommercial thins are routinely done. .Softwoods get 80-120 year rotations and high or low intensity. .Roaded Natural recreation capacity is limited by each zone's characteristics. .A mix of habitat improvements occurs appropriate to the prescription. 63 acres habitat improvement/1000 acres.
4.1	0.0	14.5	.Evenaged management for all oaks and pioneers. .Unevenaged management to maintain winter cover and unevenaged stands. .Evenaged management for other types. .Hardwoods get 100-150 year rotations at high to low intensity. .Softwoods get strip cuts or group selection. .Hardwoods on low productivity sites are converted to softwood in amounts and locations where needed. .Roaded Natural recreation capacity is limited to a low level. .A mix of habitat improvements occurs appropriate to the prescription. 63 acres habitat improvement/1000 acres.
4.2	0.0	4.8	.Similar to MA 4.1 except Semi-Primitive recreation will be managed for.

Table A.06 MANAGEMENT PRESCRIPTION AND ASSOCIATED RESOURCE MANAGEMENT (cont)

MANAGEMENT PRESCRIPTION	ACRES X 1000 FLNF	GMNF	RESOURCE MANAGEMENT
5.1	0.0	8.4	.No timber management. .Primitive recreation capacities are limited by each zone's characteristics. .No habitat improvement is performed.
6.1	0.0	12,100	.No timber management. .Primitive recreation capacities are limited by each zone's characteristics. .No habitat improvement is performed.
6.2A	0.0	60,100	.Evenaged management for all oaks and pioneers. .Unevenaged management to maintain unevenaged stands. .Evenaged management for stands not occuring on low productivity sites. .Hardwoods generally 120+ year rotations at moderate to low intensity. .Softwoods get 80 to 120 year rotations at high or low intensity. .Semi-primitive recreation capacity is limited by each zone's characteristics. .A mix of habitat improvements occurs appropriate to the prescription and each zone.
6.2B	0.0	17,500	.Evenaged management for oaks and pioneers. .Other types are not managed. .Semi-primitive recreation capacity is limited by each zone's characteristics. .A mix of habitat improvements occurs appropriate to the prescription and each zone.
7.1	0.0	3.2	.No timber management. .Rural recreation capacities are increased to 27,625 SAOT

Table A.06 MANAGEMENT PRESCRIPTION AND ASSOCIATED RESOURCE MANAGEMENT (cont)

MANAGEMENT PRESCRIPTION	ACRES X 1000 FLNF	GMNF	RESOURCE MANAGEMENT
8.1 (NRA)	0.0	29.0	.Timber in deer wintering areas is managed as described in Prescription 4.1. .Primitive recreation capacity is limited to 3,300 acres and by each zone's characteristics. .Semi-primitive recreation capacity is limited to the remaining land and by each zone's characteristics.
8.1 (Other)	0.0	2.5	.No timber management occurs. .Semi-primitive and Roaded natural recreation capacities are limited by each zone's characteristics. .A mix of habitat improvements occurs appropriate to each zone.
9.2	0.0	27.3	.No timber management occurs. .Primitive, Semi-Primitive and Roaded Natural recreation will occur when these areas are left alone. .No habitat improvements. .No roads will be build.
9.3	0.0	0.6	.No timber management .Roaded natural regeneration .No habitat improvements .No roads.

1/ Prescriptions 1.1 and 9.1 were developed, analyzed and determined to be inappropriate for these National Forests. They are not listed or described, but may be conspicuous by their absence.

Table A.07 ALLOWABLE SALE QUANTITY (ANNUAL AVERAGE FOR FIRST DECADE)

Harvest Method	Allowable Sale Quantity Sawtimber	Other Products	Total
	(MMCF)	(MMCF)	(MMCF)
Regeneration harvest:			
Clearcut	.16	.22	.38
Shelterwood	1.03	1.07	1.90
Selection	.11	.09	.20
Thinning	.09	.13	.22
Totals	1.39	1.51	2.7

Table A.08 ALLOWABLE SALE QUANTITY AND LONG TERM SUSTAINED YIELD

Year	Allowable Sale Quantity (MMCF/YR)	Long Term Sustained Yield Capacity (MMCF/YR)
1986 - 2075	2.7	3.2
2076 - 3050	3.2	3.2

APPENDIX B: TENTATIVELY SCHEDULED PROJECTS

The following schedule of capital improvement projects and timber sales is our best list at this time. The list is based on our judgements of how the new land and resource management plan will be implemented. These schedules are likely to be modified after we take a closer look at the needs of specific areas on the Forest when actually implementing the Forest plan. The early years in the schedules, especially FY 1987 and 1988, are largely based on prior project planning which has been ongoing.

Within two years of issuing the Final EIS and Approved Plan we will develop a more detailed and accurate project list which reflects integrated consideration of local issues and resources. In the implementation section of Chapter V we described our process of developing an integrated resource management program for the local opportunity areas which comprise the GMNF. Following this process will undoubtedly cause alterations to specific items in this tentative project list, but the overall thrust of the Plan and schedules will not change.

Please note that specific projects are not listed for wildlife, watershed, or range, however these and other resources will be important parts of the integrated program that we implement.

Table B.01 PLANNED RECREATION ACTIVITIES MIDDLEBURY DISTIRICT 1/

Proposed Program Year	Type of Activity 2/	Project Name/Town	Management Area	Units	Uses
				Sites	
FY88	Bridge Rehab	Skylight Pond/Ripton	5.1	1	Hiking
FY89	Shelter Rehab	Skylight Pond/Ripton	5.1	1	Camping
				Miles	
FY91	Trails Rehab	Snowmobile Trail/Ripton	3.1	0.3	Snowmobile
		Robert Frost/Ripton	8.1	1.0	Hiking
				Sites	
FY91	Campground Rehab	Silver Lake Campground/Goshen	6.2	7	Camping
FY92	Picnic Site Rehab	Falls of Lana/Goshen	4.2	6	Picnicking

1/ Refer to Road Building Schedule Table B.06 for recreation area access roads and parking area projects.
2/ Definitions of activities are in the Glossary.

Table B.02 PLANNED RECREATION ACTIVITIES ROCHESTER DISTIRICT 1/

Proposed Program Year	Type of Activity 2/	Project Name/Town	Management Area	Units	Uses
				Sites	
FY87	Picnic Site Rehab	Texas Falls/Hancock	2.1	15	Picnicking
FY88	Observation Site Rehab	Texas Falls/Hancock	2.1	1	Visitor Enjoyment
				Miles	
FY89	Trails Rehab	Chittenden Brk./Chittenden	2.1	4.0	Hiking/Crosscountry Skiing
	Loop Trail Constr	Rob Ford/Granville	6.2	2.0	Hiking
				Sites	
FY90	Fee Station Rehabilitation	Chittenden Brook/Chittenden	2.1	1	Forest Service Administration
FY91	Informative Signing	Sugarbush/Warren	7.1	1	Visitor Information
FY93	Campground Rehab	Chittenden Brook/Chittenden	2.1	17	Camping
FY94	Picnic Site Rehab Rehab	Brandon Brook/Rochester	2.1	9	Picnicking

1/ Refer to Road Building Schedule Table B.06 for recreation area access roads and parking area projects.
2/ Definitions of activities are in the Glossary.

Table B.03 PLANNED RECREATION ACTIVITIES MANCHESTER DISTIRICT 1/

Proposed Program Year	Type of Activity 2/	Project Name/Town	Management Area	Units	Uses
				Miles	
FY87	Loop Trail Construction	Green Mt. Loop/Mt. Tabor	8.1	1.0	Hiking
		Beaver Meadows Trail/ Wallingford	8.1	7.0	Multiple Use 3/
	Trail Rehab	Appalachian Trail/Peru	8.1	2.0	Hiking
				Sites	
	Campground Rehab	Greendale/Weston	3.1	14	Camping
FY88	Campground Rehab	Grout Pond/Stratton	8.1	15	Camping
	Informative Signing	Silver Bridge/Mt. Tabor	8.1	1	Visitor Information
				Miles	
FY89	Loop Trail Construction	Greendale Loop/Weston	3.1/8.1	3.0	Hiking, Crosscountry Skiing
				Sites	
	Camp Site Construction	Danby Road/Mt. Tabor	8.1	2	Camping
				Miles	
FY90	Trails Rehabilitation	PORC Network/Peru	4.1	5.0	Hiking, Crosscountry Skiing
				Sites	
	Camp Site Construction	Wallingford Pond/ Wallingford	8.1	2	Camping
	Picnic Site Rehab	White Rocks/ Wallingford	2.1	14	Picnicking
	Informative Signing	Route 9/Woodford	3.1	1	Visitor Information

Table B.03 PLANNED RECREATION ACTIVITIES MANCHESTER DISTIRICT 1/ (Cont'd)

Proposed Program Year	Type of Activity 2/	Project Name/Town	Management Area	Units	Uses
				Sites	
FY91	Campsite Construction	Beaver Meadows/ Wallingford	8.1	2	Camping
	Campground Rehab	Somerset	6.2	12	Camping
				Miles	
FY92	Trails Rehabilitation	White Rocks Nordic/Weston-Wallingford	8.1	10.0	Hiking, Crosscountry Skiing
				Sites	
	Camp Site Construction	Old Job Road/Mt. Tabor	8.1	2	Camping
				Miles	
FY93	Trails Rehabilitation	VAST/Mt. Tabor	8.1	5.0	Snowmobiling

1/ Refer to Road Building Schedule Table B.06 for recreation area access roads and parking area projects.
2/ Definitions of activities are in the Glossary.
3/ Multiple uses of trail include hiking, crosscountry skiing, and snowmobiling.

TABLE B.04 PLANNED VEGETATION MANAGEMENT VIA COMMERCIAL TIMBER SALES

- MIDDLEBURY DISTRICT -

Planned Program Year	Sale Name/Town	Management Area	Harvest Method	Acres	Volume (MBF)	SELECTED BENEFITS 1/ Wildlife	Recreation	Timber
FY87	Elk Road/Lincoln	2.1,3.1	Clearcut Shelterwood Selection Thinning	44 44 42 73	860	3,4	3,4,5	5
	Noble Clearing/ Ripton	3.1,4.1, 6.2	Removal	146	405		2,3,4,5,6,	1,2,6
	Chandler Ridge So./ Leicester	4.1	Shelterwood Thinning	63 111	772	1,4,7,	4	5,6
	Baker Hill/Leicester Goshen	4.1	Clearcut Shelterwood Thinning	52 16 16	295	1,3,4,5,6,	4	1,2,3,6
	Dragon Brk.Salv./ Ripton	3.1	Clearcut	10	143	4,	-	1,2,4
	Noble Farm I/ Ripton	4.1	Clearcut Shelterwood Thinning Selection	5 5 26 9	188	1,2,3,4,5 6,7	1,4,5,7,	1,3,4,6,
	(Middlebury District Total FY87)				(2663)			
FY88	Burt Green/Lincoln	4.1	Clearcut Thinning	5 65	300	1,2,3,4,5,6,	7	2,3
	Leicester Hollow/ Leicester	6.2	Shelterwood	87	842	3,4,7	3,4	1,2
	Beaudry Brk Salv/ Chittenden	3.1,6.2	Clearcut Removal Thinning	120 20 38	800	4	4	1,2,4
	Toll Road/Ripton	3.1,4.1	Shelterwood Selection Thinning	98 29 154	1183	1,3,4,7,8	4,5,7	1,2,3,5,6

TABLE B.04 PLANNED VEGETATION MANAGEMENT VIA COMMERCIAL TIMBER SALES (cont'd)

- MIDDLEBURY DISTRICT -

Planned Program Year	Sale Name/Town	Management Area	Harvest Method	Acres	Volume (MBF)	SELECTED BENEFITS 1/ Wildlife	Recreation	Timber
FY88	Worth Mtn./Goshen Hancock	4.1,6.2	Clearcut Shelterwood Thinning	117 163 25	1200	1,2,3,4,5,8,	2,3,4,5,6, 7,	1,2,3,6
	(Middlebury District Total FY88)				(4325)			
FY89	Blue Ridge North/ Chittenden	6.2	Clearcut Thinning	20 40	221	4,6,	4,7	1,2,3,6
	Huntley Brook II/ Ripton	3.1,4.1	Clearcut Shelterwood Selection Thinning Removal	24 27 14 67 4	727	1,2,3,4,5,6,9,	2,3,4,5,7,	1,2
	Spruce Lodge IV/ Lincoln	3.1,4.1	Clearcut Shelterwood Thinning	27 143 100	1117	1,2,3,4,5,6,9,	2,3,4,5,7	1,2
	Oxbow/Middlebury	3.1,4.1	Shelterwood Thinning	4 192	513	2,3,6,7,9,	3,4,5,7	1,2,3,6
	Ball Diamond/ Lincoln	3.1	Clearcut Selection Thinning Removal	73 33 10 27	754	3,4,6,	2,3,4,7	1,2,3
	North Branch/Ripton	4.1	Shelterwood Removal	22 46	200	1,3,4,5,6,7, 8,	7	1,2,3,6
	Silver Lake/ Leicester	4.1,6.2	Selection Thinning	48 120	809	1,3,4,5,6,	3,4	1,2,3,5,6
	Small Sales	3.1,4.1, 6.2	Clearcut Shelterwood Selection	25 50 25	133	3,4	3,4,5	1,2,5,6
	(Middlebury District Total FY89)				(4474)			

TABLE B.04 PLANNED VEGETATION MANAGEMENT VIA COMMERCIAL TIMBER SALES (cont'd)

- ROCHESTER DISTRICT -

Planned Program Year	Sale Name/Town	Management Area	Harvest Method	Acres	Volume (MBF)	Selected Benefits[1/] Wildlife	Recreation	Timber
FY87	Lookout Mtn. II/ Rochester	3.1,6.2	Clearcut Shelterwood Thinning Removal	39 60 241 59	700	3,4	2,4,7	1,6
	Joe Smith Brk.II/ Chittenden	2.1,4.1, 6.2	Clearcut Shelterwood	33 78	450	4	-	1
	Killooleet II/ Hancock	2.1	Shelterwood Selection	23 25	180	4	4	1,5
	Corporation Brk/ Chittenden	2.1,4.1, 3.1	Clearcut Selection	13 60	225	1,2,4,8,	2,4,5	1,2,3,4,5,6
	FR62/Rochester	4.1	Removal	41	120		-	6
	Mount Horrid/ Rochester	2.1	Selection	284	500	4	4	5
	Small Sales	6.2	Clearcut Shelterwood	20 20	215	4	-	1
	(Rochester District Total FY87)				(2390)			
FY88	Moss Glen/Granville	3.1	Shelterwood Removals	250 10	330	3,4	2,4,5,7	1
	Chittenden Brk.II/ Chittenden	2.1,4.1, 6.2	Shelterwood Selection Removals	50 20 40	300	3,4	-	1,5
	Mills Brook II/ Warren	3.1,4.1	Removals	20	60	3,4	4	6
	Liberty Hill/ Rochester/ Pittsfield	2.1,3.1, 4.1	Clearcut Shelterwood Selection Thinning	35 20 448 29	1100	1,2,3,4,5,6	2,4,7	1,3,5

TABLE B.04 PLANNED VEGETATION MANAGEMENT VIA COMMERCIAL TIMBER SALES (cont'd)

- ROCHESTER DISTRICT -

Planned Program Year	Sale Name/Town	Management Area	Harvest Method	Acres	Volume (MBF)	SELECTED BENEFITS 1/ Wildlife	Recreation	Timber
FY88	Campground/ Chittenden	2.1,6.2	Clearcut	40	770	3,4	4,5	1,5
			Shelterwood	68				
			Removals	64				
	Small Sales	3.1,2.1	Clearcut	10	140	3,4	3,4,5	1,2,5,6
			Shelterwood	10				
			Selection	10				
			Thinning	20				
	(Rochester District Total FY88)				(2700)			
FY89	Mayo Hill/ Pittsfield	2.1,4.1	Clearcut	10	350	1,2	4,5	1,5
			Shelterwood	35				
			Selection	34				
	Boyden Brook/ Hancock	2.1,3.1, 6.2	Shelterwood	90	300	4	4	1,5
	Thresher Hill II/ Rochester/Hancock	3.1,4.1 6.2	Shelterwood	60	1600	1,3,4	2,4,5,6	1,3,5
			Selection	456				
			Removal	40				
	Killooleet III/ Hancock	2.1	Removal	83	200		-	6
	Texas Gap II/ Granville	3.1	Removal	126	370		-	6
	Joe Smith Brook IV/ Chittenden	6.2	Removal	44	98		-	6
	Small Sales	3.1,2.1	Clearcut	20	100	1,3,4	4	1,2,5,6
			Shelterwood	10				
			Selection	10				
	(Rochester District Total FY89)				(3018)			

TABLE B.04 PLANNED VEGETATION MANAGEMENT VIA COMMERCIAL TIMBER SALES (cont'd)

- MANCHESTER DISTRICT -

Planned Program Year	Sale Name/Town	Management Area	Harvest Method	Acres	Volume (MBF)	SELECTED BENEFITS 1/ Wildlife	Recreation	Timber
FY87	Stamford Stream North/Woodford	6.2	Clearcut	68	518	4	4	1,3
	FR74 East Woodford/ Searsburg	6.2	Clearcut Removal	60 50	525	4	1,4	1,3
	Somerset South/ Somerset	3.1	Seed Tree Removal	40 364	980	4	1,4,7	1
	Lyman Brook/ Sunderland	3.1,6.2	Clearcut Shelterwood Seed Tree	110 50 124	990	3,4	1,4,5	1
	Howe Pond II/ Readsboro	6.2	Removal	179	620		1,4	1
	MacIntyre II/ Sunderland	6.2	Clearcut Shelterwood	60 88	510	3,4	1,4,5	1
	Rake Branch II/ Searsburg	2.1,3.1, 6.2	Clearcut	185	980	3,4,	1,4,5	1,2
	Hapgood South S.M./ Peru	3.1	Shelterwood	25	85		-	1
	Mad Tom Notch/Peru	3.1	Removal	40	105		-	1
	Game Farm Pine/ Sunderland	4.2	Thinning	44	150	8	4	2,6
	(Manchester District Total FY87)				(5463)			

TABLE B.04 PLANNED VEGETATION MANAGEMENT VIA COMMERCIAL TIMBER SALES

- MANCHESTER DISTRICT -

Planned Program Year	Sale Name/Town	Management Area	Harvest Method	Acres	Volume (MBF)	SELECTED BENEFITS 1/ Wildlife	Recreation	Timber
FY88	North Road/Peru	4.1	Removal	75	200			1
	Mill Brook North/ Winhall	3.1,4.1	Shelterwood Thinning	133 62	655	1,3,4,5,8	1,4,5,7	1,2
	East Branch/Stratton	2.1,3.1	Clearcut Shelterwood	10 70	364	3,4	1,2,4,5	1,2
	Fowler Brook/ Wallingford	2.1	Selection Thinning	100 287	1215	2,4	4	5,6
	FR21 South/Peru	2.1	Shelterwood Selection Thinning	60 160 40	798	4	1,4	1,5
	French Hollow/ Winhall	3.1,4.1	Shelterwood Thinning	188 235	1741	1,2,3,4,5,8	1,4,5	1
	Mad Tom Brook/ Dorset	2.1	Selection	229	491	4	-	5,6
	Junction/Peru Winhall	2.1,3.1	Removal	114	400		-	1,4
	Small Sales	3.1,4.1, 6.2	Clearcut Shelterwood Thinning	10 20 20	200	4	4,5	1,2,6
	Manchester District Total FY88				(6064)			

TABLE B.04 PLANNED VEGETATION MANAGEMENT VIA COMMERCIAL TIMBER SALES

- MANCHESTER DISTRICT -

Planned Program Year	Sale Name/Town	Management Area	Harvest Method	Acres	Volume (MBF)	SELECTED BENEFITS 1/ Wildlife	Recreation	Timber
FY89	Cardinal Brook/ Stamford	3.1,6.2	Clearcut Shelterwood Seed Tree	27 70 133	1350	3,4	1,2,4,5	1,2
	FR12 North/Peru	4.1	Thinning Selection	205 100	1010	4	4	5,6
	North Alder Brook/ Sunderland	3.1,6.2	Clearcut Seed Tree Thinning	87 176 173	1515	3,4	1,2,4,7	1
	Flood Brook North/ Londonderry	3.1,4.1	Clearcut Shelterwood Thinning	6 84 95	739	1,3,4,5,8	1,4,5,7	1,4,5
	Burgess West/ Woodford	2.1	Shelterwood Selection	 200	2351	3,4	1,2,3,4	1,2,5
	Small Sales	2.1,3.1	Clearcut Thinning Selection	10 20 20	100	4	-	1,2,6
	(Manchester District Total FY89)				(7065)			
FY87	(Forestwide Total)				(10,516)			
FY88	(Forestwide Total)				(13,089)			
FY89	(Forestwide Total)				(14,557))			
87-89	(Forestwide Average Annual Harvest)				(12,721)			

Footnotes to Table B.04

1/ Selected benefits of vegetative treatments

WILDLIFE

1. Regenerate winter cover for deer
2. Regenerate aspen
3. Establish permanent wildlife openings
4. Create temporary openings - early successional habitats
5. Convert to softwood in deer wintering areas
6. Convert to aspen
7. Improve regeneration of mast producing species
8. Perpetuate hemlock cover
9. Preserve or regenerate uncommon vegetative types

RECREATION

1. Enhance Off Road Vehicle opportunities
2. Improve opportunities for dispersed camping, hiking and crosscountry skiing
3. Improve visual quality along road
4. Provide pedestrian access
5. Provide opportunities for berry picking
6. Create vista(s)
7. Provide parking opportunities

TIMBER

1. Replace mature, high risk, low quality, sparse stands with vigorous, young growth
2. Provide fuelwood
3. Release young softwood stands
4. Salvage dead or dying material
5. Begin conversion from evenaged to unevenaged condition
6. Improve merchantable growth on highly productive sites

Table B.05 Proposed Vegetation Management Via Commercial Timber Sales (FY90-96)

Vegetative Treatment	Average Annual[1/] Amount	Management Area Location 2.1/2.2	3.1	4.1/4.2	6.2	Total
Selection	Acres	460	40	180	50	730
	MMBF	1.4	0.1	0.6	0.2	2.3
Shelterwood Regeneration	Acres	92	540		318	950
	MMBF	0.5	3.1		1.8	5.4
Shelterwood Removal	Acres		145		175	320
	MMBF		0.6		0.7	1.3
Clearcut	Acres		225	110	100	435
	MMBF		1.7	0.8	0.8	3.3
Thin	Acres		570	115	300	985
	MMBF		1.9	0.4	1.0	3.3
Subtotal	Acres	552	1520	405	943	3,420
	MMBF	1.9	7.4	1.8	4.5	15.6
Stand Improvement	Acres	50	130		155	335
Release	Acres	75		170	35	280
Plant	Acres		25	50	10	85

1/ The total average annual sale quantity could be increased by about 6% in order to harvest the average annual allowable sale quantity of timber (16.0 MMBF) in the first ten years of the Plan. This is because the volume scheduled for harvest from the GMNF in the first 3 years averages 12.7 MMBF per year (Table B.04).

TABLE B.06 PLANNED LOCAL ROAD BUILDING (1987-1989)[1]

(MIDDLEBURY DISTRICT)

Planned Program Year	Construction Type[2]	Road Name/Town	Management Area	Road No.	Units	Characteristics[3]	Access Needs[4]
FY87	None				Miles		
FY88	Restoration	Center Turnpike/Ripton	3.1	296	0.50	D	Access NF
FY89	Restoration	Osborne/Lincoln	3.1	351	0.40	D	Access NF
	New Construction	Goshen Brk. Spur Extension/ Goshen	3.1	67A	0.10	D	Timber Haul/R-W-T
	Reconstruction	Oxbow/Middlebury	4.1	236	0.40	C	Timber Haul
	Repaving	Middlebury Administrative Site Visitor Area/Middlebury		102	0.10	B	Recreation
		Frost Wayside/Ripton	8.1	397	0.10	B	Recreation
	New Construction	Blue Ridge North/Chittenden	6.2	230	0.10	D	Access NF/R-W-T
	Reconstruction	Huntley Brook/Ripton	3.1/4.1	235	1.00	D	Timber Haul
					Spaces		
	New Parking	Ripton-Goshen/Ripton	3.1	32	10	All Season	Recreation

TABLE B.06 PLANNED LOCAL ROAD BUILDING (1987-1989)[1/] (cont'd)

(ROCHESTER DISTRICT)

Planned Program Year	Construction Type [2/]	Road Name/Town	Management Area	Road No.	Units	Characteristics [3/]	Access Needs [4/]
					Miles		
FY87	Bridge Strengthening	Bingo/Rochester	4.1	42		B	Access NF
	Restoration	Mt. Horrid/ Rochester	2.1	219	0.10	D	R-W-T
		Souphouse Flat/Rochester	2.1	217	0.10	D	R-W-T
		Chittenden Brk East/ Chittenden	3.1/4.1	220	0.10	D	R-W-T
		Killooleet/Hancock	2.1	176	0.10	D	Access N.F.
		Ash Hill/Pittsfield	3.1	216	0.10	D	R-W-T
		Corporation Brook/Chittenden	3.1	226	1.00	D	Access NF
FY88	Restoration	Chittenden Bk. Ext/ Chittenden	2.1/6.2	45	1.10	D	Timber Haul
					Spaces		
	New Parking	Brandon Gap/Rochester	2.1	ST73	10	All Season	Recreation
					Miles		
FY89	Reconstruction	Thresher Spur/Rochester Hancock	4.1/6.2	62B	0.50	D	Timber Haul
	Restoration	Thresher Spur/Rochester	4.1	62C	0.05	C	R-W-T
		Bingo Spur/Rochester	4.1	62N	0.05	C	R-W-T
		Boyden Brk. Spur/Hancock	2.1	49A	0.10	D	R-W-T
		Mayo Hill/Pittsfield	2.1/4.1	292	0.10	C	R-W-T
					Spaces		
	New Parking	Lincoln Gap/Lincoln	2.1/8/1	199	10	All Season	Recreation
		Michigan Brk/Chittenden	3.1	35	10	Winter	Winter Rec.

