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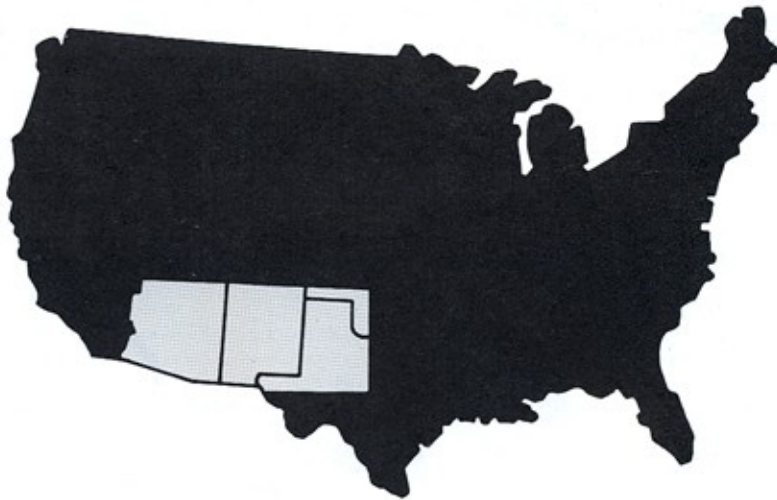


Cibola National Forest Land and Resource Management Plan



VICINITY MAP

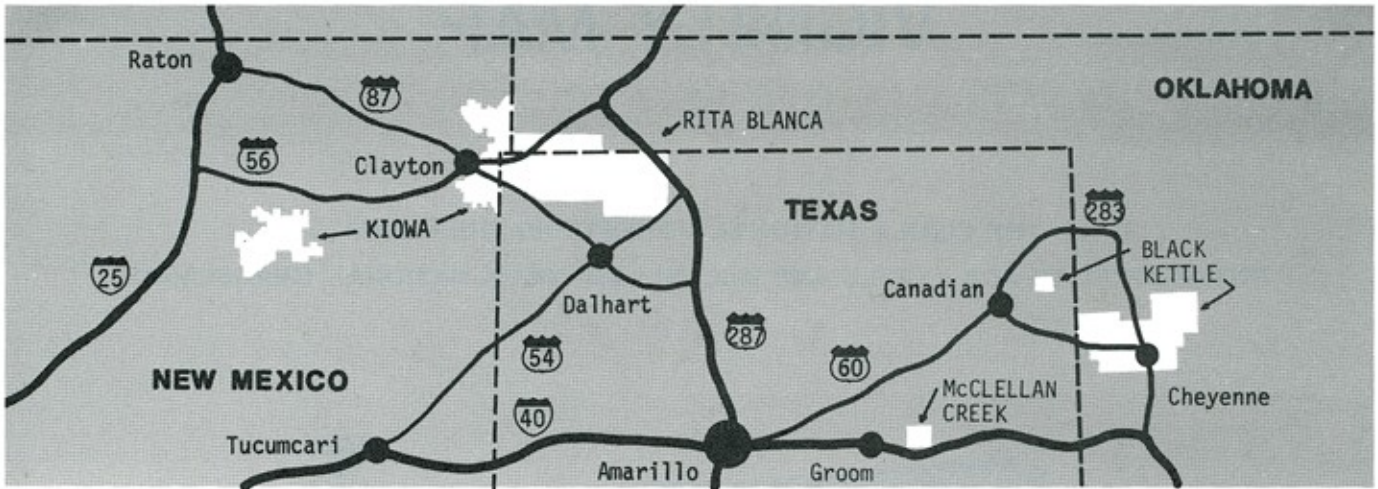
**THE CIBOLA NATIONAL FOREST AND THE KIOWA,
RITA BLANCA, BLACK KETTLE AND McCLELLAN CREEK NATIONAL GRASSLANDS**



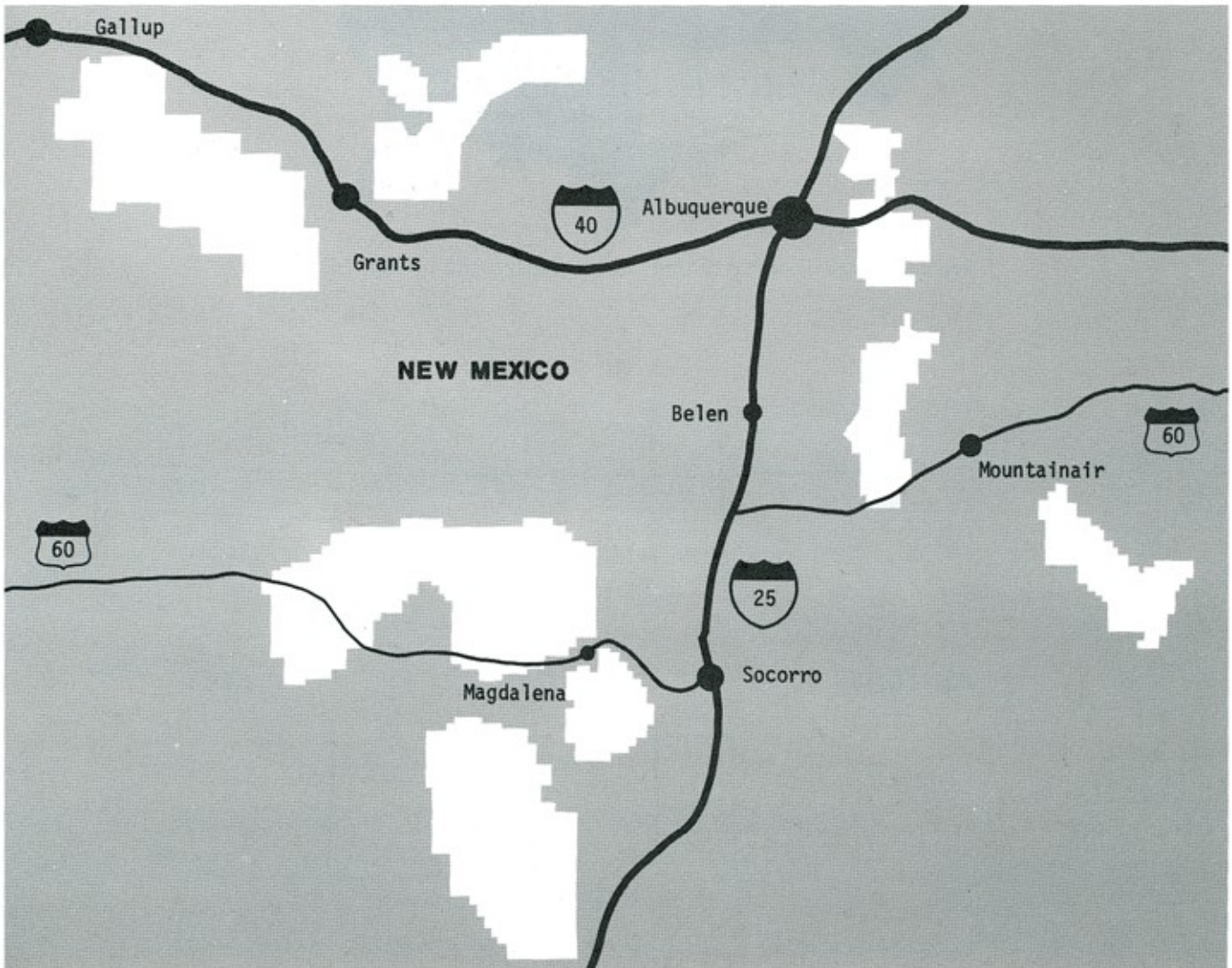
Region of the Forest, United States Department of Agriculture



Vicinity of the Forest and Grasslands



The Black Kettle, Kiowa, Rita Blanca and McClellan Creek National Grasslands



The Cibola National Forest

Cibola National Forest

Land and Resource Management Plan

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1. Introduction

PURPOSE OF THE PLAN

The Land and Resource Management Plan (Forest Plan) defines the long-term direction for managing the Cibola National Forest and the Kiowa, Rita Blanca, McClellan Creek and Black Kettle National Grasslands. The purpose of the Forest Plan is to provide for multiple use and sustained yield of goods and services from the Forest in a way that maximizes long term net public benefits in an environmentally sound manner [36 CFR 219.1a]. To accomplish this, the Forest Plan:

Briefly describes the major public issues and management concerns pertinent to the Forest and how each one is addressed in the Forest Plan.

Briefly summarizes the Analysis of the Management Situation (AMS) including the existing management situation, projected future use and supply conditions.

Establishes long-range policies, goals, and objectives, and contains the specific management prescriptions planned to meet the policies and to achieve the multiple-use goals and objectives.

Specifies the vicinity, timing, and standards and guidelines for proposed management practices.

Establishes monitoring and evaluation requirements needed so that direction is carried out to determine how well outputs and effects were predicted.

Contains references to information used and lists interdisciplinary (ID) team members participating in developing the Forest Plan.

Will ordinarily be revised on a 10 year cycle or at least every 15 years.

Preparation of the Forest Plan is required by 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 replaces all previous resource management plans prepared for the Forest and Grasslands. Upon approval of the Forest Plan, all subsequent activities affecting these lands, including budget proposals, must be based on the Forest Plan [36 CFR 219.10(e)]. In addition, all permits, contracts, and other instruments for the use and occupancy of these National Forest System lands must be consistent with the Forest Plan [36 CFR 219.10(e)].

Land management prescriptions and standards and guidelines are a statement of the Plan's management direction. Projected outputs, services and rates of implementation are, however, dependent on the annual budget process. Implementation schedules can be changed to reflect annual budget proposals and the Plan amended accordingly after appropriate public notification.

RELATIONSHIP TO OTHER PLANNING LEVELS AND STUDIES

Development of a Forest Plan occurs within the framework of Forest Service regional and national planning. The RPA Program sets the national direction and output levels for National Forest System lands based on suitability and capability information from each Forest Service Region. Each Region disaggregates its share of the national production levels among the Forests of the Region. This distribution is based on the detailed site-specific information gathered at the Forest level.

Each Forest Plan, in turn, either validates or provides a basis for changing production levels assigned by the Region. Activities and projects are planned and implemented by the Forest to carry out direction developed in the Forest Plan. Information from all Forest Plans in the Region is used in developing and revising the Regional Guide. Upon completion of the Regional Guide, a review is made to determine if amendments to Forest Plans are necessary.

Analysis that supports the Forest Plan is contained in the accompanying Environmental Impact Statement (EIS). Therefore, the Forest Plan and the EIS are companion documents. The EIS describes alternatives considered in arriving at the proposed Forest Plan and assesses environmental effects of implementing the Plan and its alternatives. Supporting documentation of the planning process is contained in the planning records on file at the Cibola National Forest Supervisor's Office in Albuquerque, New Mexico. The planning records are available for public review.

The Forest Plan either supersedes or replaces all previous resource or land use management plans prepared for the Forest and Grasslands--specifically the 1975 Sandia Land Use Plan and the Forest and District Multiple-Use Plans. Following approval of the Plan, all future permits, contracts, and other instruments for the use and occupancy of the National Forest Systems lands must be consistent with this Plan. In addition, all subsequent administrative activities affecting the Forest and Grasslands, including budget proposals, will be based on the Plan [36 CFR 219.10(e)].

The final Environmental Impact Statement (EIS) will be used for tiering [40 CFR 1502.20 and 1508.28]. Tiering means that, if needed, future environmental documents for projects based on the Plan will only summarize or incorporate by reference issues discussed in the EIS. Environmental documents for those projects will focus on site specific issues, concerns, and opportunities unique to the project. Environmental assessments will not be prepared for projects that have been found to have limited context and intensity [40 CFR 1508.27(a) and (b)] and produce little or no environmental effects, individually or cumulatively to either the biological or physical components of the human environment [40 CFR 1508.14] (FSM 1951.2) or have been adequately addressed in other environmental documents, including the EIS associated with the Forest Plan.

The Plan was analyzed in 10 year periods (Periods 1 through 5) for the first fifty years and in 50 year periods (Periods 6 through 8) for the following 150 years. Implementation of Period 1 is expected to begin in Fiscal Year 1986.

Budget proposals for Fiscal Year 1986 will have been submitted to Congress before Forest Plan can be implemented in Fiscal Year 1986. Included in these proposals are operation, maintenance, and investment project costs for the continued management of the Forest and Grasslands.

Investment projects, because of size and complexity, are phased in over a period of 3 to 5 years. For example, timber sales to be sold in 1985 are normally inventoried and examined in 1983, marked and cruised in 1984, and appraised and sold in 1985. Roads, campgrounds, wildlife habitat projects and grazing systems are phased in the same way. The number and type of disciplines needed in the organization are also tied directly to these projects--foresters, wildlife biologists, and engineers. In addition, there are many existing contracts or permits for timber sales, special uses, and grazing. Duration of these contracts is from several months to several years.

When the Forest Plan is implemented, the time needed to bring activities into compliance with the Forest Plan will vary depending on type of project. Most operation and maintenance activities, projects in the first year of development, new special use proposals and transfers of existing permits can be brought into compliance with the Forest Plan within the first year of implementation. Projects in the second to fifth year of implementation as well as many contractual obligations will continue as planned.

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

PLANNING PROCESS

The Forest Plan was developed in compliance with the NFMA- regulations [36 CFR 219] and the Council on Environmental Quality (CEQ) regulations [40 CFR 1500] that were developed to implement NEPA of 1969.

The planning process specified in the NFMA regulations was followed in development of the proposed Forest Plan. The planning process utilized the interdisciplinary (ID) approach. An ID Team was established, composed of professionals of diverse backgrounds in the physical, biological, economic, and social sciences. Implementation of this Plan will require continued ID teamwork.

The planning process is a logical, rational, and trackable approach to natural resource decisionmaking. The planning actions as described in the NFMA regulations [36 CFR 219.12(b)-(k)] and used in this Forest planning effort are as follows:

- Identification of purpose and need.
- Development of planning criteria.
- Inventory data and information collection.
- Analysis of the management situation.
- Formulation of alternatives.
- Estimation of effects of alternatives.
- Evaluation of alternatives.
- Selection of an alternative (Forest Plan).
- Plan approval and implementation.
- Monitoring and evaluation.

Planning was based on the following principles [36 CFR 219.1(b)] which were integrated throughout the process:

Establishment of goals and objectives for multiple-use sustained-yield management without impairment of the productivity of the land.

Goals, objectives, and the levels of sustained outputs are contained in Chapter 4.

Consideration of the relative values of all renewable resources, including the relationship of nonrenewable resources, such as mineral resources, to renewable resources.

Both quantifiable and nonquantifiable values were evaluated for alternatives and benchmarks. These values are displayed and discussed in detail in the EIS (Chapters 2 and 4, and Appendix B).

Recognition that the Forest is composed of ecosystems and management for goods and services requires an awareness of the interrelationships among plants, animals, soil, water, air, and other environmental factors within the ecosystems.

This principle was the foundation of the planning process. Planning models, prescriptions, benchmarks, and alternatives were formulated considering all components of the Forest. Some components were emphasized in some of the analyses but minimum standards for all other components were always met.

Protection and, where appropriate, improvement of the quality of renewable resources.

Preservation of important historic, cultural, and natural aspects of our national heritage.

Protection and preservation of the inherent right of freedom of American Indians to believe, express, and exercise traditional religions.

The Forest Service respects the ancestral ties to land which is the heart of

the Native American traditional religions.

Furthermore, realizing that in the uniqueness of the Southwest, there also exist Land Grant communities who also have cultural and spiritual ties to land.

Provisions for the safe use and enjoyment of Forest resources by the public. Protection, through ecologically compatible means, of all forest and rangeland resources from depredations by insects and disease.

Coordination with the land and resource planning efforts of other Federal agencies, State and local governments, and Indian tribes. Extensive coordination was done throughout the planning process. These efforts are described in Chapter I of the EIS.

Use of a systematic, interdisciplinary approach to ensure coordination and integration of planning activities for multiple-use management.

The Interdisciplinary Team that developed the proposed Forest Plan is listed in Chapter 6 of the EIS.

Early and frequent public participation.

The public has been involved throughout the process. A description of public involvement is found in the EIS (Chapter 6 and Appendix A).

Establishment of quantitative and qualitative standards and guidelines for land and resource planning and management.

These principles were integrated into the standards and guidelines for management prescriptions found in Chapter 4 of this Plan. Impacts and effects of the proposed management prescriptions are described in the EIS (Chapter 4). The management situation for all resources and uses is described in the AMS on file at Forest offices and summarized in Chapter 3 of both the Plan and EIS.

Management of the National Forest System lands in a manner that is sensitive to economic efficiency.

Economic efficiency of the alternatives and Forest Plan was evaluated throughout the process. Chapters 2 and 4, and Appendix B of the EIS describe the economic efficiency analysis.

Responsiveness to changing conditions of land and other resources and to changing social and economic demands of the American people.

Demand considerations and social and economic effects of the alternatives and proposed Forest Plan are found in Chapters 2, 3, and 4 of the EIS and in the AMS.

The Region 3 Regional Forester's decision to approve the July 1985 Cibola National Forest Plan was appealed by the Sandoval Environmental Action Community, New Mexico Wildlife Federation, Sierra Club, Las Huertas/La Jara Ditch Association, American Indian Environmental Council, Inc., Southwest Research and Information Center, Inc., and Tonantzin Land Institute ("Appellants"). The State of New Mexico ("State") intervened in the appeal.

The Forest Service, the Appellants, and the State met for approximately six months and resolved many of their differences. They were not able to resolve four issues, and the Appellants' and the State's positions are stated below followed by the Forest Service's position.

The first issue is whether or not the Plan provides the protection for American Indian religious beliefs and practices which is required by the Free Exercise Clause of the First Amendment to the United States Constitution, the American

Indian Religious Freedom Act, and 36 CFR section 219.1(b) (6) of the National Forest Management Act regulations.

Issue 1 - Appellants' and State's Position

The Appellants' and the State's position is that the Plan does not provide the required protection, because it does not make a commitment that activities which will interfere with Indians' religious beliefs and practices cannot proceed unless there is a compelling need for them which cannot be served by other means which interfere less with those beliefs and practices.

Issue 1 - Forest Service Position

The Forest Service's position is that the Plan does make a commitment for the protection of Indian religious beliefs and practices after it has been established on an activity by activity basis that the proposed project will interfere with Indian religious beliefs and practices.

The remaining three issues concern the timber program proposed by the Plan.

Issue 2 - Appellants' Position

The Appellants contend that the Plan must protect all or some of the semi-primitive non-motorized areas from timber activities to provide needed non-roaded recreational use, visual quality resources, watershed protection, and wildlife habitat. Semi-primitive lands have not been specifically identified and protected in the Plan and are not needed in the suitable land base to maintain the historic level of timber harvest on the Cibola.

Issue 2 - Forest Service Position

It is the Forest Service's position that the Plan provides management direction to manage semi-primitive non-motorized areas in a manner which will provide for needed non-roaded recreational use, visual quality resources, watershed protection, and wildlife habitat.

Issue 3 - Appellants' Position

It is Appellants' position that a minimum bid for timber sales must cover all costs of timber-related activities. The Forest should reduce timber sale areas and increase timber sale prices to ensure that the cost of timber harvesting activities fully covers all long-term public costs and benefits.

Issue 3 - Forest Service Position

It is the Forest Service's position that individual timber sales will be evaluated based on expected costs and revenues and achievement of other multiple-use objectives and that efforts will be made to reduce timber program costs; however, some sales may be sold where projected costs exceed projected revenues when necessary to meet these multiple-use objectives as provided for in National Forest Management Act and Multiple Use Sustained Yield Act. In any case total public benefits priced and non-priced will exceed costs on individual timber sales.

Issue 4 - Appellants' Position

The Appellants consider an annual allowable sale quantity of 8.3 million board feet inconsistent with the requirement that the Cibola Forest be managed in a balanced multiple use fashion that maximizes long term net public benefits in an environmentally sound manner. The Forest Service over-estimated timber yield and value tables resulting in excessive lands allocated to timber management and harvesting of more timber than is environmentally sound or cost effective.

Issue 4 - Forest Service Position

The Forest Service position is that the normal annual sale quantity of 8.3 million board feet is very conservative and reflects a balanced multiple-use program that maximizes long-term net public benefits in an environmentally sound manner.

Timber benefit values were tested to evaluate effects on allowable sawtimber sale quantity. The results of the sensitivity tests show that allowable sawtimber sale quantity increases throughout the range of lower timber benefit values tested.

Comparison of timber yield estimates used in developing the Plan indicates that timber yield was under estimated, not over estimated.

ORGANIZATION OF THE
FOREST PLAN
DOCUMENT

Chapter 2 of the Forest Plan describes the major issues and concerns and how the Plan responds to them. Chapter 3 summarizes the AMS and describes changes in management direction that have been incorporated into the Forest Plan. Chapter 4 details the mission, goals, objectives, proposed vicinity, and timing of management practices; projects the condition of the Forest in Period 5 from implementation of the Plan; and describes management direction and prescriptions and associated resource management standards and guidelines. Management area maps that are keyed to the prescriptions in Chapter 4 are included. Chapter 5 is the monitoring plan. The Glossary defines terms used in the Plan. Appendix A lists decision variables, Appendix B lists activity codes. Appendix C lists and describes analysis areas.

PLANNING AREA
DESCRIPTION

The Forest and Grasslands are comprised of 13 separate parcels scattered eastward from west central New Mexico into northeastern New Mexico, the Texas and Oklahoma Panhandles, and western Oklahoma. The Forest generally surrounds the Albuquerque metropolitan area, while two other metropolitan areas, Amarillo and Oklahoma City, are within 125 miles of portions of the Grasslands.

