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A SUMMARY of the Final Environmental Impact Statement for the Revised Land and Resource Management Plan

FILE COPY

GEORGE WASHINGTON NATIONAL FOREST
Virginia West Virginia

A SUMMARY
of the Final Environmental Impact Statement

INTRODUCTION

The final environmental impact statement (FEIS) documents 14 alternatives for revising the *Land and Resource Management Plan for the George Washington National Forest* (1986 Plan).and for leasing oil and natural gas in the Alleghany Front Lease Area of the Forest. All 14 alternatives represent feasible ways of managing the Forest over the next 10 to 15 years. These alternatives were developed to address major public issues and the purpose and need for the *Revised Land and Resource Management Plan for the George Washington National Forest* (Revised Plan). All 14 represent feasible ways of managing the George Washington National Forest over the next 10 to 15 years. These alternatives were developed to address major public issues and the purpose and need for the Revised Plan.

The Revised Plan is the preferred alternative (8A) which is presented in the FEIS. It is a separate document entitled *Revised Land and Resource Management Plan for the George Washington National Forest* and is incorporated by reference into the FEIS. This summary describes the alternatives and some major conclusions Land allocations are shown on the accompanying maps.

PURPOSE

Since 1976, federal law (the National Forest Management Act) requires that each of the 156 national forests be managed under a forest plan. Forest plans – or land management plans – direct all resource management activities in the national forests.

The purpose of the Revised Plan is to provide for multiple use and sustained yield of goods and services in a way that maximizes net public benefits in an environmentally sound manner. Ecosystem management will be the guiding principle in achieving this objective

The Revised Plan will guide all natural resource management activities and establish management standards for the Forest. It will determine resource management practices, levels of resource production and management, and the suitability of lands for resource management (36 CFR 219.1).

WHY REVISE?

Permission to implement the Forest Plan prepared for the George Washington National Forest (the Forest) was given by Regional Forester John E. Alcock in September 1986. The Plan did not gain public acceptance, however, and was the subject of 18 appeals filed with the U.S. Forest Service.

After a prolonged attempt to resolve the questions raised in the appeals, Regional Forester Alcock was directed by the Chief of the Forest Service to revise the Plan for the George Washington National Forest.

This revision is to accomplish these purposes:

1. The EIS, the Revised Plan, and the process used to accomplish the revision need to be in compliance with the National Forest Management Act of 1976, National Environmental Policy Act of 1969 and other federal laws and statutes.

2. The EIS and Revised Plan need to be more readily understood by the public and agency professionals than the existing Plan documents.

3. The Revised Plan needs to be more easily implemented than the existing Plan in terms of understandable management direction and where it is applied.

4. The Revised Plan needs to correct standards and other management direction that were found inadequate when monitoring and evaluating the implementation of the existing Forest Plan.

WHAT DECISIONS ARE MADE?

The Regional Forester makes decisions and recommendations on the following policies and publishes them in a Record of Decision document at the conclusion of this revision effort. All decisions but one are programmatic decisions; one decision (the consent to lease oil and natural gas) is site-specific. The Record of Decision will make the following eight decisions:

1. Establish Forest-wide multiple use goals, objectives and standards, including estimates of the goods and services expected.

2. Establish management areas with multiple-use prescriptions containing objectives, desired future condition and standards that guide future management activities in those areas;

3. Establish Forest-wide Allowable Sale Quantity (ASQ) and the Timber Sale Schedule.

4. Identify land that is suitable for timber production;

5. Allocate some or all roadless areas to management areas which permit a range of multiple uses;

6. Establish a monitoring and evaluation process;

7. Determine what lands are made available for leasable mineral development;

8. Identify those lands in the Alleghany Front Lease Area where consent to lease federally-owned oil and natural gas is being given;

9. Designate "Special Interest Areas".

The Record of Decision will also make two recommendations:

1. Identify roadless areas recommended for wilderness study;

2. Identify additions to the Research Natural Area (RNA) System.

The Record of Decision for the FEIS will make two leasing decisions:

1. The standards in Chapter 3 of the Revised Plan designate, by management areas, those lands which are administratively available for mineral development. In the case of leasing federally-owned oil and natural gas, this decision complies with 36 CFR 228.102(d). This first decision is the initial step in leasing fluid minerals on national forest lands.

2. In cooperation with the Eastern States Office of the Bureau of Land Management, the FEIS will identify those lands within the 75,000-acre Alleghany Front Lease Area where the Forest Service authorizes BLM to offer leases for oil and natural gas. This is the "consent" decision discussed in 36 CFR 228.102(e). It represents the point of irreversible and irretrievable commitment of resources. It is supported by site-specific disclosure in Chapter 3 under "MINERALS".