TABLE B.06 PLANNED LOCAL ROAD BUILDING (1987-1989)[1/] (cont'd)

(MANCHESTER DISTRICT)

Planned Program Year	Construction Type[2/]	Road Name/Town	Management Area	Road No.	Units	Characteristics[3/]	Access Needs[4/]
					Miles		
FY87	Restoration	Lyman Brk./Sunderland	2.1/3.1	327	0.60	D	Access NF/Tbr. Haul
		Greendale Recreation Area/ Weston	3.1/4.1	18	0.50	B	Recreation
	Repaving	Hapgood Pond Campground/Peru	7.1	46	0.60	B	Recreation
	Temporary Bridge	Lyman Brook/Sunderland	2.1	327			Access NF/Tbr. Haul
					Spaces		
	New Parking Areas	Danby Rd./Landgrove	4.1	10	10	Winter	Recreation
		Grout Pond/Stratton	2.1	262	8-10	All Season	Recreation
		Mad Tom/Peru	6.2	21	6-8	Winter	Recreation
		Moses Pond/Weston	3.1	29	6	Winter	Recreation
		Wallingford Pond/Wallingford	4.1	20	10	All Season	Recreation
		Meadow Brook/Wallingford	6.2	76	10	All Season	Recreation
					Miles		
FY88	Reconstruction	Dewey Access/Woodford	2.1	277	0.50	D	Access NF
	Restoration	Mill Brook North/Winhall	2.1	314	0.50	D	Access NF
					Spaces		
	New Parking Areas	Kelly Stand/Sunderland	2.1	FH6	10	Winter	Recreation
		Tarbellville/Mt. Holly	2.1	ST155	10-20	Winter	Recreation
FY89	Restoration	Roaring Brook/Stamford	3.1/6.2	264	1.20	D	Access NF/Tbr. Haul
					Spaces		
	New Parking	Black Branch/Mt. Tabor	8.1	60	10	All Season	Recreation

1/ Proposed road building for fiscal years 1990-1996 is still indefinite and cannot be finalized until time draws nearer and other aspects of each year's total program of work are decided on. The total additional amounts for the remainder of the Plan should approximate:
1.2, and 3.65 miles of newly constructed roads having characteristics C and D respectively;
3.0 miles of reconstruction and 10.70 miles of restoration of D roads;
90 spaces of all season parking and 10 spaces of winter parking.

2/ Construction Type. See Appendix F and Glossary.
Reconstruction - making an existing road driveable or replacing a road in the same general vicinity as an existing road. Activities include roadbed reshaping earthwork, gravel addition or replacement, drainage structure installation, or turnout and turnaround widening.

Restoration - some gravel replacement or drainage structure improvement may be needed, but little earthwork is necessary.

3/ Characteristics. For definitions see Appendix F and Glossary.

B - All-weather road receives continuous annual use. Permanent drainage structures and improved gravel surfacing throughout. Frequent turnouts.
C - Seasonal road receives frequent use 5-7 years out of 10. Some permanent drainage structures and imported gravel surfacing in wet spots. Few turnouts.
D - Seasonal road receives infrequent use 1-2 years out of 10. Few or no permanent drainage structures and native material surfacing throughout. Few or no turnouts.

Winter - Seasonal parking area, designed primarily for winter use when ground conditions are frozen or snow covered. Generally surfaced with native materials.
All Season - All-weather parking area, designed for continuous annual use. Imported gravel or black-top surfacing.

4/ Access Needs. See Appendix F.

Access NF - Public Access to National Forest lands currently inaccessible.
R-W-T - Recreation-Wildlife-Timber. Frequently a short spur road ending at a parking lot or log landing.

TABLE B.07 PLANNED WILDLIFE IMPROVEMENT PROJECTS 1/

PROJECTS	Average Annual Amount
Seed roads and landings	10 Acres
Release and prune apple trees	5 Acres
Browse release	25 Acres
Marsh burning	25 Acres
Seep rehabilitation	5 Acres
Permanent opening construction	35 Acres
Permanent opening rehabilitation	700 Acres
Nest box maintenance	50 Boxes

1/ These wildlife improvement projects are in addition to the timber sales (Tables B.04 and B.05) which will principally benefit wildlife habitats. Specific sites for these projects will be selected after further analysis during plan implementation.

APPENDIX C: ACTIVITIES AND OUTPUTS TO BE MONITORED

Management practices will be observed and their effects recorded in order to ensure that the goals and objectives of the Forest Plan are being met and that the anticipated results are the actual results. Other natural conditions will also be monitored to help us recognize and track environmental changes.

The monitoring results will be evaluated at intervals established in the Forest Plan in order to determine whether changes are needed to make it more effective or to respond to changed or unexpected conditions. Data gathered during monitoring will be used to modify implementation schedules, improve mitigation measures and assess the need for amending or revising the Plan.

The Plan recognizes that many people are interested in specific characteristics, outputs, or conditions and encourages cooperative monitoring projects to help evaluate progress. If an evaluation of the monitoring results indicates there is a significant difference between the conditions expected by the Plan and the actual conditions, the Forest Service may recommend changes in performance to meet the Plan requirements, changes in funding, or changes in the Forest Plan.

We recognize that the practical aspects of much of the monitoring outlined in the Plan remain to be worked out. Many of the precise monitoring actions to be taken and timing of them will be determined as the plan is being implemented. These determinations will be based on the information learned during Plan implementation and the continuing dialogue we will have with our interested publics.

A major part of our continued dialogue will be an annual report to the public of the accomplishments we made during the previous year and how those accomplishments compare with the goals and objectives we set out in the Plan (Chapter IV, Sections C and D). The many items learned from our monitoring will be included in this report. This same report to the public will contain information on our program of work scheduled for the upcoming years and the relationship of those projects with the Plan's direction.

This report will provide an important means of monitoring the public's reaction to the work we accomplish under the Forest Plan and a mechanism for holding us accountable to the Plan and the public we serve. Public reactions to our annual reports may point out needs to further adjust our policies and actions by amending or revising the Forest Plan.

*APPENDIX C. ACTIVITIES AND OUTPUTS TO BE MONITORED

Part 1. Monitoring Required by NFMA

NFMA Requirement	Purpose of Monitoring	Item Monitored	Unit of Measure	Frequency of Measure	Expected Precision	Expected Reliability
219.12(k)(1)	Compared planned and actual outputs and services	General recreation visitor days	MRVD	Annual	Moderate	Moderate
		Wildlife recreation visitor days	MRVD	Annual	Moderate	Moderate
		Acres various habitat	M Acres	Annual	Moderate	Moderate
		Miles of road	Miles	Annual	High	High
		Timber harvested	MMCF	Annual	High	High
	Determine how closely management standard and guidelines have been applied	All practices	Varies	Annual	Moderate	Moderate
219.12(k)(2)	Document prescriptions and effects	All practices	Varies	Annual reporting of prescriptions 5 year sample for effects	Moderate	Moderate
219.12(k)(3)	Compare costs estimated in plan with actual costs	Costs of all activities	$	Annual	High	High

*APPENDIX C. ACTIVITIES AND OUTPUTS TO BE MONITORED

Part 1. Monitoring Required by NFMA

NFMA Requirement	Purpose of Monitoring	Item Monitored	Size of Area Harvested	Unit of Measure	Frequency of Measure	Expected Precision	Expected Reliability
219.12(k)(5)	Determine if lands are adequately restocked	Regeneration following harvest		Acres	3 years after	Very high	Very high
	Be sure harvest areas don't exceed maximum in each prescription			Acres		Very High	Very High
	Reevaluate the suitability of lands identified as unsuitable for timber production	Land unsuitable for timber production		Acres	Every 10 years	High	High
	Determine the extent and severity of insect and disease occurrence	Insect and disease		Varies	Varies	Moderate	Moderate
219.19	Determine population trends of indicator species to estimate viability	Chestnut-sided warbler		Habitat Population	5 3	Low	Low
		Barred owl		Habitat Population	5	Moderate 1	Moderate
		Snowshoe hare		Habitat Population	5 5	Low	Low
		Black pole warbler		Habitat Population	5 1	Moderate	Moderate

Part 1. Monitoring Required by NFMA

NFMA Requirement	Purpose of Monitoring	Item Monitored	Unit of Measure	Frequency of Measure	Expected Precision	Expected Reliability
219.19	Determine population trends of indicator species to estimate viability	White-tailed deer	Habitat Population	5 1	Moderate	Moderate
		Ruffed grouse	Habitat Population	5 1	Low	Low
		Beaver	Habitat Population	5 5	High	High
		Yellow- bellied sapsucker	Habitat Population	5 1	Moderate	Moderate
		Gray Squirrel	Habitat Population	5 1	Low	Low
		American woodcock	Habitat Population	5 1	Low	Low
		Brook trout	Habitat Population	5 1	High	High
		Tree swallow	Habitat Population	5 2	Low	Low
		American Bittern	Habitat Population	5 1	High	High
		Peregrine Falcon	Habitat Population	5 1	High	High
219.7(f)	Determine effects of adjacent public and management on the GMNF, and of GMNF on adjacent land for better coordination	Letters Editorials and similar public comment	Varies	Every 5 years	Moderate	Moderate

Part 1. Monitoring Required by NFMA

NFMA Requirement	Purpose of Monitoring	Item Monitored	Unit of Measure	Frequency of Measure	Expected Precision	Expected Reliability
219.28	Determine research needs and opportunities	Research topics	N/A	Every 5 years	Moderate	Moderate
219.10(g)	Determine whether public demands have changed significantly	Outputs/benefits	Varies	Every 5 years	Moderate	Moderate
	Determine whether land conditions (or our ability to meet public demands) have changed signif-icantly	Land conditions capability	Varies	Every 5 years	Moderate	Moderate

Part 2. ADDITIONAL MONITORING TO DETERMINE OUR RESPONSE TO THE PROBLEMS

Management Problem	Purpose of Monitoring	Item Monitored	Unit of Measure	Frequency of Measure	Expected Precision	Expected Reliability
#1 Amount of Timber	Determine whether actual harvest per acre matched projections in plan	Timber cuts	CF/Acre	Annual	High	High
	Determine whether actual value of timber matches projections in plan	Timber cuts	$/CF $/MBF	Annual	High	High
	Determine if fuel-wood cutting becomes an issue again	Fuelwood permit requests	Acres and cords	Annual	High	High
	Assess benefits and costs of land acquisition	Acres acquired	Varied	Every 5 years	Moderate	Moderate
#2 Type of Timber Management	Assess visual condition of harvested acres	Harvested acres	Acres and condition	Annual sample	Moderate	Moderate
	Determine whether costs and values for unevenaged management match the project	Acres of uneven-aged management	$	Annual	High	High
	Gauge public reaction to unevenaged management	Acres of uneven-age management	Comments	Every 5 years	Moderate	Moderate

Part 2. ADDITIONAL MONITORING TO DETERMINE OUR RESPONSE TO THE PROBLEMS

Management Problem	Purpose of Monitoring	Item Monitored	Unit of Measure	Frequency of Measure	Expected Precision	Expected Reliability
#3 Wildlife Habitats	Determine acres by vegetative type and age class	Acres by type and age	Acres	Every 10 years	High	High
#4 Special Areas	Determine if uncommon and outstanding values are protected	Variable by Area	Varies	Variable	High	High
#5 Minerals	Determine how well mineral activities comply with stipulations;	Sites of surface disturbance	Varies	As projects are active	Moderate	Moderate
	Determine if adequate exploration base is maintained to assure most major mineral deposits can be discovered; assess effects	Unturned stones	Varies	Varies	Varies	Moderate
#6 Pastures and shrub openings	Determine if higher intensity pasture management is economically efficient	Management costs Grazing capacity	$ AUM	Every 10 years Every 5 years	Moderate Moderate	Moderate Moderate

* APPENDIX D - EFFECT ON OTHER PLANS

Existing Plans That Will Be Superseded By The Approved Forest Plan

Wildlife Habitat Management Plan, 1978
Forest Plan, 1974
Recreation Management Plan, 1978
Timber Management Plan, 1973
Land Use Plan for the Deerfield River Area, 1977

Existing Plans That Will Be Brought Into Compliance With The Approved Forest Plan

Ski Area Master Plans
Land Adjustment Plan
Water Quality Monitoring Plan
Fire Management Plan
Bennington Municipal Watershed Plan

APPENDIX E: ENDANGERED, THREATENED, AND POTENTIALLY SENSITIVE SPECIES; OTHER SPECIES OF CONCERN

A. INTRODUCTION

Lists of Endangered, Threatened and Potentially Sensitive Species on the GMNF were derived from many sources. While consulting these sources we realized that many species did not qualify for any of these categories, but still were of concern to the managers of the GMNF and needed to be recognized. A fourth list called "Species of Concern" was created.

To determine the animal lists the major sources consulted were:

- Federally listed species
- The proposed State of Vermont list of Endangered, Threatened and Species of Concern
- Proposed Federal listings
- Vermont Institute of Natural Sciences
- De Graaf's Forest Habitat Series for Mammals, Birds and Amphibians.
- Local knowledge of vertebrate distribution

To determine the plant lists the major sources consulted were:

- Federally listed species
- The proposed State of Vermont list of Endangered, Threatened and Species of Concern
- "New England's Rare, Threatened and Endangered Plants" by Garrett E. Crow
- "Potential Habitats for the Rare Plants of the Green Mountain National Forest", Jerry Jenkins, March 1982
- The Nature Conservancy and the State of Vermont.

Management indicator species have been selected to represent all major habitats and special habitat features (DEIS Table 3.2). The species have been selected for their dependence on a habitat or special feature and our ability to monitor them. The success or failure of our management activities to provide for all vertebrates will be gauged by the effects of activities on the indicator species.

Vegetative composition objectives are set in the Forest Plan to help us provide the proper mixture of forest types and ages. The age class distribution will depend on management and species. Dispersion of age and type will be achieved by applying composition objectives to opportunity areas.

Implementation of the Plan will not jeopardize any species and has been designed to enhance all vertebrate populations. (See Vegetative Composition Objectives for the GMNF, Villanueva, 1983).

The Standards and Guidelines in the Forest Plan along with vegetative composition objectives were developed to provide and protect the habitat needs of all vertebrates occurring on the Forest. The vegetative types and special habitat features such as cavity trees, riparian areas, and cliffs needed to support endangered and threatened species and species of concern have been considered.

B. ENDANGERED, THREATENED AND SENSITIVE SPECIES

Federal and State laws and regulations designate species as being Endangered or Threatened and prescribe that they be protected. Whether an Endangered or Threatened Species has status on the Federal or State list is important to know due to the differences in laws. Sensitive species include all species U. S. Fish and Wildlife Category land 2 and others that may not be able to maintain viable population levels in the planning area (Table E.01).

Bald Eagle

The Forest will develop and implement specific management direction for each bald eagle nesting area. Direction will include the following requirements:

1. Prohibit controllable disturbances within approximately 330 feet of each eagle nest, except as necessary to protect the nest or colony.

2. Prohibit significant changes in the landscape within approximately 660 feet of an eagle nest.

3. Restrict management activities that result in adverse disturbance to nesting eagles within approximately 1,320 feet of a nest during the nesting period.

Eastern Mountain Lion - The Eastern Mountain Lion is currently on the Vermont endangered list. The Forest is providing large remote areas in our Wilderness, primitive and semi-primitive areas. This remoteness along with an emphasis on deer wintering area management should be beneficial to the cougar. The Forest's objectives for the mountain lion isto verify existence.

C. PROTECTION OF SPECIES OF CONCERN

Species of concern occur on the state list and are known to occur on the National Forest. They will be appropriately protected when found. Vertebrate and plant species are listed separately in this section.

Vertebrate Species:

The vertebrate list for the GMNF (Table E.01) was compiled with assistance of the State of Vermont, Vermont Institute of Natural Science and the Nature Conservancy Natural Heritage program. Species listed are known or are believed to occur on the National Forest.

The following management guidelines were developed to protect specific species when they are found:

Timber Rattlesnake - The timber rattlesnake will benefit from the large forested areas with low human impact that the GMNF provides. Although no hibernacula are presently known if any are discovered they will be protected as follows:

- Build no new roads or trails
- Permit only land uses which will not significantly change the site
- Develop a site specific management plan to provide long term protection and enhancement.

Common Loon - No known nesting attempts have taken place on the ponds of the GMNF since 1979. Loons do feed on some of our remote ponds apparently ranging out from Somerset Reservoir. If a nesting attempt takes place management plans will be developed site by site. Some actions that could be incorporated into management plans include:

- nesting island installation
- cordoning off of nesting areas until hatching takes place
- informational signing for public cooperation.

Osprey and Great Blue Heron

The Forest will develop and implement specific management direction for each osprey nesting area and great blue heron colony. Direction will include the following requirements.

1. Prohibit controllable disturbances within approximately 330 feet of each osprey nest or great blue heron colony, except as necessary to protect the nest or colony.

2. Prohibit significant changes in the landscape within approximately 660 feet of an osprey nest.

3. Restrict management activities that result in adverse disturbance to nesting ospreys within approximately 1,320 feet of a nest during the nesting period.

Canada Lynx - Canada Lynx are dependent on snowshoe hare abundance and remoteness from human activity. If surveys establish resident lynx populations management plans will be written.

Pine Marten - The Forest will develop a habitat model for pine marten and the Forest will be assessed for reintroduction of this species.

Indiana Bats - Indiana bats may forage along the riparian zone of some of the Forest's lower elevation rivers and ponds. No known bat caves exist on the Forest. Riparian standards and guidelines will protect this foraging habitat.

Sedge Wren - Sedge wrens may occur in sedge meadows or unflooded beaver meadow areas. They are very rare in Vermont and an unlikely breeder. To insure management activities do not impact this species, no burning of grassy or sedge wetlands will be done from May 15 to August 30.

Table E.01 List of Protected Animal Species

Scientific Name	Common Name	SS 1/	FS 2/
Mammals			
Felis Concolor	Eastern Mountain Lion	E	SE
Lynx canadensis	Lynx	E	S
Martes americana	Pine Marten	E	SC
Microtus chrotorrhinus	Rock vole	SC	SC
Myotis leibii	Small-footed bat	T	S
Myotis sodalis	Indiana bat	E	E
Sorex dispar	Long-tailed shrew	SC	S
Sylvilagus transitionalis	New England cottontail	SC	S
Synaptomys cooperi	Southern bog lemming	SC	SC
Birds			
Accipiter cooperi	Cooper's hawk	SC	SC
Ammodramus henslowii	Henslow's sparrow	E	SC
Ammodramus savannarum	Grasshopper sparrow	SC	SC
Aquila chrysaetos	Golden eagle	--	SC
Ardea herodias	Great blue heron	--	SC
Asio flammeus	Short-eared owl	SC	SC
Asio otus	Long-eared owl	SC	SC
Canachites canadensis	Spruce grouse	T	SC
Circus cyaneus	Northern harrier	SC	SC
Cistothorus platensis	Sedge wren	T	SC
Dendroica cerulea	Cerulean warbler	SC	SC
Falco peregrinus	Peregrine falcon	E	E
Gavia immer	Common loon	E	S
Halaiaeetus leucocephalus	Bald eagle	E	E
Ixobrychus exilis	Least bittern	SC	SC
Lanius ludovicianus	Loggerhead shrike	T	S
Melanerpes erythrocephalus	Red-headed woodpecker	SC	SC
Pandion haliaetus	Osprey	E	SC
Picoides arcticus	Black-backed three-toed woodpecker	SC	SC
Picoides tridactylus	Northern three-toed woodpecker	SC	SC
Podilymbus podiceps	Pied-billed grebe	SC	SC
Tyto alba	Barn owl	SC	SC
Reptiles			
Crotalus horridus	Timber rattlesnake	E	SC
Elaphe obsoleta	Black rat snake	SC	SC
Amphibians			
Bufo woodhousei	Fowler's toad	SC	SC
Hemidactylium scutatum	Four-footed salamander	SC	SC

1/SS = State Status
2/FS = Federal Status

E = Endangered
T = Threatened
S = Recommended Sensitive Species
SC = Species of Concern

Plant Species:

The plant list for the GMNF is the result of many sources (Page E.01). The GMNF had a rare plant study done by J. Jenkins completed in March 1982. This report identified many species thought to be rare at that time as well as identifying actual locations and habitats where they might be found.

Since the Jenkins study much work has been done on the status of plants in Vermont. The State of Vermont has developed a list of threatened and endangered species with the assistance of experts throughout the State. The Nature Conservancy, State Natural Heritage Program has been continuously gathering and screening data about Vermont's rare species.

In cooperation with The Nature Conservancy, State Natural Heritage program, the Forest has developed a list of plants that will be protected and managed. We will protect known sites of occurrence for plants on our list and will survey areas where there is a high probability of occurrence. Surveys will be conducted by a botanist prior to activities on sites where the habitat indicates a high potential. Each District will have maps of high probability habitats (see footnote 3, Table E.02). The need for a survey will be identified during the opportunity area planning process or as additional information becomes available. Information on plants is constantly changing with increased interest and plant study. The GMNF will annually update our plant list with the State Natural Heritage Program to keep up with this dynamic body of knowledge.

Rare Plant Communities

a. Develop indicidual site plans on a case-by-case basis to provide specific habitat needs for each rare plant community.

b. Until specific site plans are developed, manage the area within 100' as follows:

   - Permit only land uses which will not significantly change the site;

   - Build no new roads or trails.

c. Any potential site will be investigated before any other activity at the site is begun. Potential sites have been identified by Jenkins (1982).

Table E.02 List of Protected Plant Species

Scientific Name	Common Name	SS[1/]	FS[2/]	GMNF Plant Hab. # [3/]
Asplenium montanum	Mountain Spleenwort	T	SC	10
Aster ptarmicoides	Prairie Goldenrod		SC	12
Astragalus Robinsii var. minor	A Milk Vetch		SC	13
Aureolaria pedicularia	Fernleaf Yellow False Foxglove		SC	12, 16
Betula borealis	Northern Birch		SC	27
Botrychium multifidum	Leathery Grape-Fern		SC	15
Cardamine pratensis var. palustris	Cuckoo Flower		SC	21, 23
Carex bicknellii	Bicknell Sedge		SC	18
Carex buxbaumii	Brown Bog Sedge	E	SC	3, 4
Carex scirpoidea	Canadian Single-Spined Sedge		SC	14
Cynoglossum boreale	Northern Wild Comfrey		SC	17
Cypripedium arietinum	Ram's Head Lad's Slipper	T	SC	7, 16
Cypripedium calseolus var. pubescens	Large Yellow Lady Slipper		SC	15
Cypripedium reginae	Showy Lady's Slipper	T	SC	2, 7
Dryopteris Filix-mas	Male Fern	T	SC	19
Dryopteris fragrans	Fragrant Cliff Wood-Fern		SC	14
Eleocharis intermedia	Matted Spikerush		SC	3, 4
Eleocharis olivacea	Capitate Spikerush		SC	1, 3, 5
Eleocharis ovata	Blunt Spikerush		SC	1, 3, 5
Hackelia Americana	Northern Stickseed	T	SC	17
Hydrophyllum canadense	Blunt-leaved Waterleaf	T	SC	20
Juncus trifidus	Highland Rush		SC	14
Littorella Americana	American Shore-grass			1
Lycopodium inundatum var. Biglowii	Slender Bog-clubmoss		SC	2
Lycopodium selago	Fir Clubmoss		SC	8
Malaxis brachypoda	White Adder's-mouth	T	SC	6, 7
Myriophyllum humile	Low Water-milfoil		SC	1
Panax quinquefolius	American Ginseng		SC	19, 22
Pellaea glabella	Smooth Cliff-brake		SC	11
Platanthera Hookeri	Hooker Orchis	T	SC	16
Polemonium van bruntiae	Jacob's Ladder	T	S	1, 3, 4
Polygala sanguinea	Field Milkwort		SC	24
Potamogeton bicupulatus	Pondweed		SC	1
Potamogeton confervoides	Tuckerman's Pondweed		SC	1
Pyrola minor	Lesser Wintergreen	E	SC	15
Rhexia Virginica	Virginia Meadow-beauty	T	SC	26
Saxifraga aizoon var. neogaea	Livelong Saxifrage		SC	14
Scheuchzeria palustris	Pod Grass	T	SC	2
Sedum rosea	Roseroot Stonecrop	T	SC	14
Sisyrinchium angustifolium	Pointed Blue-eyes Grass		SC	25
Sisyrinchium atlanticum	Eastern Blue-eyed Grass		SC	25
Sparganium fluctuans	Floating Bur-reed		SC	1

Table E.02 List of Protected Plant Species (cont'd)

Scientific Name	Common Name	SS 1/	FS 2/	GMNF Plant Hab. # 3/
Utricularia geminiscapa	Hidden-fruited Bladderwort		SC	1
Utricularia resupinata	Northerneastern Bladderwort	T	SC	1
Woodsia alpina	Northern Woodsia	E	SC	14
Woodsia glabella	Smooth Woodsia		SC	14
Xyris difformis	Carolina Yellow-eyed Grass		SC	1
Xyris Montana	Northern Yellow-eyed Grass	T	SC	1

1/SS = State Status
2/FS = Forest Status

E = Endangered
T = Threatened
S = Recommended Sensitive Species
SC = Species of Concern

3/ Habitat No.	Habitat Type	No. of Species
1	Ponds and Lakes	12
2	Open Sphagnum Bogs	3
3	Beaver Meadows	5
4	Sedge Meadows	3
5	Seeps	2
6	Swamps	1
7	Limy Swamps	3
8	Subalpine Habitats without lime	1
9	Subalpine woods without lime	1
10	Subalpine ledges without lime	1
11	Limestone Ledges	1
12	Limestone Ledges below 1500'	2
13	Limestone Ledges 1500' to subalpine	1
14	Subalpine Limestone Ledges	7
15	Limy Woodlands	3
16	Limy Woodlands below 1500'	2
17	Dry Limy Woodlands	2
18	Dry Limy Woodlands below 1500'	1
19	Moist Limy Woodlands	2
20	Moist Limy Woodlands below 1500'	2
21	Stream Bottoms	1
22	Woodland, Old Age Stands	1
23	Woodland Springs & Small Swamps above 1500'	1
24	Meadows	1
25	Wet Meadows	2
26	Limy Meadows	1
27	Talus	1

Species Of Uncertain Occurence:

Another list was developed to identify species whose occurence is presently uncertain on the National Forest (Table E.03). Concern for their status and protection cannot be resolved until future surveys are completed.

