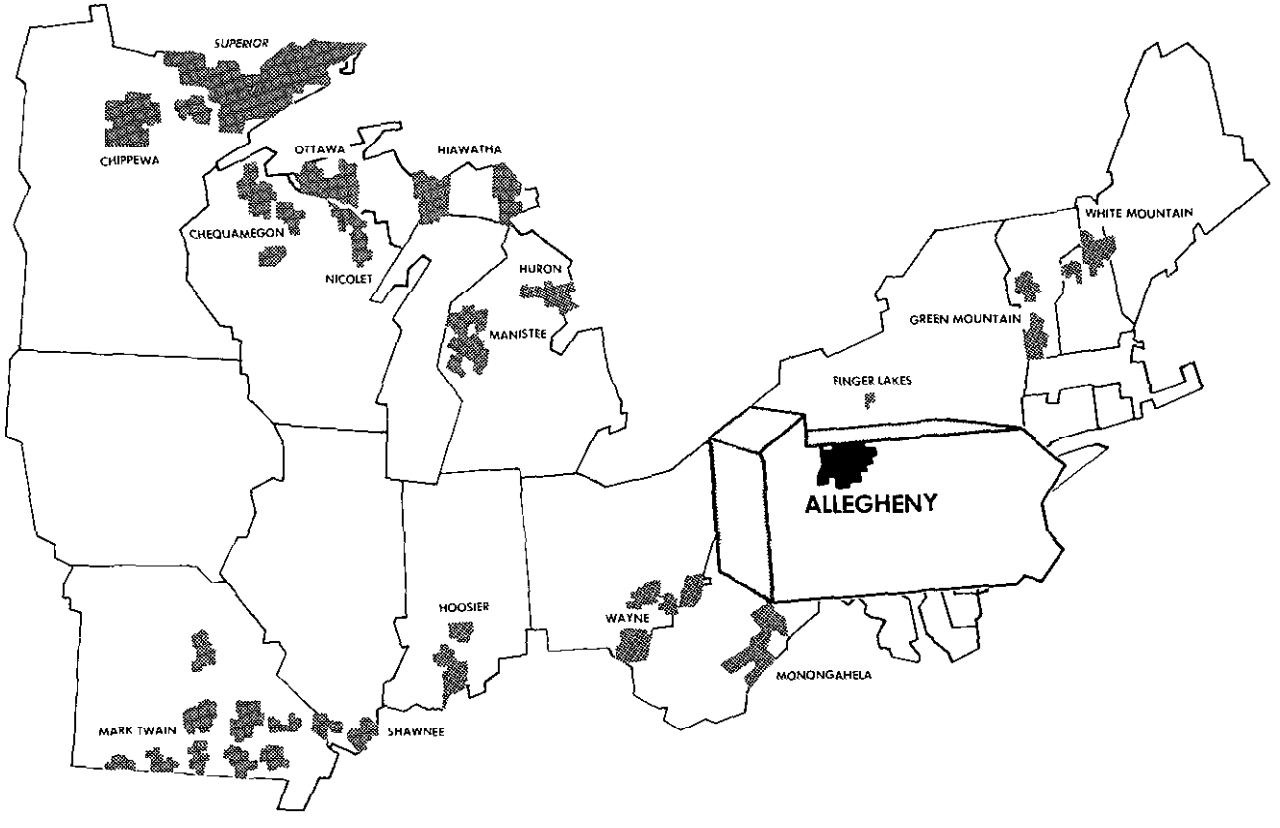
United States
Department of
Agriculture

Forest
Service

**Eastern
Region**

Land and Resource Management Plan

ALLEGHENY NATIONAL FOREST



The Allegheny National Forest

LAND AND RESOURCE MANAGEMENT PLAN

(Alternative D - Final Environmental Impact Statement)

Eastern Region
USDA-Forest Service

March 1986

PREFACE

PURPOSE OF THE PLAN

This National Forest Land and Resource Management Plan (Forest Plan) was developed to direct management of the Allegheny National Forest. The goal of the Forest Plan is to provide a management program reflecting a mixture of management activities that allows for use and protection of national forest resources while fulfilling legislative requirements and addressing local, regional, and national issues. To accomplish this, the Forest Plan:

- Sets management direction through the establishment of short (10-15 years) and long-range goals and objectives throught the year 2035.

- Prescribes the standards, practices, and approximate timing and vicinity necessary to achieve goals and objectives.

- Prescribes monitoring and evaluation needs to ensure that direction is carried out, measures quality and quantity of actual operations against predicted outputs and effects, and forms the basis to implement revisions.

Preparation of the Forest Plan is required by the implementing regulations of the Forest and Rangeland Renewable Resources Planning Act (RPA), as amended by the National Forest Management Act (NFMA). Assessment of its environmental impacts is required by the National Environmental Policy Act (NEPA) and the implementing regulations of NFMA [36 Code of Federal Regulations (CFR) 219]. The Forest Plan will be reviewed annually and updated as necessary. Once every 10 to 15 years, the plan will be reviewed and revised. The Forest Plan replaces all previous resource management plans prepared for the Allegheny National Forest. With the Forest Plan approved, all subsequent activities affecting the Forest, including budget proposals, must be in compliance with the Forest Plan [36 CFR 219.10(e)]. In addition, all permits, contracts, and other instruments for the use and occupancy of the National Forest must be in conformance with the Forest Plan [16 USC 1604(i)].

LEGISLATIVE BACKGROUND AND EVALUATION OF NATIONAL FOREST SYSTEM PLANNING

There are numerous legal bases for management of National Forest System lands. Following are some of the more significant laws which must be considered in planning uses for the Allegheny National Forest. These and other laws are included in the Department of Agriculture Handbook entitled "The Principal Laws Relating to Forest Service Activities."

CREATIVE ACT — Creative Act of March 3, 1891 (26 Stat. 1103, 16 USC 471; repealed by 704(a) of Federal Land Policy and Management Act, 90 Stat. 2792) allows the President to set apart and reserve National Forests from the public domain.

ORGANIC ACT — Organic Act of June 4, 1897 (30 Stat. 35) states "No National Forest shall be established, except to improve and protect the Forest within the boundaries, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States" (16 USC 475).

The Secretary (Interior) "shall make provision for the protection against destruction by fire and depredations upon public forests and National Forest.... and may make such rules and regulations and establish such service and will insure the objects of such reservations, namely, to regulate their occupancy and use and to preserve the Forests thereon from destruction" (16 USC 551).

TRANSFER ACT — Transfer Act of 1905 (33 Stat. 628.16 USC 472) transferred the administration of the National Forests to the Secretary of Agriculture.

WEEKS ACT — Weeks Act of 1911 (36 Stat. 962), as amended; 16 USC 515, 521) authorized the Secretary of Agriculture to purchase "forested, cut-over, or denuded lands" for the purposes of watershed protection and timber production.

MINERALS ON WEEKS LAW LAND ACT — Mineral Resources on Weeks Law Lands, Act of 1917 (39 Stat. 1150, as supplemented; 16 USC 520) authorized the Secretary of the Interior (with consent of the USDA Forest Service) to permit prospecting, development, and utilization of the mineral resources on lands acquired under the Weeks Act of 1911.

MINERAL LEASING ACT	Mineral Leasing Act for Acquired Lands, Act of 1947 (61 Stat. 913; 30 USC 351, 352, 354, 359) allowed the Secretary of the Interior (with consent of the USDA Forest Service) to lease all deposits of coal, phosphate, oil, oil shale, gas, and others which are owned by the United States.
MULTIPLE USE ACT	Multiple Use-Sustained Yield Act (MUSYA) of 1960 states the "National Forests are established and administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes" (16 USC 528). "The Secretary of Agriculture is authorized and directed to develop and administer renewable surface resources of the National Forests for multiple use and sustained yield of the several products and services obtained therefrom. In the administration of the National Forest, due consideration shall be given to the relative values of the various resources in particular cases. The establishment and maintenance of areas of wilderness are consistent with the purposes and provisions of sections 528 to 531 of this title (16 USC 529)." The Secretary is also authorized to cooperate with state and local governmental agencies in management of National Forest (16 USC 530).
WILDERNESS ACT	Wilderness Act of 1964 (16 USC 1131-1136) provided for establishment and administration of the National Wilderness Preservation System to be administered for the use and enjoyment of the American people in such a manner as will leave the system unimpaired for future use and enjoyment as wilderness.
LAND AND WATER CONSERVATION FUND ACT	Land and Water Conservation Fund Act of 1964 [78 Stat. 903, as amended; 16 USC 401-(a), (b)] provided for the purchase of land for recreation purposes from money appropriated from the Land and Water Conservation fund.
NATIONAL ENVIRONMENTAL POLICY ACT	National Environmental Policy Act (NEPA) of 1969 (42 USC 4321-4335) declares a National policy of "productive and enjoyable harmony between man and his environment" (42 USC 4321). The detailed statement requirement of NEPA was designed to disclose to the public, President, Congress, and agency decisionmaker the environmental consequences of implementation of a proposed action and alternatives to it. It applies to major federal actions significantly affecting the quality of the human environment.

MINING AND MINERALS	Mining and Minerals Policy Act of 1970 (84 Stat. 1876; 30 USC 21a) declared "that it is the continuing policy of the Federal Government in the national interest to foster and encourage private enterprise in (1) the development of economically sound and stable domestic mining, minerals, metal and mineral reclamation industries, (2) the orderly and economic development of domestic mineral resources, reserves, and reclamation of industrial, security, and environmental needs, (3) mining, mineral, and metallurgical research...., and (4) the study and development of methods for the disposal, control, and reclamation of mineral waste products, and the reclamation of mined land...".
EASTERN WILDERNESS	Eastern Wilderness Act of 1975 (88 Stat. 2096; 16 USC 1132 note) provided for the designation of wilderness in addition to that allowed by the Wilderness Act of 1964 in the eastern half of the United States.
FEDERAL LAND POLICY ACT	Federal Land Policy and Management Act of 1976 (90 Stat. 2743) dealt with range management and rights-of-way for National Forest System on public domain lands. For the most part, the statute is directed at lands managed by Bureau of Land Management, Department of Interior.
RESOURCES PLANNING ACT	Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974, as amended by National Forest Management Act (NFMA) of 1976 (16 USC 1600-1614). This is a comprehensive framework and primary source of direction to the Forest Service to fulfill its mandate to manage the National Forest System. The central element of the Act is the institution of land and resource management planning as a basic means to achieve effective use and production of renewable resources and a proper balance of the use of National Forest System (NFS) lands. Section 6 of the Act requires the Secretary of Agriculture to prescribe NFS land and resource management planning regulations. The standards and guidelines in these regulations must be incorporated into NFS land and resource management plans.
PENNSYLVANIA WILDERNESS ACT	The Pennsylvania Wilderness Act of 1984 (98 Stat. 3100) established the Hickory Creek Wilderness, Allegheny Islands Wilderness, and the Allegheny National Recreation Area. Section 8 of this Act further releases all other areas from wilderness consideration for the duration of this planning cycle.

A HISTORICAL PROFILE: CONGRESSIONAL ACTS AND FOREST PLANNING

During the early 1900's, most NFS lands were inaccessible, public demands for goods and services were low, and conflicts among resources were minor. Priority was given to protecting these public lands from fire, damaging insects and disease, and unauthorized use. Resource production and use served local rather than regional or national needs. Most Forest Service planning in that era centered on specific work plans for forest land rehabilitation, protection, and reforestation.

By the late 1930's, however, there existed a general public awareness that more intensive management of the National Forest--and the use of their various renewable resources on a sustained-yield basis--was in the national interest. This prevalent philosophy, coupled with a need for vital timber during World War II, spawned a dramatic expansion of National Forest resource management and utilization in the 1940's and 1950's.

Although early laws governing the establishment and administration of the National Forests referred only to timber and water resources, the other resources--wildlife, forage, and outdoor recreation--have always been protected and managed. By 1939, the Forest Service had made clear its policy to administer the National Forests on multiple-use principles.

Recognizing the lack of specific statutory direction to manage all the resources of the National Forests under multiple-use principles, the Forest Service proposed a multiple-use act in the late 1950's. Passage of the Multiple-Use Sustained Yield Act of 1960 provided Congressional endorsement of the Forest Service policy and practice of equal consideration of all renewable resources.

Land management planning was formulated into a distinct process upon passage of the Multiple Use-Sustained Yield Act. Until shortly after passage of the National Environmental Policy Act of 1969, this process was commonly referred to as "multiple-use plans." Separate plans were made for each National Forest Ranger District.

These multiple-use plans usually included specific coordinating requirements to ensure compatibility of resource uses. The Ranger District multiple-use plans were used to coordinate the actions taken to achieve the objectives of the NFS resource development plans.

In the early 1960's, another factor had also entered the resource picture, intensified public concern for environmental protection. The Nation realized that clean air, clean water, and natural beauty were just as important to its standard of living as industrial products. Increased concern for the Nation's forest lands were part of this awakening environmental consciousness. Many Americans became aware of the National Forest System and realized that, although these public lands contained substantial amounts of the Nation's remaining natural resources, there were limits to their uses.

The desire for quality environment, however, did not lessen the need for forest products and services from the National Forest. On the contrary, while concern for the environment reached new heights, so did the demand for products and services. One result of this was the passage of the 1964 Wilderness Act. This Act created the National Wilderness Preservation System and provided for the designation of federal land to be preserved in its natural state.

By the mid-1960's, the Forest Service was caught in a dilemma. Conflicting demands for forest resources were increasing rapidly, and the renewable resource base was perceived as shrinking with the implementation of the Wilderness Act. Some critics claimed that NFS management was out of balance, that some uses were being increased at the expense of others, and that the Forest Service was ignoring its mandate to manage the Forest for multiple uses. And, seemingly, the public was not being given a chance to effectively influence the Forest Service decision-making process. The Forest Service land management planning process changed in response to these public concerns and to NEPA.

In August 1974, Congress enacted the Forest and Rangeland Renewable Resources Planning Act (RPA). Although it did not significantly change existing Forest Service land management planning procedures, it made the development and maintenance of NFS land and resource management unit plans statutory requirements. It re-emphasized that an interdisciplinary approach be used in the development and maintenance of land management plans. It required that periodic comprehensive national programs be developed that would integrate all Forest Service activities. And it more directly involved Congress in evaluating Forest Service programs and in assigning priorities. The RPA also provided for a periodic assessment of the Nation's renewable resources, including

those of the National Forest System. This Assessment provides the basic information for resource management planning at national, regional, and local levels.

The National Forest Management Act of 1976 amended RPA to provide additional statutory direction on the preparation and revision of NFS land and resource management plans.

Major highlights of NFMA are land management planning, timber mangement actions, and public participation in Forest Service decision making. Also featured are requirements for coordination with planning processes of state and local governments and other federal agencies, and an interdisciplinary approach to plan development and maintenance.

Land management planning direction is the core of the Act. Regulations promulgated in 1979 and revised in 1982 prescribe the process for development and revision of land management plans.

The preceding discussion illustrates the evolution that has occurred in the laws, regulations, and policies directing National Forest System planning. A similar evolution has occurred in planning technology. Recent advances in inventory and analysis techniques have greatly expanded the ability of Forest Service planners to incorporate much broader considerations into Forest planning.

Changes in planning policies and procedures have accelerated during the past few years and will continue into the future. These policies and procedures are evolving so rapidly that changes often occur between the start and finish of individual Forest Plans.

These changes along with public comment have caused the final Forest Plan and EIS presented here to be different from the draft documents. These changes will make the Forest Plan a much better document in the long run. A majority of the changes relate to improved analysis techniques (as displayed in the Final Environmental Impact Statement), an improved integration with the National budget situation, and changes in the management and prescriptions.

RELATIONSHIP TO OTHER PLANNING LEVELS

It is important to understand that the planning process is a continuous cycle. The RPA and related planning regulations

require that the USDA Forest Service have a three-level integrated planning process consisting of:

National	RPA Assessment and Program
Regional	Regional Guide
Local	Forest Plan

Development of a Forest Plan occurs within the framework of Forest Service regional and national planning. Every ten years, a comprehensive national (RPA) assessment is made of the forest and rangeland renewable resource situation--timber, range, water, fish, wildlife, outdoor recreation, and wilderness. The RPA program then sets the national direction and output levels for NFS lands based on the National RPA Assessment of the suitability and capability of each Forest Service Region. Short and long-range supply and demand projections are made for each of the resources in the RPA Assessment. Alternative levels of outputs and associated costs are examined in the RPA program which is prepared every five years. Based on an analysis of these alternatives and consideration of public inputs, the Secretary of Agriculture decides on a recommended RPA Program for the Forest Service. The recommended Program and a Presidential Statement of Policy are transmitted to Congress. Congress may accept or revise the Statement of Policy. The final Policy Statement and Program serve as the guide for planning and developing future Forest Service budget proposals.

The Regional Guide links the RPA Assessment and Recommended Program with National Forest planning. It plays the dual role of providing input to development of RPA programs and providing direction for the development of Forest Plans. The Regional Guide displays the Regional RPA Program and sets tentative resource targets for the National Forests. Forest Plans then blend national and regional demands with forest capabilities and needs.

Individual Forest Plans are the foundation of regional and national plans. They contain the integrating basic data on biological potential, resource inventories, local economic and social considerations. Information from Forest Plans will be used in revising the Regional Guide.

The Allegheny's Forest Plan is based on the various considerations which have been addressed in the accompanying Final Environmental Impact Statement (FEIS). The planning process and the analysis procedure which were used in developing this Plan, as well as the other alternatives that

were considered, are described or referenced in the FEIS. Activities and projects will be planned and implemented to carry out the direction in the Forest Plan. These local projects will be "tiered to" the accompanying Final EIS as provided for in 40 CFR 1502.20. The local, project environmental analysis will use the data and evaluations in the Forest Plan and Final EIS as its basis.

Budget proposals for fiscal year 1986 will be submitted to Congress before this Forest Plan can be implemented. It will be based on the 1985 RPA Assessment data and include operational, maintenance, and investment costs necessary for the continued management of the Allegheny National Forest. Investment projects by their nature are phased in over a period of three to five years. For example, timber sales to be sold in 1988 are inventoried and reconnaissanced in 1986 or earlier, designed and cruised in 1987, and appraised and sold in 1988. Roads, campgrounds, and wildlife habitat projects are phased in the same way. The number and type of skills needed in the organization are also tied directly to these projects.

PUBLIC QUESTIONS ON FOREST PLAN

Questions regarding this Forest Plan should be sent to:

Forest Supervisor
Allegheny National Forest
P.O. Box 847
Warren, PA 16365
Phone: (814) 723-5150

EXTENT OF FINAL FOREST PLAN ACTION

If any particular provision of the proposed action or the application thereof to any person or circumstances is held invalid, the remainder of the proposed action and the application of such provisions to other persons or circumstances shall not be affected thereby.

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Introduction

CHAPTER 1

INTRODUCTION

A. ORGANIZATION OF THE FOREST PLAN

The Forest Plan is organized into five chapters.

Chapter 1 - Introduces the structure of the Forest Plan and provides a brief orientation to the Forest.

Chapter 2 - Summarizes the supply and demand conditions for significant multiple use goods and services common to the planning area.

Chapter 3 - Shows how the Plan addresses the Forest's management problems as identified during the planning process.

Chapter 4 - Provides the goals and objectives for all resource management activities and establishes the management standards and guidelines for the Allegheny.

Chapter 5 - Explains how management direction will be implemented and how these activities will be monitored, evaluated, and kept current in light of changing conditions and assumptions.

Appendices - Appendices are included that provide a glossary, more detailed summaries, and other required data on specific management practices or outputs.

B. FOREST DESCRIPTION

The Allegheny is Pennsylvania's only National Forest, and it comprises a half million acres of land in northwestern Pennsylvania. It was established in September 1923, with ownership of surface rights being of principal concern. Title to the oil, gas, and minerals was viewed with secondary concern and acquired on only a very small percentage of tracts during the early decades of Forest acquisition.

The Allegheny National Forest lies within Elk, Forest, McKean, and Warren Counties. The Forest is adjacent to several large metropolitan areas including Erie to the northwest, Buffalo to the north, Pittsburgh to the south, and the Youngstown-Akron-Cleveland area to the west. It is from these areas that the Allegheny National Forest attracts most of its recreation clientele and other forest users.

Figure 1-1 shows the location of the Forest from a national, regional, and local perspective.

The Forest is situated in the rugged plateau country of northwestern Pennsylvania. The topography is characterized by flat to rolling plateaus which are frequently dissected by stream valleys. These valleys are sometimes steep. The land is primarily timbered and helps to support local industries with fine hardwood timber such as black cherry, maple, ash, and oak. In 1983, over 61 million board-feet of timber were harvested. The watersheds provide high quality water supplies for local communities and habitat for deer, black bear, squirrels, rabbits, grouse, non-game species, and predators. At least 49 different mammals are common to the Allegheny. Water is a plentiful resource with several reservoirs and over 500 miles of stream available. These provide for a variety of fishing and hunting experiences. Opportunities for forest-based recreation are both numerous and diverse. Many miles of trails exist for the hiker, cross-country skier, and snowmobiler. Developed recreation facilities include four beaches, six boat launches, eighteen campgrounds, three overlooks, and nine picnicking areas. Many of these facilities are located around the 7,634-acre Allegheny Reservoir on the upper Allegheny River.

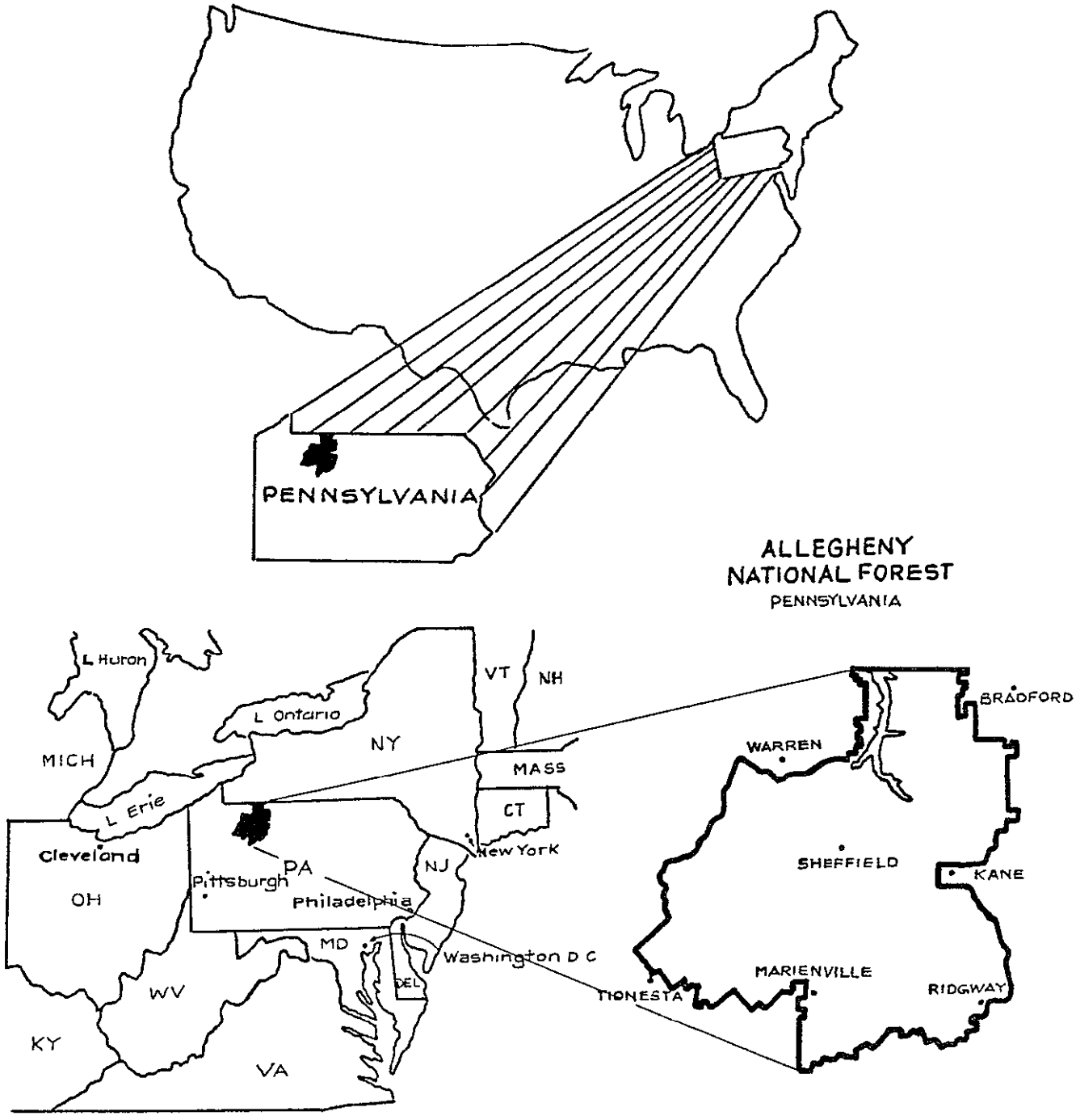


Figure 1-1. Allegheny National Forest Vicinity Map.

CHAPTER 2

Management Situation

CHAPTER 2

MANAGEMENT SITUATION

Forest Plans must assure that they provide for multiple-use and a sustained yield of products and services. In addition, Forest Plans must provide this multiple-use and sustained yield of goods and services from the Allegheny National Forest in a way that maximizes long-term net public benefits in an environmentally sound manner.

For the analysis of the management situation, NFMA identified specific requirements that must be analyzed. They include the maximum potential supply of significant resources, the projected demand for resources, and the Forest Plan objectives which are to resolve the planning problems.

A. SUPPLY OF FOREST OUTPUTS

Table 2-1 compares the resource production and use levels that would be provided by the Allegheny National Forest with:

- o current management direction (Alternative B in the Environmental Impact Statement)
- o supply potential for important resources
- o Forest Plan Alternative D and variation (D2)

The major conclusion of the demand analysis is that within our limits of production capability all outputs from the Allegheny would be consumed. An exception to this is Range outputs. The Allegheny National Forest has areas that could provide grazing units. However, according to a study by Bowersox and Strauss (1980), the market demand for grazing areas is near nonexistent. Bowersox and Strauss surveyed private livestock owners adjacent to the Forest.

The survey revealed that the livestock operations are relatively small and the operators have adequate supplies of pasture at, or very near, the central farm. Since public demand for hay or livestock grazing is nonexistent, no management of this resource is planned.

Expected demand levels are not shown on Table 2-1 because reliable, quantifiable estimates of demand were not possible to obtain. The results of demand analysis are described later in this chapter and in the Economic Efficiency Analysis section of Appendix B of the Final EIS.

Current management is the level of outputs and uses provided by projecting present management direction into the future. Current management direction is further defined in the Final Environmental Impact Statement as Alternative B.

Table 2-1 Current Outputs, Resource Supply Potential, and Forest Plan Objectives for RPA Time Periods

OUTPUTS/CATEGORY	TIME PERIODS 1986 1995	1996 2005	2006 2015	2016 2025	2026 2035
Developed Recreation MRVD[1]					
Current Management	7,769	7,829	7,829	7,829	7,829
Supply Potential	9,460	12,348	13,783	17,156	17,276
Forest Demand					
Alternative D	8,861	9,409	9,788	10,139	10,190
Variation (D2)[2]	(8,861)	(9,409)	(9,788)	(10,139)	(10,190)
Dispersed Recreation MRVD[1]					
Current Management	7,953	7,894	7,851	7,873	7,861
Supply Potential	13,351	13,615	13,875	14,207	14,370
Forest Plan					
Alternative D	8,866	9,227	9,747	10,173	10,216
Variation (D2)	(7,808)	(7,909)	(8,169)	(8,456)	(8,432)
Wilderness MRVD[1]					
Current Management	102	157	176	195	204
Supply Potential	374	578	645	713	747
Forest Plan					
Alternative D	102	157	176	195	204
Variation (D2)	(102)	(157)	(176)	(195)	(204)
Wildlife and Fish M WFUD[1]					
Current Management	3,567	3,797	3,820	3,913	4,054
Supply Potential	3,967	4,876	5,486	6,066	6,370
Forest Plan					
Alternative D	3,921	4,384	4,643	4,912	5,088
Variation (D2)	(3,659)	(4,010)	(4,189)	(4,414)	(4,594)
Timber MMBF[1]					
Current Management	623	623	623	623	623
Supply Potential	1,362	1,362	1,362	1,362	1,362
Forest Plan					
Alternative D	945	945	945	945	945
Variation (D2)	(905)	(905)	(905)	(905)	(905)

1 See the definitions of these units in the glossary in Appendix A.
2 D2 is a variation of the Forest Plan that estimates the results if a high rate of private oil and gas development is experienced during implementation.

Supply potential is the highest level of production achievable on the Allegheny National Forest. This level of outputs is based on the physical or biological limits of each Forest resource.

Totals shown are for all resource elements combined. For example, wildlife use from habitat investments in the wildlife element, and wildlife use derived from timber harvests are combined in the table.

DEVELOPED RECREATION — The potential developed recreation facilities on the Forest were inventoried, and the potential maximum capacity of use was estimated. Facilities in this category include campgrounds, picnic areas, boat launches, swimming beaches, overlooks, and parking lots.

DISPERSED RECREATION — The potential for dispersed recreation was estimated using maximum practical use densities for each recreation opportunity spectrum (ROS) class. Each ROS class has a different use density. For example, Roaded-Natural class has a significantly higher use density than Semi-Primitive Motorized. The total of all ROS classes are shown in Table 2-1. See Chapter 4 Section B of this plan for a use summary by ROS class.

WILDERNESS — The potential for wilderness use was also estimated using maximum practical use densities. The semi-primitive non-motorized ROS class densities were used.

WILDLIFE AND FISH — The potential for wildlife and fish user days was estimated by first estimating the highest number of animals which could be produced, and then estimating the consumptive use (number of hunters and fisherman) which the resource could support without adversely affecting population level objectives. An estimate of the nonconsumptive use of wildlife was also made.

TIMBER — The potential for timber production was derived using the timber management strategies which provide the highest total volume possible on the Forest.

B. RESOURCE DEMANDS

The Allegheny National Forest completed a demand analysis to assist in the evaluation of conflicts from resource allocation and to avoid situations where investments might be incurred to produce or provide outputs which have little or no identifiable value. This analysis assumed that the local demand schedule for all outputs is perfectly elastic over an established quantity interval. That is, general market prices have been, and are expected to be, insensitive to the levels of production on the Allegheny National Forest. This was assumed because the Forest does not control a significant portion of the market, and sizable quantities of goods, services, and uses are available from other resource suppliers within the market area.

The conclusion after studying alternative consumption estimates based upon different assumptions, public involvement results, and output levels in the early stages of Forest Plan alternative development is that all outputs in each alternative would be consumed. Resource supply is expected to be below demand levels.

Demand considerations for each major resource area are provided below.

DEVELOPED RECREATION

Demand for developed recreation, particularly camping, has likely been constrained by lack of facilities around the Allegheny Reservoir and other major river corridors. No new campground construction has occurred in recent years, and campground occupancy has been high at existing sites. Thus, projections of past use to represent demand for developed recreation are not considered reliable.

The demand analysis and public involvement results reveal an unfulfilled need for more developed recreation facilities around the Allegheny Reservoir, Tionesta Creek, and the Allegheny and Clarion Rivers.

DISPERSED RECREATION

Consumption estimates for dispersed recreation were derived from applying the recreation growth indices from the 1980 RPA "An Assessment of the Forest and Rangeland Situation in the United States," to the current recreation and use levels. Results indicate that projected consumption will exceed potential supply estimates for each decade in our analysis.

WILDERNESS

No efforts were made to quantify demand for wilderness use. Estimated demand for wilderness use is complex and philosophically difficult.

It must be concluded that the demand for wilderness experience on the ANF is very high, given that half the country's population lies within a day's drive of the Forest. This fact was recognized by Congress in passage of the "Pennsylvania Wilderness Act of 1984." Except for the 10,000 acres designated on the Allegheny National Forest, there are no federal wilderness areas in the entire New York, Ohio, New Jersey, Maryland area. New York has the Adirondack Preserve, and Pennsylvania manages a system of relatively small "wild" areas. There is also a significant wilderness opportunity in Canada, not far to the north. The closest other Federal wilderness, however, is located on the Monongahela National Forest in West Virginia (78,000 acres).

It seems obvious that the demand for wilderness designation on the Forest is high, and the available supply in the regional area is low.

WILDLIFE AND FISH

Consumption estimates for wildlife were derived by applying the growth indices from the 1980 RPA "An Assessment of the Forest and Rangeland Situation in the United States," to the current wildlife use levels. Results indicate that projected consumpted will exceed potential supply estimates for each decade in our analysis.

TIMBER

Projections of past timber harvest into the future and RPA projections of future harvest fall short of volumes being produced on the Forest today.

After several public meetings and meetings with the local timber industry, the following conclusions were reached:

- the Allegheny National Forest provides a relatively small part of the local region's sawtimber supply,
- the Allegheny National Forest could double or triple its sawtimber offer without requiring any major new investments in mill capacity,
- the Allegheny National Forest could at least double its sawtimber sale offer immediately,
- pulpwood supplies will continue to outstrip consumption needs in the forseeable future.

MINERALS

Energy minerals are another significant commodity produced on the Allegheny National Forest, but 96 percent are privately owned. For additional discussion about minerals supply and demand, see Page B-80 in Appendix B of the Final EIS and Page 3-3 in Section A of Chapter 3 of the Final EIS.

CHAPTER 3

Plan Response to Management Problems

CHAPTER 3

PLAN RESPONSE TO MANAGEMENT PROBLEMS

A. INTRODUCTION

Issues submitted by the public as well as concerns from within the Forest Service, helped the Forest to reassess the direction for future management of the Allegheny National Forest. These public issues and Forest Service concerns did confirm the need to reassess current direction and also guided the Forest Service in preparation of the Final EIS and accompanying Forest Plan.

Public issues were identified through various types of citizen participation including public meetings, comment forms, and individual contacts. For a detailed explanation of this process, see the Final EIS, Appendix A.

This chapter will show how the plan addresses and responds to major public issues, management concerns, and resource opportunities known as the management problems.

B. MANAGEMENT PROBLEMS

Management Problem 1 - Providing Developed Recreation

Recreation on the ANF is an important public benefit. During the 1960's, recreation opportunities expanded rapidly with construction of the 7,634-acre Allegheny Reservoir and its modern National Forest campgrounds and boating facilities.

Currently, these campgrounds around the reservoir are often full, and on most summer weekends boating facilities are busy, although not crowded. More rustic campgrounds elsewhere on the Forest have fewer campers, but these campers are those who value their solitude. Only one national forest campground is available along the Clarion and Allegheny Rivers, or along Tionesta Creek. Private, state, and Corps of Engineers campgrounds are also located along these rivers and creeks.

People do disagree about the need for new campgrounds -- either modern or rustic -- or for additional boating facilities. They also disagree about whether these facilities should be financed by the Allegheny National Forest or by private investors.

Allegheny Reservoir

Some citizens believe that the reservoir can accommodate even more modern campgrounds and boating facilities. They believe that more development should occur and that the scenic beauty can be retained if development is carefully planned. Development would create new jobs, raise local income and revenues, and satisfy users who prefer comfortable, modern campgrounds.

Other citizens believe that the undeveloped character of the reservoir is unique in the Eastern U.S. and that its scenic qualities should be preserved.

Allegheny and Clarion Rivers and Tionesta Creek

Boating and fishing on these streams is increasing, but public boating access points and campgrounds are not always available along the streams.

Public or Private Financing of Recreation Facilities

Historically, the Allegheny N.F. has financed construction of all recreation facilities and has operated most facilities, except for the marina on the Allegheny Reservoir. Now, however, private developers may become involved in the construction and the operation of both existing and planned recreation facilities.

Resolution: Through a combination of private sector and Forest Service investments, increase recreation opportunities for camping, increase boat launches around the major water attractions on the Forest, and add a new motel/restaurant complex along Route 59 adjacent to the Allegheny Reservoir Marina. Where feasible, private capital will finance new construction. Existing scenic drives will be maintained. Bank fishing areas will be developed around the Allegheny Reservoir.

The possibility exists that the private sector will not take the opportunity to construct the campgrounds and the motel/restaurant complex. If the private sector does not make the necessary investments, the Forest Service will pursue the funding necessary to construct the campgrounds but not the motel/restaurant complex.

Management Problem 2 - Providing Dispersed Recreation Opportunities

Some dispersed recreation activities, such as hiking, backpacking, and cross-country skiing, depend upon a certain amount of solitude and a natural appearing forest. Roads, trails, and evidence of timber harvests may annoy some people who are interested in these kinds of activities. Increased timber harvesting and oil and gas development have reduced recreation opportunities for those who prefer an experience where they encounter few other people and can view a natural landscape.

Alternatively, many people, including some hunters, fishermen, and off-road vehicle users, rely on roads and trails when they visit the Forest. They do not venture far from their vehicles, and meeting other Forest visitors may even increase their satisfaction. For them, many roads and trails are crucial to their enjoyment of the Forest.

Resolution: Manage for high-quality recreation opportunities in a variety of settings. Large areas for semi-primitive recreation opportunities will be provided. Small campgrounds are provided to enhance dispersed recreation opportunities. The remainder of the Forest will be managed to provide roaded-natural recreation opportunities. New pedestrian trails will be constructed, primarily in the semi-primitive recreation areas and around campgrounds.

New off-road vehicle (ORV) trails will also be designated. The policy provides for ORVs only on designated routes or trails.

Uncertainty exists about the ability of the Allegheny to provide all of the semi-primitive recreation opportunity described in the management prescription assignments. Future oil and gas development could change the nature of the recreation settings. When intensive oil and gas development occurs in management areas which provide a semi-primitive recreation setting, another management prescription, which is compatible with oil and gas development, may be assigned to that area. We will attempt to make a compensating management area acreage shift elsewhere on the Forest.

Management Problem 3 - Timber Management

Timber on the Allegheny National Forest is a valuable economic resource, especially the many stands of high-value black cherry trees. Historically, much of the timber on the Forest was harvested in the late 1800's and early 1900's. Therefore, most of the timber on the Forest will be mature and ready for harvest during the next two to three decades.

The first management question, then, is what timber volume to harvest during each decade. The second question is how to guarantee that healthy seedlings replace trees harvested. Currently, seedlings are often destroyed by competition with dense understories of brush, striped maple, and beech; by toxins which leach from ferns; and by the many deer that eat seedlings.

Timber Volumes

The National Forest Management Act directs each National Forest to provide total timber volumes that do not decline from one decade to the next. Yet because most timber on the Forest is close to maturity, timber sale

volumes may decline if large volumes are harvested all at once when trees are financially mature (60 to 90 years old). Actually, other management strategies are open to the Allegheny National Forest (ANF). For aesthetic reasons, the ANF could allow trees to grow beyond their financial maturity to a maximum of 120 years old. Such large trees may enhance the appearance of the Forest, but the delay in harvesting would decrease financial returns. For economic reasons, the Forest could maintain non-declining sawtimber volumes, yet still allow total timber volumes (sawtimber plus lower-quality pulpwood) to fluctuate.

Understory Problems

Before trees can be harvested, managers must be assured that seedlings will replace the harvested trees. Two related problems frequently prevent new seedlings on the Forest from replacing harvested trees.

First, deer populations have remained unacceptably high for a long period of time. Because the deer eat tree seedlings, acorns, as well as shrubs and other herbaceous plants, their browsing has altered the natural vegetation on the floor of the forest. They frequently eat enough tree seedlings to prevent the establishment of young tree stands. Seedlings can be protected from deer by fencing and other control measures, but the costs are very high.

Second, an estimated 50 percent of the forest floor on the Allegheny National Forest is covered with a dense understory of fern and striped maple. This understory, combined with excessive deer browsing, is sufficient to prevent the growth of black cherry and other desirable seedlings.

The most effective treatment of this dense understory is to use herbicides to kill the fern and striped maple.

Resolution: Increase timber volumes above current levels. Emphasize financial returns from production of high-quality hardwood sawtimber. A non-declining yield of total timber volume will be provided. First decade sawtimber production will increase 30 percent above the current situation. Even-aged silviculture will dominate, and stands will be harvested at a range of

ages to achieve a non-declining yield of total timber volume. Eighteen thousand acres will receive herbicide treatment in the first decade.

Analysis also indicated that the level of timber harvest and the methods for managing timber are directly related to other management problems, such as access for dispersed recreation and provisions for wildlife habitat.

Management Problem 4 - Wildlife Habitat

The management of wildlife and fish habitats and the regulation of harvest rates to achieve management objectives is a cooperative effort among the Pennsylvania Game Commission, Pennsylvania Fish Commission, U.S. Fish and Wildlife Service, and the Forest Service.

Historically, the Allegheny National Forest has relied chiefly on timber harvests to manage vegetation for wildlife. The regeneration harvest method known as clearcutting allows the regeneration of vegetation crucial for animals requiring young vegetation. As a result, hunters have enjoyed high populations of the white-tailed deer.

The wildife habitat improvement program has been expanding. Management emphasizes habitat improvements for a variety of game and non-game species.

Wildlife concerns are three-fold: (1) deer populations which exceed the capacity of the land to support them, (2) more roads and trails into prime habitat, and (3) level of management emphasis for small-game and non-game species.

Deer Populations

As mentioned in the Timber Management Problem, deer populations on the Allegheny National Forest currently exceed the land's carrying capacity. For lack of food, deer are small and have poor antler development. Deer also eat so many tree seedlings that expensive measures, such as fencing, must be used to protect seedlings until they grow above the deer's reach. Finally, deer have modified the natural understory of the forest, and wildlife species, such as rabbits, dependent upon a rich variety of understory vegetation have declined.

The Allegheny National Forest and the Pennsylvania Game Commission have agreed to limit levels for deer, and progress is being made towards achieving these population levels.

Once the deer populations are nearer to those levels, recovery of the understory vegetation may still take twenty to thirty years.

More Roads and Trails

Roads and trails associated with timber harvests and oil and gas developments have significantly opened up prime wildlife habitat. Such access allows animals to be disturbed during brooding seasons and to be hunted extensively during hunting seasons. Such disturbances are particularly bad for some species -- for instance, the wild turkey. (These wildlife impacts are in addition to those that detract from dispersed recreation, as discussed in Management Problem 2 Providing Dispersed Recreation).

Small-game and non-game emphasis

Some citizens would like the Allegheny National Forest to increase management emphasis on rabbits, squirrels, and grouse, as well as such non-game animals as songbirds and hawks. They are also concerned about the increasing number of black cherry trees on the Forest and their effect on habitat for small-game and non-game.

Resolution: The Allegheny National Forest will continue to work with the State of Pennsylvania to bring the deer herd down to ecologically acceptable levels.

Through application of standards and guidelines, roads through prime wildlife habitat will not be open to the public during critical times of the year. Over 100,000 acres of land have been assigned to management areas in which roads will normally be closed to public travel.

Investments for small-game and non-game habitat are increased substantially above current levels. Habitat will increase significantly for woodcock, ruffed grouse, cavity nesting birds, and several warbler species.

Management Problem 5 - Private Oil and Gas Development

This nation's oil industry began 125 years ago within a few miles of the Allegheny National Forest. To date, 10 percent of the Forest's surface area has been developed for oil and gas production. Extensive oil and gas deposits still underlie the National Forest.

Almost 96 percent of the oil, gas, and mineral rights under the Forest are owned by the private sector. Development timing of these private rights is determined by the owners. The Allegheny National Forest encourages mineral resource development and works cooperatively with the private owners to reduce impacts to surface resources. Reducing the impacts may include such actions as relocating a proposed road to a better route, shifting a proposed drilling site to avoid a sensitive area, or providing stone to surface roads.

Public concern about the effects of the development are high. Oil and gas development requires road access which, if done cooperatively with the Forest Service, often results in lower costs for both parties. Most roads, however, disturb wildlife habitat and opportunities for recreation in a natural-appearing forest. If done improperly, oil and gas development can also cause sediment and chemical pollution of streams and, thus, be harmful to aquatic life and to humans. Development removes timber land from production during the period of oil and gas extraction.

The Allegheny National Forest policy on private oil and gas development is to foster a spirit of cooperation between the Forest Service and the developers to provide both surface and subsurface resource protection and development. In this atmosphere of cooperation, financial benefits are greatest for both parties and adverse environmental effects are reduced. The Allegheny National Forest also works with State and Federal regulatory agencies to ensure compliance with existing laws and regulations.

Resolution: The actual rate of oil and gas development may vary between the low and high demand projections. The Forest predicts the average rate will be closer to high than low.

The Forest Service will not pursue acquisition of subsurface rights across the Forest. Limited acquisition will be pursued in specific areas where

needed to achieve surface management objectives, such as in the Tionesta Research Natural Area; or where Congressionally mandated, as in the Wilderness Areas.

The Forest Service will also continue to work cooperatively with the State and with the U.S. Environmental Protection Agency to ensure waters meet water quality goals.

The Allegheny will mitigate the significant effects of oil and gas development by continuing its education and cooperative approach with the oil and gas industry.

Management Problem 6 - Wilderness

For two decades, people have debated whether areas of the Allegheny National Forest should be designated as wilderness. Such a designation, under the Wilderness Act of 1964, would identify as wilderness those areas possessing unique scientific and research value or unique opportunities for solitude and wilderness recreation.

Two national evaluations have investigated potential wilderness areas -- the first Roadless Area Review and Evaluation, now called RARE I, and then the second evaluation, called RARE II. Under RARE II some 34,358 acres of Forest land were classified according to their wilderness values. Tracy Ridge and the Allegheny River Islands were recommended to Congress for designation as wilderness. Two other areas -- Minister Creek and Hearts Content -- and one island -- Verbeck -- were recommended for non-wilderness, and all remaining areas were identified as needing further planning. These RARE II recommendations were never acted on by Congress.

On October 30, 1984, the President of the United States signed into law the Pennsylvania Wilderness Act of 1984 (Act). The Act establishes the Hickory Creek Wilderness, the Allegheny Islands Wilderness, and the Allegheny National Recreation Area. The Wilderness problem has been resolved for this planning cycle through this legislation. Congress also directed that evaluation of other areas for wilderness is not necessary during this planning cycle.

Resolution: Based on the Act, the Forest will manage Hickory Creek and Allegheny Islands as Wilderness.

C. RESEARCH NEEDS

This section includes the research needs which were identified by the Forest Supervisor, considering the input from other federal, state, and local governments, and universities, as required under 36 CFR 219.7(e). All research needs are subject to approval by the Regional Forester and may be supplemented by additional needs identified during Plan monitoring and evaluation activities.

The following table includes those research needs applicable to the Allegheny N.F. They are in addition to or supplement those included in Chapter 5 of the Eastern Regional Guide.