The Alleghany Front Lease Area contains most of the Forest land that has high-to-moderate potential for natural gas and oil. Should future information locate other areas of high interest, additional lease areas may be identified.

PUBLIC INVOLVEMENT

The public was very involved in the revision of the Forest Plan. The Forest held 13 public meetings with as many as 100 attendees. The attendees participated in the identification, clarification, and exploration of possible responses to public issues (the issues are presented in the next section). The public continued to participate as the possible responses were formulated into 14 alternatives that offer a wide range of management plans for the Forest.

Forest officials also met with individuals and groups throughout the process to provide information and explanations of the revision.

Finally, the Forest received and analyzed 4,300 letters of comment on the Draft Environmental Impact Statement and Draft Revised Forest Plan. Specific comments raised in these letters and responses to these comments are included in Appendix I.

ISSUES GUIDE THE REVISION

Public comments expressed in letters and appeals, the Chief's directives, and concerns of other Forest Service professionals are contained in the 13 issues that follow. These issues help define the management direction that is needed in the Revised Plan.

Issue 1: Biological Diversity
Issue 2: Below-Cost Timber Sales
Issue 3: Forest Access
Issue 4: All-Terrain Vehicle Use
Issue 5: Roadless Area Management
Issue 6: Special Management Areas
Issue 7: Aesthetics
Issue 8: Vegetation Manipulation
Issue 9: Resource Sustainability
Issue 10: Minerals
Issue 11: Gypsy Moth
Issue 12: Adequacy of the Revision
Issue 13: The Mix of Goods and Services

THE FOREST PROFILE

Because the Forest is about a two-hour drive from Washington, D.C., stretches alongside the popular Shenandoah Valley, and is easily accessible from the heavily populated mid-Atlantic coastline, the spotlight stays on the Forest.

The Forest extends for 140 miles along the Appalachian Mountains of northwestern Virginia and adjacent West Virginia, as the map below indicates. It includes approximately one million acres of national forest land in 13 Virginia counties and approximately 100,000 acres in four counties in West Virginia.

Approximately 30 to 35 percent of the total land area in and adjacent to the Forest is devoted to agriculture. As is the national trend, active farms and the use of land for agriculture are on the decline.

TRANSITION FROM CURRENT PLAN TO THE REVISION

Once the public issues were identified, it became clear that in order to address the issues, some changes were needed to the existing George Washington Forest Plan. These changes include: updating the current Plan's management direction, developing and displaying more detailed management areas, reassessing the amount of suitable lands for timber, and reassessing the amount of timber to make available.

ALTERNATIVE WAYS TO MANAGE THE FOREST

This section describes alternative ways that the Forest might be managed. The National Forest Management Act requires that each alternative be implementable and address major public issues. It also requires that one alternative continue current management direction into the future (Alternative 2).

The alternatives are products of often intense interaction among the public, state, federal, and private agencies; and the Forest. Although the Forest Service seeks public input in formulating the alternatives, that input may or may not be reflected in the Revised Plan. Regardless, comments from the public follows a definite path through the planning process and often creates new approaches for the Forest Service -- new analyses, fresh alternatives

In helping the Forest Service formulate the alternatives presented here, the public exercises their right to be heard and to have their concerns addressed. In choosing the alternative that becomes the Revised Forest Plan, the Forest Service exercises its mission to listen to the public, to seek their input, and to combine, when possible, public desires with professionally-sound forest management.

The public and the Forest Service began formulating the alternatives in November 1990. The alternatives are designed to address the issues, to meet the purpose and need, and to offer a wide range of possible ways of managing the

Forest. Many alternatives have been refined as a result of letters of comment on the DEIS and Draft Revised Plan.

Alternative 1 was eliminated from detailed study. **Alternative 1** represents the 1986 Forest Plan. The alternative does not, however, include several important interim management direction requirements which could not be incorporated into the Plan without a significant amendment. Since interim management has not been completely incorporated into the 1986 Plan, Alternative 1 was not a true and viable reflection of the way the Forest could be managed.

Alternative 2 (interim management direction) is a better representation of the way the Forest has been managed since the Forest Plan was released in 1986 Therefore, Alternative 1 was not considered as the no action alternative and was eliminated from detailed study.

Thirteen alternatives, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 14, were formulated initially. The Draft FEIS was released in January 1992. The public, other government agencies, state and local governments, forest users, individuals and organizations were asked to comment. Comments on the merits of the alternatives were specifically requested.

In response to public comments, a new alternative (8A) was formulated, small adjustments were made to all of the alternatives; and substantial changes (identified in the following discussion) were made to Alternatives 5, 6, 7, 11, 12, and 13. Chapter 2 of the FEIS contains detailed descriptions of the alternatives. Summaries appear below.

Alternative 2 is the no action/no change alternative. Under this alternative, the Forest continues to be managed under management direction in the amended Forest Plan and additional interim management direction set forth by the Chief.