The Forest contains 1,618,459 acres while the Grasslands contain 263,954 acres. The Forest is divided into four Ranger Districts. These are the Magdalena Ranger District located in portions of Socorro, Sierra and Catron Counties; the Mountain-air Ranger District located in portions of Lincoln, Torrance, Bernalillo and Valencia Counties; the Mt. Taylor Ranger District located in portions of Cibola, Sandoval and McKinley counties; and the Sandia Ranger District located in portions of Bernalillo and Sandoval Counties, New Mexico. The Grasslands are administered by three Ranger Districts. These are the Kiowa Ranger District located in portions of Colfax, Harding, Union and More Counties; the Rite Blanca Ranger District located in portions of Dallam County, Texas and Cimarron County, Oklahoma; and the Black Kettle Ranger District located in portions of Gray and Hemphill Counties Texas and Roger Mills County, Oklahoma. The Black Kettle Ranger District Office administers the Black Kettle and McClellan Creek National Grasslands.

The Forest landscape is generally mountainous with numerous canyons, washes and mesas. Elevations range from about 5,660 feet in the lowland desert to the highest point, Mt. Taylor, at 11,301 feet. The lower elevations of the Forest are rolling, hilly terrain cut by sand washes and small canyons. Rock outcrops are prevalent. With an increase in elevation the terrain becomes mountainous with prominent canyons and exposed rock faces. There are numerous peaks in excess of 9,000 feet.

The Grasslands in New Mexico and Texas are characteristically flat with some rolling, low hills. The exception would be the Canadian River Canyon which bisects the Mills Unit of the Kiowa National Grassland. This canyon is approximately 800 feet deep and 1 to 2 miles in width. Rim rock is exposed at the upper elevations, while steep slopes fall away to the river below. The Black Kettle National Grassland in Oklahoma is characterized by medium to large rolling hills, some exposed rock and numerous washes or small canyons.

The maps preceding the Introduction indicate the location of the Forest and the four National Grasslands under discussion in the EIS and Plan.

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2. Public Issues, Management Concerns and Opportunities

OVERVIEW

Local issues and concerns have been identified for the Cibola National Forest and the Kiowa, Rita Blanca, McClellan Creek, and Black Kettle National Grasslands. The Forest Plan and alternatives to it are designed to respond to these issues as well as RPA Program objectives assigned to the Forest and Grasslands in the Regional Guide.

Issues, concerns, and opportunities were identified from the Regional Guide and from comments solicited from the public and Forest Service employees. Comments were received in response to a number of public involvement workshops and to an information brochure and response form mailed to the public.

Comments received were analyzed in a scoping process to determine the most relevant issues and concerns. Content analysis was then utilized to extract substantive comments from the responses. Results of the analyses were compared and consolidated in a summary of responses. A list of major issues was compiled, based on whether an issue was: 1) specifically relevant to the Forest and/or Grasslands; 2) of widespread concern to the public; 3) within the Forest Supervisor's authority to resolve; 4) long-term in duration; and 5) within the Forest's physical and biological capability.

ISSUES

The following information describes the major issues and opportunities which were selected to be addressed in the planning process and how the proposed Forest Plan responds to each issue.

FIREWOOD AND MISCELLANEOUS PRODUCTS

"Demands for firewood will result in the future supply being less in quantity, or quality, or not in locations desired or accessible by users. The Forest lacks management direction for a coordinated firewood program."

Quantifiable Comparison

In Period 1

Total average annual firewood production

<u>Period 1</u>
15,500 MBF
31.0 M cords

Non-Quantifiable Comparison

The Forest will not be able to meet the expected future demands for firewood. Two-thirds of the firewood produced in early periods results from available dead and down material. The remainder results from commercial green firewood sales and slash generated from timber sale activities. Additional firewood is also available from modification of the pinyon-juniper overstory for range and wildlife habitat improvement work.

By Period 5, 50 percent of the firewood produced will come from green firewood sales and timber harvest slash.

In addition to the volumes displayed in the Quantifiable Comparison, overstory modification annually provides 2,391 MBF for Periods 1 and 2 and 290 MBF for Periods 3 and 4. Overstory modification reduces acreage available for firewood production by 12 percent.

The Plan meets 48 percent of the projected firewood demands in Period 1 and only 18 percent in Period 5.

RANGE MANAGEMENT

"Forage production and/or intensity of management on approximately 75 percent of the Forest grazing allotments, excluding the National Grasslands, is inadequate to support permitted livestock. Current levels of use and management intensity on these allotments result in declining site productivity and unacceptable soil loss."

Quantifiable Comparison

In Periods 1 and 3

Average annual permitted use (MAUMs)		Average annual grazing capacity (MAUMs)		Management intensity in Period 5 (MAcres)					
Period 1	Period 3	Period 1	Period 3	A	B	C	D	E	X
189.7	180.9	185.2	190.0	110.9	766.7	117.3	142.1	363.1	87.8

Non-Quantifiable Comparison

Moderate reductions in permitted livestock use and increased grazing capacity because of increased management and investment in structural and nonstructural improvements will result in balancing use with capacity in Period 3 for the National Forest. The National Grasslands are currently balanced and will remain balanced. Once this balance is obtained, range conditions will improve because of increased ground cover and soil loss will be reduced. Plant and anise l diversity, watershed condition and water quality will also improve. Long-term productivity is enhanced as range condition improves.

SOIL AND WATER

Resource use and activities have created unacceptable soil erosion and reduced water quality on some watersheds on the Cibola. Soil productivity has been reduced on these areas, and continuing erosion further reduces potential production."

Quantifiable Comparison

At the end of Period 5

Percent change in soil loss from present	Satisfactory watershed acres (MAcres)
- 10	1,478.9

Non-quantifiable Comparison

Balancing livestock use with capacity, increased range management, direct watershed treatment such as pitting, interseeding, and water spreading, and some travelway closure and road reconstruction will result in increased ground cover and moderate reduction in soil loss. These actions will lead to long-term productivity of all related resources. Watershed condition will change from the current level of 80 percent unsatisfactory to 80 percent satisfactory by the end of Period 5.

PROVIDE VARIOUS RECREATION OPPORTUNITIES

- "Demand for dispersed recreation opportunities, including off-road vehicle use and winter sports activities, has steadily increased. This results in visitor conflicts and resource conflicts."
- Demand for developed recreation, especially opportunities for large group use areas near Albuquerque, exceeds capacity. Overcrowding exists on peak days. Opportunities need to be identified in private and public sectors for various types of public use sites."

Quantifiable Comparison

At the end of Period 5

Developed Recreation Additions		Recreation Use (MRVD) Developed Dispersed (excluding wildlife)	
(PAOT)	(Acres)		
9,470	916	1,321.5	1,084.7

Non-Quantifiable Comparison

Future need for dispersed recreation in Period 5 is satisfied at the 64 percent level. Only 32 percent of needed trail construction and 28 percent of needed trail reconstruction will be met during the planning period. Full service level management is provided in approximately one-fourth of the management areas for dispersed recreation.

Developed recreation meets 59 percent of the expected needs. Rehabilitation of existing sites and new site construction provide 56 percent of the needed PAOT to meet developed site needs. The private sector will provide a substantial amount of the PAOT on Forest land. Full service level management will be provided at 40

percent of the developed sites Forest-wide, with the Sandia Ranger District level at 65 percent. Some site deterioration can be expected because full service level management is not at 100 percent.

MINERALS MANAGEMENT

Exploration, development, and production of minerals, energy resources, and common varieties have the potential to conflict with other resource protection, uses and activities. Knowledge of mineral potential is lacking for some areas on the Forest, and more of this type of information is needed for long-range resource planning. Minerals exploration is limited in some locations by lack of rights-of-way."

Quantifiable Comparison

The annual minerals budget, which is a measure of the Forest's ability to adequately administer the minerals program is \$90,000 annually in Period 1 and \$110,000 thereafter.

Non-Quantifiable Comparison

Mineral withdrawals for locatable minerals will be increased by approximately 6,000 acres for: 1) protection of new recreation sites; 2) new and expanded electronic sites; 3) the Langmuir Principle Research Site; 4) the Mt. Taylor administrative site; and 5) Research Natural Areas.

For leases on nonwilderness lands, surface resources are extended additional protection by information notice on slopes from 16 - 40 percent and by limited surface occupancy stipulations on slopes above 41 percent. All wildernesses are withdrawn from leasing.

An average of 82 percent of the mining plans of operation, lease applications and common variety permits will be handled in a timely manner during the planning period. Approximately 18 percent may require a request for extension of time to properly process because of work time needed.

TRANSPORTATION

"Management of the Forest is somewhat restricted by lack of access and an inadequate transportation system."

Quantifiable Comparison

At the End of Period 5 (Roads)

Travelways closed (miles)	Total road ROW acquired (miles)	Total road construction/reconstruction (miles)	Average annual road system management by maintenance levels over 5 decades (miles)	
			Levels	
			1-2	3-5
1,790	19	3,030	1,493	1,264

Non-Quantifiable Comparison

Road construction, reconstruction and maintenance will benefit the timber resource and aid in the overall management of the Forest. The moderate levels of reconstruction and maintenance will prevent loss of the investment in the road system. Soil and watershed conditions should be improved slightly by obliteration of the travelways. Rights-of-way acquisition provides 11 percent of the mileage needed.

Quantifiable Comparison

At the End of Period 5 (Trails)

Average annual trail construction/reconstruction over 5 decades (miles)	Total trail ROW acquired (miles)	Average annual trail system maintenance over 5 decades (miles)	
		Level 1	Level 2-5
3.36	3.6	330	60

Non-Quantifiable Comparison Moderate levels of trail construction and reconstruction will increase opportunities for dispersed recreation. The planned level of maintenance will limit loss of investment. Access in later decades may be limited by lack of rights-of-way.

ELECTRONIC SITE MANAGEMENT "As population and technology increase, the demand for key electronic sites in central New Mexico will become critical as present demand exceeds available suitable sites."

Quantifiable Comparison At the End of Period 5
Acres Allocated
422

Non-Quantifiable Comparison The eleven existing electronic sites, totaling 150 acres, will be retained. Of these, four will be expanded by 79 acres. An additional four new sites will be designated covering 195 acres. These actions will provide for orderly development of local, regional and national communication facilities through the planning period.

WILDERNESS MANAGEMENT "The Forest lacks management direction for its four wilderness areas, particularly for access, trailheads, use patterns, and coordination with adjacent private land."

Quantifiable Comparison At Periods 1 and 5

Average annual use (MRVD)		Total trail construction/reconstruction (miles)
Period 1	Period 5	Period 5
78.4	89.6	64

Wilderness management direction is established in this plan.

Non-Quantifiable Comparison Full service management is provided at the 76 percent level for the Sandia Mountain Wilderness and the 39 percent level for the remaining three wildernesses. Management at reduced service level will cause deterioration of natural processes and reduce wilderness values. Fifty-three percent of the trails needed to disperse use are provided. Sandia Mountain Wilderness is managed at capacity through self registration and user contacts. Capacity management is by visitor information techniques for the other wildernesses.

RIPARIAN MANAGEMENT "Many riparian areas have deteriorated. Roads, recreation use, livestock grazing, and logging are contributing factors. This downward trend is continuing in some areas.

"Riparian areas are essential to many plant and wildlife species and are important in water quality and visual resource management."

Quantifiable Comparison At the End of Period 5
Total acres treated
2,244

Non-Quantifiable Comparison Water quality and wildlife habitat will improve moderately as direct treatments are implemented and livestock use is controlled on 44 percent of the riparian acreage. This will increase vegetation and reduce sedimentation within these areas. Riparian areas will also benefit when permitted use and grazing capacity are balanced in the third decade and from intensified range management and direct watershed treatment. Deterioration of the Bluewater Creek riparian area by recreation use is reversed by control of vehicle access. Management options for the Las Huertas area will be studied in an environmental analysis which will address

impacts on the riparian zone from dispersed recreation and reconstruction, closure or rerouting of State Highway 44.

UNAUTHORIZED USE "The level of Forest Service law enforcement is generally perceived as inadequate and does not meet public expectations. The protection of cultural resources off-road vehicle use, firewood theft, vandalism, and user protection are some of the major problems identified."

Quantifiable Comparison	Enforcement personnel (5 decades average annual man years)	
	Level 4	Cooperative
	<u>Technicians</u>	<u>Programs</u>
	4	5

Non-Quantifiable Comparison Funding for law enforcement is increased by 47 percent over the current level. This will be adequate for reducing wood theft, vandalism, man caused fires, and other law infractions in the high public use areas. Forestwide, however, funding is at 28 percent of estimated need.

OPPORTUNITIES

NATIONAL GRASSLANDS "The National Grasslands are to be managed to demonstrate and promote grassland agriculture in the areas of which they are a part. There is an opportunity to expand this role on the Black Kettle, Rita Blanca and Kiowa National Grasslands. There is a need to examine ownership patterns, combinations of land and resource uses based on soil capability and expanded cooperative efforts with other agencies and landowners to fulfill this intended role."

Non-Quantifiable Comparison The National Grasslands were established in part to demonstrate good grassland agriculture. The Plan continues this charter by managing the range resource to provide optimum forage for livestock while maintaining and enhancing wildlife habitat and recreation opportunities. Grazing penmittees, private land ranchers and ranching organizations as well as educational institutions are invited to participate in and/or review management on the National Grasslands.

PUBLIC INFORMATION AND EDUCATION "Public comments suggested the Forest needs to strengthen its information and education programs."

Non-Quantifiable Comparison The Plan provides for the following:

1. Host at least two Environmental Education Workshops each year.
2. Initiate Ranger Column in local newspapers on a monthly basis.
3. Expand efforts in developing feature stories for the news media. Efforts will be made to average one feature story per month.
4. Produce a variety of slide/tape or video programs regarding resource management for out-service use. Emphasis will be placed on slide/tape or video programs addressing the ten issues listed above.
5. Develop a list of Forest Service employees to fill requests for speakers to outside groups or organizations.
6. Initiate monthly letter covering Forest and Grassland programs and send to key individuals or organizations.
7. Assign Cibola employees to attend meetings of various special interest groups as a means of establishing stronger ties with these groups.

8. Encourage Ranger District personnel to participate in local county fairs.
9. Supervisor's Office will coordinate State Fair display.
10. Develop a series of public brochures covering such topics as ORV use, geology, mountaineering, outdoor safety, snowmobiling, grazing, timber harvest, watershed management, special uses.

3. Summary of the Analysis of the Management Situation

OVERVIEW

An Analysis of the Management Situation (AMS) was prepared and documented in October 1982 as a means of determining the productive capacity of the Forest and Grasslands to supply various goods and services. Copies of the AMS are filed at Ranger District Offices, the Forest Supervisor's Office, and the Regional Office.

This chapter summarizes the AMS. It depicts the current goods and services produced and projects supply and expected future use on the Forest. It also summarizes expected future conditions of the Forest once the Plan is implemented.

Supply and projected future use for various Forest goods and services have been analyzed to identify necessary improvements, resolve current public issues, and prevent future correct. The goal of the Plan is to identify the level and type of Forest uses that would help meet projected future use while enhancing or maintaining resources in a cost effective manner.

Table 1 compares key outputs from the Plan with projected future use and supply.

Supply data is based on information entered in the Forest data base which was used to model the single resource maximum benchmark output levels. This is our best estimate of supply potential. Supply is discussed in detail in the Forest AMS which is summarized in this chapter of the Plan.

Projected future use is from the Forest AMS and in some cases such as sawtimber, portions of this use would be supplies from areas other than the Cibola National Forest.

Table 1. Comparison of the Plan's Key Outputs with Supply and Projected Future Use.

Resource Output	Average Annual Unit of Measure	Plan		Supply		Projected Future Use	
		Period 1	Period 5	Period 1	Period 5	Period 1	Period 5
Sawtimber Sales	MBF	6,300	-	18,000	-	90,000 1/	-
Products (Pulpwood)	MBF	200	-	2,400	-	2,400	-
Firewood Sold and Free Use	MBF	7,200	6,100	17,300	19,300	27,400	33,600
Grazing Capacity	MAUM	185.2	191.5	194	241	-	-

Table 1. (Continued) Comparison of the Plan's Key Outputs with Supply and Projected Future Use.

Resource Output	Average Annual Unit of Measure	Plan		Supply		Projected Future Use	
		Period 1	Period 5	Period 1	Period 5	Period 1	Period 5
Permitted Livestock Use	MAUM	189.7	186.7	-	-	194+	241+
Wilderness Recreation	MRVD	78.4	89.6	115.2	115.2	89.8	127.0
Developed Recreation	MRVD	709.4	1331.1	820	2,270 2/	820	2,270
Dispersed Recreation Wildlife 3/	MRVD	655.8	1,358.9	2,226	2,226	700	1,700
Water	ACF	99,400	99,600	101,400	101,700	101,400	101,700
Minerals							
Natural GAS	BBTU	21,000	100,000	Unknown	Unknown	21,000	100,000
Oil	BBTU	50	300	Unknown	Unknown	50	300
Coal	BBTU	0	144	Unknown	Unknown	0	144
Uranium	BBTU	876,960	1,754,000	Unknown	Unknown	876,960	1,754,000

- 1/ Sawmill capacity within Cibola Zone of influence.
- 2/ Supply was limited to projected future use (Max Recreation Benchmark).
- 3/ Wildlife portion of total dispersed recreation.

TIMBER AND FIREWOOD Under Alternative A the Forest provides an annual sawtimber volume of 7.7 MMBF in Period 1. Actual harvest has averaged 6 MMBF annually for the last decade.

The previous ten year history (1977-1986) of actual timber harvest and/or timber offered is as follows:

1977 - 3,271	1978 - 10,505
1979 - 5,325	1980 - 3,485
1981 - 3,930*	1982 - 5,355
1983 - 0**	1984 - 15,315
1985 - 2,355*	1986 - 7,564

- * Offered Volume - Sales still unfinished
- ** Actual harvest continued on unfinished sales

Amended June 1989

Forest lands were subjected to a screening process to determine suitability for timber production. The first criterion for suitability was productivity. The next criterion was whether the land was legislatively or administratively withdrawn from timber harvest. Available land was then screened to determine whether the technology is available to permit timber harvest without irreversible soil or watershed damage. An additional suitability test was used to determine whether the lands can be adequately regenerated within 5 years following final harvest. Table 2 displays lands capable, available, and suitable for timber production.

Table 2. Lands Capable, Available, and Suitable for Timber Production

Criterion	Classification	Acres
Less than 10% stocked by trees	A. Non-forest	834,851
	1. Non-forest land	
Legislatively or administratively withdrawn	B. Forest land but withdrawn from timber production	57,232
	1. Wilderness	1,434
	2. Military Withdrawal	
Lack of technology or not suitable as a timber product	C. Physically not suitable	89,397 1/
	1. Technologically not suitable	523,203
	2. Pinyon-juniper woodland	
	D. Suitable for timber lands	376,296 2/& 3/
	E. Total National Forest System Lands	1,882,413

Amended June 1989

- 1/ Includes 87,073 acres with site index less than 40 and 2,224 acres with inadequate volume per acre for cable harvest.
- 2/ Includes 55,490 acres that are marginal from a regeneration standpoint and are not scheduled for harvest in Period 1, but because of lack of data were retained.
- 3/ Based on 1985 market values; the economically appropriate lands should be 306,900 for Period 1. This does not affect the long-term relationship of goods and services produced on the Forest. The difference reflects acres not economically appropriate which will not be scheduled for harvest in Period 1.

A base harvest schedule is displayed in Chapter 4, Table 14.

Management standards and guidelines for vegetation management are contained in the individual prescriptions for each management area in Chapter 4 of the Plan.

Forest management is designed to maintain an even flow of sustained yield of wood products while improving stand conditions and increasing long-term yields. By the end of Period 5, stands which are now in large pole size material will have reached harvest size and benefits of current silvicultural investments will begin to be realized.

Accessible areas containing dead and down firewood for free personal use are rapidly being depleted. As a result, the use of green firewood is increasing causing a need for better management.

Future Trends

Some assumptions regarding future timber and firewood use are as follows:

The future demand for wood products expected to increase.

The current 90 MMBF annual sawtimber sawmill capacity within the Cibola's zone of influence exceeds the Cibola's supply of sawtimber. However, at least three other National Forests and many private forest landowners provide timber within this zone. In the future, the Cibola will work to determine its appropriate share of the market consistent with long-term net public benefits including resource integration, environmental quality and management considerations.

The future use of firewood will increase as costs for natural gas and electricity rise.

The projected future need (33.6 MMBF/year by the end of Period 5) for firewood will exceed supply (6.1 MMBF/year) on those portions of the Forest within acceptable driving distance from metropolitan Albuquerque.

The projected increase in the use of firewood may eventually level off or even decrease if the City of Albuquerque restricts the use of wood stoves and fireplaces at some time in the future because of air quality concerns.

Conclusion

The long-term sustained yield capacity, base harvest schedule, and allowable sale quantity will be determined by following the prescriptions, standards and guidelines, and yield estimates in the Plan.

The Forest will work to meet the projected need for personal use firewood in Period 1. Some of the future use of firewood can be met by offering commercial and personal green firewood sales and personal use of logging residue.

Expected Future Condition

Commercial sawtimber sales offered in the Plan will make 8,344 MBF available on a yearly average during Period 1.