Table 3-1 Research Needs Analysis

PROBLEM STATEMENT AND BACKGROUND	NEED/URGENCY (HIGH, MEDIUM, LOW)	CORRESPONDING RESEARCH NEEDS OF R-9 REGIONAL GUIDE, TABLE 5-2
Timber		
1. Is the soil compaction/rutting associated with conventional logging systems a long-term problem affecting Forest productivity and regeneration? Background: Timber research has shown that soil compaction can adversely affect site productivity and stand regeneration. The Forest needs to identify soils susceptible to compaction, what causes it, and what conditions slow its development. Results will be beneficial for refining existing management practices.	MEDIUM - Special emphasis needs to be placed on methods of quantifying damage and measuring recovery times.	9.5
2. What is the most economic and biologically feasible method of regenerating Allegheny hardwoods under varying site conditions? Background: The high deer population present on the ANF has created numerous regeneration	HIGH - The Forest Plan calls for regenerating 33,000 acres during the first decade. The PNV of these sales could be dramatically changed as result of this research.	3.2, 3.7, & 3.9

Table 3-1 Research Needs Analysis (cont'd)

PROBLEM STATEMENT AND BACKGROUND	NEED/URGENCY (HIGH, MEDIUM, LOW)	CORRESPONDING RESEARCH NEEDS OF R-9 REGIONAL GUIDE, TABLE 5-2
problems. Deer have all but eliminated advanced reproductions, and the costs associated with fencing/fertilizations can be prohibitively high. In addition, many sites feature dense understories of laurel, striped maple, hemlock, grass, and fern. There plants are formidable competitors, and some even secrete chemicals which inhibit black cherry seedling growth. What is the effective method for controlling understory species in light of these factors? If we reduce the deer herd significantly, will the regeneration begin to successfully establish itself? We also believe some time should be spent studying the relationship between deer density and understory development of fern and striped maple.		
3. What economic alternatives are available to convert savannahs into highly productive timber stands? Background: There are many old burns and failed regeneration cuts on the ANF which are understocked and contain low-quality trees. Deer density, soil factors, and the allelopathic effects of existing ferns and grasses combine to restrict stand development.	LOW - The total acreage associated with savannah type stands is small. New regeneration practices will minimize its creation. Analysis shows that savannah type stands are not needed to meet timber output objectives.	3.3

Table 3-1 Research Needs Analysis (cont'd)

PROBLEM STATEMENT AND BACKGROUND	NEED/URGENCY (HIGH, MEDIUM, LOW)	CORRESPONDING RESEARCH NEEDS OF R-9 REGIONAL GUIDE, TABLE 5-2
4. What proportion of low-quality stands are due to stand genetics? Background: There are three primary sources of low-quality stands. 1. Past practices - This includes high grading caused by selective harvesting of the best trees and the leaving of residual culls. 2. Poor inherent site conditions such as soil, aspect, fertility, light, etc, 3. Poor genetic stock. High grading is not a big concern on the ANF because most of our stands have been clear cut. Poor site conditions are definitely a problem and the subject of research proposals 2 and 3. The role of genetics, however, is an unknown factor. We propose that research help to delineate the problem by 1) quantitatively defining the proportion of low-quality stands that are linked to genetics and 2) identifying stand characteristics which may be used by silviculturists to indicate genetics as the causal agent.	LOW - This is a long-term research need. We believe the greatest opportunity for improving stand regeneration and development lies in better understanding local site conditions and their relationship to the species involved.	4.2 & 4.45
5. What are the economic returns and biological effects of conducting intermediate cuts and TSI action immature Allegheny hardwood stands?	HIGH - the Forest Plan calls for 94,000 acres of thinning during the first decade.	3.3

Table 3-1 Research Needs Analysis (cont'd)

PROBLEM STATEMENT AND BACKGROUND	NEED/URGENCY (HIGH, MEDIUM, LOW)	CORRESPONDING RESEARCH NEEDS OF R-9 REGIONAL GUIDE, TABLE 5-2
Background: The Forest has experienced significantly different results when practicing the same activity on two different sites. We need to know what methods to employ on which sites and when, so as to achieve our desired outcome of tree quality and stand vigor. We also must be aware of any negative effects, i.e., possible stimulation of fern/striped maple, which could affect site management. Current research efforts are directed toward development of a "Stand Growth Simulator."		
6. What is the most economical and biologically feasible method of regenerating oak. Background: Allegheny hardwoods, particuclarly red maple, are severe competitors for oak. It is often present as a minor component in existing oak stands. When these stands are cut, it quickly takes a dominant place in the forest canopy and decreases the percentage of oak in the stand. This can lead to stand conversion. We need some effective, yet economical means for regenerating oak and maintaining it as a major component of the new stand.	HIGH - This was a critical issue with the public in their review of our draft LMP documents. As a result, the Plan was revised to exclude any planned oak conversion from Alternative D. There are few instances where oak can be cut and regenerated without the threat of conversion.	
7. What preventive/remedial strategies are available to deal with insect and disease outbreaks on the Allegheny National Forest?	HIGH - A strong prevention effort may reduce both the frequency of epidemics and the resulting damage. When they do occur, losses are	3.10, 6.3, 7.3, & 7.4

Table 3-1 Research Needs Analysis (cont'd)

PROBLEM STATEMENT AND BACKGROUND	NEED/URGENCY (HIGH, MEDIUM, LOW)	CORRESPONDING RESEARCH NEEDS OF R-9 REGIONAL GUIDE, TABLE 5-2
Background: The Allegheny hardwood type is susceptible to damage by many pests. Prominent among these are: 1. gypsy moth 2. cherry scallop shell moth 3. cherry trunk rot 4. maple decline 5. ash die-back 6. beech bark disease	often related to the speed and effectiveness of our control efforts. Both types of strategies have large potential payoffs due to the high-value timber found on the ANF.	
FACILITIES		
8. From what source and by what means will the ANF secure its stone needs for future road construction/reconstruction projects? Background: The ANF conducts a large annual road construction/ reconstruction program. One of the primary raw materials is stone/crushed rock. Presently, these needs are being met through a scattered array of stone pits. Conventional extraction involves removal of the softer, upper layers of sandstone. Substantial benefit may be realized if the lower layers could be shot with dynamite and run through a crusher. Research is needed to determine the durability of substrata rock and identify the most economical means of removing the overburden and crushing the hard rock.	HIGH - This project has a high potential payoff in that stone quality may be improved and less acreage disturbed.	--

Table 3-1 Research Needs Analysis (cont'd)

PROBLEM STATEMENT AND BACKGROUND	NEED/URGENCY (HIGH, MEDIUM, LOW)	CORRESPONDING RESEARCH NEEDS OF R-9 REGIONAL GUIDE, TABLE 5-2
9. What are the long-term effects of adding organic matter and other "fines" to the road surface as a result of grading and ditch pulling procedures? Background: Existing road maintenance procedures call for maintaining a road berm and periodically removing leaves and other material from cluttered ditches. There procedures cause a lot of organic matter and fine silts, sand, and clay to be mixed into the road surface. Research is needed to quantify the problem and determine what long-term effect this mixing will have on road stability, its susceptibility to erosion, and future maintenance/reconstruction requirements.	HIGH - This problem has a high potential payoff.	--
RECREATION		
10. What impact has intensive oil and gas development had on the types and amount of dispersed recreation use occurring on the Allegheny? Background: Oil and gas development has opened up large areas to public access. This development has overwhelmingly favored the motor-oriented dispersed recreationist. Data is needed to help managers evaluate just how significant this shift has been and what problems exist.	MEDIUM - Oil and gas development will continue in most areas. Roads will continue to be built, and our most feasible form of access control is gating.	17.1

Table 3-1 Research Needs Analysis (cont'd)

PROBLEM STATEMENT AND BACKGROUND	NEED/URGENCY (HIGH, MEDIUM, LOW)	CORRESPONDING RESEARCH NEEDS OF R-9 REGIONAL GUIDE, TABLE 5-2
11. What social, political, and economic impacts can be expected from a reduction in the size of the deer herd? Background: The Allegheny hosts one of the largest deer herds in the Northeast. Recreationists come to hunt and to sightsee, both of which require the sighting of deer to be termed "a successful outing." The Forest Service is currently cooperating with the PA Game Commission in an effort to bring the deer herd down to carrying capacity.	HIGH - This proposal addresses the social, political, and economic trade-offs involved in altering deer populations to bring them in line with the land's carrying capacity.	17.2 & 17.3
12. Where do the Allegheny's dispersed and developed site recreation users come from? Background: Information on the recreation user's home base can help managers to design better transportation facilities, anticipate user needs and desires, and foresee potential problems.	MEDIUM - This type of information is valuable for long-range planning. Most changes/developments involve capital expenditures and take time to develop.	--
OIL AND GAS		
13. What new types of technology can be developed to mitigate the existing adverse impacts oil and gas development has on surface resources? Background: Oil and gas activity on the Allegheny is expanding and 95% of the development rights are outstanding. This means regulatory powers will remain limited,	HIGH - Thousands of acres of high-quality hardwoods are cleared for oil and gas developments each decade.	12.3

Table 3-1 Research Needs Analysis (cont'd)

PROBLEM STATEMENT AND BACKGROUND	NEED/URGENCY (HIGH, MEDIUM, LOW)	CORRESPONDING RESEARCH NEEDS OF R-9 REGIONAL GUIDE, TABLE 5-2
and the best source of help rests with the development of new technology. Areas needing development include: - Technology to safely and economically dispose of produced brine. - Technology to improve slant drilling techniques to the point that they can economically compete with conventional extraction. - Technology to allow use of deep drilling activities concurrent with shallow well extraction.		
WILDLIFE		
14. What effect will different Forest Forest management practices have on existing bear populations? Background: Bear is a major big-game species on the ANF. Management needs to be aware of the effects certain management practices have on this species if population density is to be maintained at desired levels.	MEDIUM - Current management practices will cause a significant change in habitat over time. Will monitor population trends annually in cooperation with PGC.	--

Table 3-1 Research Needs Analysis (cont'd)

PROBLEM STATEMENT AND BACKGROUND	NEED/URGENCY (HIGH, MEDIUM, LOW)	CORRESPONDING RESEARCH NEEDS OF R-9 REGIONAL GUIDE, TABLE 5-2
15. What is the relationship between Fall turkey kill and road access. Background: Many acres of the Forest have experienced intensive road development in conjunction with OGM activities and timber sales. We suspect this increased access has had significant adverse effects on turkey populations. In the past, several areas have received overkill during the Fall hunting season. Originally, we attributed this to such on-site conditions as the existence of prolonged tracking snow and poor food conditions, which caused turkeys to congregate. Now, we believe that increased access may be a significant contributing factor. Research is needed to quantify the effects.	HIGH - Turkey populations have dropped to 25-30% of their 1971-1976 levels, and we don't know why. This type of research may give us an answer.	16.4
16. The ANF needs a statistically sound sampling technique to measure wildlife populations and recreation use. Background: 36 CFR 219.19(a)(6) requires us to monitor population trends for indicator species and determine their reaction to habitat changes. At present, the ANF lacks a statistically sound sampling technique for monitoring population trends.	HIGH - We are required to begin this once we implement this Plan.	16.4, 16.5, & 16.7

Table 3-1 Research Needs Analysis (cont'd)

PROBLEM STATEMENT AND BACKGROUND	NEED/URGENCY (HIGH, MEDIUM, LOW)	CORRESPONDING RESEARCH NEEDS OF R-9 REGIONAL GUIDE, TABLE 5-2
Air, Soils, and Water		
17. What are the relationships between soil types, site productivity, and species composition? Are the soil properties currently used to differentiate soil series and soil mapping units the same as those that differentiate site productivity and species composition? What are the relationships among soil properties, site productivity, species composition, climax community, and successional trends? Background: The Allegheny currently calculates site productivity based upon data derived from the species currently occupying the site. This system is imperfect and wide variances in productivity can occur when different species are inventoried. Another means might be to link productivity to some fixed factor of the land, in this case "soil."	HIGH - Better information on site productivity or species suitability will lead to better silvicultural prescriptions and could improve long-term productivity.	--
18. Are acid deposition or other air pollutants adversely affecting forest resources, such as tree growth or vigor and fish production?	HIGH - If adverse effects are occurring, the long-term ability of the ANF to provide resources may be decreased.	12.8, 14.4, & 14.5

Table 3-1 Research Needs Analysis (cont'd)

PROBLEM STATEMENT AND BACKGROUND	NEED/URGENCY (HIGH, MEDIUM, LOW)	CORRESPONDING RESEARCH NEEDS OF R-9 REGIONAL GUIDE, TABLE 5-2
Background: Tree mortality and loss of vigor has been report in several areas of the East in recent years. Acid deposition and other air pollutants have been suggested as possible causes, although a direct cause and effect relationship has not been established. State agencies have expressed concern that the buffering capacity of streams on the Forest is becoming exhausted due to acid deposition. Some of the most acidic rain in the country has been measured on the Forest. This highly acidic deposition coupled with poorly-buffered surface water and acid soils suggest that, if acid deposition does indeed adversely affect forest ecosystems, the Allegheny National Forest may be susceptible to such damage.		

CHAPTER 4

Management Direction

CHAPTER 4

MANAGEMENT DIRECTION

A. INTRODUCTION

Management direction contains both Forest Direction and Management Area Direction. Forest Direction consists of goals, objectives and standards and guidelines which are applicable to the entire Forest. Management Area Direction consists of the objectives, the associated management practices, and standards and guidelines specific to individual areas of the Forest. The Forest Plan Management Area Map which displays the location of each management area is also part of the management direction. It can be found in the map folder accompanying the EIS and Forest Plan document.

B. FOREST-WIDE DIRECTION

The goals and objectives provide the basis for overall direction regarding the type and amount of goods and services that the Forest will provide. The standards and guidelines contained in the Forest Direction prescribe the conditions that should be maintained on all acres of the Forest while achieving the goals and objectives.

FOREST GOALS

The following forest-wide goals are concise statements describing a desired result to be achieved over the next 10-15 years through implementing the Forest Plan. These forest goals provide the basis for developing the forest plan objectives and the annual development of short-term goals and objectives used for program development and execution.

All goals are to be achieved in the most cost-effective manner. Goals are provided by resource elements.

Recreation

Provide expanded opportunities for developed and dispersed recreation along the Allegheny Reservoir area and along the Allegheny, Tionesta, and Clarion River corridors.

Expand opportunities for semi-primitive dispersed recreation opportunities in the National Recreation Areas and in large contiguous areas within the interior of the Forest.

Promote the use of private capital for construction and operation of a motel and restaurant complex adjacent to Kinzua Beach.

Wilderness

Preserve and maintain the values of Hickory Creek and the Allegheny River Islands Wilderness Areas.

Wildlife

Maintain or increase hunting opportunities for wildlife game species through vegetative manipulation.

Maintain or increase nonconsumptive opportunities for game and non-game wildlife species through vegetative manipulation and maintain habitat for viable populations of all existing native vertebrate species.

Forest Goals

Restore understory to obtain a broader diversity of flora and fauna.

Provide a diversity of fishing opportunities for native trout, stocked trout, and warm water species.

Timber

Provide a non-declining flow of total timber volume.

Increase the sales of high-quality sawtimber, particularly black cherry.

Oil, Gas, and Minerals

Encourage the development and extraction of oil, gas, and mineral resources by integration with National Forest management.

Mitigate adverse impacts created by oil, gas, and mineral operations by working cooperatively with developers and state and federal regulatory agencies. We will also implement our oil and gas handbook direction on development of oil and gas operations.

FOREST OBJECTIVES

Forest Objectives are the planned and projected annual outputs of goods and services which correspond to the achievement of the Forest Goals. These objectives are concise, time specified, and measurable. They form the basis to estimate the management area practices and activities to be carried out. Table 4-1 displays by management problem the significant Forest Objectives planned for the first decade and those projected for decades 2-5. The objectives for decades 2-5 were projections made to display the results of continuing to implement the Forest Plan. However, the Forest Plan will be revised every 10-15 years so these objectives will likely change based on the new issues and problems of the next planning cycle.

Table 4-1 Forest Objectives

Output by Management Problem	Average Annual Amount									
	Planned		Projected							
	Decade 1		Decade 2	[1]	Decade 3		Decade 4		Decade 5	
	D	(D2)	D	(D2)	D	(D2)	D	(D2)	D	(D2)
Developed Recreation Opportunities MRVD[2]										
Semi-Primitive Motorized	37	(37)	38	(38)	38	(38)	38	(38)	32	(32)
Roaded Natural	430	(430)	471	(471)	492	(492)	492	(492)	502	(502)
Rural	419	(419)	432	(432)	450	(450)	485	(485)	485	(485)
Dispersed Recreation Opportunities MRVD										
Semi-Primitive Non-Motorized	30	(30)	42	(36)	66	(65)	73	(72)	61	(59)
Semi-Primitive Motorized	368	(355)	372	(360)	377	(364)	382	(369)	384	(372)
Roaded Natural	499	(406)	525	(406)	550	(406)	582	(424)	598	(433)
Timber Mngmt. MMBF[3]										
Hardwood Sawtimber	38	(37)	46	(39)	57	(51)	59	(57)	65	(62)
Hardwood Pulpwood	56	(54)	48	(52)	37	(40)	35	(34)	29	(28)
Wildlife M WFUD[4]										
Big-Game Hunting	147	(131)	162	(143)	169	(146)	174	(151)	171	(151)
Small-Game Hunting	50	(48)	58	(56)	56	(54)	54	(53)	56	(54)
Non-Game	44	(39)	46	(40)	49	(41)	51	(42)	51	(42)
Fishing	151	(149)	172	(163)	191	(178)	212	(196)	231	(213)

1 D2 is a variation of the Forest Plan that estimates the results if a high rate of private oil and gas development is experienced during implementation.
2 MRVD = Thousands of recreation visitor days.
3 MMBF = Millions of board feet.
4 MWFUD = Thousands of wildlife and fish user days.

FOREST STANDARDS AND GUIDELINES

The following standards and guidelines apply to all management areas across the Forest. They state the bounds or rules within which management practices will be carried out to achieve the planned objectives and requirements. Standards and guidelines applicable to specific management areas are listed by management area in Chapter 4.C.

FOREST-WIDE STANDARDS AND GUIDELINES
(An asterisk designates standards taken from the Eastern Regional Guide)

1600 INFORMATION SERVICES

Information and interpretive programs will attempt to correlate public interests and concerns with resource management direction.

*Work to achieve informed public consent during development of land and resource management plans and programs prior to their implementation.

*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.

News releases at the beginning of each season of use will inform the public of recreation opportunities available.

Provide dispersed recreation information in various brochures that list fishing streams, canoeing streams, hiking trails, ORV trails, scenic drives, etc.

Using brochures, posters, and signed provide developed recreation information that lists recreation sites, management practices, rules and regulations.

Provide information on opening and closing dates of facilities, activities offered and whether there are provisions for the handicapped.

1800 HUMAN AND COMMUNITY DEVELOPMENT

*Identify forest and range-related opportunties that will help individuals and local communities enhance their self-sufficiency and their feeling of social well-being.

Individual volunteers and volunteer organizations will be used to assist in management of the National Forest.

*Resource management activities should not preclude the right of American Indians to express and exercise their traditional religion.

Human Resource Program Project work should contribute to accomplishment of National Forest goals and objectives and be integrated into functional program activities.

Human Resource Program Project work should be designed to provide a sense of accomplishment to the participant.

Participants should be helped to develop an awareness of National Forest management in relationship to a quality environment.

1900 LAND AND RESOURCE MANAGEMENT PLANNING

Vegetative Management

*Favor native species when restoring disturbed areas or providing vegetative screening.

Non-native vegetation may be utilized when needed to enhance wildlife habitat. This includes forest trees, shrubs, and herbaceous plants not native to the Forest (such as white spruce, crabapple, crown vetch, and trefoil). Exotic shrubs with persistent fruit may be used in turkey wintering areas to complement existing native foods.

Unique plant communities will be recognized and protected wherever they occur. Their location will be identified on the compartment map for coordination purposes.

When revegetating disturbed areas, choose seed mixtures that achieve both erosion control and wildlife objectives.

In intermediate cuttings, Dogwoods, Hophornbeam, American Hornbeam, Witch Hazel, Serviceberry and other low-growing, flowering, and fruiting trees and shrubs should not be cut. In clearcuts, these species will not be cut unless their presence would preclude adequate regeneration of the desired commercial species. Wild grape areas will be maintained or enhanced in suitable locations.

When thinning, retain species which are minor components of a stand, particularly mast producers.

Retain hickory and black gum in stands where they occur naturally.

NEPA Process

Future environmental analyses (EAs) and environmental impact statements (EISs), will be tiered to the Forest Plan and EIS. Environmental Analyses and/or documentation of project level actions will address the site specific issues and concerns within the scope of the Forest Plan, EIS, and record of decision.

2100 ENVIRONMENTAL MANAGEMENT

Air Quality

If air quality problems affecting forest resources are identified through monitoring resource conditions or through research, mitigation will be sought through coordination with the state regulatory agency.

*Pesticide Use

*Use only pesticides registered by the Environmental Protection Agency (EPA) in full accordance with the Federal Insecticide, Fungicide, Rodenticide Act as amended, except as other wise provided in regulations, orders, or permits issued by the EPA. In addition, certain pesticide uses require Regional Forester approval.

2300 RECREATION MANAGEMENT

Recreation Opportunities

*Road development and management will conform to the appropriate recreation opportunity spectrum class (ROS).

Recreation Sites

The needs of handicapped persons will be considered in the construction and rehabilitation of recreation sites.

Trails

*Management of National Scenic Trails and adjacent lands will be compatible with standards incorporated in the act establishing the trail and in the trail management plan.

*National Recreation Trails will be managed in accordance with the commitments associated with their designation.

The standards and guidelines for each management area will specify which of the following trail types to be appropriate:

Motorized Summer
Pedestrian Summer
Equestrian Summer
Motorized Winter
Pedestrian Winter

Multi-purpose trails will be encouraged. Trail design may include three difficulty classes to provide a full range of experiences. Emphasis on difficulty may also vary by management area.

Easiest - Accommodate moderate to heavy traffic on a safe and well-marked trail.

More Difficult - Accommodate moderate use on a trail which is safe for those users with backcountry experience and good physical ability.

Most Difficult - Accommodate low volume of users seeking to test their skills in rugged terrain. Route should appear challenging and require good physical conditioning.

Trails will be constructed and maintained to the following design standards. Maximum trail grades vary. Low grade ranges are for the easy class of trails, and the high range is for the most difficult class.

1. Motorized Summer:

   Maximum grades will vary from 15 percent to 50 percent; grades over 25 percent will not exceed 500 feet. Maximum clearing width is four feet, clearing height nine feet, tread width 40 inches.

2. Pedestrian Summer:

   Maximum grades will vary from 20 percent to 50 percent, clearing width 3-4 feet, clearing height 8 feet, tread width 24 inches.

3. Equestrian Summer:

   Maximum grades will vary from 10 percent to 30 percent, clearing width 6 feet, clearing height 10 feet, tread width 24-30 inches.

4. Motorized Winter:

   Maximum grades will vary from 20 to 50 percent, clearing width 9-16 feet, clearing height 10 feet, tread width 5-12 feet.

5. Pedestrian Winter:

   Maximum grades will vary from 10 to 25 percent, clearing width 5-8 feet, clearing height 10 feet, tread width 18-24 inches. Surface will vary from smooth to irregular with obstacles up to 6 inches high.

Off-Road Vehicles (ORV)

These standards apply only to National Forest lands; they do not provide policies to regulate motor vehicle use on the Forest road system. The concepts used to develop the Forest's ORV policy including identification of the five intensive ORV use areas mentioned below are discussed in the USDA-Forest Service Final EIS for Off-Road Vehicles, dated 1977.

Unlicensed ORVs are permitted only on designated ORV trails; all cross-country motorized vehicular use is prohibited.

ORV trail systems will use a combination of constructed trails, roads closed to other highway vehicles, and roads jointly used by ORVs and other highway vehicles.

ORV trails will be constructed and maintained in a permanent location to prevent erosion or impact to natural resources. This does not preclude temporary rerouting to facilitate other resource activities.

In all Management Areas except 5 (Wilderness), cross-country use is allowed for administrative vehicles, emergency vehicles, and use authorized by permit or contract (required by outstanding private OGM rights).

All off-road vehicle use which occurs on roads and ORV trails is subject to Forest Service off-road vehicle regulations and other applicable state and federal regulations.

Five intensive ORV use areas are located on the Forest. All new ORV trail construction is limited to these five areas. Connector trails located outside these areas will be limited

to redesignation of existing system roads. Whenever possible, ORV use within these areas is restricted to designated trails.

Marshburg-Stickney: Bounded on the west by Forest Road 137, on the north by State Route 346, on the south by State Route 321, eastward to National Forest Boundary or western boundary of the Bradford Municipal Watershed.

Westline: Bounded on the west by State Route 321, on the north by Forest Route 122, on the east U.S. Highway 219 to National Forest Boundary on the south.

Highland - Owls Nest - Twin Lakes: Bounded on the north by State Route 948, on the east by Bear Creek, on the south by north line of Warrants 1563-66, and on the west by Forest Roads 343, 344, and 136 along a line projected northward to Chaffee Corners. Twin Lakes is a small separate area around the impoundment and recreation area with National Forest Boundary on the north and Kane Experimental Forest on the south.

Bluejay - Duhring: Bounded on the south by Forest Road 130, on the west by Forest Road 128, on the north by general line from Lynch to Watson Farm to Pig's Ear and south to state Game lands.

Grunderville - Chapman: Bounded on the south by Forest Road 437, on the west by State Route 337 and Lenhart Run Road, southeasterly along a general line to the junction where Forest Road 155 joins the Chapman Dam Road.

Cultural Resources

*Conduct cultural resource surveys and needed evaluations in all areas to be affected by land transfer and earth-disturbing activities and design activities to avoid, minimize, or mitigate adverse effects.

*Forest will schedule the inventory of cultural resources on all National Forest System lands, giving priority to areas with high potential for disturbance.

Interpretation may occur during the evaluation or the excavation of major sites, and the excavation may be featured as well as the findings of the evaluation or excavation.

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.

During high use periods, personal contacts with Forest personnel may be utilized to inform users about the Forest environments, its many uses, and their enjoyment of it.

Mobile interpretive and educational vehicles with displays and shows may be utilized at all developed recreation sites. Guided tours, talks, and formal programs may also be utilized in an integrated program to inform, educate, and entertain the visiting public while presenting historical or environmental themes. These tours, talks, and programs may be sponsored by the Forest Service, resort operators, local tourist or historical organizations, or any combination of the above.

Visual Quality

The minimum required visual quality objective of any given activity is "Maximum Modification." Insure that areas in an "Unacceptable Modification" state are upgraded to the adopted visual quality objective. Assign the short-term goal of "Rehabilitation" to these areas during and subsequent to the resource management activity.

Potential Wild and Scenic Rivers

The characteristics that make the Allegheny River, Clarion River, and Kinzua Creek eligible for study and potential inclusion into the National Wild and Scenic River system will be protected through the forest-wide and individual management area standards and guidelines.

2400 TIMBER MANAGEMENT

Harvest Cutting Methods

Harvest practices should be consistent with the objectives stated for each management area and as shown in Table 4-2.

All slopes greater than 40 percent should be considered for a yarding/skidding system which can transport wood products without creating a dense road and skid-trail system.

On "poorly" and "moderately" drained soils, seasonal logging restrictions and/or low ground pressure skidding equipment will be utilized, see 2500 Water and Soil Management text on Soil Groups II and III.

Temporary Openings Created by the Application of Even-Aged Silviculture

A temporary opening is no longer considered an opening when the height of the vegetation in the opening has reached 20 percent of the height of the surrounding vegetation.

Openings will be irregular in shape. Vary opening size and shapes to avoid uniformity of appearance.

Openings will be separated by a manageable stand of at least ten acres. The minimum spacing between openings will be 300 feet; however, they will usually exceed 660 feet.

Table 4-2 Harvest Cutting Methods[1] on the ANF by Forest Type and Management Area[2]

Management Area	Conifer[3]	Aspen	Northern Hdwds	Alleg. Hdwds	Oak
2	SEL[4]	SEL	SEL	SEL	SEL
3,1	CC	CC	SW, CC	SW, CC	SW, CC
5	No Timber Harvest				
6.2	CC	CC	SW, CC	SW, CC	SW, CC
6.1, 6.3, 7,8	Even-aged or uneven-aged silvicultural system may be used, preference determined by management area objective and silvics of species.				
9.1	No Timber Harvest				

1 The harvest cutting methods are clearcut (CC), shelterwood (SW), and selection (SEL). The harvest cutting methods shown in the Table are silviculturally preferred. Appendix D contains a discussion of the rationale for choosing these harvest cutting methods.

2 A small portion of a given management area may be occupied by the forest type not shown in the Table for that management area. An example is a small red pine plantation in the middle of a 3,000-acre area under Management Area 3. The silvicultural system chosen for the minor inclusion will be the subject of specific site analysis.

3 Various conifer species commonly occur as components of stands dominated by other types and are then included in the system for the stand as a whole.

4 Hemlock

Management Intensity and Utilization

For the purposes of determining harvest levels on the Forest, the Regional utilization standards have been modified.

Utilization standards in the following Table 4-3 will apply to all timber sold or otherwise disposed of.

Table 4-3 Utilization Standards
Harvest Level Projections (36 CFR 219.9)

Product Type	Minimum Tree Specifications[5] d.b.h. (Inches)	Length[1] (Feet)	Minimum Piece Specifications d.i.b. at Small End (Inches)	Percent of Gross Measure
Hardwood Sawlogs[2]	11.0	8	9.6	40
Aspen Sawlogs[6]				
Softwood Sawlogs[7]	9.0	8	7.6	40
Hardwood Pulpwood	6.0	8	5.0	70 sound[3]
Aspen Pulpwood[6]	6.0	8	5.0	& reasonably
Softwood Pulpwood	5.0	8	4.0	straight[4]

1 Plus trim alowance.
2 On the Allegheny, tree grading is normal practice; only logs that meet grade 3 or better factory logs are considered sawlogs.
3 Seventy-percent applied to rot, voids, and char. Mechanical type defects, such as sweep, crook, spider heart, and ring shake, shall not be considered.
4 Reasonably straight: When the true center line of a minimum length piece does not deviate more than one-half the inside diameter of the small end, plus one inch from a straight line drawn between the centers of the ends of the piece.
5 A minimum tree must include at least one piece that meets minimum specifications.
6 A market for Aspen sawlogs currently (1984) does not exist. All Aspen will be cruised as pulpwood and offered as Timber Subject to Agreement in the timber contract. Should a market for Aspen sawlogs develop, the Utilization Standards in the Regional Guide for Aspen shall apply.
7 Softwood sawlogs will not be graded.

Stocking Levels

Detailed guidelines have been developed for the three dominant hardwood timber types by the Northeast Forest Experiment Station at Irvine, Pennsylvania. The guidelines, as revised, will aid in analyzing stand conditions and prescribing appropriate silvicultural treatments in the local hardwood types.

Stocking requirements and standards for timber types on the Allegheny are provided in the silvicultural guides listed in the following table.

Table 4-4 Silvicultural Guides for Allegheny National Forest Timber Types

Publication or Manual	Timber Type				
	Aspen	Alle. Hdwds	Northern Hdwds	Oak	Conifer
Prescribing Silvicultural Treatments in Hardwood Stands of the Alleghenies		EAM[1] UAM[2]	EAM UAM	EAM UAM	
Agricultural Handbook No. 486, Quaking Aspen Silvics and Management in the Lake States	EAM				
Paper No 1439, Minnesota Ag. Exper. Station, Improving Your Forest Land for Ruffed Grouse, S.W. Gullion	EAM				
A Silvicultural Guide for Spruce-Fir in the Northeast, 1973, Frank, R.M. and Borkbem, J.C. U.S.F.S. - N.E.F.E.S.				EAM UAM	
Manager's Handbook for Red Pine in the North Central States, 1977, Benzie, J.W., Technical Report NC-33				EAM UAM	

1 Even-aged Management
2 Uneven-aged Management

Pulpwood

In periods of poor hardwood pulpwood markets, contractual requirement to remove pulpwood may be met by felling the pulpwood trees.

On all timber sales being prepared, consider one of the following options:

1. For clearcuts in Aspen types, make the entire payment unit optional.
2. For clearcuts in mixed hardwood types, make the Aspen component optional.
3. For intermediate treatments, designate Aspen with a symbol and allow optional removal.

If it is determined to treat the Aspen pulpwood size trees by a nontimber sale approach, then site preparation or timber stand improvement may be considered.

Firewood

The Forest will charge for personal use firewood. The minimum charge will be $10/permit but may be greater due to reasons such as current market value, level of administration required to administer and enforce lawful removal, and erosion/sedimentation control costs anticipated following removal.

The size and type of firewood authorized for removal will be clearly stated on the permit.

Firewood areas suitable to meet the needs of special groups, such as elderly and handicapped, will be identified, and such persons provided the information.

It is recognized that exceptions exist that may warrant a free use program. Criteria for such free use will be on a case-by-case basis to meet the following objectives when it is unlikely that the material will be removed under charge permits.

1. Visual quality objective for area warrants reduction of dead/down material.
2. Timber stand improvement or site preparation needs.

3. Reduce insect breeding areas that threaten population buildup.
4. Other justifications approved by the Forest Supervisor.

The District Ranger may issue free use firewood when conditions meeting one or more of Criteria Numbers 1-3 have been identified and documented.

Reforestation

Regeneration practices, such as site preparation, seeding, planting, and fertilization will be employed as needed and will be consistent with the relevant Regional Management Goal. (Appendix D provides discussion concerning the rationale for using these vegetation management practices.)

Natural Regeneration

Make final harvests only from those sites where natural regeneration of desired trees within five years is highly probable.

The primary means of regenerating hardwood timber types will be through natural regeneration if it provides adequate stocking, acceptable species composition, and trees of acceptable genetic quality.

Artificial Regeneration

Artificial regeneration through planting may be done to establish trees in an area where natural regeneration has failed or is not attainable, and/or brings about a conversion or maintenance of forest type(s).

Species planted will be those best suited to the site conditions and be genetically improved stock when available. Soil drainage and planting stock availability may influence species choice.

Stock may be machine or hand-tool planted depending on soil conditions and terrain.

Hardwood seedlings should be at least two feet tall. Planting will normally be done between April 15 - May 30. Generally, 436 seedlings/acre (10 x 10) for hardwoods and 908 seedlings/acre (6 x 8) for conifer are adequate numbers.

Fencing

All hardwood planting areas will be fenced.

Fencing may be either woven wire, electric wire, or nylon mesh.

Fencing may be used to mitigate probable natural regeneration failures.

All regeneration areas must be reforested within five years after timber removal, therefore, fencing to protect seedlings (natural or planted) is a viable alternative in all forest types.

A stocking survey will be used to determine fencing needs. Fencing should be accomplished within one year when a stocking survey indicates a regeneration failure is likely.

Fence maintenance will be done, and removal will occur after the risk of significant animal damage has passed and stand has been certified as established.

Site Preparation

Most sites may require some degree of site preparation for both natural and artificial regeneration.

Site preparation includes removal of unwanted vegetation or slash from the site and/or shaping of the ground surface by mechanical methods or use of herbicides.

Herbicides may be used in timber stands lacking advanced regeneration and containing dense coverage of grasses, fern, numerous beech root suckers, or striped maple stems. The wildlife habitat value of key plants, such as Spring Beauty and Dog's Tooth Violet, that occur on specific sites will be considered in the evaluation process when selecting stands to be treated. Based on research and field trials, glyphosate currently best fulfills all management needs. Individual stand selection criteria and guidelines on application rates, time of year, and methods of application of glyphosate are provided in the Northeast Forest Experiment Station's publication titled "Prescribing Silvicultural Treatments in Hardwood Stands of the Alleghenies." As information becomes available, other herbicides and/or treatment techniques may be used.

Site specific environmental analyses, which include management requirements, constraints, standards, and guidelines will be prepared. (See Section 2500 Water and Soil Management for buffer strip definitions.)

The use of prescribed fire to control species composition of regeneration in oak stands is being studied by the Northeast Forest Experiment Station at Irvine, Pennsylvania. Any future use of prescribed fire will be based on guidelines to be provided by the Station resulting from the study.

Fertilization

The application of nutrients through fertilization may be done to stimulate or maintain vigorous seedling growth. This permits regeneration to grow above deer browse height in approximately two growing seasons. Fertilizer will be used primarily on the Allegheny hardwood forest type, since other types do not respond well to fertilization.

Nitrogen and phosphorus deficiencies in Allegheny hardwood timber stands can be corrected by the application of ammonium nitrate and triple superphosphate fertilizer. Application of such fertilizer is normally in the spring of the year shortly after leafout.

Nutrient deficient areas are not easily identified but appear to be very common in the Allegheny hardwoods type. The Northeast Forest Experiment Station and the Forest Service Reforestation Handbook (FSH 2409.26B) contain guidelines on:

1. Recognizing nutrient deficiencies.
2. Fertilizer application guidelines.
3. Evaluation of degree of wildlife browsing to assist in deciding whether or not to fertilize.

Harvested areas are generally broadcast fertilized, and individual tree fertilization is done by manual methods.

Buffer zone guidelines for bodies of water, perennial streams, and intermittent streams, are contained in Section 2500, Water and Soil Management.

Precommercial Thinning

Precommercial thinning may be appropriate in those timber stands that have a stocking level of 80% or more and contain a substantial share of their stocking (basal area) in saplings.

Goal should be to remove poorly formed trees and low-valued individuals that threaten the potential crop trees.

Silvicultural guidelines for precommercial thinning are provided in "Prescribing Silvicultural Treatments in Hardwood Stands of the Alleghenies" publication. (Appendix D contains additional information.)

Non-Commercial Thinning

Non-commercial thinning may be used to remove pulpwood in those instances where the option was not exercised by the timber purchaser.

2500 WATER AND SOIL MANAGEMENT

Best Management Practices

Best management practices for controlling nonpoint source pollution are contained in the Forest-wide and Management Area sets of standards and guidelines in the 2500 section. These practices are to be applied based on evaluation of site-specific conditions.

Riparian Area Management

Riparian areas will be managed under the principles of multiple use and sustained yield. Preferential consideration will be given to riparian dependent resources in riparian areas and in the area 100 feet from either edge of perennial streams and other water bodies. Riparian-dependent resources include, but are not limited to, wildlife habitat, fish habitat, recreation opportunities, and water quality. Riparian areas will be delineated and evaluated prior to implementing any project activity. Standards and guidelines addressing riparian resources other than soil and water are found under those resource headings.

Floodplains and Wetlands

Floodplains and wetlands will be managed in accord with Executive Orders 11988 and 11990, which are designed to protect the values of floodplains and wetlands. In general, management activities in these areas will be consistent with protecting the beneficial values of the areas and protecting public safety. Rehabilitation of existing facilities or construction of new facilities, such as roads and buildings, will only occur in floodplains and wetlands where no practical alternatives exist.

Soil and Water Resource Improvement

Disturbed areas that influence soil productivity or water quality will be evaluated and priority-ranked for restoration. Disturbed areas may include borrow pits, oil/gas developments, debris dams from storm flows, and areas damaged by illegal off-road vehicle use. The first priority for plugging abandoned oil and gas wells in federal mineral ownership will be those wells which pose an immediate safety hazard or are polluting surface or ground water. Watershed improvement projects will be designed so that restored areas meet the resource objectives of the management area.

Priority ranking of water resources improvement projects will consider the use of the water body and source of impact:

Priority	Use of Water Body
Higher	Municipal watershed
	Exceptional Value/Wilderness Trout Streams**
	High Quality/Native Trout Streams**
	High Quality/Stocked Trout Streams**
Lower	Cold Water Fish/Native or Stocked Trout Streams**

**State Water Quality Standard/Type of Fishery Management

Priority	Source of Impact
Higher	Soils and water bodies affected by long-term adverse impacts caused by management practices or natural forces.
Lower	Soils and water bodies affected by short-term adverse impacts caused by management practices or uses.

Soil and Water Conservation

Limitations on management practices and mitigating measures are specified by soil groupings according to internal soil drainage characteristics. Other important soil factors are: textures and amounts of coarse fragments in the surface (A horizons) and subsoil (B horizons);topographic positions; and percent of slope. Detailed interpretations for individual soil types may be found in "Soil Interpretations for the Allegheny National Forest", by L. R. Auchmoody, Northeast Forest Experiment Station, 1984. The following discussion for each soil group reflects an estimate of the amount of land in each group (based on a one percent forest-wide sample).

Soil Group I

Hazelton, Hartleton, Clymer, Chenango, Pope, and Gilpin are the major soils. Approximately 45 percent of the Allegheny National Forest is in this soil group.

These soils are well drained, have no internal drainage problems, and range from fine to coarse textured A and B horizons, with varying amounts of coarse fragments in the soil profile.

- Topographic position and wind exposure should be considered when laying out shelterwood cuts, thinnings, or leaving residual trees.
- Surface area disturbed by logging operations should be less than 15 percent of sale area.
- All containment pits for waste fluids from oil/gas operations must be lined with impermeable material.

Soil Group II

Cookport, Ernest, Philo, Braceville, and Wharton are the major soils. Approximately 46 percent of the Allegheny National Forest contains these soils.

These soils are moderately drained. Most have restrictive layers (fragipans) which create shallow rooting depths, restrict downward movement of water, and create perched water tables. B horizons are fine textured.

- Topographic position and wind exposure must be considered when laying out shelterwood cuts, thinnings, or leaving residual trees. The shallow rooting depths increase the hazard of windthrow.

- A minimum of one of the following Timber Management restrictions will be required:

  1. Conventional rubber tired skidding equipment (p.s.i. of machine alone ranges from 10-16 p.s.i.) will be permitted to operate only during dry periods of the year (typically 6/15 - 9/30) or frozen ground conditions.
  2. Low ground pressure skidding equipment may operate during the entire normal operating season designated in the timber sale contract. Such equipment will have maximums of 7 p.s.i. for the machine itself and 12 p.s.i. for the machine when skidding.
  3. Cable logging systems

- Surface disturbance by logging operations should be limited to 15 percent or less of the timber sale area. Consider winching to avoid surface damage on wetter areas.
- Special surfacing techniques, such as stoning or the use of geo-textiles for corduroying, may be needed on off-road vehicle trails.
- Special construction techniques should be considered for camping and picnic areas to mitigate problems caused by perched water table.
- When locating a site for a vault toilet or a septic system, avoid topographic positions that receive subsurface water which moves down from upslope areas.
- Road construction should be avoided on colluvial soils (Ernest Silt Loam) formed on Devonian shales because of the high hazard of slippage and landslides.
- This group may need geotextiles in road construction to mitigate problems caused by the perched water table.
- All containment pits for waste fluids from oil/gas practices must be lined with impermeable material.

Soil Group III

Nolo, Cavode, Brinkerton, Albrights, Atkins, Rexford, and Armagh are the major soils. Approximately nine percent of the National Forest is in this soil group.

These soils are poorly drained, with most having restrictive layers (fragipans and claypans). The B horizons have high clay content.

- Timber harvesting restrictions are necessary on these soils. Timber skidding equipment will be limited to low ground pressure type models or cable logging systems. Such low ground pressure models will express maximums of seven pounds per square inch (psi) with the machine alone, and 12 psi when the machine is skidding.
- Uneven-aged management should be used on these sites to prevent regeneration failure.
- Scattered residual trees should not be left on these sites due to the high hazard of windthrow.
- These sites are not suitable for recreational developments.
- ORV and hiking trails located on these soils should be built with special surfacing techniques.
- Subsurface water pressure on these sites may dislodge standard toilet vaults and thrust them to the surface. If they must be installed here, use special engineering design to prevent this from occuring.
- Where there is no alternative to constructing roads on these soils, geotextiles will be used.
- Encourage oil/gas operators to use geotextiles in road and drilling pad construction.
- Containment pits for fluids produced from oil and gas operations should not be constructed on these soils due to the high water table.
- If containment pits are built, they must be lined with an impermeable material.

Coordination of Water Resources with Timber Management

Logging systems should be laid out systematically to minimize the number and length of roads needed and to improve the efficiency of the system.

The grade of temporary roads and skid trails should not exceed 15 percent, except lengths up to 200 feet may pitch to 20 percent when sufficient cross-drainage is provided.

Timber harvesting restrictions for poorly and moderately drained soils are provided in the previous text on Soil Groups II and III.

Temporary roads and skid trails will be cross-drained to prevent erosion and sedimentation into streams. After use, all facilities including landings should be permanently closed and erosion-controlled.

Landings located next to system roads may be used for hunter parking or other long-term uses if analysis indicates such a need.

Landings should be located and designed so that sediment will settle out before runoff reaches watercourses. Landings that must unavoidably be located on poorly drained soil types should be used only when the ground is dry or the landing is adequately surfaced.

Bridges, low-water crossings with pipes, or culverts will be provided to cross perennial and intermittent streams.

All temporary fills in stream channels shall be removed in their entirety and the area restored to its original elevation.

Sale layout will avoid, to the extent practical, the need for skidders to cross perennial and intermittent streams. Crossing by skidders will occur only at designated sites. A temporary crossing will be constructed to prevent degradation of stream banks and bed.

No skidding or trucking is permitted down any portion of any stream or streambed.

Concerning perennial and intermittent streams:

- A filter strip should be maintained to minimize the movement of silt, humus, and other organic matter into the stream. A suggested width is 50 feet plus 2 feet for every one percent of slope adjacent to each side of the stream.
- Streams will be kept free of logging debris, sawdust, equipment, oil, and other materials or obstructions that interfere with the orderly flow of water or adversely affect water quality.
- Logging operations should maintain the existing structure and shape of streambanks.
- A canopy of high and/or low shade should be provided along perennial streams. This should protect the streams from excessive exposure to direct sunlight that would increase temperatures above that tolerable to the existing fish species.

No herbicide will be sprayed on any stream or spring seep. The following buffer strips will be established for all spray projects using ground application equipment.

- A 75-foot buffer will be maintained along perennial streams, intermittent streams that have flowing water on the day of spraying, and impoundments or lakes.
- A 50-foot buffer will be maintained along intermittent streams not flowing water, and spring seeps that drain into a stream.
- A 25-foot buffer will be maintained around small seep areas that do not have an outflow channel draining to a stream.

These widths may need to be expanded after evaluation of specific sites, i.e., for steep topography.

During aerial fertilization projects, a buffer strip equal to three-fourths of the swath width will be maintained along streams with flowing water. This buffer strip will generally be in the range of 50 to 100 feet wide.

Coordination of Water Resources with Recreation Management

Filter strips should be provided between ORV trails and streams to minimize the movement of soil into streams. A suggested width is 25 feet plus two feet for every one percent of slope between the trail and the stream.

Trails will be cross-drained to prevent erosion and sedimentation into streams.

In designing trails, segments with steep grades will be located so that eroded material will not enter perennial or intermittent streams.

ORV trails should cross perennial streams via bridges or culverts. Bridges, culverts, or rocked fords where suitable to stream type and topography may be used to cross intermittent streams. In the design of crossings, attention should be given to preventing vehicle use in streams and damage to stream banks.

Locate stream crossings for hiking trails at sites with stable stream banks and stream beds.

Erosion and sediment control practices will be used during construction of recreation sites.

Coordination of Water Resources with Transportation

Filter strips should be provided between new roads and streams. Suggested filter strip widths are:

Surfacing Material	Filter Strip Widths
Commercial clean stone	25 ft + (2 ft x % Slope)
Pit run stone	50 ft + (2 ft x % Slope)
Native material	50 ft + (4 ft x % Slope)

During planning of the reconstruction of existing roads, avoid poorly drained soils (Soil Group III) or segments without adequate filter strips between the road and stream.

For most road crossings, dredge and fill permits issued by the Corp of Engineers under Section 404 of the federal Clean Water Act are not required. Roads not requiring specific 404 permits include local and temporary roads built exclusively for timber management, which are covered by the exemption for normal silvicultural activities; all roads crossing headwater sections of streams (flow less than five cfs), which are covered by a nationwide permit; and minor crossings with less than 200 cubic yards of fill below ordinary high water, also covered by a nationwide permit. Road crossings of streams that do not fit any of the above three categories require a specific permit from the Corps of Engineers.

Discharges of fill material into stream channels to construct a road crossing shall be made in a manner that minimizes encroachment of trucks, tractors, bulldozers, or other heavy equipment into waters of the United States that lie outside the lateral boundaries of the fill itself.

Stream crossings will be designed and constructed to maintain the stream's original gradient.

Stream crossings of trout streams will be designed so as not to impede fish movement.

Ditch erosion and transport of sediment will be minimized by placing sufficient culverts to handle small volumes of water frequently. Cross-drainage will be provided before stream crossings to discharge road sediment onto the forest floor rather than into the stream. Alternatively, sediment traps can be used.

Drainage of culverts onto fill slopes will be avoided where practical. If unavoidable, energy dissipators or water spreaders should be provided to prevent erosion of the fill slope.

Where culverts must drain onto steep slopes and the potential for gully formation exists, energy dissipators will be used.

Cut and fill slopes will be stabilized as soon as practical by revegetating or using other slope stabilizing methods.

During construction, filter fence will be used as needed to prevent sediment from entering water bodies. Trapped sediment and the filter fence should be removed after stabilization is completed.

Coordination of Water Resources with Oil/Gas Management

Developers will provide an erosion and sediment control plan to the Forest Service prior to construction.

Surface disturbance will be limited to the minimum necessary for extraction of minerals, as stipulated by the Secretary's Rules and Regulations governing reserved minerals or by case law concerning outstanding mineral rights.

Road and pipeline systems will be planned to eliminate stream crossings whenever practical. Operators will design and construct stream crossings such that detrimental impacts to the stream are reduced or minimized.

Considerations for road location and design:

- Provide an adequate filter strip between roads and streams to minimize the entry of sediment into streams. A suggested width is 50 feet plus two feet for every one percent of slope between the road and channel.
- Provide adequate cross-drainage to handle small volumes of water frequently. Cross-drainage will be provided before stream crossings to discharge road sediment onto the forest floor rather than into the stream. Energy dissipators will be used where needed to prevent gully formation on discharge slopes. Alternatively, sediment traps that are regularly maintained may be used.
- Road grades preferably should be kept to two to eight percent, with grades up to 15 percent acceptable on short pitches of 200 feet or less.

- Cut and fill slopes should be stabilized as soon as possible by revegetating or using other slope stabilizing methods.
- Permanent roads should be surfaced with sufficient stone to carry anticipated traffic.
- Roads to access test wells should be constructed to minimum standards in order to facilitate site restoration in the event of a dry hole or a decision not to produce. In the event of a decision to produce, the road should be upgraded as necessary for its use.

Within the constraints imposed by the well spacing pattern, locate wells to minimize environmental damage. An adequate filter strip should be provided to minimize entry of sediment into streams.

Use of Forest Roads will require a Road-Use Permit. Road construction necessary to handle the OGM traffic is the developer's responsibility.

In oil/gas developments, pipelines should be buried a minimum of three feet to protect them from damage and freezing. Exceptions may be made if site conditions warrant, such as bedrock requiring blasting. Where Forest Service has approval or permitting authority pipelines will be buried, except where site conditions make it infeasible.

In oil/gas developments under 1911 Secretary's Rules and Regulations or in outstanding ownership, the developer will be encouraged to bury pipelines as described above.

It is the operator's responsibility to comply with all state and federal water pollution abatement laws and regulations.

Each operator must prepare and implement a site-specific Preparedness, Prevention, and Contingency Plan (PPC Plan), which includes a spill prevention, containment, and countermeasure plan, as required by state and federal regulations. This plan details practices for handling, usage, and storage of materials which can cause environmental degradation if spillage, leakage, or discharge occurs.

Wastewaters will be disposed of by methods approved by state and federal regulatory agencies. Disposal of polluting materials must also be in accordance with stipulations of the deed reserving the mineral rights.

All oil storage tanks should be centrally located in batteries whenever practical and kept at least 100 feet from drainages or streams. Batteries will be constructed to meet all federal and state requirements for spill containment.

2600 WILDLIFE HABITAT MANAGEMENT

Wildlife Management

We began the planning process by reviewing the habitat requirements for all species that occur on the Forest. Special emphasis was directed at determining the effects of management on endangered species, species of special concern in Pennsylvania, important game species, furbearers, and non-game species. Management indicator species were selected to represent species having similar habitat requirements. We determined the habitat needed to maintain viable populations for each indicator species (See Table 4-3 in the Final EIS).

We then designed the individual management area objectives and the standards and guidelines to provide specific habitat conditions. Management areas vary in their capability to support each indicator species and associated species. After we developed the alternatives and knew the mix of management areas chosen in each, we evaluated the effects on big-game, small-game, furbearers, waterfowl, endangered species, species of special concern in Pennsylvania, and management indicator species. We found that each alternative provides adequate habitat to maintain viable populations of the species that occur in this area. For more information, see the discussion about wildlife in Chapter 4, Section D of the Final EIS. Table 4-24 displays the Forest-wide wildlife habitat objectives. The land management planning process records contain the habitat requirements for the individual species.

Timber management practices will be used to improve wildlife habitat where feasible. Wildlife habitat improvement practices will be used to provide important components where timber management practices will not achieve our habitat objectives. Old growth timber stands will complement the wildlife habitats that are managed more intensively.

Wildlife habitat management investments should be directed towards the species emphasized in each management area. It should also include opportunities to manage specialized habitats and inclusions to benefit game and non-game species, indicator species, and species of special concern.

All fish and wildlife stocking in waters and/or on lands administered by the Allegheny National Forest shall proceed only after concurrence is obtained from the Forest Service in cooperation with the Pennsylvania Fish and Game Commissions.

Habitat improvements for the species emphasized in each prescription should be designed to meet requirements of as many indicator species as practical.

Management indicator species for the Allegheny National Forest are: American Woodcock, Ruffed Grouse, Red-shouldered Hawk, Yellow-bellied Sapsucker, Pileated Woodpecker, Magnolia Warbler, Hermit Thrush, Black-throated Green Warbler, Great Blue Heron, Barred Owl, Beaver, White-tailed Deer, Rattlesnake, Brook Trout, and Walleye.

Openings

Permanent openings may include savannahs, hawthorne thickets, old apple orchards, old fields, pipelines, utility rights-of-way, American hornbeam stands, and other areas seeded to wildlife mixtures or composed of native vegetation.

Permanent openings will be provided on approximately six percent of the Forest. This will include four percent savannahs and two percent in other types of openings (native shrubs, old fields, pipelines, utility rights-of-way, and areas seeded to wildlife mixtures).

Openings on other private land and State Game Lands will be included in any analysis to determine the need for additional acres in this habitat component.

Higher priority will be given to habitat management on large blocks of National Forest than on small isolated tracts.

Some areas will be managed along selected roads and water shorelines to attract wildlife for public viewing purposes.

Seeding of annual grain crops will be used primarily to establish desirable grasses and legumes.

Openings for wildlife species that are sensitive to disturbances by man will generally be located away from main roadways. Access may be regulated to minimize disturbance.

Openings may be enhanced by release cutting, mowing, pruning, seeding, selective chemical treatment, providing nesting boxes, and prescribed burning. The majority of the acreage in openings will be managed to encourage native grasses, forbs, vines, and shrubs.

Permanent wildlife openings scheduled for mowing will be treated during the period June 15 to July 31.

When feasible, use selective treatment of vegetation (rather than broadcast) on transmission rights-of-way to improve wildlife forage and cover.

Spring Seeps

Protect spring seeps from damage by resource management activities.

Locate haul roads at least 50 yards downstream from the head of the seep and avoid road construction within 50 yards uphill from seeps. Use appropriate erosion control methods to minimize the movement of silt into the seep.

Manage seeps intensively only where vegetative productivity is likely to be greatest and winter food is needed most.

- Select seeps with consistent flows, a surface area greater than 40 square yards, near neutral or above water pH, and relatively high soil fertility.
- Seeps should be located in traditional winter habitat for deer and turkeys.
- Combine vegetation management with commercial logging to reduce treatment costs.
- Cut all trees back at least 20 yards from the seep except for small food producing species.
- Do not cut food producing shrubs.

Manage the timber adjacent to other seeps by using intermediate cuttings. Favor mast-producing crop trees.

Remove all slash and logs from the seep channel and clearings that are created.

Thermal Cover

Native conifers, rhododendron, and mountain laurel should be used to provide thermal cover.

Conifer cover will be provided on a minimum of five percent and a maximum of 10 percent of the Forest. Conifer stands, as well as mixed hardwood-conifer stands, can be managed to achieve this wildlife management objective. Special emphasis will be given to hemlock where feasible.

White spruce may be used to provide thermal cover in areas where it is not feasible to use native species.

Snags

A snag can be either a dead tree or a live tree with a dead crown or major dead limbs. Wildlife will use a wide variety of tree species. High value timber species should not be designated as snags, except where salvage sales are not feasible.

Some snags should be left standing in all commercial and non-commercial cuts. Where the potential exists, leave an average of five to ten snags per acre. In clearcuts, snags will be left primarily in hollows and along stand borders where they will be less subject to blowdown. Refer to the guidelines in the 1900 section for each Management Area for more specific direction.

Den Trees

As part of the requirement for providing old growth habitat, retain in intermediate cuttings up to three trees per acre with nesting cavities unless the guidelines for the Management Area exceed the forest-wide guideline. Where an inadequate number of live trees occur, retain old large trees, especially those with old wounds and broken limbs.

In clearcuts, leave small clumps of 6-15 trees with nesting cavities, trees with the potential to produce nesting cavities along with adjacent conifers and mast-producing species. These clumps should be left in hollows and along stand borders where they are less subject to blowdown. Where this is not feasible, retain a clump of approximately 75 trees (1/4 acre) within each five acres of regeneration cut. The clumps should not exceed five percent of the area to be regenerated.

Wetland Impoundments and Potholes

Water levels in selected impoundments will be manipulated for management purposes. Impoundment designs will include water level control features.

Propagation Areas may be provided on selected impoundments in cooperation with the Pennsylvania Game Commission.

Seeding of annual grains adjacent to selected shorelines will be permitted.

Potholes should be constructed only where they complement existing developments, such as small impoundments.

New shallow impoundments and potholes shoudl be developed only in areas where poorly or very poorly drained soils occur.

Consider utilization of road construction projects to develop shallow water areas.

Islands and peninsulas may be provided for nesting and loafing areas.

Cover should be provided within and adjacent to impoundments for escape and nesting purposes respectively.

Nesting Structures

Nesting boxes may be installed in wetland habitats.

Canada goose nesting structures may be provided in impoundments.

Beaver

Beaver will be encouraged on selected streams (non-trout) where stream gradient and food availability are suitable.

Specialized Habitat

Areas with rock ledges suitable for raven nesting sites should be identified and managed in a manner that will protect these areas.

Road and Trail Development

Road and trail development will be located to protect key wildlife habitat values (turkey brood habitat, deer and turkey wintering areas, wetlands, etc.)