Alternative 3 explores the advantages of changing a number of Forest Service policies. Technically, the Regional Forester does not have the authority to make such policy changes. Alternative 3 assumes that such changes are recommended by the Forest Supervisor and the Regional Forester to the appropriate higher authority.

Alternative 3 calls for a minimal level of manipulation while producing habitat not available on private lands. This alternative creates an extensive wilderness system by designating all roadless areas as wilderness and recommending additional areas Wildernesses are linked by wildlife travel corridors. Buffer zones surround wildernesses where possible. Trails are maintained at a minimum level. Foot travel requiring map reading and compass skills is encouraged All motorized vehicles are restricted to open roads outside the wildernesses.

Alternative 4 provides a variety of motorized recreation experiences. Roads constructed for timber sales are used by off-highway vehicles. Areas currently

managed for non-motorized dispersed recreation are reviewed for conversion to motorized recreation as demand warrants.

Alternative 5 provides an uninterrupted flow of marketable goods and services. It provides a high level of timber and, as a result, habitat favorable to huntable wildlife.

In the FEIS, the ASQ for this alternative has been increased from 600 MMBF to 680 MMBF to provide a response to concerns that sufficient regeneration was not being accomplished given gypsy moth mortality.

In **Alternative 6**, the emphasis is on non-market goods and services. Included are wilderness recreation, fish and wildlife habitat, water recreation, and non-wilderness dispersed recreation. Eleven roadless areas (containing 25% of the acreage in the roadless area inventory) are recommended for wilderness study. Special Interest Areas are maintained or enhanced.

In the FEIS, wildlife habitat improvement accomplished through non-timber management practices was increased so that this alternative provided an amount of wildlife habitat comparable with the selected alternative. The management area allocation was also modified to increase the amount of lands in Management Area 4 through the inclusion of more "Special Interest Areas – Biological" including the Shenandoah Mountain Crest. A new management area map for this alternative accompanies the FEIS.

Alternative 7 allocates Forest lands to unfragmented habitat, riparian areas, habitat for bear/squirrel, habitat for turkey/woodpecker, habitat for deer/grouse. Quality hunting, fishing, hiking, and nature study are emphasized.

In the FEIS, the allowable sale quantity was reduced from 580 MMBF to 520 MMBF to provide a wide range of response to concerns over the amount of timber harvesting. The management area allocation was also modified to remove all of the "Special Biological Areas" from Management Area 4. A new management area map for this alternative accompanies the FEIS.

Alternative 8 was the Forest Service selected alternative in the DEIS. It emphasizes biological values – proposed, threatened, endangered, and sensitive species; large areas of unfragmented habitat for area-sensitive species; wildlife viewing and nature studies – while providing multiple use.

Alternative 8A is the alternative selected for the Forest Plan. Although very similar to Alternative 8 above, it also reflects many of the suggestions and comments made on the draft EIS and positive components identified in other alternatives. It emphasizes providing uses, values, services and environmental conditions consistent with the 1990 RPA Assessment in a manner that maintains biological diversity and sustainable ecosystems. Since Alternative 8A was formulated after the DEIS was issued, a new management area map for this alternative accompanies the FEIS.

Alternative 9 provides extensive areas of unfragmented forest and a large increase in wilderness.

In the FEIS, the land suitable for timber production was reduced from 80,000 acres to 66,000 acres based on additional evaluation of where uneven-aged regeneration harvests could be practically applied on the Forest. The management area allocation was also modified to increase the amount of lands in Management Area 4 through the inclusion of more "Special Interest Areas — Biological". A new management area map for this alternative accompanies the FEIS.

Alternative 10 emphasizes a mixture of goods and services that provides the highest revenue in an efficient manner. Included is a timber sale program of least net cost. The volume of timber produced is determined by the amount of land available for timber production that provides a positive cash flow.

Alternative 11 emphasizes biological values and roadless area values. Eleven roadless areas are recommended for wilderness study and remote areas are managed as backcountry. Motorized recreation is restricted to open system roads.

In the FEIS, this alternative was adjusted to provide one possible response to suggested changes to the Forest Service preferred alternative in the DEIS. The roadless areas recommended for wilderness study were changed to eleven roadless areas often recommended by some individuals and organizations. The remaining roadless areas and other remote areas were allocated to a different version of Management Area 9 containing standards that resembled Management Area 8. Lands suitable for timber production were limited to lands within to 1/2 mile of system roads. No unlicensed off-highway vehicle trail routes were included and licensed off-highway vehicles were restricted to open system roads. The management area allocation was also modified to increase the amount of lands in Management Area 4 through the inclusion of more "Special Interest Areas — Biological". A new management area map for this alternative accompanies the FEIS

Alternative 12 provides a traditional range of goods and services including timber, recreation, minerals, wilderness, range, and wildlife habitat.