It is uncertain whether commercial sawtimber sales will be of any significant gain for local communities other than municipalities.

Timber harvest will be more evenly distributed throughout the Forest. In recent years, harvest has been located exclusively on the Mt. Taylor Ranger District. The Plan will eventually bring all suitable areas for timber harvest under management and regulation. Harvest activities will be coordinated with standards and guidelines for wildlife habitat diversity, water quality, visual quality, cultural resources, as well as other Plan objectives.

Other changes may include the following:

Utilizing cable logging systems on slopes over 40 percent.

Clearcut harvests in support of wildlife. Clearcut openings would not exceed 40 acres and generally will be smaller than 10 acres.

The 7,350 acres in need of reforestation will be planted by 1990.

Backlog of precommercial thinning was completed in FY 1 989 at a total of 9,000 acres.

Subtle and gradual changes will result from timber activities, creating generally more healthy and diverse stands with a greater variety of age classes. Distribution of timber harvest throughout the Forest will achieve regulation on suitable acres over the long run.

The Forest's ability to meet long-term firewood may not be met even though improved access and overstory modification are increased. The Forest will evaluate and implement methods to meet future firewood needs including working cooperatively with the State of New Mexico, other land management agencies, and landowners.

As a result of expected firewood use not being met, the Forest can expect increases in firewood theft. The price of commercial firewood in the Albuquerque metropolitan area will also increase.

WILDERNESS

The Cibola presently contains 137,239 acres in four designated wildernesses. This acreage accounts for about 8 percent of the Forest's total acreage. Activities within wildernesses include hiking, horseback riding, camping, hunting, cross-country skiing, snowshoeing, environmental studies, and technical mountain climbing.

Capacity as estimated by the Wilderness Opportunity Spectrum is 115.1 MRVDs.

Existing use for the four wildernesses (Apache Kid, Manzano Mountain, Withington and Sandia Mountain) is estimated to be 72,742 RVDs per year. The Sandia Mountain Wilderness received 60,600 RVDs 83 percent of the total use. On the ground management of these areas is currently accomplished through the use of seasonal employees and volunteers. Current management emphasis is to encourage "no-trace" visiting and to provide wilderness information to the visitor.

Currently, the Sandia Mountain Wilderness is being used at nearly its full capacity of 61,407 RVDs, the Apache Kid at 10 percent of capacity, Manzano Mountain at 39 percent of capacity and Withington at 2 percent of capacity.

Future Trends

Total projected use grows from 89.8 MRVDs in Period 1 to 127 MRVDs in Period 5 based on past population growth trends. Portions of the Sandia Mountain Wilderness are currently over utilized since this particular wilderness is approaching user capacity. This over utilization will remain a problem until capacity management is implemented. Limited access and lack of trails and trailhead facilities are responsible for some of the concentrated use problems. Similar congestion problems in heavily use areas can be expected in the three remaining wildernesses if corrective measures are not taken.

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Conclusion

Portions of the Sandia Mountain Wilderness are currently over utilized and will continue to be until a significant portion of the users shift to other areas. Access, trails and trailheads play an important role in use distribution.

Expected Future Condition

Management of wilderness will be intensified to meet projected use. Additional investments in trail construction, maintenance, rights-of-way and trailhead facilities will alleviate some of the current problems of concentrated use. Management direction will attempt to shift overuse on the Sandia Mountain Wilderness to other wildernesses. Wilderness experiences will range from high use levels with limited opportunities for solitude to low use levels with excellent opportunities for solitude.

The Plan provides for 78.4 MRVDs annually in Period 1 and 89.6 MRVDs in Period 5.

In all cases, wilderness values will be preserved. Access to wilderness will be unlimited until impacts of use on wilderness values require mandatory visitor use permits. Regulation of use through permits may be necessary within the next five years on the Sandia Mountain Wilderness. Information programs will continue as a primary technique to limit the impact of use on the wilderness resource.

WILDLIFE AND FISH

Because of the diversity of vegetation, climate, and geology, the Forest and Grasslands provide habitat for a variety of wildlife and fish species. The more familiar species include Rocky Mountain bighorn sheep, various hawks and owls, Merriam's and Rio Grande turkey, three species of quail, pheasant, blue grouse, Steller's and pinyon jay, elk, bear and mule deer. Numerous other mammals, reptiles, amphibians and fish are also present.

A major wildlife management objective was to select species for each major vegetation type which would serve as an indicator for detecting important habitat changes. Of the 607 vertebrate wildlife and fish species on the Forest and Grasslands, 11 were chosen as management indicator species. These were the long billed curlew, elk, mule deer, yellow-bellied sapsucker, house wren, plain titmouse, Merriam's turkey, red breasted nuthatch, pygmy nuthatch, hairy woodpecker, and Rio Grande turkey.

The Endangered Species Act of 1973 requires that all Federal agencies and departments attempt to conserve threatened and endangered (T&E) species. Those species Federally listed as threatened or endangered are automatically listed by the States. The Forest has, or will have, the following Federally or State designated threatened or endangered wildlife species:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u> ^{1/}
American Peregrine Falcon	<u>Falco Peregrinus anatum</u>	Endangered/Federal
Bald Eagle	<u>Haliaeetus leucocephalus</u>	Endangered/Federal
Arkansas River Shiner	<u>Notropis girardi</u>	Endangered I/NM
Mississippi Kite	<u>Ictinia mississippiensis</u>	Endangered II/NM
Violet-crowned Hummingbird	<u>Amazilia violiceps</u>	Endangered II/NM
Baird's Sparrow	<u>Ammodramus bairdii</u>	Endangered II/NM
McCown's Longspur	<u>Calcarius mccowni</u>	Endangered II/NM
Zuni Mountain Bluehead Sucker	<u>Catostomus discobolus</u> <u>Yarrowi</u>	Endangered II/NM

^{1/} The State of New Mexico (NM) has the following definitions:

- A. Endangered Group I - Any species or subspecies whose prospects of survival or recruitment in New Mexico are in jeopardy.
- B. Endangered Group II - Any species or subspecies whose prospects of survival or recruitment in New Mexico are likely to be in jeopardy within the foreseeable future.

In addition, the Forest also has the primary habitat for the black-footed ferret (Mustela nigripes). Although none have been sighted in any of the active prairie

dog towns, some of the sites may have the potential of supporting a population should live trapping and transplanting from other States become a reality.

A recovery plan for the peregrine falcon was written in 1977. The prime objective of this plan was to increase the breeding population to 100 pairs by 1995 for Rocky Mountains and southwest. The plan, at present, is being revised and updated.

In 1982 a recovery plan for the bald eagle was approved by the Director of the U.S. Fish and Wildlife Service. The plan although entitled "Southwestern Bald Eagle Recovery Plan" concentrates its action in Arizona. No specific recommendations have been written for New Mexico, Texas, or Oklahoma.

New Mexico has not yet prepared a recovery plan for their endangered species.

Habitat management consists of annual public closure of falcon breeding, nesting and rearing habitat in all alternatives during the breeding, nesting and rearing season and maintenance of fencing to control livestock in the riparian area surrounding key Sucker habitat. Additional fencing is provided in the Proposed Action and Alternatives B, C, D and F. Alternatives A and E do not provide the necessary fencing. Fencing for the Zuni Bluehead Sucker may improve the immediate habitat, but only through improved range management will the entire watershed be improved. This management is provided in the Proposed Action and Alternatives B, C, D and F.

The potential for removing or down-listing any of the species is unknown. The additional protective fencing provided in all alternatives except A and E will stabilize the habitat of the Zuni Bluehead Sucker.

Presently, there are no threatened or endangered plants on the Cibola National Forest or National Grasslands. Erigeron rhizomatus, Zuni fleabane, has been proposed for listing in the threatened category. The following have been nominated for Federal protection:

Teumeya papyracantha (Pediocactus papyrcanthus)--Grama grass cactus
Clematis hirsutissima var. arizonica--Arizona clematis
Astragalus accumbens--Zuni milk-vetch

The Regional Forester's Sensitive Plant list includes the following:

Aster horridus--Spiny aster
Astragalus wittmannii--One-flowered milk-sketch
Silene plankii--Plank's catchfly

"The objective of the Sensitive species category is to keep these species off Federal lists through positive planning and management...Ensure that sensitive species and their occupied habitats will not be adversely impacted without a thorough analysis of significance of such impacts to prevent any trend toward Federal or State listing" (excerpt from March 24, 1981, letter from the Washington Office).

The objective of all alternatives is to afford protection for threatened and endangered wildlife species and sensitive or nominated plant species to achieve delisting.

Exotic wildlife species are found on portions of the Forest and Grasslands. Barbary sheep and Siberian Ibex are found along the Canadian River on the Kiowa National Grassland. Barbary sheep and Red Fallow deer have been sighted near Mt. Taylor, having escaped from a nearby game ranch on private lands.

Future Trends

Consumptive and nonconsumptive wildlife use increases from 112 MRVDs in Period 1 to 168 MRYDs in Period 5. To accommodate projected use, the Forest and Grasslands need to increase efforts in wildlife habitat improvements, assure protection of threatened or endangered species, and increase coordination with other resource activities as well as federal and state game departments. The Forest has the ability to supply wildlife use in excess of projected use.

Threatened, endangered, or sensitive plants will be considered in implementing all resource activities to assure protection of these species.

Conclusion

Management activities involving wildlife and fish species should include: 1) coordination with other resource activities; 2) continued direct habitat improvement work; 3) continued protection of threatened or endangered species; 4) continued cooperation with appropriate game departments; and 5) wildlife habitat diversity sufficient to maintain the minimum viable population of management indicator species.

Expected Future Condition

The Plan provides annually 127 MRVDs of wildlife use in Period 1. By Period 5 272 MRVDs are provided annually.

Fish and wildlife habitats on the Forest and Grasslands will improve. Wildlife funding by the end of Period 5 provides 659 water sources; 1,117 acres of fencing; 5,981 acres seeding; and 18,000 acres of prescribed burning for improved wildlife habitat. Through other funding an additional 219 water sources will be developed; 2,140 acres will be fenced; 21,540 acres of pinyon-juniper and 4,400 acres of shinny oak will be converted to grassland; 1,200 acres of timber will be clearcut for wildlife purposes; and 8,960 acres of firewood will be clearcut for wildlife benefits. Clearcuts in suitable timber will generally be small patches of 10 acres or less. None will exceed 40 acres in size.

Management requirements such as snag retention, timber rotation age, growing stock levels, old growth retention, hiding cover, feature protection and size and dispersal of openings all are considered for wildlife impacts. The Plan will accomplish most of the New Mexico's Game and Fish Department Comprehensive Plan objectives by the end of Period 5.

Mitigating measures are contained in the management requirement of the Plan regarding construction, reconstruction and maintenance of roads, and dispersed recreation use. These measures will reduce impacts on wildlife populations and habitat. The Plan also contains management requirements which will at least maintain and, in most instances, increase management indicator species. It also provides measures which will protect and perpetuate threatened or endangered wildlife species for the purpose of delisting the species if possible.

RANGE

The goal of range management on the Forest is to provide forage for domestic livestock use under cost efficient management systems without impairment of land productivity or other resource needs. A further goal on the Grasslands is to demonstrate and promote grassland agriculture.

Past and current management on many of the Forest ranges has not led to the achievement of the above goal on the mountain Ranger Districts. Of the 91 grazing allotments currently being utilized, 43 exhibit serious resource degradation which result in an unsatisfactory classification. Most allotments are producing less than the biological capacity. Permitted use is currently 134,746 AUMs on the Forest portion with capacity estimated at 103,961 AUMs.

Current management direction will promote a slow but continuous resolution of range problems. Forage production and utilization studies, stocking adjustments and implementation of allotment management plans are made on approximately one allotment per year.

Of the 317 Grassland grazing units, which are comparable to allotments, 99 percent are in the moderately high condition class. Most units are stocked within established carrying capacities and there are no major problems. Grassland use totals 68,783 AUMs with a capacity estimated at 82,829 AUMs.

Currently permitted use for the Forest and Grasslands totals 203,529 AUMs while capacity is 186,790 AUMs.

Future Trends

Under existing management practices, range conditions on the Forest allotments will not change significantly. Some areas will slowly improve while others continue to deteriorate.

Range on the Grasslands will continue to improve slowly except for areas ecologically suited for oak brush, which will decline from a range standpoint

without shinnery oak control.

Conclusion

Range conditions on some allotments on the Forest will show gradual improvement, others will continue to deteriorate. If stocking and management corrections are made, range conditions will respond and improve. Grassland units will continue to maintain satisfactory conditions, but will produce less than the potential if current management is continued.

Expected Future Condition

Collectively, grazing use on the Forest and Grasslands currently exceeds capacity by 8 percent-16,739 AUMs. The Plan will reduce this permitted use to 180.9 MAUMs annually during Period 3. Capacity will be 190 MAUMs at this time. Use and capacity will be balanced by reducing livestock numbers and by increasing management intensity and capacity to achieve optimum distribution and forage utilization where coat effective. Permitted use will reach 186.7 MAUMs annually by the end of Period 5 while capacity increases to 191.5 MAUMs.

In order to increase management intensity, the Plan would add an additional 976 miles of fence, 404 miles of pipeline and 578 watering sources. Also, 25,900 acres of overstory modification and 61,718 acres of brush control activities would be performed.

The intensification of management in addition to range improvements and a reduction in livestock numbers will result in improved range conditions. Improved range condition indirectly increases plant and wildlife diversity, watershed condition and water quality by increasing effective ground cover and reducing soil loss.

Riparian areas will receive necessary special management to ensure quality water and wildlife habitat. Nearly 40 percent of the riparian areas will be treated by direct means for improving this resource--seeding, planting and fencing. The remaining portion will be improved by increased livestock management, herding and by placing salt and water developments away from riparian areas.

RECREATION

New Mexico, Texas, and Oklahoma have been among the fastest growing dates in the nation and this rapid population growth is projected to continue. As population increases, the future needs for outdoor recreation are also expected to increase.

Dispersed recreation Includes such activities as hiking, backpacking, picnicking, hunting, fishing, gathering forest products, bird watching, water skiing, off-road vehicle Navel, swimming, and sightseeing.

There are approximately 1,729,899 acres available for dispersed recreation use. These acres are categorized by use of the Recreation Opportunity Spectrum (ROS) classes as follows:

Semi-Primitive, Nonmotorized	406,821 acres
Semi-Primitive, Motorized	927,992 acres
Roaded, Natural	391,005 acres
Rural	1,081 acres

The ROS classes provide the framework for defining types of recreation opportunities and identifying what recreational experiences the Forest and Grasslands might be able to provide. The ROS estimated capacity for dispersed recreation is 2,226 MRVDs.

Dispersed recreation use, including consumptive and nonconsumptive wildlife use, was estimated to be 609,500 recreation visitor days (RVDs) in F.Y.1981. Dispersed recreation accounts for the largest amount of recreation use and is projected to be the fastest growing segment in the future.

The Forest and Grasslands are open to off-road vehicle (ORV) trawl except the Black Kettle National Grasslands. The Black Kettle National Grasslands are cloud 10 motor vehicle entry except for roads signed open. A portion of the Magdalena Mountains is closed to ORV use to protect the Langmuir Research Site

and public safety. Other closures or restrictions are for soil, wildlife protection or public safety.

Developed recreation use of the 69 developed recreation sites on the Forest and Grasslands was estimated at 493,100 RVDs in F.Y. 1981. The people at one time (PACT) capacity for these sites is 11,132. Fees are charged at seven of these sites. Some of the sites are utilized in excess of 50 percent of the design capacity, especially on the Sandia Ranger District.

Nearly all sites are operated at a reduced service level which results in a shorter season of use and limited clean-up and maintenance. At many sites the quality of the visitors' experience has deteriorated considerably. Water quality, visitor control and general resource protection continue to decline.

Future Trends

Dispersed recreation is expected to increase to 1,700 MRVDs annually by the end of Period 5. The increase is because of population growth and an increase in participation. Areas closest to population centers will receive most of the impact.

Developed recreation is projected to increase to 2,270 MRVDs annually by the end of Period 5. The Forest could accommodate 3,250 MRVDs by the end of Period 5 through expanding existing sites and constructing new sites on potential areas.

Under current conditions, the use of the existing facilities will be exceeded by approximately 60 percent at the more popular developed sites by the end of Period 5. If current management direction continues, it is expected that many of the existing sites will be removed or closed because of health or safety problems, conflicts between different users will become a major problem, and the quality of the recreation experience will be diminished.

Conclusion

The Forest and Grasslands have the potential to accommodate future increases of dispersed recreation. However, this potential cannot be realized under current management direction. Additional trail construction, managing use to capacity, shifting use patterns, cooperating with other agencies, utilizing volunteers and manpower programs, and increasing public awareness will all be needed to meet future trends.

Current management direction will not alleviate the future problems associated with developed recreation. Changes such as increased clean-up and maintenance, increased private sector involvement, construction of additional facilities, increased public awareness of recreational opportunities, and increased use of volunteers will assist in off-setting these problems.

Expected Future Condition

Projected future use of dispersed recreation can be met in the Plan at the 80 percent level--1,357 MRVDs annually--at the end of Period 5. In order to provide this use, 168 miles of trails will be constructed or reconstructed. Additional trailheads will also be constructed and rights-of-way for roads and trails will be obtained for better dispersion of the recreationists. However, full service management is provided for in only 50 percent of the management areas.

The Plan will satisfy only 58 percent of the projected future use for developed recreation by the end of Period 5--1,322 MRVDs. Only 40 percent of the developed recreation sites will be managed at the full service level.

In order to satisfy some of the future use, new developed recreation sites with a capacity of 9,370 PAOTs will be constructed by the end of Period 5. Of this amount 3,200 PAOTs will be provided by private sector development and will include expansion of the present Sandia Peak Ski Area, possible development of a new ski area in Upper Las Huertas Canyon on the Sandia Ranger District, and addition of a snowplay-snowmobiling-cross country ski and summer recreation center on the Mt. Taylor Ranger District.

Projected developed recreation use in excess of planned capacity and less than full service management of recreation sites will result in some site deterioration because of overcrowding.

Interest in developing an alpine (downhill) ski area on Mt. Taylor has been expressed since the 1950s and as recently as 1983. A winter sports study team, however, concluded in 1972 that a potential ski area "...would not meet optimum proportions..." and could provide only "...a marginal local area." Criteria upon which suitability was determined included: 1) exposure to prevailing wind and wind scouring; 2) temperature; 3) vertical rise, steepness and length of slope; 4) amount, quality and dependability of snowfall; and 5) capacity. The greatest problems noted included lack of dependable snow in subsequent snow surveys--1 good year out of every 3 years--and, a low capacity of 1,000 PAOTs.

An important point to remember with the planned development of Mt. Taylor is that Mt. Taylor, as a mountain and not just sections of it, is considered a cultural resource by western Pueblos like Acoma, Laguna, and Zuni. It is a spiritual marker for Navajo people and of great cultural value to the nearby land grants such as San Mates, Cebolleta, Cubero, and Bartalome Fernandez.

The Greater Grants Industrial Development Foundation (GGIDF) has invested in preliminary feasibility studies addressing the possibility of an alpine ski area development in the Mt. Taylor area. These preliminary studies indicate a resort complex including residential units would be required to finance the ski area development. A land exchange has been suggested to provide land for the resort complex development at the potential ski area base. The GGIDF has been advised that a land exchange in the core mountain area of Mt. Taylor could not be justified as being in the public interest. However, any new information the GGIDF can provide in terms of suitability and economic feasibility studies which would indicate that an alpine ski area may have potential without a land exchange will be considered.

Mt. Taylor has potential opportunity for snowplay, nordic skiing and summer recreation.

Approximately 450 acres of the upper portion of Las Huertas Canyon have potential for development as both a nordic and alpine ski area.

The area's suitability for such a development results from its northern aspect and high elevations, which assure adequate snowfall and snow retention, as well as its proximity to both New Mexico's largest urban population (Bernalillo County) and the Sandia Crest Highway.

The area is upstream of Cooper's LS Ranch and the Presbyterian Church Camp in sections S and 6, T. 11 N., R. SUE. and sections 32 and 33, T. 12 N., R. S E.

Ski area development will not occur without further analysis and evaluation consisting of an economic feasibility study and an environmental analysis of the area's physical, biological, social, and economic factors and interrelationships. Public involvement will occur during this analysis. The area will be managed to maintain its potential for skiing opportunities.

The Sandia Mountains are considered a valuable cultural resource and of religious significance to the Pueblo of Sandia. It is also recognized that the Sandias are of cultural significance to land grants such as San Pedro and Carnue as are the Manzanos to land grant communities such as Chilili, Tajique, Torreon, Manzano, Punto de Agua, and Abo.

MINERALS

Exploration, development, and production of minerals, energy resources, and common varieties have the potential to conflict with other resource protection, uses, and activities. The full mineral potential is not known but is estimated in part from information provided by the US Geological Survey and the New Mexico Bureau of Mines and Mineral Resources.

Table 3 displays acreages of probable occurrence for leasable and locatable minerals.

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Table 3. Acres of Probable Mineral Occurrence

Mineral Potential Rating	Leasable Minerals	Locatable Minerals
Demonstrated Favorable Production	1,655	63,918
Demonstrated Favorable Development	30,508	6,996
Demonstrated Favorable Prospecting	282	9,488
Demonstrated Favorable No Activity	137,762	17,783
Theoretically Favorable Prospecting	266,245	4,973
Theoretically Favorable Exploration	1,875	5,544
Theoretically Favorable No Activity	789,201	18,236

Under current management direction action is taken on all locatable mineral operating plans, lease applications, and common variety mineral permits as outlined in 36 CFR 228 and FSM 2822.41. Mineral validity contests are undertaken where detrimental surface disturbance is possible or occurring and where mining claims are suspected of being invalid.