Fish

The Forest will maintain and restore fish population balance to the extent practical through habitat and access manipulation. Population manipulation as coordinated with the Pennsylvania Fish Commission will be used when necessary.

Permit and maintain protected stocking areas on all stocked trout streams within the Forest which comply with Pennsylvania Fish Commission's policy and directives.

The following streams will be managed to reasonably conform to Wilderness Trout Streams according to Pennsylvania Fish Commission Policy No. 400-17-69. All management areas are considered compatible with the policy.

- Arnot Run, Warren County
- Crane Run, McKean and Elk Counties
- East Hickory Creek above its confluence with Middle Hickory Creek, Warren County
- Four Mile Run, Forest County
- Wildcat Run, Warren County

Stream flows should not be impeded or accelerated nor fish passage restricted unless prescribed under a fish management plan.

Refer to 2500 Water and Soil Management and 2600 Wildlife and Fish Habitat Management for each Management Area for additional standards and guidelines to protect water quality, stream temperature, and fish habitat.

If warm water impoundments are constructed:

- They will be 25-100 surface acres in size.
- They will be located where at least 65 percent of the impoundment will be at least five feet in depth.
- They will not be located in drainages whose pH is less than 6.0 unless the liming and fertilization of that lake is accepted as part of the project costs.
- Drainages with a total hardness of at least 25 p.p.m. as Calcium Carbonate will be selected first.
- The impoundment design will include a reasonably rapid drawdown capability.
- An environmental assessment will be made for each site proposed for a warm water impoundment to insure that the project will be cost-effective and comply with all the Forest standards and guidelines.

- Downstream temperatures will not be affected adversely.

Habitat Improvement in Allegheny Reservoir

Habitat improvement structures for the Allegheny Reservoir will be of two general types. The first will be brush piles constructed of trees or bushes. They will be anchored or otherwise fastened in place along shorelines to promote spawning habitat and/or cover. Shallow bank areas will be selected at roughly one mile intervals around the shoreline. Each area selected may have up to one dozen structures. The second type will be constructed from automobile tires, tiles of various diameters, concrete culverts, or other like items. These items will be cabled together with material designed to resist rust and placed in the lake at approximate elevation 1,300 MSL. Several structures may be placed in one location, generally near access points so that bank fishing will also benefit.

Endangered, Threatened, and Forest Species of Concern

The habitat requirements of all animal and plant species that are listed or proposed for listing as endangered, threatened, or of special concern in Pennsylvania were considered in developing the Forest-wide standards and guidelines, as well as those for specific management areas. Most of the species of concern can be protected and their habitat requirements provided by these standards and guidelines. Some species, however, need additional considerations for various reasons to insure that viable populations will be provided on the Forest. The following species were selected in cooperation with the Pennsylvania Game Commission; Pennsylvania Fish Commission; Pennsylvania Department of Environmental Resources, Bureau of Forestry; and Western Pennsylvania Conservancy, to receive special emphasis in the management program. A complete listing of animals and plants and their classifications by the responsible state agency is on file in the Forest Supervisor's office.

Endangered

Bald Eagle (Haliaetus leucocephalus)
Indiana Bat (Myotis sodalis)*

Forest Species of Concern

Osprey (Pandion haliaetus)**
Henslow's Sparrow (Ammodramus henslowii)***
Cooper's Hawk (Accipiter cooperii)
Red-shouldered Hawk (Buteo lineatus)
Northern Goshawk (Accipiter gentilis)
Sharp-shinned Hawk (Accipiter striatus)
Grasshopper Sparrow (Ammodramus savannarum)
Marsh Wren (Telmatodytes palustris)
Eastern Bluebird (Sialia sialis)
Great Blue Heron (Ardea herodias)
Raven (Corvus corax)
Bobolink (Dolichonyx oryzivorus)
Bobcat (Lynx rufus)
Keen's Little Brown Bat (Myotis keenii)
Silver-haired Bat (Lasionycteris noctivagans)
Timber Rattlesnake (Crotalus horridus)
Small-headed Rush (Juncus brachycephalus)
Broad-leaved Water Plantain (Alisma plantago-aquatica)
Puttyroot (Aplectrum hyemale)

*Though this species has not been recorded as occurring within the Allegheny National Forest, its historic and suspected range includes this area. Old growth habitat in riparian areas preferred by this species for nursery colonies will be provided through implementation of the standards and guidelines as well as the management area assignments.

**This species is classified as Endangered by the state and is a migrant. It has attempted to nest here recently. A hacking project is underway on the Allegheny Reservoir in New York.

***This species is classified as Threatened by the state and occurs on private land within the proclamation boundary.

The small-whorled pogonia (Isotria medeoloides), that is classified as Endangered on the federal list, was not included on the Forest list because it has not been known to occur on this unit historically. Since a population of this species has been located recently in Venango County near Oil City, Pennsylvania, within the general region of the Forest, the guidelines for locating this species will be utilized to protect it.

The standards and guidelines included here are designed to complement those in other sections of the Plan. They will provide additional assurance that the aforementioned animal and plant species and their habitats will receive special consideration during the planning and execution of management activities on the Forest.

The federal and state lists will be reviewed at least once annually, and the Forest list will be revised as deemed necessary in cooperation with the Pennsylvania Game Commission, Pennsylvania Fish Commission, and the Pennsylvania Department of Environmental Resources, Bureau of Forestry. Amendments to the current standards and guidelines will be based on any modification of the Forest list and on any new management techniques that are developed.

Habitat of endangered, threatened, and Forest Species of Concern will be protected or enhanced.

The Forest will carry out National Forest responsibilities in Recovery Plans for federally threatened and endangered species and will develop management plans for all federal and state threatened and endangered species, except for migrants or visitors, that are essentially unaffected by management of the Forest. Direction will include the following requirements:

1. Cooperate in re-introduction programs if deemed appropriate by state agencies.
2. Assess the occurrence of animal and plant species in all areas to be affected by land adjustment or resource management activities, and design action to avoid, minimize, or mitigate potential adverse effects.
3. Acquire lands or rights needed to protect or reestablish threatened or endangered species of animals or plants.
4. Protect specific key habitats and specialized habitats through coordination with other resource management activities or area closure.
5. Provide desirable nesting vegetation for the marsh wren within and adjacent to wetlands.
6. In wildlife openings provide trees with suitable nesting cavities for bluebirds, or install nesting boxes.
7. Enhance rattlesnake denning and basking sites by release cutting.
8. Identify and manage potential nest trees in suitable locations for the bald eagle and osprey.

9. Construct nesting platforms for ospreys where suitable nest trees are lacking but habitat is otherwise appropriate.
10. The guidelines to protect selected birds during the nesting season are the following:
    - Prohibit disturbances within approximately 330 feet of each existing nesting location, except those necessary to protect the nest or colony.
    - Prohibit significant changes in the landscape within 660 feet of each existing nesting location.
    - Restrict management activities* that result in adverse disturbance to nesting birds within approximately 1,320 feet of each nest location.
    - Local roads will be closed to public use where active nests are located.

The species included here and their critical time periods are the following:

Bald Eagle - February 1 to July 31
Osprey - May 1 to August 15
Cooper's Hawk - March 1 to July 31
Red-shouldered Hawk - March 1 to June 30
Northern Goshawk - April 1 to July 31
Sharp-shinned Hawk - April 15 to August 15
Great Blue Heron - March 1 to August 31
Raven - February 1 to May 15

* Includes road and trail construction and maintenance, timber cutting and hauling, oil and gas development (where possible), right-of-way management, etc.

11. Manage selected permanent openings in desirable vegetation types to provide habitat for the Henslow's sparrow, bobolink, grasshopper sparrow, and bluebird.

12. New roads, trails, recreation facilities and other developments will be located to avoid the following:

    - Rock ledge areas suitable for raven nesting sites
    - Rocky areas on southern and southeastern exposures suitable for snake dens
    - Caves or rock outcrops with crevices suitable as hibernaculums for the Keen's little brown bat and silver-haired bat

- Existing nesting locations for Henslow's sparrow, Cooper's hawk, red-shouldered hawk, northern goshawk, sharp-shinned hawk, great blue heron, and raven
- Potential nesting sites for the bald eagle and osprey
- Habitats where the small-headed rush, puttyroot, and broad-leaved water plantain are present

13. Field surveys will be conducted to determine the presence of small-whorled pogonia populations when road construction, logging, herbicide treatment, trail construction, recreation site development, and oil and gas development are proposed for areas containing suitable habitats for this species.
14. Prior to issuance of a general botanical collection permit, individuals will be notified of the state regulations, Chapter 82, "Conservation of Pennsylvania Native Plants." The collector will be given a list of the plant species of special concern as they are contained in the state regulations and notified of the special provision for the collection of Pennsylvania endangered and threatened plant species through the wild plant management permit application procedures.
15. The Forest will not pursue a bald eagle hacking project during the first plan period based on consultation with Pennsylvania Game Commission wildlife biologists. If another organization or agency decides to initiate one based on additional data, we will cooperate to the extent possible through habitat management and coordination with other resource management activities. Our current objective is to establish one nesting pair of bald eagles on the Forest by the year 2020.
16. Coordination with other resource management activities:

    Timber

    Manage the existing timber stands as old growth where great blue heron colonies are located.

    Retain as potential great blue heron nesting areas mature or old growth timber stands where American beech is a major component. These stands should be located near existing colonies when possible and should occur in similar locations.

Herbicides will be applied in a manner to avoid any adverse effect on the plants listed in this section of the Plan.

Refer to items 2, 4, 10, and 13.

Recreation

Existing ORV and foot trails will be managed to avoid conflicts between the public and "Species of Special Concern in Pennsylvania". As an alternative, the trail will be relocated to provide the protection required for these species. Refer to items 2, 4, 10, 12, and 13.

Transportation Planning and Road Management

Local roads will be closed to public use when necessary to provide additional protection for the bobcat and rattlesnake. Refer to items 2, 4, 10, 12, and 13.

Special Use Permits

Provisions will be included in special use permits to protect "Species of Special Concern in Pennsylvania". Refer to items 2, 4, 10, 12, and 13.

Land Acquisition

Refer to items 2 and 3.

17. The Forest will cooperate with other agencies and organizations interested in conducting special surveys concerning these species and other species that may occur here.

The U. S. Department of Interior, Fish and Wildlife Service, has reviewed the Land and Resource Management Plan, as required under the Federal Endangered Species Act (PL93-205). Their opinion is that "the management plan will not jeopardize the continued existence of the bald eagle." This agency's complete reply is on file in the Forest Supervisor's office.

The Pennsylvania Game Commission, Pennsylvania Fish Commission, and Pennsylvania Department of Environmental Resources, Bureau of Forestry, have reviewed the Plan and concur that it provides adequate direction to protect or

enhance the habitat of "Species of Special Concern in Pennsylvania." Their letters of concurrence are on file in the Forest Supervisor's office.

2700 SPECIAL USE MANAGEMENT

Permittees must meet the same environmental standards that apply to Forest Service facilities.

The burden of proof is upon the special use applicant to justify need for use of National Forest lands.

The establishment of commercial and tourist service facilities will be considered where private lands are not available for such development, and where development on federal lands can be demonstrated to provide a service fulfilling a public need beyond the state and local context.

Cabin permits on National Forest land will be terminated prior to December 31, 1996. Recreation residences in established areas will be reviewed and phased out prior to December 31, 1996, when such action is in the public interest.

Consolidate right-of-way uses into use-corridors whenever practical. Locate utility corridors to avoid heavily used recreation areas and special ecological or other special interest sites.

Special use permittees will be required to bury all new pipelines, telephone lines and powerlines up to and including 34.5 KV, except those to be placed on existing poles or towers.

Forest Supervisor may approve exceptions when:

- The applicant provides evidence that burying the utility line is not feasible; and/or,
- An environmental assessment of the alternatives supports the exception.

All rights-of-way except continuously used road surfaces on National Forest land should be stabilized through seeding or other natural means.

Cooperative trout nurseries operating under special use permits from the Allegheny National Forest shall receive prior approval from the appropriate agency before planting trout in waters on the National Forest.

2800 MINERALS AND GEOLOGY

Federal Minerals

Exploration

*All lands will be available for exploration that does not disturb the land surface.

Most lands outside the National recreation areas and wilderness will be available for surface-disturbing exploration (including core drilling).

*The reasons for closing an area to land-disturbing exploration must be supportable and documented.

Development

The Forest Service will encourage inventory and development of federal minerals, especially minerals of compelling domestic significance, as defined by the U.S. Department of Interior. Developments will be designed, constructed, and operated in a manner that is compatible with the surface resource objectives of the management area.

Compatibility determination for the Federal oil and gas ownership will be by an Environmental Assessment. A similar compatibility analysis will be done for oil and gas properties acquired by the federal government in the future.

Federal minerals within the Wilderness Area and the National Recreation Areas were withdrawn from leasing by the passage of the Pennsylvania Wilderness Act of 1984.

Private Minerals (includes oil, gas, and minerals outstanding or reserved in deeds)

*Land management decisions must not preclude the ability of private mineral owners to make reasonable use of the surface, as defined by deed and public law.

The Forest Service will protect the rights of the federal government, respect private mineral rights, and insure that private mineral owners and operators take reasonable and prudent measures to prevent unnecessary disturbance to the surface.

Forest Service administration of outstanding and reserved mineral rights will be in accordance with deeds, mineral reservations, and state and federal laws.

Actions required of mineral operator by law, mineral reservation, or contracts

At least 60 days in advance of proposed development, the developer will provide the Forest Service with written notification of planned activities. The advanced notification will contain the following:

1. Proof of Ownership
2. Designated Field Representative
3. A map showing the locations and dimensions of all facilities.
4. Plan of Operation, including drilling and construction schedules
5. Erosion and Sedimentation Control Plan
6. State Drilling Permit

1. Proof of Ownership

   The developer will demonstrate the right to develop the mineral estate by providing copies of deeds, leases, and farm-out agreements.

2. Designated Field Representative

   The operator will provide the name, address, and phone number of a designated field representative. The representative will be familiar with all phases of the project.

3. Map of the Planned Development

A map will be provided showing locations and dimensions of all facilities. These facilities include well sites, tank batteries, utility and collection lines, storage areas for equipment and supplies, generators, compressors, meters, and other facilities necessary for production or operation. The size of the well sites will be the minimum needed for safe operation.

4. Plan of Operation

The Plan of Operation will include a schedule of construction and drilling activities. This schedule will include the beginning and ending dates for timber harvest, road, well site, and other construction, and the drilling, hydrofracturing, and completion of wells.

5. Erosion and Sedimentation Control Plan

A site-specific plan to minimize erosion and prevent sedimentation of streams will be developed by the operator.

The emphasis of the plan should be to prevent erosion and contain soil on the site of the disturbance rather than collect eroded soil at the stream's edge.

6. Drill Permit

The operator will provide the Forest Service with a copy of the state drilling permit.

In addition to the above items, the operator must comply with the following:

- All abandoned wells will be plugged, according to state law.

- Roads will be gated and will be used only for oil and gas production and Forest Service administration.

- All merchantable timber will be sold by contract, with timber marked by the Forest Service and paid for prior to cutting. Slash from clearing roads, well sites, and other areas will be kept out of springs, seeps, and streams. Timber should not be skidded across streams.

- Unused pipelines, tanks, well jacks, and other miscellaneous equipment will be removed from National Forest land.

- Special use permits will be required for any facilities which cross the mineral estate of a different mineral owner or separately created mineral estates.

- Use of Forest Service roads will require a Road Use Permit, with payment of maintenance fees.

Actions negotiated with mineral operators

The Forest Service works cooperatively with oil and gas developers to mitigate adverse impacts on surface resources.

Standards and Guidelines in 2500, Water and Soil Management, are used to mitigate effects on water quality and soil productivity. The following recommendations and guidelines are routinely used by the oil and gas operators to reduce the impact of developments on other surface resources:

The road system will be located and designed to minimize environmental and visual impacts.

Road surfacing, including stoning and use of geotextiles, will be required as needed.

The grade of permanent roads will be between two and eight percent, with grades up to 15 percent acceptable on short pitches of 200 feet or less.

Right-of-way clearings will avoid den and unique mast producing trees wherever possible (See 2600 section).

Road rights-of-way clearings will be limited to the minimum width necessary to safely carry the anticipated traffic.

All pipelines and electric lines should be buried a minimum of 36 inches deep. All utility lines, whether buried or on the surface, should follow road rights-of-way wherever possible to minimize conflict with surface management activities and to protect the lines.

Automatic pump jacks should have warning signs to alert the public to machinery hazards. Storage tanks should have warning signs to restrict open flames near flammable materials.

Pump jacks and storage tank installations should be designed to blend with the natural environment.

Additional guidelines are developed for resource conditions on specific sites during the cooperative planning of development projects.

Compliance with regulatory requirements of other agencies

Oil and gas operators must comply with applicable state and federal laws and regulations governing oil and gas operations. The Forest Service will work cooperatively with U. S. Environmental Protection Agency, Pennsylvania Department of Environmental Resources, and other concerned agencies to ensure such compliance.

Mineral Materials (stone and gravel)

Use of construction mineral sources (pits and quarries) should conform to an Implementation Plan prepared for each source.

On all contracts, permits, and other uses, the user should have an operating plan for the production of a given quantity of mineral materials. The operating plan will conform to the long-term Implementation Plan for the designated source.

The ranking for allocations of rock from National Forest lands will be (1) for Forest roads and trails and for exercise of valid private minerals rights on National Forest land; (2) to federal, state, counties, and municipalities for off-Forest use; and (3) to a private corporation, organization, or individual for off-Forest use.

Ground Water

Protection of the ground water from oil, gas, and brine pollution will be a top priority in the administration of both federal and private oil and gas developments. All project planning, including environmental analysis as applicable, will consider potential impacts on ground water and preventive measures.

The Forest Service will request state review of well hole construction and completion plans and practices through Preparedness, Prevention, and Contingency Plans and by other appropriate means.

The Forest Service will encourage oil/gas developers to use the best available technology in well hole construction, completion, and production operations to protect ground water.

All injection wells will be permitted under the Underground Injection Control section of the Federal Safe Drinking Water Act.

3400 FOREST PEST MANAGEMENT

Integrated Pest Management

*Use integrated pest management methods to minimize or prevent the development of pest problems. Where pest problems are unavoidable, select the solution that provides the most beneficial method, based on objectives, effectiveness, safety, environmental protection, and cost.

Reporting incidence of damaging Forest pests will be the responsibility of all field-going ANF employees.

Systematic detection to locate and map pest populations and their damage will be provided by Forest Pest Management (FPM).

Biological and/or damage evaluations to assess current extent and future trends in resource losses will be provided by FPM.

The preparation of specific analyses may be necessary, based on FPM recommendations, to take suppression action to control insect and disease problems. Such analyses will consider the management objectives and standards and guidelines of the concerned management area(s).

Development of impact evaluations on how losses interfere with flow of goods and services will be responsibility of the Forest Supervisor.

Selection and implementation of the suppression or prevention alternative deemed most appropriate to mitigate Forest pest impact will be the responsibility of the Forest Supervisor.

The use of biological control tactics in suppression and cultural control tactics in prevention should be encouraged.

Monitoring and evaluation of Forest pest management suppression/prevention activities will be conducted in such a way as to quantify performance, document procedures and compare costs so as to improve on future activities.

Forest Insects

Hardwood defoliators represent the greatest threat and will receive the greatest management emphasis.

Minimize thinnings and salvage cutting of storm damaged conifers during the summer to reduce bark beetle buildup in slash, tops and downed stems.

During warmer months, encourage rapid utilization of cut trees.

Tree Diseases

Removal of defective trees with conks and cankers will be emphasized, except as required to meet wildlife objectives.

Beech bark disease complex now occurs on the northern part of the ANF. In threatened stands, consider favoring species other than beech when selecting crop trees during commercial and noncommercial intermediate treatments, except where beech is required to fulfill wildlife objectives.

Physical Factors

Promptly evaluate significant timber damage from ice, wind, etc., storms for salvage potential. In all management areas, except Management Area 5.0, a specific environmental analysis will be done as soon as possible.

Initiate timely salvage of damaged and downed stems where economically feasible.

Hazard analyses for recognizing the potential of tree failure and its human health and property damage consequences should be conducted in all developed recreational areas by Ranger District personnel every two years.

Lower bole damage from logging using selection or thinning cut methods should be minimized by reducing the number of skid trails and entries into the stand.

4000 RESEARCH

Identify candidate research natural areas in the Allegheny Hardwood (cherry, red maple, ash, poplar) and silver maple-sycamore timber types.

5100 FIRE MANAGEMENT

*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.

In all management areas except 5, wildfire prevention, detection, and suppression, and fuels management, (including fuelbreaks and hazard reduction), will be planned based on an analysis of probable fire location, expected fire intensities, potential net resource value change, and risk to health and safety. This type of analysis is performed on an annual basis and fire plans updated accordingly. See 5 for appropriate fire standards and guidelines.

A Cooperative Agreement will be maintained with the Commonwealth of Pennsylvania which defines the prevention, detection, and suppression actions.

Prescribed fire may be used to maintain and/or enhance wildlife habitat under established management prescriptions.

Prescribed fire for other than wildlife and fuel reduction purposes will only be considered after research studies determine its (prescribed fire) suitability on ecosystems common to the Allegheny National Forest.

5300 LAW ENFORCEMENT

*Adjust Cooperative Law Enforcement agreements in accordance with tri-year evaluations of Forest law enforcement needs and quality of service available.

*Law enforcement will be commensurate with frequency, severity and types of violations committed.

*At all facilities, apply recommended security measures that are cost efficient in relation to risk and value of potential loss.

"The objective of the law enforcement program is crime prevention and compliance with applicable laws and regulations, general protection of the public and their property, protection of Forest Service employees and protection of Forest resources and property."

"The Good Host concept will be applied in all law enforcement situations, which includes education and cooperation."

"The Forest will acquire and utilize the necessary resources and manpower to redeem their law enforcement responsibilities in the most effective and efficient manner. This may include the use of cooperating Federal, State, and local law enforcement officers."

5400 LAND OWNERSHIP

Surface Ownership

Lands may be acquired that could reduce management costs and improve management efficiencies. These lands are typlified by small (100-200 acre) tracts that are scattered throughout the Forest.

Rights-of-way will be acquired to facilitate efficient movement of goods and to supply services.

The following priorities will exist for lands acquisition:

Priority*	Description
1.	Lands or rights that would become part of a designated wilderness
2.	Lands or rights that are needed to protect or re-establish threatened or endangered species of plants or animals.
3.	Lands or rights that are needed to implement direction in Management Area 8
4.	Lands or rights that are needed to implement direction in Management Area 7
5.	Acquire the lands in the Tionesta Creek and Clarion river Valley corridors by exchange, purchase, or donation. Purchases will be primarily on a willing seller basis.
6.	Lands or rights that would become part of Management Area 3 or 6
7.	Lands or rights that would become part of Management Areas 1 or 2.
8.	Lands or rights that would become part of Management Area 9.

*Subsurface Ownership

*Consider subordination or acquisition of subsurface rights when all of the following are met:

1. Conflicts between surface values and mineral 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.

7100 ENGINEERING OPERATIONS

Signs and Posters

Signs and posters will be designed, installed, and maintained to ensure safe and efficient travel and education of the forest visitor. They will be aesthetically pleasing, assure adequate orientation to the forest visitor, and where possible, carry a positive message. Minimum signing to meet these needs will be stressed. Traffic control signs will be designed, located and installed in accordance with the latest "Manual on Uniform Traffic Control Devices" (MUTCD).

7400 PUBLIC HEALTH AND POLLUTION CONTROL FACILITIES	*Solid Waste *Refuse generated or deposited on National Forest System lands should be disposed of through community or area-wide systems that meet federal regulations. Waste Water Waste water systems will meet laws and regulations established by federal, state, county, and local agencies. Large, efficient disposal systems operated and managed by municipalities or county governments will be encouraged. Sanitary Landfills The sanitary landfill method is available for waste disposal on National Forest lands only when there are no suitable sites available on private land in the area. It is not appropriate in management areas 5, 6.2, 6.3, 6.4, 7, and 8,
7500 WATER STORAGE AND TRANSMISSION	Dams Impoundments will be designed, constructed, and maintained to meet laws and regulations established by federal, state, and local agencies.
7700 TRANSPORTATION SYSTEM	Arterial and collector roads will be managed as Traffic Service Level "A to C" roads, open to the public with only limited restrictions on use due to structural deficiencies. Forest Service administered local roads will be managed in accordance with the objectives of the management area served. The range of traffic service levels appropriate for local roads to meet the objectives of each management area are specified within the standards and guidelines for each management area. As deemed appropriate, right-of-way easements will be issued. Airfields and helipads may be developed as needed for private or other governmental agency needs, after completion of the proper environmental analysis.

When planning the road system, if the management area objectives and the environmental constraints can be met, take advantage of existing road corridors in order to minimize additional land clearing.

Use on any Forest Service administered road can be restricted for structural reasons or for protection during spring breakup .

Roads under the jurisdiction of an oil and gas operator are not open to public traffic, unless a formal written agreement is reached between the OGM operator and the Forest Service for this use. The only uses allowed on oil and gas roads, without the agreement specified above, are administrative traffic by the oil and gas operator and the Forest Service.

Direction for coordination and standards on road location, construction, reconstruction, and management for wildlife, fish, threatened and endangered species, species of special concern in Pennsylvania, recreation, timber, soil, and water are included within their respective headings. Road management direction in these other sections will supercede direction under the 7700 section.

Unlicensed ORV's can only be used on closed roads designated for ORV use only.

C. MANAGEMENT AREA DIRECTION

The following section describes the direction for individual areas of the Forest called management areas. Each location on the Forest where a management prescription is applied is called a management area. Management prescriptions were described in Appendix B of the accompanying Environmental Impact Statement. Management prescriptions contain multiple-use practices which produce resource outputs, goods, and services. This section describes the management prescriptions to be used to implement the Forest Plan.

The Forest's management area direction corresponds with the guidance given in the Regional Management Goals found in the Regional Guide. The first digit of both the management area and prescription numbers correspond to one of the nine Regional Management Goals. The Regional Goal missing from the Forest Plan (Goal 4) was not necessary to achieve the objectives desired.

Throughout the remainder of the Forest Plan, we will refer to management areas rather than management prescriptions. This section provides the management direction and the expected resource outputs from each management area. Specifically, it includes:

- o acres assigned to each management area
- o summary of resource output objectives
- o a summary of direction by management area including:
  - a description of the future land condition of management areas
  - resource output objectives for each management area
  - the management practices required to produce the resource outputs
  - management area standards and guidelines

MANAGEMENT AREA ACRE ASSIGNMENT

Table 4-5 lists the acres assigned to each management area. The location of each management area is displayed on the Forest Plan Management Area Map. It can be found in the map folder accompanying the Final EIS and Plan documents.

Management Area Acre Assignment

Table 4-5 Management Area Acre Summary

Forest Plan Management Area	M Acres Assigned[1]
1	7
2	6
3	327
5	10
6.1	101
6.2	20
6.3	1
6.4	23
7	1
8	6
9.1	1

1 This represents the total acres in National Forest ownership minus the acres of water surface. Approximately 503,000 acres. Summaries will vary ± 1M due to rounding.

Several demand or development projections have been made for oil and gas, which increase the amount of high intensity oil and gas development. There are 52,000 acres of existing high intensity oil and gas development. Within 150 years, under the low demand projection, there will be an additional 13,000 acres, with the high projection an additional 137,000 acres. The actual amount of development which occurs is expected to be closer to the high demand estimate than to the low. (Appendix B of the Final EIS contains additional information in Chapter IV.B.2 in the discussion on demand for oil, gas, and minerals. Chapter 4.C of the Final EIS also provides additional information under the discussion for Problem 5: Private Oil and Gas Development.)

This high intensity development is compatible only with Management Areas 1, 2, 3, and 9. Generally, these are the only management areas we have assigned or will assign to units of land which are highly developed for oil and gas production. (Chapter III.D. Identification of Prescriptions, Appendix B of the Final EIS provides additional information).

Limited information is available on where new intensive development may occur, though there are certain locations where there is a higher potential than others. When management areas were assigned to specific locations on the Forest, we attempted to recognize the potential for intensive oil and gas development and its compatibility with each management area's objectives.

Since information is incomplete, high intensity development will no doubt occur in some management areas where it may not be compatible. When development progresses to the point where it significantly affects our ability to achieve that management area's objectives and outputs, that particular site will be assigned to a more compatible management area. To maintain the management area allocation shown in Table 4-5 will require a compensating shift in the management area allocation for some other area of the Forest.

SUMMARY OF RESOURCE OUTPUT OBJECTIVES

Table 4-6 displays the resource output objectives by management area that are planned for Decade 1. Table 4-7 displays outputs projected for Decade 2 if this plan were to continue to be implemented. However, the Forest Plan will be revised at least every 10-15 years so these outputs are subject to change based on the new issues and problems of the next planning cycle.

Table 4-6 Resource Output Objectives by Management Area Planned for Decade 1

Output[1]		Average Annual Amount by Management Area for Decade 1											
		1	2	3	5	6.1	6.2	6.3	6.4	7	8	9	Total
Developed Recreation Opportunities (MRVD)[2]													
Semi-Primitive	D					4			33				37
Motorized	D2					(4)			(33)				(37)
Roaded Natural	D			15		402			13				430
	D2			15		(402)			(13)				(430)
Rural	D									419			419
	D2									(419)			(419)
Dispersed Recreation Opportunities (MRVD)													
Semi-Primitive	D				.10		20						30
Non-Motorized	D2				(10)		(20)						(30)
Semi-Primitive	D					292		1	71		4		368
Motorized	D2					(282)		(1)	(68)		(4)		(355)
Roaded Natural	D	8	10	480								1	499
	D2	(8)	(9)	(388)								1	(406)
Timber Management (MMBF)[3]													
Hardwood Sawtimber	D	0	2.4	30		3.6	2						38
	D2	0	(2.3)	(29)		(3.6)	(2)						(37)
Hardwood Pulpwood	D	0	1.1	47		2.3	5.6						56
	D2	(0)	(1)	(45)		(2.3)	(5.7)						(54)
Wildlife (MWFUD)[4]													
Big-Game	D	2	2.1	110	1.6	19	6.4	.2	5		1.2	.2	147
	D2	(1.7)	(1.8)	(96.9)	(1.6)	(17)	(6.4)	(.2)	(4)		(1.2)	(.2)	(131)
Small Game	D	6	.2	23	.5	15	.8	.4	4		.2	.1	50
	D2	(5)	(.2)	(22)	(.5)	(15)	(.8)	(.4)	(4)		(.2)	(.1)	(48)
Non-Game	D	.4	.4	23	.5	14	1.2	.1	4		.2	.1	44
	D2	(.3)	(.3)	(19.5)	(.5)	(13)	(1)	(.1)	(4)		(.2)	(.1)	(39)
Fishing	D	.3	.3	32	1	66	2	1.3	47	.3	.5	.3	151
	D2	(.3)	(.3)	(31)	(1)	(66)	(2)	(1.3)	(46)	(.3)	(.5)	(.2)	(149)

1 D2 is a variation of the Forest Plan that estimates the results if a high rate of private oil and gas development is experienced during the implementation.
2 MRVD = thousands of recreation visitor days
3 MMBF = millions of board feet
4 MWFUD = thousands of wildlife and fish user days

Table 4-7 Summary of Resource Output Objectives by Management Area for Decade 2

Output[1]		Average Annual Amount by Management Area for Decade 1											
		1	2	3	5	6.1	6.2	6.3	6.4	7	8	9	Total
Developed Recreation Opportunities (MRVD)[2]													
Semi-Primitive	D					5			33				38
Motorized	D2					(5)			(33)				(38)
Roaded Natural	D			26		432			13				471
	D2			(26)		(432)			(13)				(471)
Rural	D										432		432
	D2										(432)		(432)
Dispersed Recreation Opportunities (MRVD)													
Semi-Primitive	D				16		26						42
Non-Motorized	D2				(16)		(20)						(36)
Semi-Primitive	D					292		1	75		4		372
Motorized	D2					(282)		(1)	(73)		(4)		(360)
Roaded Natural	D	7	11	505								1	525
	D2	(6)	(9)	(390)								(1)	(406)
Timber Management (MMBF)[3]													
Hardwood Sawtimber	D	0	0	41		3.6	2						46
	D2	(0)	(0)	(33)		(3.6)	(2)						(39)
Hardwood Pulpwood	D	.7	0	39		2.3	5.6						48
	D2	(1.3)	(0)	(43)		(2.3)	(5.7)						(52)
Wildlife (MWFUD)[4]													
Big-Game	D	2.5	2.1	119	1.6	23	6.8	.2	5		1.2	.2	162
	D2	(2.1)	(1.7)	(102.2)	(1.6)	(22)	(6.8)	(.2)	(5)		(1.2)	(.2)	(143)
Small Game	D	7	.2	27	.8	17	1.5	.4	4		.2	.1	58
	D2	(6)	(.2)	(26)	(.8)	(17)	(1.5)	(.4)	(4)		(.2)	(.1)	(56)
Non-Game	D	.4	.4	25	.8	14	1	.1	4		.2	.1	46
	D2	(.3)	(.3)	(20)	(.8)	(13)	(1)	(.1)	(4)		(.2)	(.1)	(40)
Fishing	D	.3	.3	35	1	75	2	1.3	56	.3	.5	.3	172
	D2	(.3)	(.3)	(29)	(1)	(73)	(2)	(1.2)	(55)	(.3)	(.5)	(.2)	(163)

1 D2 is a variation of the Forest Plan that estimates the results if a high rate of private oil and gas development is experienced during the implementation.
2 MRVD = thousands of recreation visitor days
3 MMBF = millions of board feet
4 MWFUD = thousands of wildlife and fish user days

DIRECTION BY MANAGEMENT AREA

This section provides a summary of each management area. It includes a general description, the objectives, the estimated practices, and the standards and guidelines specific to each management area.

The first section describes the management area and the projected future land conditions. The output objectives table displays the portion of the Forest Objectives that would be produced on that management area. The second table lists the practices that would be necessary to achieve these objectives. The selection of practices was based on the data and technology available at the time of the analysis. As we progress further into implementing the plan, it is likely that more efficient ways of achieving the objectives will be identified through monitoring and research. If so, adjustments to the management practices may be necessary. If the effects of these adjustments are significant, the plan may need to be amended or revised. See Chapter 5 for more information on amendment and revision procedures.

The last section in each management area summary lists the standards and guidelines. The Forest Standards and Guidelines also apply to each management area unless specifically excepted.

Description for Management Area 1 (7,000 acres)

This management area provides a forest of primarily hardwood stands, with interspersed conifers and openings suitable for a variety of game and non-game wildlife species associated with the early successional stages of vegetation.

The primary purpose is to:

- Emphasize habitat management for ruffed grouse and other wildlife species associated with early successional stages of forest habitat.
- Provide a high quality of wood fibre production.
- Provide a roaded natural setting for all types of dispersed recreation opportunities.

The areas managed under this prescription will be predominantly aspen stands. Even-aged timber stands in a balanced variety of age and size classes, from seedling/sapling to small sawtimber, will be evident.

A variety of inclusions, such as conifers, openings, seeded roads, and savannah-type areas will also be present.

Specialized habitats and inclusions will receive treatments to specifically benefit small game, non-game, indicator species, or species of special concern.

Timber harvesting, reforestation activities, and wildlife habitat improvement will be intensive. Such activities as commercial or non-commercial timber regeneration, conifer and shrub plantings, release and pruning, and opening maintenance may significantly modify the landscape.

Recreation opportunities will including hunting, viewing wildlife, hiking, cross-country skiing, and viewing scenery.

State, township, and Forest Service administered arterial and collector roads may be located within this management area. Forest Service local roads, Traffic Service Level (TSL) "C", will be open to all public traffic, except for certain seasonal restrictions for wildlife purposes. Forest Service local roads, TSL "D", will be closed to all public traffic, except for certain seasonal openings to meet resource objectives.

Special uses, utility corridors, road rights-of-way, and intensive oil and gas development may dominate the landscape at specific sites.

Administrative and law enforcement activities will be infrequent.

Table 4-8 Output Objectives for Management Area 1

Output by Management Problem	Unit of Measure	Average Annual Amount Planned Decade 1 D	(D2)	Projected Decade 2 D	(D2)
Dispersed Recreation Opportunities					
Roaded Natural	M RVD	8	(8)	7	(6)
Timber Management					
Hardwood Sawtimber	MMBF				(0)
Hardwood Pulpwood[1]	MMBF			.7	(1.3)
Wildlife					
Big-Game Hunting	M WFUD	2	(1.7)	2.5	(2.1)
Small-Game Hunting	M WFUD	6	(5)	7	(6)
Non-game	M WFUD	.4	(.3)	.4	(.3)
Fishing	M WFUD	.3	(.3)	.3	(.3)

Table 4-9 Practices for Management Area 1

Management Practice	Unit of Measure	Average Annual Amount Planned Decade 1 D	(D2)	Projected Decade 2 D	(D2)
Dispersed Recreation Trail Construction		0.8		1.3	
Motorized - Summer	miles	.3	(.3)	.3	(.3)
Wildlife and Fish Habitat Improvement					
Wildlife Habitat Improvement	acres	342		342	
Wildlife Structures	# of struct.	1	(1)	1	(1)

1 pulpwood outputs result from nonstructural wildlife habitat improvement

STANDARDS AND GUIDELINES FOR MANAGEMENT AREA 1
(An asterisk designates standards taken from the Eastern Regional Guide.)

1900 LAND AND RESOURCE MANAGEMENT PLANNING

Vegetative Management

*Limit whole tree removal to soils with sufficient nutrient content and nutrient storage capacity to support the new stand of vegetation and maintain soil productivity.

A minimum of 20% of the area should be in the 0-9 age class in each decade, and 20% of the area should be in the 10-19 year age class at any time. Regeneration treatments should be relatively small (up to 10 acres in size).

Regeneration cutting of aspen should be done during the dormant season. Retain at least one downed (drumming) log in each regeneration cutting. Each such log should be more than 10 inches in diameter. The current aspen component should be retained or increased.

2300 RECREATION MANAGEMENT

*Recreation Opportunities

*Location of recreational developments will be determined with priority given to correcting health and safety problems, protecting the environment, complementing prescribed recreation opportunities, and meeting public demand.

*Selected areas, trails, and roads may be closed, where appropriate, to motorized vehicles during specific periods, such as hunting seasons, to provide for non-motorized experiences.

*Feature primarily roaded natural ROS class recreation opportunities.

Trails

*Trail management will be compatible with the ROS objective of roaded natural.

Trail types appropriate to this management area are:

Motorized Summer
Pedestrian Summer
Motorized Winter
Pedestrian Winter

The choice of which type to be constructed will be based on analysis of demand, existing supply (both public and private), suitable locations, plans of other agencies and plans of private sector at the time of implementation.

Trails may include all three difficulty classes of Easiest, More, and Most Difficult to provide a full range of experiences.

*Cultural Resources

*Priorities will be set for evaluation of cultural resources for the National Register of Historic Places.

*Assess the nature and degree of damage to cultural resources caused by vandalism, visitor use, and natural deterioration and identify protective measures to be implemented.

*Identify opportunities for both onsite and offsite interpretation of cultural resources, considering significance, accessibility, and protection needs.

Visual Quality

Management activities should meet the Visual Quality Objectives (VQO) displayed in the chart below by sensitivity levels, distance zones, and variety classes.

Class :	fg-1	mg-1	bf-1	fg-2	mg-2	bf-2	3
Class A :	R	PR	PR	PR	M	M	M
Class B :	PR	M	M	PR	M	MM	MM
Class C :	PR	M	M	M	MM	MM	MM

Visual Quality Objectives - (R) Retention, (PR) Partial Retention, (M) Modification, (MM) Maximum Modification
Variety Class - (A) Distinction, (B) Common, (C) Minimal
Visual Distance Zone - (FG) Foreground, (MG) Middleground, (BG) Background
Sensitivity Level - (1) Most Sensitive, (2) Sensitive, (3) Least Sensitive

2400 TIMBER MANAGEMENT

Silvicultural Systems

Even-aged will be the featured silvicultural system used to achieve the wildlife habitat objective.

Uneven-aged management may be an option on inclusions, such as riparian areas, wet soils, or visually sensitive areas. Its use will be based on individual site analysis.

Harvest Cutting Methods

Seasonal restrictions may occur to protect or manage the featured wildlife species, to provide non-motorized recreational opportunities, and to protect soil and water resources.

*Temporary Openings Created by the Application of Even-aged Silviculture

*The maximum size of temporary openings created by even-aged management is 10 acres, except for provisions in NFMA regulations.

- On an individual sale basis after 60 days public notice and review by the Regional Forester.
- As a result of natural catastrophic condition, such as fire, insect and disease attack, or windstorm.

Openings will be separated by a manageable stand of at least two acres and a width of 300 feet.

Management Intensity and Utilization

Precommercial or commercial thinning entries should not be necessary. Rotation age will be approximately 50 years.

Harvest cuttings and timing of such cuts will be of the intensity necessary to obtain a balance of age and size classes from seedlings/saplings to small sawtimber over time. See standards for wildlife habitat management in 2600 section.

Firewood

Make maximum utilization of wood residues available for fuelwood purposes. In areas developed for OGM, cooperative measures between the developer, Forest Service, and fuelwood cutter may be necessary to protect the developer's properties.

Pulpwood

Pulpwood on commercial timber sales will be addressed by either:

1. Mark or designate all merchantable products in all cut trees, but make pulpwood removal optional. Cut pole timber with KV funds, if the option is not taken.

2. Exclude pulpwood from all commercial treatments. Only sawtimber will be sold, cut, and removed from the sale area. To complete the silvicultural prescription, cut or shear large saplings and poles promptly after completing the commercial operations (using KV funds, if available). Consider all aspen as pulpwood until such time as a viable market for aspen sawlogs becomes established.

3. Mark or designate all merchantable products in all cut trees and require that they be paid for, cut, and removed. Undesirable saplings will be removed with KV funds if necessary to meet the cutting prescription.

2600 WILDLIFE HABITAT MANAGEMENT

Wildlife

*Protect existing spring seeps and other water areas critical to wintering wildlife.

*Provide wetland habitats to meet the requirements of management indicator species.

*Favor selective treatment of transmission line rights-of-way vegetation to improve wildlife forage.

*Manage permanent openings and grasslands in upland forest areas to meet needs of management indicator species.

If high intensity oil and gas development occurs on this management area, wildlife investments will be made only for those species that are not displaced by the development.

Specialized habitats and inclusions may receive treatments to benefit small-game, non-game, indicator species, and species of special concern.

Habitat management should be directed toward production of ruffed grouse and other species associated with early successional stages of vegetation.

Manage timber stands on short rotation of 40-50 years emphasizing aspen species where practical.

Timber stands to be managed as aspen stands will require a minimum aspen stocking of 20 square feet basal area or 10 healthy mature trees per acre to assure successful regeneration.

Non-commercial treatments may be necessary to maintain the aspen component and improve wildlife habitat.

Maximum acreage to be regenerated every 10 years should be 25% and layout should be on a grid pattern to increase grouse activity centers.

Regeneration cutting for all timber should occur every 10 years and for aspen be scheduled during the dormant season.

Coniferous cover should be provided on a minimum of 2-5 percent of the areas. This cover should be well distributed in small stands and be comprised primarily of seedling/ sapling and poletimber size classes.

Where inadequate cover exists, establish conifer stands ranging in size from 1/4 to two acres in size.

Permanent openings may be provided on up to three percent of the area.

- Openings should be 1/2 to one acre in size usually, and distribution should be 1/10 - 1/5 miles apart.
- Certain trails may be closed to all motorized traffic and seeded to herbaceous seed mixtures.
- Most of the acreage will be managed to favor native grasses, forbs, vines, and shrubs. Selected areas may be planted with exotic shrubs.

- These areas should be irregular in shape to maximize forest edge.

Manage habitat adjacent to selected warm-water non-trout streams and lakes to maintain viable populations of beaver, other furbearers, and associated aquatic species.

Provide for the retention of dead and down logs and other ground material necessary to maintain viable populations of indigenous species, such as reptiles and amphibians.

Local roads (TSL C) will be closed for the following reasons:

- Roads impacting important brood habitat areas will be closed during the brood rearing season (May 1 to September 1), except for two years following sales. They may be left open to permit firewood collection.

- Roads will be closed during fall turkey and bear hunting seasons if population levels are below desired levels.

- Roads will be closed as necessary during the antlerless deer season to direct hunting pressure into other areas.

Local roads (TSL D) may be opened during the antlerless deer season to provide hunter access if necessary to regulate the deer herd and if road conditions are suitable.

Fish

Fish passage in streams should not be blocked or prevented, unless done in conjunction with prescribed fish management.

2700 SPECIAL USES MANAGEMENT

*Utility Transmission Corridors

*Provide for utility transmission corridors. Emphasize use of corridors when granting appropriate rights-of-way.

*Utility Distribution Systems

*Approval of application for distribution systems crossing National Forest System lands (such as utility rights-of-way serving individual residences) will be determined individually, consistent with the standards and guidelines.

5100 FIRE MANAGEMENT

*Prescribed fire may be used to establish or maintain vegetation under established resource management prescriptions.

	*Activity fuels will be managed at a level commensurate with the allowable fire intensity and rate of spread that meets resource objectives in established prescriptions. Treatment along highways and adjacent properties will meet applicable state laws.
5400 LAND OWNERSHIP	*Surface Ownership *Avoid encumbering land available for exchange with uses that compromise exchange opportunities.
7300 BUILDINGS AND STRUCTURES	*Buildings and structures may be provided to support resource management objectives.
7400 PUBLIC HEALTH AND POLLUTION CONTROL FACILITIES	Water Supply *Drinking water may be provided. If provided, it must meet Federal and State regulations and be protected to ensure its continued quality. Water systems may include springs, hand pumps, and electric pumps. Solid Waste *Use of National Forest System land for landfill disposal sites should be considered only as a part of an areawide system. Effluents Sewage systems may include vault toilets and/or tank and field systems.
7700 TRANSPORTATION SYSTEM	Roads *Arterial roads, at a minimum, will be designed and constructed for transporting forest products and accommodating planned motorized recreation use, will be open, and will be maintained to maintenance level III or higher. *Collector and local roads will be designed and constructed to be suitable for transporting forest products and accommodating planned motorized recreation use.

*Roads may be closed to public use or restricted by vehicle type or season of use.

*Roads will be maintained to at least maintenance level III if passenger car travel is intended, maintenance level II if passage of vehicles is limited, or maintenance level I if closed to vehicular traffic.

*All temporary and short-term roads will be planned and constructed to be revegetated. Revegetation will be accomplished in a reasonable period of time, not to exceed 10 years after termination of the contract, lease, or permit.

*Identify all existing roads and determine those needed for administrative and public use. Unnecessary roads will be closed.

Roads leading to and within small scale developed recreation areas should be designed and maintained to a standard applicable to the site.

Forest Service road density will range from one to three miles per square mile in this management area.

Local roads will be either Traffic Service Level (TSL) "C" or "D". This decision will be tied to the specific area and resources being accessed. Traffic Service Level "D" roads will be closed to all public traffic, except as specifically allowed to meet resource objectives within the management area. TSL "C" roads will be open to public traffic, except for certain seasonal restrictions to achieve wildlife objectives.

Description for Management Area 2 (6,000 acres)

In Management Area 2, the Forest will generally have a continuous crown canopy consisting primarily of shade tolerant vegetation with interspersed small openings and associated wildlife. Intensive oil and gas developments may be evident. Its primary purpose is to:

- Provide a continuous, forested scene through practicing uneven-aged management which will promote tolerant species and produce quality sawtimber.
- Feature wildlife species associated with shade tolerant vegetation, primarily songbirds and cavity-nesting birds and mammals.
- Provide the opportunity for a variety of developed and dispersed motorized recreation opportunities in a Roaded Natural setting.

The Forest will consist of primarily uneven-aged Northern hardwood stands (including hemlock) of a variety of ages and size classes from seedlings to sawtimber 18 to 30 inches in diameter. Species composition will be varied, but shade tolerant species will be dominant. In many areas only minor modification of the forest landscape will exist.

Intensive oil and gas development may dominate the landscape at specific sites.

State, township, and Forest Service administered arterial and collector roads may be located within this management area. Forest Service roads will be open to public traffic, except for certain seasonal restrictions for wildlife purposes.

Developed recreation facilities, such as campgrounds, boat launches, picnic areas, overlooks, and trailhead parking lots, may exist along with appropriate trail signs and bulletin boards. Dispersed recreation facilities, such as ORV trails, signs, and structures (like bridges, etc.), along with trailhead parking lots, trail signs, and bulletin boards may exist. Recreational opportunities may include camping, picnicking, boating, swimming, ORV use, snowmobiling, trailbiking, auto touring, day hiking, hunting, fishing, and bird watching.

Timber harvesting and transportation of forest products will occur frequently as well as timber stand improvement. Wildlife habitat management, road and trail construction, and maintenance will also be evident.

Administrative and law enforcement activities will be frequently seen in this area.

Specialized habitats and inclusions within the management area will receive treatments to specifically benefit small game, non-game, indicator species, or species of special concern.

Activities, such as right-of-way maintenance, oil/gas well hydrofracturing, drilling, and maintenance, may occur.

Table 4-10 Output Objectives for Management Area 2

Output by Management Problem	Unit of Measure	Average Annual Amount Planned Decade 1 D (D2)	Projected Decade 2 D (D2)
Dispersed Recreation Opportunities			
Roaded Natural	M RVD	10 (9)	11 (9)
Timber Management			
Hardwood Sawtimber	MMBF	2.4 (2.3)	0 (0)
Hardwood Pulpwood	MMBF	1.1 (1)	0 (0)
Wildlife			
Big-Game Hunting	M WFUD	2.1 (1.8)	2.1 (1.7)
Small-Game Hunting	M WFUD	.2 (.2)	.2 (.2)
Non-Game	M WFUD	.4 (.3)	.4 (.3)
Fishing	M WFUD	.3 (.3)	.3 (.3)

Table 4-11 Practices for Management Area 2

Management Practice	Unit of Measure	Average Annual Amount Planned Decade 1 D	(D2)	Projected Decade 2 D	(D2)
Timber Practices					
Timber Stand Improvement	acres	60	(60)	0	(0)
Selection	acres	600	(600)	0	(0)
Herbicide	acres	300	(300)	0	(0)
Fencing	acres	54	(54)	0	(0)
Road Construction	miles	.7	(.5)	0	(0)
Road Reconstruction	miles	.3	(.2)	0	(0)
Wildlife and Fish Habitat Improvement					
Wildlife Habitat Improvement	acres	17	(17)	17	(17)

STANDARDS AND GUIDELINES FOR MANAGEMENT AREA 2

(An asterisk designates standards taken from the Eastern Regional Guide.)

1900 LAND AND RESOURCE MANAGEMENT PLANNING

Vegetative Management

*Limit whole tree removal to soils with sufficient nutrient content and nutrient storage capacity to support the new stand of vegetation and maintain soil productivity.

The current hemlock component should be retained or increased. Hemlock should comprise at least 20 percent of the growing stock in this management area, and some pure hemlock stands are desirable.

Both individual trees and small clumps of conifers will be provided throughout the area.

Retain the following snags per acre:

Tree Size	No. Snags
10" to 16" DBH	3
18" to 24" DBH	3
Greater than 24" DBH	3

Old growth habitat should be a component of each stand (tree age greater than or equal to pathological rotation).

2300 RECREATION MANAGEMENT

Opportunities

*Location of recreational developments will be determined with priority given to correcting health and safety problems, protecting the environment, complementing prescribed recreation opportunities, and meeting public demand.

*Selected areas, trails, and roads may be closed, where appropriate, to motorized vehicles during specific periods, such as hunting seasons, to provide for non-motorized experiences.

*Feature primarily roaded natural ROS class recreation opportunities.

Three dispersed recreation management intensities were options within this area which varied by quantity and quality of trail building and recreation management.

- Low Intensity is defined as maintaining the current investments. We would maintain the existing trail system and would not develop any new trails.
- Medium Intensity is mid-way between Low and High Intensity.
- High Intensity established the upper limit on trail densities for each prescription by the respective Recreation Opportunity Spectrum (ROS) class.

If high intensity oil and gas development occurs in this management area, we will make no new recreation investments. Manage using a low recreation management intensity.

The output objectives and the proposed and probable practice amounts are a result of the moderate intensity being selected.

Recreation Sites

Construction of new sites may occur at development scale 3 or less.

Maintenance of sites will follow guidelines contained in FSM 2330, referenced handbooks, and ED&T #9099 titled "Cleaning Recreation Sites".

Trails

*Trail management will be compatible with the ROS objective of roaded natural.