In the FEIS, the ASQ for this alternative has been reduced from 500 MMBF to 450 MMBF to provide a wide range of response to concerns over the amount of timber harvesting. The lands suitable for timber production have been increased to 595,000 acres. Also, the mixture of regeneration harvest methods has been changed so that the estimated annual program of harvest would consist of clearcutting 1,250 acres, modified shelterwood on 1,400 acres and two-stage shelterwood on 700 acres.

Alternative 13 provides areas of unfragmented forest and increases wilderness. Twenty-three roadless areas are recommended for wilderness designation; the remainder provide primitive recreation.

In the FEIS, this alternative was adjusted to provide one possible response to suggested changes to the Forest Service preferred alternative in the DEIS. 23 roadless areas were recommended for wilderness study based on roadless areas often recommended by some individuals and organizations. The remaining roadless areas and other remote areas were allocated to a different version of Management Area 9 containing standards that resembled Management Area 8. Some lands were allocated to Management Area 2 (migration corridors) to respond to concerns that such changes were needed to the Forest Service preferred alternative in the DEIS. Lands suitable for timber production were limited to lands within 1/2 mile of system roads. No unlicensed off-highway vehicle trail routes were included and licensed off-highway vehicles were restricted to open system roads. The management area allocation was also modified to increase the amount of lands in Management Area 4 through the inclusion of more "Special Interest Areas – Biological" A new management area map for this alternative accompanies the FEIS.

Under **Alternative 14**, the Forest is managed to (1) provide a mixture of emphases based on local issues and conditions, (2) provide goods and services to local constituents, (3) maintain natural values on large portions of the Forest (including a moderate increase in wilderness), (4) achieve a multiple-use program in light of the 1990 Resources Planning Act Assessment, and (5) minimize value loss and vegetation impacts caused by the spread of gypsy moth defoliation and mortality.

Alternative 8A has been identified as the Forest Service preferred alternative

COMPARISON OF ALTERNATIVES

This section compares the 14 alternatives. The information presented here is intended to highlight the major differences between the alternatives. As such, the discussion centers on those measurable aspects which provide a clear change between the alternatives.

In Table 1, the reader can get a sense of the "zoning concept" of the management areas. It shows how much land would be managed under the management areas for the different alternatives. Following this comparison, Table 2 summarizes the effects to the Forest's environment if implementation of a particular alternative occurs. Included in this comparison is a listing of the goods and services and environmental effects produced by each alternative.

Table 1.
Comparison of Management Areas (in Thousands of Acres) by Alternative

		Alternative													
Mgmt Area	Description	2	3	4	5	6	7	8	8A	9	10	11	12	13	14
1	Minimal Level Management	0	101	0	0	16	0	55	0	16	231	4	0	0	42
2	Migration Corridors	0	151	0	0	82	0	0	0	107	0	0	0	107	0
3	Sensitive Watersheds/Municipal Watersheds [1]	9	0	8	8	5	0	0	0	1	22	2	8	0	0
4	Special Interest Areas	55	11	53	53	84	2	54	70	34	53	42	53	40	55
5	Sensitive Viewsheds	0	223	0	0	34	0	0	10	100	37	0	0	11	26
6	The Appalachian Trail	13	5	13	13	9	13	9	10	7	13	9	13	7	10
7	Scenic Corridors/Highland Scenic Tour	0	0	0	0	98	0	67	39	0	0	85	0	228	66
8	Wilderness & Wilderness Study Areas	32	557	32	32	119	32	44	44	293	34	149	32	245	44
9	Back Country/Remote Highlands	8	0	0	8	126	0	186	141	243	3	169	8	186	107
10	Scenic/Recreational Rivers	14	0	14	14	11	13	13	8	7	14	12	13	9	18
11	All-Terrain/Off-Highway Routes	0	0	925	0	10	0	17	11	0	0	0	77	0	19
12	Developed Recreation Areas	2	2	2	2	2	2	2	2	2	2	2	2	2	2
13	Dispersed Recreation Areas	11	7	5	11	6	11	55	42	8	5	57	11	4	22
14	Remote Habitats for Wildlife	207	0	0	0	109	206	85	133	27	176	190	114	0	147
15	Mosaics of Wildlife Habitats With Freedom from Continued Disturbance	350	0	0	0	310	570	306	331	137	292	300	403	184	256

[1]While not specifically called "Sensitive Watersheds", areas identified as such in other alternatives are either allocated to management areas affording the same level of protection as management area 3 would provide or have standards to protect them

Table 1. *(Continued)*
Comparison of Management Areas (in Thousands of Acres) by Alternative