Approximately 57 mineral lease applications are processed each year. Of these, 35 leases are approved covering approximately 56,762 acres. Leasable energy minerals production in 1977 produced the following billion BTUs: natural gas - 845; oil - 27; and uranium - 10,080.

Future Trends

The current interest in mineral prospecting, exploration, and development combined with the high potential for production will affect the minerals resource management workload. Table 4 displays mineral production for Periods 1-5.

Table 4. Projected Energy Minerals Production

Mineral	Annual Production BBTU				
	Period				
	1	2	3	4	5
Natural Gas	21,000	42,000	63,000	80,000	100,000
Oil	50	100	150	200	300
Coal	0	20	60	90	144
Uranium	876,960	1,753,920	1,754,000	1,754,000	1,754,000
Geothermal	0	0	0	0	103

Conclusion As the country endeavors to become more energy independent, the Forest will be impacted by exploration, development, and production of various energy minerals. This increased activity will have impacts on other natural resources. The Forest needs to be prepared to address this concern and mitigate the corresponding impacts to the extent necessary.

Expected Future Condition The timing and location of mineral prospecting, exploration and development are difficult to predict since these activities are controlled by the private sector and are based on international demand, supply and market prices.

The Plan provides funding sufficient to process mineral operating plans, leases and permits based on projections from historical needs.

In addition to the 77,900 acres withdrawn from mineral entry, approximately 6,000 acres will be proposed for withdrawal under the Plan. This will protect new recreation sites, proposed research natural areas, electronic sites, an administrative site and the principle research site of the Langmuir Research Area.

SOIL AND WATER Six ground water basins underlie the Forest. Minor amounts of water are drawn from these basins by windmills for use by wildlife and domestic livestock. The Forest yields 99,690 acre feet of water per year from 29 administrative watersheds.

Past resource uses have created unacceptable soil erosion and reduced water quality on 17 of the watersheds. Annual soil loss in these watersheds varies from .05 to 5.83 tons per acre. The overall Forest annual average is 2.99 tons per acre. Pollution of streams, ponds, and lakes is of major concern. Sedimentation is the major pollutant and generally follows heavy localized storms. Livestock grazing, off road vehicle use, and poorly located and/or maintained roads are the more prevalent sources contributing to nonpoint pollution because of soil loss. Efforts are currently focused on integrating soil and water protection with current and future uses and activities of the other natural resources. Presently there is one area where direct soil erosion measures are being taken--Hausner Canyon.

Future Trends It is doubtful that under current management direction the trend on the 17 unsatisfactory watersheds could be altered significantly. As a result these watersheds would continue to erode and reduce water quality.

Conclusion In order to improve watershed conditions, the following actions need to be considered: 1) treatment of land by pitting, reseeding, and on site water management; 2) balancing grazing use with capacity; 3) rehabilitating approximately 5,000 acres of riparian areas; 4) stabilizing channels; 5) reconstruction of system roads; and 6) closure and revegetation of nonessential roads and travelways.

Water yield under current management will decline slightly to 99.2 M acre feet annually by Period 5.

Expected Future Condition The Plan with its combination of direct watershed treatments and indirect intensified management will result in an improved watershed condition on all watersheds. By the end of Period 5, 27 watersheds will be in satisfactory condition and two in unsatisfactory condition. The two watersheds in unsatisfactory condition will, however, be at or near potential. Average annual soil loss for all watersheds should be reduced by 10 percent. In addition, riparian area improvements will further improve water quality.

The Plan provides annually 99.4 M acre feet in Period 1 which increases slightly to 99.6 M acre feet in Period 5.

CULTURAL RESOURCES Lands in and surrounding the Forest contain archeological sites important to the understanding of the prehistory, history, past land use patterns, environmental change the formation and collapse of complex societies, and abandonment of many settled areas.

The Forest currently has records on 1,152 archeological and historical sites. Estimates of the total number of sites that may exist on these lands range from 20,000 to 26,000. Three sites on the Forest are listed in the National Register of Historic Places. Two of these three are registered National Historic Landmarks. Two sites on the Mountainair Ranger District have been nominated to the National Register while many remain to be nominated.

The current cultural resources program focuses on four areas: 1) protection; 2) quality review of archeological field work; 3) allocation of cultural resources to management categories; and 4) interpretation of these resources for the education of visitors and specialists.

Future Trends Various other resource uses and activities will increase with time, threatening the cultural resources. The rate at which these resources will be threatened or depleted in the future will vary with the state of the economy, level of Forest funding, market for timber and minerals, and academic research interests. Depletion can be controlled through proper management as outlined in the Plan.

Conclusion Archeological management has been effective in controlling impacts of various other resource activities. The cultural resources program has been designed to ensure that use of the resource occurs wisely and in a controlled manner. The Plan provides for management of natural deterioration, and protection from pilfering and vandalism.

Expected Future Condition The Plan provides funds for protecting the Gallinas Springs National Register site from gully erosion. It also provides an attainable level of law enforcement for vandalism and pilfering.

Interpretation of cultural resource sites for public information and education on the Sandia Ranger District are provided for in the Plan.

Archeological management will continue, and expand, the current successful program, as a means of protecting or preserving cultural resource sites and/or the information they might provide.

Implementation of the Plan will result in an effective program of cultural resources protection, interpretation, and management. The future condition of the Forest's cultural resources will beneficially reflect this program.

RESEARCH NATURAL AREAS

Research Natural Areas (RNAs) are administratively set aside to protect naturally occurring ecosystems that have been relatively free of human disturbance or have recovered from man's influence. The areas typify important forest, shrub land, or grassland types that have scientific interest or importance. Research Natural Areas are established for nonmanipulative research, observation and study. Currently there are no established RNAs on the Forest.

Future Trends As future use of natural resources increases, the options for designating RNAs will diminish. This is especially true as the population increases and future needs for recreation, timber and firewood rise.

Conclusion In order to meet RNA targets assigned to the Forest and preserve specific vegetation types for future study, suitable candidate areas need to be studied for possible inclusion in the RNA system within two years.

Expected Future Condition Proposed RNAs requiring study and preparation of an establishment report for approval, by the Chief of the Forest Service are: 1) Little Water Canyon (910 acres) on the Mt. Taylor Ranger District; 2) Bernalillo Watershed (990 acres) on the Sandia Ranger District; and 3) one area on each of the three National Grasslands. Little Water Canyon is representative of blue spruce. The Bernalillo Watershed is a grama-galleta grassland. The Kiowa and Rita Blanca National Grasslands may

contain representative shortgrass prairie grasslands and the Black Kettle may contain midgrass prairie grasslands.

DIVERSITY

Diversity implies environmental variety, the key aspects of which are the kinds, numbers, proportions, and distribution of plants and animals and the different associations. Management of the Forest primarily affects the relative proportion and distribution of plant and animal species and the associations.

Diversity of plants and animal species is impacted by man's activities. By the mid-1890's, significant amounts of grazing and lumbering were taking place. These activities brought construction of roads, water impoundments, and a variety of other man-made improvements. As access increased, the amount of human activity also increased. As a result of these changes, some plant and animal communities have been modified.

Future Trends

As use for Forest resources increases in the future, diversity of the various plant and animal communities will be altered.

Conclusion

In order to protect and perpetuate plant and animal communities and ensure as much diversity as possible, the Forest needs to develop and implement management direction for this purpose. Off-road vehicle closures, fencing, water development and eyrie wardens are examples of current management direction to protect and enhance plant and animal diversity.

Expected Future Condition

In general, timber harvest and overstory modification activities will increase diversity of both plant and animal species by changing the pattern, distribution and age classes of overstory vegetation.

VISUAL RESOURCES

The Forest encompasses a rich variety of vegetation, climatic, and geologic zones.

The visual quality of the Forest has been altered to varying degrees by timber harvest, road construction, farming, vegetative manipulation, mineral exploration and production, and utility corridors. In order to protect the visual quality, visual quality objectives have been established and are displayed in Table 5. Manipulation of the landscape varies from none in Preservation to a considerable amount in Maximum Modification.

Table 5. Acres of Visual Quality Objective

Preservation	Retention	Partial Retention	Modification & Maximum Modification	Rehabilitation
137,665	33,568	247,357	1,437,701	258

Future Trends

The visual quality of lands viewed from recreation sites, prominent vista points, and scenic travelways is becoming increasingly important. Forest visitors appreciate the natural quality of the landscape and are not eager to see it altered.

Conclusion

In order to maintain the natural quality of the landscape, visual quality management techniques need to be applied to all future projects. Specific emphasis needs to be placed on those areas identified as high in scenic value or in recreation visitor use.

Expected Future Condition

Impacts on visual quality are minimal. The Plan contains management requirement to maintain Visual Quality Objectives (VQOs) at current inventory objectives with emphasis on maintenance of retention and partial retention VQOs.

The more disruptive activities such as timber harvest, overstory modification and road construction occur on modification and maximum modification acreages.

LANDS AND
SPECIAL USES

Included within the Forest boundaries are private lands, mineral patents, and lands administered by other agencies. The Forest can acquire land through exchanges, purchase, donation, and service easements. Disposal of land is generally accomplished by exchange, although sale is permitted under certain circumstances.

Utility and communication facilities, recreation residences, concessions, and rights-of-way are authorized on the Forest by special use permits.

In order to make adjustments in the landownership pattern for administrative purposes, 39,563 acres of Forest or Grassland have been identified for exchange. Criteria for selection of these lands for exchange includes: 1) isolated tracts; 2) improves management; 3) needed by local community; 4) not suitable for Forest purposes; 5) improves consolidation of public lands; and 6) meets overriding public needs.

Lands desirable for acquisition by the Forest Service should meet one or more of the following criteria: 1) tracts within wilderness; 2) water related; 3) high recreation potential; 4) contain unique natural or cultural values; 5) needed to stabilize or protect threatened or endangered species; and 6) needed to improve ownership and management pattern or meet research needs; 7) needed to provide access or protect public land from fire or trespass or prevent damage to public land resources; 8) needed for rehabilitation or stabilization to restore productivity of public lands; 9) needed to meet programs prescribed by Congress or U.S. Department of Agriculture; and 10) needed to improve management or meet specific administrative needs or benefit other Forest programs.

Current management direction indicates that the Forest needs to acquire 173 miles of road right-of-way in order to assure adequate access for public and administrative use. Local counties need to acquire 88 miles of right-of-way within the Forest and Grasslands for the same reasons. An estimated 3,300 miles of property boundary need to be surveyed and posted to standards.

The Forest and Grasslands currently administer 625 special use permits covering 84,000 acres and 2,050 miles of rights-of-way.

Future Trends

The fragmented landownership pattern on the southern portion of the Sandia Ranger District, in the Zuni Mountains, and on the Mills Unit (Canadian River) of the Kiowa National Grasslands present administrative problems which need to be resolved. As population increases, these problems are expected to increase.

It is estimated the future needs for electronic sites and various utility lines and gas and oil pipelines will remain strong through the planning horizon.

Conclusion

The Forest should attempt to resolve the landownership problems as a means of improving administration of these federal lands. In doing so, some of the problems associated with rights-of-way and property survey can be eliminated. Land line location, utility corridors and electronic sites have all been identified as concerns and need to be addressed in the Plan.

Expected Future
Condition

The Plan provides sufficient funding for the administration of special use permits. Based on historical experiences, the Plan will also provide for land exchange and acquisition.

An estimated 173 miles of rights-of-way are needed to meet multiple use objectives. An additional 88 miles of rights-of-way need to be acquired by the counties. The Plan only provides for acquisition of 70.8 miles of rights-of-way. An estimated 3,300 miles of land line need to be surveyed. The Plan will locate 3,240 miles by the end of Period 5.

An attempt has been made to establish corridors or windows for major utility facilities such as natural gas pipelines, electric transmission lines, or major transportation routes. The corridors or windows have been established as a means of providing routes through the Forest in order to minimize development impacts on the surface resources. Corridors are shown on the Transportation and Utility Corridors map enclosed with the Plan.

The demand for electronic sites has increased dramatically in recent years. The Plan will meet this demand by retaining the current eleven electronic sites and expanding four by 79 acres. Four new sites will be added providing an additional 195 acres for this use.

LISTED, WILD,
SCENIC AND
RECREATIONAL
RIVERS

A 105 mile long stretch of the Canadian River in northeastern New Mexico was inventoried in 1982 by the National Park Service in a Nation-wide Rivers Inventory. Approximately 13 miles of the 105 are within the Kiowa National Grassland. Within these 13 miles is a small 40 PACT campground, a historic stagecoach station and a homestead. Public use within the Grassland portion is very light, with an estimated 600 RYDs in 1982 at the Mills Canyon Campground.

The portion of the river within the Grassland would qualify as a Scenic River under section 2 (b) of the Wild and Scenic Rivers Act because of the limited access and largely undeveloped shoreline.

Future Trends

The Forest would not be the appropriate lead agency to pursue designation of the river because of the limited portion within the Grassland. There is no public agency proposing designation at this time. Current use of the Mills Canyon area is light and is expected to increase slowly.

Conclusion

Because of the area's potential for Scenic River designation, it should be managed to preserve the characteristics which led to its listing in the Rivers Inventory.

Expected Future
Condition

The 13 mile stretch of the Canadian River will not be altered from its existing condition. The Plan provides for management of the area similar to that of the past. The Plan will attempt through land exchange or scenic easement, acquisition of 8 miles of land along the river, currently in private ownership, in order to assure public access and protect the area's unique qualities. Mineral leasing will be permitted but restricted to no surface occupancy.

AIR

The majority of air pollution affecting the Forest originates from other areas. These areas are primarily metropolitan areas and, to a lesser extent, unpaved roads and farming operations. Some temporary and localized pollution results from prescribed burning and wild fires on the Forest.

Current Forest Service research in the sixteen western states ("Atmospheric Deposition in Natural Ecosystem of the Western U.S.") will provide some information on acid rain and related impacts on Forest Service land. Upon the completion of that research, the Forest Service will consider further action on the Cibola National Forest.

Prescribed use of fire on the Forest is approved in advance by the New Mexico Environmental Improvement Division.

Future Trends

Current Forest practices have only minor, short-term effects on air quality.

Conclusion

Sources of Forest Service air pollution because of prescribed burning can be controlled and limited.

Expected Future
Condition

Use of prescribed fire to treat fuels will more than double over current use levels by the end of Period 5. However, such fires will be in accordance with State standards and managed for maximum smoke dispersal.

PROTECTION

Protection includes fire, insect and disease and law enforcement.

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Fire

Fire management on the Forest is designed to provide a cost-effective program responding to land and resource goals. This program includes wildfire prevention, presuppression, suppression, fuel reduction and prescribed fire activities.

The threat of wildfire starting outside the Forest boundary and moving onto the Forest has increased considerably in the past 30 years. This is especially true for the Sandia Ranger District because of the influx of new homes adjacent to the Forest boundary. From 1950 to 1980, the population of Bernalillo County has increased by 187 percent.

From 1970 through 1979, the Forest had an annual average of 102.3 lightning caused fires and 44.1 man caused fires. The average annual acreage burned was 289.2 acres for lightning caused fires and 564.1 acres for man caused fires. Approximately 78 percent of these fires occur between April 15 and August 15, a period when the fire hazard is generally at its peak.

Insect and Disease

Dwarf mistletoe is found throughout most of the timber land on the Forest. The degree of infection varies widely. Some timber stands are virtually mistletoe free, while others are severely infected. Mistletoe reduces the growth and vigor of trees, increasing susceptibility to attack by insects. During timber harvest and thinning operations attempts are made to remove as many infected trees as possible.

The western spruce budworm has caused serious defoliation of spruce, Douglas fir and true fir in the Sandia, Manzano, Magdalena and Mt. Taylor areas. Of the 17,800 acres defoliated, most are within established wildernesses and do not materially impact suitable timber land. The impact is primarily visual.

The spruce beetle has caused some losses to Englemann spruce in past years on Mt. Taylor. This particular pest is currently at an endemic level.

The Grasslands have experienced periodic outbreaks of range caterpillars and grasshoppers. Some of these outbreaks have been serious enough to cause economic impacts on the livestock industry. Extensive aerial spraying of the Grasslands and adjacent private lands for control of these insects has taken place in recent years.

Law Enforcement

The Forest and Grasslands play host to an increasing number of people each year for recreation and livelihood purposes. Some of these visitors illegally remove a variety of resources for profit. As an example, an estimated 12,000 cords of firewood are illegally removed each year. Illegal removal of Christmas trees and wildlings is also a problem.

Other offenses include theft of Government property, vandalism, dumping of garbage, damage and removal of archeological artifacts, fire violations, cultivation of marijuana, theft of property of visitors and illegal off-road vehicle use.

Future Trends

Fire occurrence, acreage burned and loss of resource values will continue to rise because of an expected large increase in public use. Also, protection and suppression funds remain constant after Period 2. Some of the fire hazard will be reduced as the harvest of dead firewood increases, but the fire risk will increase as the population grows, particularly in areas close to population centers.

Dwarf mistletoe levels will decrease on the Mt. Taylor Ranger District through continued timber harvest activities. Mistletoe will increase on other portions of the Forest until similar activities are initiated. The most recent surveys indicate the spruce budworm populations are declining and no direct suppression activities are anticipated or recommended at this time. Spruce beetle populations can be limited by timber harvest activities. Populations of range caterpillars and grasshoppers are cyclic and can be expected to increase in the future.

As can be expected of most areas located in the sun belt, New Mexico, Texas and Oklahoma will continue to see increased population growth. This growth will continue to cause law enforcement problems.

Conclusion

Man caused fire risk will continue to increase as the population increases.

Future timber harvest in the mixed conifer type should be designed to reduce insect and disease susceptibility and vulnerability by favoring thrifty ponderosa pine and Douglas fir as opposed to spruce and true fir.

Range caterpillar and grasshopper population increases on the Grasslands will have to be controlled when they approach epidemic proportions.

The Forest needs to continue monitoring insect and disease levels and take appropriate control actions as needed.

The current level of law enforcement is not expected to keep pace with the projected increase in population and the assumed increase in violations of Federal and State Laws.

Expected Future Condition

Increasing uses of the Forest, particularly for recreation and timber harvest, and continuing accumulations of natural fuels increase the risk for large, intense wildfires. These factors, coupled with costs for protection and suppression held at a constant rate, increase the potential for catastrophic fires for Periods 3 to 5. Long-term productivity of soil and water relationships and the resources and uses dependent upon the relationships between soil and water can be affected in proportion to the size and intensity of a wildfire.

Insect populations which have a potential to reach epidemic proportions will be treated through silvicultural, biological or chemical means. Diseases, particularly dwarf mistletoe, will be controlled by removal of infected trees during intermediate and regeneration stages of a shelterwood cut.

Infestations will be monitored within wildernesses as a means of identifying potential spread to adjoining areas. Control efforts within wilderness are limited to biological and chemical methods and require the approval of the Regional Forester.

The Plan provides for an increase in funding of 47 percent over the current level. This increase appears sufficient to provide adequate law enforcement on the Forest.

FACILITIES

The Forest is responsible for construction, maintenance and administration of various facilities including roads, trails, and a variety of buildings or other structures.

There are 4,215 miles of Forest Service roads. Of this amount, 2,508 miles are classified as travelways. Travelways are unplanned, unconstructed and unmaintained two-track roads which exist as a result of prior off-road vehicle travel. Additional travelways are created each year as a result of public firewood gathering, hunting or other ORV activities.

Road construction has averaged 7.4 miles annually for the 11 years from 1970 through 1980. The average annual maintenance for the same period is 1,091 miles. From 1972 through 1982, an average of 5.5 miles of trail were constructed each year.

State Highway 44 between Placitas, New Mexico, and the Sandia Crest highway continues to be a transportation problem which effects other resources because of narrowness, lack of surfacing and drainage, and its location along Las Huertas Creek.

The 1975 Sandia Land Use Plan recommended the road be reconstructed and paved in place because: 1) weekend traffic results in congestion and hazardous driving conditions in summer; 2) storms cause periodic closure in winter; 3) maintenance is not cost effective and, therefore, is minimized causing excessive vehicle wear and tear; 4) water quality and fish habitat are reduced by sediment; and 5) riparian wildlife habitat and dispersed recreation opportunities are reduced by the volume of traffic and related noise.

Reconstruction in place, however, may destroy important wildlife and fisheries habitat and dispersed recreation opportunities, and may decrease public safety

because the narrow canyon may not be able to physically accommodate both a modern highway and a perennial stream. Rerouting or closing the road, however, could affect access to the dispersed and developed areas, the Sandia Mountain Wilderness, a potential ski area and private land. The effects would range from positive to negative, depending on the construction standards or the route chosen and the type of access permitted to these areas.

Because of these questions a decision has been made to study potential solutions through the environmental analysis process and recommend a preferred action before the revision of the Plan.

Many buildings and other structures have been constructed over the years to facilitate management and administration. Currently there are 10 fire lookouts, 22 storage buildings or shops, 19 family dwellings, 4 offices, 19 crew quarters, 13 miscellaneous buildings and 11 water/waste systems. There are four leased office buildings. Six dams are also maintained by the Forest or a special use permitted.