Trail types appropriate for this management area are:

Motorized Summer
Pedestrian Summer
Equestrian Summer
Motorized Winter
Pedestrian Winter

The choice of which types to be constructed will be based on analysis of demand, existing trails (both public and private), suitable locations, plans of other agencies and plans of private sector at the time of implementation.

Trails should include all three difficulty classes of Easiest, More, and Most Difficult to provide a full range of experiences.

Cultural Resources

*Cultural resources will be evaluated for the National Register of Historic Places.

*Assess the nature and degree of damage to cultural resources caused by vandalism, visitor use, and natural deterioration and identify protective measures to be implemented.

*Identify opportunities for both on-site and off-site interpretation of cultural resources, considering significance, accessibility, and protection needs.

Provide opportunities for both on-site and off-site interpretation of cultural resources. Interpretation may occur during the evaluation or the excavation of major sites, and the excavation may be featured as well as the findings of the evaluation or excavation.

Visual Quality

Management activities should meet the Visual Quality Objectives VQO displayed in the chart below by sensitivity levels, distance zones, and variety classes.

VARIETY CLASS	SENSITIVITY LEVEL & DISTANCE ZONE FG1	MG1	BG1	FG2	MG2	BG2	3
Class A	R	R	R	R	PR	PR	PR
Class B	R	R	PR	R	PR	PR	PR
Class C	R	R	PR	R	PR	PR	PR

Visual Quality Objectives - (R) Retention, (PR) Partial Retention, (M) Modification, (MM) Maximum Modification
Variety Class - (A) Distinction, (B) Common, (C) Minimal
Visual Distance Zone - (FG) Foreground, (MG) Middleground, (BG) Background
Sensitivity Level - (1) Most Sensitive, (2) Sensitive, (3) Least Sensitive

2400 TIMBER MANAGEMENT

Silvicultural Systems

Uneven-aged management using either group selection or individual tree selection will be the featured silvicultural system. Project level planning will determine the specific type of selection cut used. In single tree selection, the Q Factor will generally be 1.25 to 1.35 with a maximum tree size of 28 inches DBH. This will result in retaining larger

trees and a greater proportion of large to small trees than more conventional all-aged structures. Uneven-aged management will tend to move stand species composition toward the northern hardwood type.

Even-aged management may be an option on inclusions such as aspen stands for wildlife and within visual corridors for providing variety and viewpoints.

Temporary Openings Created by the Application of Uneven-aged Silviculture

Openings up to one-half acre in size are acceptable if the establishment of some intolerant species regeneration is desired.

Management Intensity and Utilization

*Minimum stand size for timber production normally will be 10 acres.

Selection cut every 15-20 years. Begin cutting to develop stand structure when stand will produce operable volume. Age of first entry is normally 60 years, with emphasis on producing quality sawtimber. This first entry rule does not apply once the stands are all converted.

Firewood

Make wood residues available for fuelwood purposes. In areas developed by OGM, cooperative measures between the developer, Forest Service, and fuelwood cutter may be necessary to protect the developer's properties.

Pulpwood

Pulpwood on commercial timber sales will be addressed by either:

1. Mark or designate all merchantable products in all cut trees, but make pulpwood removal optional. Cut pole timber with KV funds, if the option is not taken.
2. Mark or designate all merchantable products in all cut trees and require that they be paid for, cut, and removed. Undesirable saplings will be removed with KV funds, if necessary, to meet the cutting prescription.

2600 WILDLIFE MANAGEMENT

Wildlife Management

Three wildlife management intensities were options within this prescription which varied by quantity and quality of habitat development.

- Low Intensity maintains the current investments with no new habitat development.
- Medium Intensity is mid-way between Low and High Intensity.
- High Intensity conforms with achieving the upper limit of the featured species population range. These upper limits are consistent with those specified in recent research literature, modified slightly based on our professional knowledge of local conditions.

The output objectives and the proposed and probable practice amounts are a result of the moderate intensity being selected.

Specialized habitats and inclusions within the management area, will receive treatments to specifically benefit small-game, non-game, indicator species, or species of special concern.

If high intensity oil and gas development occurs on this management area, wildlife investments will be made only for species that would not be affected adversely by the development.

*Protect existing spring seeps and other water areas critical to wintering wildlife.

*Provide wetland habitats to meet the requirements of management indicator species.

*Favor selective treatment of transmission line rights-of-way vegetation to improve wildlife forage.

*Manage permanent openings and grasslands in upland forest areas to meet the needs of management indicator species. Distribution of openings will recognize the home range needs of the selected species. Opening and grassland objectives will recognize the contribution of adjacent private lands.

Habitat management should be directed toward production of cavity-nesting birds and mammals as well as songbirds.

Wildlife habitat management includes permanent opening development and maintenance.

- Provides a minimum of one percent and a maximum of three percent in permanent openings.
- New openings should range in size from one to five acres, and selected ones seeded to herbaceous mixtures. Where feasible, encourage a variety of native shrubs, grasses, and forbs.
- Spatial distribution should be 1/5 to 1/2 mile apart.
- Maintain all shrub type openings less than 20 acres in size unless the percent available exceeds the maximum.

Manage recognized deer and turkey wintering areas to provide a sustained supply of winter thermal cover and food.

- Thermal cover will be dispersed. When vegetation composition goals are achieved, there will generally be no more than 10% of a management area in conifers. Rhododendron and mountain laurel will be provided in selected areas to provide additional thermal cover and habitat diversity.
- Seedling/sapling, pole timber, and sawtimber size classes of conifers will be provided.
- Favor hemlock and white pine where they occur.
- Manage timber stands within and adjacent to wintering areas to increase browse and mast production.

Manage habitat adjacent to selected warm-water non-trout streams and lakes to maintain viable populations of beaver, other furbearers, and associated aquatic species.

Regenerate aspen inclusions to increase their age class diversity.

Provide cover/forage edge adjacent to rights-of-way.

Provide for the retention of dead and down logs and other ground material necessary to maintain viable populations of indigenous species, such as reptiles and amphibians.

Provide three to five trees with nesting cavities per acre, with a minimum DBH of 14 inches.

Local roads may be closed for the bear and fall turkey hunting seasons when necessary to meet the management objectives for these species.

*Fish

*Vegetation canopy in and along streams should be manipulated to provide water temperatures within the prescribed ranges to meet the fisheries objective.

*Fish passage in streams should not be blocked or prevented, unless done in conjunction with prescribed fish management.

2700 SPECIAL USES MANAGEMENT

*Utility Transmission Corridors

*Provide for utility transmission corridors. Emphasize use of corridors when granting appropriate rights-of-way.

Utility Distribution Systems

*Approval of application for distribution systems crossing National Forest System lands such as utility rights-of-way serving individual residences will be determined individually, consistent with the standards and guidelines.

5100 FIRE MANAGEMENT

*Prescribed fire may be used to establish or maintain vegetation under established resource management prescriptions.

*Activity fuels will be managed at a level commensurate with the allowable fire intensity and rate of spread that meets resource objectives in established prescriptions. Treatment along highways and adjacent properties will meet applicable State laws.

5400 LAND OWNERSHIP

Surface Ownership

*Avoid encumbering land available for exchange with land uses that compromise land exchange opportunities.

7300 BUILDINGS AND STRUCTURES

*Buildings and structures may be provided to support resource management objectives.

7400 PUBLIC HEALTH AND POLLUTION CONTROL FACILITIES	Water Supply *Drinking water may be provided. If provided, it must meet Federal and State regulations and be protected to ensure its continued quality. Water systems may include springs, hand pumps, and electric pumps. Solid Waste *Use of National Forest System land for landfill disposal sites should be considered only as a part of an areawide system. Effluents Sewage systems may include vault toilets, and/or tank and field systems.
7700 TRANSPORTATION SYSTEM	Roads *Arterial roads, at a minimum, will be designed and constructed for transporting forest products and accommodating planned motorized recreation use, will be open, and will be maintained to maintenance level III or higher. *Collector and local roads will be designed and constructed to be suitable for transporting forest products and accommodating planned motorized recreation use. *Roads may be closed to public use or restricted by vehicle type or season of use. *Roads will be maintained to at least maintenance level III if passenger car travel is intended, maintenance level II if passage of vehicles is limited, or maintenance level I if closed to vehicular traffic. *All temporary and short-term roads will be planned and constructed to be revegetated. Revegetation will be accomplished in a reasonable period of time, not to exceed 10 years after termination of the contract, lease, or permit.

*Identify all existing roads and determine those needed for administrative and public use. Unnecessary roads will be closed.

Roads leading to and within small scale developed recreation areas should be designed and maintained to a standard applicable to the site.

Forest Service road density will range from two to four miles per square mile in this management area.

Local roads will be Traffic Service Level "C". These local roads will normally be open to public traffic. Some seasonal closures may be imposed to meet specific wildlife management objectives.

Description for Management Area 3 (327,000 acres)

The emphasis in this management area is to provide a forest which is a mosaic of predominantly hardwood stands and associated understories that provide habitat for game and non-game wildlife species. Each stand will consist of trees of approximately the same age and height. Intensive oil and gas developments may be evident. The primary purpose is to:

- Provide a sustained yield of high-quality Allegheny hardwood and oak sawtimber through even-aged management.
- Provide a variety of age or size class habitat diversity from seedling to mature sawtimber in a variety of timber types.
- Emphasize deer and turkey in all timber types and squirrel in the oak type.
- Provide a roaded natural setting for all types of developed and dispersed recreation opportunities, with an emphasis on motorized recreation activities.

The areas managed under this prescription will result in a forest of Allegheny or oak hardwood stands with inclusions of conifer, shrub, and herbaceous openings.

Even-aged timber stands distributed across a variety of age classes will be evident throughout the area. Tree sizes will range from seedlings to mature sawtimber.

State, township, and Forest Service administered arterial and collector roads may be located within this management area. Forest Service local roads, Traffic Service Level (TSL) "C", will be open to all public traffic, except for certain seasonal restrictions for wildlife purposes. Forest Service local roads, TSL "D", will be closed to all public traffic, except for those situations where a seasonal opening/closure policy supports other resource objectives.

Developed facilities may include campgrounds and picnic areas with a variety of toilet facilities and drinking water systems. Dispersed recreation facilities may include trailhead facilities and developed trail systems.

Utility corridors, road rights-of-way, and development of oil and gas fields may be evident. In some areas intensive oil and gas development will dominate the landscape.

The following types of management activities will be ongoing within the area: timber harvesting and hauling of forest products; reforestation, timber stand improvements; wildlife habitat management work; and road, trail, and recreation facility construction and maintenance.

Specialized habitats and inclusions within the management area will receive treatments to specifically benefit small-game, non-game, indicator species, or species of special concern.

Recreational activities may include auto camping, ORV trailriding, auto touring, boating, day hiking, swimming, fishing, and hunting.

Administrative and law enforcement activities will be frequently seen in the area.

Activities, such as right-of-way maintenance, oil/gas well drilling and hydrofracturing, and oil/gas well maintenance, will occur in a portion of the area.

Table 4-12 Output Objectives for Management Area 3

Output by Management Problem	Unit of Measure	Average Annual Amount Planned Decade 1 D (D2)	Projected Decade 2 D (D2)
Developed Recreation Opportunities			
Roaded Natural	M RVD	15 (15)	26 (26)
Dispersed Recreation Opportunities			
Roaded Natural	M RVD	480 (388)	505 (390)
Timber Management			
Hardwood Sawtimber	MMBF	30 (29)	41 (33)
Hardwood Pulpwood	MMBF	47 (45)	39 (43)
Wildlife			
Big-Game Hunting	M WFUD	110 (97)	119 (102)
Small-Game Hunting	M WFUD	23 (22)	27 (26)
Non-Game	M WFUD	23 (19)	25 (20)
Fishing	M WFUD	32 (31)	35 (29)

Table 4-13 Practices for Management Area 3

Management Practice	Unit of Measure	Average Annual Amount Planned Decade 1 (D2)	Projected Decade 1 (D2)
Developed Recreation Area Construction			
Campgrounds	# of areas[1]	0 (0)	1 (1)
Dispersed Recreation-Trail Construction	miles		
Pedestrian	miles	1.2 (.6)	1.4 (.8)
Motorized-Winter	miles	1.1 (1.1)	1.1 (1.1)
Motorized-Summer	miles	12 (12)	12 (12)
Timber Practices			
Final Harvest Clearcuts	acres	292 (292)	302 (232)
Final Harvest - Shelterwood	acres	2628 (2628)	2718 (2088)
Thinning[2]	acres	8360 (8460)	6760 (9360)
Timber Stand Improvement[3]	acres	706 (606)	566 (766)
Herbicide	acres	1485 (1485)	1585 (1285)
Fertilization	acres	2256 (2256)	1156 (1056)
Fencing	acres	300 (300)	354 (354)
Planting	acres	190 (180)	180 (80)
Site Prep for Natural Regeneration	acres	1460 (1460)	1460 (1060)
Road Construction	miles	20.8 (22)	11.2 (16.5)
Road Reconstruction	miles	8.5 (9.0)	4.6 (6.7)
Wildlife and Fish Habitat Improvement			
Wildlife Habitat Improvement	acres	1176 (1176)	1541 (1389)
Wildlife Structures	# of struct.	0 (0)	6 (3)

1 Unit of measure for this practice is the number of recreation areas to be completed within the entire decade not an average annual amount.

2 The wide variation in thinning acres displayed here results from a modeling limitation caused by lumping analysis areas into 20-year age classes. The 60-year-old and 80-year-old age classes support thinnings in Decade 1 and 2, but the PNV is higher for the thinnings in Decade 1. The next cycle of planning 10 years hence will more adequately address thinning amounts in the second decade.

3 All of the acres shown for this practice are noncommercial cutting of pulpwood to complete the silvicultural prescription in commercial thinnings.

STANDARDS AND GUIDELINES FOR MANAGEMENT AREA 3
(An asterisk designates standards taken from the Eastern Regional Guide.)

1900 LAND AND RESOURCE MANAGEMENT PLANNING

Vegetative Management

*Limit whole tree removal to soils with sufficient nutrient content and nutrient storage capacity to support the new stand of vegetation and maintain soil productivity.

Old growth habitat timber at pathological rotation or older should be provided on a minimum of 5 percent of the area.

Retain 5 snags per acre greater than 10 inches DBH.

2300 RECREATION MANAGEMENT

*Recreation Opportunities

*Location of recreational developments will be determined with priority given to correcting health and safety problems, protecting the environment, complementing prescribed recreation opportunities, and meeting public demand.

*Selected areas, trails, and roads may be closed, where appropriate, to motorized vehicles during specific periods, such as hunting seasons, to provide for non-motorized experiences.

*Feature primarily roaded natural ROS class recreation opportunities.

Three dispersed recreation management intensities were options within this prescription which varied by quantity and quality of trail building and recreation management.

- Low Intensity is defined as maintaining the current investments. We would maintain the existing trail system and would not develop any new trails.
- Medium Intensity is mid-way between Low and High Intensity.
- High Intensity established the upper limit on trail densities for each prescription by the respective Recreation Opportunity Spectrum (ROS) class.

The output objectives and the proposed and probable practice amounts are a result of the moderate intensity being selected.

If high intensity oil and gas development occurs, make no new recreation investments. Manage using a low recreation management intensity.

Recreation Sites

Construction of new sites may occur at development scale 3 or less.

Maintenance of sites will follow guidelines contained in FSM 2330, referenced handbooks, and ED&T #9099 titled "Cleaning Recreation Sites." Sites may be closed for economic or safety reasons.

Trails

*Trail management will be compatible with the ROS objective of roaded natural.

Trail types appropriate to this management area are:

Motorized Summer
Pedestrian Summer
Equestrian Summer
Motorized Winter
Pedestrian Winter

The choice of which type to be constructed will be based on analysis of demand, existing supply (both public and private), suitable locations, plans of other agencies and plans of private sector at the time of implementation.

Trails may include all three difficulty classes of Easiest, More, and Most Difficult to provide a full range of experiences.

*Cultural Resources

*Priorities will be set for evaluation of cultural resources for the National Register of Historic Places.

*Assess the nature and degree of damage to cultural resources caused by vandalism, visitor use, and natural deterioration and identify protective measures to be implemented.

*Identify opportunities for both onsite and offsite interpretation of cultural resources, considering significance, accessibility, and protection needs.

Visual Quality

Management activities should meet the Visual Quality Objectives (VQO) displayed in the chart below by sensitivity levels, distance zones, and variety classes.

Class :	FG-1 :	MG-1 :	BG-1 :	FG-2 :	MG-2 :	BG-2:	3
Class A :	R	PR	PR	PR	M	M	M
Class B :	PR	M	M	PR	M	MM	MM
Class C :	PR	M	M	M	MM	MM	MM

Visual Quality Objectives - (R) Retention, (PR) Partial Retention, (M) Modification, (MM) Maximum Modification
Variety Class - (A) Distinction, (B) Common, (C) Minimal
Visual Distance Zone - (FG) Foreground, (MG) Middleground, (BG) Background
Sensitivity Level - (1) Most Sensitive, (2) Sensitive, (3) Least Sensitive

2400 TIMBER MANAGEMENT

Silvicultural Systems

Even-aged will be the featured silvicultural system.

Uneven-aged management may be an option on inclusions, such as riparian areas, wet soils, or visually sensitive areas. Its use will be based on individual site analysis.

Harvest Cutting Methods

Seasonal restrictions may occur to protect or manage the featured wildlife species, to provide non-motorized recreational opportunities, and to protect soil and water resources.

*Temporary Openings Created by the Application of Even-aged Silviculture

*The maximum size of temporary openings created by even-aged management is 40 acres, except for provisions in NFMA regulations.

- On an individual sale basis after 60 days public notice and review by the Regional Forester.
- As a result of natural catastrophic condition, such as fire, insect and disease attack, or windstorm.

Management Intensity and Utilization

A variety of management intensities are options for Management Area 3. All analysis areas (see definition in Appendix A) except those which have low stocking, have three management intensities as options. These are based on the amount of stand stocking regulation activity: (1) Regeneration cut only; (2) One thinning - regeneration cut; and (3) Two thinnings - regeneration cut. The more productive analysis areas also have an option for a third thinning entry. High site oak and Allegheny hardwood analysis areas have the option for an intensity of management which includes precommercial thinning and either one, two, or three thinnings depending on when the final harvest occurs. High site oak AA/s have an additional intensity which calls for type conversion to Allegheny hardwoods.

Table 4-13, " Proposed and Probable Practices," summarizes the results of management intensities chosen to be carried out.

Earliest age for the first commercial thinning:

Analysis Area Characteristics	Age at First Entry
Oak - High & low site	60 years for all intensities except precommercial thinning
- High site	50 years for precommercial thinning intensity
Low & High CAP's	
45-74% stocked	80 years
≥ 75% stocked	60 years
High CAP's	50 years for precommercial thinning intensity

Commercial thinnings are not appropriate within 10 years of a scheduled regeneration cut.

Precommercial thinning may be appropriate in those Allegheny hardwood and high site oak stands that have a stocking level of 80 percent or more and contain a substantial share of their stocking (basal area) in saplings. In order to maximize economic benefits from precommercial thinning, complete the work when the stand is 20 to 30 years old.

- Remove poorly formed trees and low-valued individuals that threaten the potential crop trees.

- Silvicultural guidelines for precommercial thinning are provided in "Silvicultural Guidelines for Allegheny Hardwoods and Oak" publication.

Non-commercial thinning may be used to remove optional pulpwood when it has not been cut by the timber purchaser.

The minimum rotation age corresponds with the point at which the stand has exceeded 95 percent of Culmination of Mean Annual Increment (CMAI) of growth. The following table displays the earliest age for regeneration cutting.

Table 4-14 Minimum Rotation Ages

		Management Intensity							
		Regen Cut Only		Commercial Thinning		Conversion		Commercial Thin & PCT	
Timber Type	Stocking/ Site Index	Exist[1]	Regen	Exist[1]	Regen	Exist[1]	Regen	Exist[1]	Regen
Oak	SI≥65	60	50	80	80	80	80	80	70
	SI<65	60	60	80	80				
High CAPS	45-74%	80	60	90	90				
	>75%	60	50	80	70		80	70	
Low CAPS	45-74%	80	80	90	90				
	>75%	70	70	80	80				
All CAPS	<45%					60	80		

1 Current stand on the site.

Firewood

Make maximum utilization of wood residues available for fuelwood purposes. In areas developed for OGM, cooperative measures between the developer, Forest Service, and fuelwood cutter may be necessary to protect the developer's properties.

Pulpwood

Pulpwood on commercial timber sales will be addressed by either:

1. Mark or designate all merchantable products in all cut trees, but make pulpwood removal optional. Cut pole timber with KV funds if the option is not taken.

2. Exclude pulpwood from all commercial treatments. Only sawtimber will be sold, cut, and removed from the sale area. To complete the silvicultural prescription, cut or shear large saplings and poles promptly after completing the commercial operations, using KV funds if available. Consider all aspen as pulpwood until such time as a viable market for aspen sawlogs becomes established.

3. Mark or designate all merchantable products in all cut trees and require that they be paid for, cut, and removed. Undesirable saplings will be removed with KV funds, if necessary, to meet the cutting prescription.

2600 WILDLIFE HABITAT MANAGEMENT

Wildlife

*Protect existing spring seeps and other water areas critical to wintering wildlife.

*Provide wetland habitats to meet the requirements of management indicator species.

*Favor selective treatment of transmission line rights-of-way vegetation to improve wildlife forage.

*Manage permanent openings and grasslands in upland forest areas to meet needs of management indicator species.

Three wildlife management intensities were options within this prescription which varied by quantity and quality of habitat development.

- Low Intensity maintains the current investments with no new habitat development.
- Medium Intensity is mid-way between Low and High Intensity.
- High Intensity conforms with achieving the upper limit of the featured species population range. These upper limits are consistent with those specified in recent research literature, modified slightly based on our professional knowledge of local conditions.

The output objectives and the proposed and probable practice amounts are the result of the moderate intensity being selected.

If high intensity oil and gas development occurs on this management area, wildlife investments will be made only for species that are not adversely affected by the development.

Habitat management should be directed toward production of turkey and deer in all timber types and squirrel in oak.

Specialized habitats and inclusions within the management area will receive treatments to specifically benefit small game, non-game, indicator species, or species of special concern.

Wildlife habitat management should emphasize a variety of timber age classes.

- In general, when emphasizing wild turkey the acreage in the 0-20 year age class should not exceed 20 to 25 percent of the management area.
- Also, mast producing timber (35 or more years of age, depending on species,) should exist on 50 percent or more of the management area.

Wildlife habitat management will provide a minimum of three percent and a maximum of 10 percent in permanent openings and other types of turkey brood habitat. Most of this acreage will be comprised of shrub-type openings, savannah, and rights-of-way.

- Retain openings less than 20 acres in size unless the percent available exceeds the maximum. Some existing fields over two acres in size may be planted with fruit-bearing trees and shrubs.
- Brood habitat for turkeys less than three weeks of age can be managed in stands up to 80 acres in size. This unique habitat contains certain ground vegetation, vertical stand structure and timber stocking densities.
- New permanent openings created will range in size from one to five acres.
- Spacial distribution should be 1/4 to 1/2 mile apart.
- Some openings will be seeded to non-native grasses and legumes to improve turkey habitat; however, most openings will be managed in native grasses, forbs, and shrubs.

- Selected areas may be developed adjacent to sawtimber size coniferous cover to provide turkey wintering areas.

    - These areas will be located at elevations less than 1,800 feet and preferably on south slopes or valley bottoms.
    - Areas developed will range in size from 5-10 acres and should be located at one to two mile intervals adjacent to stream bottoms.
    - Food and cover-producing trees and shrubs that have persistent fruit will be planted where necessary to complement existing food-producing species.
    - If cover is scarce, plant two acres in conifers.
    - Provide at least a 200-yard wide buffer zone around them where human activity and land management practices are regulated.
    - Protective fencing may be required to protect seedlings from deer.

Manage recognized deer and turkey wintering areas to provide a sustained supply of winter thermal cover and food.

- Thermal cover will be dispersed. When vegetation composition goals are achieved, there will generally be no more than 10 percent of a management area in conifers. Rhododendron and mountain laurel will be provided in selected areas to provide additional thermal cover and habitat diversity.
- Seedling/sapling, pole timber, and sawtimber size classes of conifers will be provided.
- Favor hemlock and white pine where they occur.
- Thin timber stands within and adjacent to wintering areas to increase browse and mast production.

Manage habitat adjacent to selected warm-water (non-trout) streams and lakes to maintain viable populations of beaver, other furbearers, and associated aquatic species.

Regenerate aspen stands to increase their age class diversity.

Provide cover/forage edge adjacent to rights-of-way.

Provide for the retention of dead and down logs and other ground material necessary to maintain viable populations of indigenous species, such as reptiles and amphibians.

Provide wetland habitats to meet the needs of selected species.

Provide four to six live den trees per acre with a minimum DBH of 14 inches in the oak type.

Roads and trails should be located to avoid turkey brood habitat and wintering areas for both turkey and deer.

Road construction should be scheduled to avoid a conflict during the turkey nesting season, April 15 to June 15, to the extent practicable.

Local roads will be closed for the following reasons:

- Those impacting turkey brood habitat areas will be closed during the period of May 1 to September 1, except for two years following sales they may be left open for firewood collection.
- During the fall turkey and bear hunting seasons if necessary to meet the management objectives for these species.
- During the deer season to direct hunting pressure into other areas where overbrowsing by deer is occurring.
- To meet the Pennsylvania Fish Commission guideline for Wilderness Trout Streams management; i.e., stream must not be accessible to motorized vehicles at more than one point every two miles. Refer to the 2600 section of the Forest-wide Standards and Guidelines for a listing of these streams.

Resource management activities that would disturb turkeys during the nesting season (April 15 - June 15) should be scheduled to avoid a conflict to the extent practicable.

Fish

Fish passage in streams should not be blocked or prevented, unless done in conjunction with prescribed fish management.

2700 SPECIAL USES MANAGEMENT

*Utility Transmission Corridors

*Provide for utility transmission corridors. Emphasize use of corridors when granting appropriate rights-of-way.

	*Utility Distribution Systems *Approval of application for distribution systems crossing National Forest System lands (such as utility rights-of-way serving individual residences) will be determined individually, consistent with the standards and guidelines.
4000 RESEARCH	The Muzette Tract is a candidate Research Natural Area (RNA) located in Management Area 3. This area is only under study and must receive a thorough evaluation before being officially designated "RNA" by the Chief of the Forest Service. No actions will be taken that may effect its suitability or capability to be so designated. For additional information, consult the Final EIS, Chapter 3, Section B - "Special Areas". The primary purpose of an RNA is to preserve unique ecosystems for scientific purposes. The Northeast Forest Experiment Station will be responsible for the management of all designated RNA's.
5100 FIRE MANAGEMENT	*Prescribed fire may be used to establish or maintain vegetation under established resource management prescriptions. *Activity fuels will be managed at a level commensurate with the allowable fire intensity and rate of spread that meets resource objectives in established prescriptions. Treatment along highways and adjacent properties will meet applicable state laws.
5400 LAND OWNERSHIP	*Surface Ownership *Avoid encumbering land available for exchange with uses that compromise exchange opportunities.
7300 BUILDINGS AND STRUCTURES	*Buildings and structures may be provided to support resource management objectives.

7400 PUBLIC HEALTH AND POLLUTION CONTROL FACILITIES	Water Supply *Drinking water may be provided. If provided, it must meet Federal and State regulations and be protected to ensure its continued quality. Water systems may include springs, hand pumps, and electric pumps. Solid Waste *Use of National Forest System land for landfill disposal sites should be considered only as a part of an areawide system. Effluents Sewage systems may include vault toilets and/or tank and field systems.
7700 TRANSPORTATION SYSTEM	Roads *Arterial roads, at a minimum, will be designed and constructed for transporting forest products and accommodating planned motorized recreation use, will be open, and will be maintained to maintenance level III or higher. *Collector and local roads will be designed and constructed to be suitable for transporting forest products and accommodating planned motorized recreation use. *Roads may be closed to public use or restricted by vehicle type or season of use. *Roads will be maintained to at least maintenance level III if passenger car travel is intended, maintenance level II if passage of vehicles is limited, or maintenance level I if closed to vehicular traffic. *All temporary and short-term roads will be planned and constructed to be revegetated. Revegetation will be accomplished in a reasonable period of time, not to exceed 10 years after termination of the contract, lease, or permit. *Identify all existing roads and determine those needed for administrative and public use.

Roads leading to and within small scale developed recreation areas should be designed and maintained to a standard applicable to the site.

Forest Service road density will range from two to four miles per square mile in this management area.

Local roads will be either Traffic Service Level (TSL) "C" or "D". This decision will be tied to the specific area and resources being accessed. Traffic Service Level "D" roads will be closed to all public traffic, except as specifically allowed to meet resource objectives within the management area. TSL "C" roads will be open to public traffic, except for certain seasonal restrictions to achieve wildlife objectives.

Description for Management Area 5 (10,000 acres)

The emphasis in this management area is to provide a natural ecosystem in Congressionally designated Wilderness.

The primary purpose is to:

- Preserve natural ecosystems.
- Protect the Wilderness character for future generations.
- Provide a Wilderness experience in a natural-appearing, unmodified environment within a semi-primitive non-motorized recreation setting.

The existing stands of hardwoods, if managed under this goal, will eventually provide extensive old growth stands of oak, sugar maple, beech, and hemlock. Valley bottoms now interspersed with openings may eventually be transformed through succession into stands of tolerant species. Visitor use areas will maintain a near natural appearance.

Existing openings left from early oil and gas and logging production (i.e., old roads, railroad grades, pipelines, oil well sites, power houses, roadlines, and cleared rights-of-way) have and will continue to slowly revert to a natural Forest condition.

Facilities such as pedestrian trails, campsites, signing will provide a way to disperse recreation use throughout the areas. Recreationists will be involved in non-motorized activities such as dispersed camping, hiking, cross-country skiing, fishing, hunting, nature appreciation, viewing wildlife, and viewing scenery.

Administrative and law enforcement activities may occur where needed to maintain the natural character and integrity of the ecosystem.

No utility corridors or road rights-of-way will be permitted. Private rights will be honored.

Table 4-15 Output Objectives for Management Area 5

Output by Management Problem	Unit of Measure	Average Annual Amount Planned Decade 1 D	(D2)	Projected Decade 2 D	(D2)
Dispersed Recreation Opportunities					
Semi-Primitive Non-Motorized	M RVD	10	(10)	16	(16)
Wildlife					
Big-Game Hunting	M WFUD	1.6	(1.6)	1.6	(1.6)
Small-Game Hunting	M WFUD	.5	(.5)	.8	(.8)
Non-Game	M WFUD	.5	(.5)	.8	(.8)
Fishing	M WFUD	1	(1)	1	(1)

Table 4-16 Practices for Management Area 5

Management Practice	Unit of Measure	Average Annual Amount Planned Decade 1 D	(D2)	Projected Decade 2 D	(D2)
Dispersed Recreation-Trail Construction	miles	0.3	(.3)	0	(0)
Wilderness Management[1]	acres	9719	(9719)	9719	(9719)

1 Wilderness management covers the scheduling and implementation of many minor activities further defined in the Standards and Guidelines. It includes such activities as boundary location, signing, and visitor information services.

STANDARDS AND GUIDELINES FOR MANAGEMENT AREA 5
(An asterisk designates standards taken from the Eastern Regional Guide.)

1500 EXTERNAL RELATIONS

Search & Rescue

Motorized and mechanical equipment may be used only in life threatening situations for search and rescue with Forest Supervisor approval. Operations will be coordinated with local county sheriff. The Forest Service will maintain control of search and rescue operations in Wilderness areas.

- Horses or helicopters will be favored over wheeled vehicles.
- If vehicles are required, either snowmobile or low pressure balloon tires will be favored.

1600 INFORMATION SERVICES

Information will generally be provided through use of the Recreation Opportunity Guide, maps, brochures, etc.

Interpretative information, if provided, will be outside of Wilderness boundaries.

Publications should emphasize:

- Outdoor ethics and no trace camping
- Weekday and winter use to those seeking more solitude.
- Orienteering as a way to minimize use impacts, reduce people encounters, and increase solitude experience.

1900 LAND AND RESOURCE MANAGEMENT PLANNING

Vegetative Management

*Manage vegetation only to protect Wilderness values or to protect adjacent property from fire or pests.

Natural succession will be allowed to proceed as the dominant process.

Use native plants for temporary soil stabilization. Annuals will be used so as to favor natural succession.

Planning

An operating plan will be prepared for each Wilderness to direct implementation of Forest Plans and to guide routine activities.

2100 ENVIRONMENTAL MANAGEMENT

Air Quality

The Forest Supervisor will coordinate with the Commonwealth of Pennsylvania on potential air pollution impacts to wilderness resources.

Pesticide Use

*Use pesticides in designated Wilderness only when necessary to prevent the loss of significant aspects of the designated Wilderness or to prevent significant losses to resource values on private or public lands bordering the Wilderness. Obtain Regional Forester approval for all pesticide applications in Wilderness.

Normally endemic forest pests will not be controlled.

2300 RECREATION MANAGEMENT

Opportunities

*Feature semi-primitive non-motorized ROS class recreation opportunities. Allow recreation use consistent with protecting Wilderness values.

Current conforming use patterns will be allowed to continue until use reaches carrying capacity, overuse occurs, or visitor conflicts arise.

A range of management options will be considered when unacceptable environmental damage or significant user dissatisfaction results. The emphasis will be on (1) educational approaches - signing, brochures; (2) natural resource modification - closing trails, restoration, tent pads; and (3) use of regulatory approaches - law enforcement, permit system, only if others fail.

Use of any motorized vehicles and equipment is prohibited. In addition, bicycling, hang gliding, and use of temporary roads or aircraft landing sites is prohibited.

Camping and day use will be permitted on the Allegheny River Islands, and non-motorized watercraft may be landed on the shoreline.

Trails

*Trail management will be compatible with the ROS objective of the area.

Trail types appropriate to this management area are:

Pedestrian Summer
Pedestrian Winter

Trails may include two difficulty classes of More and Most Difficult experiences within the semi-primitive non-motorized ROS class.

Off-Road Vehicles (ORV)

ORV use will not be permitted.

Cultural Resources

*Cultural resources will be evaluated for the National Register of Historic Places.

*Assess the nature and degree of damage to cultural resources caused by vandalism, visitor use, and natural deterioration and identify protective measures to be implemented.

*Cultural resource values within a Wilderness may be stabilized and preserved when these values are compatible with and enhance Wilderness values.

*On-site cultural resource interpretation will not occur.

No scientific excavations will occur unless justified by providing scientific information not likely to be found elsewhere. Any digs will be promptly restored to natural condition.

*Visual Quality

*Management activities should meet the visual quality objective of preservation or retention for all sensitivity levels, distance zones, and variety classes.

2400 TIMBER MANAGEMENT

*Timber is not harvested under this management goal.

Salvage of timber damaged as a result of fire, storm, or pests will not occur, except to protect Wilderness values or to protect adjacent property from fire or pests.

Firewood

Firewood may be gathered in Wilderness, but only for use within the Wilderness boundary. If significant resource damage is expected, gathering may be restricted by Forest Supervisor order.

2500 SOIL AND RESOURCE MANAGEMENT

*Control measures to mitigate erosion will be commensurate with the soil characteristics, expected use, and management objectives of the area.

*Limit watershed improvement projects to correcting problems caused by people and natural disasters that threaten downstream health and safety. Abandoned oil and gas wells on federal mineral ownership will be plugged if the wells pose a safety hazard or are polluting surface or ground water.

Current water quality will be maintained in the Hickory Creek Watershed to protect instream values. Variation in water quality may occur in response to natural elements.

Riparian Area Management

Public use of specific areas may be limited to protect water quality.

Trails will be located to protect soil and water quality values.

Riparian areas will be managed to protect the natural condition of riparian ecosystems. Creation or enhancement of riparian-dependent resources, such as wildlife or fish habitat, is generally not appropriate.

2600 WILDLIFE MANAGEMENT

Fish and wildlife habitat management may occur to the extent it is consistent with Wilderness management objectives and to meet the needs of threatened and endangered species.

- Wildlife habitat will not be manipulated except for T&E species.
- Hunting, fishing, and trapping may occur subject to applicable state and federal laws.
- Stocking of fish will be permitted to re-establish or supplement native populations when determined necessary by the Forest Service and the Pennsylvania Fish Commission. Stocking will be in accordance with the provisions of the Wilderness Act.
- Winter recreational use will be discouraged on the islands if it interferes with Bald Eagle populations. Impacts of recreational use on the islands with respect to spring and fall osprey migrations will be monitored. Restrictions will be implemented as necessary.
- Existing wildlife improvements will not be maintained and will be allowed to revert to natural conditions.

2700 SPECIAL USES MANAGEMENT

*<u>Utility Transmission Corridors</u>

*Corridors for reservoirs, water conservation works, power projects, transmission lines, and other facilities are not permitted, except as authorized by the act establishing the Wilderness or in accordance with private rights.

*<u>Other Special Uses</u>

*Special uses in Wilderness areas will not be permitted, except as authorized by the act establishing the Wilderness and will be considered on an individual basis.

Outfitter or other commercial permits may be issued if compatible with Wilderness objectives and if they provide for protection of Wilderness attributes.

2800 MINERALS AND GEOLOGY

Federal Minerals

The Pennsylvania Wilderness Act of 1984 withdrew all leasing authority for Federal minerals located within the Hickory Creek or Allegheny Islands Wilderness Areas. Rock sources within the wilderness areas will not be used or developed.

Private Minerals

The Pennsylvania Wilderness Act of 1984 directed the Secretary of Agriculture to purchase all of the outstanding mineral rights, on a willing seller basis, under the Hickory Creek and Allegheny Islands Wilderness Areas.

If private development occurs, the goal for Forest Service administration is to reduce the impacts of development on visual quality, recreation opportunities, watershed values, and wildlife habitat, while honoring private rights.

At least 60 days in advance of proposed development, the developer will provide the Forest Service with a Plan of Operations. The Plan of Operations must be approved by the Forest Service before any surface disturbing activities begin. In addition to those items specified in the forest-wide standards and guidelines, the Plan will address the following:

Schedule of Activities and Staging of Operations

The staging of well construction will be provided in the Plan of Operations. At any one time, no more than five well sites and accompanying access roads will be cleared in advance of actual drilling operations. Each five-well package will be handled as a single timber sale payment unit.

In the vicinity of developed recreation sites or areas receiving heavy recreation use, the Forest Service may impose restriction on the hours, days, or season of operation in order to reduce impacts on recreationists.

Water for hydrofracturing will be stored in tanks.

Production and Collection Facilities

Visual impacts of facilities will be reduced to the extent possible by siting, vegetative screening, or other methods. All above-ground facilities will be painted with earth-tone colors. Construction materials will meet visual quality requirements.

Roads will be gated and will be used only for oil and gas production activities.

Tank batteries will be located outside wilderness areas whenever where possible. Tanks and separators will be located on one site in the development. Tank hatches will be locked.

Where possible, all utility and collection lines will be buried at a minimum depth of three feet and marked with Terra tape or its equivalent. Surface lines may be permitted if boulders, topography, or other conditions make burial impractical or infeasible. Lines will be located in road rights-of-way. Lines may be located outside of rights-of-way if no new corridor clearing is required for their installation.

Pump jacks will be powered by electric motors and signed to warn the public of automatic operation.

Natural gas that is not utilized on the development or marketed will be flared.

Methods for Waste Disposal

All produced water will be contained in tanks and disposed of outside Wilderness areas by state-approved methods.

Stumps will be buried in an approved location or removed from the Wilderness areas. Slash will be lopped to within three feet of the ground and scattered.

Excess or unused materials, litter, and trash will be promptly removed from the development and disposed of properly.

Surface Restoration Plan

The goal of surface restoration is to restore the natural landform and facilitate the establishment of forest vegetation.

A bond to guarantee stabilization and final restoration of disturbed areas will be required on all developments.

Restoration plans will include removal of all equipment and facilities, recontouring of roads and well sites, and revegetating all disturbed areas. In order to restore forest vegetation, methods such as scarification, fertilizing, mulching, liming, direct seeding, or planting shrubs and trees may be necessary. Native plant species will be used when seed or planting stock is available.

Any equipment or facility not used for a period of one year is considered abandoned and must be removed by the owner within 90 days of notification.

4000 RESEARCH

The Forest will actively cooperate with research intended to develop basic knowledge on ecological processes, human behavior, or Wilderness management problems.

All proposed projects will be reviewed to determine if essential in a Wilderness environment. Approved projects will be conducted in a manner compatible with the preservation of a Wilderness environment.

There are three candidate Research Natural Areas (RNAs) located within the Allegheny Islands and Hickory Creek Wilderness Areas. They are:

- Crulls Island (96 acres)
- Thompson Island (67 acres)
- Sheffield Compartment 126 (276 acres)

These areas are only under study and must receive a thorough evaluation before being officially designated "RNA" by the Chief of the Forest Service. No actions will be taken that may affect their suitability or capability to be so designated. For additional information, consult the Final EIS, Chapter 3, Section B - "Special Areas".

The primary purpose of an RNA is to preserve unique ecosystems for scientific purposes. The Northeastern Forest Experiment Station will be responsible for the management of all designated RNAs.

5100 FIRE MANAGEMENT

Wildfire detection and suppression will be commensurate with the resource value to be protected. Detection and suppression will be planned, based on an analysis of probable fire locations, expected fire intensities, potential net resource value change, and potential threat to health, safety, and adjacent properties.

All fire suppression activities will be in accordance with established Wilderness policy.

- Fire suppression will be by non-motorized means.
- Regional Forester approval is required for use of tractors, plows, tracked, or mechanized equipment.
- Disturbance to soil and vegetation created by fire suppression will be rehabilitated as soon as possible using nonmechanical means and native plant species.
- If fuel buildup becomes a problem, those areas may be closed to open fires.

5400 LAND OWNERSHIP

Subsurface

Private mineral rights will be acquired within Wilderness areas to protect Wilderness values as specified in the designating legislation.

7100 ENGINEERING OPERATIONS

Surveying

Wilderness boundaries will be marked to a standard that will allow for identification.

- Wilderness boundaries will be surveyed only where and when there is a threat of encroachment by other activities.
- Wilderness boundaries will be posted at 100 foot intervals adjacent to private lands and at 300 foot intervals along roads.

Signs

Trail signs may be provided within Wilderness boundaries.

- All signs will conform to Wilderness standards of rustic routed wood.
- Signing within areas will be kept to a minimum and primarily used for direction and safety.
- Each of the Wilderness islands will be identified as belonging to the system.
- Painted trail blazes are generally inappropriate within Wilderness areas. Trails will be marked with axe blazes or rock cairns.

Solid Waste

Sewage systems will not be developed.

7300 BUILDINGS AND STRUCTURES

*No buildings or structures will be constructed, except as authorized by the act establishing the Wilderness.

7400 PUBLIC HEALTH AND POLLUTION CONTROL ACTIVITIES

*Water Supply

*Drinking water sources will not be developed.

*Emphasize and promote use of the carry-in/carry-out method of disposal.

*Solid Waste

*Landfill disposal sites will not be provided.

Biodegradable waste from dispersed recreation use may be burned or buried by users. Plastic, metal, and other waste must be carried out. Additional waste disposal regulations may be ordered by the Forest Supervisor to protect the Wilderness experience and environment.

7500 WATER STORAGE AND TRANSMISSION

Dams

No dam construction will occur.

7700 TRANSPORTATION System

Roads

All roads will be eliminated from designated Wilderness areas, excepting those necessary for oil and gas recovery on outstanding rights or on private property.

Description for Management Area 6.1 (101,000 acres)

The emphasis in this management area is to provide a land condition with vegetation predominantly made up of mature or overmature hardwood forests.

The primary purpose is to:

- Maintain or enhance scenic quality.
- Emphasize a variety of dispersed recreation activities in a semi-primitive motorized setting.
- Emphasize wildlife species which require mature or overmature hardwood forests, such as turkey, bear, cavity-nesting birds, and mammals.

Since timber management activities will be for wildlife habitat improvement, much of the Forest will generally progress to a mature hardwood type. Scattered herbaceous, shrub, and conifer inclusions will be evident due to the wildlife habitat improvement practices. In portions of the area, small stands of hardwoods in a variety of age classes will be evident from implementing timber practices to benefit wildlife.

State, township and Forest Service administered arterial and collector roads may be located within this management area. Forest Service local roads, Traffic Service Level (TSL) "D", will be closed to all public traffic except for certain seasonal exceptions.

Recreational facilities will generally be limited to those necessary to provide access into the area or to protect resources such as trails, trailhead facilities, and primitive campsites, vault toilets, and spring or hand pump water systems.

Utility corridors and low intensity development of oil and gas fields may be evident within the area.

Seasonal wildlife habitat improvement and maintenance will include such activities as shrub and conifer planting, release treatments, and food plot maintenance. Timber harvesting to enhance wildlife habitat will occur periodically in some locations.

Road and trail construction and maintenance will occasionally be evident. Administrative and law enforcement activities will occur.

Recreational opportunities will include dispersed activities such as cross-country skiing, backpacking, hiking, fishing, hunting, and ORV trail riding.

A variety of game and non-game wildlife species may be seen that are characteristic of mature forested habitat including squirrel in the oak type and non-game birds in all types.

Specialized habitats and inclusions within the management area will receive treatments to specifically benefit small game, non-game, indicator species, or species of special concern.

Activities, such as right-of-way maintenance, oil/gas well hydrofracturing, drilling and maintenance, will occur but will be a minor part of the total activity in the area.

TABLE 4-17 Output Objectives for Management Area 6.1

Output by Management Problem		Unit of Measure	Average Annual Amount Planned Decade 1 D (D2)	Projected Decade 2 D (D2)
Developed Recreation Opportunities				
Semi-Primitive Motorized	SPM	M RVD	4 (4)	5 (5)
Roaded Natural	RN	M RVD	402 (402)	432 (432)
Dispersed Recreation Opportunities				
Semi-Primitive Motorized	SPM	M RVD	292 (282)	292 (282)
Timber				
Hardwood Sawtimber		MMBF	3.6 (3.6)	3.6 (3.6)
Hardwood Pulpwood		MMBF	2.3 (2.3)	2.3 (2.3)
Wildlife				
Big-Game Hunting		M WFUD	19 (17)	23 (22)
Small-Game Hunting		M WFUD	15 (15)	17 (17)
Non-Game		M WFUD	14 (13)	14 (13)
Fishing		M WFUD	66 (66)	75 (73)

TABLE 4-18 Practices for Management Area 6.1

Management Practice	Unit of Measure	Average Annual Amount Planned Decade 1 D (D2)	Projected Decade 2 D (D2)
Developed Recreation Area Construction			
Other Forest Areas			
Campground	# of areas[1]	0 (0)	1 (1)
Boat Launch	# of areas	2 (2)	0 (0)
Dispersed Recreation Trail Construction			
Pedestrian	miles	1.8 (1.7)	2 (2)
Motorized-Summer	miles	2.2 (2.2)	2.2 (2.2)
Wildlife and Fish Habitat Improvement			
Wildlife Habitat Improvement	acres	589 (581)	772 (755)
Wildlife Structures	# of struct.	3 (3)	3 (3)
Fish Structures in Lakes	# of struct.	80 (80)	80 (80)
Timber Practices for Wildlife			
Final Harvest	acres	300 (300)	300 (300)
Thinning or Selection Cut	acres	700 (700)	700 (700)
Herbicide	acres	170 (170)	170 (170)
Fertilization	acres	180 (180)	180 (180)
Fencing	acres	36 (36)	36 (36)
Planting	acres	15 (15)	15 (15)
Site Prep for Natural Regeneration	acres	300 (300)	300 (300)
Road Construction	miles	1.5 (1.5)	1.5 (1.5)
Road Reconstruction	miles	.6 (.6)	.6 (.6)

1 Unit of measure for developed recreation area construction is not the annual average but the number of areas to be completed within the decade.

STANDARDS AND GUIDELINES FOR MANAGEMENT AREA 6.1
(An asterisk designates standards taken from the Eastern Regional Guide.)

1900 LAND AND RESOURCE MANAGEMENT PLANNING

Vegetative Management Planning

*Limit whole tree removal to soils with sufficient nutrient content and nutrient storage capacity to support the new stand of vegetation and maintain soil productivity.

The current aspen component should be retained.

Within aspen inclusions, 20 percent of the area should be in the 0-9 year age class, and 20 percent of the area should be in the 10-19 year age class. Regeneration cuts should be relatively small (up to 10 acres in size).

Regeneration cutting of aspen should be done during the dormant season. Retain at least one downed log in each regeneration cutting. Each such log should be more than 10 inches in diameter.

Old growth habitat should be provided on a minimum of 10 percent of the area and should comprise at least 100 of each 1,000 acres.

Retain the following snags per acre:

Tree Size	No. Snags
10" to 16" DBH	3
18" to 24" DBH	3
Greater than 24" DBH	3

2300 RECREATION MANAGEMENT

Recreation Opportunities

*Location of recreational developments will be determined with priority given to correcting health and safety problems, protecting the environment, complementing prescribed recreation opportunities, and meeting public demand.

*Selected areas, trails, and roads may be closed where appropriate to motorized vehicles during specific periods, such as hunting seasons, to provide for non-motorized experiences.

Provide opportunities for a semi-primitive motorized ROS class recreation experience. The roads necessary for wildlife management make the recreation setting a motorized class. Occasionally, local roads will remain open for access or to provide ORV opportunities. Hiking, skiing, hunting, and mountain biking will be encouraged on closed roads.

Three dispersed recreation management intensities were options within this area which varied by quantity and quality of trail building and recreation management.

- Low Intensity is defined as maintaining the current investments. We would maintain the existing trail system and would not develop any new trails.
- Medium Intensity is mid-way between Low and High Intensity.
- High Intensity established the upper limit on trail densities for each prescription by the respective Recreation Opportunity Spectrum (ROS) class.

If high intensity oil and gas development occurs in this management area, we will make no new recreation investments. Manage using a low recreation management intensity.

The output objectives and the proposed and probable practice amounts are a result of the high intensity being selected.

Recreation Sites

Recreation sites may be provided at development scale 3 or less. Some of the reservoir campgrounds which can be reached only by boat are within this management area. Generally these sites will be less than 50 campsites, will have vault toilets, carry-in and carry-out garbage policy, and hand pump water supply.

Maintenance of sites will follow guidelines contained in FSM 2330, referenced handbooks, and ED&T #9099 titled "Cleaning Recreation Sites." Sites may be closed for economic or safety reasons.

Trails

*Trail management will be compatible with the ROS objective of semi-primitive motorized.

Trail types appropriate to this management area are:

Motorized Summer
Pedestrian Summer
Equestrian Summer
Motorized Winter
Pedestrian Winter

The choice of which type to construct will be based on analysis of demand, existing supply (both public and private), suitable locations, plans of other agencies and plans of private sector at the time of implementation.

Trails may include all three difficulty classes of Easiest, More, and Most Difficult to provide a full range of experiences.

*Off-Road Vehicles (ORV)

Off-road vehicle trails will not be designated in either the Minister Valley or Clarion River undeveloped areas. The Minister Valley Area is that portion of Management Area 6.1 which is located in the Minister Creek Valley north of State Route 666. The Clarion river Area is that portion of Management Area 6.1 along the Clarion River that is east of the powerline which goes to Portland Mills and south of Township Road T-307 and LR 24002 between Hallton and Ridgway.

*Cultural Resources

*Priorities will be set for evaluation of cultural resources for the National Register of Historic Places.

*Assess the nature and degree of damage to cultural resources caused by vandalism, visitor use, and natural deterioration and identify protective measures to be implemented.

*Interpretation of cultural resources should be compatible with the natural character and recreation opportunities of this area.

Visual Quality

Management activities should meet the Visual Quality Objectives (VQO) displayed in the chart below by sensitivity levels, distance zones, and variety classes.

VARIETY CLASS	SENSITIVITY LEVEL & DISTANCE ZONE						
	FG1	MG1	BG1	FG2	MG2	BG2	3
Class A	R	R	R	R	R	PR	PR
Class B	R	PR	PR	PR	PR	M	M
Class C	PR	PR	PR	PR	M	M	M

Visual Quality Objectives - (R) Retention, (PR) Partial Retention, (M) Modification, (MM) Maximum Modification
Variety Class - (A) Distinction, (B) Common, (C) Minimal
Visual Distance Zone - (FG) Foreground, (MG) Middleground, (BG) Background
Sensitivity Level - (1) Most Sensitive, (2) Sensitive, (3) Least Sensitive

2400 TIMBER MANAGEMENT

Silvicultural Systems

Even-aged and uneven-aged silvicultural systems will be used to achieve the wildlife and recreation management objectives.