		Alternative													
Mgmt. Area	Description	2	3	4	5	6	7	8	8A	9	10	11	12	13	14
16	Early Successional Forested Habitats for Wildlife	330	0	0	0	0	186	35	39	0	0	0	145	0	38
17	Timber Emphasis	0	0	0	907	0	0	108	91	30	156	0	157	0	184
18	Riparian Areas with Ecological Widths	0	0	5	9	0	0	21	0	0	21	0	21	0	21
19	Riparian Areas with Set Widths	26	0	0	0	36	22	0	0	45	0	35	0	34	0
20	Administrative Sites, Utility Corridors and Communications Sites	4	4	4	4	4	4	4	4	4	4	4	4	4	4
21	Special Management Areas	0	0	0	0	0	0	0	59	0	0	0	0	0	0
22	Small Game and Watchable Wildlife	0	0	0	0	0	0	0	6	0	0	0	0	0	0

Table 2.
Summary of Environmental Effects by Alternative

Environmental Effect	Alternative Discussion
Air Quality Degradation	Under Alternative 3, three core wildernesses, containing more than 55,000 acres, are proposed for designation as Class 1 air quality areas Under all other alternatives, there are no Class 1 areas. The existing Class 2 areas are maintained Smoke from prescribed fire causes temporary air quality degradation which may persist for a few hours in all alternatives except Alternative 3. In Alternative 3, prescribed fire is not used
Cultural Resource Protection	Each alternative protects all significant cultural resources by avoidance and or study Areas containing potential cultural resources are surveyed prior to ground disturbing activities.

Alternative	2	3	4	5	6	7	8	8A	9	10	11	12	13	14
Developed Recreation Site Capacity (M PAOT)	13 6	12 8	13 6	13 6	12 9	13 6	15.7	16 2	12 9	16 2	13 6	16.2	13 6	16.3
Licensed Off-Highway Vehicles (Miles of Road)	223	0	725	575	105	223	223	223	45	160	45	375	45	223
Unlicensed Off-Highway Vehicles														
Number of Systems	3	0	19	3	3	0	5	4	0	3	0	9	0	4
Miles of Trail Routes	60	0	360	63	53	0	95	75	0	60	0	175	0	65
Adopted Recreation Opportunity Spectrum (Thousands of Acres)														
Semi-Primitive Non-Motorized	167	862	63	39	209	72	132	150	337	121	197	84	312	154
Semi-Primitive Motorized	203	0	181	32	134	271	213	208	14	194	153	226	39	161
Roaded Natural	691	199	459	82	714	714	643	615	706	586	707	541	706	558
Roaded Modified	0	0	358	908	4	4	73	88	4	160	4	210	4	188

Table 2. (Continued)
Summary of Environmental Effects by Alternative

Environmental Effect	Alternative Discussion
Fisheries and Riparian Areas	In Alternatives 2, 6, 11, and 13, a slow progression toward a more mature forest of more shade tolerant species occurs as an approach that resembles *current management continues More large woody debris is deposited into streams Riparian habitats and fisheries are sustained in a healthy condition* Timber harvesting only occurs when needed to protect or enhance riparian-dependent resources. Little potential for soil from earth-disturbing activities to reach streams In Alternatives 3 and 9, a slow progression towards a more mature forest of more shade tolerant species also occurs as natural processes occur *Timber harvesting does not occur. No potential for soil from earth disturbing activities to reach streams Riparian areas will, through natural processes,* lead to improved fisheries habitat that provides diverse, self-maintaining habitats, even though stocking and other habitat improvements are restricted or prohibited In Alternatives 7, 8, 8A, 10, 12, and 14, a slow progression towards a more mature forest of more shade tolerant species also occurs as riparian areas are managed based on ecological parameters Timber harvesting occurs only when needed to protect or enhance riparian-dependent resources. Little potential, (but more than Alternatives 2, 6, 7, 11 and 13) for soil from earth-disturbing activities to reach streams. In Alternatives 4 and 5, the existing forest of tolerant and intolerant species is maintained as riparian areas are managed using state BMP's Timber harvesting does occur Some riparian dependent species, such as salamanders, are temporarily displaced as shade removal results in warmer, drier conditions. Removal of mature timber provides habitat for early successional and edge species Habitat for species preferring large diameter trees (such as the pileated woodpecker) or continuous canopy cover (certain neotropical migrants) is lessened. Little potential, but more than all other alternatives, for soil from earth-disturbing activities to reach streams Recreational fishing is increased or maintained in all alternatives except Alternative 3 Under Alternative 3, there will be a significant decrease in recreational fishing as the trout stocking program is eliminated.