Future Trends

Current management direction does not permit adequate maintenance of roads and trails for the future.

In order to help meet the needs for access, the Forest in cooperation with local, state and county agencies will need to share the acquisition and granting of rights-of-way based upon negotiated jurisdictional status for roads on the system.

Current direction only provides for limited maintenance of Forest offices and other structures necessary to meet health and safety requirements. Portable or modular buildings will continue to be used.

Conclusion

As roads and trails continue to deteriorate with time, safety hazards and damage to other resources is expected to increase.

Many of the Forest Service buildings and other structures will need to be replaced within the next 20 years as it will no longer be cost effective to maintain them.

Expected Future Condition

The Plan will provide for construction or reconstruction of an average 60.6 miles annually of arterial, collector and local roads. This is a 39 percent increase over the current level of construction and reconstruction and responds to increased timber and other resource activities. Road maintenance will increase 26 percent over current, providing additional safety to road users. Approximately 1,790 miles of travelways will be closed by the end of Period 2. This action should reduce soil erosion, increase productivity of the land, and improve the quality of hunting opportunities. Local roads are designed for closure between the 20 year timber harvest entry periods. However, these roads will remain open for 1 to 2 years following harvest in order to permit firewood gathering.

Administrative facilities such as offices, houses, crew quarters and lookouts will receive funds for construction or reconstruction in the Plan. This amounts to \$380,000 as compared to no funds at the current level.

Maintenance and rehabilitation funding for dams at Lake McClellan and Lake Marvin will be increased by 9 percent over the current level.

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4. Management Direction

MISSION	<p>A mission is a guiding principle toward which all activities focus and contribute. The mission of the Cibola National Forest and Kiowa, Rita Blanca, Black Kettle and McClellan Creek National Grasslands is to provide multiple use and sustained yield of goods and services in a way that maximizes long term net public benefits consistent with resource integration, environmental quality, and management considerations.</p>
GOALS	<p>A goal is defined as a "concise statement or condition that a land and resource management plan is designed to achieve. A goal is usually not quantifiable and may not have a specific data for completion." (36 CFR 219.3). The goals necessary to achieve the mission of the Cibola National Forest follow.</p>
Budget	<p>Any funding requests will be designed to achieve or exceed goals and objectives of the Forest Plan.</p>
Range	<p>Provide forage to promote sustained livestock yields. Maintain or improve range condition and coordinate livestock use with other resource considerations. Manage rangelands to reduce or minimize areas of overuse in order to achieve significant improvement of rangeland from unsatisfactory to satisfactory condition.</p>
Riparian	<p>Emphasize protection and improvement projects for riparian areas.</p>
Recreation	<p>Provide dispersed and developed outdoor recreation opportunities and enhance experiences by providing access, services, and facilities consistent with other resource considerations.</p> <p>Emphasize dispersed recreation over developed recreation.</p> <p>Riparian protection and improvement projects shall be emphasized.</p>
Wilderness	<p>Manage the wilderness resource for a quality wilderness experience and to protect and preserve the unique wilderness character of each wilderness.</p> <p>Maintain wilderness trails and other facilities at full service management, as appropriate for WOS (wilderness opportunity spectrum) classification. Manage wilderness to actively disperse use from heavily to lightly used wilderness. Publish up-to-date trail maps for all wildernesses.</p>
Timber	<p>Manage all timber resources, both commercial species and pinyon-juniper woodlands, to provide a sustained yield of wood fiber. Apply technology to improve productivity of stands and coordinate timber management with other resource considerations.</p>
Wildlife and Fish Habitat	<p>Manage for a diverse, well-distributed pattern of habitats for viable populations of wildlife and fish species in cooperation with states and other agencies. Apply technology and manage habitat to help recover threatened and endangered species and increase the productivity for existing native and desired non-native, vertebrate species consistent with other resource considerations. Resist introduction of exotics.</p>
Minerals	<p>Provide for mineral prospecting, exploration, and development by responding in a timely fashion. Emphasize energy and strategic minerals. Ensure coordination of mineral and environmental laws and regulations with due regard to other resources.</p> <p>Expand the minerals data base through coordination with industry and other State and Federal agencies that manage mineral resource data.</p>
Water	<p>Provide for favorable conditions of waterflow which provide for long term consumptive and nonconsumptive water quality needs through improved management technology.</p>

National Grasslands	Promote the role of demonstrating grassland agriculture on the National Grasslands and the application to other land. as specified in FSM 2202.1.
Soil	Improve and maintain soil productivity and condition of watersheds and riparian areas.
Air Quality	Minimize reduce air pollution from land management activities through application and timing of improved management practices.
Fire Management	Provide a fire management program in cooperation with other agencies that allows a reasonable level of fire protection to reduce fire hazards and risks, prevent loss of life and property, minimize resource losses, and support other resource objectives.

Law Enforcement	Reduce risk of harm to visitors and damage to public and private property and natural resources through education, enforcement, and cooperation with other agencies.
Lands and Special Uses	Conduct landownership adjustment, right-of-way acquisition, land line location, and special use programs to promote efficient management.
Facilities	Construct, maintain, and regulate use of Forest Service facilities to protect natural resources and correct safety hazards. Analysis to reduce disinvestment and support management activities will be conducted to determine objectives of the facilities in relation to economics.
Cultural Resources	Inventory, protect, and where appropriate interpret cultural resources.
Research Natural Areas	Protect the values associated with recommended Research Natural Areas pending decision of designation or nondesignation by the Chief. Where established, RNA's will be managed for scientific research or baseline studies.
Information and Education	Pursue opportunities to promote public awareness of the Forest mission, goals, and objectives, as well as opportunities for the Forest managers to become aware of the concerns of parties interested in, or affected by, management activities on the National Forest and National Grasslands.
Human Resources	Manage human resource programs to provide employment and economic development opportunities for neighboring communities while meeting natural resource goals.
Land Management Planning	Provide coordination and ensure interdisciplinary input for implementing, monitoring, and updating the Forest Plan.
Native American Concerns	Expand contacts with Native American groups and implement a system for collecting and reviewing tribal, pueblo, and individual Native American input regarding the environmental analysis and decisionmaking process. Work with individual Native American Tribes and individual Land Grant communities to act on economic development opportunities where possible.
OBJECTIVES	Objectives for the Forest Plan are now found in Appendix D as displayed in Tables 6 through 14. Tables 15 and 16 have been replaced with a standard regional table and may be found on page 35.

Pages 36 through 53 have been deleted with this amendment.

Amendment No. 7, September 1996

Standard Vegetation Treatment Table

Standard Vegetative Management Practices for Certain Composition, Structure, and Function Attributes (use at the site/stand level).

COMPOSITION (Forest Type*)	Aspen and Western Live Oak	Engelmann Spruce-Subalpine Fir, White Fir, Blue Spruce, Limber Pine, Rocky Mountain Juniper, Cottonwood-willow, Interior Ponderosa Pine, Pinyon-Juniper, Arizona Cypress, and Mesquite							All Forest Types	Grassland, Meadow, and Alpine
STRUCTURE	DESIRED ONE-AGED, SINGLE-STORIED STAND (One-age class comprises >=90% of total stand BA for most of the rotation. Age difference between oldest and youngest tree in a class is less than 20% of the rotation)				DESIRED TWO-AGED, TWO-STORIED STAND (Two age classes, each > 10% BA most of rotation)	DESIRED UNEVEN-AGED, MULTI-STORIED STAND (More than two age classes)			ANY DESIRED ONE-, TWO-, OR MULTI-STORIED STAND	OPEN
FUNCTION	Coppice Regeneration Method (vegetative regeneration function)	Clearcutting Regeneration Method (no trees function for seed/shelter)	Seed Tree Regeneration Method (some trees function for seed only)	Shelterwood Regeneration Method (some trees function for seed/shelter)	Irregular Shelterwood Regeneration Method (function for continuous tree cover)	Single-Tree Selection Regeneration Method (function for continuous tree cover)	Group-Selection Regeneration Method (group size <= 2 TO 4 acres)	Irregular Group Shelterwood Regeneration Method	Intermediate Treatment Methods (tree cover between stand formation and regeneration)	No or Few Trees (maintain open)
VEGETATIVE MANAGEMENT PRACTICE	<u>Activity</u> Coppice Coppice w/Reserves	<u>Activity</u> <=5% tree cover post harvest: Patch cut Strip cut Stand cut 6-10% tree cover post harvest: Patch cut w/Reserves Strip cut w/Reserves Stand cut w/Reserves	<u>Activity</u> Preparatory Seed 1-10% tree cover post harvest: Final Removal Final Removal w/Reserves	<u>Activity</u> Preparatory Seed Group Seed Strip Seed Removal Group Removal Strip Removal Final Removal Final Removal w/Reserves	<u>Activity</u> Preparatory Seed Removal Final Removal Final Removal w/Reserves Coppice Regeneration Method Coppice w/Standards (understory must regenerate vegetatively, suckers/sprouts)	<u>Activity</u> Single Tree/(Individual - Tree) Selection	<u>Activity</u> Group-Selection Group-Selection w/Reserves	<u>Activity</u> Seed Removal Final Removal Final Removal w/Reserves	<u>Activity</u> Improvement Liberation Thinning Commercial & Noncommercial Mortality Salvage Sanitation Salvage Cull Salvage Prescribed Fire Cleaning Weeding	<u>Activity</u> Meadow Maintenance & creation

*Fyre, F.H. 1980. Forest cover types of the United States and Canada. Society of American Foresters, Washington, D.C. 148 P.

Pages 37 through 53 have been deleted with this amendment. Tables 6 through 14 previously found on these pages have now been moved to Appendix D. Tables 15 and 16 have been eliminated and replaced with the standard regional table found on page 35.

Amendment No. 7, September 1996

MANAGEMENT
PRESCRIPTIONS

The mission, goals, objectives for the Cibola National Forest and Kiowa, Rita Blanca, Black Kettle and McClellan Creek National Grasslands are attained through applying groups of management activities to specific units of land. Groups of management activities are called "Prescriptions" and the land units are called "management areas." This portion of the proposed Forest Plan describes the linkage between prescriptions and the management areas.

Prescriptions are management practices selected and scheduled for application on a specific area to attain multiple use and other goals and objectives [36 CFR 219.31]. A management area is a unit of land where a given prescription is to be applied. These areas are outlined on the Management Area Map accompanying the proposed Forest Plan.

All prescriptions developed for the proposed Forest Plan integrate a number of resource and support element activities and will produce a variety of outputs when applied to a management area. Each prescription is broken into the following categories listed below.

Management Area
Description

A brief description of the physical, biological, and administrative characteristics of the management area to which the prescription applies.

Analysis Area

A list of all analysis areas in the management area. The purpose of delineating analysis areas is to predict the response of identified land areas to various management activities. Analysis areas can be defined and delineated on maps and can be identified on the ground. Data can be generated by area for the purpose of estimating the capability to provide goods, services, or resource uses for each prescription. Each prescription is expected to have the same consequences or to produce the same results when applied to any acre with the analysis area.

Analysis areas are not necessarily contiguous areas. Separate areas of the same type are found across the Forest with the total of all such areas defining a single analysis area. The Analysis Area Index in Appendix C is a quick reference.

Management Emphasis	A brief statement regarding the resource management emphasis for the prescription.
Activities	<p>A list of resource management activities applicable to management practices. These activities are grouped into resource or support elements and are identified by alpha/numeric code, such as A01 or B01. Each activity has a unique code, title, and unit of measure for the work performed. An index of codes is provided in Appendix B.</p> <p>Resource program elements are defined as major mission-oriented activities that fulfill statutory or executive requirements.</p> <p>Support program elements encompass the activities necessary to maintain and facilitate outputs of several or all resource elements.</p>
Decision Variables	A list of RPA decision variables applicable to management practices. A decision variable represents a collection of projects producing specific types of outputs for which budgets are prepared and managers make decisions on the scope, direction and quality of work to be performed. An index of decision variables is provided in Appendix A.
Applicable Analysis Areas	A list of the analysis areas where each activity is applicable. Within a single prescription, some activities may be suitable for application on certain analysis areas whereas other activities are suited to a different set of analysis areas within the management area.
Standards and Guidelines	A description of standards and guidelines which apply to each activity. Standards and guidelines set forth: 1) specific policies that apply to activities in each prescription; 2) timing and intensity of planned activities; and 3) mitigation measures and coordinating requirements needed to protect resources and the environment.
How to Apply the Prescriptions	<p>District Rangers and Staff apply management practices or activities by locating the applicable management area on analysis area maps and field check to determine their suitability. Practices or activities are monitored in accordance with Chapter 5, Monitoring Plan, to insure compliance with costs, outputs, and standards and guidelines.</p> <p>If practices or activities are not adequately covered by the Plan, an environmental analysis is conducted to evaluate the proposal and alternatives to it, as well as coordinate the selected practices or activities with applicable standards and guidelines for the area. Additional management constraints not covered by the standards and guidelines in the Plan are determined at this time.</p> <p>If the practices or activities in the Plan are not appropriate for a specific site because of land suitability or other conflicts with standards and guidelines, the planned action is redesigned or relocated. Major unforeseen practices or activities which cannot be changed and which conflict with the Plan may result in an amendment or revision. Amendments or revisions are accomplished by the Forest Supervisor after appropriate public notification [36 CFR 219.10(f)].</p> <p>The management prescriptions, including the standards and guidelines, shall govern all activities regardless of funding levels. If funding necessary for complete implementation of any objective is not appropriated, that objective shall be implemented only to the extent possible consistent with applicable management prescriptions.</p> <p>The interdisciplinary process will include notification and invitations in the form of mailings and personal contacts with affected interests for scoping.</p> <p>The intent of this notification will be to solicit participation of expertise and local interests early in scoping.</p>

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS

	<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
Range	140	D01	All except 1, 2, 4, 5	Prepare or update to applicable Regional standards allotment analyses on 75 percent of the National Forest allotments each period.
	140	D01	4,5	Prepare or update to applicable Regional standards allotment analyses on 90 percent of the National Grassland units each period.
	140	D01	All except 1 & 2	Develop and maintain a mechanism for sustained communication with the State, interested groups and affected communities for development and review of implementation schedules.
	140	D02	All except 1 & 2	Prepare or update to Regional standards allotment management plans on all allotments, on the National Forest and National Grasslands each period.
	140	D02	All except 1 & 2	Prepare annual operating plans for all obligated allotments on the National Forest and National Grasslands.
	140	D02	All except 1, 2, 4, 5	Administer all National Forest term grazing permits annually. Inspect 50 percent of these allotments annually following guidelines and intensity outlined in Region 3 Allotment Analysis Handbook FSH 2209.21 as amended. Each allotment will be inspected to this standard at least three times per period.
	140	D02	4, 5	Administer all National Grassland term grazing permits annually. Inspect 80 percent of these allotments annually, following guidelines and intensity outlined in Region 3 Allotment Analysis Handbook FSH 2209.21 as amended. Each allotment will be inspected to this standard at least three times per period.
	140	D02	All except 1, 2	Develop audio visual program(s), environmental education field investigations, and news articles which address range problems, and solutions to those problems. Forest employees will be available to make presentations to various organizations.
	140	D02	All except 1, 2, 4, 5	Conduct production/utilization studies on all allotments twice per period on National Forest allotments. Make annual extensive allotment inspections. Prevent excess and unauthorized use.

Amended 1-9-87

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
140	D02	4, 5	Conduct production/utilization studies on all units three times per period on National Grasslands. Make extensive allotment inspections annually. Prevent excess and unauthorized use.
140	D02	All	Utilization level of available forage production may vary by soil type, season of use, and type of management being applied. The following guidelines will be used to determine if management is appropriate to protect and/or enhance the resource.
140,150	D01, D02	All except 1 & 2	<p>The following guidelines will be used when scheduling implementation of new, revised, or updated Allotment Management Plans in the Forest Plan Implementation Schedule. Emphasis will be placed on the first guideline. Flexibility in rescheduling to take advantage of opportunities and changing conditions is needed and recognized:</p> <ul style="list-style-type: none"> -Problem allotments where unsatisfactory management, unsatisfactory range condition, or overstocking is occurring. -Allotments properly stocked where range condition, trend and management are satisfactory but resource information and data need to be updated to accomplish planned monitoring. -Properly stocked allotments where investments in range developments are required to maintain an upward trend in range condition and obtain or continue an intensive management level. -Allotments where agreed-upon management is in effect but needs revision due to changes in objectives or other factors affecting current management. -Allotments which have potential for increasing stocking.

Amended 1-9-87

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
			Woodland, Plains Grassland (National Forest), and Ponderosa Pine and Mixed Conifer
			Low Condition 15%
			Moderately Low Condition 25%
			Moderately High Condition 35%
			High Condition 40%
			Mountain Grassland
			Low Condition 15%
			Moderately Low Condition 25%
			Moderately High Condition 30%
			High Condition 35%
			Deciduous Forest, Mountain Shrub
			Low Condition 10%
			Moderately Low Condition 20%
			Moderately High Condition 30%
			High Condition 40%
			Riparian
			Low Condition 5%
			Moderately Low Condition 15%
			Moderately High Condition 25%
			High Condition 30%
			Plains Grassland and Prairie (National Grasslands)
			Low Condition 15%
			Moderately Low Condition 25%
			Moderately High Condition 40%
			High Condition 50%
140	D02	All except 1,2,13,17	Adjust permitted use to range capacity by Period 3. Capacity and permitted use are summarized below for Periods 1-5.

Average Annual Grazing Capacity in AUMs for Periods 1-5
 Shown by Management Area and Total

Period	Management Area													Total
	3	4	5	7	8	9	10	11	12	14	15	16	18	
1	720	14,144	69,068	1,013	3,079	5	260	2,991	220	15,592	11,055	65,377	1,634	185,158
2	520	14,188	70,855	872	2,236	4	244	2,882	166	14,209	11,968	65,898	1,521	185,563
3	400	14,600	73,269	802	2,015	3	228	2,803	83	14,543	12,926	66,819	1,508	189,999
4	390	14,894	74,149	802	2,281	3	222	2,665	54	14,124	13,041	66,522	1,491	190,638
5	390	14,676	75,555	802	2,112	4	222	2,527	37	14,137	13,110	66,490	1,468	191,530

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

Average Annual Permitted Use in AUMs for Periods 1-5
 Shown by Management Area and Total

Period	Management Area													Total
	3	4	5	7	8	9	10	11	12	14	15	16	18	
1	1,219	13,544	61,009	1,448	5,161	7	278	3,899	387	17,197	13,557	70,225	1,722	189,702
2	889	14,033	67,714	1,126	4,644	7	250	3,507	318	16,495	12,506	69,117	1,596	189,202
3	400	14,912	66,615	802	2,008	3	227	2,803	83	13,343	11,468	65,428	1,508	180,880
4	390	14,428	71,790	802	1,986	3	221	2,665	54	13,079	11,849	65,238	1,491	183,994
5	390	14,341	74,724	802	1,799	3	221	2,527	37	13,091	12,209	68,088	1,468	186,698

Decision Variables	Activities	Applicable Management Areas	Standards and Guidelines
140	D02	All except 1,2,13,17	Improve 50 percent of suitable range to its maximum potential condition class by the end of Period 3.
150	D03	14, 15, 16	Pinyon-Juniper overstory removal will be accomplished through firewood harvest. Where public demand for firewood is not sufficient to permit the desired treatment schedule to be met, firewood harvest does not achieve the desired management objectives, the stand does not provide suitable firewood or factors which are necessary to accomplish harvest are not available, other measures will be used. These measures will involve mechanical, fire or chemical treatment. However, no more than 20 percent of the acres identified for pinyon-juniper removal in each period will be treated by mechanical or chemical means.
150	D05, D06	All except 1,2,13,17	Construction of new fences and reconstruction of fences will provide for movement of wildlife.
150	D05, D06	All except 1,2,13,17	New livestock water developments will provide for wildlife escape. The Plan provides for 446 waters with related storage and drinkers, as shown in each management area standards and guidelines.
150	D05, C06, A01	All except 1,2,13,17	Fence new spring developments where needed to enhance cover for wildlife.
140	D06	All except 1,2,13,17	Require permittee maintenance of all Range improvements assigned in the grazing permit.
Recreation	010	A01	All Acceptable variations in ROS classifications from the acreages presented in the standards and guidelines for specific management areas are as follows

Primitive: No change
 Semi-primitive Nonmotorized: ±15%

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
			Semi-primitive Motorized: ±15% Roaded Natural: ±15% Rural: ±15%
			Where road construction would result in a loss of semi-primitive nonmotorized acreage, action will be taken to close the road and restore its surface at completion of the project when possible.
010	A01	All	Develop audio visual program(s), brochures, environmental education field investigation, and news articles which address the various recreation problems and their solutions. Forest employees will be available to make presentation to various organizations.
010	A01	All	Semi-primitive nonmotorized areas shall be managed for dispersed recreation opportunities.
010	A03	All	Acceptable variations in VQO classifications from the acreages presented in the standards and guidelines for specific management areas are as follows: Preservation: No Change Retention: ±2 percent in foreground, ±5 percent in middle ground and background Partial Retention: ±5 percent in foreground, ±10 percent in middle ground and background Modification: ±10 percent in all zones
010		All	Complete Recreation Opportunity Guide for Forest and update every 5 years. Include in Recreation and Opportunity Guides the identification and mapping of Recreation Opportunity Spectrum classification of land in the Cibola Forest.
010		All	Review effects of road closures on ROS/WOS class acreages every three years and adjust acreages as affected by closures.
010	A14 A15	All except 1,3	OHV use will be designated and managed in accordance with the Travel Management Rule, 36 CFR Parts 212, 251, 261, and 295 once analysis has been completed and a decision has been signed by the deciding officer.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
010	A14	All	Once a MVUM has been issued for a district, cross-country travel is prohibited off of the designated system unless an area has been designated on the MVUM. Roads and trails open to motor vehicle