Table E.03 List of Species of Uncertain Occurence

INSECTS	Taconic Cave Amphipod, Stygobromus borealis Holsinger
	Puritan Tiger Beetle, Cincindela puritana
	American tiger beetle, Cicindela patruela Dejean
	American Burying Beetle, Nicrophorus americanus,
	Chestnut Ermine Moth, Argyresthia castaneela
	Marbled Underwing Moth, Catocala marmorata
FISHES	Round Whitefish, Prosopium cylindraceum
	Muskellunge, Esox masquinongy
	Lake Chub, Couesius plumbeus
	Brassy Shiner, Hybognathus hankinsoni
	Bridle Shiner, Notropis bifrenatus
	Blackchin Shiner, Nortropis heterodon
	Blacknose Shiner, Notropis heterolepis
	Pearl Dace, Semotilus margarita
	River Carpsucker, Carpiodes cyprinus
	Redhorses, Moxostoma spp.

APPENDIX F
FUTURE ROAD PROGRAM

INTRODUCTION

The purpose of this Appendix is to provide a more detailed description of the projected types, amounts, and locations of road building on the Green Mountain National Forest. The reasons and priorities for road building are outlined.

The Appendix is broken into four sections--role of the transportation system, projected local roads, arterial and collector roads and road operation and management.

ROLE OF THE TRANSPORTATION SYSTEM

The primary role of the transportation system is to provide public access to the National Forest. Many integrated resource management activities also require access. Timber sales, stand improvement, wildlife management activities, and firewood cutting all need roads and trails to facilitate their accomplishment. Developed recreation sites like ski areas, campgrounds, and picnic areas could not be constructed or utilized without access roads and trails.

Access to and through the GMNF is via an interconnected system of state, town, and Forest Development roads. North-south routes, US 7 and Vermont 100, are located on either side of the Green Mountain range. These are connected by a number of east-west routes. I-87, I-89, and I-91 provide access from out of state.

Trails make up an important part of the overall Forest transportation system. When linked with the road network, trails complete the travelway network. The most common types of trails on the GMNF are skid trails which provide logging access and recreation trails such as those for hiking, ski touring, horseback riding and snowmobiling. Some recreation trails originated as skid trails. Other recreation trails are low standard permanent roads which are closed to all but intermittent vehicular use.

Parking areas are considered part of the National Forest transportation system. Many areas are unmarked turnouts along Forest roads but others are developed sites at vistas, information areas, and trailheads. Parking areas are also provided on closed roads at the gate to allow visitors to the Forest opportunities to park and continue on foot or, in some cases, on off-road vehicles along the road.

The types, amounts and locations, of roads, parking areas and trails in the transportation system vary within each Management Area. The types and numbers of people or vehicles requiring access to and within any given Management Area are determined by the nature of the activities in the Area. The appropriate types and amounts of roads, trails and parking areas for each Management Area are given in the Standards and Guidelines, Chapter IV of the Forest Plan.

PROJECTED LOCAL ROADS

An overall shift in local road building policy on the GMNF is toward constructing fewer miles of roads or shorter roads at lower standards and costs than in the past.

Amounts and Locations of Local Roads

Within the next ten years, approximately 11 miles of local roads are planned for construction or reconstruction. These roads are needed to meet the objectives of the Forest Plan. Road building accomplishments are contingent on funding.

In addition to economic conditions, timber harvesting technologies and public needs and wants, will play major roles in determining the location and amount of local roads which will actually be built in this decade and the ones to follow.

Maps showing the proposed location of these roads are available for public review in the Forest Supervisor's office in Rutland and in the District Ranger's Offices in Manchester, Middlebury, and Rochester.

The local roads we have chosen to build in the next ten years satisfy the highest priority access needs presently faced while keeping as many future options open as possible. In particular, during this decade no roads will be built into areas where road building would preclude the current potential for primitive or semi-primitive non-motorized recreation experiences.

Priorities for Local Road Building

No local road building schedule has been established beyond the first ten year planning period. Those roads scheduled for construction or reconstruction in fiscal years 1986-1990 are listed in Appendix B--Table 6.11--of this Plan.

This schedule could vary due to changes in funding levels or modifications to the recreation or wildlife activity schedules or the timber sale schedule. Additional roads could be added to the road building program as a result of further analysis of access needs on newly acquired lands or to correct unforseen user safety problems or to prevent resource damage.

Generally, a first priority for local road building is to provide public access to areas of the National Forest which are currently inaccessible. Other reasons for building roads on the GMNF are to prevent resource damage, to provide for certain recreation opportunities, and for Forest Service access for resource management and forest products removal.

All aspects of integrated resource management enter into decisions on road scheduling. However, a higher priority will be given to roads which will provide access to a variety of management activities rather than to single purpose projects only.

Local roads are built on the GMNF for one or a combination of the following three reasons:

*Access National Forest: Roadbuilding will provide public access to National Forest lands which are currently inaccessible because of current road conditions or because no roads exist.

*Recreation-Wildlife-Timber (R-W-T) Access: Area is currently accessible, but additional or improved access is necessary. Access will be provided by short multiple-use spur roads with parking areas/log landings at their endpoints. In some areas, lower standard roads may continue beyond the spurs and will jointly serve Recreation, Wildlife, and Timber (R-W-T). In these cases, the additional portions will generally be gated and closed to public vehicles for user safety, prevention of resource damage, and to provide desired recreational experiences and wildlife habitats.

*Forest Products Removal: These roads will be used primarily for hauling timber. Although closed to public wheeled vehicles, the roads will remain open for pedestrian use.

A summary of the primary reasons for building local roads in the next ten years is provided (Table 6.13). It is important to note that most of the roads which will provide new access to the National Forest will also help meet recreation, wildlife and timber needs. No new roads will be built primarily for hauling timber.

Table 6.13
Planned Local Road Building Through 1995 (Miles)

Reason For Road Building	Type of Road Building		
	New Construction	Reconstruction 1/	Restoration 2/
Access NF 3/	3.55	2.30	9.20
Timber Haul	1.10	3.50	4.20
Recreation-Wildlife Timber	0.40	0	2.70
Total	5.05	5.80	16.10

1/ Reconstruction means making an existing road driveable or replacing a road in the same general vicinity as an existing road. Activities include roadbed reshaping earthwork, gravel addition or replacement, drainage structure installation, or turnout and turnaround widening.

2/ Restoration means some gravel replacement or drainage structure improvement may be needed, but little earthwork is necessary.

3/ These will meet recreation-wildlife and timber needs. They are not being built primarily for hauling timber.

Types of Local Roads

Forest local roads are one lane, unpaved roads under Forest Service jurisdiction. Local roads connect terminal facilities with Forest collector or arterial roads, or public highways. Their location and standard are usually controlled by a specific resource activity rather than travel efficiency. Forest local roads may be developed and operated for either long-term or short-term service.

In the past, local roads followed established travelways, ridgelines, or paralleled streams and rivers. As the Forest acquired private lands, it also acquired existing roads built by early settlers for access to their woodlots and fields. Many of these are still used. Today, the local road system is a mix of low standard seasonal roads and higher standard all weather routes. The density of the system is heavier in some areas of the Forest, because of natural barriers and geographic restrictions to travel and construction.

The GMNF developed a cost and use classification system to aid in studying Forest Local roads during the planning process through to the Draft EIS and Plan stage. Our classification system was used to highlight differences in costs between road types. Road types differed with respect to type and frequency of traffic, season of use, width, drainage, surfacing, and cost.

The GMNF system is similar to the Traffic Level (TSL) classification system that has been adopted on all National Forests in the country. The GMNF has also begun to use the TSL System to classify its local roads (Table 6.14).

Table 6.14
Characteristics of Permanent Local Roads

Road Description	GMNF Road Classification	Traffic Service Level 1/	Mtce. Level 1/	Travelway Width (feet)	Drainage 2/	Surfacing	Turnouts
Seasonal, infrequent use (1 or 2 years out of 10)	b	D	I/II	8-10	few or no permanent structures	native material	none to few
Seasonal, frequent use (5 to 7 years out of 10)	c	C	II/ III	8-13	some permanent structures	spot imported gravel	few
All-weather continuous annual use	d	B	III/ IV	8-13	permanent structures throughout	imported gravel throughout	frequent

1/ Refer to Glossary for definitions.

2/ Drainage structures include waterbars, wooden "box-type" culverts and corrugated galvanized aluminum pipes.

Local Road Construction and Reconstruction

Typically road construction and reconstruction and maintenance costs are the lowest for Traffic Service Level D roads and the highest for Traffic Service Level B roads. See Table 6.15.

Table 6.15
Local Road Costs (1985$'s)

Traffic Service Level	New Construction and Reconstruction Cost Range ($/Mile)	Preconstruction and Engineering Costs ($/Mile)	Maintenance Cost ($/Mile/year)
D	10,000-20,000	7,500	200
C	20,000-40,000	17,000	600
B	40,000-80,000	19,000	1600

Over half of the projected road building on the GMNF is reconstruction. Reconstruction means making an existing road driveable or replacing a road in the same general vicinity as an existing road. Typically, reconstruction costs are at the low end of the range of construction costs. Reconstruction activities can include roadbed reshaping gravel addition or replacement, drainage structure installation, or turnout and turnaround widening.

Construction costs can be expected to vary from site to site due to varying topography and the suitablity of an area for road construction. Suitablity determination considers amounts of steep side slopes, depth to bedrock, and numbers of streams and wet areas.

Preconstruction, Engineering, and Maintenance activities are discussed in Transportation Study Report (Gaiotti, 1983). Preconstruction and engineering costs are not significantly effected by the suitability of an area for construction. Maintenance costs generally are not affected by suitability for construction.

PROJECTED ARTERIAL AND COLLECTOR ROADS

Forest arterial roads serve large land areas, usually connecting public highways or other forest arterial roads to form a network of primary travel routes. Their locations and standards are often determined by demands for travel efficiency rather than specific resource management access needs.

Forest collector roads serve a smaller land area than Forest arterial roads. They usually connect to a Forest arterial road or public highway and collect traffic from Forest local roads. The location and standard of Forest collector roads are influenced by long term multi-resource access needs as well as travel efficiency.

The basic arterial and collector road system is in place. About half of the 45 miles of the arterial and collector roads used to access the GMNF are under town or state jurisdiction. No change to the arterial/collector road system is anticipated in the future. See Arterial and Collector Roads on the Green Mountain National Forest (Gaiotti, 1984).

No new arterial or collector roads are planned at this time.

Rehabilitation of short sections of some existing arterial and collector roads might be necessary to improve driveability or for user safety. Site specific needs are not known. Rehabilitation activities could include such items as resurfacing, turnout and pull-off widening, curve straightening, or bridge replacement.

Forest highways are arterial and collector roads under town or state ownership that are also vital for National Forest use and administration carrying substantial amounts of Forest Service traffic. Programming for Forest Highway projects is done by the state in consultation with the Forest Service. Funding for Forest Highway projects is from the Federal Highway Administration. Most future needs will be rehabilitation of existing facilities.

The GMNF and the Vermont Agency of Transportation have developed a schedule of planned reconstruction on Forest Highways through 1989. See Table 6.16.

Table 6.16
Current Recommended Forest Highway Program and Costs Through 1989
(1985 Dollars)

Forest Priority	Project Name	F.H. No.	Town	Cost 1/ ($)
1	Replace Bridge 26	9	Chittenden	106400
2	Replace Bridge 28	9	Chittenden	98500
3	Replace Bridge 23	9	Chittenden	92100
4	Replace Bridge 17	10	Ripton	100000
5	Replace Bridge 18	10	Goshen	75000
6	Replace Bridge 10	10	Ripton	50000

1/ Funding for these activies comes from the Federal Highway Administration.

ROAD OPERATION AND MANAGEMENT

Road use on the GMNF will be controlled to meet the resource objectives of specific areas. For example, roads would be closed to provide for non-motorized recreation experiences or for protecting wildlife habitats.

Controls may also be imposed for economic reasons. Our analysis has shown that building and operating all roads as year-round multiple-use facilities is too expensive. Access will also be controlled to protect roads from damage by use during critical times of the year such as spring breakup.

While roads may be closed to vehicular traffic, generally they will remain open for hiking, ski touring, snowmobiling, and horseback riding--depending on the specific area and resource needs.

APPENDIX G: SITING VISUALLY PROMINENT FACILITIES

OVERVIEW

This appendix is intended to briefly outline the process the GMNF will follow if faced with proposals to site visually prominent facilities such as wind turbines, high voltage transmission lines and microwave antennae. In developing this process we considered the objectives of each Management Area on the Forest. The recreation opportunities to be provided and the visual sensitivity of sites in each area are particularly important objectives to consider. Visual sensitivity not only involves the natural beauty of a site, but also the number of people that see it.

Visually prominent structures are in greatest contrast at the Primitive end of the recreation opportunity spectrum and more closely compatible at the Urban end (Appendix D of the EIS). Locating facilities in contrast with the natural surroundings is complicated by the numbers of viewers involved. Although the degree of acceptable contrast may be greater towards the urban end of the spectrum, this end also has much higher numbers of viewers.

Facilities that are highly reflective of daylight or that have night lighting are more eye catching. Also, if facilities have motion, especially in an intermittent way (rotating blades, and lights), they will attract more attention. Such qualities amplify the degree of visual prominence and will be considered when examining proposals.

Other environmental factors will also be considered when viewing proposals, for example, soils on steep mountain peaks are typically shallow, high in organic matter, and easily eroded. Standards and guidelines to protect soils, water quality and other resources will be used when locating, designing, and constructing highly visible facilities and their associated access roads.

PROCESS

STEP 1: Consult Maps and Management Area Objectives

The maps in this appendix broadly reflect all the steps in the process used to evaluate proposals for siting visually prominent facilities, and will be consulted first. We will repeat this process for all specific proposals and sites since more detailed examination of local conditions may show the need to make adjustments in the maps or location and design of the projects proposed.

The maps show areas where visually prominent facilities will have high, moderate and low impact on achieving the objectives of the Forest Plan. No visually prominent facilities are allowed in the areas where the "highest impact" will result. Sitings in areas where high, moderate and low impacts are likely have not been ruled out at this point, but the ratings reflect the degree of inconsistency with our management objectives. The areas of high impact are likely to pose the greatest challenges to acceptably siting visually prominent facilities.

The maps reflect the management objectives and locations of the Management Areas in the Forest Plan. Some Management Areas do not permit non-recreation facilities (MA 5.1, 6.1, 8.1), and are shown as areas of "highest" impact. Other Management Areas discourage non-recreation facilities in order to achieve their desired opportunities for recreation (Pages 4.79 to 4.165).

The maps show that the most visible peaks and ridges are not available (highest impact) for siting visually prominent facilities irregardless of the Management Area locations.

STEP 2: Determine Visual Sensitivity of Specific Site

If the proposed facility occurs in areas where moderate to low visual impact will occur then we will determine the visual sensitivity of the specific site to see if the proposal meets the desired visual quality objectives (Pages 4.40 to 4.41).

If possible, Alternatives to the proposed project design and location will be examined. The Alternatives will attempt to reduce the area where high or moderate visual impacts occur.

STEP 3: Determine if Desired Visual Quality Conditions Can Be Met

Based on the desired recreation opportunity and visual sensitivity of the site, we will determine if the facility will blend well with the area's desired visual quality conditions (Page 4.43).

Figure G 1

SITING VISUALLY PROMINANT FACILITIES

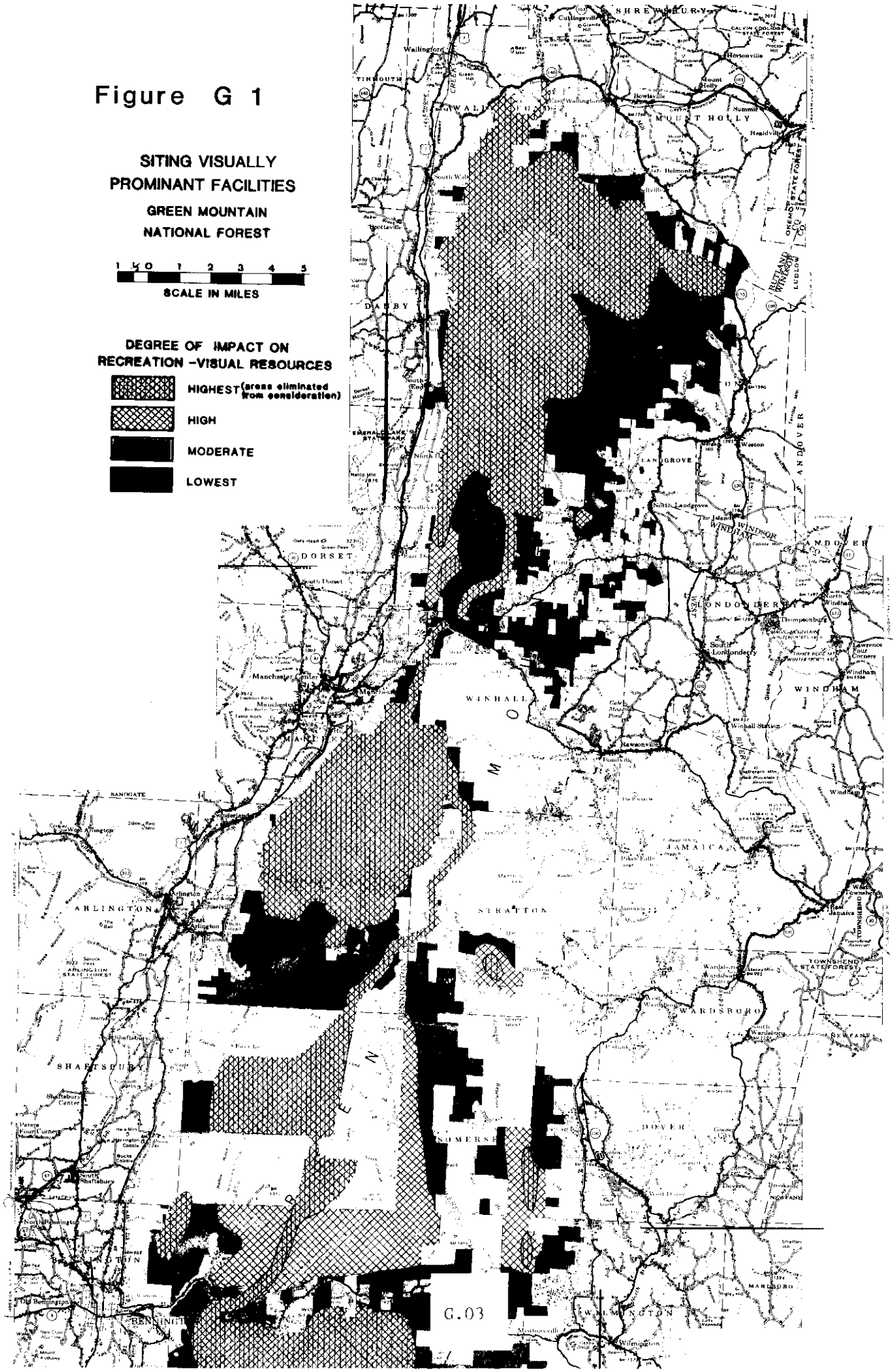
GREEN MOUNTAIN NATIONAL FOREST

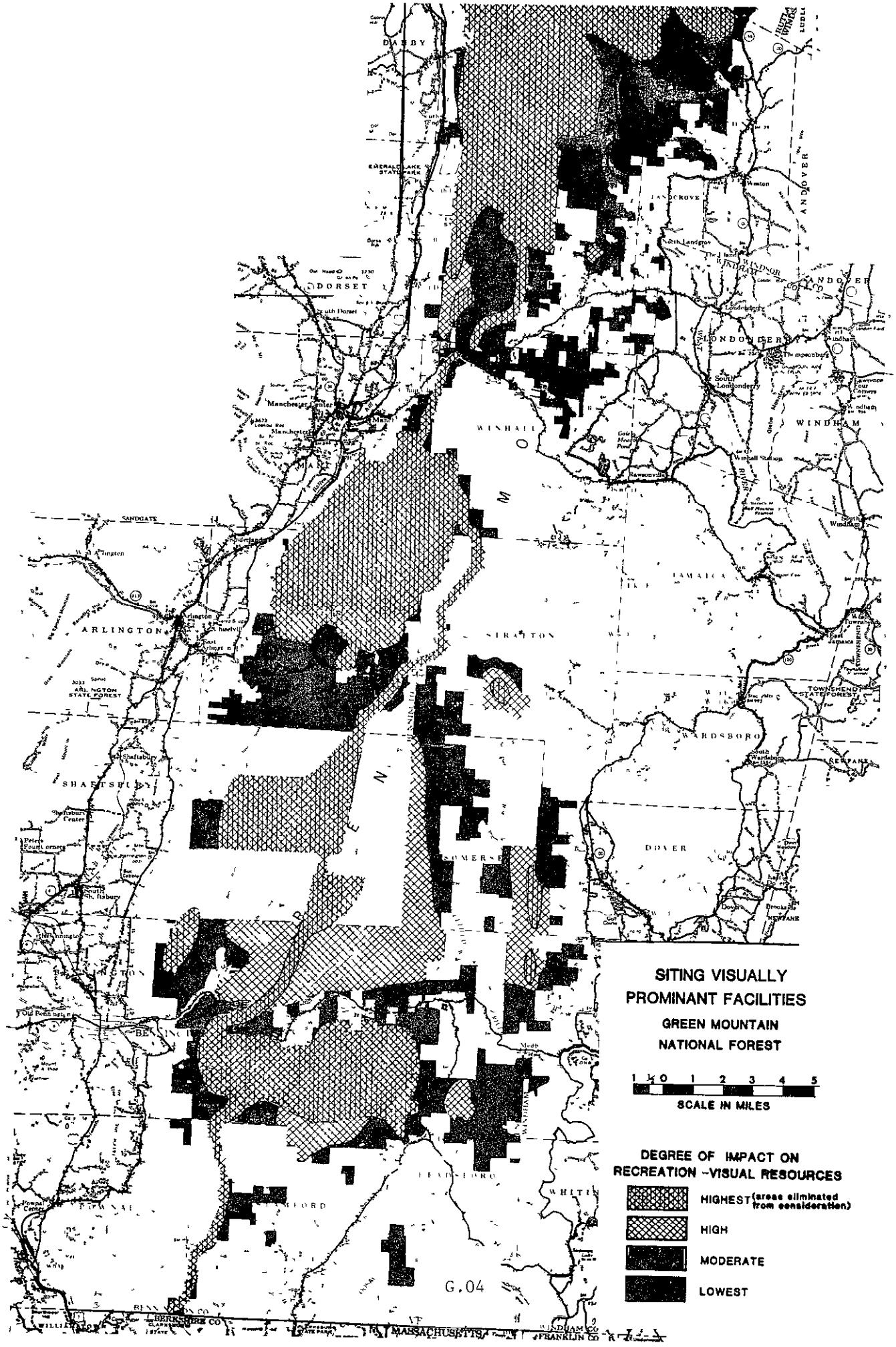
1 ½ 0 1 2 3 4 5

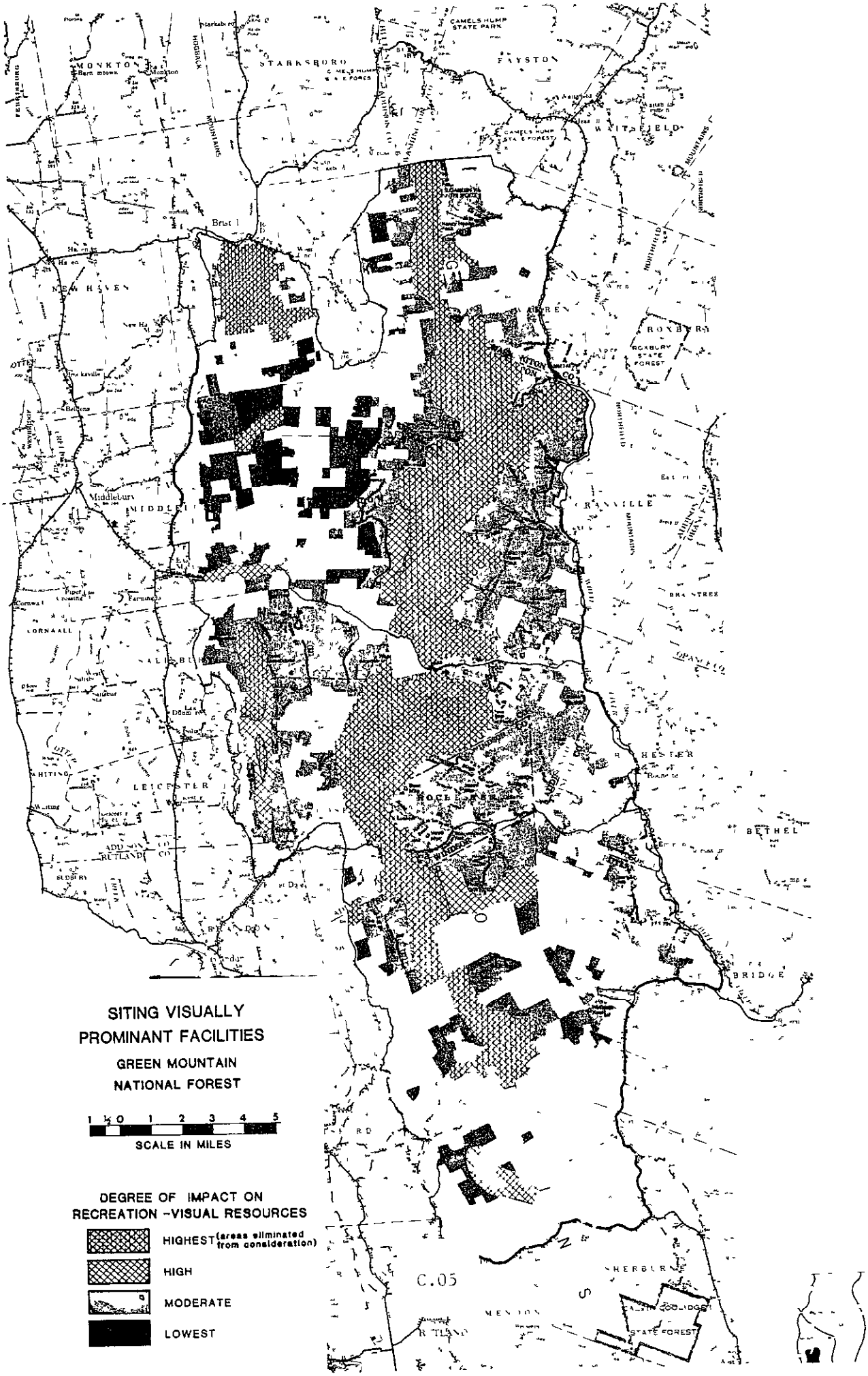
SCALE IN MILES

DEGREE OF IMPACT ON RECREATION -VISUAL RESOURCES

- HIGHEST (areas eliminated from consideration)
- HIGH
- MODERATE
- LOWEST




SITING VISUALLY
PROMINANT FACILITIES
GREEN MOUNTAIN
NATIONAL FOREST
1 ½ 0 1 2 3 4 5
SCALE IN MILES
DEGREE OF IMPACT ON
RECREATION -VISUAL RESOURCES
HIGHEST (areas eliminated from consideration)
HIGH
MODERATE
LOWEST
DORSET
LONDONDERRY
WINDHAM
WINHALL
STRATTON
ARLINGTON
SHAFTSBURY
WARDSBORO
DOVER
JAMAICA
TOWNSHEND STATE FOREST
ARLINGTON STATE FOREST
SANDGATE
MASSACHUSETTS
BERKSHIRE CO
FRANKLIN CO
WINDHAM CO
G.04


SITING VISUALLY
PROMINANT FACILITIES
GREEN MOUNTAIN
NATIONAL FOREST
1 ½ 0 1 2 3 4 5
SCALE IN MILES
DEGREE OF IMPACT ON
RECREATION -VISUAL RESOURCES
HIGHEST (areas eliminated from consideration)
HIGH
MODERATE
LOWEST
C.05
MONKTON
STARKSBORO
FAYSTON
WAITSFIELD
NEW HAVEN
ROXBURY
MIDDLEBURY
LEICESTER
HESTER
BETHEL
BRIDGE
SHERBURNE
CAMELS HUMP STATE PARK
ROXBURY STATE FOREST
STATE FOREST

APPENDIX H: CULTURAL RESOURCE MANAGEMENT

PURPOSE:

The physical remains of all of the past types of human activity and/or occupation are "Cultural Resources". They are a non-renewable resource and a part of the history of the country. Cultural resources belong to the American people and are to be protected and utilized to further the understanding and appreciation of the past. The study and interpretation of these sites can also help the public understand the present, and hopefully provide information that will help in planning for the future.