Even-aged management will be used to benefit wildlife by increasing horizontal habitat diversity. It fulfills important habitat requirements for the wild turkey, black bear, white-tailed deer, management indicator species, and a variety of other small-game and non-game species. It may be used also for increasing visual diversity and providing viewpoints for recreationists in desirable locations.

Uneven-aged management will be used to benefit wildlife by increasing mast and browse production, improving tree species composition and diversity, and increasing vertical habitat diversity. It will be used where cutting is planned in visually sensitive areas to provide a continuous canopy or visual variety in recreation travelways and use areas.

Harvesting Cutting Methods

Seasonal restrictions will occur to protect or manage the featured wildlife species and/or provide non-motorized recreational opportunities.

Temporary Openings Created by the Application of Even-Aged Silviculture

Temporary openings created by even-aged management will usually not exceed 20 acres. In the following cases, the size may exceed 20 acres:

- When consistent with wildlife and recreation objectives, the size may be as large as 25 acres;
- Where larger units, not to exceed 40 acres, will produce a more desirable combination of net public benefits;
- On an individual sale basis after 60 days public notice and review by the Regional Forester;
- As a result of natural catastrophic condition, such as fire, insect and disease attack, or windstorm.

Creation and size definition of temporary openings will be governed by the wildlife management objectives.

Frequency of Entry and Intensity

Timber harvesting will be necessary to achieve the wildlife management objectives. Sales will be scheduled to improve wildlife habitat, and the treatments will be based on an inventory of the existing habitat conditions. The timber harvest will vary in intensity within this management area to achieve both the wildlife and recreation management objectives.

The earliest age for regeneration cutting by timber type and management period is the following:

Timber Type	Minimum Rotation Age by Management Period (Decade) 1-2	3	4-15
Northern Hardwoods (Beech/Hemlock)[1]	120	120	120
Northern Hardwoods (miscellaneous)[2]	90	100	120
Allegheny Hardwoods	≥80	≥100	≥100
Oak	≥80	≥100	≥120
Aspen	40	40	40
Conifers (plantations)	100	100	100

Firewood

Firewood will be available for public use only when its removal is compatible with the wildlife management objective for the stand. Only designated material may be removed for fuelwood purposes.

1 Stands comprised of a plurality of Beech or Beech/Hemlock basal area.
2 Stands not comprised of a plurality of Beech or Beech/Hemlock.

Pulpwood

Pulpwood on commercial timber sales will be addressed by either:

1. Mark or designate all merchantable products in all cut trees and require that they be paid for, cut, and removed. Undesirable saplings will be removed with KV funds, if necessary, to meet the cutting prescription.
2. Mark or designate all merchantable products in all cut trees, but make pulpwood removal optional. Cut pole timber with KV funds, if the option is not taken.

Timber Stand Improvement

The improvement of stands of timber will be based upon wildlife or recreation management objectives. For example, this technique may be utilized to increase mast production, improve species composition and diversity, alter vertical stand structure, or improve visual quality. This activity may be conducted non-commercially or commercially.

Reforestation

Reforest all areas which receive a final harvest cut except where the objective is to create a permanent opening.

2600 WILDLIFE HABITAT MANAGEMENT

*Protect existing spring seeps and other water areas critical to wintering wildlife.

*Provide wetland habitats to meet the requirements of management indicator species.

*Favor selective treatment of transmission line rights-of-way vegetation to improve wildlife forage.

*Manage permanent openings and grasslands in upland forest areas to meet needs of management indicator species.

*Provide special habitat requirements necessary to maintain viable populations of those species that require isolation.

Wildlife

Three wildlife management intensities were options within this area which varied by quantity and quality of habitat development.

- Low Intensity maintains the current investments with no new habitat development.
- Medium Intensity is mid-way between Low and High Intensity.
- High Intensity conforms with achieving the upper limit of the featured species population range. These upper limits are consistent with those specified in recent research literature, modified slightly based on our professional knowledge of local conditions.

The output objectives and the proposed and probable practice amounts are the result of the high intensity being selected.

Habitat improvement should be directed toward production of turkey, bear, cavity-nesting birds, and cavity-nesting mammals.

Specialized habitats and inclusions within the management area will receive treatments to specifically benefit small-game, non-game, indicator species, or species of special concern.

Wildlife habitat management will provide a minimum of five percent and a maximum of 10 percent in permanent openings and other types of turkey brood habitat. Most of this acreage will be comprised of shrub type openings, savannahs, and rights-of-way.

- Maintain openings less than 20 acres in size unless the percent available exceeds the maximum. Some existing fields over two acres in size may be planted with fruit-bearing trees and shrubs.

- Brood habitat for turkeys less than three weeks old can be managed in stands up to 80 acres in size. This unique habitat contains certain ground vegetation, vertical stand structure, and timber stocking densities.

- New permanent openings created will range in size from one to five acres.
- Spacial distribution should usually be 1/4 to 1/2 mile apart and should not exceed one mile.
- Openings will be seeded to non-native grasses and legumes to improve turkey habitat in selected locations; however, most openings will be managed in native grasses, forbs, and shrubs.
- Selected areas may be developed adjacent to sawtimber size coniferous cover to provide turkey wintering areas.

    . These areas will be located at elevations less than 1,800 feet and preferably on south slopes or valley bottoms.
    . Areas developed will range in size from 5-10 acres and should be located at one to two mile intervals adjacent to stream bottoms.
    . Food and cover-producing trees and shrubs that have persistent fruit will be planted where necessary to complement existing food-producing species.
    . If cover is scarce, plant two acres in conifers.

    . Provide at least a 200-yard wide buffer zone around them where adverse human activity and forest and land management practices are regulated.
    . Protective fencing will usually be required to protect seedlings from deer.

Manage recognized deer and turkey wintering areas to provide a sustained supply of winter thermal cover and food.

- Thermal cover will be dispersed and when vegetation composition goals are achieved, there will generally be no more than 20% of a management area in conifers. Rhododendron and mountain laurel will be provided in selected areas to provide additional thermal cover and habitat diversity.
- Seedling/sapling, pole timber, and sawtimber size classes of conifers will be provided.
- Favor hemlock and white pine where they occur.
- Manage timber stands within and adjacent to wintering areas to increase browse and mast production.

Manage habitat adjacent to selected warm-water (nontrout) streams and lakes to maintain viable populations of beaver, other furbearers, and associated aquatic species.

Provide cover/forage edge adjacent to rights-of-way.

Provide for the retention of dead and down logs and other ground material necessary to maintain viable populations of indigenous species, such as reptiles and amphibians.

Regeneration cuttings will be small and well distributed. Poletimber and sawtimber will comprise a minimum of 70 percent of the forested acreage per 5,000 acres of habitat.

Provide special habitat requirements necessary to maintain viable populations of those species requiring isolation.

Provide wetland habitat to meet the needs of selected species.

Provide three to five live trees per acre containing nesting cavities and having a minimum DBH of 14 inches for cavity-nesting birds and mammals.

Within regeneration units, mark for retention the snags and cavity nesting trees (leave or reserve trees) which would meet utilization standards under the timber sale contract.

Road construction, reconstruction, and other resource management activities that would disturb turkeys during the nesting season, April 15 to June 15, should be scheduled to avoid a conflict to the extent practicable.

Roads should be located to avoid turkey brood habitat, as well as turkey and deer wintering areas.

Local roads may be open to hunters during the antlerless deer season, flintlock muzzleloader, and late archery seasons if overbrowsing is occurring and the road conditions are suitable.

Local roads will be closed to meet the Pennsylvania Fish Commission guideline for Wilderness Trout Stream management, i.e., stream must not be accessible to motorized vehicles at more than one point every two miles or can be limited to at most one point every two miles. Refer to the 2600 section of the Forest-wide standards and guidelines for the listing of these streams.

Roads and trails should be located in a manner to avoid turkey brood habitat and both turkey and deer wintering areas.

*Fish

*Fish passage in streams should not be blocked or prevented, unless done in conjunction with prescribed fish management.

2700 SPECIAL USES

*Utility Transmission Corridors

*NOTE: See also 7700 Transportation System, Corridors.

*Permit those facilities that are required to serve recreational or administrative facilities. Exceptions will be considered on an individual basis.

*Utility Distribution System

*Approval of application for distribution systems crosssing National Forest System lands (such as utility rights-of-way serving individual residences) will be determined individually, consistent with the standards and guidelines.

2800 MINERALS AND GEOLOLGY

Private Minerals

Special emphasis will be given to identifying and implementing measures to reduce adverse impacts on the resource objectives of this Management Area. Mitigation measures may include gating roads, vegetative screening of facilities, and wildlife habitat improvement projects. Implementation of these measures will be negotiated with the oil/gas developers.

5100 FIRE MANAGEMENT

*Prescribed fire may be used to establish or maintain vegetation for wildlife.

*Activity fuels will be managed at a level commensurate with the allowable fire intensity and rate of spread that meets resource objectives in established prescriptions. Treatment along highways and adjacent properties will meet applicable state laws.

5400 LAND OWNERSHIP	*Surface Ownership *Avoid encumbering land available for exchange with land uses that compromise land exchange opportunities.
7300 BUILDINGS AND STRUCTURES	*Buildings and structures may be provided to support resource management objectives.
7400 PUBLIC HEALTH AND POLLUTION CONTROL ACTIVITIES	Water Supply *Drinking water may be provided. If provided, it must meet Federal and State regulations and be protected to ensure its continued quality. Water systems may include springs or hand pumps. *Solid Waste *Emphasize and promote use of the carry-in/carry-out method of disposal. Landfill disposal sites will not be provided unless other more compatible alternatives are exhausted including private land. Effluents Sewage systems include vault toilets only.
7700 TRANSPORTATION SYSTEM	*Collectors and local roads will be designed, constructed, and managed for transporting forest products and supporting administrative use. *Roads may be closed to public use or restricted by vehicle type or season of use. *Roads will be maintained to at least maintenance level III if passenger car travel is intended, maintenance level II if passage of vehicles is limited, or maintenance level I if closed to vehicular traffic. *All temporary and short-term roads will be planned and constructed to be revegetated. Revegetation will be accomplished in a reasonable period of time.

*Identify all existing roads and determine those needed for administrative and public use. Unnecessary roads will be obliterated.

Roads leading to and within small-scale developed recreation areas will be designed and maintained to a standard applicable to the site.

Forest Service road density will range from one to three miles per square mile in this management area.

Local roads will be Traffic Service Level (TSL) "D". These local roads will be closed to public traffic.

New road construction in this management area will be restricted to TSL "D". Existing roads may be reconstructed, but to no higher a standard than TSL "D".

ORV use will not be designated on existing roads within Minister Valley (Management Area 6.1 north of State Route 666) or Clarion River (Management Area 6.1 east of powerline near Portland Mills and south of Township Road 307 and LR 24002) areas. No new road construction will occur in these areas either.

Description for Management Area 6.2 (20,000 acres)

This management area produces hardwood sawtimber and a setting suitable for dispersed non-motorized recreation. The timber activities will occur in a ten-year, intensive management period which occurs once every 40 years. Dispersed recreation activities will be emphasized during the remaining 30 years of the 40-year cycle.

The primary purpose is to:

- Provide a sustained yield of Allegheny hardwood and oak sawtimber using even-aged management.
- Emphasize turkey and bear in all timber types.
- Provide a semi-primitive non-motorized setting with opportunity for a variety of dispersed non-motorized recreation experiences.

The 20,000 acres will be spread over four blocks, each being about 5,000 acres in size. Intensive timber management will be practiced on each block using a rotating schedule. Only one block will be entered each decade with the remaining three blocks providing a SPNM recreation experience.

The Forest will be Allegheny hardwood or oak stands. Even-age stands will be distributed throughout the area, and sizes will range from seedling to mature sawtimber. Modification of the natural appearing landscape will be evident due to the timber management activities on portions of the area. Although not contiguous, about 25 percent of the area will be cut in each intensive management period.

State, township, and Forest Service administered arterial and collector roads may form, or be adjacent to, but not within, the boundary of this management area. Forest Service local roads, Traffic Service Level (TSL) "C", will be open to all public traffic during the 10-year intensive management period with certain restrictions for wildlife. Forest Service local roads, TSL "D", will be closed to all public traffic, except for certain exceptions. During the 30-year extensive period, all Forest Service adminstered roads will be revegetated with no traffic allowed on them (public or administrative).

A system of roads and trails for non-motorized use will provide access within the area.

Recreational facilities and structures will be limited to those necessary to provide access to the area such as non-motorized trails, trail signs, and primitive cleared and leveled campsites with fire pits and, if necessary, pit toilets.

Utility corridors and low intensity development of shallow oil and gas fields may be evident within the area.

The following types of management activities will occur during the 10-year intensive management period: timber harvesting and the hauling of forest products; road and trail construction and maintenance.

During the 30-year semi-primitive non-motorized period, activities may include trail construction and maintenance, wildlife, habitat improvement, and timber management activities using manual methods.

Specialized habitats and inclusions within the management area will receive treatments to specifically benefit small-game, non-game, indicator species, or species of special concern.

Recreational opportunities will offer a moderate degree of challenge, risk, and interaction with the environment. These activities may include backpacking, hiking, cross-country skiing, hunting, fishing, and primitive dispersed camping.

Activities, such as right-of-way maintenance, oil/gas well hydrofracturing, drilling and maintenance, may occur but will be a minor part of the total activity in the area.

TABLE 4-19 Output Objectives for Management Area 6.2

Output by Management Problem	Unit of Measure	Average Annual Planned Amount Decade 1 D (D2)	Projected Decade 2 D (D2)
Dispersed Recreation Opportunities			
Semi-Primitive, Non-Motorized	M RVD	20 (20)	26 (26)
Timber Management[1]			
Hardwood Sawtimber	MMBF	2 (2)	2 (2)
Hardwood Pulpwood	MMBF	5.6 (5.7)	5.6 (5.7)
Wildlife			
Big-Game Hunting	M WFUD	6.4 (6.4)	6.8 (6.8)
Small-Game Hunting	M WFUD	.8 (.8)	1.5 (1.5)
Non-game	M WFUD	1.2 (1)	1 (1)
Fishing	M WFUD	2 (2)	2 (2)

TABLE 4-20 Practices for Management Area 6.2

Management Practice	Unit of Measure	Average Annual Planned Amount Decade 1 D (D2)	Projected Decade 2 D (D2)
Dispersed Recreation Trail Construction	miles		
Pedestrian	miles	.6 (.6)	.2 (.2)
Timber Practices[1]			
Final Harvest - Clearcuts	acres	8 (8)	8 (8)
Final Harvest - Shelterwood	acres	72 (72)	72 (72)
Thinning	acres	340 (340)	340 (340)
Timber Stand Improvement	acres	34 (34)	34 (34)
Herbicide	acres	45 (45)	45 (45)
Fertilization	acres	64 (64)	64 (64)
Fencing	acres	10 (10)	10 (10)
Planting	acres	5 (5)	5 (5)
Site Preparation	acres	40 (40)	40 (40)
Road Construction	miles	.7 (.7)	.7 (.7)
Road Reconstruction	miles	.3 (.3)	.3 (.3)
Wildlife and Fish Habitat Improvement			
Wildlife Habitat Improvement	acres	107 (107)	69 (69)
Wildlife Structures	# of struct.	1 (1)	0 (0)

1 Timber sales must be developed and sold early in the planning period in order for actual harvesting activities to be completed by the end of the decade. The annual averages will therefore not represent the actual implementation strategy.

STANDARDS AND GUIDELINES FOR MANAGEMENT AREA 6.2
(An asterisk designates standards taken from the Eastern Regional Guide.)

1900 LAND AND RESOURCE MANAGEMENT PLANNING

Vegetative Management

*Limit whole tree removal to soils with sufficient nutrient content and nutrient storage capacity to support the new stand of vegetation and maintain soil productivity.

Retain five snags per acre greater than 10 inches DBH.

Old growth habitat (timber at pathological rotation and older) will be provided on a minimum of five percent of the area.

2300 RECREATION MANAGEMENT

Recreation Opportunities

*Location of recreational developments will be determined with priority given to correcting health and safety problems, protecting the environment, complementing prescribed recreation opportunities, and meeting public demand.

*Feature primarily semi-primitive non-motorized ROS class recreation opportunities.

Three dispersed recreation management intensities were options within this prescription which varied by quantity and quality of trail building and recreation management.

- Low Intensity is defined as maintaining the current investments. We would maintain the existing trail system and would not develop any new trails.
- Medium Intensity is mid-way between Low and High Intensity.
- High Intensity established the upper limit on trail densities for each prescription by the respective Recreation Opportunity Spectrum (ROS) class.

The output objectives and the proposed and probable practice amounts are a result of the intensities selected.

Emphasize semi-primitive non-motorized opportunities during 30 years of the 40-year cycle.

Administrative motorized vehicle use may be permitted only under emergency situations or as necessary for infrequent needs, such as construction and/or pumping vault toilets. Frequent use for routine maintenance wouldn't be permitted.

Provide roaded natural dispersed recreation opportunities during the 10-year harvesting period.

Recreation Sites

Construction of new sites may occur at development scale 1 or 2.

Maintenance of sites will follow guidelines contained in FSM 2330, referenced handbooks and ED&T #9099 titled "Cleaning Recreation Sites." Sites may be closed for economic or safety reasons.

Trails

*Trail management will be compatible with the ROS objective of semi-primitive non-motorized.

Trail types appropriate to this management area are:

Pedestrian Summer
Pedestrian Winter
Equestrian Summer

The choice of which type to be constructed will be based on analysis of demand, existing supply (both public and private), suitable locations, plans of other agencies and plans of private sector at the time of implementation.

Trails may include two difficulty classes of More and Most Difficult to provide a range of experiences within the semi-primitive non-motorized ROS class.

Interpretation

At trailheads into the management area, personal contact, brochure racks, and bulletin boards will be utilized to interpret the environment and inform users about proper use of the area.

Emphasize the dual objective of the area and inform users what to expect when visiting the area in each management cycle.

Off-Road Vehicles (ORV)

Use of motorized vehicles off roads will not be permitted. Exceptions include use of administrative vehicles, emergency vehicles, and use authorized by permit, contract, or outstanding private rights.

*Cultural Resources

*Priorities will be set for evaluation of cultural resources for the National Register of Historic Places.

*Assess the nature and degree of damage to cultural resources caused by vandalism, visitor use, and natural deterioration and identify protective measures to be implemented.

*Interpretation of cultural resources should be compatible with the natural character and recreation opportunities of this area.

Visual Quality

Management activities should meet the Visual Quality Objectives (VQO) displayed in the chart below by sensitivity levels, distance zones, and variety classes.

VARIETY CLASS	SENSITIVITY LEVEL & DISTANCE ZONE						
	FG1	MG1	BG1	FG2	MG2	BG2	3
Class A	R	R	R	R	PR	PR	PR
Class B	R	R	PR	R	PR	PR	PR
Class C	R	R	PR	R	PR	PR	PR

Visual Quality Objectives - (R) Retention, (PR) Partial Retention, (M) Modification, (MM) Maximum Modification
Variety Class - (A) Distinction, (B) Common, (C) Minimal
Visual Distance Zone - (FG) Foreground, (MG) Middleground, (BG) Background
Sensitivity Level - (1) Most Sensitive, (2) Sensitive, (3) Least Sensitive

2400 TIMBER MANAGEMENT

Silvicultural Systems

Even-aged will be the featured silvicultural system.

Uneven-aged management may be an option on inclusions such as riparian areas, wet soils, or visually sensitive areas. Its use will be based on individual site analysis.

Harvest Cutting Methods

Seasonal restrictions may occur to protect or manage the featured species and/or provide non-motorized recreational opportunities.

*Temporary Openings Created by the Application of Even-aged Silviculture

*Temporary openings created by even-aged management will generally not exceed 25 acres, except as provided below:

- where larger units, not to exceed 40 acres, will produce a more desirable combination of net public benefits.
- on an individual sale basis after 60 days public notice and review by the Regional Forester
- as a result of natural catastrophic condition, such as fire, insect and disease attack, or windstorm.

Management Intensity and Utilization

Limit timber harvest for each block to one 10-year period every 40 years. The entry schedule for decades 1-4 will be as follows:

(1) Ridgway
(2) Sheffield
(3) Bradford
(4) Marienville

Timber management practices not dependent on motorized vehicles may be scheduled at any time during the 40-year cycle.

Management intensities for each timber type include either one or two commercial thinnings.

Thinnings entries are at 40-year intervals. Earliest entry is age 40 and latest is 40 years prior to rotation.

Once the area has reached minimum rotation age, up to 33 percent of the Allegheny hardwoods and 25% of the Oak/Northern hardwood may be final harvested during each 10-year intensive management period.

Minimum rotation ages are:

Timber Type	Stocking/ Site Index	Exist	Regen
Oak	SI≥65	80	80
	SI≤65	80	80
High CAPS	45-74%	90	90
	≥75%	80	70
Low CAPS	45-74%	90	90
	≥75%	80	80

The minimum rotation age for each analysis area corresponds with the point where it has exceeded 95 percent of Culmination of Mean Annual Increment. This information comes from the FORPLAN yield tables. Minimum rotation ages vary depending on the management intensity, timber type, stocking/site index, and whether it is the existing or regenerated stand.

Firewood

Make wood residues available for fuelwood purposes during the 10-year intensive management period.

Pulpwood

Pulpwood on commercial timber sales will be addressed by either:

1. Mark or designate all merchantable products in all cut trees, but make pulpwood removal optional. Cut pole timber with KV funds, if the option is not taken by the timber purchaser.
2. Exclude pulpwood from all commercial treatments. Only sawtimber will be sold, cut, and removed from the sale area. To complete the silvicultural prescription, cut or shear large saplings promptly after completing the commercial operations (using KV funds, if available). Consider all aspen as pulpwood until such time as a viable market for aspen sawlogs becomes established.

3. Mark or designate all merchantable products in all cut trees and require that they be paid for, cut, and removed. Undesirable saplings will be removed with KV funds, if necessary, to meet the cutting prescription.

2600 WILDLIFE MANAGEMENT

*Protect existing spring seeps and other water areas critical to wintering wildlife.

*Provide wetland habitats to meet the requirements of management indicator species.

*Favor selective treatment of transmission line rights-of-way vegetation to improve wildlife forage.

*Manage permanent openings and grasslands in upland forest areas to meet needs of management indicator species.

*Provide special habitat requirements necessary to maintain viable populations of those species that require isolation.

Three wildlife management intensities were options within this area which varied by quantity and quality of habitat development.

- Low Intensity maintains the current investments with no new habitat development.
- Medium Intensity is mid-way between Low and High Intensity.
- High Intensity conforms with achieving the upper limit of the featured species population range. These upper limits are consistent with those specified in recent research literature, modified slightly based on our professional knowledge of local conditions.

The output objectives and the proposed and probable practice amounts are a result of the intensities selected.

Specialized habitats and inclusions, within the management area, will receive treatments to specifically benefit small game, non-game, indicator species, or species of special concern.

Habitat improvement should be directed toward production of turkey and bear.

Habitat improvement requiring use of motorized vehicles will be limited to the 10-year harvesting period.

Permanent openings will be provided on a minimum of one percent and a maximum of three percent of the area. They should range 1-10 acres in size, spaced approximately 1/2 to one mile apart.

- Maintain openings less than 20 acres in size unless the percent available exceeds the maximum. Some existing fields over two acres in size may be planted with fruit-bearing trees and shrubs.
- Openings may be seeded to non-native grasses and legumes to improve deer and grouse habitat in selected locations; however, most openings will be managed in native grasses, forbs, and shrubs.

Manage recognized deer and turkey wintering areas to provide a sustained supply of winter thermal cover and food.

- Thermal cover should be dispersed and when vegetation composition goals are achieved, there will generally be no more than 10 percent of a management area in conifers. Rhododendron and mountain laurel will be provided in selected areas to provide additional thermal cover and habitat diversity.
- Seedling-sapling, pole timber, and sawtimber size classes of conifers will be provided.
- Favor hemlock and white pine where they occur.
- Thin timber stands within and adjacent to wintering areas to increase browse and mast production.
- Where inadequate cover exists, establish conifer stands ranging from 10-50 acres in size.

Manage habitat adjacent to selected warm-water, non-trout streams and lakes to maintain viable populations of beaver, other furbearers, and associated aquatic species.

Regenerate aspen inclusions to increase their age class diversity.

Provide cover/forage edge adjacent to rights-of-way.

Provide for the retention of dead and down logs and other ground material necessary to maintain viable populations of indigenous species, such as reptiles and amphibians.

Roads and trails should be located to avoid turkey brood habitat areas, as well as turkey and deer wintering areas.

Local roads will be closed for the bear and fall turkey hunting seasons when necessary to meet the management objectives for these species.

Retain fruit and mast-producing tree and shrub species and improve their productivity by utilizing management techniques such as release, pruning, and fertilizing. In selected areas, perform replacement planting of such species to restore productivity of the site. Protective fencing may be required to protect seedlings from deer.

Provide three to five live trees per acre having a minimum DBH of 14 inches and containing nesting cavities for cavity-nesting birds and mammals.

Within regeneration units, mark for retention the snags and cavity-nesting trees (leave or reserve) which would meet utilization standards under the timber sale contract.

Road construction and resource management activites that would disturb turkeys during the nesting season (April 15 to June 15) should be scheduled to avoid conflicts to the extent possible.

*Fish

*Fish passage in streams should not be blocked or prevented, unless done in conjunction with prescribed fish management.

2700 SPECIAL USES MANAGEMENT

Utility Transmission Corridors

*Permit those facilities that are required to serve recreational or administrative facilities. Exceptions will be considered on an individual basis.

*Utility Distribution Systems

*Approval of application for distribution systems crossing National Forest System lands, such as utility rights-of-way serving individual residences, will be determined individually, consistent with the standards and guidelines.

2800 MINERALS AND GEOLOGY	Private Minerals Special emphasis will be given to identifying and implementing measures to reduce adverse impacts on the resource objectives of this management area. Mitigation measures may including vegetative screening of facilities, gating and closing of roads during the non-motorized period, and removal of unused equipment. Implementation of these measures will be negotiated with the oil/gas developers.
5100 FIRE MANAGEMENT	*Prescribed fire may be used to establish or maintain vegetation for wildlife. *Activity fuels will be managed at a level commensurate with the allowable fire intensity and rate of spread that meets resource objectives in established prescriptions. Treatment along highways and adjacent properties will meet applicable state laws.
5400 LAND OWNERSHIP	*Surface Ownership *Avoid encumbering land available for exchange with land uses that compromise land exchange opportunities.
7300 BUILDINGS AND STRUCTURES	*Buildings and structures may be provided to support resource managment objectives.
7400 PUBLIC HEALTH AND POLLUTION CONTROL FACILITIES	Water Supply *Drinking water may be provided. If provided, it must meet Federal and State regulations and be protected to ensure its continued quality. Water systems may include springs and hand pumps. *Solid Waste *Emphasize and promote use of the carry-in/carry-out method of disposal. Landfill disposal sites will not be provided unless other more compatible alternatives are exhausted including private land. Effluents Sewage systems may include vault toilets.

7700 TRANSPORTATION SYSTEM

Roads

*Collectors and local roads will be designed, constructed, and managed for transporting forest products and supporting administrative use.

*Roads will be maintained to at least maintenance level III if passenger car travel is intended, maintenance level II if passage of vehicles is limited, or maintenance level I if closed to vehicular traffic.

*All temporary and short-term roads will be planned and constructed to be revegetated. Revegetation will be accomplished in a reasonable period of time.

*Identify all existing roads and determine those needed for administrative and public use. Unnecessary roads will be closed.

Roads leading to and within small-scale developed recreation areas will be designed and maintained to a standard applicable to the site.

State, township, and Forest Service administered arterial and collector roads may form, or be adjacent to, but not within, the boundary of this management area.

Forest Service road density will range from one and one half to four miles per square mile in this management area.

Local roads will be either Traffic Service Level (TSL) "C" or "D". This decision will be tied to the specific area and resources being accessed. Traffic Service Level "D" roads will be closed to all public traffic, except as specifically allowed for within the project Environmental Analysis (EA) for the area. Traffic Service Level "C" roads will be open to public traffic, with restrictions as indicated in the Standards and Guidelines for resource areas.

During the 30-year extensive management period, all local roads will be revegetated and closed to all traffic (public and administrative), except as needed for private oil and gas administration and development.

Description for Management Area 6.3 (1,000 acres)

This management area is currently known as Buzzard Swamp Wildlife Management Area. Wildlife habitat improvement and maintenance is done through a cooperative agreement with the Pennsylvania Game Commission.

It is dominated by large savannah-like areas, open bodies of water, and vegetation dependent upon riparian conditions intensively managed to produce high populations of associated wildlife species.

The primary purpose is to:

- Intensively manage for wildlife species which require riparian habitat, including waterfowl, furbearers, and warm-water fish.
- Emphasize dispersed recreation activities particularly hunting, fishing, and wildlife observation in a semi-primitive motorized recreation setting.

The area will continue to be dominated by open bodies of water and wetland vegetation. Large openings with scattered trees and food plots will be maintained on the drier sites, with small interspersed inclusions of aspen, other hardwoods, conifers, and/or shrubs.

State, township, and Forest Service administered arterial and collector roads may form, or be adjacent to, but not within, the boundary of this management area. Forest Service local roads, Traffic Service Level (TSL) "D", will be closed to all public traffic, except for certain seasonal exceptions for wildlife purposes.

Although some foot trails are provided within the area, the majority of the trails into the area are provided by the road system.

Recreational facilities will be limited to those necessary to provide access into the area. Facilities may include trails and parking lots. Primitive campsites may also be designated.

Utility corridors and low intensity development of shallow oil and gas fields may be evident.

Wildlife habitat improvement and maintenance work such as planting, fertilizing and mowing of food plots, shrub planting, and tree pruning may be evident. Trail construction and/or maintenance, road maintenance, administrative travel, and law enforcement activities will occasionally occur.

Recreational opportunities will generally be associated with the wildlife resources and may include hiking, wildlife photography, wildlife observation and identification, fishing, trapping, hunting, and camping.

A variety of game and non-game wildlife species may be seen that are characteristic of open and/or wetland areas including: deer, shorebirds, woodchucks, non-game birds, raptors, reptiles, and amphibians.

Specialized habitats and inclusions within the management area will receive treatments to specifically benefit small game, non-game, indicator species, or species of special concern.

Activities, such as right-of-way maintenance, oil/gas well hydrofracturing, drilling and maintenance, may occur but will be a minor part of the total activity in the area.

TABLE 4-21 Output Objectives for Management Area 6.3

Output by Management Problem	Unit of Measure	Average Annual Amount Planned Decade 1 D	(D2)	Projected Decade 2 D	(D2)
Dispersed Recreation Opportunities					
Semi-Primitive Motorized	M RVD	1	(1)	1	(1)
Wildlife					
Big-Game Hunting	M WFUD	.2	(.2)	.2	(.2)
Small-Game Hunting	M WFUD	.4	(.4)	.4	(.4)
Non-game	M WFUD	.1	(.1)	.1	(.1)
Fishing	M WFUD	1.3	(1.3)	1.3	(1.2)

TABLE 4-22 Practices for Management Area 6.3[1]

Output by Management Problem	Unit of Measure	Average Annual Amount Planned Decade 1 D	(D2)	Projected Decade 2 D	(D2)
Wildlife and Fish Habitat Improvement					
Wildlife Habitat Improvement	Acres	8	(8)	10	(10)
Wildlife Structures	# of Structures	1	(1)	1	(1)

1 Management practices are funded, scheduled, and implemented by the Pennsylvania Game Commission under cooperative agreement with the Allegheny National Forest. The Forest plans no significant investments in the area during the first two decades.

STANDARDS AND GUIDELINES FOR MANAGEMENT AREA 6.3
(An asterisk designates standards taken from the Eastern Regional Guide.)

1900 LAND AND RESOURCE MANAGEMENT PLANNING

Vegetative Management

*Limit whole tree removal to soils with sufficient nutrient content and nutrient storage capacity to support the new stand of vegetation and maintain soil productivity.

In forested areas, retain five snags per acre greater than 10 inches DBH.

2100 ENVIRONMENTAL MANAGEMENT

Pesticide Use

Use of pesticides for control of vegetation, insects, or disease is generally not appropriate.

2300 RECREATION MANAGEMENT

*Recreation Opportunities

*Location of recreational developments will be determined with priority given to correcting health and safety problems, protecting the environment, complementing prescribed recreation opportunities, and meeting public demand.

*Selected areas, trails, and roads may be closed, where appropriate, to motorized vehicles during specific periods, such as hunting seasons, to provide for non-motorized experiences.

Provide semi-primitive motorized ROS class recreation experience. The roads necessary for wildlife management make the recreation setting a motorized class even though the public will not be operating vehicles in these areas.

Pedestrian use will be encouraged on the closed roads.

Maintenance of sites will follow guidelines contained in FSM 2330, referenced handbooks, and ED&T #9099 titled "Cleaning Recreation Sites." Sites may be closed for economic or safety reasons.

Trails

*Trail management will be compatible with the ROS objective semi-primitive motorized.

Trail types appropriate to this management area are:

Pedestrian Summer
Pedestrian Winter

Trails may include all three difficulty classes of Easiest, More, and Most Difficult to provide a full range of experiences.

The choice of trail type to be constructed will be based on analysis of demand, existing supply (both public and private), suitable locations, plans of other agencies and plans of private sector at the time of implementation.

Interpretation

At trailheads into the management area, personal contact, brochure racks, and bulletin boards will be utilized to interpret the environment and inform users about proper use of the area.

Off-Road Vehicles (ORV)

Use of motorized vehicles off roads will not be permitted. Exceptions include use of administrative or emergency vehicles or use authorized by permit or contract.

*Cultural Resources

*Priorities will be set for evaluation of cultural resources for the National Register of Historic Places.

*Assess the nature and degree of damage to cultural resources caused by vandalism, visitor use, and natural deterioration and identify protective measures to be implemented.

*Interpretation of cultural resources should be compatible with the natural character and recreation opportunities of this area.

Visual Quality

Management activities should meet the Visual Quality Objectives (VQO) displayed in the chart below by sensitivity levels, distance zones, and variety classes.

VARIETY CLASS	SENSITIVITY LEVEL & DISTANCE ZONE FG1	MG1	BG1	FG2	MG2	BG2	3
Class A	R	R	R	R	R	PR	PR
Class B	R	PR	PR	PR	PR	M	M
Class C	PR	PR	PR	PR	M	M	M

Visual Quality Objectives - (R) Retention, (PR) Partial Retention, (M) Modification, (MM) Maximum Modification
Variety Class - (A) Distinction, (B) Common, (C) Minimal
Visual Distance Zone - (FG) Foreground, (MG) Middleground (BG) Background
Sensitivity Level - (1) Most Sensitive, (2) Sensitive, (3) Least Sensitive

2400 TIMBER MANAGEMENT

Silvicultural Systems

Silvicultural systems to be used will be consistent with the wildlife and recreation objectives.

Uneven-aged management system may be an option on riparian areas, wet soils, visually sensitive areas or as habitat required by riparian species.

Even-aged management may be an option on aspen stands for grouse and deer production, for providing visual variety, or for providing views for recreationists. Choice of system will be based on individual site analysis and primary objectives.

Harvesting Cutting Methods

Seasonal restrictions may occur to protect or manage the featured wildlife species and/or provide non-motorized recreational opportunities.

*Temporary Openings Created by the Application of Even-aged Silviculture

*Temporary openings created by even-aged management will generally not exceed 25 acres, except as provided below:

- Where larger units, not to exceed 40 acres, will produce a more desirable combination of net public benefits.
- On an individual sale basis after 60 days public notice and review by the Regional Forester.
- As a result of natural catastrophic condition, such as fire, insect and disease attack, or windstorm.

Frequency of Entry and Intensity

Timber harvest will occur primarily to benefit wildlife and recreation. Timber stands involved will typically have low volume per acre and very low quality. Removal of timber products by timber sale contract is encouraged when acceptable amounts of merchantable sized timber exist and can be economically removed.

Firewood

Firewood gathering is not permitted in this management area.

Pulpwood

Pulpwood on commercial timber sales will be addressed by either:

1. Mark or designate all merchantable products in all cut trees and require that they be paid for, cut, and removed. Undesirable saplings will be removed with KV funds, if necessary to meet the cutting prescription.

2. Mark or designate all merchantable products in all cut trees, but make pulpwood removal optional. Cut pole timber with KV funds, if the option is not taken.

3. Include all merchantable sawtimber within designated clearcuts and shelterwood removals. Require that all such material be cut and removed from the sale area. Cut or shear poles and large saplings promptly after the commercial operations are complete (using KV funds, if available). All aspen will be considered as pulpwood until such a time as a viable market for aspen sawlogs becomes established.

Reforestation and Timber Stand Improvement

Such activities will normally not occur except when necessary to be consistent with wildlife habitat and recreation objectives and when necessary to protect adjacent land owners from pests.

2500 WATER AND SOIL RESOURCE MANAGEMENT

Riparian Area Management

In this management area, the important riparian areas are open water and wetlands adjacent to impoundments, potholes, and beaver ponds.

Management will emphasize riparian-dependent values associated with open water and wetlands. These values include waterfowl habitat, beaver habitat, warm-water fishery, and associated recreational opportunities, such as wildlife viewing, nature photography, hiking, hunting, and fishing.

The only facilities that will be located in riparian areas within this management area are those that enhance the above-named riparian-dependent values. Such facilities might include hiking trails, cross-country skiing trails, or interpretive signs and trails.

See 2600 for standards and guidelines relating to impoundment management and wildlife habitat management.

2600 WILDLIFE MANAGEMENT

Wildlife

*Protect existing spring seeps and other water areas critical to wintering wildlife.

*Provide wetland habitats to meet the requirements of management indicator species.

*Favor selective treatment of transmission line rights-of-way vegetation to improve wildlife forage.

*Manage permanent openings and grasslands in upland forest areas to meet needs of management indicator species.

*Provide special habitat requirements necessary to maintain viable populations of those species that require isolation.

*Solid Waste

*Emphasize and promote use of the carry-in/carry-out method of disposal.

Effluents

Sewage systems may include vault toilets.

7700 TRANSPORTATION SYSTEM

Roads

*All temporary and short-term roads will be planned and constructed to be revegetated. Revegetation will be accomplished in a reasonable period of time.

*Identify all existing roads and determine those needed for administrative and public use. Unnecessary roads will be obliterated.

Roads leading to and within small-scale developed recreation areas will be designed and maintained to a standard applicable to the site.

Local roads will be Traffic Service Level "D". These local roads will be closed to public vehicle traffic.

Description for Management Area 6.4 (Approx. 23,100 acres)

This management area of approximately 23,100 acres was established through the Pennsylvania Wilderness Act of 1984. It contains portions of Cornplanter, Tracy Ridge, and Allegheny Front RARE II inventory areas as well as the section of the Allegheny Reservoir between Cornplanter and Tracy Ridge. See Figure 4-1.

The emphasis in this area is to provide a land condition with vegetation generally progressing through the natural succession process to mature or overmature hardwood forest.

The primary purpose is to:

- Preserve and protect the natural scenic, scientific, historic, archaeological, ecological, educational, watershed, and wildlife values.
- Provide for enhancement of dispersed semi-primitive motorized and non-motorized recreation opportunities.

As these areas will have only a limited amount of vegetative management activities designed to enhance wildlife habitat or to achieve recreation objectives, the Forest will generally progress through natural succession to a mature northern hardwood type. Scattered herbaceous, shrub, and conifer inclusions may be evident due to maintenance of wildlife habitat.

Some abandoned roads and facilities are still evident from early oil and gas and logging production; i.e., old roads, railroad grades, pipelines, oil well sites, power houses, rodlines, and cleared rights-of-way. The area will continue to slowly revert to a natural Forest condition.

State, township, and Forest Service administered arterial and collector roads may form, or be adjacent to, but not within, the boundary of this management area. All other roads will be closed except for roads serving developed recreation sites.

Recreational facilities will generally be limited to those necessary to provide access into the area or protect the resources, such as trails, trailhead facilities, and primitive campsites, vault toilets, and spring or hand pump water systems.

Utility corridors and development of oil and gas fields may be evident within the area.

Seasonal wildlife habitat improvement and maintenance work may include such activities as food plot maintenance, shrub and conifer planting, and timber thinning. Trail construction and maintenance will occasionally be evident. Administrative and law enforcement activities will occur.

Specialized habitats and inclusions within the management area will receive treatments to specifically benefit small-game, non-game, indicator species, or species of special concern.

Recreational opportunities will include dispersed activities, such as cross-country skiing, backpacking, hiking, fishing, hunting, trapping, motor boating, camping, and water skiing.

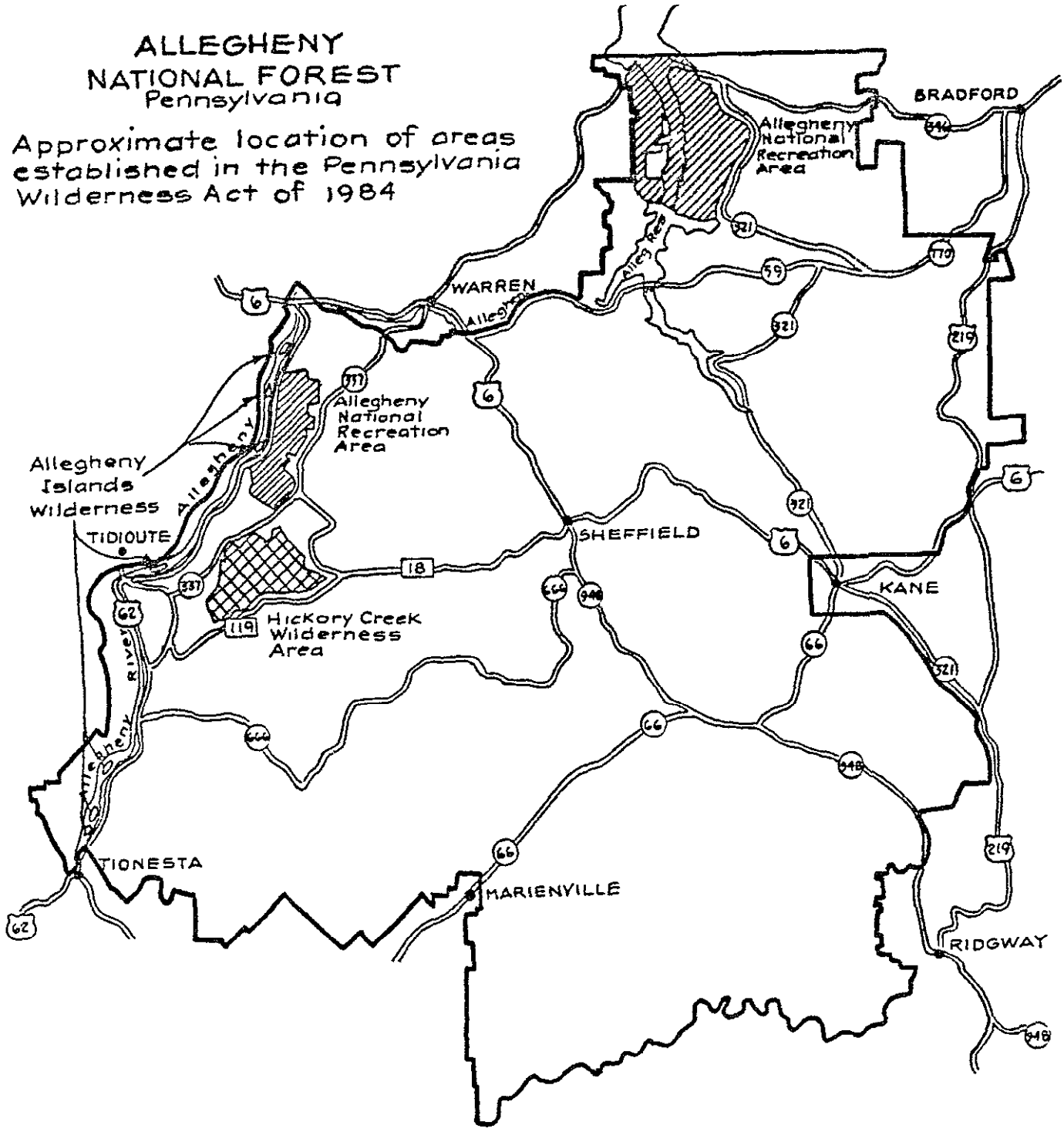


Figure 4-1. Location of Wilderness and National Recreation Areas

Table 4-23 Output Objectives for Management Area 6.4

Output by Management Problem	Unit of Measure	Average Annual Amount Planned Decade 1 D (D2)	Projected Decade 2 D (D2)
Developed Recreation Opportunities			
Semi-Primitive Motorized	M RVD	33 (33)	35 (35)
Roaded Natural	M RVD	13 (13)	13 (13)
Dispersed Recreation Opportunities			
Semi-Primitive Motorized	M RVD	71 (68)	75 (73)
Wildlife			
Big-Game Hunting	M WFUD	5 (4)	5 (5)
Small-Game Hunting	M WFUD	4 (4)	4 (4)
Non-game	M WFUD	4 (4)	4 (4)
Fishing	M WFUD	47 (46)	56 (55)

Table 4-24 Practices for Management Area 6.4

Management Practice	Unit of Measure	Average Annual Amount Planned Decade 1 D (D2)	Projected Decade 2 D (D2)
Developed Recreation Area Construction			
Other Forest Areas			
Campgrounds	# of areas	1 (1)	0 (0)
Dispersed Recreation Trail Construction			
Pedestrian	miles	.4 (.4)	.5 (.4)
Wildlife and Fish Habiat Improvement			
Wildlife Habitat Imp. & Mtnce.	acres	132 (130)	170 (169)

STANDARDS AND GUIDELINES FOR MANAGEMENT AREA 6.4

ALLEGHENY NATIONAL RECREATION AREA

1900 LAND AND RESOURCE MANAGEMENT PLANNING

Vegetative Management

Vegetative management shall be done only to maintain or enhance existing recreation, wildlife, or watershed values, except to facilitate private mineral resource exploration and development.

2300 RECREATION MANAGEMENT

Opportunities

Protect and enhance the existing opportunities for semi-primitive motorized and non-motorized recreation experiences.

Semi-primitive motorized ROS class recreation experiences will be emphasized in the NRA.

Non-motorized recreation opportunities will be emphasized on the interior of the NRA in the existing undeveloped portions.

Public motorized vehicle use will not be permitted except for motorized use on the Allegheny Reservoir and vehicles in the developed recreation areas.

Recreation Sites

With the exception of existing sites, recreation sites may be provided at development scale 3 or less. Some of the reservoir "boat-to" campgrounds are within this management goal. Generally these sites will have less than 50 campsites, with vault toilets, carry-in and carry-out garbage policy, and hand pump water supplies.

Maintenance of sites will follow guidelines contained in FSM 2330, referenced handbooks, and ED&T #9099 titled "Cleaning Recreation Sites." Sites may be closed for economic or safety reasons.

Where possible, developed recreation facilities (permanent campgrounds, etc.) should be limited to those general areas where they already occur and should not be planned in the more remote and wild areas.

*Location of recreational developments will be determined with priority given to correcting health and safety problems, protecting the environment, complementing prescribed recreation opportunities, and meeting public demand.

Trails

*Trail management will be compatible with the ROS objectives.

Trail types appropriate to this management area are:

Pedestrian Summer
Equestrian Summer
Pedestrian Winter

The choice of which type to be constructed will be based on analysis of demand, existing supply (both public and private), suitable locations, plans of other agencies, and plans of private sector at the time of implementation.

Trails may include all three difficulty classes of Easiest, More, and Most Difficult to provided a full range of experiences.

Interpretation

At trailheads into the management area, personal contact, brochure racks, and bulletin boards will be utilized to interpret the environment and inform users about proper use of the area.

Off-Road Vehicles (ORV)

*Use of motorized vehicles off roads will not be permitted in the NRA. Exceptions include use of administrative vehicles, emergency vehicles, use authorized by permit or contract (relating to outstanding private OGM rights).

*Cultural Resources

*Priorities will be set for evaluation of cultural resources for the National Register of Historic Places.

*Assess the nature and degree of damage to cultural resources caused by vandalism, visitor use, and natural deterioration and identify protective measures to be implemented.

*Interpretation of cultural resources should be compatible with the natural character and recreation opportunities of this area.

Visual Quality

Management activities should meet the Visual Quality Objectives (VQO) displayed in the chart below by sensitivity levels, distance zones, and variety classes.

VARIETY CLASS	SENSITIVITY LEVEL & DISTANCE ZONE						
	FG1	MG1	BG1	FG2	MG2	BG2	3
Class A	R	R	R	R	R	PR	PR
Class B	R	PR	PR	PR	PR	M	M
Class C	PR	PR	PR	PR	M	M	M

Visual Quality Objectives - (R) Retention, (PR) Partial Retention, (M) Modification, (MM) Maximum Modification
Variety Class - (A) Distinction, (B) Common, (C) Minimal
Visual Distance Zone - (FG) Foreground, (MG) Middleground, (BG) Background
Sensitivity Level - (1) Most Sensitive, (2) Sensitive, (3) Least Sensitive

2400 TIMBER MANAGEMENT

Silvicultural Systems

Timber will be harvested only to achieve wildlife and recreation management objectives.

Uneven-aged management or salvage may be an option used to maintain browse and mast production around existing habitat improvements to maintain continuous canopy in visually sensitive areas, or to provide visual variety in recreation travelways or use areas.

Even-aged management may be an option for creating or maintaining permanent openings for wildlife; for increasing visual variety; and providing viewpoints for recreationists.

*Temporary Openings Created by the Application of Even-aged Silviculture

Temporary openings created by even-aged management will generally not exceed ten acres, except as provided below:

- On an individual sale basis after 60 days public notice and review by the Regional Forester

- As a result of natural catastrophic condition, such as fire, insect and disease attack, or windstorm.

Frequency of Entry and Intensity

A limited amount of commercial timber sales may be necessary to achieve wildlife management objectives.

Timber harvest is unscheduled and will vary in intensity.

Firewood

Firewood may be gathered for use within the NRA boundary. If significant resource damage is expected, gathering may be restricted by Forest Supervisor order.

Reforestation

Reforestation will be done to meet wildlife and recreation objectives.

2500 WATER AND SOIL RESOURCE MANAGEMENT

Riparian Area Management

Riparian areas will be managed to emphasize riparian-dependent resources which contribute to the objectives of this management area. Such resources include wildlife habitat; fish habitat in the Allegheny River, Allegheny Reservoir, and streams; and dispersed recreation opportunities. Appropriate activities in riparian areas may include wildlife and fish habitat improvement, and trail construction.

Public use of specific areas may be limited to protect water quality.

Trails will be located to protect soil and water quality values.

2600 WILDLIFE HABITAT MANAGEMENT

*Provide wetland habitats to meet the requirements of management indicator species.

*Provide special habitat requirements necessary to maintain viable populations of those species that require isolation.

*Favor selective treatment of transmission line rights-of-way vegetation to improve wildlife forage.

Specialized habitats and inclusions within the management area will receive treatments to specifically benefit small-game, non-game, indicator species, or species of special concern.

Maintain or enhance existing permanent openings and grasslands in upland forest areas to meet wildlife needs.

Openings may be planted with fruit producing trees and shrubs, although most will be managed in native grasses, forbs, and shrubs.

Protect and enhance spring seeps and other water areas including the adjacent vegetation that are critical to wildlife.

2700 SPECIAL USES MANAGEMENT

*Utility Transmission Corridors

*Permit only those facilities that are required to serve recreational or administrative needs. Exceptions will be considered on an individual basis.

*Utility Distribution Systems

*Approval of application for distribution systems crossing National Forest System lands (such as utility rights-of-way serving individual residences) will be determined individually, consistent with the standards and guidelines.

2800 MINERALS AND GEOLOGY

Federal Minerals

Federally owned oil, gas, and other minerals within the NRA have been congressionally withdrawn from leasing consideration. Rock sources within the NRA will not be used or developed.

Private Minerals

The goal of Forest Service administration of private mineral development is to reduce the impacts of development on visual quality, recreation opportunities, watershed values, and wildlife habitat, while honoring private rights.

At least 60 days in advance of proposed development, the developer will provide the Forest Service with a Plan of Operations. The Plan of Operations must be approved by the Forest Service before any surface disturbing activities begin. In addition to those items specified in the forest-wide standards and guidelines, the Plan will address the following:

Schedule of Activities and Staging of Operations

The staging of well construction will be provided in the Plan of Operations. At any one time, no more than five well sites and accompanying access roads will be cleared in advance of actual drilling operations. Each five-well package will be handled as a single timber sale payment unit.

In the vicinity of developed recreation sites or areas receiving heavy recreation use, the Forest Service may impose restriction on the hours, days, or season of operation in order to reduce impacts on recreationists.

Water for hydrofracturing will be stored in tanks.