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
			Use will be designated by vehicle class and, if appropriate, by time of year pursuant to 36 CFR 212.51. Designated roads, trails, and areas shall be identified on a MVUM that is available to the public pursuant to 36 CFR 212.56.
010 050	A08, A09 A11, A13 A14-A16 B03, B04	All	Region 3 operation and maintenance standards will be used for administration of developed sites, winter sports sites, dispersed areas, and wilderness. Update operation and administration plans annually to reflect these standards.
010	A03	All except 1, 3	Manage for the visual quality objective of retention or partial retention for developed site plan perimeter using a definition of characteristic landscape which includes manmade features. Extend perimeter to five chains around developed recreation sites.
010	A03	2,6-17	Accomplish view shed corridor planning as needed for timber sales.
010	A03	All	Inventory for existing visual condition (EVC) and visual absorption capability (VAC) in Period 1.
010	A05 A06 C03 C05 D05 E05-E07 F01 G02-G06 G09 K03	All except 1, 3, 4, 5	Dispose of all activity slash within seen area or up to approximately 200 feet on either side of roads and trails where the VQO is retention. Retain/enhance retention by Landscape Architect (LA) specifying GSL, DBH and vista opportunities appropriate to each site and coordinated with special GSL and old growth requirements for wildlife. Use slash disposal techniques appropriate for given area. Where the foreground VQO is partial retention, the following will be required: Dispose of all activity slash occurring within 200 feet of recreation sites, forest trails, forest roads, and paved or all-weather roads. Slash will be disposed of within 1 growing season after completion of the project which generates the slash. Retain/enhance partial retention areas by LA specifying GSL, DBH and vista opportunities appropriate to a given site. Use slash disposal techniques appropriate for given area. Newly created tree stumps in thinning areas will have cut-face away from any

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
			Recreation sites, trails, or roads within 200 feet of the stumps.
010	All A13	All except 1, 3	Hazard inspections will be made on developed sites each spring. Serious hazards with threaten public safety will be corrected immediately. Other hazards will be corrected prior to opening the site to the public.
010	All A13	All except 1, 3	During Period 1, rehabilitate to condition class 1 all facilities scheduled for rehabilitation during that Period.
010	A01 All	All except 1, 3	1. Maintain facilities 3 years old or less at Condition Class 1. 2. Eliminate maintenance related health and safety hazards on facilities in all condition classes. 3. Maintain other facilities to Condition Classes 2 and 3.
010	All A13	All except 1, 3	Provide Region 3 Full Service Management at all developed sites in the Sandia Ranger District during the major season (May 15 through September 14 or longer if that season is extended). Provide at least Region 3 Reduced Service Management at all developed sites in the Sandia Ranger District during all other seasons.
010	A13	All	Permit gathering of dead and down firewood for recreation use while camping or picnicking.
010	L23	All	Use Forest Service staff and Adopt-A-Trail volunteers for trail maintenance.
010	All	All except 1,3	No improvements will be constructed within potential recreation sites which will detract from the future value of those sites for development. Consider provisions for handicap needs in design and construction of all facilities.

MANAGEMENT PRESCRIPTIONS
APPLICABLE TO ALL AREAS
(Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
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GUIDELINES FOR FOREST-WIDE RECREATIONAL DEVELOPMENT

1. Evaluate compatibility with other Resources and Activities

- a. Grazing
- b. Firewood gathering
- c. Other recreational opportunities
- d. Timber
- e. Minerals
- f. Riparian
 - (1). Establish buffers or other mitigation measures to protect and maintain riparian and wetland habitat.
- g. Wildlife
- h. Visual quality
 - (1). Emphasize developments that will cause no deviation in the visual quality classification. Limit change in VQO so that one project will not utilize all of the deviation for any management area.
- i. Water
 - (1). Quality
 - (a). Maximum road density of 1.9 miles of road per square mile. Open system road densities will increase temporarily to 2-3 miles per square mile in active vegetation management areas.
 - (b). Use Best Management Practices with specific practices identified and implemented for specific sites.
 - (c). Control sediment, particularly resulting from soil movement caused by roads.
 - (d). Provide adequate provisions

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
			for effluent and waste water treatment.
			(2). Quantity
			(a). Insure adequate water rights and supply are available to support the development.
			j. T&E Species
			(1). Protect habitat for T&E species of plants and animals.
			(2). Consult with appropriate State and Federal agencies.
			k. Soils
			(1). Erodibility
			(2). Productivity
			(3). Geologic hazard
			(4). Resistance to compaction
			(5). Revegetation potential
			l. Vegetation
			(1). Height
			(2). Density
			(3). Resiliency to use
			(4). Revegetation potential
			2. Evaluate recreational developments to achieve compatibility with, or mitigate adverse effects on, resources and other factors
			a. Effects on surrounding communities
			(1). Access through or near rural communities
			(2). Effects on traditional uses by local communities
			(3). Effects on economic base of local communities
			(4). Consult with Land Grant

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
			Commissioners, Land Grant Officers, and Mayordomos
			(5). Development of a mechanism for sustained communication with tribal religious leaders and tribal governments.
010	A02	All	<p>The Forest will comply with the National Historic Preservation Act (NHPA) and with Executive Order (ED) 11593, and will undertake active management which recognizes cultural resources as equal in importance to other multiple uses. Cultural resources will be managed in coordination with the State Historic Preservation Plan (SHPP) and planning activities of the State Archeologist, and in accordance with the negotiated settlement to the Save the Jemez et al. /State of New Mexico vs. Forest Service litigation.</p> <p>Representatives of the Forest will meet at least annually with the New Mexico State Historic Preservation Officer (SHED), and as necessary with the Texas and Oklahoma SHPOs, to coordinate cultural resources management activities. The Forest will honor requests for meetings to discuss the Forest's cultural resources management program from other State and Federal agencies, cultural resources organizations, and other interested parties.</p> <p>Five cultural resources overviews have been prepared that cover all Forest lands. These are available at the Forest Supervisor's and Regional Offices, and at public libraries. The overviews will be updated as required by new data and scientific research, by the management situation, and/or by planning needs. A Forest-wide cultural resources management assessment will be prepared, in consultation with the State Historic Preservation Officers, by April 1, 198B. The contents of this assessment will follow guidelines that will be established by the Regional Office in consultation</p>

MANAGEMENT PRESCRIPTIONS
APPLICABLE TO ALL AREAS
(Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
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with the SHPOs. Its content will include, but not be limited to, summaries of information in the cultural resources overviews, in the 1982 Analysis of Management Situation for cultural resources, and in the Forest's data bases of cultural resources and areas surveyed.

Information from the overviews, the Analysis of Management Situation, the data base, Native American Forest users, and framework for the identification, classification, and evaluation of known and predicted properties in the cultural resources management assessment, as provided for in the settlement to the Save the Jemez et al. /State of New Mexico vs. Forest Service litigation.

Interactions among cultural and other resources will be considered in detail in the cultural resources management planning assessment due April 1, 1988. These interactions will be analyzed on the basis of management areas by assessing the kind and distribution of cultural resources, and their interaction with other multiple uses, within each management area. The interaction between cultural and other resources for any specific undertaking will be evaluated in project-level analyses.

The following standards will apply:

1. The Forest will comply with the National Historic Preservation Act. Executive Order 11593, and the settlement to the Save the Jemez et al./State of New Mexico litigation while it is in effect.

2. The standards specified in the settlement to the Save the Jemez et al. /State of New Mexico litigation will be followed. Where the settlement document does not specify standards, those in the Forest Service Manual and Handbook will apply.

3. During the conduct of undertakings, the preferred management of sites listed in, nominated to, eligible for, or potentially eligible for the National Register is avoidance and protection. Exceptions may occur in specific cases

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
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where consultation with the SHPO indicates that the best use of the resource is data recovery and interpretation.

4. Sites listed in, nominated to, eligible for, or potentially eligible for the National Register will be managed during the conduct of undertakings to achieve a "No Effect" finding, in consultation with the SHPO and the Advisory Council on Historic Preservation.

5. Where resource management conflicts occur, the desirability of in-place preservation of cultural resources will be weighed against the values of the proposed land use. Preservation of cultural resources in place will be the preferred option under the following conditions:

- where present methods of investigation and data recovery cannot realize the current research potential of the sites;

- where the sites are likely to have greater importance for addressing future research questions than current ones;

- where the cultural values derive primarily from qualities other than research potential, and where those values are fully realized only when the cultural remains exist undisturbed in their original context(s) (e.g., association with significant historical persons or events, special ethnic or religious values, or unique interpretive values);

- where cultural resources are important primarily for the quality of their architecture and the integrity of their setting;

- where preservation in place is necessary to accomplish the objectives of the State Historic Preservation Plan;

- where site density would make data recovery economically infeasible, or require unattainable operating conditions.

Where these conditions exist, the Forest should redesign, relocate or cancel the project. The procedure specified in 36 CFR 800 will be followed in reaching a management decision, and the minimum

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
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management standard will be to achieve a "No Adverse Effect" finding.

6. Surface disturbing undertakings will be managed to comply with 36 CFR 800 and the settlement to the Save the Jemez et al. /State of New Mexico litigation. All consultation responsibilities to the SHPO, before, during, and after an undertaking, will be followed. The area of an undertaking's potential environmental impact will be surveyed for cultural resources and areas of Native American religious use. Inventory standards will be as specified in the settlement document and in the Forest Service Handbook, and will be determined in consultation with the SHPO. Native American groups will be consulted as appropriate.

Cultural resource management will be coordinated with the State Cultural Resource Plan and planning activities of the SHPO and State Archeologist, and with other State and Federal agencies. This will be accomplished as follows: (a) consultation and meetings with such parties, (b) sharing of data, reports, plans, interpretations, and other documents, (c) coordination on National Register nominations, and (d) participation in the State cultural resources planning process.

All parts of the Forest not surveyed at the 100 percent level, and on which there is a likelihood that cultural resources exist, require more intensive inventory. Areas rated as highest priority for survey will be those that either (a) are expected to have high site densities, and/or (b) are important to understanding the historic and/or prehistoric occupations of the Forest. Such areas will be identified in the cultural resources management planning assessment to be completed by April 1, 1988. At a minimum, survey of such areas will be undertaken in conjunction with annual update training for para-professional archeologists as specified in the settlement to the Save the Jemez et al. /State of New Mexico litigation.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision</u> <u>Variables</u>	<u>Activities</u>	<u>Applicable</u> <u>Management Areas</u>	<u>Standards and Guidelines</u>
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The following areas will have priority for nonproject related survey in F.Y. 1987 and 1988:

Southwestern Zuni Mountains, Mt. Taylor RD

North end Sandia Mountains, Sandia RD

Gallinas Mountains, vicinity of Pueblo Blanco, and Pueblo Colorado Mountainair RD

Sawtooth Mountains, Magdalena RD

Native American use areas, Black Kettle NG

Experience indicates that there is likely to be a significant density of cultural resources in each of these areas.

The Forest will implement, or seek to develop or participate in the development of, Cultural Resources Allocation Plans. These plans will be available in the Supervisor's and Regional Offices. Data will be collected to implement the plan(s). In consultation with the SHPO, sites will be allocated to management categories and treated accordingly.

The Forest, through the cultural resources management planning assessment to be completed by April 1, 1988, will develop a prioritized list and schedule for nominating eligible properties to the National Register of Historic Places (National Register).

In consultation with the SHPOs, identified sites will be evaluated for eligibility for the National Register. Sites considered eligible will be assigned a priority for nomination in the cultural resources planning assessment. Sites not yet evaluated will be managed as if eligible, unless consultation with the SHPO indicates otherwise.

The National Register nominating criteria are contained in 36 CFR 60.4. These will be further refined through the cultural resources management planning assessment due April 1, 1988. Nominations will be coordinated with the planning activities of the SHPO and the State Archeologist, and with the Allocation Plan(s). Priorities for nomination will be based on a consideration of these plans and the overall cultural resources program.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
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Nomination priorities for F.Y. 1987 and 1988 are as follows:

F.Y. 1987: Jaral Pueblo, Sandia RD
 Fire Lookout Thematic Nomination

F.Y. 1988: Tijeras Pueblo, Sandia RD
 Pueblo Blanco and Pueblo Colorado,
 Mountainair RD

The Forest will nominate at least two individual sites per year for every full-time professional employed in the Forest's cultural resources management program. Alternatively, the Forest will submit at least one district, thematic, or multiple property nomination per year, or may cooperate with other Forests in producing such a nomination. A different submission schedule for specific multiple property nominations may be proposed to the SHPO. Any nomination returned by the keeper of the National Register for reasons of technical inadequacy will be revised and resubmitted within 90 days, weather permitting.

Measures for the protection of cultural resources from vandalism and natural destruction will include regular inspection and, where necessary, electronic monitoring. Sites listed in or nominated to the National Register will be inspected biennially. Sites determined eligible for the National Register will be inspected periodically, unless previous data recovery has fully documented the characteristics that qualify the site for the Register. All other sites, except those formally determined ineligible for the National Register, will be inspected on a need or opportunity basis as specified in the settlement to the Save the Jemez et al. /State of new Mexico litigation. Sites susceptible to rapid deterioration and/or human disturbance will be inspected most frequently.

The Forest will seek funding for the following protection measures in the indicated years from the Region 3 funds for protection measures. The Forest will commit funds for and initiate the protection measures in the years they are funded.

MANAGEMENT PRESCRIPTIONS
APPLICABLE TO ALL AREAS
(Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
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F.Y. 1987

Inspect the following sites:

Gallinas Springs (NRHP)
Big Bead Mesa (NRHP)
Sandia Cave (NHRP)
Jaral Pueblo
Tijeras Pueblo
Michael's Land Exchange sites
Native American use area,
Black Kettle NG
Copperton

Establish photographic control points at the following sites:

Gallinas Springs
Jaral Pueblo

F.Y. 1988

Inspect the following sites:

Pueblo Blanco
Pueblo Colorado
LA 2091
Michael's Land Exchange sites
Sawyer
Rita Blanca Spring Site
Mills Canyon Ranch House

Establish photographic control points at the following sites:

Pueblo Blanco
Pueblo Colorado
Copperton

Sites known to have sustained unusual damage, beyond minimal levels that normally occur from natural forces, will be listed in priority order for stabilization. This listing will appear in the cultural resources management planning assessment due April 1, 1988. This list will specify five sites that are the highest priority for stabilization, 35 sites that have sustained severe damage, and up to 60 additional sites that have sustained less severe damage. At the present time, the Forest inventory indicates that there are not 35 known severely damaged sites on the Forest. The Forest will emphasize identification of severely damaged sites to ensure a complete inventory. Criteria for establishing priorities will be those specified in the settlement to the Save

MANAGEMENT PRESCRIPTIONS
APPLICABLE TO ALL AREAS
(Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
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the Jemez et al./State of New Mexico litigation

Sites listed in or eligible for the National Register that need maintenance will be described in detail in the cultural resources planning assessment due April 1, 1988. The Forest will seek funding for stabilization/maintenance for the following sites in F.Y. 1987 and F.Y. 1988 from the Region 3 funds for stabilization/maintenance. The Forest will commit funds for and initiate the stabilization and maintenance measures in the years they are funded.

1. Gallinas Springs
2. Unnumbered pueblo on Gallinas wash upstream of Gallinas Springs
3. Swift Horse site
4. Tijeras Pueblo
5. LA 2091

Rapid natural deterioration, or susceptibility to this, will require appropriate measures, such as stabilization and/or data recovery. Vandalism, collecting, or illicit excavation will require protective measures, such as signing, fencing, administrative closure, remote sensing, increased patrolling, investigations, interpretive signs, District displays, media communications, and stabilization and/or data recovery. Specific sites or areas may be closed to ORV use and withdrawn from mineral entry. Parties known to have damaged identified cultural resources willfully or through negligence will be held legally and financially liable for the costs of stabilization and repair. The appropriate SHPO will be consulted on treatment of damaged sites.

A cultural resources professional will inspect each site that may be affected by an undertaking, and each undertaking with the potential to affect cultural resources prior to issuance of clearance for the undertaking by the Forest Supervisor.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
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In addition, at least one site, and not less than 20 percent of the sites designated for protection, or marked, within each undertaking's area of potential environmental impact, will be inspected by a cultural resource specialist, site administrator, contracting officer's representative, or project inspector. All sites listed in, nominated to, or formally determined eligible for the National Register will be inspected.

Inspections will occur during the course of the undertaking, or at the close of each undertaking with total duration of less than 72 hours. Inspection records will be provided to the SHPO.

Each Forest contract, permit, or lease that has the potential to affect cultural resources will contain a clause specifying site protection responsibilities and liability for damage. If damage to a cultural resource is found, the procedures specified in the settlement to the Save the Jemez et al. /State of New Mexico litigation, and in the Forest Service Manual and Handbook, will be followed.

The Forest regards cultural resources interpretation as a public service of high importance. New and existing groups and individuals will be offered the opportunity to participate in this interpretation. A focus will be on new and existing Native American groups and individuals and new and existing Chicano groups and individuals.

The Forest will seek funding from the Region 3 funds for cultural resources interpretation as specified below. The Forest will commit funds for and initiate trails, interpretive signs and other interpretive activities in the years they are funded.

1. On-site cultural resources interpretation of Tijeras Pueblo (F.Y. 1988). Tijeras Pueblo is a large, excavated pueblo near the Albuquerque metropolitan area. It is scheduled for development as an exhibit.

2. Cultural resources displays in the Supervisor's Office and in District Offices.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

Decision Variables Activities Applicable Analysis Areas Standards and Guidelines

3. Trails and interpretive signs at frequently visited sites.

F.Y. 1988: Pueblo Colorado
 Pueblo Blanco
 Copperton

F.Y. 1989: Gallinas Springs
 Jaral Pueblo

Future Years:
 LA 2091
 Goat Spring
 Limekiln Canyon sites

4. Preparation of popular literature, brochures, and films regarding the Forest's cultural resources.

5. Preparation of popular talks regarding the Forest's cultural resources.

6. Professional cultural resource interpretation for presentation at meetings and/or dissemination through professional publications.

By April 1, 1988, the Forest will identify cultural resource interpretation audiences and objectives. This list of interpretive opportunities will be reviewed and updated as appropriate. Opportunities for public involvement will be provided.

GRAZING MANAGEMENT

Standards: Forage use by grazing ungulates will be maintained at or above a condition which assures recovery and continued of threatened and endangered species.

Guidelines: Identify key ungulate forage monitoring areas. These key areas will normally be 1/4 to 1 mile from water, located on productive soils on level to intermediate slopes, and be readily accessible for grazing. Size of the key forage monitoring areas could be 20 to 500 acres. In some situations such as high mountain meadows with perennial streams, key areas may be closer than 1/4 mile from water and less than 20 acres. Within key forage monitoring uses, select appropriate key species to monitor average allowable use.

In consultation with US Fish and Wildlife Service, develop site-specific forage use levels. In the event that site specific information is not available, average key species forage utilization in key forage monitoring uses by domestic livestock and wildlife should not exceed levels in the following table during the forage growing season.

ALLOWABLE USE GUIDE (percent) BY RANGE CONDITION AND MANAGEMENT STRATEGY*

Range Condition**	Continuous Season-long Use	Defer 1 yr. in 2	Defer 1 yr. in 3	Defer 2 yr. in 3	Rest 1 yr. in 2	Rest 1 yr. in 3	Rest 2 yr. in 3	Rest over 2 yr. in 3
Very Poor	0	10	5	15	15	10	20	25
Poor	10	20	15	20	20	15	30	35
Fair	20	25	20	30	30	25	40	45
Good	30	35	35	35	35	35	45	50
Excellent	30	35	35	35	35	35	45	50

* Site-specific data may show that the numbers in this table are substantially high or low. These numbers are purposefully conservative to assure protection in the event that site-specific data is not available.

** Range Condition as evaluated and ranked by the Forest Service is a subjective expression of the status or health of the vegetation and soil relative to their combined potential to produce a sound and stable biotic community. Soundness and stability are evaluated relative to a standard that encompasses the composition, density, and vigor of the vegetation and physical characteristics of the soil.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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The above table is based on composition and climatic conditions typical of sites below the Mogollon Rim. On sites with higher precipitation and vegetation similar to sites above the Mogollon Rim, allowable use for ranges in poor to excellent condition under deferment or rest strategies may be increased by 5%. The guidelines established in the above table are applicable only during the growing season for the identified key species within key areas. Allowable use for key forego species during the dormant season is not covered in the above table. These guidelines are to be applied in the absence of more specific guidelines currently established through site specific NEPA analysis for individual allotments.

Guidelines for allowable use for specific allotment(s) management or for grazing strategies not covered in the above table will vary on a site-specific basis when determined through the Integrated Resource Management (IRM) process.

Allowable use guidelines may be adjusted through the land management planning revision or amendment process. Guidelines established through this process to meet specific ecosystem objectives, will also employ the key species and key area concept and will be monitored in this manner.