The Forest Service, like all other Federal agencies, is required to inventory, evaluate, protect and enchance the cultural environment on the land it manages. The overall objectives of the Cultural Resource Management (CRM) program are defined by a set of Federal Laws (PL 93-291; PL 96 515), regulations (36CFR60; 36CFR800; 7CFR3100) and an Executive Order (EO11593). These laws and regulations require that certain information be collected, analyzed and processed to assure that Federal Agencies will "administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations:" (EO11593).

The Green Mountain National Forest is committed to retaining and protecting a representative sample of every type of site that occurs within the forest. As time and funding permits, all of the sites worthy of the National Register of Historic Places will be nominated. The Forest has made an additional commitment to save and protect a number of sites that, while not worthy of the register, have research and/or interpretative value.

OVERVIEW OF CULTURAL RESOURCES:

Human occupation and/or utilization of the Green Mountain National Forest (GMNF) could have begun at the close of the Ice Age, 10-11,000 years before the present. The periods of utilization have been arbitrarily divided into three periods; prehistoric, protohistoric and historic. Prehistoric refers to the time for which we have no written documents or history. Protohistoric is that period after Europeans arrived in the New World, but before they moved into and occupied the area in and around the GMNF. Historic is the time after Europeans moved into and occupied the areas in and around the GMNF, and continues to the present.

The sites of Indian utilization are, for the most part, not visible on the surface of the landscape. Time, historic land disturbance and soil accumulation have buried most of the evidence from view.

At present, there are 13 known prehistoric archeological sites on the forest. The oldest of the sites is thought to date to a period some 6,000 years before the present. The paucity of identified prehistoric sites does not reflect the number of sites present, but rather, the lack of intensive testing which is necessary to find them.

There are no known sites on the forest from the protohistoric period. Such sites would probably be small, single purpose sites that represent a short occupation span. Examples of such sites would be trappers' camps, military encampments, or perhaps the shelter for an exploring or surveying party.

Cellar holes, stonewalls, apple trees and old fields are all that remain of most of Vermont's historic old hill farms and industrial sites. You can expect to find these cultural remains wherever you go on the National Forest. Over 150 historic archeological sites have been identified on the Green Mountain National Forest. The total is expected to reach about 700 sites when the survey is complete. The types of sites includes mines, charcoal kilns, quarries, farmsteads, small industries, churches, schools, mills and logging camps. These sites span a time period from the 1780's up through 1940.

In 1978 the GMNF contracted with the Institute of Conservation Archaeology to compile an overview of cultural resources on the National Forest. (A Cultural Resource Overview of the GMNF, Vermont Contract #01-3186, 1978 by the Institute of Conservation Archaeology, Peabody Museum, 11 Divinity Ave., Cambridge, MA 53203). The document provides general information relevant to the history, ethnography and prehistory of the region.

In the overview the National Forest was divided into sensitivity zones to reflect the probability of prehistoric sites occurring. This was done because no site specific information about prehistoric occupation or exploitation was available. The factors used in defining sensitivity zones were topography, slope, aspect, proximity to water and elevation. The sensitivity maps are being updated as more prehistoric sites are identified within the Forest.

Potential historic sites were identified based on maps and information from the 19th and early 20th centuries. Approximate site locations were plotted on Forest Service topographic maps and the available information concerning each site was recorded in a master file. Information in the master file is updated with the results of on-site surveys when they are performed. Maps and information in the master file are for agency use only. Public access to this information must be controlled in order to assure protection of the sites.

Cultural Resource Management:

Cultural Resource Management is based upon the concepts of conservation and Federal stewardship. Direction and advice for the program are provided by an archeologist/historian. The goal is the protection and preservation of a representative sample of all types of architectural and archeological sites that occur in the forest. Although the program is overseen by an archeologist, the focus is on managing the resource, not the excavation and destruction of sites.

Within the forest there are a finite number of archeological sites. Many sites have been severely impacted by vandals and/or natural forces, or are not of National Register caliber. Pending evaluation, the forest will practice non-discriminatory preservation to assure that the best of each type of site is still in existence when the inventory has proceeded to the place where nominations to the National Register of Historic Places can be prepared.

Cultural resource management activities can be categorized in the following ways:

1. Survey - the inspection of the landscape for sites
2. Inventory - the mapping and recording of information about sites
3. Evaluation and nomination of eligible properties to the National Register of Historic Places.
4. Site protection and/or monitoring
5. Mitigation - the excavation and/or testing of sites that will be impacted by a proposed project or the denial of a proposed project.
6. Stabilization and/or enhancement - the expenditure of the necessary funds to maintain or improve a site.
7. Interpretation - preparation of a site or community of sites for interpretation for the education and enjoyment of the public.

The Forest has signed a Memorandum of Agreement with the Vermont Historic Preservation Officer, and will soon sign one with the New York State officer. The agreement concerns the standards for cultural resource inventory and evaluation of sites, and how nominations for National Register Sites will be prepared.

CRM activities are performed to protect cultural resources and to develop a solid information base about them. Our goals are to inventory 100% of the GMNF, to expand the information about particular types of resources and to refine predictive modelling capabilities. Most of the CRM activities performed to date have been undertaken in direct response to surface disturbing project proposals such as timber sales, facility construction or alteration and trails construction or proposals such as land sales or exchanges which may compromise cultural resource protection. All projects which may compromise cultural resources are at least surveyed. Other activities are undertaken as monies are available.

Since 1979 cultural resource surveys have been conducted prior to all planned land disturbance activities. Such activities include timber sales, road construction, trail and campground construction and trail relocation. Land exchanges are also studied to prevent the loss or destruction of valuable cultural resources on land passing into private ownership. In the event the lands being exchanged include sites eligible for the National Register, protective clauses will be inserted into the deeds to insure their continued protection.

The master file of known information is consulted prior to doing any cultural resource survey. Information about new sites or additional information about old sites is added to the master file as it becomes available. Every site identified during the survey is sketch mapped, given a site identification number and located precisely on topographic maps.

All cultural resources found during the survey are flagged and avoided until they are evaluated for significance. Criteria for the National Register of Historic Places, 36CFR60.6, is used for this evaluation. Adverse effects to all qualified sites will be mitigated in accordance with 36CFR800. Given the labor intensive nature of archeological excavations, every effort is made to protect sites when encountered.

Nominations of groups of different types of sites, called thematic nominations, for the National Register of Historic Places began in 1985. Such an approach makes it possible to evaluate by comparison, instead of the more expensive method of looking at one site, or a small cluster of sites, at a time. Thematic inventory and evaluation of cultural resources will focus on several discreet subjects such as prehistoric sites, farmsteads, industrial sites and logging camps (Table H.1). History and anthropology graduate students from accredited colleges and universities will be encouraged to conduct the research for their theses and dissertations in these thematic subject areas.

Every effort will be made to protect cultural resources not meeting the criteria for the National Register of Historic Places if they have local significance, or interpretative and/or research value. Standards appropriate to ensure protection of such sites are described in Chapter IV of the Forest Plan.

TABLE H.1 THEMATIC INVENTORY and EVALUATION of CULTURAL RESOURCES

Theme	Project Period	Objectives
Prehistoric Sites & Travelways	1984 - 1987	•Site evaluation criteria •Refined prediction model •Dissertation
Charcoaling & Iron Industry	1982 - 1988	•Evaluation criteria •Publication
Logging Industry	1987 - 1990	•Site evaluation criteria •Increased inventory •Dissertation
Civilian Conservation Corps	1985 - 1991	•Evaluation criteria •Publication
Farmsteads & Rural Communities	1990 - 1992	•Site evaluation criteria •Increased inventory •Dissertation
Rural Industry	1992 - 1995	•Increased inventory •Site evaluation criteria •Dissertation
Town SM & Recreation	1995 - 1998	•Increased inventory •Indepth information about recreational use •Dissertation
GMNF Administrative History	1998 - 2002	•Organization of information •Dissertation •Publication

Monitoring and Maintenance:

The heavily wooded, mountainous terrain and financial limitations render site protection a task that must be shared by all field going personnel. Sites will be inspected on a regular basis, and also will be visited randomly by field going personnel who are in the vicinity. Inspections will be for the purpose of ascertaining if there has been any damage to the site from vandalism or natural forces. A report of disturbance will be followed by an inspection by the archeologist. A recommendation will be made to the Forest Supervisor on the actions and funds needed to repair the damage.

Sites eligible for the National Register will be inspected at least once a year by a trained Cultural Resource Paraprofessional or the Forest archeologist. * Unevaluated sites or those deemed not eligible for the National Register will be inspected at least once every 4 years by someone from the District where the sites are located. Additional site visits will be conducted if there is a report of vandalism. Known sites are to be inspected by each person who is in the vicinity and disturbances by man or natural forces will be reported. Recommendations for any necessary repairs, stabilization or enhancement will be made to the Forest Supervisor. A budget estimate will accompany the recommended work.

APPENDIX I: RESTRICTIONS ON MINERAL ACTIVITIES

This appendix describes the resource conditions and land uses which are most likely to affect mineral exploration, development and extraction activities on NFS lands outside of the Wilderness and NRA.

No mineral development or extraction will be allowed on 87,400 acres of Wilderness and the National Recreation Area. Decisions on whether or not to allow leasing on 27,300 acres of Management Area 9.2 will be deferred until those newly acquired lands are inventoried and reassigned to other Management Areas.

Minerals exploration, development and extraction can occur on about 128,900 acres of the GMNF if standard stipulations are followed. Another 81,800 acres may be leased, but no surface disturbance allowed. This 81,800 acres covers a variety of situations where other surface values are too important to allow disturbance by mining activities. These include: primitive recreation areas, critical wildlife habitats, fragile soils, riparian areas and important recreation facilities. These situations are described below later in this appendix.

An alternative was considered that would not have allowed leasing on these 81,800 acres. This alternative was not chosen because the Forest Service has the ability to enforce a no-surface disturbance stipulation and because potentially, it would reduce income from leases. The 1948 Leasing Law for Acquired Lands, gives the Land Management Agency authority to add whatever stipulations are necessary to achieve their management objectives. This lease is a binding document that all parties must adhere to.

The no-surface occupancy stipulation has been used in other places and has not been successfully challenged after the lease was issued. The Interior Board of Land Appeals with its many administrative judges has long upheld the validity and applicability of the no-surface disturbance stipulation.

The acreages given in each category do not overlap with each other. For instance, there are actually 13,450 acres of municipal watersheds on the GMNF, but many acres are roads, trails, deer wintering areas, streams, open water, or wet, steep and fragile areas. Since these acres are counted elsewhere, only 11,421 are listed for the municipal watershed.

MUNICIPAL WATERSHED

There are ten municipal watersheds on the Green Mountain National Forest totalling 11,421 acres. The Bennington watershed is the largest, with 6,420 acres on NFS lands. These watersheds are used for domestic water supplies.

Water quality could be jeopardized by activities associated with mineral exploration and development. Only nonsurface disturbing activities will be allowed in order to remove all risks to water quality. Given this restriction, the large size of the Bennington watershed poses some problems to accessing the minerals beneath it.

DEVELOPED RECREATION AREAS

There are 33 developed recreation areas. They include campgrounds, picnic grounds, boat landings, and winter sports areas, totalling 3,706 acres. They are scattered throughout the forest. With the exception of 13 winter sports areas, developed recreation areas are less than 28 acres in size.

Mineral activities could potentially reduce the recreational experience by changing the visual quality and increasing noise. Also, activities might affect the safety of recreational users.

Only nonsurface disturbing activities will be allowed within 200 feet of these areas to reduce the risk of adverse effects. In most instances, a 200 foot buffer will be sufficient to mitigate adverse effects to visual quality.

Prohibiting surface disturbing activities could affect mineral availability by eliminating road construction and drilling within the no occupancy area. However, with the exception of the winter sports areas, all of these areas are small and scattered. Subsurface mineral information can very likely be collected from outside these small acreages.

DEVELOPED CAMPS AND ADMINISTRATIVE SITES

There are 5 developed camps and administrative sites. Mineral activities, if permitted too close to existing sites, could create safety and conflicting use problems. These might result from increased vehicle traffic noise, and visual impacts.

Only activities which do not disturb the surface will be allowed. In most instances a 200 foot buffer will be sufficient to mitigate any adverse effects. There may still be some temporary noise effects. All of these areas are small and scattered so minerals will still be readily available even though surface disturbances are prohibited.

WINTER DEER YARDS

There are several deer yards on the Forest. They are commonly 200-1000 acres in size. There are two concerns: noise and loss of habitat. Site clearings, seismic work, drilling, vehicle traffic, etc., all create noises which will probably disturb deer. The impact of this will be most significant during critical high stress winter periods. Loss of habitat may occur when vegetation is cleared for roads and drilling sites. Increased noise and loss of vegetation may increase stress and cause some deer to die.

Experience with logging activities shows that a 200 foot setback from critical areas is sufficient to mitigate the adverse effects of noise. Since logging and mineral activities create similar noise disturbances, a 200 foot setback should provide sufficient buffer. Also, this 200 foot setback is sufficient to prevent damage to the critical habitat.

No surface disturbance will be allowed at any time in the softwoods providing winter cover since their amounts and location must be stable.

No surface disturbance will be allowed in the hardwood portion of the wintering area during the critical high stress winter months. These activities could occur the rest of the year with standard stipulations. These stipulations would eliminate the risk of disturbing deer during their critical periods. Our experience with other earth disturbing activities shows that disturbance during other times does not have adverse impact.

MANAGEMENT AREA 6.1

Management Area 6.1 emphasizes Primitive recreation and ranges in size from 2000 to 5000 acres. M.A. 6.1 has year round users; skiers in the winter, hikers in other months. Earth disturbing activities would adversely affect the Primitive recreational experience by decreasing visual quality and increasing noise.

To meet the objectives of Management Area 6.1, we will not allow surface disturbance. There may still be some noise effects from mineral activities adjacent to these areas. However, these effects will be short term. Prohibiting surface disturbances could affect mineral opportunities by eliminating road construction and drilling within the restricted area. Oil and gas beneath these areas may be collected from outside. Given the restriction of no surface disturbance, the size of M.A. 6.1 lands could impair easy access to the minerals.

WETLANDS, STEEP SLOPES AND SHALLOW SOILS

There are several thousand acres of these lands on the Forest. They range in size from 5 to 1000 acres and are scattered. The primary concern is that mineral activities could result in degradation of water quality, loss of site productivity and loss of wetland habitat. These lands are particularly sensitive to any surface disturbing activities and rehabilitation/mitigation techniques, although available, are costly.

Oil and gas activities pose additional problems because of the tank batteries, pipelines, 2-3 acre drill pads, and disposal of drilling fluids. Further, roads and drill pad construction could block or impede water movement due to compaction, which in turn can disrupt the sensitive ecology of the riparian vegetation and wildlife habitat. More excavation is needed to construct drill pads and roads on steep slopes than on relatively flat lands. When shallow soils have been disturbed, it is often difficult to re-establish vegetative cover. Also, there is concern that mineral activities could reduce the recreational value by changing the visual quality and aesthetics of these areas.

Surface disturbance of wetlands and steep slopes is not allowed and a buffer or filter strip surrounding these areas will be maintained. The width of the filter strips will vary depending upon slope, soil conditions and general resource sensitivity. In most instances, the filter strip will be greater than 200 feet.

This width is sufficient to ensure compliance with Forest Service best management practices. This requirement reduces the acres which are readily available for mineral entry., This will affect the ability to inventory the mineral resource and depending upon the size of the area, may affect the ability to develop minerals if commercial resources are discovered.

SPECIAL USE PERMITS AND AREAS UNDER MEMORANDAS OF UNDERSTANDING (MOU)

There are many special use and MOU areas on the Forest. Most of these areas are small or narrow rights-of-way, etc.. These areas are scattered throughout the Forest. The primary concern is conflict of use and possible damage to special use investments from mineral activities.

Surface disturbances will be prohibited on or near the Special Use areas. Buffer zone distance varies depending on special use, however, in most instances, 200 feet is the minimum. This would probably not adversely affect mineral availability because the areas are small, narrow and scattered.

ROADWAYS

There are over 200 miles of road on the Forest. These roads are often used for motorized recreation. There are two concerns with mineral activities impacts on visual quality (activities visible from the road) and safety (conflicts in traffic use).

Surface disturbing activities will be prohibited within 200 feet of roadways. This reduces the risk of changing the visual quality. Disturbances must be set back from roadways at a sufficient distance to ensure maintenance of existence visual quality. The distance would be variable but in most instances would be 200 feet or more. Conflict between mineral activities and other traffic would be minimal. Restrictions on road side zone will not reduce the total acres available for mineral activities appreciably.

DESIGNATED TRAILS

There are 512 miles of trail. The primary concern is with use conflict and visual impacts. Vegetative buffer will separate hikers from mineral activities and screen visual impacts.

To protect the visual quality and recreational experience, surface disturbing activities will be prohibited Disturbances must be well screened from trails. The distance would be variable but in most instances would be 200 feet or more. Conflict between mineral activities and recreation would be minimal. This would reduce the total acres available for mineral activities; however the areas are narrow, scattered and effects would be minor.

RANGE

Presently there are 256 acres of open pasture, grazing and hay production on the Green Mountain National Forest. Grazing is from early May through October. Mineral activities could conflict with grazing use by temporarily taking some lands out of production and allowing cattle to escape from some pastures.

Surface disturbing activities will be prohibited on pastures in order to protect the condition of the pasture and the herd. This slight amount will not significantly affect minerals availability.

CULTURAL RESOURCE SITES

This resource is covered by USDA stipulation 10 and the Historic Preservation Act; no other stipulations are necessary. When an application is received, we will conduct a cultural resource survey. If evidence is found of important cultural resources, the area will be identified and the applicant will be notified of the required setbacks.

THREATENED AND ENDANGERED SPECIES (Bald Eagle Nests)

Standard stipulation clause 10 requires compliance with existing laws and rules and regulations. The Forest Service will not permit surface disturbing activities within 1320 feet of a known nesting site. This restriction has proven successful in mitigating the adverse impacts of similar activities such as logging.

LAKES, STREAMS, AND OPEN WATER

The Clean Water Act as amended, Agency regulations and policy, and State statutes require the protection and maintenance of water quality. Mineral activities immediately adjacent to or within these areas would increase the risk of water degradation. Therefore, landss immediately adjacent to or beneath lakes, streams, and open water cannot be disturbed.

OTHER AREAS

Most lands outside of the above categories are not as sensitive to surface disturbance so exploration, development and extraction will be permitted if standard restrictions are followed. These standard restrictions will require project specific environmental analysis to precede all surface disturbing activities. If the resources of any areas are likely to be unacceptably affected, then the disturbing activities will be prohibited or mitigated.

APPENDIX J: SIGNIFICANT STREAMS

The recreational, water quality and aesthetic values of certain sections of streams will be protected or enhanced because of their significance to the public (Table J.01). These stream sections crisscross public and private lands within the Proclamation Boundary of the National Forest so ensuring their long term protection will require cooperation with other landowners.

Proposed management activities on National Forest lands will be planned so that they complement the streams values and not detract from them (Chapter IV, Section E).

All of the stream sections inventoried by the Heritage Conservation and Recreation Service (HCRS) as possible candidates for Congressional designation as Wild, Scenic or Recreation Rivers are included in this listing (DEIS Appendix G). The values inventoried by HCRS will be protected by following the standards and guidelines in the Plan (Chapter IV-E, Recreation/Visual). This will maintain the option of adding these streams to the National System if future studies determine that is appropriate. More specific management standards and activities will be proposed to enhance the special values of those protected stream corridors while implementing the Forest Plan.

Acquisition of additional public lands along these streams and providing improved public access to them will receive high priority over the next ten years.

Table J.01 Sections of Significant Streams

Map[1/] #	Stream	HCRS[2/] Stream (*=Yes)	Section of Stream From	Section of Stream To	Length of Stream (miles)	Length on NF (miles)
MIDDLEBURY DISTRICT:						
1.	New Haven River	*	Proclamation Boundary	Proclamation Boundary	6.0	0.7
2.	Abbey Brook		Proclamation Boundary	Abbey Pond	1.6	1.0
3.	Middlebury River		Proclamation Boundary	Fork of North and Middle Branches	1.1	0.7
4.	North Branch Middlebury River		Confluence with Middle Branch	Confluence with Alder Brook	3.3	1.1
5.	Middle Branch Middlebury River		Confluence with North Branch	Ripton Village	1.2	0.7
6.	South Branch Middlebury River		Confluence with Middle Branch	Bread Loaf Campus	1.8	0.7
7.	Sucker Brook		Lake Dunmore	Forest Road 32	3.2	2.8
8.	Leicester Hollow Brk		Neshobe River	Source	2.4	2.1
9.	Steam Mill Brook		Furnace Brook	Kettle Brook	1.6	1.2
				DISTRICT TOTAL	11.0	

Table J.01 Sections of Significant Streams (continued)

Map[1/] #	Stream	HCRS[2/] Stream (*=Yes)	Section of Stream From	Section of Stream To	Length of Stream (miles)	Length on NF (miles)
ROCHESTER DISTRICT:						
10.	Stetson Brook		Proclamation Boundary	Last road crossing	1.8	1.3
11.	Austin Brook		Proclamation Boundary	End of Forest Road 25	1.6	1.6
12.	White River	*	Proclamation Boundary	Source above FR 55	17.0	1.8
13.	Hancock Branch		White River	One mile above Texas Falls	4.2	1.6
14.	West Branch		Proclamation Boundary	Bingo Brook	2.7	0.3
15.	Bingo Brook		West Branch	Falls Brook	3.4	2.7
16.	Brandon Brook		West Branch	Brandon Brook Picnic Area	3.4	2.6
17.	Chittenden Brook		Brandon Brook	Chittenden Campground	1.5	1.5
18.	Michigan Brook		Proclamation Boundary	Morrill Brook	2.3	0.2
19.	Townsend Brook		Proclamation Boundary	Fork at end of road	2.0	0.8
				DISTRICT TOTAL		14.2

Table J.01 Sections of Significant Streams (continued)

Map[1/] #	Stream	HCRS[2/] Stream (*=Yes)	Section of Stream From	Section of Stream To	Length of Stream (miles)	Length on NF (miles)
MANCHESTER DISTRICT:						
20.	Meadow Brook		Proclamation Boundary	Two miles up stream	2.0	2.0
21.	Feller Brook		Proclamation Boundary	Wallingford Pond	2.8	1.2
22.	Otter Creek	*	South Wallingford	North Dorset	7.3	0.4
23.	Homer Stone Brook		Proclamation Boundary	Little Rock Pond	1.8	1.0
24.	Big Branch		Proclamation Boundary	Ten Kilns Brook	4.0	3.2
25.	Lake Brook		Big Branch	Griffith Lake	3.2	3.2
26.	Big Black Branch		Big Branch	Beaver Pond	1.5	1.5
27.	Mad Tom Brook		Proclamation Boundary	Two miles up stream	2.0	1.0
28.	Bourn Brook		Proclamation Boundary	Bourn Pond	4.8	3.6
29.	Lye Brook	*	Proclamation Boundary	Source	2.8	2.8
30.	Roaring Branch	*	Proclamation Boundary	Branch Pond	6.4	5.2
31.	South Fork Roaring Branch		Roaring Branch	Glastenbury Town Line	1.8	1.8
32.	Fayville Brook		Proclamation Boundary	Confluence of Black Brook	4.0	0.0
33.	Walloomsac Brook	*	Proclamation Boundary	Confluence of Bolles Bk & City Stream	1.8	1.6
34.	Bolles Brook	*	Walloomsac Brook	Source	4.6	4.1
35.	Bickford Brook		Bolles Brook	Source	4.0	4.0

Table J.01 Sections of Significant Streams (continued)

Map[1/] #	Stream	HCRS[2/] Stream (*=Yes)	Section of Stream From	Section of Stream To	Length of Stream (miles)	Length on NF (miles)
MANCHESTER DISTRICT: (cont'd)						
36.	Hell Hollow Brook		Bolles Brook	Source	2.0	2.0
37.	City Stream		Walloomsac Brook	Woodford	2.4	2.0
38.	Stamford Stream		City Stream	Stamford Town Line	3.2	3.1
39.	West River		Along Proclamation Boundary	across Weston-Mt. Holly Town Line	1.0	1.0
40.	Greendale Brook		Proclamation Boundary	Greendale Campground	2.7	1.5
41.	Utley Brook		Proclamation Boundary	Weston Town Line	4.4	2.1
42.	Mount Tabor Brook		Utley Brook	Last culvert on FR10	1.7	1.7
43.	Winhall River	*	Proclamation Boundary	Source	8.0	1.8
44.	Deerfield	*	Proclamation Boundary	Source	12.8	7.4
45.	Rake Branch		Deerfield River	Redfield Brook	1.8	1.8
46.	Redfield Brook		Rake Branch	Little Pond Brook	2.1	2.1
47.	Glastenbury River		Deerfield River	Blind Brook	1.7	1.7
48.	West Branch Deerfield River		Proclamation Boundary	Reservoir Brook	8.9	1.5
					DISTRICT TOTAL	66.3

1/ Refer to detailed maps maintained at Forest Service offices.