Production and Collection Facilities

Visual impacts of facilities will be reduced to the extent possible by sitting, vegetative screening, or other methods. All above-ground facilities will be painted with earth-tone colors. Construction materials will meet visual quality requirements.

Tank batteries will be located outside the NRA where possible. Tanks and separators will be located on one site in the development. Tank hatches will be locked.

Where possible, all utility and collection lines will be buried at a minimum depth of three feet and marked with Terra tape or its equivalent. Surface lines may be permitted if boulders, topography, or other conditions make burial impractical or infeasible. Lines will be located in road rights-of-way. Lines may be located outside of rights-of-way if now new corridor clearing is required for their installation.

Pump jacks will be powered by electric motors and signed to warn the public of automatic operation. Gasoline powered motors may be used, in limited cases, if environmentally preferred.

Natural gas that is not utilized on the development or marketed will be flared.

Methods for Waste Disposal

All produced water will be contained in tanks and disposed of outside the NRA by state-approved methods.

Stumps will be buried in an approved location or removed from the NRA. Slash will be lopped to within three feet of the ground and scattered.

Excess or unused materials, litter, and trash will be promptly removed from the development and disposed of properly.

Surface Restoration Plan

The goal of surface restoration is to restore the natural landform and facilitate the establishment of forest vegetation.

A bond to guarantee stabilization and final restoration of disturbed areas will be required on all developments.

Restoration plans will include removal of all equipment and facilities, recontouring of roads and well sites, and revegetating all disturbed areas. In order to restore forest vegetation, methods such as scarification, fertilizing, mulching, liming, direct seeding, or planting shrubs and trees may be necessary. Native plant species will be used when seed or planting stock is available.

Any equipment or facility not used for a period of one year must be removed by the operator within 90 days of notification.

5100 FIRE MANAGEMENT	*Activity fuels will be managed at a level commensurate with the allowable fire intensity and rate of spread that meets resource objectives in established prescriptions. Treatment along highways and adjacent properties will meet applicable state laws.
5400 LAND OWNERSHIP	Surface Ownership Land within the National Recreation Area is not available for exchange.
7300 BUILDINGS AND STRUCTURES	*Buildings and structures may be provided to support resource management objectives.
7400 PUBLIC HEALTH AND POLLUTION CONTROL ACTIVITIES	*Water Supply *Drinking water may be provided. If provided, it must meet Federal and State regulations and be protected to ensure its continued quality. Water systems may include springs or hand pumps. Effluents Sewage systems include vault toilets only. Solid Waste *Landfill disposal sites will not be provided.
7700 TRANSPORTATION SYSTEM	*Identify all existing roads and determine those needed for administrative and public use. Unnecessary roads will be closed. State, township, and Forest Service administered arterial and collector roads may form, or be adjacent to, but not within, the boundary of these areas, except for those needed to satisfy private legal rights. Existing local roads will be managed as Traffic Service Level "D". These local roads will be closed to public traffic with the following exception: - Roads leading to and within developed recreation areas will be designed and managed to a Traffic Service Level applicable to the site.

Description for Management Area 7 (1,000 acres)

The emphasis in this area is to provide high-density, destination-type recreation developments within a forest environment.

The primary purpose is to:

- Provide high-density, self-contained forest recreation developments in a rural setting.
- Vegetation management will ensure that the long-term viability, safety, and attractiveness of the area will continue throughout the anticipated life of the development.

Vegetation will be intensively managed to provide an attractive setting for the intended use, and it will generally consist of native species.

Facilities for motorized use and parking will be available. Facilities will be designed for use by a large number of people and will be provided for special activities. Away from the developed sites, facilities will accommodate moderate user density.

Facilities, structures, and utilities will be very evident, but will be designed to be compatible with the values that make the area attractive to the users. Oil and gas development will not generally occur within these highly developed sites.

State, township, and Forest Service administered arterial and collector roads may be located within this management area. Forest Service local roads will be Traffic Service Level (TSL) "A to C" and will be open to all public traffic except for certain seasonal restrictions for recreation purposes.

Large numbers of users will be present, human sights and sounds readily evident, and the interaction between users will be moderate to high. Resource modification and utilization practices will be primarily to enhance specific recreational activities, to maintain vegetative cover and to stabilize soil.

This goal may have activities and facilities such as auto camping, swimming, motor boating, picnicking, lodges, and food services.

Table 4-25 Output Objectives for Management Area 7

Output by Management Problem	Unit of Measure	Average Annual Planned Decade 1 D (D2)	Amount Projected Decade 2 D (D2)
Developed Recreation Opportunities			
Rural	M RVD	419 (419)	432 (432)
Wildlife			
Fishing	M WFUD	.3 (.3)	.3 (.3)

Table 4-26 Practices for Management Area 7

Management Practice	Unit of Measure	Average Annual Planned Decade 1 D (D2)	Amount Projected Decade 2 D (D2)
Developed Recreation Area Construction[1]			
Allegheny Reservoir Area			
Campgrounds	# of areas	1 (1)	1 (1)
Kinzua Beach Motel/Restaurant Complex	# of areas	1 (1)	0 (0)
Other Forest Areas			
Campgrounds	# of areas	0 (0)	1 (1)

1 Specific facilities and improvements developed on a case-by-case basis during the design process. Read standards and guidelines for more information. Unit of measure for this practice is the number of recreation areas to be completed within the entire decade not an average annual amount.

STANDARDS AND GUIDELINES FOR MANAGEMENT AREA 7
(An asterisk designates standards taken from the Eastern Regional Guide.)

2300 RECREATION MANAGEMENT

Opportunities

*Location of recreational developments will be determined with priority given to correcting health and safety problems, protecting the environment, complementing prescribed recreation opportunities, and meeting public demand.

*Feature Rural ROS class recreation opportunities.

Recreation Sites

Construction of new sites will occur at development scale 4 or 5. Sites will be larger than 50 campsites or 250 PAOT. The sites will usually have pressure water systems, sewage treatment plants, hot showers, paved service roads, and outdoor lighting.

All structures and facilities will be designed and located to maintain a natural or rustic appearance.

Structures will not be more than two stories high.

Natural building materials, such as stone and wood, will be used on the exterior of all structures.

Earth-tone colors will be used for all exterior finishes.

The visual quality objectives will be met primarily through vegetative screening of structures seen from a distance.

These sites may be developed and operated by the private sector under permit to the U. S. Government.

Trails

*Trail management will be compatible with the ROS objective.

Trail types appropriate for this management area are:

Motorized Summer
Pedestrian Summer
Equestrian Summer
Motorized Winter
Pedestrian Winter

The choice of trails to be constructed will be based on analysis of demand, existing supply (both public and private), suitable locations, plans of other agencies and plans of private sector at the time of implementation.

Trails may include two difficulty classes of Easiest, and More Difficult to provide a range of experiences within the Rural ROS class.

Interpretation

In this area, manned interpretive and information facilities may be utilized to inform and educate Forest visitors.

Visual Quality

Management activities should meet the Visual Quality Objectives (VQO) displayed in the chart below by sensitivity levels, distance zones, and variety classes.

VARIETY CLASS	SENSITIVITY LEVEL & DISTANCE ZONE						
	FG1	MG1	BG1	FG2	MG2	BG2	3
Class A	R	PR	PR	PR	M	M	M
Class B	PR	M	M	PR	M	MM	MM
Class C	PR	M	M	M	MM	MM	MM

Visual Quality Objectives - (R) Retention, (PR) Partial Retention, (M) Modification, (MM) Maximum Modification
Variety Class - (A) Distinction, (B) Common, (C) Minimal
Visual Distance Zone - (FG) Foreground, (MG) Middleground, (BG) Background
Sensitivity Level - (1) Most Sensitive, (2) Sensitive, (3) Least Sensitive

Cultural Resources

*Priorities will be set for evaluation of cultural resources for the National Register of Historic Places.

*Assess the nature and degree of damage to cultural resources caused by vandalism, visitor use, and natural deteriortation and identify protective measures to be implemented.

*Emphasize development and interpretation of significant cultural resources to enhance recreation opportunities.

Interpretation may occur during the evaluation or the excavation of major sites, and the excavation may be featured as well as the findings of the evaluation or excavation.

2400 TIMBER MANAGEMENT

Silvicultural Systems

Timber will be managed for visual, recreational, and safety purposes in the developed area. Single tree selection and group selection will be emphasized.

Salvage of timber products may occur in developed areas.

Whole tree removal will be emphasized in developed areas.

A vegetative management plan should be developed for each area and address the size of temporary openings.

Timber harvest is unscheduled.

Harvesting may be restricted to periods of low recreation use to minimize user conflict.

Firewood

Fuelwood may be made available for public use.

Pulpwood

Mark or designate all merchantable products in all cut trees and require that they be paid for, cut, and removed. Undesirable saplings will be removed with KV funds, if necessary, to meet the cutting prescription.

Reforestation and Timber Stand Improvement

These activities will usually not occur except when necessary to achieve the management objectives of the area or to protect adjacent land owners from fire or pests.

2500 WATER AND SOIL RESOURCE MANAGEMENT

Intensive structural and nonstructural practices for erosion control should be used as necessary to prevent soil loss and water quality degradation in areas receiving heavy recreation use. Practices may include paving, terracing, gabion installation, rip-rapping, etc.

2600 WILDLIFE HABITAT MANAGEMENT

Wildlife

*Favor selective treatment of transmission line rights-of-way vegetation to improve wildlife forage.

*Manage wildlife habitat to enhance visitor enjoyment.

Nest boxes for cavity-nesting bird species and squirrels may be provided.

Provide special viewing structures or interpretative trails when appropriate to enhance visitor enjoyment.

Specialized habitats and inclusions within the management area will receive treatments to specifically benefit small-game, non-game, indicator species, or species of special concern.

2700 SPECIAL USES MANAGEMENT

*Utility Transmission Corridors

*NOTE: See also 7700 Transportation System, Corridors.

*Permit only those facilities that are required to serve recreational or administrative needs. Exceptions will be considered on an individual basis.

*Utility Distribution System

*Approval of application for distribution systems crossing National Forest System lands (such as utility rights-of-way serving individual residences) will be determined individually, consistent with the standards and guidelines.

2800 MINERALS AND DEVELOPMENT

*Federal Minerals

Surface disturbing mineral development is generally not compatible with the resource objectives of this management area. This compatibility determination, however, will be based on a site specific analysis of each tract.

Private Minerals

Special emphasis will be given to identifying and implementing measures to reduce adverse impacts on the resource objectives of this Management Area. Implementation

of these measures will be negotiated with the oil/gas developers. Mitigation measures may include:

- Location of support facilities such as tank batteries, separators, pipe yards, etc., outside management area.
- Use of techniques and equipment that can be put underground such as downhole pumping and buried utility lines and pipelines.
- Vegetative screening of well locations and roads and noise control measures.
- Removal of brine water from the management area.
- Removal of all unused equipment.

5100 FIRE MANAGEMENT

*Activity fuels will be managed at a level commensurate with the allowable fire intensity and rate of spread that meets resource objectives in established prescriptions. Treatment along highways and adjacent properties will meet applicable State laws.

5400 LAND OWNERSHIP

Subsurface

Acquire or subordinate private subsurface interests in developed recreation sites where necessary to protect recreation values.

7300 BUILDINGS AND STRUCTURES

Buildings and structures may be provided to support resource management objectives.

7400 PUBLIC HEALTH AND POLLUTION CONTROL FACILITIES

Water Supply

*Drinking water may be provided. If provided, it must meet Federal and State regulations and be protected to ensure its continued quality.

Water systems may include springs, hand pumps, or electric pumps.

Effluents

Sewage Systems may include vault toilets, but will usually be flush systems and sewage treatments plants.

*Solid Waste

*Landfill disposal sites will not be provided.

7700 TRANSPORTATION SYSTEM

Roads

*Arterial roads, at a minimum, will be designed and constructed for transporting forest products and accommodating planned motorized recreation use, will be open and will be maintained to maintenance level III or higher.

*Local roads will be designed and constructed to be suitable for accommodating intensive recreation use and associated service vehicles.

*Roads may be closed to public vehicle use or restricted by vehicle type or season of use.

*Roads will be maintained to at least maintenance level III if passenger car travel is intended, maintenance level II if passage of vehicles is limited, or maintenance level I if closed to vehicular traffic.

*All temporary and short-term roads will be planned and constructed to be revegetated. Revegetation will be accomplished in a reasonable period of time.

*Identify all existing roads and determine those needed for administrative and public use. Unnecessary roads will be closed.

The local road standards applicable to this management prescription will be developed during the site design process.

Forest Service Local roads will be Traffic Service Level (TSL) "A to C" and will be open to all public traffic except for certain seasonal restrictions for recreation purposes.

Description for Management Area 8 (6,000 acres)

The emphasis in this management area is management of four special areas on the Forest: Tionesta Scenic Area (2,018 areas), Tionesta Research Natural Area (2,113 acres), Hearts Content Scenic Area (122 acres), and Kane Experimental Forest (1,650 acres). Except for the scenic areas, the activities are administered by the Northeastern Forest Experiment Station.

The primary purpose for Hearts Content Scenic Area and Tionesta Scenic Area is to:

- Protect the unique areas of national significance and provide dispersed recreation opportunities that emphasize the area's uniqueness
- Preserve the unique ecosystems for scientific purposes.

The primary purpose for Tionesta Research Natural Area is to:

- Preserve the unique ecosystem for scientific purposes.

The primary purpose for Kane Experimental Forest is to:

- Provide an area where we will conduct research to improve the benefits of forests.

The areas encompass many vegetative types from open fields to virgin timber stands.

State, township, and Forest Service administered arterial and collector roads may be located within this management area. Forest Service local roads, Traffic Service Level (TSL) "C & D", will be closed to all public traffic except for certain exceptions for recreation purposes.

Recreational facilities and structures may be present but generally designed to be compatible with the natural surroundings. Facilities could range from primitive structures to highly developed sites, except in the Kane Experimental Forest and Tionesta Research Natural Area where none will exist.

Recreation and use will vary, from substantially unnoticeable to very evident. Evidence of human activities will vary depending on the area's purpose, but activity generally will be controlled to reduce adverse impacts on the sites.

Administrative activities could include timber, wildlife, and recreation management functions. The unique characteristics of these areas require that they be protected by law or administrative order. Law enforcement and associated administrative activities may be common within the areas.

Table 4-27 Output Objectives for Management Area 8

Output by Management Problem	Unit of Measure	Average Annual Amount Planned Decade 1 D (D2)	Projected Decade 2 D (D2)
Dispersed Recreation Opportunities			
Semi-Primitive Motorized	M RVD	4 (4)	4 (4)
Wildlife			
Big-Game Hunting	M WFUD	1.2 (1.2)	1.2 (1.2)
Small-Game Hunting	M WFUD	.2 (.2)	.2 (.2)
Non-Game	M WFUD	.2 (.2)	.2 (.2)
Fishing	M WFUD	.5 (.5)	.5 (.5)

Table 4-28 Practices for Management Area 8[1]

Management Practice	Unit of Measure	Average Annual Amount Planned Decade 1 D (D2)	Projected Decade 2 D (D2)
Dispersed Recreation-Trail Construction	miles	0.5 (.5)	0 (0)

1 Applies only to the Tionesta and the Hearts Content Scenic Areas. Management practices for the Tionesta Research Natural Areas and Kane Experimental Forest are funded, scheduled, and implemented by the Northeastern Forest Experiment Station.

STANDARDS AND GUIDELINES FOR MANAGEMENT AREA 8
(An asterisk designates standards taken from the Eastern Regional Guide.)

Management Area 8 consists of two subgroups, each composed of several areas with similar objectives, management activities, and outputs. Scenic Areas form one subgroup and Research Areas the second subgroup. There are separate standards and guidelines for each subgroup.

HEARTS CONTENT AND TIONESTA SCENIC AREAS

1900 LAND AND RESOURCE MANAGEMENT PLANNING

Vegetative Management

Protect and preserve to extent possible the natural condition of the virgin forest that now exists.

2300 RECREATION MANAGEMENT

Opportunities

Provide opportunities for a semi-primitive motorized recreation experience.

Due to Hearts Content's small size and easy access, no overnight camping, fire, or equestrian use will be permitted.

Recreation Sites

Developed facilities may be provided to enhance public use of area or protect environmental conditions.

Day use facilities at development scale 3 or below are appropriate.

Trails

*Trails will be consistent with the special area management objectives.

Trail types appropriate to the Scenic Areas are Pedestrian Summer and Winter.

Trail difficulty level should be Easy, to provide for the widest range of users.

Off-Road Vehicles (ORV)

ORV use will not be permitted.

Cultural Resources

*Priorities will be set for evaluation of cultural resources for the National Register of Historic Places.

*Assess the nature and degree of damage to cultural resources caused by vandalism, visitor use, and natural deterioration and identify protective measures to be implemented.

*Areas having unique cultural resource values of national significance will be identified for special management, including enhancement and interpretation. Cultural resource interpretation in other special management areas will be consistent with each area's purpose.

Interpretation

Except during high use periods, nonpersonal interpretative techniques should be used such as interpretive trails, bulletin boards, brochures, and maps to explain the unique natural and cultural history of the scenic areas.

During high use periods, personal contact may be used.

Visual Quality

All activities in scenic areas should meet the visual quality objective of retention.

2400 TIMBER MANAGEMENT

Timber is not managed for commercial purposes.

Silvicultural System

Some individual tree cutting may occur to ensure safety of visitors along trails, roads or in designated use areas. Extensive salvage may occur following significant insect or disease infestations or catastrophic event.

2500 WATER AND SOIL RESOURCE MANAGEMENT	Riparian areas will be managed to protect the natural condition of riparian ecosystems. Creation or enhancement of riparian-dependent resources, such as wildlife and fish habitat, is generally not appropriate.
2600 WILDLIFE MANAGEMENT	Wildlife *Protect existing spring seeps and other water areas that are critical to wintering wildlife. *Favor selective treatment of transmission line rights-of-way vegetation to improve wildlife forage. Wildlife or fish habitat is not managed except that any threatened and endangered species habitat identified may be protected and enhanced. Hunting and fishing is permitted under state regulations.
2700 SPECIAL USES MANAGEMENT	*Utility Transmission Corridors *Permit only those facilities that are required to serve recreational or administrative needs. Exceptions will be considered on an individual basis. *Utility Distribution Systems *Approval of application for distribution systems crossing National Forest System lands, such as utility rights-of-way serving individual residences, will be determined individually, consistent with the standards and guidelines for this Regional management goal.
2800 MINERALS AND GEOLOGY	Federal Minerals Surface disturbing mineral development is generally not compatible with the resource objectives of this management area. This compatibility determination, however, will be based on a site specific analysis of each tract. Private Minerals Special emphasis will be given to identifying and implementing measures to reduce adverse impacts on the resource objectives of this Management Area. Implemen-

tation of these measures will be negotiated with the oil/gas developers. Mitigation measures may include:

- Location of support facilities, such as tank batteries, separators, pipeyards, etc., outside the management area
- Use of techniques and equipment that can be put underground, such as downhole pumps, buried utility lines, and pipelines
- Vegetative screening of well locations and roads and noise control measures.
- Removal of brine water from the management area.

5100 FIRE MANAGEMENT

*Activity fuels will be managed at a level commensurate with the allowable fire intensity and rate of spread that meets resource objectives in established prescriptions. Treatment along highways and adjacent properties will meet applicable State laws.

5400 LAND OWNERSHIP

*Surface Ownership

*Avoid encumbering land available for exchange with land uses that compromise land exchange opportunites.

Subsurface Ownership

Acquire subsurface rights in the Tionesta Research Natural Area. Acquire subsurface rights in the Hearts Content National Landmark.

7300 BUILDINGS AND STRUCTURES

*Buildings and structures may be provided to support resource management objectives.

7400 PUBLIC HEALTH AND POLLUTION CONTROL ACTIVITIES

*Water Supply

*Drinking water may be provided. If provided, it must meet Federal and State regulations and be protected to ensure its continued quality.

Solid Waste

*Landfill disposal sites will not be provided.

7700 TRANSPORTATION SYSTEM

Roads

*Roads will be maintained to at least maintenance level III if passenger car travel is intended, maintenance level II if passage of vehicles is limited, or maintenance level I if closed to vehicular traffic.

*All temporary and short-term roads will be planned and constructed to be revegetated. Revegetation will be accomplished in a reasonable period of time.

*Identify all existing roads and determine those needed for administrative and public use. Unnecessary roads will be closed.

Local roads will be Traffic Service Level (TSL) "D". These local roads will be closed to public traffic with the following exception:

- FR 133 E and FR 193.2 will be TSL "C" roads open to the public during the normal use season.

TIONESTA RESEARCH NATURAL AREA (TRNA) AND KANE EXPERIMENTAL FOREST (KEF)

1600 INFORMATION SERVICES	No effort to disseminate information. Specific inquiries will be responded to.
1900 LAND AND RESOURCE MANAGEMENT PLANNING	Vegetative Management Preserve the natural condition present in the Tionesta Research Natural Area. Within the KEF, vegetative management standards will be specified within each approved research project. Research projects will generally relate to forest management problems and opportunities in the northeast.
2300 RECREATION MANAGEMENT	In both the Tionesta Research Natural Area and KEF, no new recreation investments will be made. In the KEF, the existing hiking trail will be maintained. The ROS class provided will be semi-primitive motorized. Dispersed use will be allowed in the Tionesta Research Natural Area but to protect the natural conditions, no camping or fires will be permitted.
2400 TIMBER MANAGEMENT	In KEF, silvicultural systems and associated activities will be specified in each research project. In TRNA, timber harvesting will not occur unless associated with development of private mineral ownership.
2500 WATER AND SOIL RESOURCE MANAGEMENT	Riparian Area Management Riparian areas will be managed to protect the natural condition of riparian ecosystems. Creation or enhancement of riparian-dependent resources, such as wildlife and fish habitat or recreation opportunities, is generally not appropriate.

2600 WILDLIFE MANAGEMENT	In the KEF, no wildlife habitat improvements will be provided except to protect or enhance threatened and endangered species habitat. In the TRNA, there will be no wildlife habitat improvements.
2800 MINERALS AND GEOLOGY	<u>Federal Minerals</u> Surface disturbing mineral development is generally not compatible with the resource objectives of this management area. This compatibility determination, however, will be based on a site specific analysis of each tract. <u>Private Minerals</u> Special emphasis will be given to identifying and implementing measures to reduce adverse impacts on the resource objectives of this Management Area. Implementation of these measures will be negotiated with the oil/gas developers. Mitigation measures may include: - Location of support facilities, such as tank batteries, separators, pipeyards, etc., outside the management area - Use of techniques and equipment that can be put underground, such as downhole pumps, buried utility lines, and pipelines - Vegetative screening of well locations and roads and noise control measures. - Removal of brine water from the management area.
4000 RESEARCH	The Northeastern Forest Experiment Station will be responsible for scientific use of the Tionesta Research Natural Area and Kane Experimental Forest.
5100 FIRE MANAGEMENT	Fire suppression will recognize the natural conditions and active research projects in the area and avoid use of heavy mechanical equipment unless the size, intensity, and/or escape of fire is critical to values of MA 8 or adjacent management areas.

5400 LAND OWNERSHIP	Subsurface Private mineral rights should be acquired as necessary to protect research values. Priority will be given to the Tionesta Research Natural Area.
7700 TRANSPORTATION SYSTEM	Local roads will be Traffic Service Level "D". These local roads will be closed to public vehicles.

Description for Management Area 9.1 (1,000)

In this management area, the land condition is dominated by vegetation progressing through a natural succession process to mature and overmature hardwood and softwood forests. Natural forces play a dominant role in site or vegetation change. Intensive oil and gas developments will be evident.

The primary purpose is to:

- Emphasize minimal management and investment in the surface resources.
- Protect the life, health, and safety of incidental forest users.
- Prevent significant loss of existing resources or productivity on the site or on adjoining land areas.

The areas managed under this goal will provide "old growth" stands of oak, sugar maple, beech, and hemlock. Naturally created openings may exist, but ecological succession will transform these into stands of tolerant hardwoods.

State, township, and Forest Service administered arterial and collector roads may be located within this management area. Jurisdiction of existing Forest Service local roads not needed for access to other areas will be transferred to the oil and gas operator.

Management or investment in recreation would be minimal. Only National Trails remain open and maintained.

Activities

The following are types of activities which may occur within the management area: dispersed recreation including hiking, camping, hunting, trapping, photography, bird-watching, and nature study; private oil, gas, and mineral exploration and development activities; possible salvage of diseased or damaged timber.

TABLE 4-29 Output Objectives for Management Area 9.1

Output by Management Problem	Unit of Measure	Average Annual Planned Decade 1 D (D2)	Amount Projected Decade 2 D (D2)
Dispersed Recreation Opportunities			
Roaded Natural	M RVD	1 (1)	1 (1)
Wildlife			
Big-Game Hunting	M WFUD	.2 (.2)	.2 (.2)
Small-Game Hunting	M WFUD	.1 (.1)	.1 (.1)
Non-Game	M WFUD	.1 (.1)	.1 (.1)
Fishing	M WFUD	.3 (.2)	.3 (.2)

TABLE 4-30 Practices for Management Area 9.1[1]

Management Practice	Unit of Measure	Average Annual Planned Decade 1 D (D2)	Amount Projected Decade 2 D (D2)
NOT APPLICABLE			

1 No management practices will be scheduled for this area. Only activities necessary to protect resources or incidental users will be carried out as needed. Read standards and guidelines for more information.

STANDARDS AND GUIDELINES FOR MANAGEMENT AREA 9.1
(An asterisk designates standards taken from the Eastern Regional Guide.)

1900 LAND AND RESOURCE MANAGEMENT PLANNING

Vegetative Management

*Permit timber salvage only for fire hazard reduction, pest management, and prevention of significant resource loss.

*Make no investments in vegetation management, unless needed to protect adjoining lands from pests or fire or to protect the resources and existing investments.

2100 ENVIRONMENTAL MANAGEMENT

Pesticide Use

Use of pesticides is suitable for controlling insects and disease only to prevent significant resource loss or if adjacent private lands are endangered.

2300 RECREATION MANAGEMENT

Opportunities

*Accept the existing classes of recreational opportunities without further investment.

Recreation Sites

There will be no recreation sites in this management area.

Trails

*Investments in existing trails needed to connect segments of a continuous or extensive trail system, other than national scenic trails, will be made only for user safety and resource protection.

Only national trails will remain open. These national trails may provide pedestrian summer and winter use.

Trails may include two difficulty classes of More and Most Difficult.

*Cultural Resources

*On-site cultural resource interpretation will not occur in this prescription area.

*Conduct evaluations of cultural resources, as needed, to determine if protective measures are justified. Protective measures will be limited to those necessary to prevent loss of significant value.

Interpretation

There will be no interpretation carried out in this management area.

Visual Quality

Management activities should meet the Visual Quality Objectives (VQO) displayed in the chart below by sensitivity levels, distance zones, and variety classes.

VARIETY CLASS	SENSITIVITY LEVEL & DISTANCE ZONE						
	FG1	MG1	BG1	FG2	MG2	BG2	3
A (Distinctive)	R	PR	PR	PR	M	M	M
B (Common)	PR	M	M	PR	M	MM	MM
C (Minimal)	PR	M	M	M	MM	MM	MM

Visual Quality Objectives -(R) Retention, (PR) Partial Retention, (M) Modification, (MM) Maximum Modification
Variety Class - (A) Distinction, (B) Common, (C) Minimal
Visual Distance Zone - (FG) Foreground, (MG) Middleground, (BG) Background
Sensitivity Level - (1) Most Sensitive, (2) Sensitive, (3) Least Sensitive

No investments will be made to mitigate the visual impacts of natural-caused changes.

2400 TIMBER MANAGEMENT

Timber is not managed for commercial uses. Salvage may be considered if fire or insect and disease epidemics threaten adjacent productive land. Timber products cut by the mineral developer will be paid for and removed.

	Firewood The only fuelwood available is that removed from the area by the timber purchaser during salvage sale operations. Pulpwood In salvage operations, mark or designate all merchantable products in all cut trees and require that they be paid for, cut, and removed.
2500 WATER AND SOIL RESOURCE MANAGEMENT	Watershed improvement projects will be limited to those necessary to maintain environmental values and to protect public health and safety.
2600 HABITAT MANAGEMENT	Wildlife Provide for habitat management only to protect public safety and threatened and endangered species.
2700 SPECIAL USES MANAGEMENT	*Provide for utility transmission corridors. Emphasize use of corridors when granting appropriate rights-of-way. *Utility Distribution Systems *Approval of application for distribution systems crossing National Forest System lands (such as utility rights-of-way serving individual residences) will be determined individually, consistent with the standards and guidelines.
5100 FIRE MANAGEMENT	Wildfire detection and suppression will be commensurate with the resource value to be protected. Detection and suppression will be planned, based on an analysis of probable fire locations, expected fire intensities, potential net resource value change, and potential threat to health, safety, and adjacent properties.

5400 LAND OWNERSHIP	*Surface Ownership *Avoid encumbering land available for exchange with land uses that compromise land exchange opportunities.
7300 BUILDINGS AND STRUCTURES	*Provide buildings and structures only as needed to protect health and safety.
7400 PUBLIC HEALTH AND POLLUTION CONTROL FACILITIES	Water Supply *Drinking water sources will not be developed. Effluents No sewage system will be provided. *Solid Waste *Emphasize and promote use of the carry-in/carry-out method of disposal. *Use of National Forest System lands for landfill disposal sites should be considered only as a part of an area-wide system.
7700 TRANSPORTATION SYSTEM	Roads *Arterial roads, at a minimum, will be designed and constructed for transporting forest products, accommodating planned motorized recreation use, will be open, and will be maintained to maintenance level III or higher. *Provide roads only as needed for access to adjacent areas or to protect resources. *Roads may be closed to public use or restricted by vehicle type or season of use. *Roads will be maintained to at least maintenance level III if passenger car travel is intended, maintenance level II if passage of vehicles is limited, or maintenance level I if closed to vehicular traffic.

*All temporary and short-term roads will be planned and constructed to be revegetated. Revegetation will be accomplished in a reasonable period of time.

*Identify all existing roads and determine those needed for administrative and public use. Unnecessary roads will be obliterated.

State, township, and Forest Service administered arterial and collector roads may be located within this management area.

Local roads not needed for access to other management areas and needed to develop oil and gas may have their jurisdiction transferred to the oil and gas operator.

Local Roads that lie completely within this area will be closed and revegetated.

Local roads that pass through this area and provide access to other management areas will be designed and maintained to the standard for the management area served.

D. OTHER FOREST SUMMARIES

Forest-wide summaries of particular management practices, output, or costs are displayed in Appendix C. These serve to meet requirements of the National Forest Management Act and regulations as well as provide a clearer understanding of forest-wide programs.

Appendix C contains:

Table C- 1 Forest-wide Summary of Management Practices and Total Cost
Table C- 2 Allowable Sale Quantity and Long-Term Sustained Yield Capacity
Table C- 3 Timber Resource Land Suitability
Table C- 4 Allowable Sale Quantity, Timber Sale Program Quantity, and Vegetation Management Practices
Table C- 5 Present and Future Forest Conditions
Table C- 6 Rotation Ages of Existing Stands Assigned Management Prescriptions 3 and 6.2
Table C- 7 Timber Productivity Classification for Forest Land
Table C- 8 Forest-wide Summary of Recreation Investments for the First Decade
Table C- 9 Timber Sale Schedule for 1986, 1987, and 1988
Table C-10 Annual Timber Implementation Summary for Decade 1 (1986-1995)
Table C-11 Summary of Other Benefits for Scheduled Timber Sales.

CHAPTER 5

Implementation, Monitoring, and Evaluation

CHAPTER 5

IMPLEMENTATION, MONITORING, AND EVALUATION

The direction in this chapter is contained in three sections:

- Implementation Direction
- Monitoring and Evaluation Program
- Amendments and Revisions

Collectively, these sections explain how management direction will be implemented, how Forest Plan implementation will be monitored and evaluated, and how the Forest Plan will be kept current in light of changing conditions and assumptions.

Both the structure and the titles in the Monitoring and Evaluation Program subsection reflect all the provisions of the NFMA Regulations.

A. IMPLEMENTATION DIRECTION

Implementation Process

Implementation is the process used to achieve, on the ground, the future desired conditions and management direction described in each management area. An integrated resource management approach will be used to assure interdisciplinary teamwork and public involvement throughout the process. The major steps of this approach are:

1. Selecting land areas that best provide opportunities for accomplishing the Forest Plan management direction.

2. Analyzing the situation and identifying multi-resource projects that assure an integrated approach to achieving the desired future condition.

3. Prioritizing, scheduling, and budgeting the multi-resource projects that best meet the Forest Plan management direction.

4. Designing the projects to accommodate the integrated needs for all resources and values.

5. Completing the multi-resource projects as designed.

6. Protecting and managing the resources and providing public health and safety.

A detailed description of the Integrated Resource Management (IRM) approach is included in the USDA Forest Service Eastern Region publication, "Working Together for Multiple Use - IRM."

Implementation Schedule

An implementation schedule for all resource projects and activities will be developed and maintained. (See Appendix C for a partial listing). The Forest Supervisor is responsible for maintaining the schedule. The public will be notified, annually, of changes.

Consistency of Other Management Instruments

Subject to valid existing rights, all outstanding and future permits, contracts, cooperative agreements, and other instruments for occupancy and use of affected lands will be consistent with the Forest Plan by September 30, 1990. Existing plans will be superseded or brought into compliance within two years after Forest Plan approval.

Budget Proposals

The Forest Plan provides the basis for developing multi-year program budget proposals and the annual program of work. Actual funding levels will determine the rate of implementation of the Forest Plan.

Environmental Analysis

Future environmental analyses will be tiered to the Forest Plan and EIS.

Projects and management practices permitted within the Forest Plan will be subjected to environmental analysis as they are planned for implementation. USDA Forest Service Environmental Policy and Procedures are described in FSM 1950 and FSH 1909.15. If the environmental analysis for a project shows that: (1) the management area prescription and standards and guidelines can be complied with and (2) little or no environmental effects are expected beyond those identified and documented in the Forest Plan Final EIS; the analysis could be tiered to this Final EIS and a Decision Notice used to document the decision. In such situations, the analysis will not be documented in the form of an environmental assessment or environmental impact statement, rather an analysis or project file would be made available to the public for review.

B. MONITORING AND EVALUATION PROGRAM

This subsection describes how monitoring and evaluation requirements will be met. The purpose of monitoring and evaluation is to determine progress in meeting Forest Plan direction. Monitoring and evaluation are separate, sequential activities. They provide information to determine whether Forest Service programs are meeting the Forest Land and Resource Management Plan direction. This direction includes goals and objectives, management prescriptions, and standards and guidelines. It is through this process that the quality of implementation is assessed. Also, any needed change in Forest Plan Management direction is determined through this process.

MONITORING

Monitoring is done to observe or record the results of actions. This consists of collecting information from selected sources, usually on a sample basis. Information is used to determine:

- if Forest Plan goals and objectives are being achieved,
- if management prescriptions are applied as directed,
- if the results of applying prescriptions address the management problems, issues, concerns, and opportunities,
- if significant effects are occurring as predicted,
- if costs of implementing the Plan are as predicted.

A table displaying the required items to be monitored and their respective standards of measurement is included within the Monitoring Plan located in Appendix B.

Requirements

There are two considerations that determine monitoring requirements. They are: (1) Monitoring needs required by NFMA and (2) Considerations found to be significant and linked to the resolution of public issues, management concerns, and resource development opportunities and corresponding environmental effects.

1) NFMA Regulations - The following NFMA required items will be monitored. (Ref. to 219.12(k)(i-iv), 219.7(f), 219.19, 219.28).

a) Compare outputs with objectives
b) Verify unit costs with estimated costs
c) Document prescriptions and effects
d) Determine significant changes in productivity
e) Determine if lands are adequately restocked
f) Evaluate unsuitable lands
g) Determine if harvest area size limits should be continued
h) Assure insect/disease do not increase to damaging level
i) Determine population trends of indicator species
j) Evaluate effects of Allegheny National Forest management on adjacent private land or other public land as well as the effects management on these adjacent lands has on the Allegheny National Forest.
k) Identify research needs to support or improve National Forest management

2) Forest Management Problems

Items specifically related to the Forest Management Problems will be monitored to determine how well management is addressing the significant public issues, management concerns, development opportunities and corresponding environmental effects. To assist in evaluating environmental effects, refer to the EIS, Chapter 4, Environmental Consequences which describes: a) practices needed to address each problem, b) kinds of effects caused by the practices, and c) specific effects that would occur in response to the problem.

Standards of Measurement

Monitoring standards of measurement will be established for each item to be monitored. They include:

1) What is to be measured - activity, practices, outputs, effects
2) Unit of measure
3) Frequency of measure
4) Expected precision
5) Expected reliability
6) Technique or method

The frequency, precision, and reliability of sampling is based on the relative importance and identified needs. A variety of data collection techniques will be used. These techniques include:

- site specific observations by specialists,
- field assistance trips,
- general field observations,
- management attainment reporting system,
- formal management reviews on a scheduled basis,
- and discussions with other agencies and general public users.

The specific monitoring action program will be included as part of the Forest annual program of work. This annual program includes the details on the schedule of monitoring actions, specific locations, costs, and responsibilities.

EVALUATION

Evaluation determines how well actual results are meeting Forest Plan direction. Information obtained through monitoring is analyzed with respect to the Forest Plan implementation.

Requirements

A review and evaluation of monitoring results will be conducted by the Forest Supervisor on an annual basis. The review and evaluation will focus on the monitoring requirements using input from the various monitoring techniques.

Results and Recommendations

Based on the results of the evaluation, the Forest Interdisciplinary Team will make recommendations to the Forest Supervisor on proposed amendments, revisions, or changes in management direction to the Forest Plan. The evaluation results and recommendations will usually be within the following categories:

EVALUATION RESULTS AND RECOMMENDATIONS

	Evaluation Results	Recommendation
1)	Management Problems, ICO's are being resolved.	No Action.
2)	Practices or standards/guidelines are applied in an unacceptable manner.	Revise management direction or provide training.
3)	An allocation, practice, standard/ guideline is not responsive to a management problem or ICO's or it creates unacceptable, adverse effects, but does not cause a major change in Plan intent.	Amend Plans and/or Standards & Guidelines.
4)	Unit costs are too low to maintain quantity and quality of output.	Amend unit costs. Program funds to accomplish backlog that will accumulate during adjustment.
5)	Budget insufficient to implement Plan, but future outlook favorable; schedule affected by natural catastrophe or not compatible with land suitability but can still be adjusted to approximate planned objectives.	Amend schedule of projects. Program future funds to accomplish backlog that will accumulate during adjustment.
6)	New information seriously affects assumptions; ICO's not being resolved; emerging ICO identified; an allocation of land, a practice, or standards or guidelines do not resolve ICO and seriously affect multiple resources or management prescriptions; schedule of projects cannot be adjusted during Plan period to meet Plan objectives due to natural catastrophy or land suitability problems. Significant change in demand for goods, services, and uses causes adjustments in schedules or management direction.	Consider significant Amendment of Plan. Recommend to Regional Forester.
7)	Evaluation inconclusive.	Initiate more data collection or research.

Annual Evaluation Report

The Forest Supervisor's decisions resulting from monitoring, review, and analysis will be documented in an Annual Evaluation Report and maintained for future use in amending or revising the Forest Plan.

During revision of the Forest Plan, normally from ten to fifteen years after the plan is final, an overall evaluation of the annual reports will be used as one measure to analyze the management situation and identify a need to change. This anaysis will be submitted to the Regional Forester for review prior to revision of this plan. This same procedure will be used for significant amendments to the plan that may require the filing of an Environmental Impact Statement.

C. AMENDMENTS AND REVISION

The following Federal regulations provide information about the conditions that could lead to amendments and revisions.

36 CFR 219.10 (e) - Plan Implementation. As soon as practicable after approval of the plan, the Forest Supervisor shall ensure that, subject to valid existing rights, all outstanding and future permits, contracts, cooperative agreements, and other instruments for occupancy and use of affected lands are consistent with the plan. Subsequent administrative activities affecting such lands, including budget proposals, shall be based on the plan. The Forest Supervisor may change proposed implementation schedules to reflect differences between proposed annual budgets and appropriated funds. Such scheduled changes shall be considered an amendment to the forest plan, but shall not be considered a significant amendment, or require the preparation of an environmental impact statement, unless the changes significantly alter the long-term relationship between levels of multiple-use goods and services projected under planned budget proposals as compared to those projected under actual appropriations.

36 CFR 219.10 (f) - Amendment. The Forest Supervisor may amend the forest plan. Based on an analysis of the objectives, guidelines, and other contents of the forest plan, the Forest Supervisor shall determine whether a proposed amendment would result in a significant change in the plan. If the change resulting from the proposed amendment is determined to be significant, the Forest Supervisor shall follow the same procedure as that required for development and approval of a forest plan. If the change resulting from the amendment is determined not to be significant for the purposes of the planning process, the Forest Supervisor may implement the amendment following appropriate public notification and satisfactory completion of NEPA procedures.

36 CFR 219.10 (g) - Revision. A forest plan shall ordinarily be revised on a 10-year cycle or at least every 15 years. It also may be revised whenever the Forest Supervisor determines that conditions or demands in the area covered by the plan have changed significantly or when changes in RPA policies, goals, or objectives would have a

significant effect on forest level programs. In the monitoring and evaluation process, the interdisciplinary team may recommend a revision of the forest plan at any time. Revisions are not effective until considered and approved in accordance with the requirements for the development and approval of a forest plan. The Forest Supervisor shall review the conditions on the land covered by the plan at least every 5 years to determine whether conditions or demands of the public have changed significantly.

An annual summary of Forest Plan amendments will be prepared and incorporated into the Plan as additions and made available to interested parties. This is to insure that the Plan will remain current, as is intended by the monitoring and evaluation, amendment, and revision provisions of the Regulations. September 30 is the annual target date for the completion of these Forest Plan Amendment summaries.

This Forest Plan will be revised when necessary but no later than 15 years from the date the plan legally goes into effect.

APPENDIX A

Glossary

APPENDIX A

GLOSSARY

Activity Fuels: Fuels that have been directly generated or altered by management action.

Allegheny Hardwoods: Forest type containing Black Cherry, Red Maple, Yellow Poplar, White Ash, and Sugar Maple.

Analysis Area: The smallest unit of land recognized in the analysis process or in the FORPLAN model. Each acre of a given analysis area has similar productivity, response to treatment, and cost of treatment. Analysis areas divide the Forest into units which help us analyze the planning problems.

Analysis of Management Situation (AMS): A determination of the ability of the planning area to supply goods and services in response to society's demand for those goods and services.

Aquatic: Pertaining to standing and running water in streams, rivers, lakes and reservoirs.

Allowable Sale Quantity: The quantity of timber that may be sold from the area of suitable land covered by the Forest Plan during a time period specified by the plan. This quantity is usually expressed on an annual basis as the average annual allowable sale quantity.

Arterial Roads: These roads provide service to large land areas and usually connect with public highways or other forest arterial roads to form an integrated network of primary travel routes. Their location and standard are often determined by a demand for maximum mobility and travel efficiency, rather than specific resource management service. They are usually developed and operated for long-term land and resource management purposes and constant service.

B/C Values: See "Benefit/Cost Ratio."

Background (Visual Distance Zone): The distance part of a landscape; surroundings, especially those behind something, providing harmony and contrast; area located from two miles to infinity from the viewer.

Basal Area: Measurement of how much of a site is occupied by trees. It is determined by estimating the DBH of all the trees in the area; that is, to estimate the total cross-section area of all the trees at breast height (4.5 feet above the ground).

Base Sale Schedule: A schedule in which the planned sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceeding decade of the planning period and this planned sale and harvest for any decade is not larger than the long-term sustained-yield capacity. (This definition expresses the principle of non-declining flow.)

Benchmark: A set of estimates used to establish standards by which to compare alternatives in detail. Benchmark alternatives include minimum level, maximum resource levels and maximum present net value levels.

Benefit/Cost Ratio: The total discounted benefits of any activity divided by the total discounted cost.

Best Management Practices (BMPs): Standards and guidelines which reduce nonpoint source pollution.

Big Game: The species of large animals that are hunted, such as deer.

Biological Potential: The maximum production of a selected organism that can be obtained under optimum management.

Board Foot: An amount of wood equivalent to a piece 12" by 12" by 1".

Buffer Filter Strip: A designated land or water area, along the perimeter of some land use, where use is regulated so as to restrict, absorb, or otherwise preclude or control unwanted development or other intrusions into areas beyond the buffer.

Burning Prescription: Written direction stipulating fire environment conditions, techniques and administrative constraints necessary to achieve specific resource management objectives by use of fire on a given area of land.

CAPs or CAP: Cherry, Ash and Poplar (See DEIS, Appendix III,C. for more information).

CEQ: Council of Environmental Quality.

CFR: Code of Federal Regulations.

CMAI: See "Culmination of Mean Annual Increment."

Canopy: The more or less continuous cover of branches and foliage formed collectively by the crown of adjacent trees and other woody growth.

Carrying Capacity	The maximum number of animals that a habitat can sustain while maintaining the ecosystem in a healthy, vigorous condition.
Character Type:	A landscape term used to classify land by its distinguishing visual characteristics such as land form, rock formations, water forms, and vegetative patterns.
Clearcutting:	A regeneration method used to establish even-age stands whereby all trees are removed in one harvest. For a detailed description of clearcutting, see the environmental consequences section of Chapter 4 of the EIS, page .
Collector Road:	Serves smaller land areas than a Forest arterial road and is usually connected to a Forest arterial road or public highway. Collects traffic from Forest local roads and/or terminal facilities. The location and standard are influenced by long-term multi-resource service needs as well as travel efficiency. May be operated by either constant or intermediate service, depending on land use and resource management objectives for the area served by the facility.
Commercial Forest Land:	Forest land that is producing or is capable of producing crops of industrial wood and (1) has not been withdrawn by Congress, the Secretary, or the Chief; (2) existing technology and knowledge is available to ensure timber production without irreversible damage to soils, productivity, or water conditions; and (3) 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.
Common (Variety Class B):	Refers to prevalent, usual, or widespread landscape variety within a character type. It also refers to ordinary or undistinguished visual variety.
Concession Permit:	A permit which authorizes private individuals or corporations to operate Forest Service-owned facilities as a commerical profit-making venture.
Conifer:	Any of predominantly evergreen, cone-bearing trees, such as pine, spruce, hemlock, or fir.
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 stacking round or split wood. A standard cord is 4' by 4' by 8' or 128 cubic feet. A standard cord may contain 60-100 cubic feet of solid wood depending on the size of the pieces and the compactness of the stacks.
Corridor:	A linear strip of land identified for present or future location of transportation or utilities rights-of-way within its boundaries.
Cost Coefficients:	Values which relate an acre of land to a particular dollar cost in a specific period of time.
Cost Efficiency:	The usefulness of specified inputs (cost) to produce specified outputs (benefits). In measuring cost efficiency, some outputs (such as environmental, economic, or social impacts) are not assigned monetary values but are achieved at specified levels in a least cost manner.
Cubic Foot:	Common unit of measure for wood volume equivalent to a 12 inch cube.
Culmination of Mean Annual	Increment (CMAI): The age at which the average annual growth is greatest for a stand of trees. Mean annual increment is expressed in cubic feet and is based on expected growth according to the management intensities and utilization standards assumed in accordance with 36 CFR 219.16(a)(2)(i) and (ii). The culmination of mean annual increment calculation includes yields from the regeneration harvest, as well as yields from any planned intermediate harvests. The utilization standards in the 2400 section of the Forestwide Standards and Guidelines apply.
Cultural Resource:	The physical remains of human cultural systems in places or sites of importance in human history or prehisotry.
DBH:	Diameter at Breast Height (4.5 feet).
Demand Trends:	The expected future need or desire for outputs, services, and uses.
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 the Forest's long-term sustained yield capacity.

Design Criteria — Those requirements (such as resource management objectives, road management objectives, safety requirements, and traffic characteristics) that govern selection of elements and standards for a road or section of road.

Design Standards — The definitive lengths, widths, and depths of individual elements (such as 14-foot traveled way, 2-foot shoulders, 3/4:1 cut slops, 3-foot curve widening, and 6 inches of crushed aggregate).

Developed Recreation: — Recreation requiring facilities that result in concentrated use of an area. Examples are campgrounds and picnic areas. Facilities might include roads, parking lots, picnic tables, toilets, drinking water, and toilet buildings.

Development Scale: — The various levels of site modification or kinds of facilities permitted at a recreation site. Five levels are described:

Level I - Minimum Site Modification: Rustic or rudimentary improvements designed for protection of the site rather than comfort of the users. Use of synthetic materials excluded. Minimum controls are subtle. No obvious regimentation. Spacing informal and extended to minimize contacts between users. No motorized access.

Level 2 - Little Site Modification: Rustic or rudimentary improvements designed primarily for protection of the site rather than comfort of the users. Use of synthetic materials avoided. Minimum controls are subtle. Little obvious regimentation. Spacing informal and extended to minimize contacts between users. Motorized access provided or permitted. Primary access over primitive roads. Interpretive services informal, almost subliminal.

Level 3 - Site Modification Moderate: Facilities about equal for protection of site and comfort of users. Contemporary/rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about three family units per acre. Primary access may be over high standard roads. Interpretive services informal, but generally direct.

Level 4 - Site Heavily Modified: Some facilities designed strictly for comfort and convenience of users. Luxury facilities not provided. Facility design may incorporate synthetic materials. Extensive use of artificial surfacing of roads and trails. Vehicular traffic control usually obvious. Primary access usually over paved roads. Development density three to five family units per acre. Plant materials usually native. Interpretive service often formal or structured.

Level 5 - High Degree of Site Modification: Facilities mostly designed for comfort and convenience of users. Usually includes flush toilets; may include showers, bathhouses, laundry facilities, and electrical hookups. Synthetic materials commonly used. Formal walks or surfaced trails. Regimentation of users is obvious. Access usually by high-speed highways. Development density five or more family units per acre. Plant materials may be foreign to the environment. Formal interpretive services usually available. Designs formalized; architecture may be contemporary. Mowed lawns and clipped shrubs not unusual.

Dispersed Recreation: In contrast to developed recreation sites such as campgrounds, picnic grounds, resorts, and recreation residences, dispersed recreation areas are the lands and waters under Forest Service jurisdiction which are not developed for intensive recreation use. Dispersed areas include general undeveloped areas, roads, trails, and water areas not treated as developed sites.

Distance Zones: Areas of landscapes denoted by specified distances from the observer. Used as a frame of reference in which to describe landscape characteristics or human activites and described as foreground (fg), middleground (mg), or background (bg).

Distinctive (Variety Class A): Refers to unusual and/or outstanding landscape varieties that stand out from the common features in the character type.

Distribution System: Transmission lines, pipelines, utility lines and the like.

Diversity: The relative degree of abundance of wildlife species, plant species, communities, habitats, or habitat features per unit of area. The degree of diversity is measured relative to those levels of abundance which would be expected to occur under natural stand conditions.

EA: Environmental Assessment.

Ecological Land Type (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 (sere) of plant succession, an ELT is usually occupied by a predictable and relatively uniform plant community. Typical size generally ranges from about ten to a few hundred acres.

Ecosystem: The system formed by the interaction of groups of organisms and their environment.

Endangered Species (E): Species listed as nationally in danger of extinction throughout all or a significant portion of their ranges by current Federal Register Final Rule-making.

Endemic: *Native or confined to a certain region; having comparatively* restricted distribution.

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 a "finding of no significant impact," and (2) aid in agency's compliance with the NEPA when no environmental impact statement is necessary (40 CFR 1508.9a).

Environmental Effect: 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.

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.

Erosion: The wearing away of the land's surface by running water, wind, ice, and other geological agents. It includes detachment and movement of soil or rock fragments by water, wind, ice or gravity.

Even-aged Silvicultural System: The combination of actions that result in the creation of stands in which trees of essentially the same age grow together. A stand is considered even-aged if the difference in age between the oldest and youngest trees of the managed stand does not exceed 20 percent of the length of the rotation.

Even-flow: Continuous supply of products over a given time period.

Existing Visual Conditions (EVC): The present state of visual alteration which is measured in six degrees (untouched, unnoticed, minor disturbance, disturbed, major disturbance, drastic disturbance) of deviation from the natural appearing landscape.

FSM: Forest Service Manual.

Fauna: The animals of a given region or period.

Filter Strip: A designated area along streams where the sediment filtering ability of the forest floor is maintained.

Financial Maturity: Term generally used to refer to a specific timber rotation age where the total present net value of the analysis area or timber stand reaches the maximum.

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.

Fire Management Area: One or more parcels of land with clearly defined boundaries and with established fire management direction which is responsive to land and resource management goals and objectives.