Timber	160	E00	2, 7-12, 18	Inventory suitable timber lands every 10 years. Analyze data from timber inventory to identify lands with over 40 percent slopes, under 50 site index ratings, and semi-primitive non-motorized recreational opportunity spectrum classifications. Develop timber harvest action plans on a continuous five year interval. Develop audio visual program(s), brochures, environmental education field investigation, and news articles describing current and future timber programs. Topics will include sawtimber management and harvest, firewood and miscellaneous products.
	160	E03	2, 7-12, 18	Minimum stand size 10 acres Maximum stand size 100 acres Preferred range 20-80 acres
	160	E03	All	Maximum clearcut will be 40 acres.
	160	443	2, 7-12, 18	Monitor reforestation sites 1, 3, and 5 years after planting to ensure adequate stocking. Stocking objective is (number specified in the Regional Silvicultural Handbook for the given site) appropriate to site conditions. Planting will be preceded by site preparation where needed. Planting may be by machine, auger, hand tools, or a combination. Collect cones from appropriate seed zones to maintain a 10 year supply of seed in the seed bank.
	160	E05,P11,P34	2, 7-12, 18	Thin stands at completion of timber sale activities to appropriate GSL. Lop thinning slash to within 12 to 18 inches of ground level where necessary or remove as firewood.
	160	E00,E06,E07	2, 7-12, 18	The following standards apply to the 83,397 unsuitable acres and the 20,125 nonappropriate acres on the areas supporting commercial timber species.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			Except for emergency salvage sales or sales needed to protect or enhance other multiple use values, no timber harvesting will occur for a period of 10 years. Those lands will be evaluated every 10 years to determine if conditions have changed enough that they should be included for future timber production.
160	E00,E03, E05, E06, E07	All	There shall be no harvesting during Period 1 on lands greater than 40 percent slopes, in areas in the 40-50 site index range for Forest regeneration or in roadless areas previously identified in RARE II.
160	E06,E07,C01	2, 7-12, 18	A one chain nonactivity buffer will be left around all known wildlife waters. Leave a two chain or more nonactivity buffer around all known raptor nests. Plan and administer timer harvest activities in known elk calving and deer fawning areas so as not to disrupt calving and fawning and retain cover needed.

OLD GROWTH

Standards: Until the forest plan is revised, allocate no less than 20 percent of each forested ecosystem management area to old growth as depicted in the table below.

In the long term, manage old growth in patterns that provide for a flow of functions and interactions at multiple scales across the landscape through time.

Allocations will consist of landscape percentages meeting old growth conditions and not specific acres.

Guidelines: All analyses should be at multiple scales - one scale above and one scale below the ecosystem management areas. The amount of old growth can be provided and maintained will be evaluated at the ecosystem management area level and be based on forest type, site capability, and disturbance regimes.

Strive to create or sustain as much old growth compositional, structural, and functional flow as possible over time at multiple-area scales. Seek to develop or retain old growth function on at least 20 percent of the naturally forested area by forest type in any landscape.

Use information about pre-European settlement conditions at the appropriate scales when considering the importance of various factors.

Consider the effects of spatial arrangement on old growth function, from groups to landscapes, including de facto allocations to old growth such as goshawk nest sites, Mexican spotted owl protected activity centers, sites protected for species behavior associated with old growth, wilderness, research natural areas, and other forest structures managed for old growth function.

In allocating old growth and making decisions about old growth management, use appropriate information about the relative risks to sustaining old growth function at the appropriate scales, due to natural and human-caused events.

Use quantitative models at the appropriate scales when considering the importance of various factors. These models may include, but are not limited to: Forest Vegetation Simulator, BEHAVE, and FARSITE.

Forested sites should meet or exceed the structural attributes to be considered old growth in the five primary forest cover types in the southwest as depicted in the following table:

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

The Minimum Criteria for the Structural Attribute Used to Determine Old Growth

Forest Cover Type, Name	Pinon-Juniper		Interior Ponderosa Pine		Aspen	Mixed-Species Group		Englemann Spruce Subalpine Fir	
Forest Cover Type, SAF Code	239		237		217	210,211,216,219		206, 209	
Site Capability Potential Break Between Low and High Site			55 minor			50 Douglas-fir Edminster & Jump		50 Englemann Spruce Alexander	
Site	Low	High	Low	High	All	Low	High	Low	High
1. Live Trees in Main Canopy:									
Trees/Acre	12	30	20	20	20	12	16	20	30
DBH/DRC	9"	12"	14"	18"	14"	18"	20"	10"	14"
Age (Years)	150	200	180	180	100	150	150	140*/70**	140*/70**
2. Variation in Tree Diameters (Yes or No)	ND	ND	ND	ND	ND	ND	ND	ND	ND
3. Dead Trees Standing	0.5"	1	1	1	ND	2.5	2.5	3	4
Trees/Acre	9"	10"	14"	14"	10"	14"	16"	12"	16"
Size, DBH/DRC	8'	10'	15'	25'	ND	20'	25'	20'	30'
Height (Feet)									
Down									
Pieces/Acre	2	2**	2	2	ND	4	4	5	5
Size (Diameter)	9"	10"	12"	12"	ND	12"	12"	12"	12"
Length (Feet)	8'	10'	15'	15'	ND	16'	16'	16'	16'
4. Tree Decadence Trees/Acre	ND	ND	ND	ND	ND	ND	ND	ND	ND
5. Number of Tree Canopies	SS/MS	SS/MS	SS/MS	SS/MS	SS	SS/MS	SS/MS	SS/MS	SS/MS
6. Total BA, Square Feet/Acre	6	24	70	90	ND	80	100	120	140
7. Total Canopy Cover, Percent	20	35	40	50	50	50	60	60	70

Pinon-Pine: *Dead limbs help make up dead material deficit.
 **Unless removed for firewood or fire burning activities.

Spruce-Fir: *In mixed corkbark fir and Englemann spruce stands where Englemann spruce is less than 50 percent composition in the stand
 **In mixed corkbark fir and Englemann spruce stands where Englemann spruce is more percent composition in the stand.

ND is not determined; SS is single-storied; and MS is multi-storied.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
160	E06,E07,C01	2, 7-12, 18	Retain three slash piles per acre in fuelbreaks for small game and/or turkey nesting cover. Piles will be at least 6-feet in diameter and 4-feet high where slash is piled within ½ mile of water.
160	E06, E07	2, 7-12,18	Salvage harvesting operations will be prescribed as needed to meet conditions imposed by wildlife, insect or disease epidemics, blow down, or other catastrophes. Such harvesting will not be subject to the 40 acre clearcut limitations. Salvage prescriptions will consider timber salvage values, harvesting coats, and environmental impacts of the harvesting.
160	E07	2, 7-12, 18	Encourage firewood gathering of logging debris by leaving roads open for 1 to 2 years following sale completion. Direct the public to these areas. Design road systems to outslope or waterbar. Seed following activity. Restrict use to dry or frozen conditions on unsurfaced roads.
160	E07	2, 7-12, 18	Close all local roads not essential for management needs upon completion of sale and firewood activities.
160	E06,A03,C01	2, 7-12, 18	Maintain existing aspen stands through harvest methods that will encourage suckering.
160	E05, E06	3-16	Provide green personal and pinyon-juniper firewood in designated areas. Provide green commercial pinyon-juniper firewood sales on a competitive basis. Free use firewood for personal use will be restricted to dead and down material in designated areas. All firewood removal, both free and paid, will be administered through a permit or sale system.
160	E06, E07	All except 1, 3, 4, 5	Forest products such as Christmas trees, posts, poles, and vigas, will be available if removal does not conflict with other resource objectives for any analysis area.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Fire Management	160	E06, E07, P11, P34	All except 1, 3	All activity created fuels which exceed 15 tons per acre will be considered for treatment to achieve a Fuel Model 12 or less. Treatment will consider other resource objectives and acceptable risk. Activity created fuels which are less than Fuel Model 12 may be treated to achieve resource objectives. All treatments will consider acceptable risk. An appropriate suppression strategy will be selected and implemented on all fires occurring on the Forest. This strategy selected will follow manual and supplement direction and will be documented on appropriate Cibola form. Develop fire management plans for the Forest so unplanned ignitions may be classified as prescribed fires when meeting prescribed burning prescriptions to meet pre-determined resource objectives.
	350	P16, P17	All	Submit burning plans to the State in compliance with air quality regulations. Conduct all burning projects when weather conditions minimize smoke impacts on air quality. Use prescribed fire to support resource management objectives.
	350	F01	All	Strengthen efforts to reduce the number of man-caused wildfires through news releases, contact with Forest visitors, and contacts with various organizations. Increase public awareness of the need to use fire as a management tool. Accomplish through news releases, brochures, audio visual programs and Forest speakers bureau.
Insect and Disease Control	160	P34, E03	All	Monitor and report insect and disease conditions on a continuing basis and initiate appropriate control methods in early stages of potential outbreaks when it is determined that allowing the condition to follow its natural course will result in unacceptable resource loss. When pesticides are used for pest control, project plans will contain appropriate and necessary monitoring procedures and mitigation measures.
Watershed	230	552	All	Conduct terrestrial ecosystem inventories on 900,000 acres during period 1 to standards specified in Region 3 FSH 2509.14.
	230	F02, 225	All	Conduct watershed condition inventory and update water use inventories on all watersheds during periods 1 and 2.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

Decision Variables	Activities	Applicable Management Areas	Standards and Guidelines
230	K03	All	<p>Through the use of best management practices the adverse affect of planned activities will be mitigated and site productivity maintained. These practices are determined (after problem assessment, examination of alternatives and appropriate review by local or state agencies and public participation) to be the most effective practicable means of preventing or reducing the amount of pollutants generated by non-point sources to levels compatible with water quality goals. These practices are involved in activities affecting the forest and grassland resource and include:</p> <ol style="list-style-type: none"> 1. Install water control structures and/or interseed on poor and very poor condition ranges where revegetation potential is moderately high to high on slopes less than 40 percent. 2. Pitting and terracing will be done on the contour. 3. Balance permitted use with capacity. 4. Restrict tractor skidding to areas that: 1) have less than 40 percent slope; 2) can be reforested, and 3) have volumes of at least 800 board feet per acre. 5. Require cable systems for timber harvest for areas that: 1) have slopes greater than 40 percent; 2) can be reforested; and 3) have volumes of at least 3,000 board feet per acre. Design systems that take advantage of concave slopes and avoid convex slopes. 6. Construct or reconstruct roads to specifications that allow outsloping or water control structures at appropriate distances. Obliterate all temporary roads following activities. 7. Stream courses will be designated within timber sales to protect watershed values. The protection will include controls on skidding within riparian areas and along or across designated stream courses. 8. Skid trails and landings will be water barred, seeded, and closed following activities. 9. Mechanical site preparation should include appropriate measures to include discing on the contour, periodic leave strips, and construction of periodic flow restrictions as needed. <p>Rehabilitation will be applied when needed to minimize loss of site productivity following activities or wildfire.</p>

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

Decision Variables	Activities	Applicable Management Areas	Standards and Guidelines
			<p>These measures include seeding with appropriate species to establish adequate effective ground cover and the construction of control structures where needed to control runoff.</p> <p>Riparian areas in moderately high and high condition will be maintained or improved. Areas in low and moderately low condition will be treated. The anticipated result will be conditions similar to those set in the Regional Guide regarding riparian areas.</p> <p>Direct watershed improvements scheduled for Period 2 will be considered for implementation in Period 1 in addition to those scheduled for Period 1 as opportunities arise through special programs with funding or volunteer programs, and in conjunction with other activities such as K-V Projects on timber sales.</p> <p>Give preferential consideration to resources dependent on riparian areas over other resources when unresolvable conflicts among uses arise.</p> <p>Riparian areas should be managed toward meeting the following standards:</p> <p>a. Aquatic Resource:</p> <p style="padding-left: 40px;"><u>Shade</u>. Maintain or provide shading over perennial and intermittent water surfaces that is at least 80 percent of natural levels.</p> <p style="padding-left: 40px;"><u>Bank Cover</u>. Maintain or provide natural bank protection to at least 80 percent of natural levels. Give emphasis to the protection of stream bank stability provided by woody plant roots, particularly on outside bends of stream channel meanders.</p> <p style="padding-left: 40px;"><u>Streambed Sedimentation</u>. Composition of sand, silt, and clays within streambeds should not exceed 20 percent of natural levels.</p> <p>b. Vegetation Resource (where site is capable of supporting woody plants):</p>

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

Decision Variables	Activities	Applicable Management Areas	Standards and Guidelines
			<p><u>Plant Composition.</u> Maintain or provide 60 percent of woody plant composition in three or more riparian species or as appropriate for the site.</p>
			<p><u>Plant Structure.</u> Maintain or provide at least three age classes of riparian woody plants with at least 10 percent of the woody plant cover in the sprout seedling and sapling stages and 10 percent in the mature and overmature.</p>
			<p><u>Crown Cover.</u> Maintain or provide crown cover of both trees and shrubs that is at least 60 percent of natural levels considering unit reaches of about 2 miles in length.</p>
			<p><u>Ground Cover.</u> Maintain or provide ground cover and litter as appropriate for site and overstory conditions.</p>
			<p>Update water uses inventory. Maintain and protect existing water rights and file for additional water rights necessary to provide for all Forest water use needs.</p>
			<p>Promote the conservation and efficient use of water at all Forest water developments.</p>
	F01, F02, F05		<p>Plan and design projects or parts of projects, such as timber sales, specifically for soil and water resources improvement where watershed condition is unsatisfactory.</p>
	F03		<p>Water quality and soil monitoring will be done in key locations to aid in the identification and correction of resource problems.</p>

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

The following list identifies watershed priorities for diagnostics analysis (WCI) for all unsatisfactory condition watershed.

5 th Code				
<u>Watershed Name</u>	<u>Map No.</u>	<u>Acres</u>	<u>District</u>	<u>Priority</u>
Las Huertas	042	24,600	Sandia	1
West Rio San Jose	053	165,300	Mt. Taylor	2
East Rio San Jose	054	85,400	Mt. Taylor	3
Puerco River	106	52,000	Mt. Taylor	4
Manzano	047	65,900	Mountainair	5
North Plains	052	43,500	Mt. Taylor	6
Alamosa Creek	058	170,800	Magdalena	7
Gallinas-Rio Salado	056	212,000	Magdalena	8
East Magdalena	048	51,100	Magdalena	9
Elephant Butte	057	212,100	Magdalena	10
San Agustin	055	145,100	Magdalena	11
South Estancia	064	47,600	Mountainair	12
Pajaro Largo	066	18,500	Mountainair	13
Bonita Canyon	076	12,700	Mountainair	14
Lower Rio Puerco	050	25,500	Mt. Taylor	15
Arroyo Chico	051	74,100	Mt. Taylor	16

Decision Variables	Activities	Applicable Management Areas	Standards and Guidelines
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Develop a variety of public information tools, such as audio visual program(s), brochures, environmental education field investigations, etc., which address the importance of protecting watershed conditions.

Forest employees will be available to make presentations to various organizations.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

	Decision Variables	Activities	Applicable Management Areas	Standards and Guidelines
Wildlife	080	C01, C12	All	Manage for the following indicator species where key vegetation occurs: Plains Grassland: Long Billed Curlew Mountain Grassland: Elk Mountain Shrub: Mule Deer Deciduous Forest: Yellow-Bellied Sapsucker Riparian: House Wren Pinyon-Juniper: Plain Titmouse, Mule Deer Spruce Fir: Red-Breasted Nuthatch, Black Bear Ponderosa Pine: Pygmy Nuthatch, Merriam's Turkey Mixed Conifer: Hairy Woodpecker, Elk, Black Bear Eastern Riparian: Rio Grande Turkey
	080	C01	All except 1, 3	Require Rural Electrification Administration (REA) specifications for raptor protection on permitted power lines during construction and reconstruction.
	080	C12	All	Consult annually with State wildlife management agencies on hunting regulations and recommendations.
	080	C06	All	Fence new spring developments where needed to enhance cover for wildlife.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

Decision Variables	Activities	Applicable Management Areas	Standards and Guidelines
080	C01	All	<p>Conduct special wildlife habitat studies for specific species, 32 studies/decade.</p> <p>Initial studies will concentrate on habitat requirements for Federally and State listed flora and fauna. After these species are completed, data will be compiled for lesser know nongame species on the Forest and National Grasslands.</p> <p>Develop audio visual program(s), brochures, environmental education field investigations, and news releases dealing with the problems associated with the wildlife resource and what can be done to provide protection.</p> <p>Forest employees will be available to make presentations to various organizations.</p>
080	C01	All	<p>Manage wildlife habitat to increase populations for sight seeing values and population level goals contained in the New Mexico Wildlife Comprehensive Plan.</p>
080	C01	All	<p>Those areas where existing big game native wildlife species are present will be managed as such. Exotic species will not be introduced. Efforts will be made to eliminate exotics from National Forest lands consistent with State Game and Fish agencies policies.</p>
080	C09	2, 7-16, 18	<p>Maintain existing habitat structural and non-structural improvements annually, including the following:</p> <ul style="list-style-type: none"> springs trick tanks fenced food plots impoundments <p>Develop structural and nonstructural improvements for habitat enhancement. Maintain existing structural and nonstructural improvements annually, including the following:</p> <ul style="list-style-type: none"> springs trick tanks food plots overflows at windmills impoundments raptor song bird structure <p><u>Threatened, Endangered and Sensitive Species</u></p> <p><u>General</u></p>
120,010,050, 140,160.220, 230,270,280, 350,360,380, 420,480,500	C03-C05,C07, C08,A01,A03, D01,E00,F01, G10,G11,J01, K03,P01,P10, P11,P27	All	<p>Manage threatened and endangered species habitat to achieve delisting consistent with recovery plans and goals established by the US Fish and Wildlife Service. Manage sensitive species habitat to maintain population viability within the National Forest.</p>

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

Decision Variables	Activities	Applicable Management Areas	Standards and Guidelines
			Habitat management for Federally listed species will take precedence over unlisted species. Habitat management for endangered species will take precedence over threatened species. Habitat management for sensitive species will take precedence over non-sensitive species.
080	C12	All	All vegetation manipulations will be coordinated with threatened and endangered species requirements.
080	C12	All	Consult and cooperate with all Federal and State Natural Heritage Programs and Native American programs, such as the Navajo Heritage Program, to achieve management objectives identified in these programs.
080	C01	All	Studies by appropriate, qualified personnel will be conducted to ascertain suitability of reintroduction of endangered, threatened, proposed, and state listed native species to suitable habitat where not presently occupied.
080	C01	All	Consult with appropriate agencies and specialists on all proposed activities, modifications, and other commitments of lands within known habitats of peregrine, bald eagle, Zuni bluehead sucker, and threatened, endangered or sensitive plants, and historical range of black-footed ferrets.
080	C12	All	When management practices are proposed in listed or proposed species habitats, evaluate the need for consultation or conference with Fish and Wildlife Service and appropriate State Agency.
080	C01	All	Forage improvement activities and population control projects will not be permitted on areas where prairie dog towns larger than 15 acres without prior evaluation by the Forest Wildlife Biologist to protect potential black-footed ferret habitat.
			<u>Peregrine Falcon</u>
080	C09	All	Activities likely to cause disturbance will be prohibited in the vicinity of essential peregrine falcon nesting habitat.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

Decision Variables	Activities	Applicable Management Areas	Standards and Guidelines
080	C01	All	<p>between March 15 and August 1. Should peregrines remain strongly attached to nest sites after August 15, this period may be extended; or should peregrines disperse earlier than August 15, this period may be shortened. Seasonal restrictions may apply unless the Forest Wildlife Biologist determines that the breeding pair is unproductive by June 1. Restrictions for sites determined to be unoccupied by June 1 will then be rescinded. Activities likely to cause disturbance may include but are not limited to: human disturbance within ¼ miles, vehicular traffic, within 1 mile, heavy motorized equipment within 2 miles and helicopter flights within 2 miles of an occupied eyrie.</p> <p>Continue to identify existing and potential habitat for peregrine falcons, as outlined in the Species Recovery Plan.</p> <p>Monitor management practices within occupied and potential peregrine falcon habitat and evaluate impacts.</p> <p>All reasonable efforts will be taken during the detection, fire suppression or other emergency activities such as search and rescue operations from March 15 through August 15 to protect peregrine nesting sites, consistent with policies regarding jeopardy to human life and property and confidentiality of nest sites.</p>

MEXICAN SPOTTED OWL

Standards: Provide three levels of habitat management - protected, restricted, and other forest and woodland types to achieve a diversity of habitat conditions across the landscape.

Protected areas include delineated protected activity centers; mixed conifer and pine-oak forests with slopes greater than 40 percent where timber harvest has not occurred in the last 20 years; and reserved lands which include wilderness, research natural areas, wild and scenic rivers, and congressionally recognized wilderness study areas.

Restricted areas include all mixed-conifer, pins-oak, and riparian forests outside of protected areas.

Other forest and woodland types include all ponderosa pine, spruce-fir, woodland, and aspen forests outside protected and restricted areas.

Survey all potential spotted owl areas including protected, restricted, and other forest and woodland types within an analysis area plus the area ¼ mile beyond the perimeter of the proposed treatment area.

Establish a protected activity center at all Mexican spotted owl sites located during surveys and all management territories established since 1989.

Allow no timber harvest except for fuelwood and fire risk abatement in established protected activity centers. For protected activity centers destroyed by fire, windstorm, or other natural disaster, salvage timber harvest or declassification may be allowed after evaluation on a case-by-case basis in consultation with US Fish and Wildlife Service.