2/ Heritage Conservation and Recreation Service prepared the list of potential Wild, Scenic, and Recreational Rivers.

APPENDIX K: WHITE ROCKS NATIONAL RECREATION AREA

INTRODUCTION

White Rocks National Recreation Area (NRA) includes 36,400 acres on the north half of the Manchester Ranger District, Green Mountain National Forest in the Eastern Region of the Forest Service. The area lies within the towns of Dorest and Peru, Bennington County; towns of Mt. Tabor, Mt. Holly and Wallingford, Rutland County; and the town of Weston,Windsor County, State of Vermont. See pages 2 and 3.

The area had been in large timber company ownership from the early 1800's to the 1930's. Early management emphasis was on softwood lumber production. This was followed by the production of charcoal from the mid-1800's to early 1900's. Emphasis in the 1900's has been on hardwood sawlog and pulp production. Forest Service purchase in the area began in the early 1930's. Management emphasis has been on quality timber production, dispersed recreation and wildlife management.

In the 1970's, the Roadless Area Review and Evaluation (RARE II) process identified three areas for study within the NRA: Devils Den, Griffith Lake and Wilder Mountain.

In 1983, the Vermont Congressional delegation held public hearings in several Vermont communities and worked with public interest groups to develop a management strategy agreeable to all parties. As a result of these efforts, Public Law 98-322 was developed, designating 36,400 acres of the Manchester Ranger District as the White Rocks National Recreation Area. Presidential signing came on June 19, 1984.

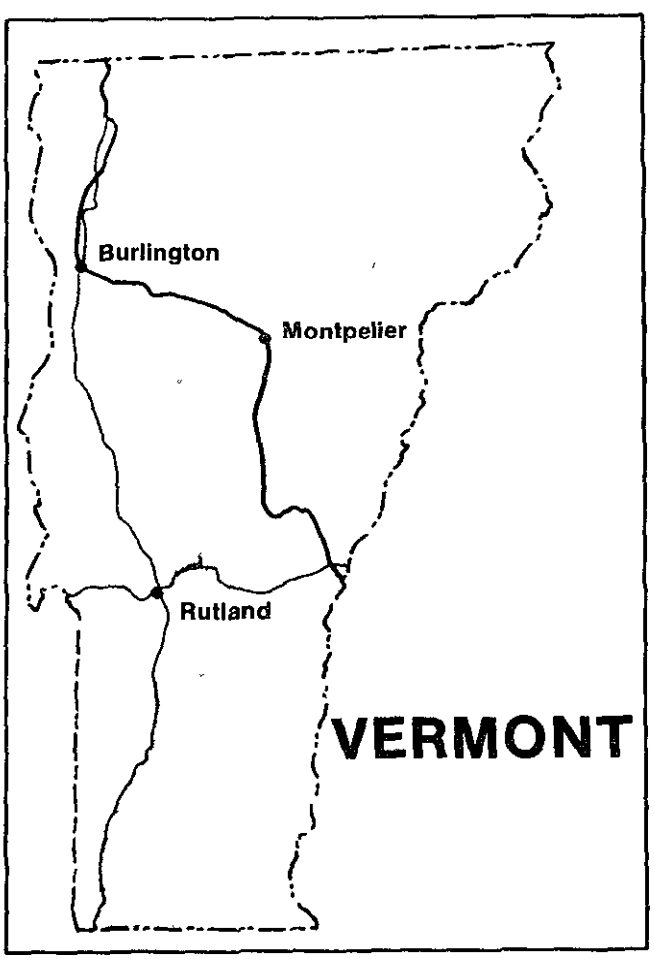
PURPOSE

This plan is prepared to meet the requirements of Public Law 98-322 in preparing a Management Plan for the White Rocks National Recreation Area prior to December 31, 1985. This report will be a part of the Green Mountain National Forest Land Management Plan as an appendix.

Plans to implement recommendations of this study as well as methods to monitor and evaluate the success of management actions will also be developed.

A detailed listing of inventories, analysis, alternatives considered, evaluation, public involvement, and resource maps can be found in the White Rocks National Recreation Area Management Plan (1985), which is located at the Green Mountain National Forest, 151 West Street, Rutland, Vermont, 05701 and at the Manchester Ranger Station, Routes 11 and 30, Manchester Center, Vermont, 05255.

EASTERN REGION
USDA Forest Service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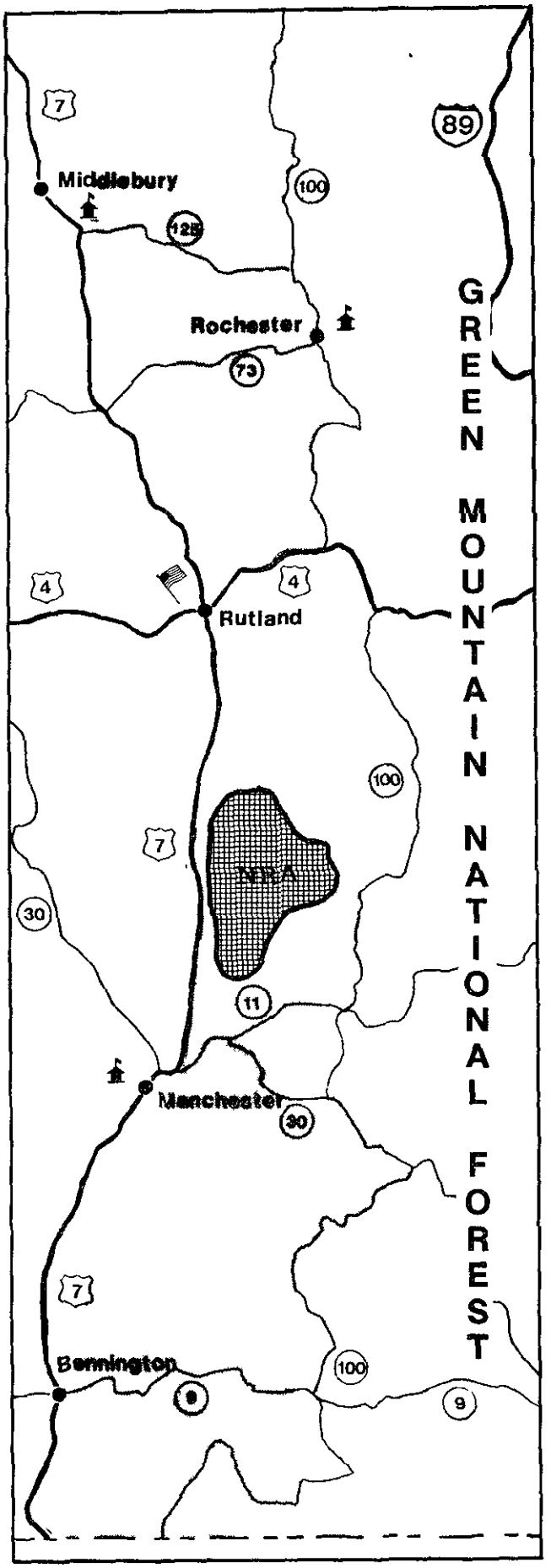
Montpelier
Rutland
VERMONT


Middlebury
Rochester
Rutland
Manchester
Bennington
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GREEN MOUNTAIN NATIONAL FOREST
7
89
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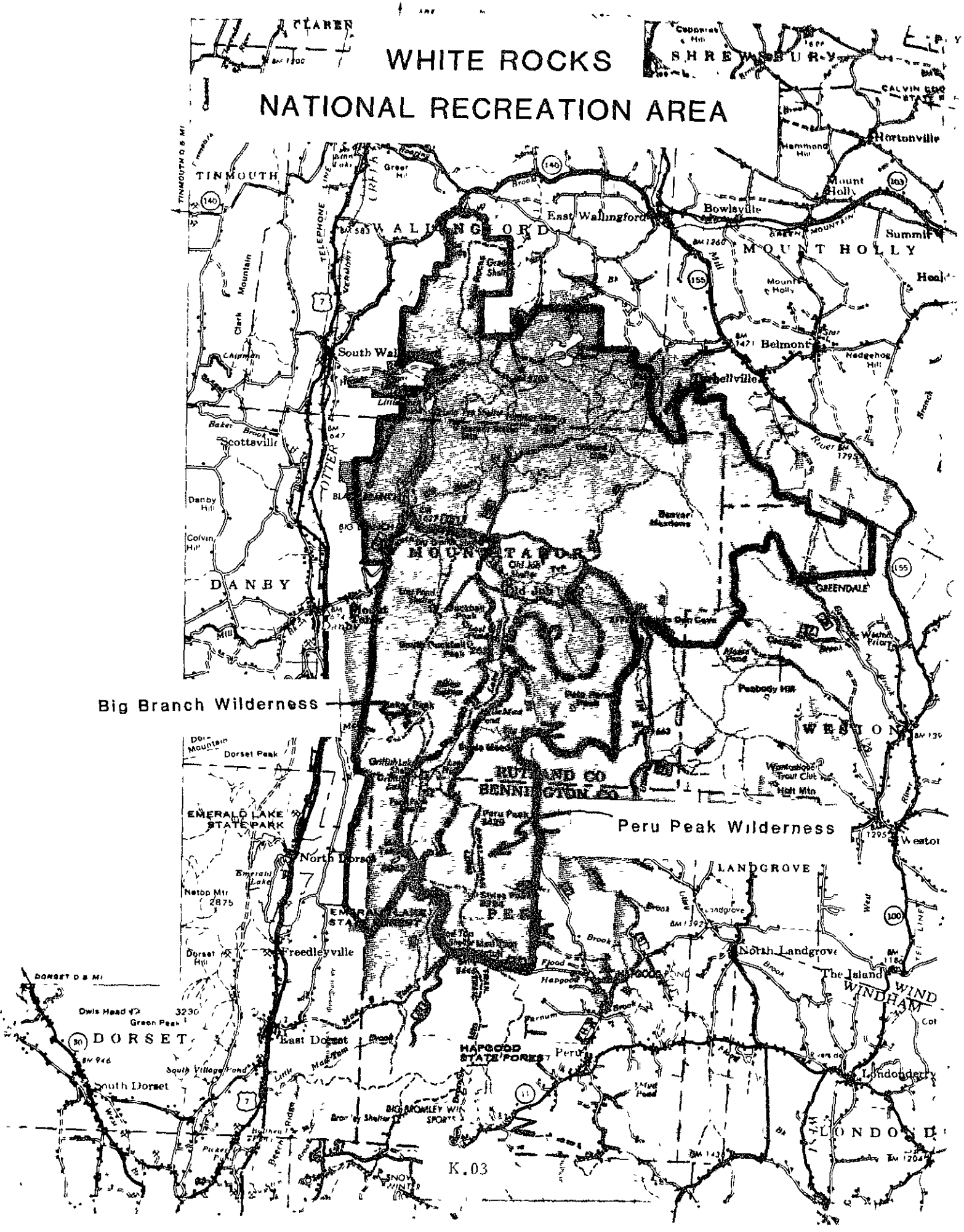
WHITE ROCKS NATIONAL RECREATION AREA



PLANNING PROCESS

In order to develop a comprehensive management plan for White Rocks National Recreation Area (NRA) the following planning process was developed:

a. Identify issues, concerns and opportunities
b. Develop selection criteria for preferred alternative
c. Collect data on current and expected conditions
d. Situation Assessment
   - Describe current and expected future conditions as they relate to major issues, concerns, and opportunities
   - Identify resource data deficiencies.
e. Formulate Alternative
   - Develop a range of alternative management strategies to respond to major issues, concerns, and opportunities.
f. Evaluate Alternative Management Strategies
   - Estimate effects against major issues, concerns, and opportunities
   - Evaluate against selection criteria.
g. Identify preferred alternative and prepare draft plan.

CORE GROUP

Early in the planning process we asked a small group of people (Core Group) to help us develop the NRA plan. They were people who had worked with the Vermont Congressional Delegation in developing the Vermont Wilderness Bill which established the NRA.

The group included representatives from local chapters of national environmental organizations, three local forest user groups, two Vermont State Representatives, the State Planning Office, and the Vermont Fish and Game Department. The group was a valuable source of public input and helped clarify Congressional intent.

ISSUES AND CONCERNS

Early in the NRA planning process, people interested in the White Rocks Area had identified several issues to be addressed. The legislative process, the Land Management Planning process, core group meetings, and other publics surfaced issues. National Forest employees expressed concerns they had regarding the management of the NRA.

The issues and concerns noted were:

- Location and/or intensity of management activities,
- Availability of biological evidence to guide management of deep woods species,
- Quality of habitat available for deep woods species,
- Management of deer wintering areas,
- Effective road closures to insure resource protection and management efficiency while meeting public access needs,
- Control of overuse and abusive recreation use that impacts other users and resources,
- Protection of special areas from overuse and resource deterioration.

SELECTION CRITERIA

The following selection criteria were developed to assist in formulating and evaluating alternative management strategies:

Meet Direction of Congress

Throughout the study and passage of Wilderness and National Recreation Area legislation, Congress provided direction for the ultimate management of these areas. All alternatives met the intent of this direction as well as all applicable Federal, State, and local laws and regulations.

Ecologically Sound

Any attempt to manage the area for future users must assure survival of the ecosystem. We recognize that we cannot manage for sustained yield of individual elements of the ecosystem without sustaining the system itself.

Practical and Economically Feasible

Service-wide recreation and wildlife management budgets have been decreasing in recent years. This trend can be expected to continue. The best management alternatives should be feasible in light of current and projected budgets.

Acceptable to Interested Publics

The best management alternative should have a high level of acceptance by State and local governments and other interested people. Public comments prior to and following issuance of draft documents will indicate levels of acceptance and help determine the best management alternative.

ASSESSING CURRENT STATUS OF ALL RESOURCES

The time frames imposed by PL 98-322 dictated that the assessment of the resources of the NRA be done with data currently available. Large amounts of resource data on the NRA were found to be in existence. The Forest Planning Process had developed resource data based on the area as well as various resource situation papers. District resource files proved a valuable source of detailed information on the area.

Local user groups, interest groups, and core group members proved to be a valuable source of on-the-ground information. The State of Vermont Recreation and Fish and Wildlife Departments assisted with information and assessments by their resource specialists.

Assessing the Recreation Resource

The Forest used the inventory system described in Recreation/Visual Resource on the Green Mountain National Forest (1983) to evaluate the recreation and visual resources in the NRA. The inventory system integrates and refines three established systems into one. The three systems used were:

- Recreation Input to Land Management Planning (FSH 1902.12, Chapter 500)
- The Visual Management System (USDA Handbook 462)
- The Green Mountain National Forest Recreation Management Plan (1978).

From these systems, five measurable inventory items were identified. The first is the visual condition which reflects how natural the environment appears. The second is people density which reflects the opportunity for solitude or to socialize. Distance from human activity is the third and reflects the opportunity for remoteness. The fourth is the size of area which reflects the opportunity to experience the vastness of nature. Finally, activity characterization reflects the opportunity to pursue specific recreation activities.

The Forest used this system to:

- Inventory existing values and opportunities
- Inventory potential values and opportunities
- Identify value impacts and conflicts
- Identify alternative opportunities
- Direct management of the selected alternative
- Monitor and evaluate resource impacts and success of management objectives.

The system proved valuable as it was able to work with the level of data available, was understandable to resource managers and interested publics, and had a high level of public acceptance.

Assessing the Wildlife Resource

The Habitat Evaluation Procedure (HEP) was used to evaluate the wildlife resource in the NRA. The system was developed by the U. S. Fish and Wildlife Service to evaluate various wildlife habitats in the New England area. Forest wildlife biologists worked with biologists from the State of Vermont Fish and Game Department to more accurately reflect values in the NRA.

The system proved valuable in not only assessing the current suitability of wildlife habitat for the identified deep woods and edge species, but also allowed the Forest to develop long-term vegetative composition objectives for the NRA.

MANAGEMENT ALTERNATIVES

A range of alternative management strategies was developed to respond to the major issues and concerns.

Meetings with the core group and other groups such as the Green Mountain Club, the Vermont Association of Snow Travelers, and individuals familiar with the area help develop the range of alternatives. The range reflects minimum management a low, moderate, and high intensity of development.

Comparison of Management Alternatives

Management alternatives were compared in terms of how well they addressed the specific issues and concerns identified. In the development of issues and concerns, specific elements of a problem were identified as being key to mitigating or resolving the problem. There elements are:

- Capacity for primitive and semi-primitive recreation opportunities
- Parking capacity
- People distribution
- Miles of road and area accessible for management
- Vegetative composition
- Bobcat and fisher habitat
- Snowshoe hare habitat
- Bear habitat
- Edge species habitat

Alternatives were compared in terms of the total number of problems they were able to resolve, the degree to which problems were resolved, as well as the latitude each alternative offered for future management.

SELECTION OF PREFERRED ALTERNATIVE

One of the five alternatives described in Appendix E of the DEIS was selected to become part of the Final Forest Plan. The major program elements of that alternative are described on the following pages and have been incorporated into the program of work outlined for the entire Green Mountain National Fores.

Table K.01 Summary of Recreation Characteristics

Characteristics	Final Plan
SUMMER	
Travelways	
Miles	40
Density (MI/1000 Ac)	1.10
Capacity (PAOT)	240
Facilities (PAOTS)	
Overnight	130
Parking	120
Other	
Summer Capacity	700
Level of Development	VL
WINTER	
Travelways	
Miles	61.0
Density (MI/1000 Ac)	2.7
Capacity (PAOT)	360
Facilities (PAOTS)	
Parking	160
Level of Development	MOD
Winter Capacity	750
Capacity - Year Round	640
Average Development Level	VL

Table K-02 Summary of Wildlife Characteristics

Characteristic	Final Plan
Permanent Openland	558 Acres Annual Program 55-110 Acres/Year 1st Decade: 110-165 Acres/Year
Pioneer-Aspen Community	590 Acres Annual Program 15 Acres/Year 1st Decade: 30 Acres/Year
Deer Wintering Areas	Winter Surveys Annual Program Manage 1300 Acres of Deer Wintering Areas Annual Program 13 Acres/Year 1st Decade: 26 Acres/Year
Snowshoe Hare Habitat Conifer Management Other Than Deer Wintering Areas	2,639 Acres Annual Program 38 Acres/Year 1st Decade: 53 Acres/Year
Hardwood Browse Other Than Aspen	336 Acres Annual Program 34 Acres/Year
Wetlands	Manage 10% of Wetlands 75 Acres Maintain Wood Duck Boxes Add Boxes to High Use Areas
Research	Bobcat, Bear Fisher and other species that seek remote areas

APPENDIX L: WATER SUPPLIES ON THE NATIONAL FOREST

Table L.01 Peak Flows for Gauged GMNF Watersheds 1/
(Cubic Feet per second per square mile)

Return Interval	East Creek (Rutland) 2,3/	West River (Jamaica) 2/	Battenkill (Arlington) 2/
Annual	7.87	18.56	9.78
10 Year	38.44	105.60	38.00
25 Year	47.88	154.88	48.38
50 Year	55.27	204.16	57.04
100 Year	62.96	264.57	66.54

1/ Data are from the US Geological Survey. These three stations are close to the Forest and are representative of Forest watersheds. Gauging stations on other streams are far from the Forest and do not represent runoff patterns from Forest watersheds.
2/ Location of USGS Gauging Station
3/ East Creek empties into Otter Creek, thence Lake Champlain.

Table L.02 Seven-Day Low Flows for Gauged GMNF Watersheds
(Cubic Feet per second per square mile) 1/

Return Interval	East Creek (Rutland) 2,3/	West River (Jamaica) 2/	Battenkill (Arlington) 2/
Annual	1.23	.43	.81
10 Year	.27	.039	.33
20 Year	.21	.037	.31
100 Year	.12	.035	.27

1/ Data are from the US Geological Survey. These three stations are close to the Forest and are representative of Forest watersheds. Gauging stations on other streams are far from the Forest and do not represent runoff patterns from Forest watersheds.
2/ Location of USGS Gauging Station
3/ East Creek empties into Otter Creek, thence Lake Champlain

Table L.03 Dams on National Forest

Name	Owner	Capacity (acre feet)	Stream	District
Silver Lake	Central Vt. Public Service Corp.	1310	Sucker Brook	Middlebury
Hapgood Pond	Forest Service	32	Flood Brook	Manchester
Sucker Brook	Central Vt. Public Service Corp.	33	Sucker Brook	Middlebury
Forest Pond	Forest Service	16	Sawmill Creek	Hector

Table L.04 Wells on National Forest[1/]

Site Name	District
Chittenden Brook 1	Rochester
Chittenden Brook 2	"
Texas Falls	"
Brandon Brook	"
Robert Frost	Middlebury
Moosalamoo Site 1	"
Moosalamoo Site 12	"
Silver Lake Campground	"
Silver Lake Picnic	"
Falls of Lana	"
Ripton JCCC	"
White Rocks	Manchester
Hapgood	"
Greendale	"
Mad Tom	"
Red Mill No. 1	"
Red Mill No. 2	"
Blueberry Patch	Hector
Potomac Campground	"

1/ All wells are NF property, drilled and cased, non-community water systems

Table L.05 Municipal Watersheds on the Green Mountain National Forest

Municipality	Watershed	District	Watershed Area N.F.	Watershed Area Other	Status
Bennington	Bolles Brook	Manchester	11160	380	Active, sole source
Brandon	Leicester Hollow Brk	Middlebury	1095	100	Inactive
Bristol	Cutts Peak	Middlebury	680	70	Active, sole source
Pittsford	*	Middlebury	0	*	*
Proctor	Kiln Brook	Middlebury	190	1315	Active, partial source
Readsboro	Howe Pond	Manchester	390	1370	Active
Seward's Dairy	Feller Brook	Manchester	1540	0	Active
Sugarbush	Unnamed	Rochester	960	45	Active
Wallingford	Roaring Brook	Manchester	1180	3500	Active, sole source
Wilmington	Haystack Pond	Manchester	35	85	Inactive
		Total	17530	6865	

* The town of Pittsford has a backup supply within the Proclamation Boundary on Nickwackett Mountain. However, no land within the watershed is National Forest.

APPENDIX M: CHANGES IN LAND OWNERSHIP

Many tracts of land, totalling 34,638 acres, were acquired after the planning analysis began in September of 1981 and were not assigned to Management Areas in the Draft Plan (Table M.01). Other tracts, totalling 394 acres were either exchanged or deeded away under provisions of the Small Tracts Act (Table M.02). We have incorporated newly acquired lands within adjacent Manangement Areas because this was the most logical and apparent designation (Table M.03). We determined that no additional study or analysis was needed for these relatively small tracts.

The larger, more controversial tracts have been assigned to Management Area 9.2, which was written to keep open all options for future management of these and surrounding National Forest lands until further inventory and analysis can be done (Plan, Chapter IV, Section F). No roading, vegetative manipulation or other major activities will occur until the analysis is completed. Maps showing the location of each tract are on file at the Supervisor's Office and Ranger District offices.