Fire Management/Effectiveness Index (FMEI): The index value measures effectiveness of annual fire management operations programs. It is a planning, attainment, analysis, and evaluation tool for both annual and long-term programs. Measured in dollars per thousand acres protected, the objective is to minimize the index value.

Floodplain: Low land and relatively flat areas joining inland and coastal waters, including debris cones and flood prone areas of off-shore islands. The minimum area included is that subject to a one percent (100-year recurrence) or greater chance of flooding in any given year.

Flora: The plants of a given region or period.

Forage: All nonwoody plants (grass, grass-like plants and forbs) and portions of woody plants (browse) available to domestic livestock and wildlife for food. Only a portion of a plant is available for forage if the plant is to remain healthy.

Foreground (Visual Distance Zone): That part of a scene, landscape, etc., which is nearest to the viewer and in which detail is evident, usually up to one-quarter mile from the viewer.

Forest Highway (Legal Definition): 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.)

Forest Land: Land at least ten percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for nonforest use.

Forest Land - Not Appropriate: Lands not selected for timber production in the Forest plan alternative due to (a) the multiple-use objectives for the alternative precluded timber production; (2) other management objectives for the alternative limit timber production activities to the point where management requirements set forth in 36 CFR 219.27 cannot be met; and (3) the lands are not cost-efficient, over the planning horizon, in meeting Forest objectives that include timber production. Lands not appropriate for timber production shall be designated as unsuitable in the preferred alternative and Forest plan.

Forest Land - Not Suited: Forest land that is not managed for timber production because (1) the land has been withdrawn by Congress, the Secretary, or the Chief; (2) the land is not producing or capable of producing crops of industrial wood; (3) technology is not available to prevent irreversible damage to soils, productivity, or watershed conditions; (4) there is no reasonable assurance that lands can be adequately restocked within five years after final harvest, based on existing technology and knowledge, as reflected in current research and experience; (5) there is, at present,

a lack of adequate information to respond to timber management activities; or (6) timber management is inconsistent with or not cost efficient in meeting the management requirements and multiple-use objectives specified in Forest plans.

Forest Land - Suited: Land that is to be managed for timber production on a regulated basis.

Forest Land - Tentatively Suited: Forest land that is producing or is capable of producing crops of industrial wood and (1) has not been withdrawn by Congress, the Secretary, or the Chief; (2) existing technology and knowledge is available to ensure timber production without irreversible damage to soils, productivity, or watershed conditions; (3) 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 harvest; and (4) adequate information is available to project responses to timber management activities.

Forest Plan: A long-range plan for managment 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-wide Standards and Guidelines: 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.

Forest Type: A descriptive term used to group stands of similar character, species composition, and other ecological factors.

FORPLAN: A specific linear program model designed for use in Forest Service planning.

Fuel Break: A strategically located strip, normally 100-400 feet wide, where fuel has been reduced or modified; used as a safe location from which firefighters can attack and control a fire.

Fuel Management: The practice of planning and executing treatment or control of any vegetative material which adversely affects meeting fire management direction based upon resource management goals and objectives.

Fuel Treatment:	A rearrangement or disposal of natural or activity fuels to reduce the fire hazard. Fuels are defined as those vegetative materials (living or dead) consumable by fire.
Fuels:	Wildland vegetation which can burn. While usually referring to above-ground living and dead wildland surface vegetation; *roots and organic soils, such as peat, are often included.*
Game Species:	Wild animals hunted for sport or food.
Goods and Services:	The various outputs, including on-site uses, produced by forest and rangeland resources.
Group Selection Cutting:	A cutting method used in uneven-aged management. It involves the removal of small groups of trees to meet a predetermined goal of size, distribution, and species in the remaining stands.
Growing Stock Level:	Expressed in either stems per acre or square feet of basal area of timber growing on any area.
Guideline:	An indication or outline of policy or conduct.
Habitat:	The place where animals live (i.e., water for beaver, fish and aquatic insects; rocks for bats and some bird species; or forested areas for many mammals, birds and reptiles).
Hardwood:	A broad-leaved flowering tree, as distinguished from a conifer. Trees belonging to the botanical group of angiospermae.
Harvest (Timber Harvest):	Cutting and removal of trees from the forest for utilization.
Herbicide:	A chemical compound used to kill or control growth of undesirable plant species.
High Quality Hardwoods:	Hardwood trees or stands that will yield high-value timber products such as face veneer, knot-free lumber, furniture or specialty product stock, and flooring.
IOC:	Abbreviation for the term "Issues, Opportunities and Concerns."
Implementing Regulations:	Regulations generated by an agency to implement an Act of Congress; i.e., 36 CFR 219 contains implementing regulations for RPA and NFMA.

Indicator Species: A species whose presence in a certain location or situation at a given population level 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; not introduced by humans.

Informed Public Consent: Attaining substantial effective agreement on a course of action through various public information and involvement projects.

Insecticide: An agent used to control insect populations.

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: The comprehensive systems approach to achieving economical pest control in an environmentally acceptable manner. The individual components of integrated pest management in forestry include cultural, mechanical, manual, prescribed fire, biological, chemical, and regulatory means.

Interdisciplinary Team (ID): 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.

Intermediate Harvest: Any removal of trees from an even-aged stand between the time of its formation and the regeneration cutting.

Intermittent Stream: A stream that only flows during periods of the year when it receives flow from intermittent groundwater sources or surface water, such as rain or snowmelt.

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.

Intolerant Species: Those plant species that do not grow well in shade.

Issue: A subject or question of widespread 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 for reforestation and timber stand improvement work on areas cut over by a timber sale.

Land Adjustment: Changing National Forest System landownership through acquisition, exchange or disposal of land or interests in land.

Land Allocation: The commitment of a given area of land and its resources to the compatible combination of goods, services and uses specified by a management prescription.

Land Condition: The state of a given area in terms of the quality of its physical and biological character and use. Land conditions can be existing, future or desired.

Land Management: An intentional process of planning, organizing, programming, coordinating, directing, and controlling land use actions.

Land Type Group: Broad groupings of land forms (moderate slope, plateau, steep slope, and bottom) with differences in management costs and resource production potential.

Land Use: The occupation or reservation of land or water area for any human activity or any defined purposes; in this EIS, the terms "use" and "land use" are interchangeable.

Landline: Property boundaries located on the National Forest.

Leasable Minerals: Coal, phosphate, sodium, potassium, oil, oil shale, native asphalt, solid and semi-solid bitumen, bituminous rock, sulfur and gas.

Legal Administrative Status: Identifies specific legal or administrative requirements which may restrict management options on an area.

Linear Program Model: A mathematical method used to determine the best use of resources to achieve a desired result and limitations on available resources that can be expressed in the form of equations.

Linear Programming: A mathematical technique for determining the effects of alternative resource allocations.

Litter: 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.

Local Road: Connect terminal facilities with Forest collector and 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.

Long-term: Action governed by the Forest Plan generally taking place over a period longer than ten years from the present.

Long-term Sustained Yield Capacity (LTSYC): 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.

M: 1,000 units.

MBF: One thousand board feet of timber.

MIH Codes: Management Information Handbook codes.

MM: 1,000,000 units.

MMBF: One million board feet of timber.

Maintenance Level: A formally-established criterion which prescribes the intensity of maintenance necessary for the planned use of a road.

Maintenance Level 1: This level is basic custodial care as required to protect the road investment and to see that damage to adjacent lands and resources is held to a minimum. Level 1 maintenance often requires an annual inspection to determine work needed, if any, to keep drainage functional and the road stable. This level is the normal prescription for roads that are not open to traffic. Level 1 is to maintain drainage facilities and runoff patterns.

Maintenance Level 2: This level is used on roads where management requires that the road be open for limited passage of traffic. Traffic is normally minor, usually consisting of one or a combination of administrative uses, permittee use, or other specialized traffic.

Maintenance Level 3: This level is used on roads which are open to public traffic and generally applies when use does not exceed 15 vehicles average daily traffic (ADT). ADT should be used as a guide in determining the maintenance level but not as the sole criterion. A road may be used by only one or two vehicles a day for most of the year; however, during a brief period, such as hunting season, the road use may increase to 20 or 30 vehicles a day. Total traffic types and planned land use are important criteria for selecting a maintenance level. The road is maintained for safe and moderately convenient travel, suitable for passenger cars.

Maintenance Level 4: This level generally applies when use of a road is between 15 and 100 vehicles ADT (see comment concerning ADT under Maintenance Level 3). At this level, more consideration is given to the comfort of the user. These roads are frequently surfaced with aggregate material, but some routes may be paved to meet economical considerations of the limited aggregate resource and surface replacement cost factors.

Maintenance Level 5: This level is generally maintained for use of 100 or greater vehicles ADT (see comment concerning ADT under Maintenance Level 3). Roads in this category include both paved and aggregate surfaces. Safety and comfort are important considerations. Abrupt changes in maintenance will be posted to warn a traveler until these deficiencies are corrected.

Management Area: A land area that has common management direction to achieve a common goal. The entire Forest is divided into management areas. All are described, and policies and prescriptions relating to their use are listed.

Management Concern: A matter of importance to the management of National Forest System lands which is identified by sources within the agency.

Management Direction: A statement of multiple use and other goals and objectives, the management prescriptions, and the associated standards and guidelines for governing them.

Management Indicator Species: See "Indicator Species."

Management Intensity: The management practice or combination of management practices and their associated costs designed to obtain different levels of goods and services.

Management Opportunity: A statement of general actions, measures, or treatments that address the public issues or management concern in a favorable way.

Management Practice: A specific action, measure or treatment.

Management Prescription: Management practices selected and scheduled for application in a specific area to attain multiple-use and other goals and objectives. At the Forest level for a management area, a management prescription includes the management practices selected and scheduled, the description of the desired future condition of the land, and the standards and guidelines necessary to control the management practices and achieve and maintain the desired future conditions.

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.

Maximum Modification (MM): A visual quality objective meaning human activity may dominate the characteristic landscape but should appear as a natural occurrence when viewed as background area.

Middleground (Visual Distance Zone): That part of a scene or landscape which extends from the foreground zone to 1/2 to 2 miles from the observer. Texture is discernible at that distance.

Mineral Development: To open up a mineralized seam, ore body, or deposit for production.

Mineral Exploration: A search for mineral materials.

Mineral Materials: Common varieties of bedrock, sand, gravel, and similar material.

Minimal (Variety Class B): Refers to little or no visual variety in the landscape. Monotonous or below average compared to the common features in the character type.

Minimal Level Management: The management strategy that would meet only the basic statutory requirements of administering unavoidable non-discretionary land uses, preventing damage to adjoining lands of other ownerships, and protecting the life, health, and safety of incidental users.

Modification (M): A visual quality objective meaning human activity may dominate the characteristic landscape but must, at the same time, utilize naturally-established form, line, color and texture. It should appear as a natural occurrence when viewed in foreground or middleground.

Motorized Use: Land uses requiring or largely dependent on motor vehicles and roads.

Multiple Use: The management of all the various renewable surface resources of the National Forests 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 use to conform to changing needs and conditions; that some land would be used for less than all of the resources; in a harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

NEPA: National Environmental Policy Act.

NFMA: National Forest Management Act.

National Register of Historic Places: A listing maintained by the National Park Service of areas which have been designated as being of historical significance.

Natural: Existing and/or formed by nature. Not artificial.

Net Public Benefits: The overall long-term value to the nation of all outputs and positive effects (benefits) less all associated inputs and negative costs (costs) whether they can be quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria, rather than by 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. (Federal Register/Vol. 47, No. 190/9/30/81/219.3 Definitions and Termination and Terminology, page 43039).

Net Value Change (or Net Resource Value Change): The sum of the changes resulting from increases (benefits) and decreases (damages) in the value of outputs from the land area affected as a consequence of fire.

No Action Alternative: The most likely condition expected to exist in the future if current management direction would continue unchanged.

Non-declining Yield: A level of timber production planned so that the planned sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceeding decade.

Non-forest Land: Lands never having or incapable of having 10 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-market Value (Non-market Output): Goods, services and uses which are not commonly bought or sold in existing markets. For use in comparing alternatives, they are assigned dollar values derived from willingness-to-pay analyses. See also "Intangible Values."

Non-motorized Use: Land uses requiring or largely dependent on isolation from motor vehicles and/or roads.

Nonpoint Source Pollution: Pollution generated by dispersed activities on the land, such as road construction, some silvicultural practices, and recreation site development.

Northern Hardwoods: Forest type similar to Allegheny Hardwoods but containing less Black Cherry and Sugar Maple.

OGM: Acronym for "oil, gas, and minerals."

Objective: A clear and specific statement of planned results to be achieved within a stated time period. The results indicated are those which are designed to achieve the desired condition represented by the goal. An objective is

	measureable and implies precise time-phase steps to be taken and resources to be used which, together, represent the basis for defining and controlling the work to be done.
Obliteration:	The returning of the land occupied by a road or trail to production.
Occupancy Trespass:	The illegal occupancy or possession of National Forest land.
Off-road vehicle (ORV):	Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, swampland, or other natural terrain; except that such term excludes: (a) any registered motor boat; (b) any fire, military, emergency, or law enforcement vehicle when used for emergency purposes, and any combat or combat support vehicle when used for national defense purposes; and (c) any vehicle use expressly authorized by the respective agency head under a permit, lease, or contract.
Old Growth:	A stand of trees older than normal rotation age for the type that provides important habitat conditions not normally found in younger stands.
Opportunity Costs:	The value of benefits foregone or given up due to the effect of choosing another management alternative that either impacts 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 an acre of land to a particular quantity of output in a specific period of time.
Overstory:	Relative to even-aged stands: the mature trees which overtop the younger trees.
PAOT:	See "Persons at One Time."
Partial Retention (PR):	A visual quality objective which, in general, means human activity may be evident but must remain subordinate to the characteristic landscape.
Perennial Stream:	Streams that flow throughout the year.
Persons at One Time:	A creation/capacity measurement term indicating the number of people that can comfortably occupy or use a facility or area at one time.

Planning Area:	The area of the National Forest System covered by a Forest Plan.
Planning Criteria:	Criteria prepared to guide the planning proces and management direction.
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.
Pole Timber:	As used in timber survey, a size class definition: trees 6.0 to 10.9 inches at DBH. As used in logging operations, trees from which pole products are produced, such as telephone poles, pilings, etc.
Post Market:	The market of trees to be used as fence posts; normally four to ten inches in diameter and six to ten feet long.
Pothole:	A small pond, usually less than .1 acre in size, excavated by a bulldozer, which provides nesting habitat and escape cover for ducks (such as mallards, teal, wood ducks and black ducks).
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.
Prescribed Fire:	A fire burning under specified conditions that will accomplish certain planned objectives. The fire may result from either planned or unplanned ignitions. Use of unplanned ignitions (such as allowing a lightning fire to burn) for this purpose must have prior approval by the Regional Forester.
Prescription:	See "Management Prescription."
Present Net Value (PNV):	Discounted benefits less discounted costs associated with providing all outputs to which monetary values can be assigned.
Preservation (P):	A visual quality objective that provides for ecological change only.

Prime Habitat:	The best of the most critical habitat for individual species.
Primitive ROS Class:	The classification of the recreation opportunity spectrum (ROS) characterized by an essentially unmodified environment, where trails may be present but structures are rare, and where probability of isolation from the sights and sounds of humans is extremely high.
Public Issue:	A subject or question of widespread public discussion or interest regarding management of National Forest System lands and identified through public participation.
Pulpwood:	The wood from trees used to make paper.
Q-Factor:	Q-Factor is a means of describing the distribution of tree size classes in an uneven-aged stand. It is the ratio of trees in successive 2-inch diameter classes. For example, a "q" of 1.5 means there are 1.5 times as many 10-inch trees as there are 12-inch trees; 1.5 times as many 12-inch trees as there are 14-inch trees, etc. The lower the "q" ratio, the more large trees there are in proportion to small trees. Ratios of 1.3 to 1.5 are recommended for timber production on the Allegheny National Forest. Ratios at the lower end of this range are better where the objective is to provide large trees to benefit aesthetics.
ROS Class:	See "Recreation Opportunity Spectrum."
RPA:	Forest and Rangelands Renewable Resource Plananing Act of 1974.
RPA National Assessment:	A document compiled by the Secretary of Agriculture every ten years which contains facts and analyses to develop and guide public and private forest and rangeland policies and programs.
RPA National Program:	A document compiled by the Secretary of Agriculture every five years which outlines Forest Service programs for National Forest System management, cooperative assistance to states and private landowners, and research.
RVD:	See "Recreation Visitor Day."
Raptor:	Predatory bird. Includes hawks, owls and eagles.

Reclamation: Returning disturbed lands to a form and productivity that will be ecologically balanced and in conformity with the predetermined land management plan.

Record of Decision: The documentation of what the decision was, the date, and a statement of reasons for the decision.

Recreation Opportunity Spectrum (ROS): A system of classifying the range of recreational experiences, opportunities and settings available on a given area of land. Classifications are:
Primitive (P)
Semi-primitive Motorized (SPM)
Semi-primitive Non-motorized (SPNM)
Roaded Natural (RN)
Rural (R)
Urban (U)

Recreation Residence Site: House or cabin permitted on National Forest System land for the recreational use of the owner, but not as a primary residence.

Recreation Visitor Day (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 equal combination.

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 diversion in the past.

Reforestation: The natural or artificial restocking of an area with trees.

Reforestation Backlog: Areas that need to have trees re-established. This can be done by planting, seeding, or preparing the site for natural regeneration.

Regeneration: (1) The actual seedlings and saplings existing in a stand. (2) The act of establishing young trees naturally or artifically.

Regeneration Cut: Removal of trees with the intention of establishing a new crop of seedlings.

Regulated: Forest land managed for timber production under sustained yield principles.

Removal Cut: See "Shelterwood Cut." Final stage of shelterwood harvest system.

Research Natural Area: Land areas classified by order of the Chief of the Forest Service containing natural plant communities that have not been modified by humans and which are protected and studied to obtain more information about the ecosystem.

Reserved and Outstanding Mineral Rights: Privately-owned rights to develop and extract subsurface minerals from National Forest lands.

Resort: A large recreation site which provides support facilities for many recreation opportunities, both on and off site. These sites provide facilities for parking, eating, overnight accommodations, equipment rental, supplies, gasoline, meeting rooms, and lounges. An example of a privately-financed resort on National Forest land is a ski area in Colorado. These areas are usually financed and operated by a private corporation under permit to the USDA, Forest Service.

Rentention (R): A visual quality objective which, in general, means human activities are not evident to the casual forest visitor.

Revegetation: The re-establishment of a plant cover. This may take place naturally, through the reproductive process of existing flora; or artificially, through the direct action of humans.

Riparian Area; A term used by the Forest Service which includes stream channels, lakes, immediately adjacent terrestial ecosystem, flood- plains, and wetlands.

Riprap: Material such as rock, logs, and concrete which are placed along a water course to stabilize the banks.

Roaded Natural ROS Class: A classification of Recreation Opportunity Spectrum that characterizes a predominantly natural environment with evidence of moderate permanent alternate resources and resource stabilization. Evidence of the sights and sounds of humans is moderate, but in harmony with the natural environment. Opportunities exist for both social interaction and moderate isolation from human sights and sounds.

Rotation: The period of time (for stands under even-aged management) between the initial establishment of a stand of timber and the time when it is considered ready for cutting and regeneration.

Rotation, Pathological: The maximum rotation through which species may be grown and yet prevent undue loss from disease. Generally for stands, this is the point where total volume per acre starts to significantly decrease from disease.

Roundwood: Trees that are used without being milled (fence posts, telephone poles, pulpwood, etc.).

Rural ROS Class: A classification of Recreation Opportunity Spectrum that characterizes an area on which the sights and sounds of humans are prevalent and the landscape has been considerably altered by human works.

Salvage: Dead or dying trees which occur in excess of those needed for wildlife, aesthetics, or other purposes. These trees are harvested for production.

Sapling: As used in timber survey, a size class definition: trees 1.0 to 4.9 inches at DBH (diameter at breast height).

Sawtimber: As used in timber survey, a size class definition: trees larger than 11.0 inches at DBH.

Scarification: Loosening of top soil in open areas to prepare for regeneration by direct seeding or natural seed fall.

Scenic Easement: Relative to the Wild and Scenic Rivers Act (P.L. 93-621) 1975, and by definition of the Act: the right to control the use of land (including the air space above such land) within the authorized boundaries of the component of the Wild and Scenic River System, for the purpose of protecting the natural qualities of a designated wild, scenic or recreation river area; but such control shall not affect, without the owner's consent, any regular use exercised prior to the acquisition of the easement.

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 road.

Sediment: Solid materials, both mineral and organic, that are in suspension, are being transported, or have been moved from their site of origin by air, water, gravity, or ice, and have come to rest on the earth's surface either above or below sea level.

Sediment Yield: Proportion of eroded solids washed into a water course.

Seed Cut: See "Shelterwood Cut." Preparatory phase of shelterwood harvest system.

Seedbed: In natural regeneration, the soil or forest floor in which seed falls. In nursery practices, prepared area which is seeded.

Seedling: As used in timber survey, a size class definition: trees less than one inch at DBH.

Selection Harvest Cut: A system which removes trees individually in a scattered pattern from a large area each year. (1) Individual tree selection cutting involves the removal of selected trees of all size classes on an individual basis. Regeneration is established under the partial shade of the overstory canopy after each cut. (2) Group selection cutting involves the removal of selected trees of all size classes from groups a fraction of an acre to two to three acres in size. Regeneration occurs in the groups under conditions similar to those found in small clearcuts. For a detailed description of selection harvest, see the environmental consequences section of Chapter 4 of the Final EIS.

Semi-primitive Motorized ROS Class: A classification of Recreation Opportunity Spectrum characterized by moderately dominant alterations by humans, with strong evidence of permanent roads and/or trails.

Semi-primitive Non-motorized ROS Class: A classification of the Recreation Opportunity Spectrum characterized by few and/or subtle modifications by humans and with a large probability of isolation from the signts and sounds of humans.

Sensitive Species (S): Species designated by the Regional Forester and included on the Eastern Region Sensitive Species list. The list will include those species identified by criteria below that are known, reported, or suspected to occur on or in the immediate vicinity of the planning area in the Eastern Region. The criteria are:

A. Species is in an officially-proposed status by Federal Register Proposed Rule-making.

B. Species is on a Notice of Review List in the Federal Register (e.g., CFR 45.242, December 15, 1980).

C. Species placed on the Region 9 Sensitive Plant or Animal list at the discretion of the Regional Forester if he deems that they require special management attention. Examples of situations that may cause such listings include:

1. Species common elsewhere, but a disjunct population of unique, popular, or scientific interest occurs on National Forest System land.

2. Locally endemic population in unique habitats that warrant continued monitoring or special management to assure jeopardy is not occurring and will not occur in the future.

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: 3 - Least sensitive

Shade Tolerant: A tree or other plant species having the capacity to grow without receiving direct sunlight.

Shelterwood Cutting: A cutting method used in even-aged management. It is the removal of a stand of trees through a series of cuttings designed to establish a new crop with seed and protection provided by a portion of the stand. For a detailed description of shelterwood cutting, see the environmental consequences section of Chapter 4 of the Final EIS.

Silviculture: A combination of actions whereby forests are tended, harvested and replaced.

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.

Skid Trail: Travelway used to drag or transport trees from the stump to the road.

Slash: Debris left after logging, pruning, thinning or brush cutting, and large accumulation of debris after wind or fire. It includes logs, branches, bark and stumps.

Snag: A standing dead tree, used by birds for nesting, roosting, perching, courting and/or foraging for food. There are many mammals that use snags for denning and foraging.

Softwood:	A coniferous tree. Trees belonging to the botanical group gymnosperme.
Soil Profile:	A progression of distinct layers of soil beginning at the surface which has been altered by normal soil-forming processes such as leaching, oxidation and accretion.
Spatial Feasibility:	The capacity of a management precription to be practically implemented on the ground.
Special Land Use;	The occupation or reservation of land or water for a particular land use or uses and excluding some other land uses.
Stand (Tree Stand):	An aggregation of trees occupying a specific area and sufficiently uniform in composition, age arrangement, and condition as to be distinguishable from the forest on adjoining areas.
Standard:	A principle requiring a specific level of attainment; a rule to measure against.
Stream:	A channel with defined bed and banks which carries enough water flow at some time during the year to flush out leaves.
Subsoil:	The lower layer of soil surface in which roots normally grow.
Subsurface Rights (Mineral Rights):	Ownership of or right to develop or recover the oil, gas or minerals resources under the land surface.
Succession:	An orderly process of biotic community development that involves changes in species, structure and community processes with time; it is reasonably directional and, therefore, predictable.
Suitable Timber Lands:	Forest lands to be managed for timber production.
Surface Rights:	Ownership of the surface of the land only; right to use the surface of the land on a regulated basis.
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.
TSI:	See "Timber Stand Improvement."

Temporary Road: A temporary use of the land for transportation purposes, usually constructed to serve a specific resource activity. On timber sales, these roads are constructed only for the purchaser's use. Occupied land is returned to resource production upon termination of the activity requiring its use.

Thinning: Cutting made in an immature crop or stand, primarily to accelerate the diameter increment (annual growth) of the residual trees, but also by suitable selection, to improve the average form of the trees that remain.

Threatened Species (T): Species listed as threatened nationally by current Federal Register Final Rule-making.

Tiering: Incorporating information contained in an Environmental Impact Statement (EIS), such as the Forest Plan EIS, by reference to subsequent environmental documents.

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.

Topsoil: The original or present dark-colored upper soil that ranges from a fraction of an inch to several feet deep.

Traffic Service Levels (TSL): Traffic service levels describe the significant traffic characteristics and operating conditions for a road. These levels are identified as a result of transportation planning activities. Objectives are established for each road and may be expressed in terms of the area and resources to be served, environmental concerns to be addressed, amount and types of traffic to be expected, life of the facility, and functional classification.

Table 3-2 of the Forest Plan Final EIS describes the Road Operational Characteristics for each of the form types or classes of TSL Roads.

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.

Uneven-aged Management: The course of actions involved in maintaining a forest or stand composed of intermingling trees that differ markedly in age. For a detailed description of uneven-aged management, see the environmental consequences section of Chapter 4 of the Final EIS.

Unregulated (Pre-1980 Terminology): Forest land that is suitable and available, but not organized for timber production under sustained yield principles; where timber harvest is permissible but is not a goal of management.

Urban ROS Class: A classification of the Recreation Opportunity Spectrum in which the natural setting is dominated by artificial structures, and human sights and sounds predominate.

Utility Corridor: A tract of land of varying width forming a passageway through which various commodities such as oil, gas and electricity are transported.

VIS: See "Visitor Information Service."

VQO: See "Visual Quality Objective."

Variety Class: A particular level of visual variety or diversity of landscape character; described as Distinctive (Class A), Common (Class B), or Minimal (Class C).

Vegetative Manipulation: The change from one vegetation type to another. It can be done using a tractor, chemicals or fire; usually done to increase forage for livestock. It can be a beneficial tool for wildlife management.

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 and/or the more diverse the species composition, the higher the degree of vertical diversity.

Visitor Information Service: A service provided to the public by National Forests in which the public is supplied with information regarding opportunities or activities on National Forest System land; ususally, but not restricted to, recreational opportunities.

Visual Absorption Capacity (VAC): Indicates the relative difficulty or cost of achieving VQOs; measures the land's capacity to absorb the visual impact of management activities.

Visual Distance Zone: Areas of landscapes denoted by specific distances from the observer. Used as a frame of reference in which to discuss landscape characteristics or human activities. The three zones are foreground (fg), middleground (mg), and background (bg).

Visual Quality Objective (VQO): A desired level of excellence based on physical and sociological characteristics of an area. Refers to degree of acceptable alteration on the characteristic landscape. The five levels are: Preservation, Retention, Partial Retention, Modification, and Maximum Modification.

WFUD: See "Wildlife and Fish User Day."

Water Yield: The total net amount of water produced on the Forest, including streamflow and groundwater recharge.

Watershed: The entire area that contributes water to a drainage or stream.

Wetlands: Areas with shallow standing water or seasonal to year-long saturated soils (includes bogs, marshes and wet meadows).

Whole Tree Removal: Felling and transporting the whole tree with its crown, and sometimes even its roots, for trimming and cross-cutting at a landing or mill.

Wild and Scenic River Corridor: See "Wild River" and Scenic River."

Wild River: Wild and Scenic Rivers Act usage: Those rivers and sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted.

Wilderness: The 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 humans are visitors who do 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 contined use will not change its unspoiled natural condition.

Wilderness Area: A Congressionally-designated tract of Federal land retaining its primeval character and influence without permanent improvements or human habitation. Management is intended to retain these characteristics.

Wildfire: Any fire that requires a suppression response.

Wildlife and Fish User Day (WFUD): Wildlife and fish 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 equal combination.

Wildlife Habitat: The sum total of environmental conditions of a specific place occupied by a wildlife species or a population of such species.

Wildlife Structure: A site specific improvement of a wildlife or fish habitat, i.e., spring development or dugout to provide water, brushpile for cover, nestbox for bird nesting, or rock and log placement in a stream for fish cover and pool creation, or a gate on a road to control access during critical nesting or brood rearing seasons.

APPENDIX B

Monitoring Plan

APPENDIX B

MONITORING PLAN

Source & Purpose of Monitoring Action	Activity Effect / Practice Output	Unit of Measure	Frequency of Measure	Techniques and/or Data Sources	Expected Precision	Expected Reliability	Responsibility
36 CFR 219.12(k)(1) A quantitative estimate of performance. Compare accomplishments with Forest Plan Objectives.	Outputs by Management Area and Forest Totals	RVD , WFUD, MBF	Annual	MAR	High	High	Allegheny National Forest
36 CFR 219.12(k)(3) Verify unit costs used in Plan. Build data for Plan revision.	Management Practices	$/Unit	Annual	PAMAR & special cost studies as needed	High	High	Allegheny National Forest
	Management Practices in relation to significant factors that affect cost.	i.e. $/Mile of road construction by land type association	Annual	PAMAR and/or special cost studies as needed	High	High	Allegheny National Forest
36 CFR 219.12(k)(2) Determine if the prescriptions are being implemented within the management areas assigned and as specified in the Forest Plan management direction.	Management Practices and Standards and Guidelines	Compliance check by prescription, by management area and by project-Narrative Report Summary	Annual on a sample basis	Management reviews, Project EA reviews, Sample field surveys RIM, TMIS, MAR, WMIS	Moderate	Moderate	Allegheny National Forest
Verify predicted effects of management practices on environmental elements.	Implementation and effectiveness of BMP's in controlling NPS pollution.	Varies Narrative on Effectiveness	Annually or as necessary on selected CGM, Rec., and Timber projects in decade one.	Impact Monitoring, Field surveys, Sequential Photo Points, Spray cards in buffer strips	Moderate	Moderate	Allegheny National Forest

MONITORING PLAN (con't)

Source & Purpose of Monitoring Action	Activity Effect Practice Output	Unit of Measure	Frequency of Measure	Techniques and/or Data Sources	Expected Precision	Expected Reliability	Responsibility
	Recreation Opportunities and Visual Quality	Acres by ROS class and VQO	5 Years	Revise Recreation Opportunity Spectrum Map and Visual Quality Objective map	Moderate	Moderate	Allegheny National Forest
36 CFR 219.7(f) To identify emerging issues issues, concerns, ans opportunity from adjacent land owners or other public agencies.	Land owner reaction; Other agency	Number of comments; Narrative	Annual	Letters, meeting, personal contacts, public involvement responses	Moderate	Moderate	Allegheny National Forest
36 CFR 219.19 Monitor population trends of indicator species to maintain viable populations of all wildlife species.	White-tailed Deer American Woodcock Ruffed Grouse Beaver	Population Trend	Annual	Field surveys, PGC, Harvest Data	Moderate	Moderate	Allegheny National Forest Pennsylvania Game Comm. PGC
	Red-shouldered Hawk, Great Blue Heron	Population	Annual	Field surveys	High	Moderate	Allegheny National Forest
	Rattlesnake Yellow-bellied Sapsucker* Pileated Woodpecker* Magnolia Warbler* Black-Throated Green Warbler*, Barred Owl Hermit Thrush	Population Trend	Annual for three years andy every two years thereafter	Field surveys	Moderate	Moderate	Allegheny National Forest
	Brook Trout Walleye *These species will be surveyed	Population Trend	Annual	Stream and Lake surveys	Moderate	Moderate	U.S. Fish and Wildlife Service and PA Fish Commission

MONITORING PLAN (con't)

Source & Purpose of Monitoring Action	Activity Effect Practice Output	Unit of Measure	Frequency of Measure	Techniques and/or Data Sources	Expected Precision	Expected Reliability	Responsibility
Monitor endangered species to protect, maintain, or enhance key habitat.	Bald Eagle	Population Trend	Annual	Field surveys	Moderate	Moderate	Allegheny National Forest
36 CFR 219.12(k)(5) Assure Lands adequately stocked within five years.	Regeneration Acres	Acres established	First, third, and fifth years	Stocking surveys and Annual report	Very High	Very High	Allegheny National Forest
Determine extent and severity of insect and disease occurrence.	Tree/stand vigor	Acres	Annual	Air surveillance	Moderate	High	Allegheny National Forest State and Private Forestry
Determine if final harvest size limits are appropriate	Timber Final Harvest	Acres	Every 5 years	Field Surveys public comment resource output estimates			Allegheny National Forest
Determine if lands not suited for timber production have become suited	Management Area Allocation	Acres	Every 10 Years	Field Surveys FORPLAN analysis	Moderate	Moderate	Allegheny National Forest
Dispersed and Developed Recreation and Wilderness Problems							
Determine use of recreation opportunities provided to assure appropriate mix that satisfies users.	Use by ROS class for developed and dispersed recreation and wilderness	RVD's	Annual	RIM and MAR	Moderate	Moderate	Allegheny National Forest

MONITORING PLAN (con't)

Source & Purpose of Monitoring Action	Activity Effect Practice Output	Unit of Measure	Frequency of Measure	Techniques and/or Data Sources	Expected Precision	Expected Reliability	Responsibility
Timber Management Problems							
To verify that we provide the supply of high-quality sawtimber that satisfies demand.	Timber offer, timber sold, timber cut, demand	Acres by method of cut. MBF by product & method of cut. Value by acre, volume, and product	Quarterly and Annual Summary	TMIS, TRANS-EV, TSA, uncut volume under contract	High	High	Allegheny National Forest
Monitor public reaction to vegetation manipulation to assure mitigation measures are adequate.	Public comments aesthetics of clearcutting	Number of comments, Narrative Report	Annual	Letters, telephone calls and personal contacts	Moderate	Moderate	Allegheny National Forest
Oil, Gas, and Mineral Management Problem							
Assure lands are made available for development and verify projected development scenario.	New Minerals Development	Areas impacted and number of producing wells	Every 5 years	Field survey, lease applications	High	High	Allegheny National Forest
Assure effectiveness of cooperative education approach and check compliance	OGM Developments	Development Acceptability	Annually on 25 developments	Allegheny N.F. Evaluation for OGM Developments	Moderate	Moderate	Allegheny National Forest
Wildlife Habitat Management Problem							
Determine trend of game species emphasized in prescriptions to insure planned population standards are met. Some included as indicator species.	Wild Turkey and Bear	Population Trend	Annual	Field survey, harvest data	Moderate	Moderate	Allegheny National Forest Pennsylvania Game Commission

MONITORING PLAN (con't)

Source & Purpose of Monitoring Action	Activity Effect Practice Output	Unit of Measure	Frequency of Measure	Techniques and/or Data Sources	Expected Precision	Expected Reliability	Responsibility
Determine trends in fish habitat capability and appropriate stocking densities	Allegheny River, Reservoir, Stocked and Native Trout Streams	by Habitat Quality and Species Composition	Annual on sample basis	Stream and lake	Moderate	Low	U.S. Fish and Wildlife Serv. Pennsylvania Fish Commission
Determine wildlife and fish utilization compared to planned use estimates	Fishing and Hunting	Success	Reservoir - 1/decade: Game take - 3/decade	Creel census, game take surveys	Moderate	Moderate	U.S. Fish and Wildlife Serv. Pennsylvania Game Commission

APPENDIX C

Forest-Wide Summaries

APPENDIX C

FOREST-WIDE SUMMARIES

Table C-1 Forest-wide Summary of Management Practices and Total Cost

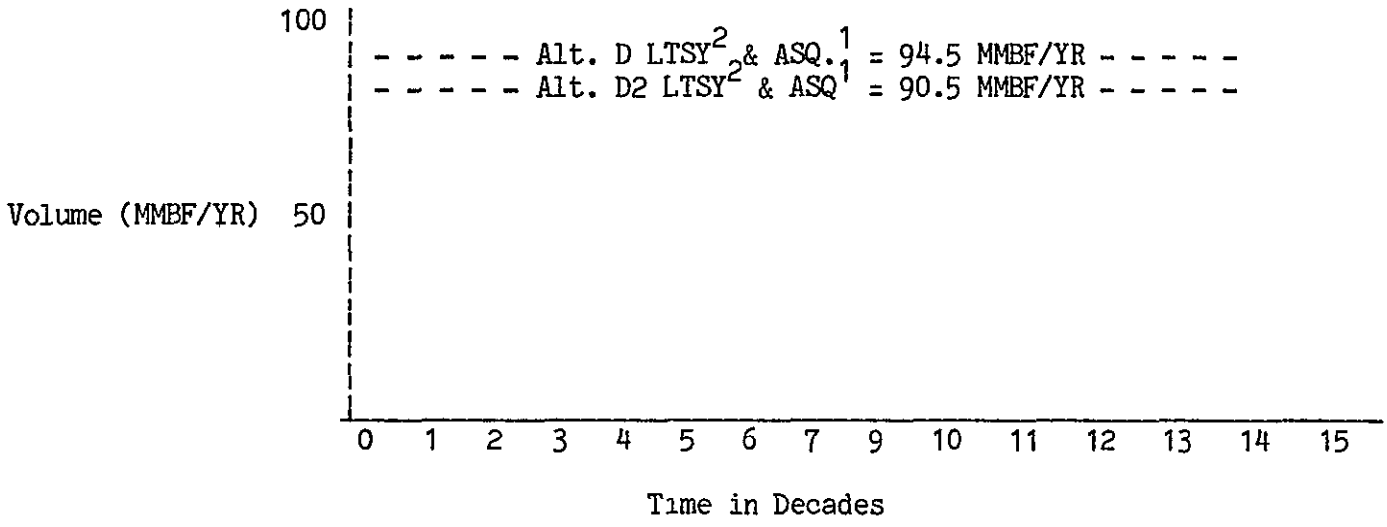
Management Practice	Unit of Measure	Average Annual Amount Planned Decade 1 D	(D2)[2]	Projected Decade 2 D	(D2)
Dev. Recreation Area Const. & Expansion[1]					
Allegheny Reservoir Area					
Campgrounds	# of Areas	1	(1)	1	(1)
Motel/Restaurant Complex	# of Areas	1	(1)	0	(0)
Other Forest Areas					
Campgrounds	# of Areas	1	(1)	3	(3)
Boat Launches	# of areas	2	(2)	0	(0)
Dispersed Recreation					
Pedestrian Trail	miles	4.8	(4.1)	4.1	(3.4)
Motorized Winter	miles	1.1	(1.1)	1.1	(1.1)
Motorized Summer	miles	14.5	(14.5)	14.5	(14.5)
Wilderness Management	acres	9719	(9719)	9719	(9719)
Timber Practices					
Final Harvest - Clearcuts	acres	330	(330)	340	(270)
Final Harvest - Shelterwood	acres	2970	(2970)	3060	(2430)
Thinning	acres	9400	(9500)	7800	(10400
Timber Stand Improvement	acres	800	(700)	600	(800)
Selection	acres	600	(600)	0	(0)
Herbicide	acres	2000	(2000)	1800	(1500)
Fertilization	acres	2500	(2500)	1400	(1300)
Fencing	acres	400	(400)	400	(400)
Planting	acres	200	(200)	200	(200)
Site Prep for Natural Regeneration	acres	1800	(1800)	1800	(1400)
Road Construction	miles	23.7	(24.7)	13.4	(18.7)
Road Reconstruction	miles	9.7	(10.1)	5.5	(7.6)
Wildlife and Fish Habitat Improvement					
Wildlife Habitat Imp. & Mtnce.	acres	2372	(2361)	2758	(2589)
Wildlife Structures	# of struct.	6	(6)	11	(8)
Fish Structures - Lakes	# of struct.	80	(80)	80	(80)
Warm Water Lake Construction	# of lakes	1/dc	(1/dc)	1/dc	(1/dc)
Energy Mineral Development	acres	429	(4290)	429	(4290)
Common Variety Mineral Development	acres	8	(12)	6	(13)
TOTAL COST	M$	6,475		5,693	

1 Unit of measure for this practice is the number of recreation areas to be completed within the entire decade not an average annual amount

2 D2 is a variation of the Forest Plan that projects the results if a high rate of oil and gas development is experienced during implementation.

Table C-2 Allowable Sale Quantity and Long-Term Sustained Yield Capacity

(Average annual yield per decade within the planning horizon equals long-term sustained yield; 945 million board feet of sawtimber and pulpwood per decade for Alternative D and 905 million for Alternative D2.)



1 Allowable Sale Quantity (ASQ)

The quantity of timber that may be sold from an area of 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.

2 Long-Term Sustained Yield Capacity (LTSY)

The highest uniform wood yield from lands being managed for timber production that may be sustained under a specific intensity of managment consistent with the multiple-use objective.

Table C-3 Timber Resource Land Suitability

Classification	Acres D	Acres (D2)
1. Water	8,305	(8,305)
2. Non-Forest Land	22,561	(22,561)
3. Forest Land	479,664	(479,664)
4. Forest Land Withdrawn from Timber Production	15,621	(15,621)
5. Forest Land Not Producing Crops of Industrial Wood	0	0
6. Forest Land Physically Not Suited:		
Irreversible Damage Like to Occur	450	(450)
Not Restockable Within 5 Years	450	(450)
7. Forest Land - Inadequate Information[1]	0	0
8. Tentatively Suitable Forest Land (Item 3 minus items 4, 5, 6, & 7)	463,143	(463,143)
9. Forest Land Not Appropriate for Timber Prod.[2]	43,118	(55,667)
10. Not Suited Forest Land[3] (Items 4, 5, 6, 7, and 9)	59,639	(72,188)
11. Total Suitable Forest Land (Item 3 minus item 10)	420,025	(407,476)
12. Total Net National Forest Area (Items 1, 2, and 3)	510,530	(510,530)

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

2 Lands identified as not appropriate for timber production due to: (1) assignment to other resource uses to meet Forest plan objectives; (2) to meet management requirements; and (3) not cost-efficient in meeting Forest plan objectives over the planning horizon.

3 Lands identified as not suited for timber production are examined every ten years and analyzed through the land management planning process to determine their suitability for timber production.

Table C-4 Allowable Sale Quantity, Timber Sale Program Quantity, and Vegetation Management Practices - Annual Average for the First Decade

Practice	Acres D	Acres (D2)	Allowable Sale Quantity: Sawtimber MMBF D	Sawtimber MMBF (D2)	Sawtimber MMCF D	Sawtimber MMCF (D2)	Other Products MMBF D	Other Products MMBF (D2)	Other Products MMCF D	Other Products MMCF (D2)
Regeneration Harvest										
Clearcut	330	(330)	2.5	(2.5)	.4	(.4)	2.5	(2.5)	.4	(.4)
Shelterwood	2970	(2970)	22.8	(22.2)	3.6	(3.5)	22.6	(23.0)	3.6	(3.6)
Intermediate Harvest										
Commercial Thinning	9400	(9500)	10.6	(10.0)	1.7	(1.6)	30.1	(27.0)	4.7	(4.3)
Selection Harvest	600	(600)	2.4	(2.3)	.4	(.4)	1.0	(1.0)	.2	(.2)
TOTAL ALLOWABLE SALE QUANTITY[1]			38.3	(37.0)	6.1	(5.9)	56.2	(53.5)	8.9	(8.5)
Timber Stand Improvement[2]	800	(700)								
Regeneration Practice										
Fencing	400	(400)								
Aerial Fertilization	2500	(2500)								
Site Preparation For Natural Regeneration	1800	(1800)								
Planting	200	(200)								
Herbicide	2000	(2000)								
Additional Sales, Unsuitable Land[3]			2.0	(2.0)	.3	(.3)	2.0	(2.0)	.3	(.3)
OGM Clearing			.3	(3.1)	.05	(.5)	.5	(4.9)	.1	(.8)

1 Includes only chargeable volumes from suitable lands.

2 Includes non-commercial pulpwood treatment in commercial thinnings

3 Timber Management on Unsuitable Lands - A limited amount of unscheduled timber harvests including thinnings, clearcuts, & selection cuts will occur in MA 6.3 to meet wildlife management objectives. In MA 7, unscheduled timber harvests may occur within the developed recreation sites to maintain the visual, recreation, & safety emphasis within each area. These will most often be single tree or group selection cuts. Timber harvesting in MA 6.4 and MA 8 will also be unscheduled. In the Kane Experimental Forest, harvesting will meet the objectives of each research project. In the other areas, it will maintain user safety, or it will be associated with private mineral development. In MA 9.1, commercial timber harvesting will include only salvage sales or sales associated with private mineral development.

Forest-wide Summaries

Table C-5 Present and Future Forest Conditions

	Unit of Measure	Suitable Land D	Suitable Land (D2)	Unsuitable Land D	Unsuitable Land (D2)
Present Forest (Decade 1)	MMCF*	758	(715)	69	(62)
Growing Stock	MMBF*	4798	(4526)	437	(392)
Annual Net Growth	MMCF*	15	(14)	1	(1)
	MMBF*	95	(89)	8	(8)
Future Forest (Decade 15)	MMCF*	625	(606)		
Growing Stock	MMBF*	3956	(3836)		
Annual Net Growth	MMCF	17	(16)		
	MMBF	108	(101)		

Rotation Ages Chosen (Existing and Regenerated Stands)

Northern Hwds.	Years	80 to 200
Allegheny Hwds.	Years	50 to 150
Oak	Years	80 to 200

Age Class Distribution Thousands of Acres suitable lands	Age Class (YR)	Present Forest	Future Forest D	Future Forest (D2)
	0 - 30	14	129	(128)
	31 - 50	22	101	(88)
	51 - 70	182	66	(77)
	71 - 90	157	37	(40)
	91 - 110	28	16	(16)
	111+	4	52	(52)
	Uneven-aged	0	6	(6)
	TOTAL	407	407	(407)

*Volumes include sawtimber and pulpwood.

Table C-6 Rotation Ages of Existing Stands Assigned Management Prescriptions 3 and 6.2

Rotation Age	Timber Type (Thousands of Acres) AH D	AH (D2)	NH D	NH (D2)	Oak D	Oak (D2)	TOTAL D	TOTAL (D2)
60	26	(26)	0	(0)	0	(0)	26	(26)
70	7	(0)	0	(0)	0	(0)	7	(0)
80	46	(26)	0	(6)	0	(1)	46	(33)
90	43	(33)	0	(<1)	22	(16)	65	(49)
100	45	(30)	8	(9)	3	(8)	56	(47)
110	22	(68)	3	(1)	<1	(1)	25	(71)
120	17	(28)	1	(7)	13	(15)	31	(50)
130	41	(12)	0	(5)	4	(2)	45	(19)
140	30	(24)	13	(14)	0	(0)	43	(38)
150	0	(10)	0		0	(0)	0	(10)
160	0		0		0	(5)	0	(5)
170	0		0		0		0	
180	0		0		2		2	
190	0		0		0		0	
200	0		≤1		1		1	
TOTAL	277	(257)	25	(42)	45	(48)	347	(347)

Table C-7 Timber Productivity Classification For Forest Land
(Thousands of Acres)

Potential Growth (cubic feet/acre/year)	Suitable Land D	(D2)	Unsuitable Land[1] D	(D2)
Less than 20	0		0	
20- 48	205	(200)	35	(34)
50- 84	218	(212)	4	(4)
85-119	0		0	
120-164	0		0	
165-224	0		0	
225+	0		0	

1 Does not include 8,300 acres of water area in the Allegheny Reservoir or non-Forest land (see Table C-3)

Table C-8 Forest-wide Summary of Recreation Investments for the First Decade

Area Location and Name	Type of Area
Allegheny Reservoir Area	
Willow Bay	Campground Expansion
Dewdrop Bank Fishing	Handicap Bank Fishing Trail
Webbs Ferry Bank Fishing	Handicap Bank Fishing Trail
Kinzua Beach	Motel/Restaurant (PVT Investment)
Other Forest Areas	
Arroyo Boat Launch	Boat Launch
Barnes Boat Launch	Boat Launch
Allegheny River Trailhead	Trailhead Parking/Picnic Area
Allegheny River Bank Fishing	Trail below "Dam"
Arroyo Bank Fishing	Trail along Clarion River
Mayburg Bank Fishing	Trail along Tionesta Creek

Table C-9 Timber Sale Schedule for 1986, 1987, and 1988

Timber Sales By Year And Management Area	Location		Volume	Acres by Method of Cut			Miles of Road	
	District	Compartment	MBF	FH	TH	Sel	Const	Reconst
Management Area 1 - 1986								
Crow Run**	Ridgway	103	500	34	36			
Subtotal	Forest	--	500	34	36	0	0	0
Management Area 3 - 1986								
Oven Bird	Sheffield	98	1215		166			
Pebble Run	"	56	695		35			0.8
OGM	"	All	750					
Firewood Sales	"	All	250					
Small Sales	Marienville	All	300	45				
Kellettville*	"	29	2000	40				
FR 486 Salvage*	"	7	568	29	54			
Collins Salvage*	"	44	897	63	34		0.5	0.6
Forest Road 361	"	31	500	25	25			
Big Bridge*	"	85	750	26	73		0.7	
Beaver No. 2*	"	50	3000	80	200		0.8	0.8
Tubbs Run*	"	2	2000	100	50		1.0	
Pigeon Hill*	"	2,3	1000	50	30			
Starr*	"	12	200	20	10			
Whig Hill*	"	19	300	30				
Hunter Run*	"	117	200	20	10			
Left-over	"	72	750	49			0.4	
Bear Creek	"	21-25,28	600			350	1.5	
Watson Branch	"	102	1500	25	200			1.0
Rappe Run III	"	100,101	1100	50	100			1.4
Lagoon	Bradford	54,52,94	1053	36	91		0.5	
Trail Hollow	"	3	1298	46	128		0.3	
Schoolhouse Hollow	"	4,35	848		218			
Coal Knob	"	87	750		140			
Buck Lick	"	38	1533	60	36			

* The timber sales marked with an asterisk are salvage sales related to the 5/31/85 tornado damage.

** This timber sale was prepared and approved prior to the issuance of the final Forest Plan. Even so, the timber sale activities proposed support the objectives of Management Area 1 and are considered wildlife habitat improvement.