Alternative	2	3	4	5	6	7	8	8A	9	10	11	12	13	14
Percent Riparian Area Suitable For Timber Production	0	0	46	66	0	0	18	5	0	9	0	33	0	22

Table 2 (Continued)
Summary of Environmental Effects by Alternative

Environmental Effect	Alternative Discussion
Protection from Gypsy Moth Defoliation of Oak Trees	Under alternative 3, repeated years of oak defoliation will lead to mortality of individual trees and stands of trees. Stands sustaining mortality will change species composition over time Such species as white pine, Virginia Pine, and pitch pine may seed into sites where oaks have been killed. Red maple, blackgum, and sassafras present in the understory may occupy the stands In other sites, laurel may become the dominant vegetation, slowing development of new stand of trees Under all other alternatives, stands of oak on land suitable for timber production may not die "if" treated with insecticides or through timber harvesting to manage moth populations. The maximum number of acres that may be considered for treatment varies by alternative depending on the amount of suitable timberland

Acres that may be Considered for Insecticide Treatment (in Thousands of Acres)

Alternative	2	3	4	5	6	7	8	8A	9	10	11	12	13	14
Generally Available	898	0	935	926	435	973	596	668	175	647	521	927	188	685
Available Under Limited Circumstances	163	0	126	135	545	88	465	393	779	414	540	134	766	376
Not Available	0	1061	0	0	81	0	0	0	107	0	0	0	107	0

Land Ownership	All alternatives have similar land adjustment programs aimed at consolidating national forest ownership Alternative 3 has the most ambitious program for land acquisition that provides for the acquisition of buffer lands along a wilderness-corridor system.
Special Uses	All alternatives except Alternative 3 allow for special uses provided the uses are consistent with management area direction.
Utility Corridors	All alternatives manage utility corridors No new uses are granted under alternative 3.
Communication Sites	Alternative 3 restricts all future use to the current sites In all other alternatives, new site requests are not granted as long as space is available on existing sites.

Table 2. (Continued)
Summary of Environmental Effects by Alternative

Environmental Effect	Alternative Discussion													
Alternative	2	3	4	5	6	7	8	8A	9	10	11	12	13	14
Available For Leasable Energy (Oil and Gas) Minerals (Thousands of Acres)[1]														
with Standard Lease Terms	338	0	933	916	33	194	223	145	51	396	12	397	6	298
with Stipulations	644	0	70	84	943	794	768	842	918	591	964	600	982	691
with No Surface Occupancy	47	0	26	29	53	41	38	42	60	42	53	41	53	40
Not Available	32	1061	32	32	32	32	32	32	32	32	32	32	32	32
Available For Non-Energy Leasable Minerals (Thousands of Acres)[1]														
Generally Available	698	0	942	924	342	764	529	479	189	710	312	802	190	535
On Case-By-Case Basis	300	0	68	84	648	245	482	532	825	298	700	206	824	475
Not Available	53	1061	51	53	52	52	50	50	47	53	49	53	47	51
Available For Salable Minerals (Thousands of Acres)[1]														
Material Sales Allowed	330	0	924	907	26	185	214	141	47	387	4	379	0	283
On Case-By-Case Basis	670	0	76	93	894	824	786	858	707	971	891	621	802	716
Not Available	61	1061	61	61	141	52	61	62	307	74	166	61	259	62

Given the overall low potential of the Forest for most mineral resources, the differences among the various alternatives would not result in a difference in acres of actual surface disturbance, tons of soil loss through construction activities, number of wells drilled, etc Just because more or less land might be available doesn't mean that industry will rush in and try to develop mineral resources. In fact, current and past activity levels are low despite the general availability of lands for mineral exploration and development. Rather, the main difference will be in acres available for industry to consider for exploration or development in the future as mineral commodities, uses of minerals, and new technologies change

Consent for Oil and Gas Leasing in the Alleghany Front Lease Area(Thousands of Acres)[1]														
with Standard Lease Terms	-[2]	0	65	65	3	10	5	5	0	40	0	27	0	5
with Stipulations	-[2]	0	9	9	71	64	69	69	74	34	74	47	74	69
with No Surface Occupancy	-[2]	0	1	1	1	1	1	1	1	1	1	1	1	1
Not Available	-[2]	75	0	0	0	0	0	0	0	0	0	0	0	0

[1]The above figures do not distinguish between federal and private mineral rights Approximately 19 percent of the Forest contains mineral holdings on which developmental rights may be reserved or outstanding.
[2]The decision to consent to leasing is deferred and evaluated with each proposal.

Table 2. (Continued)
Summary of Environmental Effects by Alternative

Environmental Effect	Alternative Discussion
Range	The grazing program is discontinued in Alternatives 3, 6, 9, 11 and 13 Alternatives 2, 4, 5, 8, 8A, 10, 12 and 14 continue the current program. Alternative 7 modifies and reduces the program after completion of site-specific analysis on each area.