Table M.01: Summary of Newly Acquired Lands

Management Area	Acreage
2.1	2,186
2.1B	5
2.2	55
3.1	2,460
4.1	276
5.1	939
6.2	943
8.1	455
9.2	27,319
TOTAL	34,638

Table M.02: Lands Exchanged or Deeded[1/] to Private Ownership

Map Code	Tract Designation	Date Acquired	Acres	Former Management Area
A	Tr. #605a, Town of Lincoln	11/19/82	56.5	3.1
B	Tr. #181, Poor	10/24/83	6.9	3.1
C	Tr. #604, Garland	08/01/85	98.3	3.1, 2.1
	Tr. #609, Dunshee	08/01/85	49.6	3.1, 2.1
	Tr. #666, Lathrop	08/01/85	77.5	3.1, 2.1
	Tr. #776, Clark	08/01/85	62.0	3.1, 2.1
	Tr. #932, Moore	08/01/85	37.2	3.1, 2.1
D	Tr. #500Aj-I, Midd. College	09/18/85	1.7	7.1
E	Tr. Storrs	09/11/82	5.1	2.1
F	Tr. #10A, Emporium Forestry Co.	07/17/84	1.4	4.1
	Tr. #63, Taylor			
G	Tr. #63, Taylor	08/16/85	0.14	4.1

1/ Deeded under provisions of Small Tracts Act

Table M.03: ACQUISITION SINCE SEPTEMBER 1, 1981

Map Code	Tract Designation	Date Acquired	Acres	Management Area
North Half:				
5	Tr. #737h-L, Green	11/12/81	749.0	3.1
7	Tr. #909, Atwood	12/07/81	190.0	6.2
8	Tr. #631, Newton	02/18/82	109.3	6.2
9	Tr. #657, Gurley	11/16/81	1.1	4.1
10	Tr. #858a, Forbes	02/22/82	92.0	4.1
11	Tr. #620, McEdward	03/18/82	120.0	3.1
12	Tr. #810b, Hawk Mountain	03/30/82	718.0	2.1
13	Tr. #652d, Horn	04/14/82	400.0	2.1
			154.0	3.1
15	Tr. #639, Town of Rochester	06/28/82	6.0	3.1
17	Tr. #649, 649a, Parker	09/29/82	105.3	3.1
19	Tr. #644, Baldwin	03/03/83	9.3	3.1
20	Tr. #737g, Green	07/26/83	20.0	2.1
23	Tr. #625, Klinck & Keiser	10/06/83	120.0	3.1
25	Tr. #640, Hooker	10/31/83	114.1	2.1
26	Tr. #809, Osborn	11/01/83	153.0	3.1
27	Tr. #652c, Horn	11/17/83	98.0	3.1
29	Tr. #757a, Daly	06/25/84	5.0	2.1B
32	Tr. #660, IP Realty Corp.	01/11/85	4.0	3.1
34	Tr. #597, Pitney	02/22/85	122.0	2.2
37	Tr. #598a, NE Land Assoc.	03/27/85	108.0	6.2
			54.0	2.2
39	Tr. #509m-r, A. Johnson Co.	08/01/85	315.0	3.1
			20.0	2.1
43	Tr. #658, Rupert	10/16/85	50.5	2.1
46	Tr. #521, Robinson	03/25/86	100.0	2.1
47	Tr. #693, Mead	10/16/85	83.0	3.1
South Half:				
1	Tr. #39, Courbin	10/15/81	17.2	9.2
2	Tr. #45, Uhlein	10/27/81	11.3	9.2
3	Tr. #69, Phillips	10/30/81	17.2	9.2
4	Tr. #73, Sheehy	11/03/81	29.5	9.2
6	Tr. #737m-I, Green	11/12/81	25.2	8.1
14	Tr. #48, Guille	05/10/82	0.9	3.1
16	Tr. #77, 77a, Vt./Kelly	04/26/82	455.0	8.1
18	Tr. #46, Readsboro Land Assoc.	12/23/82	450.0	6.2
21	Tr. #461-II, Readsboro Land "	08/24/83	160.0	2.1
22	Tr. #112, Hagar	09/26/83	3.6	2.1
24	Tr. #102, Lauzon	10/24/83	4.7	3.1
28	Tr. #144, Phelan	04/09/84	90.8	2.1
30	Tr. #109, Ennis	09/12/84	2.7	5.1
31	Tr. #187, Anderson	12/24/84	127.0	4.1
33	Tr. #150e, The Nature Conservancy	2/07/85	559.0	3.1
35	Tr. #150f, The Nature Conservancy	3/06/85	112.0	3.1
36	Tr. #130g, Scott	10/04/85	7100.0	9.2
38	Tr. #145a, Colclough	08/02/85	40.5	2.1
40	Tr. #190, Dodge	08/21/85	52.0	2.1
41	Tr. #90, Moore	08/29/85	26.0	4.1
42	Tr. #501Ai, Aj, IP Co.	03/07/85	937.5	5.1
44	Tr. #149, Cleary	10/10/85	134.0	6.2
45	Tr. #693, Beaver Valley	12/06/85	173.0	2.1
48	Scott	04/16/86	5800.0	9.2
49	International Paper Co.	05/21/86	12000.0	9.2
50	Bills	07/86 Est.	2345.0	9.2
51	Allegheny Realty Development	06/86 Est	260.0	

APPENDIX N: GLOSSARY

AASHTO - American Association of State Highway and Transportation Officials

ACID PRECIPITATION - Rain, snow or fog with an unnaturally high level of acidity.

ACID SOIL - (See also pH) A soil with a preponderance of hydrogen and aluminum ions in proportion to hydroxyl ions. Soil with a pH value less than 6.6.

ACQUISITION - Obtaining land through purchase, exchange, and donation.

ACRE-FOOT - (See also Water Measurement) The volume of water that will cover one acre to a depth of one foot.

ACTIVITY FUEL (Slash) - Fuels which have been directly generated or altered by management action.

ADT - Average daily traffic.

ADVISORY COUNCIL ON HISTORIC PRESERVATION - The Advisory Council on Historic Preservation was created under the authority of the National Historic Preservation Act of 1966. The mission of the Council is to advise the President and Congress on national historic preservation policies and programs and to administer the provisions of law relating to the protection of cultural property.

AESTHETIC(S) - Generally, the study, science or philosophy dealing with beauty and with judgments concerning beauty.

AGE CLASS - An interval, commonly 10 years, into which the age range of trees is divided for classification purposes.

AGGREGATE - All of the coarse materials, such as sand, gravel, and crushed stone, that are used in base courses on roads.

AIR QUALITY RELATED VALUES - A feature or property of an area that is affected in some way by air pollution. Possible air quality values include visibility, odor, flora, fauna, soil, water, climate, geologic features and cultural resources.

ALL SEASON ROADS - (See Roads).

ALL-AGED MANAGEMENT - (See Uneven-aged)

ALLOWABLE SALE QUANTITY - The quantity of timber that may be sold from the area of suitable land covered by the forest plan for a time period specified by the plan. This quantity is usually expressed on an annual basis as the "average annual allowable sale quantity". (36 CFR 219.3).

ALLUVIAL - Pertaining to the material that is transported and deposited by running water.

ALLUVIAL LAND - Areas of unconsolidated material that was transported and deposited by running water. It is generally stratified and varied in texture.

ALTERNATIVE - One of several policies, plans, or projects proposed for decision making.

ANALYSIS AREA - Land areas mapped for study in the Monongahela Forest Plan. They are delineated by administrative boundaries, site productivity, timber type, ecological classification, timber age classes and transportation category.

ANALYSIS OF THE MANAGEMENT SITUATION - A determination of the ability of the area covered by the Forest Plan to supply goods and services in response to society's demand.

ANIMAL-UNIT (AU) - A production measurement based on one mature (1,000 lb.) cow or the equivalent, i.e., 5 sheep or 6 goats, having an average daily forage consumption of 26 pounds of dry matter.

ANIMAL-UNIT MONTH (AUM) - The amount of feed required by an animal-unit for one month.

AQUATIC ECOSYSTEMS - The stream channel, lake bed, water itself, and biotic communities that occur therein.

AQUIFER - Any permeable underground formation of rock, sand or gravel which stores and transmits substantially or economically usable quantities of water, as to wells or springs.

ARTERIAL ROADS - Roads which serve large land areas, usually connecting public highways or other Forest arterial roads - forming a network of primary travel routes. Locations and standards are often determined by demands for travel efficiency rather than specific resource management access needs.

ASPECT (Slope Orientation) - The direction toward which a slope faces; exposure.

AVAILABLE FUEL - The portion of the total fuel that actually burns.

AVAILABLE LANDS - Those portions of the Forest land not administratively or legislatively excluded from use for timber harvest or livestock grazing.

AVAILABLE WATER - The portion of water in a soil that can be absorbed by plant roots; usually that water held in the soil against a soil water pressure of up to approximately 15 bars. (See also field capacity).

AVAILABLE WATER CAPACITY - The capacity to store water available for use by plants, usually expressed in linear depths of water per unit depth of soil; the difference between the percentage of soil water at field capacity and the percentage at wilting point. This difference multiplied by the bulk density and divided by 100 gives a value in surface inches of water per inch depth of soil. (See also field capacity, wilting point).

BASAL AREA - A measure of the density of trees on an area. It is determined by estimating the total cross-sectional area of all trees measured at breast height (4.5 feet) expressed in square feet per acre.

BASE SALE SCHEDULE - A timber sale schedule formulated on the basis that the quantity of timber planned for sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade, and this planned sale and harvest for any decade is not greater than the long-term sustained yield capacity. (36 CFR 219.3).

BEDROCK - The solid rock underlying soils and the regolith in depths ranging from zero (where exposed by erosion) to several hundred feet.

BENCHMARK - A set of estimates used to establish standards by which to compare alternatives considered in detail. Benchmark alternatives include minimum levels, maximum resource levels, and maximum net value lands.

BENEFIT (VALUE) - Inclusive terms used to quantify the results of a proposed activity, project or program expressed in monetary or nonmonetary terms.

BENEFIT/COST RATIO (B/C) - The total discounted benefits of an activity divided by the total discounted costs. (See also Cost Efficiency)

BEST MANAGEMENT PRACTICES - A practice or combination of practices that are determined to be the most effective, practicable means of preventing or reducing pollution generated by non-point sources to a level compatible with water quality goals.

BIG TREE MANAGEMENT - Timber management of prime forest lands to produce large, high quality trees for lumber, veneer, hard mast production, and scenic attributes. Rotation ages are significantly extended beyond the traditional plus or minus 100 years.

BIPARTITE LAND EXCHANGE - Either a direct land exchange between the Government and landowner, or an exchange of timber to the landowner in exchange for land.

BOARD FOOT - A volume of solid wood, equivalent to a piece one foot square and one inch thick.

MBF - One thousand board feet.

MMBF - One million board feet.

BROOD RANGE (Cover) - Low lying vegetation such as herbs and forbs which afford food (insects) and cover for young game birds, usually quail, turkeys, and grouse.

BROWSE - The part of leaf and twig growth of shrubs, vines, and trees available for animal consumption.

BUREAU OF LAND MANAGEMENT (BLM) LEASES - Leases of federally-owned minerals, such as gas and oil, on all Federal lands.

CANOPY - The more or less continuous cover of branches and foliage formed collectively by the crowns of adjacent trees and other woody growth.

CAPABILITY - The potential of an area 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 on current conditions and site conditions such as climate, slope, landform, soils, and geology as well as the application of management practices such as silvicultural protection from fire, insects, and disease.

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.

CARRYING CAPACITY

ECOLOGICAL - The number or weight of organisms that can survive without causing deterioration of the ecosystem.

RECREATIONAL - The number of people seeking a specific recreation use that an area can support without significant deterioration to the quality of the recreation experience or the resource.

CCF - Hundred cubic feet.

CHARACTER TYPE - Large physiographic area of land which has common characteristics of landforms, rock formations, water forms, and vegetative patterns.

CLASS I AREA (Air Quality) - The designation given a geographic area in which the best air quality is desired, and the least amount of increase in pollutants is allowed. Class I Areas include certain components of the National Wilderness System. Lye Brook is the only Class I Area on the GMNF.

CLAY - Soils Application: 1) A mineral soil separate consisting of particles less than 0.002 millimeter in equivalent diameter. 2) A soil textural class. Engineering Application: A fine-grained soil that has a high plasticity index in relation to the liquid limits.

CLEARCUTTING - (See Cutting Methods)

CLIMAX FOREST - A stable, plant community representing the culminating stage of natural succession for a given locality and environment.

CMAI - See culmination mean annual increment.

COARSE FRAGMENTS - Rock or mineral particles greater than 2.0 millimeters in diameter.

COLLECTOR ROAD - Roads which serve a smaller land area than Forest arterial roads. Usually connects to a Forest arterial road or public highway and collects traffic from Forest local roads.

COLLUVIUM - Poorly sorted soil material that accumulates through gravity, soil creep, and local wash on the lower slopes and in depressions.

COMMERCIAL FOREST LAND - Forest land that is producing or is capable of producing crops of industrial wood and (a) has not been withdrawn by Congress, the Secretary, or the Chief; (b) existing technology and knowledge is available to ensure timber production without irreversible damage to soils, productivity, or watershed conditions; and (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that adequate restocking can be attained within five years after final harvesting.

COMPARTMENT EXAMINATION - The process of gathering in-place field data for a forest stand or area to determine its current condition and management opportunities for the various resources.

CONDEMNATION - In real property law, the process by which property of a private owner is taken for public use without his consent, but payment of just compensation is required.

CONIFER - Any of a wide range of predominantly evergreen, cone bearing trees with needle-shaped or scale-like leaves, such as pine, spruce, or hemlock.

CONSTANT SERVICE - Facilities which are open and available for use on a continuous or recurrent basis each year during the life of the facility.

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.

CORD - A unit of gross volume measurement for stacked round wood; a STANDARD CORD contains 128 stacked cubic feet and generally implies a stack of 4-foot long sticks of wood, 4 feet high and 8 feet wide.

CORRIDOR - A linear strip of land identified for the present or future location of transportation or utility rights-of-way within its boundaries. (36 CFR 219.3).

COST EFFECTIVE - Achieving specified outputs or objectives under given conditions for the least cost.

COST EFFICIENCY - The usefulness of specified inputs (costs) to produce specified outputs (benefits). In measuring cost efficiency, some outputs including environmental, economic, or social impacts, are not assigned monetary values but are achieved at specified levels in the least cost manner. Cost efficiency is usually measured using present net value, although use of benefit-costs ratios and rates of internal return are sometimes used.

COVER - Vegetation which provides concealment and protection to wild animals.

CREEP (Soil) - Slow mass movement of soil and soil material down relatively steep slopes, primarily under the influence of gravity but facilitated by saturation with water and by alternate freezing and thawing.

CRITICAL AREA - A severely eroded sediment producing area that requires special management to establish and maintain vegetation in order to stabilize soil conditions.

CUBIC FEET (CF) - Cubic Foot - Common unit of measure for wood volume equivalent to a cube 12" on all sides.

CCF - One hundred cubic feet. Also referred to as a "Cunit".

MCF - One thousand cubic feet.

MCCF - One thousand "Cunits" or 100,000 cubic feet.

MMCF - One million cubic feet.

CULTURAL RESOURCE - The physical remains of past ways of life. They include historic and prehistoric sites; and the artifacts and features associated with these sites.

CULMINATION MEAN ANNUAL INCREMENT (CMAI) - That point in 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.

CUTTING METHODS - Timber management practices employed to either regenerate a new stand (regeneration cutting) or to improve the composition and increase the growth of the existing forest (intermediate cutting).

I. REGENERATION CUTTING (Harvest Cut) - Includes four basic cutting methods used to regenerate a forest: clearcutting, seed-tree, shelterwood, selection. 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.

A. EVENAGED MANAGEMENT - Timber management which produces a forest or stand composed of trees having relatively small differences in age. Regeneration cutting methods in this system include those below.

(1) CLEARCUTTING - A cut which removes all trees from a designated area at one time, for the purpose of creating a new, evenaged stand.

(2) SEED-TREE - (Seed Cut) - The removal of most of the trees in one cut, leaving a few scattered trees of desired species to serve as a seed source to reforest the area.

(3) SHELTERWOOD - A series of two or three cuttings which open the stand and stimulate natural reproduction. A two cutting series has a seed cut and a removal cut, while a three cutting series has a preparatory cut, a seed cut and a removal cut.

B. ALL-AGED OR UNEVEN-AGED MANAGEMENT - Timber management which produces a stand or forest composed of a variety of ages and sizes. Regeneration cutting methods in this system include the following:

(1) GROUP SELECTION - The removal of small groups of trees to meet a predetermined goal of size, distribution, and species.

(2) SINGLE TREE SELECTION - The removal of trees individually in a scattered pattern, from an area. Trees are chosen to meet a predetermined goal of size distribution, and species.

II. INTERMEDIATE CUTTING - Any removal of trees from a stand between the time of formation and the harvest cutting undertaken to improve the growth and/or species composition. (Normally done as a commercial venture).

A. SALVAGE CUTTING - The removal of dead, dying and damaged trees after a natural disaster such as fire, insect or disease attack, wind or ice storm to utilize the wood before it rots.

B. SANITATION CUTTING - The removal of dead, dying and damaged trees after a natural disaster to prevent the spread of insects or disease.

C. THINNING - Removing some of the trees in a dense immature stand primarily to improve the growth rate and form of the remaining trees.

III. CULTURAL OPERATIONS - Treatments (usually non-commercial) made to assist or complete the establishment of regeneration or promote the development of existing stands.

A. TIMBER STAND IMPROVEMENT - Activities conducted in young stands of timber to improve growth rate and form of the remaining trees.

B. CLEANING OR WEEDING - Regulating the composition of a young stand by eliminating some trees and encouraging others, and also freeing seedlings or saplings from competition with ground vegetation, vines and shrubs.

C. RELEASE - The freeing of well established cover trees, usually large seedlings or saplings, from closely surrounding growth.

D. SITE PREPARATION - Activity intended to make conditions favorable for planting or the establishment of natural regeneration.

DBH - Diameter at breast (4.5 feet) height.

DEER WINTERING AREA - Forest area with at least 70 percent conifer that provides suitable stable habitat to meet deer needs during the winter.

DELPHI - A technique for predicting future trends or events by seeking consensus from a group of knowledgeable individuals.

DEMAND - The amount of an output that users are willing to take at a specified price, time period, and condition of sale.

DEEP WOODS - A large, remote area where mature and older wooded vegetation dominates and human activities may be present but few major disturbances occur.

DEEP WOOD SPECIES - The legislation establishing the White Rocks National Recreation Area names the fisher, black bear, bobcat and four-toed salamander as representative deep woods species on the GMNF.

DEMAND ANALYSIS - A study of the factors affecting the schedule of demand for an output, including the price - quantity relationship if applicable.

DEMAND SCHEDULE (Curve) - A schedule of quantities of an output that users are willing to take at a range of prices, at a given point in time, and conditions of sale.

DEN TREE - A live tree at least 15" dbh containing a natural cavity used by wildlife for nesting, brook rearing, hibernating, daily or seasonal shelter and escape from predators.

DEPARTURE - A schedule which deviates from the principle of nondeclining 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 the planning period, over the base sale schedule that would otherwise be established, without impairing the future attainment of Forest's long-term sustained yield capacity.

DEPTH, EFFECTIVE SOIL - The depth of soil material that plant roots can penetrate readily to obtain water and plant nutrients; the depth to a layer that differs sufficiently from the overlying material in physical or chemical properties to prevent or seriously retard the growth of roots.

DESIGN CRITERIA, ROAD - The requirements derived from management area direction such as safety requirements and traffic characteristics that govern the selection of elements and standards for a road or section of a road.

DESIGN ELEMENTS, ROAD - (FSH 7709.56) - The physical characteristics of a road, such as traveled-way width, shoulders, slopes, curve widening, and pavement structures, that, when combined, comprise the planned facility.

DEVELOPED RECREATION - Activities associated with man-made structures and facilities that result in concentrated use of an area. Examples are campgrounds and ski areas.

DEVELOPMENT (MINERAL) - Determination of the location, extent and quality of a mineral deposit by sinking shafts or holes and installing the required equipment.

DEVELOPMENT SCALE - Refers to the degree of site modification associated with developed facilities. It ranges from 1 - Primitive where improvements are minimal, designed for the protection of the site rather than the convenience of users, to 5 - Modern where facilities are mostly designed for the comfort and convenience of users. The development scale is related to the recreation experience level.

DISCOUNT RATE - An interest rate that represents the cost or time value of money in determining present value of future costs and benefits. A discount rate of 4 per cent is commonly displayed in this EIS and Plan.

DISPERSED RECREATION - In contrast to developed recreation, these activities are associated with low-density use distributed over large expanses of land or water. When provided, facilities are more for protection of the environment than for comfort or convenience of the visitor.

DISTANCE ZONE - (See Visual Management)

DIVERSITY - The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan. (36 CFR 219.3).

ECOLOGICAL LANDTYPE (ELT) - An area of land with a distinct combination of natural, physical, chemical, and biological properties that cause it to respond in a predictable and relatively uniform manner to the application of given management practices. In a relatively undisturbed state and/or at a given stage of plant succession, an ELT is usually occupied by a predictable and relatively uniform plant community. Typical size usually is tens to hundreds of acres.

ECOSYSTEM - An association of interactive organisms and their environment, perceived as a single entity.

EDGE - The place where plant communities meet or where successional stages or vegetative conditions within plant communities come together.

EDGE EFFECT - Wildlife habitat where two or more vegetative types come together.

EDGE SPECIES - Examples occurring on the GMNF include brush openings adjacent to timber stands, conifer stands adjacent to northern hardwood stands and regenerating timber stands adjacent to mature timber stands.

EFFECT,(ENVIRONMENTAL) - Net change (good or bad) in the physical, biological, social or economic components of the environment resulting from human actions. Effects and impacts as used in this EIS are synonymous.

EFFECT (Impact), ECONOMIC - The change, positive or negative, in economic conditions, including the distribution and stability of employment and income in affected local, regional, and national economies, which directly or indirectly result from an activity, project, or program.

EFFECT (Impact), PHYSICAL, BIOLOGICAL - The change, positive, or negative, in the physical or biological conditions which directly or indirectly results from an activity, project, or program.

EFFECT (Impact), SOCIAL - The change, positive or negative, in social and cultural conditions which directly or indirectly result from an activity, project, or program.

EMPLOYEE COMPENSATION - Wages and salaries paid to employees of firms in all industrial sectors of the GMNF input/output model.

ENDANGERED SPECIES (E) - Species listed in the current Federal Register as being in danger of extinction nationally throughout all or a significant portion of their ranges.

ENHANCEMENT - Improved visual condition achieved by increasing desirable variety in the landscape.

ENVIRONMENTAL ANALYSIS - The process associated with the preparation of an environmental assessment or environmental impact statement and the decision whether to prepare an environmental impact statement. It is an analysis of alternative actions and their predictable short-term and long-term environmental effects which include physical, biological, economic, and social factors and their interactions.

ENVIRONMENTAL ASSESSMENT - A concise public document that serves to (1) briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or finding of no significant impact, and (2) aid in agency's compliance with NEPA when no environmental impact statement is necessary (40 CFR 1508.9a).

ENVIRONMENTAL IMPACT STATEMENT (EIS) - A statement of environmental effects required for major Federal actions under Section 102 of the National Environmental Policy Act (NEPA), and released to the public and other agencies for comment and review. It is a formal document which must follow the requirements of NEPA, the Council on Environmental Quality (CEQ) guidelines, and directives of the agency responsible for the project proposal.

EPHEMERAL STREAM - A stream which flows only in direct response to precipitation, receives no water from springs and no long-continued supply from melting snow or other surface source. The channel may or may not be well-defined, but at all times is above the water table. (See Stream Flow Duration).

EROSION - Wearing away of the land's surface by water, wind, ice, and other geological agents.

A. ACCELERATED EROSION - Erosion much more rapid than normal, natural, or geologic erosion, primarily as a result of the influence of the activities of man or, in some cases, of other animals or natural catastrophies that expose base surfaces, for example, fires.

B. GEOLOGICAL EROSION - The normal or natural erosion caused by geological processes acting over long geologic periods and resulting in the wearing away of mountains, the building up of floodplains, coastal plains, etc. Also called natural erosion.

C. GULLY EROSION - The erosion process whereby water accumulates in narrow channels and, over short periods, removes the soil from this narrow area to considerable depths, ranging from 1 to 2 feet to as much as 75 to 100 feet.

D. NATURAL EROSION - Wearing away of the earth's surface by water, ice, or other natural agents under natural environmental conditions of climate, vegetation, etc., undisturbed by man. Also called geological erosion.

E. RILL EROSION - An erosion process in which numerous small channels only several inches deep are formed; occurs mainly on recently cultivated soils. (See also Rill).

F. SHEET EROSION - The removal of a fairly uniform layer of soil from the land surface by runoff water.

EVENAGED MANAGEMENT - The application of a combination of actions that results in the creation of stands in which trees of essentially the same age grow together. Managed even-aged forests are characterized by a distribution of stands of varying ages (and, therefore, tree sizes throughout the forest area). The difference in age between trees forming the main canopy level of a stand usually does not exceed 20 percent of the age of the stand at harvest rotation

age. Regeneration in a particular stand is obtained during a short period at or near the time that a stand has reached the desired age or size for regeneration and is harvested. Clearcut, shelterwood, or seed tree cutting methods produce even-aged stands. (36 CFR 219.3).

EVEN-FLOW - A continuous supply of products over a given time. Congressionally determined policy of a non-declining even-flow of timber.

EXPLORATION - The search for economic deposits of oil, gas or minerals in order to establish their nature, shape and quality.

EXTRACTION - The process of mining and removing mineral deposits or oil and gas from the earth.

FEE OWNERSHIP - To have full and absolute possession, which includes all minerals and rights as well as the surface of the land.

FERTILITY (Soil) - The quality of a soil that enables it to provide nutrients in adequate amounts and in proper balance for the growth of specified plants when other growth factors, such as light, moisture, temperature, and the physical condition of the soil, are favorable.

FERTILIZER - Any organic or inorganic material of natural or synthetic origin that is added to a soil to supply elements essential to plant growth.

FILTERSTRIP - A special management zone of largely undisturbed forest floor, maintained between a water body and any activity that disturbs the vegetative cover and exposes mineral soil. The main design function of a filterstrip is to absorb overland flow and trap sediment before it enters the water body.

FIRE MANAGEMENT - All activities required for the protection of resources and values from fire, and the use of fire to meet land management goals and objectives.

FLOOD - Any level of a natural body of water that exceeds its normal banks.