C-9 (con't) Timber Sale Schedule for 1986, 1987, and 1988

Sale Name	Location: District	Location: Compartment	Volume MBF	Acres by Method of Cut: FH	TH	Sel	Miles of Road: Const	Reconst
Old Tower	Bradford	38,39	1200	98	38		0.2	
Camp Run	"	63,64	4840	152	587		0.8	2.0
Porter Hollow	"	26,27	1200		450		1.0	
Optional Wood, Ranger Sales, and OGM Sales	"	All	960					
Birds Nest Salvage*	Ridgway	25	2200	191	35			
Nansen BD Salvage*	"	42,49	2200	129	60		0.9	
Hoffman Run BD Salvage*	"	36,37	1800	82	50			
Benton BD Salvage*	"	43	700	29	140		0.7	
133 BD Salvage*	"	25	400	19	20		0.3	
South Side BD Salvage*	"	29	2100	101	10			
West Kane BD Salvage*	"	29	2100	93	30		0.4	
Friday Night BD Salvage*	"	29	1900	131				
66 BD Salvage*	"	41	1400	61	50			
McKinley BD Salvage*	"	42	700	38	30		0.2	
Otter Run	"	86	1800	80	74			
Tin Shanty	"	97	400	38				
Unplanned	"	All	300					
Subtotal	Forest	--	50257	2036	3174	350	10.2	7.0
Management Area 6.1-1986								
McKean Salvage	Sheffield	128,129	1700	116	16			
Dark Hollow	"	134	1497	28	17			
Pebble Run	"	56	1200	40				
Regan Run	"	142	1440	40	125			
Yellow Lilly	"	89	900	--	210			
Forest Road 361	Marienville	31	500	25	25			
Small Sales	"	All	300	45				
Tinkertown	Bradford	1	2600	31	500		1.1	
Coal Knob	"	87	250		44			
Subtotal	Forest	--	10387	325	937		1.1	
Management Area 6.2-1986								
Stoney Point*	Marienville	23,24	1000	20	50		0.8	
Bear Creek	"	21-25,28	1400			650		
Subtotal	Forest	--	2400	20	50	650	0.8	

Forest-wide Summaries

C-9 (con't) Timber Sale Schedule for 1986, 1987, and 1988

Sale Name	Location: District	Location: Compartment	Volume MBF	Acres by Method of Cut: FH	TH	Sel	Miles of Road: Const	Reconst
Management Area 8 - 1986								
West Side Salvage	Sheffield	106	1520	60	150			
Pipeline Salvage	"	106	1000	116				
South Side Salvage	"	106	1000	84				
Middle Salvage	"	106	1100	129				2.0
East Side Salvage	"	106	1135	125				
Circle Salvage	"	106	1200	125				
Subtotal	Forest	--	6955	639	150		0.0	2.0
FOREST TOTAL - 1986	Forest	--	70499	3054	4347	1000	12.1	9.0
Management Area 3 - 1987								
Picnic Run	Sheffield	18,19	3400	43	318		1.1	
Fenced Clearcut	"	96	1200	60				
Fox Den	"	122	960	38				
Brown Run	"	10	640	19	34			
Henrys Mill	"	102	1200	40	200			
Little Arnot	"	103	600	13	117			
Ott Run	"	9	300		84			
Messenger Run	"	111,112	1900		127			
Camp 13	"	74	1800	60	15		1.0	
Cherry Run	"	108-110	2100	49	452			
Whig Hill	"	152	250		70			
Grunder Run	"	4	1500	100				
OGM	"	All	1050					
Firewood Sale	"	All	500		200			
Final Harvest	Marienville	All	2000	100				
Final Harvest	"	All	2000	100				
Heli-stat	"	60,61	800	42				
Wagner Run	"	99,110	3000	75	600		1.5	
Small Sales	"	D-wide	1200		90			
Balltown	"	37	1500	25	200		1.0	
Sheffield Junction	"	104	1200		400		1.5	
Dump Town	"	55	1500		400		1.0	
Goat Farm	"	74	500		50			
Powder House	"	49	2000	50	250			1.0
Turkey Pen	"	43	500	25				
Dog Trial	"	73	1500	25	150		1.0	
Wildbird II	"		1300	50	100			1.0

C-9 (con't) Timber Sale Schedule for 1986, 1987, and 1988

Sale Name	Location: District	Location: Compartment	Volume MBF	Acres by Method of Cut: FH	TH	Sel	Miles of Road: Const	Reconst
Townline Run	Bradford	74	2650	100	336		3.0	
Music Mountain	"	68,69	3960	54	405		1.7	
Kennedy Springs	"	66,67	4874	140	474		3.8	
Optional Wood, Ranger Sales, and OGM Sales	"		250					
Linn Buck A Thin	"	36	563		163			
Linn Buck B Thin	"	35	580		151			
Linn Buck C Thin	"	35	565		115			
Goose Pond	Ridgway	8,9	2100	186	25		0.1	
Square	"	25	1200	55	232		0.5	
Tip Top	"	39,40	2000	125	86	30		
Turkey Roost	"	66	1000	82	22			
White Pine Run	"	71	1200	100				
Hawks Nest	"	87	2500	97	46		1.0	
Reservoir	"	99	700	50	50			
South Branch	"	14	2200	89	230		2.0	2.0
Herringbone	"	35	2300	130	292			
Ludlow Pine	"	20	400	0	70			
Durant City	"	36,37	1000	70	0			
Rerun	"	68,69	1500	40				
Turkey Track	"	85	1500	80	100		1.0	
Unplanned Sales	"	All	400					
Subtotal	Forest	--	69842	2312	6654	30	19.2	4.0
Management Area 6.1-1987								
Wildlife Cutting	Sheffield	54,60,192	600	90				
Subtotal	Forest	--	600	90				
Management Area 6.2-1987								
Briggs Run	Bradford	50,51,52	3500	60	900		1.8	
Subtotal	Forest	--	3500	60	900		1.8	
FOREST TOTAL - 1987	Forest	--	70792	2462	7554	30	21.0	4.0

Forest-wide Summaries

C-9 (con't) Timber Sale Schedule for 1986, 1987, and 1988

Sale Name	Location: District	Location: Compartment	Volume MBF	Acres by Method of Cut: FH	TH	Sel	Miles of Road: Const	Reconst
Management Area 3 - 1988								
Otter Track	Sheffield	135	1000					
Hoot Owl	"	32	1250		149			
Wood Sorrel	"	37	2500	100	150		1.5	
Pigeon Run	"	105	1500		300		0.5	
Hawkeye	"	118	1600		200			
Twin Pines	"	145	500		100			
Wakerobin	"	14	1000		100			
	"	30	600	40				
Roystone Station	"	63,64	1500		100			
Spade Four	"	20	1000	40	50		0.5	
Raven Nest	"	94	1000					
OGM	"	All	750	50				
Old Pit	"	38	1100	50	50			
Rock Run	"	109	1100	40	100			
Final Harvest	Marienville	All	3000	150				
Final Harvest	"	All	3000	150				
Watson Farm II	"	103	2000	25	400		1.0	
Small Sales	"	All	1200		180			
Coon Creek	"	26	400	10	50			
Little Salmon	"	34	800	20	245			1.0
Trail Sale II	"	36	800		80			1.0
Salmon Creek	"	38	1400	24	307		2.0	
Millstone	"	60	500		150		1.0	
Loleta Dog Trial	"	62	600		100		0.5	
Pigeon	"	85	800	30	240		1.0	
Thad Shanty III	"	88	1200	20	240			1.0
Bogus Run	"	114	1900	20	300		1.0	
Reck Brand	"	13	500		350		0.5	
208 Extension	"	10	500		400		1.5	
Branch III	"	32	500	25	100			1.0
Gypsy I	"	65,66,67	650	40		200	1.5	

C-9 (con't) Timber Sale Schedule for 1986, 1987, and 1988

Sale Name	Location: District	Location: Compartment	Volume MBF	Acres by Method of Cut: FH	TH	Sel	Miles of Road: Const	Reconst
Klondike	Bradford	45	1200	39			1.2	
Blacksnake	"	81	1000	60	120		1.0	
Coon Run	"	4,5,7	4000	125	600			
Dry Brook	"	25,27	2800	50			2.0	
Irishtown	"	70,71	2000	70				
Yaeger Branch	"	6	1900	30	400		0.5	
Westline II	"	61,62	900	90				
Ranger Sales, Optional Wood, OGM Settlement	"	All	600				1.0	
Circle	Ridgway	10,11	2300	80	240			
Red Mill	"	82	600	50	40		0.2	
West Branch	"	59	1400	40	150		1.0	
Jury	"	5	2400	100	120		1.5	
Chaffee	"	45	1200	53	100			
Small Sales	"	All	100					
Subtotal	Forest	--	57000	1601	6141	200	20.9	4.0
Management Area 6.1-1988								
Wildlife Cutting	Sheffield	55,66	600	90				
Devils Hollow	Marienville	15	1500		450		2.0	
Ross Run	"	18	500	25		150	1.0	
Gypsy I	"	65,66,67	250	10		200	0.5	
Subtotal	Forest	--	2850	125	450	350	3.5	
Management Area 6.2-1988								
TGT	Ridgway	51	2600	108	340		1.3	
Cherry Tree Run	"	56	2300	50	224		2.2	
Rooster	"	57	2400	40	285		2.3	
Old Camp	"	55,67	3200	180	250		1.0	
Subtotal	Forest	--	10500	378	1099		6.8	
FOREST TOTAL - 1988	Forest	--	71900	2124	7760	550	31.2	4.0

Forest-wide Summaries

C-10 Annual Timber Implementation Summary by Management Area for Decade 1 (1986-1995)

Forest Totals by Year and Management Area (MA)		D - Low Oil and Gas Demand						(D-2) - High Oil and Gas Demand					
		Volume	MAcres by Method of Cut			Miles of Road		Volume	MAcres by Method of Cut			Miles of Road	
Year	MA	MBF	FH	TH	Sel	Const	Reconst	MBF	FH	TH	Sel	Const	Reconst
1986	1	500	34	36	0	0	0	500	34	36	0	0	0
	2	0	0	0	0	0	0	0	0	0	0	0	0
	3	50257	2036	3174	350	10.2	7.0	50257	2036	3174	350	10.2	7.0
	6.1	10387	325	937	0	1.1	0.0	10387	325	937	0	1.1	0.0
	6.2	2400	20	50	650	0.8	0	2400	20	50	650	0.8	0
	8[1]	6955	639	150	0	0.0	2.0	6955	639	150	0	0.0	2.0
	TOTAL	70499	3054	4347	1000	12.1	9.0	70499	3054	4347	1000	12.1	9.0
1987	2	0	0	0	0	0	0	0	0	0	0	0	0
	3	69842	2312	6654	30	19.2	4.0	69842	2312	6654	30	19.2	4.0
	6.1	600	90	0	0	0	0	600	90	0	0	0	0
	6.2	350	60	900	0	1.8	0.0	350	60	900	0	1.8	0.0
	TOTAL	70792	2462	7554	30	21.0	4.0	70792	2462	7554	30	21.0	4.0
1988	2	0	0	0	0	0	0	0	0	0	0	0	0
	3	58550	1601	6141	200	20.9	4.0	58550	1601	6141	200	20.9	4.0
	6.1	2850	125	450	350	3.5	0.0	2850	125	450	350	3.5	0.0
	6.2	10500	378	1099	0	6.8	0	10500	378	1099	0	6.8	0
	TOTAL	71900	2124	7760	550	31.2	4.0	71900	2124	7760	550	31.2	22.2
1989	2	4950	172	503	30	1.0	.1	3392	124	366	22	.8	.1
	3	84335	2921	8567	509	17.9	2.5	80045	2932	8715	511	20.9	10.0
	6.1	6387	222	649	39	1.4	.2	6383	236	700	41	1.7	1.8
	6.2	8874	308	900	53	1.9	.3	9010	331	981	57	2.4	.7
	TOTAL	104546	3623	10619	631	22.2	3.1	98830	3623	10762	631	25.8	12.6
1990	2	4950	172	503	30	1.0	.1	3392	124	366	22	.8	.1
	3	84335	2921	8567	509	17.9	2.5	80045	2932	8715	511	20.9	10.0
	6.1	6387	222	649	39	1.4	.2	6383	236	700	41	1.7	1.8
	6.2	8874	308	900	53	1.9	.3	9010	331	981	57	2.4	.7
	TOTAL	104546	3623	10619	631	22.2	3.1	98830	3623	10762	631	25.8	12.6
1991	2	4950	172	503	30	1.0	.1	3392	124	366	22	.8	.1
	3	84335	2921	8567	509	17.9	2.5	80045	2932	8715	511	20.9	10.0
	6.1	6387	222	649	39	1.4	.2	6383	236	700	41	1.7	1.8
	6.2	8874	308	900	53	1.9	.3	9010	331	981	57	2.4	.7
	TOTAL	104546	3623	10619	631	22.2	3.1	98830	3623	10762	631	25.8	12.6

1 Volume in Management Area 8 are salvage sales related to the 5/31/85 tornado damage.

C-10 (con't) Annual Timber Implementation Summary by Management Area for Decade 1 (1986-1995)

Forest Totals by Year and Management Area (MA)		D - Low Oil and Gas Demand					(D-2) - High Oil and Gas Demand				
		Volume	MAcres by Method of Cut			Miles of Road	Volume	MAcres by Method of Cut			Miles of Road
Year	MA	MBF	FH	TH	Sel	Const / Reconst	MBF	FH	TH	Sel	Const / Reconst
1992	2	4950	172	503	30	1.0 / .1	3392	124	366	22	.8 / .1
	3	84335	2921	8567	509	17.9 / 2.5	80045	2932	8715	511	20.9 / 10.0
	6.1	6387	222	649	39	1.4 / .2	6383	236	700	41	1.7 / 1.8
	6.2	8874	308	900	53	1.9 / .3	9010	331	981	57	2.4 / .7
	TOTAL	104546	3623	10619	631	22.2 / 3.1	98830	3623	10762	631	25.8 / 12.6
1993	2	4950	172	503	30	1.0 / .1	3392	124	366	22	.8 / .1
	3	84335	2921	8567	509	17.9 / 2.5	80045	2932	8715	511	20.9 / 10.0
	6.1	6387	222	649	39	1.4 / .2	6383	236	700	41	1.7 / 1.8
	6.2	8874	308	900	53	1.9 / .3	9010	331	981	57	2.4 / .7
	TOTAL	104546	3623	10619	631	22.2 / 3.1	98830	3623	10762	631	25.8 / 12.6
1994	2	4950	172	503	30	1.0 / .1	3392	124	366	22	.8 / .1
	3	84335	2921	8567	509	17.9 / 2.5	80045	2932	8715	511	20.9 / 10.0
	6.1	6387	222	649	39	1.4 / .2	6383	236	700	41	1.7 / 1.8
	6.2	8874	308	900	53	1.9 / .3	9010	331	981	57	2.4 / .7
	TOTAL	104546	3623	10619	631	22.2 / 3.1	98830	3623	10762	631	25.8 / 12.6
1995	2	4950	172	503	30	1.1 / .1	3392	124	366	22	.7 / .1
	3	84322	2920	8573	511	18.1 / 2.5	80044	2931	8720	513	23.6 / 5.9
	6.1	6387	222	649	39	1.4 / .2	6383	236	700	41	1.5 / 1.7
	6.2	8874	308	900	54	1.9 / .2	9010	331	981	58	2.1 / .7
	TOTAL	104533	3622	10625	634	22.5 / 3.0	98829	3622	10767	634	21.1 / 8.4
TOTAL - DECADE 1 (ALL MA's)		945000	33000	94000	6000	237.0 / 97.0	905000	33000	95000	6000	247.0 / 101.0

Table C-11 Summary of Other Benefits for Scheduled Timber Sales[1]

Timber Sales by Year and District	Dispersed Recreation			Visual Quality Improvement	Improved Habitat Diversity	Maintained Habitat Diversity	Firewood	Improved Public Transportation Safety	Other
	Parking	Motor Access	Non-Motor Access						
1986 - SHEFFIELD									
McKean Salvage			X		X		X		
Dark Hollow					X				
Oven Bird	X						X		
Pebble Run					X		X		
Regan Run					X		X		
West Side Salvage									
Pipeline Salvage									
Southside Salvage			X						
Middle Salvage			X						
Eastside Salvage									
Circle Salvage							X		

1 This table illustrates the multiple benefits that are anticipated as a result of the proposed vegetative treatments. It is tied directly to the benefits and objectives stated in the Forest Plan.

It should also be noted that this table does not address all of the priced benefits and environmental effects. Chapters 4 of the Forest Plan and Final EIS contain additional information on the output objectives by Management Area and anticipated environmental effects, respectively.

The following definitions were used in preparing this table:

Parking---Provide needed off-road parking for recreationist, hunter, dispersed camper, and fisherman where current parking is not adequate.
Motor Access---Provide new access (where none existed before) that will remain open to the public for motorized vehicle use at least part of the year.
Non-Motor Access---Provide new non-motorized access to an area using roads/trails closed to all motor vehicles. This type of access was not be available prior to the sale.
Visual Quality Improvement---Sale Areas around or near highly sensitive travelways and trails where visual quality or diversity may be improved through vista cutting, small opening development or special marking instructions.
Increased Habitat Diversity---Sale Area where habitat diversity (i.e. age classes, species composition, permenant openings, shrub openings, conifer inclusions, brood habitat) is increased above the existing diversity.
Maintained Habitat Diversity---Sale areas where existing habitat diversity is maintained.
Firewood---Sale areas that would provide and be open for gathering firewood.
Improve Public Transportation Safety---Sales that result in improving heavily used public transportation routes for safety of users.

Table C-11 Summary of Other Benefits for Scheduled Timber Sales

Timber Sales by Year and District	Dispersed Recreation			Visual Quality Improvement	Improved Habitat Diversity	Maintained Habitat Diversity	Firewood	Improved Public Transportation Safety	Other
	Parking	Motor Access	Non-Motor Access						
1986 - MARIENVILLE									
Small Sales			X		X	X	X		
Kellettville*	X	X	X		-	X	X		
Forest Road 361	X		-		-	X	X		
Big Bridge*	X		X		X	X	X		
Beaver No. 2*			X		X	X	-		
Tubbs Run*			X		X	X	X		
Pigeon Hill*	X					X	X		
Stoney Point*	X		X		X	X	X		
Starr*						X	X		
Whig Hill*						X	X		
Hunter Run*						X	X		
Left-over	X				X	X	X		
Bear Creek	X		X		X	X	X		
Watson Branch	X		X		X	X	X		
Rappe Run III					X	X	X		
1986 - BRADFORD									
Lagoon			X	X	X	X	X	X	
Trail Hollow	X		X		X		X	X	
School House Hol					X				
Coal Knob				X	X		X		
Buck Lick					X		X		
Old Tower			X		X		X		
Tinkertown			X		X		X		
Camp Run			X		X	X	X		
Porter Hollow			X		X		X		
Cable Logging					X				X^2

2 Research & educational demonstration sale

Table C-11 Summary of Other Benefits for Scheduled Timber Sales

Timber Sales by Year and District	Dispersed Recreation			Visual Quality Improvement	Improved Habitat Diversity	Maintained Habitat Diversity	Firewood	Improved Public Transportation Safety	Other
	Parking	Motor Access	Non-Motor Access						
1986 - RIDGWAY									
Birdsnest BD Salv					X				X[3]
Nansen BD Salvage			X		X		X		
McKinley BD Salvage			X		X		X		
Benton BD Salvage			X		X				
66 BD Salvage							X		
Friday Night BD Salv					X				
Southside BD Salv					X				
West Kane BD Salv					X				
Hoffman Run BD Salv					X				
133 BD Salvage			X		X		X		
Tin Shanty	X				X		X		
Crow Run	X				X	X			
Otter Run			X			X	X		
1987 - SHEFFIELD									
Picnic Run	X				X		X	X	
Fenced Clearcut					X				
Fox Den					X				
Brown Run	X				X		X		
Henrys Mills	X						X		
Little Arnot					X		X		
Ott Run									
Messenger Run	X		X				X		
Camp 13			X		X				
Cherry Run			X		X		X		
Whig Hill					X		X		
Grunder Run					X	X	X		

3 Stream Rehab. and/or Improvement

Table C-11 Summary of Other Benefits for Scheduled Timber Sales

Timber Sales by Year and District	Dispersed Recreation: Parking	Dispersed Recreation: Motor Access	Dispersed Recreation: Non-Motor Access	Visual Quality Improvement	Improved Habitat Diversity	Maintained Habitat Diversity	Firewood	Improved Public Transportation Safety	Other
1987 - MARIENVILLE									
Final Harvest	X		X		X	X	X		
Final Harvest	X		X		X	X	X		
Heli-stat	X		-		X	X	X		
Wagner Run	X		X		X	X	X		
Small Sales			X		X	X	X		
Balltown	X		X		X	X	X		
Sheffield Junction	X		X		X	X	X	X	
Dump Town	X		X		X	X	X		
Goat Farm			X		X	X	X		
Powder House	X		X		X	X	X		
			-		-	-	-		
Turkey Pen	X		X		X	X	X		
Dog Trial			X		X	X	X		
Wildbird II	X		X		X	X	X		
1987 - BRADFORD									
Briggs Run			X		X				
Townline Run		X		X	X		X		
Kennedy Springs	X		X		X		X		
Music Mountain	X		X		X		X		
Linn Buck A Thin					X		X		
Linn Buck B Thin			X		X		X		
Linn Buck C Thin			X		X		X		

Table C-11 Summary of Other Benefits for Scheduled Timber Sales

Timber Sales by Year and District	Dispersed Recreation			Visual Quality Improvement	Improved Habitat Diversity	Maintained Habitat Diversity	Firewood	Improved Public Transportation Safety	Other
	Parking	Motor Access	Non-Motor Access						
1987 - RIDGWAY									
Goose Pond	X	X	X		X	X			
Square	X					X	X		
Tip Top						X	X		
Turkey Roost	X				X		X		
White Pine Run	X					X	X		
Hawks Nest			X		X		X		
Reservoir	X	X			X			X	X[4]
Turkey Track	X		X			X	X		
South Branch			X			X	X		
Herringbone	X			X		X	X	X	X[5]
Ludlow Pine									
Rerun			X		X		X		
Durant City				X		X	X		
1988 - SHEFFIELD									
Otter Track			X		X	X	X		
Hoot Owl			X		X				
Wood Sorrel			X				X		
Pigeon Run	X				X		X		
Hawkeye							X		
Twin Pines							X		
Wake Robin							X		
Roystone Station	X						X		
Spade Four					X				
Raven Nest			X		X		X		
Old Pit					X				
Roch Run					X				
Wildlife Cutting					X				

4 Water Quality Improvement (in Municipal Watershed)
5 Stream Rehab., Water Quality Improvement

Table C-11 Summary of Other Benefits for Scheduled Timber Sales

Timber Sales by Year and District	Dispersed Recreation			Visual Quality Improvement	Improved Habitat Diversity	Maintained Habitat Diversity	Firewood	Improved Public Transportation Safety	Other
	Parking	Motor Access	Non-Motor Access						
1988 - MARIENVILLE									
Final Harvest	X		X		X	X	X		
Final Harvest	X		X		X	X	X		
Devils Hollow	X	X	X	X	X	X	X		
Watson Farm II	X	X	X		X	X	X		
Small Sales	X		X		X	X	X		
Coon Creek	X		X		X	X	X		
Little Salmon	X		X		X	X	X		
Trail Sale II	X		X		X	X	X		
Salmon Creek	X		X		X	X	X		
Millstone	X		X		X	X	X		
Loleta Dog Trial	X		X		X	X	X		
Pigeon	X		X		X				
Thad Shanty III	X		X		X	X	X		
Bogus Run	X	X	X		X	-	-	X	
Reck Brand	X		X		X	X	X	X	
208 Extension	X		X		X	X	X		
Ross Run	X		X		X	X	X	X	
Branch III	X		X		X	X	X	-	
Gypsy I	X		X		X	-	X	X	
1988 - BRADFORD									
Klondike			X		X		X		
Blacksnake	X		X		X		X		
Coon Run	X		X		X		X		
Dry Brook	X		X	X	X		X		
Irishtown			X		X		X		
Yeager Branch	X	X	X		X				
Westline II					X		X		
Ranger Sales					X		X		

Table C-11 Summary of Other Benefits for Scheduled Timber Sales

Timber Sales by Year and District	Dispersed Recreation			Visual Quality Improvement	Improved Habitat Diversity	Maintained Habitat Diversity	Firewood	Improved Public Transportation Safety	Other
	Parking	Motor Access	Non-Motor Access						
1988 - RIDGWAY									
TGT			X		X		X		
Cherry Tree Run			X		X				
Rooster	X		X	X	X		X		
Circle	X			X		X	X		
Old Camp	X		X	X	X		X		
West Branch					X		X		
Jury	X		X		X				
Chaffee	X				X				
Red Mill	X		X			X	X		

APPENDIX D

Vegetation Management Practices Rationale for Choice

APPENDIX D

VEGETATION MANAGEMENT PRACTICES - RATIONALE FOR CHOICE

A. INTRODUCTION

The National Forest Management Act of 1976 (Section 6(g)(3),(e)(iv) and (f)(i)) and the resulting Secretary's Regulations (36 CFR 219.15) require that vegetation management practices be chosen that are appropriate to meet the objectives and requirements of the land and resource management plan. Appendix D presents the rationale for the vegetation management practices chosen for the various vegetation types on the Allegheny National Forest. In those cases where recent literature or other sections of the Forest Plan or Draft Environmental Impact Statement adequately describe practices, Appendix D will refer the reader to the appropriate documents and sections, but the information will not be repeated.

B. HARVESTING PRACTICES

Silvicultural Systems and Harvest Methods

Timber harvests are designed to achieve a number of resource management objectives. These include developing desired visual conditions, species composition, wildlife habitat, timber product mix, revenues, and carrying out integrated pest management. Although there are many harvest methods used in managing forest lands, there are only two silvicultural systems, even-aged and uneven-aged.

During the prescription development phase of the planning process, we prepared interdisciplinary prescriptions for each major timber type, using a variety of harvesting practices. The following harvesting practices are options in the various timber types for each of the silvicultural systems. They are briefly defined in Appendix A of the Forest Plan, and they are described in detail in the environmental consequences section of Chapter 4 of the Final EIS.

Even-aged System

- Thinning or intermediate cut
- Shelterwood seed cut
- Shelterwood removal cut
- Clearcut

Uneven-aged System

Single tree selection (.1 acre)
Group selection (.1 to .5 acre)

As explained in the glossary in Appendix A, clearcutting regenerates a stand with one cutting entry, while shelterwood cutting regenerates it through more than one. On the Allegheny National Forest, the land appearance following a clearcut is actually very similar to that following the final removal cut using the shelterwood method. All stands which will be clearcut must have adequate advance regeneration, though this may be smaller than that present before a shelterwood removal cut. Clearcutting here does not rely heavily on dormant seed in the leaf litter, so the area will have seedling cover during and immediately following the harvest. The amount of advanced regeneration on the ground generally determines whether we will use the clearcut or shelterwood method; those areas lacking adequate advance regeneration will receive a shelterwood treatment.

Regeneration Harvest Methods for Management Areas

Silvicultural systems and harvest cutting methods vary between management areas. The silvicultural system and harvest cutting methods chosen for each management area achieve the desired mix of conditions or outputs for that area. Each management area provides a little different response to some of the issues, management concerns, and resource opportunities than do the rest of the mangement areas.

Some forest types can be regenerated by more than one silvicultural system and/or harvest method, but other types cannot. Table D-1 shows the harvest methods in each forest type for each management area on the Allegheny National Forest. Following this table there are brief discussions about the rationale for harvest cutting methods in each management area on the Allegheny National Forest. Keep in mind that cutting related to the development of private minerals may occur in any management area, so it will not be discussed any further here.

TABLE D-1 Harvesting Methods on the ANF by Forest Type and Management Area[1]

	FOREST TYPES[2]				
Management Area	Conifer[3]	Aspen	Northern Hdwds.	Alleg. Hdwds.	Oak
2	SEL[4]		SEL	SEL	SEL
1,3, 6.2	CC	CC	SW, CC	SW, CC	SW, CC
5	No Timber Harvest				
6.1, 6.3, 6.4, 7,8	Even-aged or uneven-aged silvicultural system may be used. Some areas will not receive silvicultural treatments.				
9	No Timber Harvest except salvage				

1 The harvesting methods are clearcut (CC), shelterwood (SW), and selection (SEL).

2 A small portion of any management area may be occupied by the forest type not shown in the Table for that management area. An example is a small red pine plantation in the middle of a 3,000-acre area under Management Prescription 3.4. The silvicultural system chosen for the minor inclusion will be the subject of specific site analysis.

3 Various conifer species commonly occur as components of stands dominated by other types and are then included in the system for the stand as a whole.

4 Hemlock

Management Area 1

The prescriptions in this management area emphasize shade intolerant vegetation, the production of roundwood or small diameter sawtimber, and wildlife species associated with early successional stages of vegetation. Therefore, even-aged management will be the predominant silvicultural system, with uneven-aged management occurring only on small inclusions.

Management Area 2

The prescriptions in this area emphasize maintaining a generally continuous forest canopy, shade tolerant vegetation, and wildlife species associated with this kind of habitat. Uneven-aged management (single tree selection and group selection) will be the primary silvicultural system, but even-aged management may occur on small inclusions.

Management Areas 3 and 6.2

These management area prescriptions emphasize shade intolerant vegetation, a variety of age or size class habitat and vegetation types, and production of high quality hardwoods. Wildlife emphasis is on producing deer and turkey in all vegetation types, and squirrel in the oak type. Therefore, even-aged management will be the primary silvicultural system.

Management Area 5

The emphasis here is to provide a wilderness experience and to preserve natural ecosystems. There will be no timber harvesting except for salvage when needed to protect wilderness values or to protect adjacent property from fire or pests.

Management Area 6.1

The emphasis in this area is on dispersed recreation in a semi-primitive motorized setting and on providing wildlife which require mature or overmature forest habitat. Both even-aged and uneven-aged management will be used when and where needed to maintain wildlife habitat required by these species.

Management Area 6.3

This area contains large savannah-like areas, small interspersed wooded areas, and vegetation dependent on riparian conditions. Management is intensive to produce high populations of wildlife associated with riparian habitat. Minor amounts of even-aged or uneven-aged management will occur to enhance recreation or wildlife objectives.

Management Area 6.4

Vegetation in the National Recreation Area will generally progress through the natural succession process to maturity. A limited amount of even-aged or uneven-aged management may be used to achieve recreation, wildlife, or watershed objectives.

Management Area 7

The objective of this area is to provide high-density, self-contained, forest recreation developments. Vegetation management will occur only to maintain the long-term viability, safety, and attractiveness of the area.

Uneven-aged management will be the predominant technique used to achieve this objective.

Management Area 8

These prescriptions cover management of special areas on the Allegheny National Forest. In the Kane Experimental Forest, each research project will specify the silvicultural system and cutting methods to be used. In the rest of the areas the only cutting which may occur is salvage or individual tree cutting to ensure user safety.

Management Area 9

This area emphasizes minimal management of or investment in surface resources. The only timber harvesting which will occur is salvage necessary to protect adjacent land from insect or disease epidemics or from the threat of fire.

Rationale for Prescriptions for Each Timber Type

The following references contain the scientific rationale for choosing and developing the specific prescriptions we included for each timber type:

Burns, Russell M., Silvicultural Systems for the Major Forest Types of the United States, Agricultural Handbook #445, Washington, D.C., U.S. Department of Agriculture, Forest Service, 1983, (191 pages).

Marquis, David A., Richard L. Ernst, and Susan L. Stout 1984 Prescribing Silvicultural Treatments in Hardwood Stands of the Alleghenies USDA, For. Serv. Gen. Tech. Rpt. NE-96, 90 p.

Forest Service, Final Environmental Impact Statement for Eastern Region, Milwaukee, WI, U.S. Department of Agriculture, Forest Service, 1983. See the following timber type discussion in Appendix D:

Aspen	Page D-15
Cherry, Maple	Page D-49
Northern Hardwoods	Page D-108
Oak, Hickory	Page D-143
Red Pine	Page D-166
Eastern White Pine, Hemlock	Page D-74

The following is a brief discussion of the rationale for harvesting methods by timber type. It briefly summarizes information presented in the Eastern Region EIS shown above and includes local information.

Aspen

Aspen is a minor timber type on the Allegheny National Forest, occupying less than 2 percent of the total forested land area. It grows on a diversity of soils. Poor-quality, slow-growing trees are found on dry soils, rock outcrops, and poorly-drained mineral soils; while high-quality, fast-growing aspen grows on deep, well drained soils.

Principal components of this type are quaking aspen and bigtooth aspen. Common associates on this Forest are black cherry, red maple, yellow birch, sweet birch, beech, hemlock, red oak, white oak, and scarlet oak. These associates eventually dominate the stand on better sites.

Despite abundant seed production, aspen reproduces most commonly from adventitious root sprouts (suckers). Aspen suckering is suppressed by auxin transported from growing shoots. The parent stems must be killed by cutting, bulldozing, or fire to relieve this apical dominance and allow suckering to occur.

Even-aged management using clearcutting is the optimum method for maintaining aspen due to its intolerance for shade and its physiological requirements for suckering. Harvesting practices usually consist of commercial cutting or non-commercial cutting or bulldozing to benefit wildlife. Single tree or group selection will discriminate against aspen. Both seedlings and suckers are intolerant of shade and can endure little suppression. Natural thinning in dense young stands is rapid, and trees that fall below the canopy stop growing and die within a few years.

Aspen is not an important timber producing species on the Allegheny National Forest. Its pathological rotation age seldom exceeds 60 years, so few opportunities exist to grow aspen sawtimber, except on the very best sites. However, pulpwood is the only marketable product for aspen on this Forest, and this market is limited and often non-existing. Consequently, our objective for maintaining aspen relates mainly to wildlife and maintaining vegetative diversity on the Forest.

The aspen type is particularly good habitat for wildlife associated with forest margins and openings, such as white-tailed deer, ruffed grouse, woodcock, snowshoe hare, and a large number of songbirds. A diversity of aspen age classes, along with intermixed conifer stands, provides the best wildlife habitat. Aspen is predominantly dioecious, and the male flower buds are important winter food for grouse. For increased grouse production, clearcuts should be no larger than 10 acres.

Cherry, Maple, (Allegheny hardwoods)

The cherry-maple forest type covers about 12 million acres in the Allegheny Plateau and Allegheny Mountain sections of New York, Pennsylvania, Maryland, and West Virginia. The Forest lies in the heart of this area. Nearly all the world's supply of cherry lumber for furniture and veneer comes from the Allegheny hardwood forest type, as well as a substantial proportion of fine ash and maple sawtimber.

The cherry-maple or Allegheny hardwood forest type covers 53 percent of the Forest. It consists primarily of black cherry, red maple, sugar maple, and white ash with American beech, eastern hemlock, yellow birch, sweet birch, yellow poplar, and cucumbertree as common associates. Black cherry and the maples usually dominate these stands on the Forest.

Allegheny hardwoods represent an early-successional to mid-successional stage that ultimately leads to a climax forest dominated by beech, hemlock, and sugar maple if left undisturbed for a long period. Even-aged management best satisfies the reproduction and growth requirements of the high value intolerant species. Single tree selection favors the tolerant, lower valued species. Group selection favors more intolerants than does individual tree selection, but it still yields substantially fewer intolerants than does even-aged management. In even-aged management of Allegheny hardwood stands, thinnings play an important role in increasing sawtimber production and stand value.

When using even-aged management, we rely on natural regeneration to reestablish nearly all cherry-maple stands. Clearcutting is normally used where adequate advanced seedlings are already present beneath the canopy. Where advanced seedlings are not present, the shelterwood method is used. We will generally use the shelterwood method on 90 percent of the acres regenerated and clearcutting on the

remaining 10 percent. The shelterwood removal cut takes place only if there is adequate advanced regeneration following the shelterwood seed cut.

Because Allegheny hardwoods contain species that span the full range of shade tolerance and growth rates, stands usually have a complex structure. Black cherry and yellow poplar usually outgrow and eventually overtop all other species. Sugar maple, beech, and hemlock generally grow slower than their associates, but being shade tolerant, they survive when overtopped, and often form a distinctive lower canopy and diameter class. Timber rotation ages differ widely among species because of the large differences in growth rates. Stocking and yield also vary considerably, depending on species composition.

White-tailed deer cause extensive damage by feeding on Allegheny hardwood seedlings. The choice of silvicultural systems in Allegheny hardwoods would be wider were it not for the unusually high deer damage to regeneration on this Forest. Only even-aged methods that provide abundant sunlight for seedlings to grow quickly out of reach of deer are practical. In many cases it is still necessary to apply fertilizer so the leader on the main stem grows above deer browse height within one or two growing seasons. Where management objectives call for maximizing high-quality timber production or for maximizing habitat for such wildlife as deer, grouse, rabbits or hares, the even-aged silvicultural system provides the optimum response.

Northern hardwoods

The Northern hardwood forest in the northeastern United States, covering nearly 15 million acres, contains primarily sugar maple, American beech, and yellow birch. Species composition depends on stand age, site characteristics, geographic region, and past land use. The Northern hardwood type covers approximately 16 percent of the Allegheny National Forest. The sugar maple, beech, and birch occur in various proportions in individual stands and are commonly associated with red maple, white ash, eastern hemlock, sweet birch, yellow poplar, cucumbertree, and black cherry.

Species in this type differ in shade tolerance, longevity, and growth rate. Yellow birch is intermediate in tolerance and growth rate. White ash and red maple are also intermediate in shade tolerance but have moderately fast growth rates. Sugar maple, beech, and hemlock are shade tolerant, long-lived

species. Sugar maple and beech have moderately slow growth rates, while hemlock grows rapidly in diameter, though not in height. Ground vegetation (ferns and grass) and tolerant small trees and shrubs (such as striped maple and eastern hophornbeam) affect silvicultural procedures.

The highly shade-tolerant beech and sugar maple are the most common tree species in the understory of Northern hardwood stands on well-drained sites. Hemlock is more commonly found on the wet sites. These species and other long-lived tolerant species, when established, can respond to release after long periods of suppression. Yellow and sweet birches need overhead light and seedbeds of moist humus or mineral soil for optimum early establishment and development. Birches must become dominant early in life if they are to survive to maturity.

All important commercial species in this type characteristically reproduce from seed, and some also reproduce by vegetative means. Reforestation normally occurs through natural regeneration and relies heavily on adequate advance regeneration. White-tailed deer cause extensive damage by feeding on Northern hardwood seedlings.

Choice of silvicultural systems and harvest methods would be wider were it not for the unusually high deer browsing which occurs on this Forest. Since tolerant trees do not respond well to fertilization, fencing many times is required to reduce browsing damage. Even then it is important that the trees grow above browse height as quickly as possible. Even-aged management provides a better seedling growth response than uneven-aged management, thus allowing seedlings to grow above browse height sooner. Individual tree selection favors the tolerant beech, sugar maple and hemlock, while group selection will provide some higher valued black cherry. Shelterwood cuttings produce rich mixtures of hardwoods, including black cherry, red maple, white ash, and yellow poplar. Clearcutting in this type is only done when adequate advanced reproduction is present in the understory.

Oak-Hickory

The oak-hickory forest type occurs on about 18 percent of the Allegheny National Forest. It is found mainly along the river corridors and their major tributaries. White oak, northern red oak, and black oak are found throughout this type on the better sites. Other common oaks on dry sites are scarlet oak and chestnut oak. Shagbark and bitternut hickories are

consistent but minor components of the type. Other species occuring in the oak-hickory type are yellow poplar, white ash, red maple, sugar maple, black gum, and black cherry. On suitable sites, eastern white pine and eastern hemlock may also be present.

Oaks and hickories produce large seed crops at two to ten year intervals with great variation among species. Acorn production differs greatly from year to year, species to species, and tree to tree within the same species and forest stand. In some years the seed crop of some species fails completely. Most of the time animals, birds, and insects eat a large portion of the acorns and nuts.

Acorns and nuts are dispersed primarily by gravity, but squirrels, mice, and voles are also important dispersal agents as they bury them in their food caches.

Even-aged management provides the best response where the management objective is to perpetuate the intolerant oaks and hickories. It also provides the best seedling growth response, so trees can exceed browse height as soon as possible. Clearcutting and shelterwood cutting are the two regeneration harvest methods most often used in the oak-hickory type. Both methods depend on the presence or development of advanced oak reproduction and on stump sprouts. The species composition of the advanced regeneration is critical, for if Northern hardwoods or the cherry-maple type dominate, the new stand may convert to these types. Research is underway to develop economical and effective methods for retaining oak stands. Thinnings are an integral part of maximizing sawtimber production and value on the better sites.

The single tree selection system favors more tolerant species, particularly Northern hardwoods, and reduces the oak composition, particularly those species which are intolerant. Group selection successfully maintains the oak-hickory type where deer populations are low or where fencing successfully eliminates deer browsing. Inital reproduction establishment and species composition will be the same as clearcutting in openings of 0.1 to 0.25 acres. Oaks will be present only to the extent they were present as large, advanced reproduction or as stump sprouts. Reproduction growth will be retarded near the opening edges; maximum growth occurs in the central part of the opening not influenced by the surrounding stand.

The oak-hickory type provides habitat and mast for numerous wildlife species. Creating and maintaining diverse vegetation is the key to providing habitat for the greatest number of wildlife species.

Red Pine

Red pine is not native to the Allegheny National Forest, but planted stands comprise a large portion of the conifer type that occurs on 4 percent of the Forest. Plantations vary from stands of pure red pine to stands where red pine is the major species with varying amounts of native species and/or one or more species of planted white spruce, Norway spruce, and larch.

Since red pine is intolerant, even-aged silvicultural systems provide the optimal growth response. Clearcutting the mature stand and planting a new stand will be used where the management objective is to perpetuate the red pine type.

Red pine is a long-lived tree and grows up to age 200 or more. Over half of the total yield is removed in periodic thinnings, beginning when the stand is approximately 30 years old. The initial planting density, timing of thinnings, and stand density left after thinning greatly affect tree diameter growth.

Even-aged seedling stands provide a relatively open area with a large variety of pioneer plant species and good edge habitat for about a decade. Dense sapling stands provide cover for many species of wildlife.

Eastern White Pine and Eastern Hemlock

Eastern white pine and eastern hemlock are the only native conifer species found in any abundance on the Forest. (There are a few scattered pitch pine trees - the only other native species found here). White pine and hemlock occasionally occur in small pure stands, but most often occur in mixtures with each other or with hardwood species.

White pine grows on many sites: from moist stream bottoms or wet soils to ridgetops or dry soils. The soil requirements for eastern hemlock are not exacting but are usually characterized as moist to very moist but with good drainage.

Hemlock responds well to release. Often seedlings with a history of suppression and release may grow better than those that were free to grow from the start. Hemlock can survive a suppression period ranging from 25 to about 200 years. Reforestation is by natural regeneration.

Growth characteristics of white pine indicate that it can be managed best under even-aged stand conditions, though there is considerable leeway in choosing regeneration methods. White pine has been naturally regenerated in the northeast by clearcutting in blocks and strips, and by seed tree, shelterwood, and group selection methods. Single tree selection cutting has usually not proven satisfactory.

Abundant, established, advanced white pine regeneration can be released by cutting the remaining pine or hardwoods. Clearcutting during or just after a heavy seed crop often results in well-stocked stands on light soils. Release from competing hardwoods is often necessary several years following overstory removal.

Because of its tolerance to shade, hemlock can regenerate under low-light conditions. Deer browsing can severely affect regeneration, so fencing or lower deer populations are necessary to help ensure successful regeneration. To increase the proportion of hemlock and hasten growth of the understory hemlock in mixed stands, single tree selection can be used. This requires periodic removal of mature trees or groups of trees to increase hemlock growth. Excessive selection cutting may result in windfall. Hemlock stands are usually thinned from below leaving about 70 to 80 percent crown cover.

This type provides excellent wildlife habitat in all stages of its development. Deer use it for winter cover. Ruffed grouse, turkey, and other birds use it for cover throughout the year. Squirrels, other rodents, and many species of birds feed on the seeds.

Final Selection of Silvicultural Systems

As stated previously, we first prepared separate prescriptions for both even-aged and uneven-aged management for oak, Allegheny hardwoods, and Northern hardwoods. We then entered these prescriptions into the FORPLAN model for the appropriate management areas, together with their associated recreation and wildlife outputs and costs. Each was available to be chosen, based on its individual merit, in any of the

alternatives. For each of the five planning alternatives, the silvicultural systems and harvest methods actually chosen maximize net public benefits from the entire Forest as a unit. (Section III.D of Appendix B of the EIS contains additional information about silvicultural prescriptions).

The FORPLAN solution for each alternative, however, generally did not include any substantial amount of uneven-aged management unless indirectly constrained to do so. A long rotation constraint in even-aged management prescriptions in two of the alternatives resulted in significant acreage going to uneven-aged management.

Selection harvesting prescriptions generally produce lower present net values per acre than even-aged management prescriptions on the same analysis area. This is because selection harvesting prescriptions favor lower value timber species, are more expensive, and produce lower big game yields.

C. TIMBER STAND IMPROVEMENT PRACTICES

Precommercial Thinning

Precommercial thinning is removing trees from a stand that is not old enough for a commercial treatment. The objectives of the treatment are to control species composition, stand quality, and to improve growth rates on the preferred trees. It is an option on well-stocked Allegheny hardwood and high site index oak stands. The optimum age for completing this activity is 20 to 30 years.

Non-commercial Pulpwood Removal in Commercial Thinnings

The silvicultural prescription for intermediate cutting calls for removing both sawtimber and poletimber-size material from treated stands. As in the precommercial thinnings, this controls species composition, stand quality, and improves growth rates on the preferred trees. The growth and yield calculations built into the FORPLAN model assume we will cut all of this material. Where poor markets for the smaller material exist, we will have to cut it as a non-commercial activity following the commercial sale.

The publication entitled "Silvicultural Guidelines for Allegheny Hardwoods and Oak," discussed above in the section on harvesting practices, provides additional information on both of these practices.

D. REGENERATION PRACTICES

Planting

Planting is placing seedlings, containerized stock, transplants, or cuttings in the ground to establish a forest stand. The primary reason for planting are 1) to establish trees in an area where natural regeneration has failed or is not attainable and 2) to bring about a conversion of forest types from hardwoods to conifers. In failed clearcuts, the species most often planted will be hardwoods that are best suited to the site conditions. The 2400 section of the Forest-wide Standards and Guidelines in the Forest Plan contains additional detail on planting.

Fencing

Fencing involves the construction, maintenance, and eventual removal of protective fencing around a regeneration area to protect natural or artifically established seedlings from animal damage, particularly overbrowsing by deer. We usually decide to fence an area after we find post-harvest seedling or sapling stocking levels do not meet the minimum requirements identified for successful regeneration of harvest areas. When we do not have these minimum stocking levels, there is a good chance that deer browsing on the few seedlings which do exist will cause the clearcut to fail to regenerate. The Forest uses three types of fence: woven wire, small mesh nylon fence, and five-strand electric fence. We install woven wire fence using a bulldozer and a fence stretcher, and we install nylon fences and electric fences using only manual labor. We use fencing most often in the oak and northern hardwood types since neither of these will respond adequately to fertilization.

Fertilization

Fertilization is the application of nutrients to seedlings or saplings in recently-harvested stands or to individual trees. The Allegheny National Forest uses fertilizer to stimulate vigorous seedling/sapling tree growth, thereby limiting the length of time they remain vulnerable to browsing by wildlife species, particularly deer. We complete individual tree fertilization manually in areas where we have planted seedling stock to establish a stand. Where we are relying on natural regeneration to become the new stand, we apply fertilizer to the whole stand using a helicopter. Only shade tolerant species such as black cherry, white ash, and yellow poplar respond well to fertilization, so generally we will fertilize only the Allegheny hardwood timber type.

Site Preparation for Natural Regeneration

This activity involves treating the understory vegetation and undesirable tree stems remaining after a final harvest or shelterwood cut. On the Allegheny National Forest, we generally complete this by cutting down (using a chainsaw) all stems larger than two inches in diameter which have poor form, defects, or are not the species we desire in the new stand. These stems, if left in place, will use valuable growing space, nutrients, and water which the desirable seedlings and saplings will need.

Herbicide Treatment of Undesirable Understory Vegetation

The interference of understory vegetation with the establishment and growth of tree seedlings has been recognized as a problem on the ANF for at least a decade. As the forest approaches maturity, the need for a solution becomes critical.

Research projects have been conducted by the Forestry Sciences Laboratory (NEFES) in an effort to find solutions to this problem. Some techniques have been applied on a semi-commercial basis on the Forest and are in commercial use by other public agencies and companies in the area.

Background

When hayscented and New York fern are present beneath the overstory of a stand to be harvested, they often cause regeneration failure. Such stands often have 50 to 90 percent fewer desirable seedlings. Growth of these seedlings is poor, and seedlings do not usually grow above the herbaceous cover before they die. Striped maple and beech suckers also occur in the understory of many hardwood stands. When these species are abundant before cutting, they tend to become the dominant vegetation after cutting, crowding out desirable species of reproduction. When ground covers of fern or understories of striped maple or beech are excessive, as described in the Allegheny Hardwood Handbook, action should be taken to reduce the amounts of these plants before cutting so that satisfactory regeneration of the stand can be obtained.

We estimate that half of the Forest contains restrictive quantities of fern, striped maple, and/or beech suckers. On these areas, it is not possible to regenerate the Forest with either even-aged or uneven-aged silvicultural prescriptions. Vertical diversity is lacking in the

understory. This means there is less food and less cover for wildlife species.

The current situation results from a combination of factors. Selective browsing by large deer herds has drastically reduced or eliminated tree seedlings on many sites. Since fern, striped maple, and beech are not preferred deer food, they often survive and dominate the understory. Once established, these weed species are able to survive and interfere with reproduction of desirable tree species for an indefinite period of time. (For example, orchard stands and savannahs have been dominated by herbaceous plants for nearly 60 years). Reductions in deer population, shading of overstory, and similar ecological factors do not seem to reduce them enough to permit seedling regeneration. Some form of direct control of the undesirable plants is required. Control measures must be adopted during the 5 to 10 year period prior to harvest cutting in even-aged stands and immediately prior to each periodic harvest cutting in uneven-aged stands.

Alternatives Considered

Apply Herbicide

Five herbicides (bromacil, glyphosate, picloram, simazine, and hexazinone) have been tested by the Forestry Sciences Laboratory. Glyphosate (N-phosphonomethyl glycine), marked as Round-up herbicide by Monsanto Agricultural Products, St. Louis, MO, has been evaluated as the most economical herbicide tested that met the control criteria.

Mechanical Control

Ferns can be controlled mechanically by plowing during the growing season or by mowing two to three times per year for two to three successive years. Cutting of beech and striped maple is not effective because these species resprout rapidly. Small striped maple (3 feet tall) can be controlled by hand weeding.

Prescribed Fire

Ferns, striped maple, and beech can also be controlled with fire; however, two to three burns in successive years are needed to produce adequate control. A single burn does not reduce the cover of any of these plants and may actually stimulate it.

Fire use, however, has several limitations on the Allegheny Plateau. First, the number of burning days on the Allegheny Plateau are limited. During the 10-year period from 1960 to 1969, the ANF averaged only 8.5 days/year when wildfires occurred. During the same period, forests where prescribed burning is used averaged 49.8 to 97.3 days/year when fire occurred. Second, the Allegheny hardwood forest, the major timber type, does not develop a fuel accumulation large enough to sustain fires in each of three successive years. Thus, despite the potential effectiveness of fire as a weed control tool, it has limited value for a large scale program like understory control.

No Understory Control

As timber stands attain maturity, regeneration through clearcutting, shelterwood cutting, or selection cutting would be prescribed where understory conditions would permit such action. Where fern, striped maple, and/or beech dominated the floor beneath mature stands, regeneration would be deferred indefinitely.

Effects of Implementation

Effectiveness

The effectiveness of Roundup for control of a variety of weeds of agricultural crops and the specific weeds found in Allegheny hardwood forests is well documented in the literature. Furthermore, Roundup has been used operationally in an herbicide-shelterwood sequence by Hammermill Paper Company, Texasgulf, Inc., the Pennsylvania Department of Environmental Resources, and the Pennsylvania Game Commission for four years. These companies and agencies have made a substantial financial investment in equipment to carry out this work. Moreover, Roundup has been approved for forestry use by the Pennsylvania Department of Agriculture and the U.S. Environmental Protection Agency.

Mechanical methods are effective in controlling ferns where plowing and mowing can be done. But, these are impractical techniques in forest situations. Striped maple can be controlled mechanically by repeated treatment; mechanical techniques are ineffective in controlling beech.

Fire is an ineffective weed control measure in the Allegheny hardwood forest for the reasons given above.

Water

The possibility of Roundup moving through the soil profile or running off the soil surface has been addressed in literature. Extensive studies using a variety of soils have shown that Roundup is bound tightly to soil, has a low propensity for runoff, and does not leach through the soil profile. These studies used 14C-labeled Roundup permitting detection of very minute quantities of Roundup.

Mechanical understory control measures being considered will have no measurable effect on water quality.

Where no control measures are employed, there will be no effect on water quality.

Soils and Soil Micro-Organisms

Roundup is rapidly and completely degradable to CO2 in both soils and water. Studies have utilized a range of soils and geographic areas. Degradation is carried out chiefly by micro-organisms. Research shows that a wide variety of microflora are capable of degrading Roundup. Furthermore, experiments with both treated and untreated soils demonstrate that Roundup has no adverse effect on the overall microflora population.

Handweeding striped maple will have no significant impact on soils or soil micro-organisms.

Mowing may cause negligible soil compaction.

Public Acceptance

There has been widespread public concern about the use of herbicides as a forest management tool for the past decade. Regardless of the credentials of a particular herbicide, the phrase "chemical weed control" may generate public opposition. However, Roundup has been one of the most widely-used herbicides in agriculture during the past decade, where it has been used to control weeds among food crops, and thus has not created a great deal of public concern. Mechanical control measures or simply making no treatment are not likely to cause public concern.

Safety and Health

The graph on the succeeding page compares the toxicity of glyphosate to other selected herbicides and to aspirin and table salt. Glyphosate is less toxic than aspirin or table salt and is registered for use on agricultural crop lands.

Roundup is classified as only slightly toxic by oral ingestion with an acute LD_{50} (lethal dose to 50 percent of the population when given as a single dose) to rats of 4,320 mg/kg of body weight (indicates low toxicity), and an oral LD_{50} of 4,900 mg/kg of body weight (indicates low toxicity). Roundup is classified as practically nontoxic by skin contact since rabbits survived single dermal dosages greater than 7,940 mg/kg of body weight.