Alternative	2	3	4	5	6	7	8	8A	9	10	11	12	13	14
Roadless Areas Recommended for Wilderness Study														
Number of Areas	0	25	0	0	11	0	3	3	27	2	11	0	22	3
Thousands of Acres	0	524	0	0	87	0	12	12	260	3	115	0	213	12
Management of Roadless Areas (Percent of Roadless Area Acreage)														
Recommended for Wilderness Study	0	93	0	0	33	0	5	5	100	1	45	0	82	5
Not Available for Development	20	7	17	20	62	3	89	84	0	49	54	20	18	50
Available for Development	80	0	83	80	5	97	6	11	0	51	1	80	0	45

If development occurs on above available acres, it will preclude many of the roadless areas from wilderness consideration in the future. Roadless area values will be lost in many areas if development occurs. Experiences of solitude and remoteness will diminish with development The Forest will appear less natural as management activities are implemented.

Alternative	2	3	4	5	6	7	8	8A	9	10	11	12	13	14
Estimated Amount of New Road Construction to Support the Timber Sale Program														
Average Annual Miles	5-8	0	6-9	9-13	0	9-13	4-7	5-8	1-2	2-3	0	7-11	0	5-8

Table 2. (Continued)
Summary of Environmental Effects by Alternative

Environmental Effect	Alternative Discussion													
Alternative	2	3	4	5	6	7	8	8A	9	10	11	12	13	14
Changes in Total Employment														
Number of Jobs	0[4]	-566	-74	+293	-149	+339	0	+80	-385	-197	-24	+192	-245	+101
Changes in Timber Industry Employment														
Number of Jobs	0[4]	-246	+11	+194	-246	+93	-71	-33	-195	-147	-109	+44	-148	-20
Changes in Total Income														
Millions of Dollars	0[4]	-11	-2	+6	-2	+7	0	+2	-7	-4	0	+4	-5	+3
Present Net Value														
Millions of Dollars	1255	1246	1133	1266	1236	1214	1217	1229	1178	1241	1178	1296	1208	1208
Total Budget														
1991 Millions of Dollars	13 7	8.9	15 7	14 9	14 3	18	15	15 2	12 9	12.8	16 3	14.5	16 3	16.4

[4]Alternative 2 serves as the basis for comparison

Table 2. (Continued)
Summary of Environmental Effects by Alternative

Environmental Effect	Alternative Discussion													
Alternative	2	3	4	5	6	7	8	8A	9	10	11	12	13	14
Anticipated Accelerated Soil Erosion Caused by Human Activities During the First Decade														
Thousands of Tons	10 6	2.6	14 6	14 9	4.6	15 0	9.4	10.6	5 5	7.0	8 5	13 2	7.9	10 5
Average Annual Sediment, Natural and Human Causes (Natural Sediment Averages Approximately 20.1 Thousand Tons/Year.)	22.8	20.8	23 9	23 9	21.3	24	22.5	22 9	21 5	21 9	22 3	23 5	22.1	22 8
In no alternative does soil compaction result in long-term reductions in soil productivity. In no alternative is nutrient loss or nutrient cycle disruption severe enough to lower productivity over the short or long term No alternative increases the severity of major floods Since forest management practices do not measurably impact the ground water resource, impacts do not vary measurably by alternative														

Alternative	2	3	4	5	6	7	8	8A	9	10	11	12	13	14
Allowable Sale Quantity for 1st Decade Millions of Board Feet	380	0	400	680	0	520	270	330	80	150	210	450	150	350
Suitable Timber Land Thousands of Acres	300	0	354	655	0	696	260	350	66	120	280	595	185	350
Average Annual Projected Net Revenue Thousands of Dollars	-716	0	-750	-735	0	-1105	-611	-683	-506	-352	-511	-918	-489	-718
Total Regeneration Harvesting for 1st Decade (in Thousands of Acres)														
Clearcut	15	0	10	40	0	20	3	3	0	9	0	12	0	10
Other Even-Aged	8	0	18	0	0	18	14	20	0	0	8	21	11	12
Selection	9	0	0	0	0	32	16	8	56	0	86	0	31	47

Table 2. (Continued)
Summary of Environmental Effects by Alternative

Environmental Effect	Alternative Discussion
Adopted Visual Quality Objectives (Thousands of Acres)	

Alternative	2	3	4	5	6	7	8	8A	9	10	11	12	13	14
Preservation	34	1055	32	32	246	32	44	46	536	35	318	32	431	44
Retention	94	6	662	112	328	54	497	379	516	392	204	148	294	321
Partial Retention	279	0	9	9	483	971	447	546	5	474	535	671	332	508
Modification	654	0	358	908	4	4	73	88	4	160	4	210	4	188