FLOODPLAIN - The lowland and relatively flat areas joining streams and rivers, including at a minimum that area subject to one percent (100 year recurrence) or greater chance of flooding in any given year.

FORAGE - Portions of woody and herbaceous plants available to animals for food.

FOREST - When used with a capital F this term refers to the Green Mountain National Forest.

FOREST DEVELOPMENT ROAD - A Forest road under the jurisdiction of the Forest Service.

FOREST HIGHWAY - A Forest road under the jurisdiction of and maintained by a public authority and open to public travel. (Title 23 USC 101 as amended by the Surface Transportation Act of 1978). Generally, arterial and collector roads under town or state ownership that are also vital for National Forest use and administration carrying substantial amounts of Forest Service traffic.

Programming for Forest Highway projects is done by the state in consultation with the Forest Service. Funding is from the Federal Highway Administration.

FOREST LAND - Land at least 10% occupied by Forest trees of average size, or formerly having had such tree cover, and not currently developed for non-Forest use.

FOREST PLAN - A long-range plan for management of a designated area of National Forest System lands. This plan will provide management direction for all management programs and practices, resource uses, and resource protection measures on these lands.

FOREST PROGRAM - A forest program is the integrated (multifunctional) course of action for a given level of funding on a National Forest that is consistent with the Forest Plan.

FOREST TYPE - A natural group or association of different species of trees which commonly occur together over a large area. Forest types are defined and named after the one or more dominant species of trees, such as the spruce-fir and the birch-beech-maple types.

FORESTRY - The art and science of growing and managing forests and forest lands for the continuing use of their resources.

FOREST-WIDE MANAGEMENT REQUIREMENTS - A set of statements which define or indicate acceptable norms, specifications, or quality that must be met when accomplishing an activity or practice under a given set of conditions on the Forest.

FORMATION - Any assembly of rocks that have some characteristic in common, whether of origin, age, or composition.

FORPLAN - A specific linear program model designed for use in Forest Service planning.

FRAGIPAN - A natural subsurface horizon with high bulk density relative to the solum above, seemingly cemented when dry but showing a moderate to weak brittleness when moist. The layer is low in organic matter, mottled, slowly or very slowly permeable to water, and usually shows occasional or frequent bleached cracks forming polygons. It may be found in profiles or either cultivated or virgin soils but not in calcareous material.

FROST HEAVE - A phenomenon caused by the expansion of water as it freezes. Such expansion may lift field stones, surveyor's stakes, or roadway pavement.

FSH - Forest Service Handbook.

FSM - Forest Service Manual.

FUNCTIONING CHANNEL - A well defined channel that clears itself at least one a year of small debris and litter, exhibits channel bank formation, and may often contain alluvial deposits of sand, gravel and/or rubble in the channel bed.

GAME SPECIES - Wild animals hunted for sport or food.

GMNF - Green Mountain National Forest.

GOAL - A concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad, general terms, and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed. (36 CFR 219.3).

GOODS AND SERVICES - The various outputs including on-site uses produced by forest and rangeland resources. (36 CFR 219.3).

GRADE - The rise or fall of a ground surface or of a roadway surface, expressed as a percentage. Thus, a rising one percent road grade rises one foot in 100 feet of distance along the road.

GROUND WATER

AQUIFER - Any permeable underground formation which yields ground water.

GROUND WATER - Water underneath the water table, in the zone of saturation, from which wells, springs, and baseflow are supplied.

WATER TABLE - The upper surface of the ground water, below which saturated conditions exist. A perched water table is formed by impermeable layers lying above the surface of the main water table and tends to fluctuate considerably.

GROUP SELECTION - (See Cutting Methods)

GROWING STOCK - All the trees growing in a forest or in a specified part of it, generally expressed in terms of number or volume.

GUIDELINE - An indication or outline of policy or conduct.

HABITAT - The place where a plant or animal can live and maintain itself.

HABITAT CAPABILITY - The estimated ability of an area, given existing or predicted habitat conditions, to support a wildlife, fish or plant population. It is measured in terms of potential population numbers.

HARD SNAGS - Trees composed essentially of sound wood on the outside and usually marketable.

HARDWOOD - A broad leaved, flowering tree, as distinguished from a conifer. Trees belonging to the botanical group of angiospermae.

HARVEST CUT - (See Cutting Methods)

HEADWATER - The small rivulets forming the source of a stream or river.

HECTOR - Ranger District of the GMNF located in New York State.

HERBICIDE - A chemical compound used to kill or control growth of undesirable plant species.

HIGH RISK STAND - Will not survive another ten years, or will have a net loss of timber volume in the next ten years.

HIGH SITE - (See Site Index)

HUMMUS - Garbanzos, Tahini, et.al..

HUMUS - The plant and animal residues of the soil, litter excluded, which are undergoing decomposition.

IMPLEMENTING REGULATIONS - Regulations generated by an agency to implement Act of Congress, i.e., 36 CFR 219 contains implementing regulations for RPA and NFMA.

IMPROVEMENT CUTTING - (See Cutting Methods)

INDICATOR SPECIES - A species whose presence in a certain location or situation at a given population indicates a particular environmental condition. Their population changes are believed to indicate effects of management activities on a number of other species or water quality.

INDIGENOUS SPECIES - Species historically native to an area.

INFILTRATION - The gradual downward flow of water from the surface through soil to ground water and water table reservoirs.

INFORMED PUBLIC CONSENT - Attaining substantial effective agreement on a course of action through various public information and involvement projects.

INGRESS AND EGRESS - The right to enter and exit across property of others.

INPUT/OUTPUT ANALYSIS - A technique for analyzing the interdependence of producing and consuming sectors in an economy.

INTANGIBLE VALUES (Intangible Outputs) - Goods, services, uses and conditions which are believed to have values to the society but which have neither market values nor assigned values.

INTEGRATED PEST MANAGEMENT - 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 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. (36 CFR 219.3).

INTEGRATED RESOURCE MANAGEMENT _ A process of implementing the Plan on specific areas of each National Forest by considering resources in an integrated fashion.

INTERDISCIPLINARY TEAM (IDT) - A group of individuals with skills from different resources. An interdisciplinary team is assembled because no single scientific discipline is sufficient to adequately identify and resolve issues and problems. Team member interaction provides necessary insight to all stages of the process.

INTERMITTENT SERVICE - Facilities which are for more than one year between periods of use.

INTERMITTENT STREAM - A stream or reach of a stream that does not flow continuously, as when water losses from evaporation or seepage exceed the available stream flow. Flow occurs only at certain wet times of the year, as when the channel receives water from springs or from some surface source. The channel is well-defined. (See also Stream Flow Duration).

INTERPRETIVE SERVICES - A service provided to the public by National Forests in which the public is supplied with information regarding opportunities or activities on National Forest land; usually but not restricted to recreational opportunities.

INTERPRETIVE SITES - A developed site at which a broad range of natural or cultural history is interpreted or described for the enjoyment of the public.

INTERSPERSION - The degree to which plant communities, or successional stages, or both are mixed within an area.

INTOLERANT SPECIES - Those plant species that do not grow well in shade.

IRM - Integrated Resource Management

ISOLATED FINDS - An archaeological object or objects found in solitary circumstances.

ISSUE - A subject or question of wide spread public discussion or interest regarding management of National Forest System lands.

K-V FUNDS - In 1930, Congress passed the Knutson-Vandenberg Act (K-V Act) to authorize collection of funds (K-V Funds) for reforestation and timber stand improvement work, wildlife habitat work and other resource improvements on areas cut over by timber sales.

LAND ADJUSTMENT - Changing National Forest System land ownership through acquisition, exchange or disposal of land or interests 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 AND WATER CONSERVATION FUND ACT (Public Law 78-897) - Authorizes Federal purchase of lands for outdoor recreation uses from monies received from taxes on outboard motor fuels, recreation user fees, surplus property sales, and other appropriations.

LANDBASE - A specific area of the earth's surface and all its attributes including water bodies, from which goods, services and uses can be supplied.

LAND CONDITION - The state of a given area in terms of the quality of its physical and biological character and use, conditions can be existing, future or desired.

LAND EASEMENT - An interest in land restricting the manner in which an owner may develop or use his property, or allowing the holder of the easement to use the property in some specified way.

LANDING, LOG - A site where logs are transferred or stockpiled. Generally the ending of skid trails, and the beginning of temporary or permanent local roads.

LAND FORM - A discernible natural landscape, such as a floodplain, stream terrace, plateau, or valley.

LANDLINE - Property boundaries located between the National Forest and other lands.

LAND MANAGEMENT - The intentional process of planning, organizing, programming, coordinating, directing and controlling land use actions.

LANDSLIDE - 1) A mass of material that has slipped downhill under the influence of gravity, frequently occurring when the material is saturated with water. 2) Rapid movement down slope of a mass of soil, rock, or debris.

LAND USE - The occupation or reservation of land or water areas for any human activity or any defined purposes; in this EIS, the terms "use" and "land use" are interchangeable.

LEASABLE MINERALS - Coal, oil, gas, phosphate, sodium, potassium, oil shale, and geothermal steam. To be leasable on National Forest lands, the government must have complete mineral rights as well as surface rights.

LEGUME - A member of the pulse family, one of the most important and widely distributed plant families. The fruit is a pod that opens along two sutures when ripe. Leaves are alternate, have stipules, and are usually compound. Includes many valuable food and forage species, such as peas, beans, peanuts, clovers, alfalfas, sweet clovers, lespedezas, vetches, and kudzu. Practically all legumes are nitrogen-fixing plants.

LEGUME INOCULATION - The addition of nitrogen-fixing bacteria to legume seed or to the soil in which the seed is to be planted.

LINEAR PROGRAM MODEL - A mathematical method used to determine the best use of resources to achieve a desired result with limitations on available resources, expressed in the form of equations.

LITTER - 1) The uppermost layer of organic debris on the ground under a vegetation cover, i.e., essentially the freshly fallen or only slightly decomposed vegetable material, mainly from foliage but also bark fragments, twigs, flowers, fruits, etc. 2) Refuse left by Forest visitors.

LOAMY - Intermediate in texture and properties between fine-textured and coarse-textured soils; includes all textural classes with the words "loamy" or "loam" as a part of the class name, such as clay loam or loamy sand. See soil texture; or particle size classes for family groupings for its use in the Soil Classification System of the National Cooperative Soil Survey in the United States.

LOCAL ROAD - (See also Traffic Service Level and Temporary Roads) Connects terminal facilities with Forest collector or Forest arterial roads, or public highways. The location and standard are usually controlled by a specific resource activity rather than travel efficiency. Forest local roads may be developed and operated for either long-term or short-term service.

All permanent local roads on the GMNF are of one of these three types:

Seasonal, infrequently used roads 8-13 feet wide, permanent drainage structures at live streams, and native surfacing. Usually available for use 6 months out of a year, 2 or 3 years per decade and sometimes closed to prevent resource damage and for public safety. Mainly used for administrative and timber sale access (Traffic Service Level D).

Seasonal, frequently used roads 8-13 feet wide, have permanent drainage structures at live and intermittent streams, and gravel surfacing in wet areas. Usually available for use 6 months out of a year, 5-8 years per decade and are sometimes closed to prevent resource damage and for public safety (Traffic Service Level C).

All Season, continuously used roads 8-13 feet wide, generally have permanent drainage structures,and gravel surfacing throughout. Used 11 out of 12 months annually. Road may need roadbed protection during extended wet periods and at other times as needed to protect users. (Traffic Service Level B)

LOCATABLE MINERALS - The hard rock minerals which are mined and processed for the recovery of metals. May include certain non-metallic minerals and uncommon varieties of mineral materials such as valuable and distinctive deposits of limestone or silica. May include any solid natural inorganic substance occurring in the crust of the earth, except for the common varieties of mineral materials and leasable minerals.

LOGGING ROAD - (See Local Road, Temporary Roads, Skid Trails, and Roads).

LOG TRANSFER SITE (See Landing, Log).

LONG-TERM - Action governed by the Forest Plan generally taking place over a period longer than ten years from the present.

LONG-TERM FACILITIES - Facilities which are developed and operated for long-term land and resource management purposes. Roads of this nature are permanent roads (FSM 7703).

LONG-TERM SUSTAINED YIELD (LTSY) - 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.

LOONEY TUNES - Planner's Blues

LOW SITE - (See Site Index)

LOW QUALITY STAND - is made up of trees whose potential to produce timber products is poor.

LT/AT - LONG TRAIL and APPALACHIAN TRAIL.

LTSY - See long term sustained yield.

M - One thousand (1,000) units.

MAINTENANCE LEVEL ROADS - A formally established criterion which prescribes the intensity of maintenance necessary to retain a road's approved management objectives (FSM 7705).

Maintenance Level I - Generally used on roads not open to traffic. Drainage facilities are kept functional and roadbed stable. Custodial care to protect road investments and to minimize resource damage. Closure devices and signing are kept in place and functional.

Maintenance Level II - Used on roads where management requires that the road be open for limited traffic--usually administrative use, permitted use, or specialized traffic. All activities same as Level I and brush and slides removed from traveled ways and roadway shape and surface restored as needed to keep road passable.

Maintenance Level III - Used on roads which are generally open to public traffic. Maintained to provide safe and moderately convenient travel suitable for passenger cars. All activities same as Level II and travelway, shoulder, roadside and drainage structures maintained to keep roads in as-constructed condition.

Maintenance Level IV - Used on roads with higher average daily traffic than Level III. Generally activities same as Level III, but with more attention to user comfort and aesthetic appearance.

Maintenance Level V - Not used on GMNF because traffic levels are all too low to warrant this level of maintenance.

MANAGEMENT AREA - An area with similar management objectives and a common management prescription.

MANAGEMENT CONCERN - An issue or problem requiring resolution, or a condition which constrains the management practices identified by the Forest Service in the planning process.

MANAGEMENT DIRECTION - A statement of multiple-use and other goals and objectives, the management prescriptions, and standards and guidelines for attaining them.

MANAGEMENT GOAL - A statement that describes a desired condition of the land to be achieved sometime in the future.

MANAGEMENT INTENSITY - The management practice or combination of management practices and associated costs designed to obtain different levels of goods and services. (36 CFR 219.3).

MANAGEMENT OPPORTUNITY - A statement of general actions, measures or treatments that address the public issue or management concern in a favorable way.

MANAGEMENT PRACTICE - A specific activity, measure, course of action, or treatment. (36 CFR 219.3).

MANAGEMENT PRESCRIPTION - Management practices and intensity selected and scheduled for application on a specific area to attain multiple use and other goals and objectives. (36 CFR 219.3).

MANAGEMENT TEAM - Decision-making group consisting of the Forest Supervisor, Staff Officers, and District Rangers.

MARGINAL ANALYSIS - A type of analysis in which the only costs and benefits considered are those about which decisions can be made. Fixed benefits and costs are not considered.

MARKET VALUE (Market Output) - Goods, services and uses which are commonly bought and sold and which are priced or valued directly from existing markets.

MAST - The fruit and nuts of such plants as oaks, beech, hickories, dogwood, blueberry, and grape.

MAXIMUM MODIFICATION (MM) - (See Visual Management)

MBF - One thousand board feet. Equals 0.167 MCF.

MCF - One thousand cubic feet. Equals 5.988 MBF.

MEAN ANNUAL INCREMENT - The total growth increment up to a given age divided by that age.

MIDDLE GROUND - (See Visual Management)

MINERAL - Any inorganic material. The term is used to designate broadly all material that is not animal or vegetable. It includes sand, gravel, and stone.

MINERAL RIGHTS - Owning minerals beneath the surface of the ground; often it is someone other than the owner of the surface. Legal ownership of minerals, including authority to use so much of the surface as is prudently necessary to produce them.

MINIMAL (Variety Class C) - (See Visual Management)

MINIMUM LEVEL MANAGEMENT - The management strategy that would meet only the basic statutory requirements of administering unavoidable nondiscretionary land uses, preventing damage to adjoining lands of other ownerships, and protecting the life, health, and safety of incidental users.

MM - One million (1,000,000) units.

MODIFICATION (M) - (See Visual Management)

MOTORIZED USE - Land uses requiring or largely dependent on motor vehicles and roads.

MULCH - A natural or artificial layer of plant residue or other materials, such as sand or paper, on the soil surface.

MULTIPLE USE - The management of all the various renewable surface resources of the National Forest System so that they are utilized in the combination that will best meet the needs of the American people: making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in the use to conform to changing needs and conditions: that some lands will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output. (36 CFR 219.3).

MUNICIPAL WATERSHED - A watershed from which municipal water supplies are derived.

NATIONAL REGISTER OF HISTORIC PLACES - A listing maintained by the National Park Service of areas which have been designated as being of local, regional or national historical significance.

NDY - See non-declining yield.

NEPA - National Environmental Policy Act.

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 units of the National Forest System is consistent with the principles of multiple-use and sustained yield. (36 CFR 219.3).

NFMA - National Forest Management Act.

NO ACTION ALTERNATIVE - An alternative identified in an Environmental Analysis in which either (1) current management is continued or (2) a project does not occur.

NON-DECLINING YIELD (NDY) - 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-FOREST LAND - Lands never having or incapable of having ten percent or more of the area occupied by forest trees, or lands previously having such cover and currently developed for non-forest use.

NON-GAME SPECIES - Animal species that are not usually hunted in this state. This classification is determined by the State Legislature.

NON-MOTORIZED USE - Land uses not requiring roads or motor vehicles.

NON-POINT SOURCE POLLUTION - Is a pollutant that is not traceable to a discrete or confined facility. The principal non-point pollutant associated with silviculture is sediment washed from bare, disturbed soil.

NON-STRUCTURAL RANGE IMPROVEMENT - A modification of existing vegetation to improve forage. Examples are lime and fertilizer application, noxious weed control, seeding to grass or legumes, etc.

NORTHERN HARDWOODS - Primarily sugar maple, yellow birch and beech. May include red maple, white ash, black cherry, red spruce and hemlock.

NRA - National Recreation Area.

OBJECTIVE - A concise, time-specific statement of measurable planned results that respond to preestablished goals. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals. (36 CFR 219.3).

OBLITERATION - Returning land occupied by a road or trail to its original condition prior to construction of road or trail.

OCCUPANCY TRESPASS - The illegal occupancy or possession of National Forest land.

OFF-ROAD VEHICLE - 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. ORV's include vehicles such as 4-wheel drive units, motorcycles, snowmobiles, amphibious vehicles, and aircushion vehicles.

OLD GROWTH - Old growth is a self perpetuating vegetative community that has reached a dynamic steady state. The dominant vegetation is considered to be climax with all age classes present. Old growth communities on the GMNF will be at least 170 years old and more than 500 acres in size. To represent ecologically sound habitats old growth will not be silviculturally treated.

ONE-HUNDRED YEAR FLOODPLAIN - An area inundated by a flood which has a one (1.0) percent chance of occurring in any given year.

OPENING - A cutover area in which the vegetation is less than twenty percent of the height of the surrounding vegetation.

OPEN TO PUBLIC TRAVEL - Except during scheduled periods, extreme weather conditions, or emergencies, open to the general public for use with a standard passenger automobile, without restrictive gates or prohibitive signs or regulations, other than for general traffic control or restrictions based on size, weights, or class of registration (See also Traffic Management).

OPERATION, ROAD - The control and coordination of the use of the forest development transportation system.

OPPORTUNITY AREA - Land areas that provide the best opportunities to work toward Forest Plan goals and objectives. They are used to further refine the desired future condition and decide upon the best location of management practices.

OPPORTUNITY COSTS - The value of benefits foregone or given up due to the effect of choosing another management alternative that either restricts existing outputs or shifts resources away from other activities so that they are no longer produced and their benefits are lost.

OUTPUT COEFFICIENT - Values which relate a unit of land to a particular quantity of output in a specific period of time.

OUTSTANDING MINERALS - Those minerals which through previous conveyances are owned by persons other than the vendor.

OVERALL BEST - The management strategy which maximized net public benefits (See Net Public Benefits).

OVERMATURE - A stand of trees that is older than normal rotation age for the type and provides important habitat conditions not found in younger stands. Northern hardwood and oak stands are overmature if between 120 and 170 years old while the minimum age for other types of trees will vary.

OVERSTORY - Upper crown canopy of a forest.

PAOT - (See People At One Time)

PARENT MATERIAL (Soils) - The unconsolidated, more or less chemically weathered mineral or organic matter from which the solum of soils has developed by pedogenic processes. The C horizon may or may not consist of materials similar to those from which A and B horizons developed.

PARKING SPACE - Parking space for a passenger vehicle. Typically a space measures 10 feet deep and 8 feet wide. Additional depth may be added to accommodate recreational vehicles and trailers. Surfacing varies, by season and frequency of use, from native material to imported gravel or blacktop.

PARTIAL RETENTION (PR) - (See Visual Management)

PARTICLE SIZE ANALYSIS - Determination of the amounts of different particle sizes in a soil sample, usually by sedimentation, sieving, micrometry, or combinations of these methods.

PEAT - Unconsolidated soil material consisting largely of undecomposed or only slightly decomposed organic matter accumulated under conditions of excessive moisture.

PEOPLE AT ONE TIME (PAOT) - A recreation-capacity measurement term indicating the number of people that can comfortably occupy or use a facility or area at one time.

PERMANENT UPLAND OPENING - Supports perennial grasses, forbs, sedges and shrubs and has less than 16% stocking of trees and less than 10% tree crown cover.

PERENNIAL STREAM - A stream which flows continuously throughout the year during most years. It receives water not only from precipitation, but also from underground sources such as springs and seeps, and its upper surfaces generally stand lower than the water table in the locality through which it flows. The channel is well-defined. (See also Stream Flow Duration).

PERMANENT U.S. ACQUIRED RIGHT-OF-WAY - Easements unlimited as to time and purposes for which the road or trail may be used.

PEST - A plant, animal or environmental stress which the land manager determines to be detrimental to achieving resource management objectives.

PESTICIDE - Any substance or mixture of substances used to control populations of injurious pests.

pH - A quantitative measure of hydrogen-ion concentration. A pH of 7 corresponds to exact neutrality; a pH less than 7 indicates acidity; and a pH greater than 7 indicates alkalinity.

PIONEERS - Tree species which aggressively invade freshly disturbed sites and abandoned fields. Aspen and paper birch are principally referred to when the term "pioneers" is used in this EIS.

PLANNING AREA - The area of the National Forest System covered by a Forest Plan. (36 CFR 219.3).

PLANNING CRITERIA - Criteria prepared to guide the planning process and management direction.

PLANNING HORIZON - The overall time period considered in the planning process that spans all activities covered in the analysis or plan and all future conditions and effects of proposed actions which would influence the planning decisions. 150 years used for this plan. (36 CFR 219.3).

PLANNING PERIOD - One decade. The time interval within the planning horizon that is used to show incremental changes in yields, costs, effects, and benefits. (36 CFR 219.3).

PLANNING PROBLEM - A major problem of long-range significance, derived from public issues and management concerns, to be addressed when formulating Forest Plan Alternatives.

PLANTATION - A Forest crop or stand raised artificially, either by seeding or planting of young trees.

PNV - See present net value.

POINT SOURCE POLLUTION - Pollution traceable to a discharge of pollutants from a discernible, confined and discrete conveyance, such as an effluent discharge from a sewage treatment plant.

POLE TIMBER - As used in timber survey, a size class definition, tree 5.0 to 8.9 inches at DBH. As used in logging operations, trees from which pole products are produced, such as telephone poles, pilings, etc.

POTHUNTING - Slang term used by professional archaeologists to describe illegal or non-professional collecting of artifacts.

PREDATOR - An animal species that obtains its food by hunting other animal species.

PREFERRED ALTERNATIVE - The alternative favored for implementation by the Forest Service based on relative merits including physical, biological, social and economic considerations and the agency statutory missions.

PREPARATORY CUT - The first phase of the shelterwood system which removes mature and defective trees to create openings to stimulate seedling growth. (See also Cutting Methods).

PRESCRIBED FIRE - Prescribed fire is the application of fire under specified conditions to achieve specific land management objectives.

PRESCRIPTION - (See Management Prescription)

PRESCRIPTIVE RIGHT-OF-WAY - A right-of-way relating to an existing road established by virtue of use and possession usually over long periods under provision of State law. It cannot be vested in the United States unless a public road agency appropriates the road or right-of-way to Government use.

PRESENT NET VALUE (PNV) - 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. (36 CFR 219.3).

PRIMARY SOFTWOOD SITES - Lower elevation areas such as swamps where drainage is poor or impeded and upper slopes with shallow soils.

PRIME AGRICULTURAL LAND - Land that is best suited for producing food, feed, forage, fiber, and oilseed crops, and also available for those uses; includes cropland, pastureland, rangeland, forest lands, but not urbanized land or water. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops economically when treated and managed, including water management, according to modern agricultural methods.

PRIME TIMBERLAND - Prime timberland is land that has soil capable of growing wood at the rate of 85 cubic feet or more per acre per year (at culmination of mean annual increment) in natural stands and is not in urban or built-up land uses or water.

PRIMITIVE ROS CLASS - (See Recreation Opportunity Spectrum)

PROCLAMATION BOUNDARY - National Forest Boundary as proclaimed by the President of the United States.

PROGRAM BUDGET - A plan that allocates annual funds, work force ceilings and targets among agency management units.

PROJECT - An organized effort to achieve an objective identified by location, activities, outputs, effects, and time period and responsibilities for execution.

PROPERTY CORNER - Land survey turning point pertaining to Forest Service ownership lines.

PROPERTY LINE - Accurately located ownership line between the National Forest land and adjoining land owned or administered by others.

PUBLIC EDUCATION - Direct education on Forest Service activities or programs. Consists in part of exhibits, letters, descriptive publications, press publicity, and show-me trips.

PUBLIC INVOLVEMENT - A Forest Service process designed to broaden the information base upon which agency decisions are made by (1) informing the public about Forest Service activities, plans, and decisions, and (2) encouraging public understanding about and participation in the planning processes which lead to final decision-making.

PUBLIC ISSUE - A subject or question of widespread public interest relating to management of the National Forest System. (36 CFR 219.3).

PUBLIC PARTICIPATION - Meetings, conferences, seminars, workshops, tours, written comments, survey questionnaires, and similar activities designed or held to obtain comments from the general public and specific groups about National Forest System land management planning.

PULPWOOD - Wood suitable for manufacturing into wood pulp for paper products.

PURCHASE UNIT - An area established outside of the Forest Proclamation Boundary by the National Forest Reservation Commission within which the Government may acquire land.

REACTION SOIL - The degree of acidity or alkalinity of a soil, usually expressed as a pH value. Descriptive terms commonly associated with certain ranges in pH are extremely acid, less than 4.5; very strongly acid, 4.5-5.0; strongly acid, 5.1-5.5; medium acid, 5.6-6.0; slightly acid, 6.1-6.5; neutral, 6.6-7.3; mildly alkaline, 7.4-7.8; moderately alkaline, 7.9-8.4; strongly alkaline, 8.5-9.0; and very strongly alkaline, more than 9.0.

REAL DOLLAR VALUE - A monetary value which compensates for inflation. (36 CFR 219.3).

RECEIPT SHARES - The portion of receipts derived from Forest Service resource management that is distributed to State and county governments such as the Forest Service 25 percent fund payments. (36 CFR 219.3).

RECLAMATION - Returning disturbed lands to a form and productivity that will be ecologically balanced and in conformity with the predetermined land management plan.

RECONSTRUCTION, ROADS: - (See also Restoration) Upgrading or improving drainage structures, surfacing, or horizontal and vertical alignment of existing roads. Reconstruction is done to allow more frequent access by a wider range of vehicles or to prevent resource damage.

RECORD OF DECISION - The documentation of what the decision was, the date, and a statement of reasons for the decision.

RECREATION AREA - A relatively small, distinctly defined portion of the National Forest where concentrated public use for the more traditional recreation purposes predominates, e.g., campgrounds, picnic areas, swimming areas, etc.

RECREATION COMPOSITE - An area which identifies key recreation lands within National Forests which are needed to meet existing or projected recreation demands. Approved composites justify investment of Land and Water Conservation funds for land acquisition and document Forest Service intent to emphasize recreation in the management of these lands once acquired.

RECREATION OPPORTUNITY SPECTRUM (ROS) - A system of classifying the range of recreational experiences, opportunities and settings available on a given area of land. Classifications include:

PRIMITIVE (P) - Essentially unmodified environment, where trails may be present but structures are rare, and where probability of isolation from the sights and sounds of man is extremely high.

SEMI-PRIMITIVE MOTORIZED (SPM) - Moderately dominant alterations by man, with strong evidence of permanent roads and/or trails.

SEMI-PRIMITIVE NON-MOTORIZED (SPNM) - Few and/or subtle modifications by man, and with a large probability of isolation from the sights and sounds of man.

RECREATION VISITOR DAYS (RVD) - Recreational use of National Forest System land which aggregates twelve hours. It may consist of one person for twelve hours, two people for six hours, or any combination that totals twelve hours.

RECREATION RIVER - Wild and Scenic Rivers Act Usage - Those 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 deversion in the past.

REFORESTATION - The natural or artificial restocking of an area with Forest trees.

REGENERATION - The natural or artificial renewal of a tree crop. (See also Cutting Methods)

REGULATED FOREST LAND - Forest land managed for timber production under sustained yield principles.

REHABILITATION - An improved condition achieved by removing existing visual impacts.

REMOVAL CUT - The final cut of the Shelterwood System which removes the remaining mature trees, completely releasing the young stand. An even-aged stand results. (See also Cutting Methods).

REPLACEMENT TREES - Live or partially dead trees left to become hard snags and eventually soft snag replacements.

RESEARCH NATURAL AREAS - Land areas classified by order of the Chief of the U.S. Forest Service containing natural plant communities that have not been modified by man, and are protected and studied to obtain more information about the ecosystem.

RESERVE TREES - Trees left for wildlife in areas where timber is being cut. See Snag, Den and Mast.

RESERVED MINERALS - Vendor reserves mineral rights subject to rules and regulations of the Secretary of Agriculture.

RESIDUAL SOIL - A soil formed in material weathered from bedrock without transportation from the orginal location.

RESTORATION, ROADS - Surface replacement or drainage structure improvement needed to retain a road to original management objective. Little earthwork is necessary.

RETENTION (R) - (See Visual Management)

REVEGETATION - The reestablishment of a plant cover occurring either naturally or artifically.

RIGHT OF EMINENT DOMAIN - The taking of property for a necessary public use, with reasonable compensation being made to the property owner. The legal procedure for doing this is called condemnation.

RIGHT-OF-WAY EASEMENT - A right to construct a road, trail or other improvements over the land of others.

RIM - Refers to Recreation Information Management which is an electronic system storing recreation information. It furnishes current and meaningful data on the identification, location, dimensions, condition, and use of each recreation site and area on National Forest lands.

RIPARIAN AREA - Geographically delineated area with distinctive resource values and characteristics, that are comprised of the aquatic and riparian ecosystems, floodplains and wetlands.

RIPARIAN ECOSYSTEM - A transition between the aquatic ecosystem and the adjacent terrestrial ecosystem; identified by soil characteristics and distincitive vegetation communities that require free or unbound water.

ROADS, MAINTENANCE - (See Maintenance Level, Roads) -

ROAD MANAGEMENT OBJECTIVE - The specific intended purpose of a road. Documented by design criteria and operation and maintenance criteria. (FSM 7712)

ROADS - (See Local Roads, Traffic Service Level, Arterial Roads, Collector Roads and Temporary Roads).

ROS CLASS - (See Recreation Opportunity Spectrum)

ROTATION - The planned number of years between formation or regeneration of a stand and its final cutting.

RPA - Forest and Rangelands Renewable Resource Planning Act of 1974.

RVD - Recreation Visitor Days

SALE SCHEDULE - The quantity of timber planned for sale by time periods, from the area of land covered by a Forest plan. The first period, usually a decade, of the selected sale schedule provides the allowable sale quantity. Future periods are shown to establish that long-term sustained yield will eventually be achieved and maintained. (36 CFR 219.3).

SALVAGE - Dead, dying or deteriorating trees due to old age or damage by fire, wind, insects or disease. Those trees not reserved for wildlife are harvested while still merchantable.

SANITATION - The removal of dead, damaged, or susceptible trees to prevent the spread of insects or disease.

SAPLING - As used in timber survey, a size class definition; trees 1.0 to 4.9 inches at DBH.

SAWLOG - A log considered suitable in size and quality for producing lumber; trees, larger than 9 inches at DBH.

SCARIFICATION - Loosening the top soil in open areas to prepare for regeneration by direct seeding or natural seed fall.

SCENIC EASEMENT - An acquired partial interest in non-National Forest land obtained to maintain the area's natural beauty and prevent development of changes that would mar or detract from such natural beauty.

SCENIC RIVER - Wild and Scenic Rivers Act Usage - The rivers or sections of rivers that are free of impoundments, where shorelines or watersheds are still largely primitive and shorelines largely undeveloped, but accessible at places by a road.

SCENIC VISTA - A point along a travel route which affords a panoramic, unusual or highly pleasant view.

SEASONAL, FREQUENTLY USED ROADS - (See Roads, Type C.)

SEASONAL, INFREQUENTLY USED ROADS - (See Roads, Type B.)

SECONDARY SOFTWOOD SITES - Moderate to well drained areas at lower elevations and medium elevation ridge lands.

SEDIMENT - Solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice.

SEEDBED - The soil prepared by natural or artificial means to promote the germination of seed and the growth of seedlings.

SEED TREE - (See Cutting Methods)

SEEDLING - As used in timber survey, a size class definition, trees less than 1.0/inch at DBH.

SELECTION HARVEST CUT - (See Cutting Methods)

SEMI-PRIMITIVE MOTORIZED ROS CLASS - (See Recreation Opportunity Spectrum)

SEMI-PRIMITIVE NON-MOTORIZED ROS CLASS - (See Recreation Opportunity Spectrum)

SENSITIVE AREAS - Areas of high erosion hazard, areas that may be susceptible to compaction, or areas of nonstable slopes.

SENSITIVE SPECIES (S) - Species designated by the Regional Forester and included on the Eastern Region Sensitive Species List. The list will include those species that are known, reported or suspected to occur on or in the immediate vicinity of the Eastern Region and require special management attention.

SENSITIVITY LEVEL - As used in Cultural Resource Management, the degree of cultural resource potential and/or the possible degree of conflict with other uses for a given area.

SENSITIVITY LEVEL - As used in Visual Quality Management; a particular degree or measure of viewer interest in the scenic qualities of the landscape. (1) most sensitive, (2) sensitive, and (3) less sensitive.

SHADE STRIP - A strip of standing trees, shrubs and other vegetation maintained along perennial streams to provide shade to the aquatic ecosystem and protect the fishery resource from adverse water temperature increases.

SHADE TOLERANT - A tree or other plant species having the capacity to grow without receiving direct sunlight.

SHELTERWOOD CUTTING - (See Cutting Methods)

SHORT-TERM FACILITIES - Facilities such as temporary roads on the Forest development transportation system which have a planned, limited life. When the facility has served its intended purpose, the occupied land is revegetated and returned to resource production (FSM 7703).

SHRUB OPENING - An area managed for wildlife that is dominated by short, woody vegetation that may include small patches of grassy openings and clumps of trees.

SIGNIFICANT STREAMS - Streams which have significant recreational, and aesthetic values to the public.

SILT - 1) A soil separate consisting of particles between 0.05 and 0.002 millimeter in equivalent diameter. 2) A soil textural class.

SILVICULTURAL SYSTEMS - A management process whereby forests are tended, harvested, and replaced, resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the fellings that remove the mature crop and provide for regeneration and according to the type of forest thereby produced. (36 CFR 219.3).

SILVICULTURE - A combination of actions whereby forests are tended, harvested, and replaced. The art and science of growing forests.

SITE INDEX - A measure of the relative productive capacity of an area based on the height, in feet, of the dominant trees at 50 years of age.

SITE PREPARATION - Preparation of the ground surface before planting or preparing a seedbed for natural regeneration; includes removal of unwanted vegetation, slash, stumps, and roots from a site.

SKIDDER - A vehicle used to move logs from the stump to a landing. Most skidders operating on the GMNF have rubber tires and pull logs by the butt end (elevated), dragging the top.

SKID TRAIL - A temporary travel route used to move logs from the stump to a landing site where the logs are loaded on a hauling vehicle. Old skid trails located on the GMNF are also used by recreationists for hiking, snowmobiling, ski touring, etc.

SLASH - Branches, bark, tops, uprooted stumps, and broken or uprooted trees left on the ground after logging; also debris resulting from thinnings, wind, or fire.

SNAG - Includes standing dead or partially dead trees which are at least 6" in diameter at breast height (DBH) and 20 feet tall. See hard snag and soft snag.

SOFT SNAG - Trees with wood, especially sapwood, in an advanced stage of decay and generally not merchantable.

SOFTWOODS - A coniferous tree. Trees belonging to the botanical group gymnospermae. Softwoods on the GMNF principally include red spruce and balsam fir along with minor amounts of white pine, red pine and hemlock.

SOIL ASSOCIATION - A group of defined and named taxonomic soil units occurring together in an individual and characteristic pattern over a geographic region, comparable to plant associations in many ways.

SOIL FERTILITY - The quality of a soil that enables it to provide nutrients in adequate amounts and in proper balance for the growth of specified plants, when other growth factors, such as light, moisture, temperature, and physical condition of soil, are favorable.

SOIL HORIZON - A layer of soil, approximately parallel to the soil surface, with distinct characteristics produced by the soil forming processes.

SOIL IMPROVEMENT - The processes for, or the results of, making the soil more productive for growing plants by drainage, irrigation, addition to fertilizers and soil amendments, and other methods.

SOIL PROFILE - A progression of distinct layers of soil, beginning at the surface that has been altered by normal soil-forming processes.

SOIL SURVEY - A general term for the systematic examination of soils in the field and in laboratories; their description and classification; the mapping of kinds of soil; the interpretation of soils according to their adaptability for various crops, grasses, and trees; their behavior under use or treatment for plant production or for other purposes; and their productivity under different management systems.

SPARSE - See Stand Condition.

SPECIAL AREA - Areas having uncommon or outstanding biological, geological, recreational, cultural, or historical significance.

SPECIAL RESTRICTIONS - Restrictions on mineral exploration development and extraction activities which require applicants not to disturb the surface resources.

SPECIAL USE PERMITS - Permits issued by the Forest Service which authorize use of National Forest lands, improvements, and resources.

SPECIES OF CONCERN - Species with declining populations included on State lists, but not on the Federal Threatened and Endangered list or Eastern Regions Sensitive Species list are also of concern to the GMNF. (See Appendix D of Plan.) Appropriate management actions will be taken to reflect that concern.

STAND (TREE STAND) - A community of trees occupying a specific area and sufficiently uniform in composition, age, arrangement, and condition as to be distinguishable from the forest on adjacent areas.

STAND CONDITION - A silvicultural classification used to describe the present condition of a stand, particularly in relation to its need for treatment. The stand conditions used are as follows:

NON-STOCKED - Totally lacking forest growth.

POORLY STOCKED - Stands having insufficient growing stock for normal management.

SPARSE - Poorly stocked stands with inadequate total basal area.

LOW QUALITY - Poorly stocked stands with inadequate basal area in crop trees or potential crop trees.

WELL STOCKED - Stands having sufficient growing stock for normal management.

ALL-AGED - A stand composed of trees of all or almost all age classes.

EVEN-AGED - A stand composed of trees having no, or relatively small differences in age.

IMMATURE - Even-aged stands at least five years younger than silvicultural rotation age.

MATURE - Even-aged stands within five years of or beyond silvicultural rotation age.

MULTI-AGED - A stand having two or more age classes but not all-aged.

HIGH RISK - Stands which will not survive for 10 years without significant volume loss due to mortality.

STANDARD - A principle requiring a specific level of attainment, a rule to measure against.

STANDARD RESTRICTIONS - The limitations on mineral exploration development and extraction which are included as part of every government lease to ensure protection of surface resources and uses.

STATE HISTORIC PRESERVATION OFFICER - The State Historic Preservation Officer is the official within each State who has been designated by the Governor or Chief Executive of the State to administer the National Register and grants programs within the State.

STATE ROAD - Road under jurisdiction of State Department of Highways.

STOCKING - (See Stand Condition)

STONY - Containing sufficient stones to interfere with tillage but not to make intertilled crops impracticable. Stones may occupy 0.01 to 0.1 percent of the surface. Stoniness is not a part of the soil textural class. The terms "stony" and "very stony" may modify the soil textural class name in the soil type, but this is simply a brief way of designating stony phases.

STREAM CHARACTERISTICS

BRAIDED STREAM - One whose flow successively divides and rejoins, forming islands.

DRAINAGE DENSITY - Measure of how well drained a watershed is by surface streams. It is the miles of perennial and intermittent streams divided by the square miles of watershed area.

EFFLUENT STREAM - A stream losing water to the ground water.

RIPARIAN VEGETATION - Vegetation growing along the banks of a stream.

STREAM FLOW DURATION

PERENNIAL STREAMS - Streams whose flow persists almost throughout the year, during most years, in a well-defined channel.

INTERMITTENT STREAMS - Streams whose flow generally occurs only during wetter seasons, in a well-defined channel.

EPHEMERAL STREAMS - Streams which flow only in response to storms; channels are not well-defined.

STREAM ORDERS

FIRST ORDER STREAM - Streams with an unbranched main stem. These streams are normally found in the headwaters portion of a watershed.

SECOND ORDER STREAM - A second order stream is that portion of the main stem of a stream below the confluence of two first order streams.

THIRD ORDER STREAM - A third order stream is that portion of the main stem of a stream below the confluence of two second order streams.

SUBORDINATION OF MINERAL INTERESTS - The owner continues to reserve the mineral rights and retains the full right to explore for and produce minerals by methods which would not involve the use of the surface in any manner whatsoever, or result in a loss of support of the surface.

SUBSOIL - The layer below the soil surface in which roots normally grow.

SUBSURFACE RIGHTS (MINERAL RIGHTS) - Ownership of, or right to use the resources and improvements under the surface of the land.

SUCCESSION - The gradual development of a plant community. This involves changes in species, structure, and community processes with time.

SUITABILITY - The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.

SURFACE SOIL - The uppermost part of the soil ordinarily moved in tillage or its equivalent in uncultivated soils, ranging in depth from about 5 to 8 inches. Frequently designated as the plow layer, the Ap layer or the Ap horizon.

SURFACE RIGHTS - Ownership of the surface of the land only; right to use the surface of the land.

SUSTAINED YIELD - The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the National Forest without impairment of the productivity of the land.

TEMPORARY ROAD - Road needed only for short-term use, such as by timber purchasers for access to a single timber sale. Usually short spur roads connecting log landings to Forest Development (permanent) Roads.

TERMINAL FACILITY - A transfer point between the transportation network and resources served such as a vehicle parking area, boat ramp and dock, trailhead or landing.

THINNING - (See Cutting Methods)

THREATENED SPECIES (T) - Species listed in the current Federal Register as being nationally threatened.

TIERED APPROACH - A procedure which allows an agency to avoid duplication of paperwork through the incorporation by reference of the general discussions and relevant specific discussions from an environmental impact statement of broader scope into one of lesser scope or vice versa.

TIMBER SALE - The cutting and removal of designated trees under the authority of a contract.

TIMBER STAND IMPROVEMENT (TSI) - Usually related to activities conducted in young stands of timber to improve growth rate and form of the remaining trees. Examples are: thinning, pruning, fertilization, and control of undesirable vegetation.

TOLERANCE - The ability of a tree to grow satisfactorily in the shade of or in competition with other trees. Trees which are classified as tolerant can survive and grow under continuous shade.

TOPSOIL - The dark-colored surface layer of soil that ranges from a fraction of an inch to several feet deep.

TRACE ELEMENT - Elements naturally occurring in soil or vegetation not considered to be of major nutritional importance. Often referred to as micronutrients.

TRAFFIC MANAGEMENT - The management and controlled use of forest development roads to prevent damage to the roadway, to abate unsafe traffic conditions, to limit the use of vehicles that exceed design capacity (such as width, weight, or length of loads), to require appropriate investment sharing from commercial users, and to reduce maintenance costs. Also the management and controlled use

to meet other specific management direction such as protecting wildlife habitat or achieving semiprimitive recreation objectives. (See also Open to Public Travel).

TRAFFIC SERVICE LEVEL - A formally established classification system which describes Forest roads with respect to traffic volumes and flow, vehicle types, traffic management, user costs, alignment and surfacing. Refer to FSH 7724.

Traffic Service Level	Traffic Volume	Traffic Management	Alignment	Road Surface
A		Not found on the GMNF		
B	Moderate-heavy, mixed	Controls to reduce volume and conflict	Influenced by topography and speed	Stable for normal use season
C	Moderate-intermittent, mixed	Frequent controls at high use periods	Influenced by topography and environmental factors	Surface rutting or roughness may be present, not stable, all traffic or weather conditions
D	Intermittent-single use	Use other than single purpose (discouraged or prohibited)	Influenced by topography and environmental factors	Rough and irregular, stable during dry conditions

TRAIL - A designated path or travelway of varying width which is maintained for hikers, horsemen, snow travelers, bicyclists, or motorized vehicles. (See also skid trail).

TRANSMISSION PIPELINE - A pipeline which carries gas or liquid from a producing field or central collection facility to a storage or consumption facility, usually over long distances.

TRANSPORTATION ANALYSIS - An analysis of alternative road locations and standards to meet special resource management objectives access needs. Alternatives are compared with respect to short and long-term environmental effects and economic and social factors.

TRAVEL CORRIDOR - An area adjacent to a road or trail which includes all the land normally visible from the road or trail.

TREATMENT PRIORITY - A general guide used to establish the order in which stands should be treated. In general, the lower in magnitude the number, the higher the priority for treatment.

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.

TRIPARTITE LAND EXCHANGE - A land acquisition process in which revenues from certain timber sales are deposited in a special fund to pay for the purchase of private land.

TSI - Timber Stand Improvement

TYPE - (See Forest Type)

UNEVENAGED MANAGEMENT - The application of a combination of actions needed to simultaneously maintain continuous high-forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to retain within each area, thereby maintaining a planned distribution to size classes. Cutting methods that develop and maintain uneven-aged stands are single-tree selection and group selection. (36 CFR 219.3).

UPLAND OPENING - See Permanent Upland Opening.

URBAN ROS CLASS - (See Recreation Opportunity Spectrum)

UTILITY CORRIDOR - A linear tract of land of varying width forming a passageway through which various commodities such as oil, gas, and electricity are transported.

VEGETATIVE MANIPULATION - The forced change of one vegetation type to another. It can be done with mechanical equipment, chemicals, or fire. Usually, this is done to provide timber products, increase forage for livestock, improve scenic views, and to improve habitat for wildlife.

VERTICAL DIVERSITY - The diversity in an area that results from the complexity of the above ground structure of the vegetation; the more tiers of vegetation, the more diverse the species make-up, or both, the higher the degree of vertical diversity.

VIABLE POPULATION - A population which has adequate numbers and dispersion of reproductive individuals to ensure the continued existence of the species population on the planning area.

VISITOR DAY - The presence of one or more persons engaged in recreational activity(ies) for continuous, intermittent, or simultaneous periods aggregating 12 hours.

VISUAL MANAGEMENT (Terms frequently used)

(1) Characteristic Landscape/Character Type - A large area of land which has common characteristics of landforms, rock formations, water forms, and vegetative patterns. (2) Edge - The line where an object or area begins or ends; serve as boundaries. (3) Enhancement - A short-term management alternative which is done with the express purpose of increasing positive visual variety where little variety now exists. (4) Rehabilitation - A short-term management alternative used to return existing visual impacts in the natural landscape to a desired visual quality. (5) Sensitivity Level - A degree or measure of viewer interest in the scenic qualities of the landscape: (a) Most sensitive, (b) sensitive, and (c) less sensitive.

VARIETY CLASS - A level of visual variety or diversity of landscape character, described as: (1) Distinctive (Class A) - Refers to unusual and/or outstanding landscape. Variety that stands out from the common features in the characteristic landscape. (2) Common (Class B) - Prevalent, usual, or widespread landscape variety within a characteristic landscape. It also refers to ordinary or undistinguished visual variety. (3) Minimal (Class C) - Little or no visual variety in landscape. Monotonous or below average as compared to the common features in the characteristic landscape.

VISTA - See Scenic Vista.

VISUAL ABSORPTION CAPACITY (VAC) - Indicates the relative difficulty or cost of achieving Visual Quality Objectives (VQO's). It measures the land's capacity to visually absorb the impact of management activities.

VISUAL DISTANCE ZONES - Areas of landscapes denoted by specified distances from the observer. Used as a frame of reference, in which to discuss landscape characteristics or activities of man. The three zones are: (1) Foreground (fg) - That part of a landscape which is nearest to the viewer, and in which detail is evident, usually from observer position to one-fourth mile. (2) Middleground (mg) - The space between the foreground and the background in the landscape. It is located between one-fourth mile and four miles from the observer. (3) Background (bg) - The distant part of a landscape; especially behind something, and providing harmony and contrast. The area located from 4 miles to infinity from the viewer.

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 characteristic landscape. The five levels of VQO are: (1) Preservation - provides for ecological changes only. (2) Retention - human activities are not evident to the casual forest visitor. (3) Partial Retention - human activities may be evident but must remain subordinate to the characteristic landscape. (4) Modification (m) - human activity may dominate the characteristic landscape but must, at the same time, appear as a natural occurrence when viewed as fg or mg. (5) Maximum Modification (mm) - human activity may dominate the characteristic landscape but should appear as a natural occurrence when viewed as background.

VISUAL RESOURCE MANAGEMENT - The art and science of planning and administering the use of forest lands in such ways that the visual effects maintain or upgrade man's psychological welfare. It is the planning and design of the visual aspects of multiple-use land management.

WATER MEASUREMENT

ACRE FOOT - A measure of water volume commonly used in describing lakes, or water yield equivalent to one level acre of water, one foot deep, or 43,560 cubic feet.

CUBIC FEET PER SECOND (cfs) - A rate of water flow delivering one cubic foot of water each second, commonly used as a measure of stream discharge.

WATERSHED - The entire area that contributes water to a drainage or stream.

WATER TABLE - The upper surface of the ground water.

WATER TABLE, PERCHED - The surface of a local zone of saturation held above the main body of ground water by an impermeable layer or stratum, usually clay, and separated from the main body of ground water by an unsaturated zone.

WATER YIELD - The total net amount of water produced on the Forest including stream flow and ground water recharge.

WETLANDS - Those areas that 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. Includes swamps, marshes, bogs, sloughs, potholes, wet meadows, river overflows, mudflats and natural ponds.

WILDERNESS - The National Wilderness Preservation Act of 1964 defines a wilderness as an area of undeveloped, Federally owned land designated by Congress that has the following characteristics: (1) It is affected primarily by the forces of nature, where man is a visitor who does not remain. It may contain ecological, geological, or other features of scientific, educational, scenic, or historical value. (2) It possesses outstanding opportunities for solitude or a primitive and unconfined type of recreation. (3) It is an area large enough so that continued use will not change its unspoiled natural condition.

WILDFIRE - Any fire other than a controlled or prescribed burn.

WILDLIFE HABITAT - The sum total of environmental conditions of a specific place occupied by a wildlife species or a combination of such species.

WILDLIFE STAND IMPROVEMENT (WSI) - An improvement made in a stand to increase its value for wildlife. An example is the planting of suitable tree and shrub species for food and cover.

WILDLIFE OPENINGS - Openings maintained to meet various food or cover needs for wildlife. They may contain native vegetation or planted crops and can be maintained by burning, mowing, planting, fertilizing, grazing, or applying herbicides.

WILD RIVER - Wild and Scenic Rivers Act usage - Those 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.

ZONES - Portions of the GMNF that make logical local planning areas. Zones usually comprise several timber compartments, are bounded by ridges, streams and roads and have a relatively discrete transportation network.

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