Wild and Scenic River Protection	In all alternatives, protection is provided within a one-quarter mile corridor on each side of an eligible river (one-half mile total). Management activities allowed within this corridor are designed to meet the minimum protection requirements, given the river's potential classification Management Area 10 in the Revised Forest Plan (Chapter 2) describes these minimum protective measures
Management of Existing Wilderness	The amount of existing wildernesses does not differ among the alternatives Additional wilderness might occur if roadless areas were recommended for wilderness study. This is discussed under ROADLESS AREAS Under Alternative 3, existing wildernesses would form the core of most of the large wilderness areas in the wilderness-corridor complexes

Table 2. (Continued)
Summary of Environmental Effects by Alternative

Environmental Effect	Alternative Discussion													
Alternative	2	3	4	5	6	7	8	8A	9	10	11	12	13	14
"Carrying Capacity" (Thousands of Animals Habitat for Which is Provided)														
Black Bear	1 3	1.5	0.7	0.9	1.5	1.4	1.4	1.4	1 5	1 4	1 4	1 2	1 4	1 3
Wild Turkey	16 6	15 6	8 6	14 9	21 6	24 2	18 9	19 8	16 2	16.1	18.9	19.3	17.5	18 2
White-Tailed Deer	40 3	26 6	30.8	60 7	46 4	64 1	41.4	46.4	28 6	34 2	38 0	56 6	33 1	46 6
Average Annual Prescribed Burning Thousands of Acres	0 5	0	0	0 5	3	3	3	3	0.5	3	0 5	0 5	0 2	3
Average Annual Wildlife Clearings Maintained Thousands of Acres	0	0	0	0	2 4	3 1	0 4	0 4	0	0	0	0	0	0
Land Available for Old Growth Conditions Thousands of Acres	542	1061	692	390	951	348	772	668	1001	923	766	411	863	688

Table 2. (Continued)
Summary of Environmental Effects by Alternative

Environmental Effect	Alternative Discussion
Unfragmented Habitats	Unfragmented habitat is another distinctive type of habitat. It is particularly important for certain neotropical birds, some of which require large tracts of undisturbed forest lands A dependency of some neotropical birds on unfragmented habitats is related to the inability of the forest interior dependent species to reproduce successfully under edge conditions where predation, cowbird parasitism, and competition are high Area sensitive Management Indicator Species include the pileated woodpecker, work-eating warbler, and ovenbird Estimated acreage of unfragmented habitat needed to maintain optimum populations of area sensitive neotropical migrants is 7,400+ acres Suggested minimum area requirements to maintain the presence of these species are 15 acres for the ovenbird, 370 acres for the worm eating warbler, and 400 acres for the pileated woodpecker Timber production and the associated road building programs were analyzed in each alternative to determine the unharvested acres that provide edge conditions around harvested areas where predation, parasitism, and competition from other species is increased. Results follow. As edge habitat increases, unfragmented habitats and associated area sensitive indicator species decrease. Conversely, as edge habitat decreases, unfragmented habitat increases.

Alternative	2	3	4	5	6	7	8	8A	9	10	11	12	13	14
"Relatively Unfragmented" Habitat Thousands of Acres	526	1051	117	128	934	299	617	603	952	882	672	326	720	550
"Relatively Fragmented" Habitat Thousands of Acres	535	10	944	935	127	762	444	458	109	179	389	735	341	511

Protection of Threatened, Endangered, Sensitive Species	The Forest contains no critical habitat, as defined by the U.S. Fish and Wildlife Service, for federally listed species inhabiting this Forest (refer to Appendix F). Each alternative provides for protection of habitat for threatened, endangered, and sensitive species

THE GEORGE WASHINGTON NATIONAL FOREST

The following are titles of documents prepared in conjunction with the revision of the Forest's land management plan. All documents are dated January 1993.

The Record of Decision, 48 pages
A Summary of the Final Environmental Impact Statement, 24 pages
The Final Revised Land and Resource Management Plan, 450 pages
Final Environmental Impact Statement (FEIS), 876 pages
Comments and Responses, Appendix I of the FEIS, 758 pages
A Maps Packet: Alternative 8A -- the Preferred Alternative
The Transportation Network and Recreational Opportunities
Lands Classified Suitable for Timber Production
Alternative 6
Alternative 7
Alternative 9
Alternative 11
Alternative 13

Copies of these documents are available upon request from:
The Supervisor's Office
George Washington National Forest
P.O. Box 233
Harrisonburg, VA 22801
(703)4332491

Also, all documents are available for viewing at the following locations:
Rockingham County Public Library
Jefferson-Madison Regional Library, Charlottesville
Stauton Public Library
Buena Vista Public Library
Rockbridge Regional Library, Lexington
Waynesboro Public Library;
Lynchburg Public Library
Clifton Forge Public Library
Bath County Public Library
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