Allow no timber harvest except for fire risk abatement in mixed conifer and pine oak forests on slopes greater than 40 percent where timber harvest has not occurred in the last 20 years.

MANAGEMENT PRESCRIPTIONS
APPLICABLE TO ALL AREAS
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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Limit human activity in protected activity centers during the breeding season.

In protected and restricted areas, when activities conducted in conformance with these standards and guidelines may adversely affect other threatened, endangered, or sensitive species or may conflict with other established recovery plans or conservation agreements; consult with US Fish and Wildlife Service to resolve the conflict.

Minor changes in owl populations and habitat needed for delisting.

Guidelines:

A. GENERAL

Conduct surveys following Region 3 survey protocol.

Breeding season is March 1 to August 31.

B. PROTECTED AREAS

Protected Activity Centers

Delineate an area of not less than 600 acres around the activity center using boundaries of known habitat polygons and/or topographic features. Written justification for boundary delineation should be provided.

The Protected Activity Center boundary should enclose the best possible owl habitat configured in as compact a unit as, possible, with the nest or activity center located near the center.

The activity center is defined as the nest site. In the absence of a known nest, the activity center should be defined as a roost grove commonly used during breeding. In the absence of a known nest or roost, the activity center should be defined as the best nest/roost habitat.

Protected Activity Center boundaries should not overlap.

Submit protected activity center maps and descriptions to the recovery unit working group for comment as soon as possible after completion of surveys.

Road or trail building in protected activity centers should be avoided but may be permitted on a case-by-case basis for pressing management reasons.

Generally allow continuation of the level of recreation activities that was occurring prior to listing.

Require bird guides to apply for and obtain a special use permit. A condition of the permit shall be that they obtain a sub-permit under the U.S. Fish and Wildlife Service Master endangered species permit. The permit should stipulate the sites, dates, number of visits and maximum group size permissible.

Harvest fuel wood when it can be done in such a way the effects on the owl are minimized. Manage within the following limitations to minimize effects on the owl.

- Retain key forest species such as oak.
- Retain key habitat components such as snags and large downed logs.
- Harvest conifers less than 9 inches in diameter only within those protected activity centers treated to abate fire risk as described below.

Treat fuel accumulations to abate fire risk.

- Select for treatment 10 percent of the protected activity centers where nest sites are known in each recovery unit having high fire risk conditions. Also select another 10 percent of the protected activity centers where nest sites are known as a paired sample to serve as control areas.

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MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			<ul style="list-style-type: none"> • Designate a 100 acre "no treatment" area around the known nest site of each selected protected activity center. Habitat in the no treatment area should be as similar as possible in structure and composition as that found in the activity center. • Use combinations of thinning trees less than 9 inches in diameter, mechanical fuel treatment and prescribed fire to abate fire risk in the remainder of the selected protected activity center outside the 100 acre "no treatment" area. • Retain woody debris larger than 12 inches in diameter, snags, clumps of broad-leafed woody vegetation, and hardwood trees larger than 10 inches in diameter at the root collar. • Select and treat additional protected activity centers in 10 percent increments if monitoring of the initial sample shows there were no negative impacts or there were no negative impacts which can be mitigated by modifying treatment methods. • Use light prescribed burns in non-selected protected activity centers on a case-by-case basis. Burning should avoid a 100 acre "no treatment" area around the activity center. Large woody debris, snags, clumps of broad-leafed woody vegetation should be retained and hardwood trees larger than 10 inches diameter at the root collar. • Pre and post treatment monitoring should be conducted in all protected activity centers treated for fire risk abatement. (See monitoring guidelines)

Steep Slopes (Mixed conifer and pine-oak forests outside protected activity centers with slopes greater than 40 percent that have not been logged within the past 20 years)

No seasonal restrictions apply.

Treat fuel accumulations to abate fire risk.

- Use combinations of thinning trees less than 9 inches in diameter, mechanical fuel removal, and prescribed fire.
- Retain woody debris larger than 12 inches in diameter, snags, clumps of broad-leafed woody vegetation, and hardwood trees larger than 10 inches in diameter at the root collar.
- Pre and post treatment monitoring should occur within all steep slopes treated for fire risk abatement. (See monitoring guidelines)

Reserved Lands (Wilderness, Research Natural Areas, Wild and Scenic Areas, and Congressionally Recognized Wilderness Study Areas)

Allow prescribed fire where appropriate.

C. RESTRICTED AREAS (Mixed conifer, pine-oak, and riparian forests)

Mixed Conifer and Pine-oak Forests (See glossary definition)

Manage to ensure a sustained level of owl nest/roost habitat well distributed across the landscape. Create replacement owl nest/roost habitat where appropriate while providing a diversity of stand conditions across the landscape to ensure habitat for a diversity of prey species.

The following table displays the minimum percentage of restricted area which should be managed to have nest/roost characteristics. The minimum mixed conifer restricted area includes 10 percent at 170 basal area and an additional amount of area at 150 basal area. The additional area of 150 basal area is +10 percent in BR-E and +15 percent in all other recovery units. The variables are for stand averages and are minimum threshold values and must be met simultaneously. In project design, no stands simultaneously meeting or exceeding the minimum threshold values should be reduced below the threshold values unless a district-wide or larger landscape analysis of restricted areas shows that there is a surplus of restricted area across simultaneously meeting the threshold values. Management should be designed to create minimum threshold conditions on project areas where there is a deficit of stands simultaneously meeting minimum threshold conditions unless the district-wide or larger landscape analysis shows there is a surplus.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

Decision Variables Activities Applicable Analysis Areas Standards and Guidelines

VARIABLE	MC ALL RU	MC BR-E RU	MC OTHER RU	PINE-OAK
Restricted area %	10%	+10%	+15%	10%
Stand Average for:				
Basal Area	170	150	150	150
18 inch + treat/ac	20	20	20	20
Oak basal area	NA	NA	NA	20
Percent total existing stand density index by size class:				
12-18"	10	10	10	15
18-24"	10	10	10	15
24+"	10	10	10	15

Attempt to mimic natural disturbance patterns by incorporating natural variation, such as irregular tree spacing and various patch sizes, into management prescriptions.

Maintain all species of native trees in the landscape including early seral species.

Allow natural canopy gap processes to occur, thus producing horizontal variation in stand structure.

Emphasize uneven-aged management systems. However, both even-aged and uneven aged systems may be used where appropriate to provide variation in existing stand structure and species diversity. Existing stand conditions will determine which system is appropriate.

Extend rotation ages for even-aged stands to greater than 200 years. Silvicultural prescriptions should explicitly state when vegetative manipulation will cease until rotation age is reached.

Save all trees greater than 24 inches dbh.

In pine-oak forests, retain existing large oaks and promote growth of additional large oaks.

Encourage prescribed and prescribed natural fire to reduce hazardous fuel accumulation. Thinning from below may be desirable or necessary before burning to reduce ladder fuels and the risk of crown fire.

Retain substantive amounts of key habitat components:

- Snags 18 inches in diameter and larger
- Down logs over 12 inches midpoint diameter
- Hardwoods for retention, recruitment, and replacement of large hardwoods
- Riparian Areas

Riparian Areas

Emphasize maintenance and restoration of healthy riparian ecosystems through conformance with forest plan riparian standards and guidelines. Management strategies should move degraded riparian vegetation toward good condition as soon as possible. Damage to riparian vegetation, stream banks, and channels should be prevented.

MANAGEMENT PRESCRIPTIONS
APPLICABLE TO ALL AREAS
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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Domestic Livestock Grazing

Implement forest plan forage utilization standards and guidelines to maintain owl prey availability, maintain potential for beneficial fire while inhibiting potential destructive fire, maintain and restore riparian ecosystems, and promote development of owl habitat. Strive to attain good to excellent range conditions.

Old Growth

Except where otherwise noted, implement forest plan old growth standards and guidelines to maintain and promote development of owl habitat.

D. OTHER FOREST AND WOODLAND TYPES

Apply ecosystem approaches to manage for landscape diversity mimicking natural disturbance patterns, incorporating natural variation in stand conditions and retaining special features such as snags and large trees, utilizing appropriate fires, and retention of existing old growth in accordance with forest plan old growth standards and guidelines.

E. GUIDELINES FOR SPECIFIC RECOVERY UNITS

Colorado Plateau

No special additional guidelines apply

Southern Rocky Mountain - New Mexico

No special additional guidelines apply

Upper Gila Mountains

No special additional guidelines apply

Basin and Range - West

Emphasize restoration of lowland riparian habitats

Management activities necessary to implement the Mt. Graham red squirrel recovery plan, which may conflict with standards and guidelines for Mexican spotted owl, will take precedence and will be exempt from the conflicting Mexican spotted owl standards and guidelines.

Basin and Range - East

Emphasize restoration of lowland riparian habitats

Management activities necessary to implement the Sacramento Mountain thistle recovery plan which may conflict with standards and guidelines for Mexican spotted owl, will take precedence and will be exempt from the conflicting Mexican spotted owl standards and guidelines.

F. MONITORING GUIDELINES

Monitoring and evaluation should be collaboratively planned and coordinated with involvement from each national forest, USFWS Ecological Services Field Office, USFWS Regional Office, USFS Regional Office, Rocky Mountain Research Station, recovery team, and recovery unit working groups.

MANAGEMENT PRESCRIPTIONS
APPLICABLE TO ALL AREAS
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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Population monitoring should be a collaborative effort with participation of all appropriate resource agencies.

Habitat monitoring of gross habitat changes should be a collaborative effort of all appropriate resource agencies.

Habitat monitoring of treatment effects (pre and post treatment) should be done by the agency conducting the treatment.

Prepare an annual monitoring and evaluation report covering all levels of monitoring done in the previous year. The annual report should be forwarded to the Regional Forester with copies provided to the recovery unit working groups, USFWS Ecological Services field offices, and the USFWS Regional Office.

Range-wide

Track gross changes in acres of owl habitat resulting from natural and human caused disturbances. Acreage changes in vegetation composition, structure, and density should be tracked, evaluated, and reported. Remote sensing techniques should provide an adequate level of accuracy.

In protected and restricted areas where silvicultural or fire abatement treatments are planned, monitor treated stands pre and post treatment to determine changes end trajectories in fuel levels; snag basal areas; live tree basal areas; volume of down logs over 12 inches in diameter; and basal area of hardwood trees over 10 inches in diameter at the root crown.

Upper Gila Mountain, Basin and Range East, and Basin and Range West Recovery Units

Assist the recovery team and recovery unit working groups to establish sampling units consisting of 19 to 39 square mile quadrats randomly allocated to habitat strata. Quadrats should be defined based on ecological boundaries such as ridge lines and watersheds. Quadrat boundaries should not traverse owl territories. Twenty percent of the quadrats will be replaced each year at random.

Using the sample quadrats, monitor the number of territorial individuals and pairs per quadrat; reproduction; apparent survival; recruitment; and age structure. Track population density both per quadrat and habitat stratum.

ECOSYSTEM MANAGEMENT IN NORTHERN GOSHAWK HABITATS

Applicability: The northern goshawk standards and guidelines apply to the forest and woodland communities described below that are outside of Mexican spotted owl protected and restricted areas. Within Mexican spotted owl protected and restricted areas, the Mexican spotted owl standards and guidelines take precedence over the northern goshawk standards and guidelines. One of the other set of standards and guidelines apply to all forest and woodland communities but the Mexican spotted owl standards always take precedence in areas of overlap.

Standards Survey the management analysis area prior to habitat modifying activities including a ½ mile beyond the boundary.

Establish and delineate on a map, a post-fledging family area that includes six nesting areas per pair of nesting goshawks for known nest sites, old nest sites, areas where historical data indicates goshawks have nested there in the past, and where goshawks have been repeatedly sighted over a two year or greater time period but no nest sites have been located.

Manage for uneven-age stand conditions for live trees and retain live reserve trees, snags, downed logs, and woody debris levels through out woodland, ponderosa pine, mixed conifer and spruce-fir forest cover types. Manage for old age trees such that as much old forest structure as possible is sustained over time across the landscape. Sustain a mosaic of vegetation densities (overstory and understory), age classes and species composition across the landscape. Provide foods and cover for goshawk prey.

Limit human activity in nesting areas during the breeding season.

Manage the ground surface layer to maintain satisfactory soil conditions i.e. to minimize soil compaction; and to maintain hydrologic and nutrient cycles.

MANAGEMENT PRESCRIPTIONS
APPLICABLE TO ALL AREAS
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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When activities conducted in conformance with these standards and guidelines may adversely affect other threatened, endangered, or sensitive species or may conflict with other established recovery plans or conservation agreements; consult with US Fish and Wildlife Service to resolve the conflict.

Within the ranges of the Kaibab pincushion cactus, *Pediocactus paradinel*, and the Arizona leatherflower, *Clematis hirsutissima arizonica*, management activities needed for the conservation of these two species that may conflict with northern goshawk standards and guidelines will be exempt from the conflicting northern goshawk standards and guidelines until conservation strategies or recovery plans (if listed) are developed for the two species.

Guidelines:

General

Emphasize maintenance and restoration of healthy riparian ecosystems through conformance with forest plan riparian standards and guidelines. Management strategies should restore degraded riparian areas to good condition as soon as possible. Damage to riparian vegetation, stream banks, and channels should be prevented.

Refer to USDA Forest Service General Technical Report RM-217 entitled "Management Recommendations for the Northern Goshawk in the Southwestern United States" for scientific information on goshawk ecology and management which provide the basis for the management guidelines. Supplemental information on goshawk ecology and management may be found in "The Northern Goshawk: Ecology and Management" published by the Cooper Ornithological Society as Studies in Avian Biology No. 16 In woodland forest cover types, use empirical data to determine desired habitat conditions.

Inventory

Use the R3 survey protocol to get complete coverage of the management analysis area (Kennedy and Stahlekar 1993, as modified by Joy, Reynolds, and Leslie 1994). Management analysis areas should be entire ecosystem management areas if possible.

Complete at least one year of survey, but two years of survey should be done to verify questionable sightings, unconfirmed nest sites, etc. If nesting goshawks are found during the first year of inventory, a second year of inventory is not needed in that territory.

For areas where complete inventories cannot be done, use aerial photographs to locate vegetative structural stages (VSS) 4-6 within the project area and inventory just those sites for goshawk nest areas using R3 Inventory protocol. All un-inventoried areas (VSS 1-3) will be managed to post fledging family area (PFA) specifications while in that stage. If, while using this inventory option, evidence suggests goshawks are present (such as finding plucking perches or molted goshawk feathers) conduct a complete inventory as outlined above.

If forests have goshawks commonly nesting in stands classified as VSS 1-3, use the complete inventory methods for those areas. There may be situations where an area is classified as a VSS 3, based on the predominant VSS class, but in actuality a combination of VSS 4 & 5 predominate the area. For those situations, use the complete inventory methods.

Home Range Establishment

Post-fledging family areas (PFA) will be approximately 600 acres in size. Post-fledging family areas will include the nest sites and consist of the habitat most likely to be used by the fledgings during their early development.

Establish a minimum of three nest areas and three replacement nest areas per Post-fledging family area. The nest areas and replacement nest areas should be approximately 30 acres in size. A minimum total of 180 acres of nest areas should be identified within each post-fledging family area.

Nest site selection will be based first on using active nest sites followed by the most recently used historical nest areas. When possible, all historical nest areas should be maintained.

MANAGEMENT PRESCRIPTIONS
APPLICABLE TO ALL AREAS
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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Manage for nest replacement sites to attain sufficient quality and size to replace the three suitable nest sites.

Management Scale

Distribution of habitat structures (tree size and age classes, tree groups of different densities, snags, dead and down woody material, etc.) should be evaluated at the ecosystem management area level, at the mid-scale such as drainage, and at the small scale of site.

Vegetation Management

Landscapes outside (Goshawk post-fledging family area's

General: The distribution of vegetation structural stages for ponderosa pine, mixed conifer and spruce-fir forests is 10 percent grass/forb/shrub (VSS1), 10 percent seedling-sapling (VSS2), 20 percent young forest (VSS3), 20 percent mid-aged forest (VSS4), 20 percent mature forest (VSS5), 20 percent old forest (VSS6). NOTE: The specified percentages are a guide and actual percentages are expected to vary + or - up to three percent.

The distribution of VSS, tree density, and tree age are a product of site quality in the ecosystem management area. Use site quality to guide in the distribution of VSS, tree density and tree ages. Use site quality to identify and manage dispersal PFA and nest habitat at 2-2.5 mile spacing across the landscape.

Sage are 18 inches or larger DBH and 30 feet or larger in height, downed logs are 12 inches in diameter and at least eight feet long woody debris is three inches or larger on the forest floor, canopy cover is measured with vertical crown projection on average across the landscape.

The order of preferred treatment for woody debris is: 1) prescribed burning; 2) lopping and scattering; 3) hand piling or machine grapple piling; and 4) dozer piling.

Canopy Cover: Canopy cover guidelines apply only to mid-aged to old forest structural stages (VSS 4, VSS 5, and VSS 6) and not to grass/forb/shrub to young forest structural stages (VSS 1, VSS 2, and VSS 3).

Spruce-Fir: Canopy cover for mid-aged forest (VSS 4) should average 1/3 60 percent and 2/3 40+ percent, mature forest (VSS 5) should average 60+ percent, and old forest (VSS 6) should average 60+ percentage. Maximum opening size is one acre with a maximum width of 125 feet. Provide two groups of reserve trees per acre with six trees per group when opening size exceeds 0.5. Leave at least three snags, five downed logs, and 10-15 tons of woody debris per acre.

Mixed Conifer: Canopy cover for mid-aged forest (VSS 4) should average 1/3 60+ percent and 2/3 40+ percent, mature forest (VSS 5) should average 50+ percent, and old forest (VSS 6) should average 60+ percent. Maximum opening size is up to four acres with a maximum width of up to 200 feet. Retain one group of reserve trees per acre of 3-5 trees per group for openings greater than one acre in size. Leave at least three snags, five downed logs, and 10-15 tons of woody debris per acre.

Ponderosa Pine: Canopy Cover for mid-aged forest (VSS 4) should average 40+ percent, mature forest (VSS 5) should average 40+ percent, and old forest (VSS 6) should average 40+ percent. Opening size is up to four acres with a maximum width of up to 200 feet. One group of reserve trees, 3-5 trees per group, will be left if the opening is greater than an acre in size. Leave at least two snags per acre, three downed logs per acre, and 5-7 tons of woody debris per acre.

Woodland: Manage for uneven age conditions to sustain a mosaic of vegetation densities (overstory and understory), age classes, and species composition well distributed across the landscape. Provide for reserve trees, snags, and down woody debris.

Within post-fledging family area's

General: Provide for a healthy sustainable forest environment for the post-fledging family needs of goshawks. The principle difference between within the post-fledging family area and outside the post-fledging family area is the higher canopy cover within the post-fledging family area and smaller opening size within the post-fledging family area. Vegetative Structural Stage distribution and structural conditions are the same within and outside the post-fledging family area.

MANAGEMENT PRESCRIPTIONS
APPLICABLE TO ALL AREAS
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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Spruce-Fir: Canopy Cover for mid-aged forest (VSS 4) should average 60+ percent and for mature (VSS 5) and old forest (VSS 6) should average 70+ percent.

Mixed Conifer: Canopy Cover for mid-aged (VSS 4) to old forest (VSS 6) should average 60+ percent.

Ponderosa Pine: Canopy Cover for mid-aged forest (VSS 4) should average 1/3 60+ percent and 2/3 50+ percent. Mature (VSS 5) and old forest (VSS 6) should average 50+ percent.

Woodland: Maintain existing canopy cover levels.

Within Nesting Areas

General: Provide unique nesting habitat conditions for goshawks. Important features include trees of mature to old age with high canopy cover.

The structure of the vegetation within nest areas is associated with the forest type, and tree age, size, and density, and the developmental history of the stand. Table 5 of RM-217 presents attributes required for goshawks on locations with "low" and "high" site productivity.

Preferred treatments to maintain the desired structure are to thin from below with non-uniform spacing and use of handtools and fire to reduce fuel loads. Lopping and scattering of thinning debris is preferred if prescribed fire cannot be used. Piling of debris should be limited. When necessary, hand piling should be used to minimize compaction within piles and to minimize displacement and destruction of the forest floor and the herbaceous layer. Do not grapple or dozer-pile debris. Manage road densities at the lowest level possible to minimize disturbance in the nest area. Use small, permanent skid trails in lieu of roads for timber harvesting.

Spruce-fir, Mixed Conifer and Ponderosa Pine Cover Types: The nesting area contains only mature to old forest (VSS 5 & 6) having a canopy cover (measured vertically) between 50-70 percent with mid-aged VSS 6 trees 200-300 years old. Non-uniform spacing of trees and clumpiness is desirable.

Woodland: Maintain existing canopy cover levels.

Human Disturbance

Limit human activities in or near nest sites and post-fledging family area's during the breeding season so that goshawk reproductive success is not affected by human activities.

The breeding season extends from March 1 through September 30.

Low intensity ground fires are allowed at any time in all forested cover types, but high intensity crown fires are not acceptable in the post-fledging family area or nest areas. Avoid burning the entire home range of a goshawk pair in a single year. For fires planned in the occupied nest area, a fire management plan should be prepared. The fire management plan should minimize the risk of goshawk abandonment while low intensity ground fire burns in the nesting area. Prescribed fire within nesting areas should be planned to move with prevailing winds away from the nest tree to minimize smoke and risk of crown fire developing and driving the adults off or consuming the nest tree.

Ground Surface Layer (All forested cover types)

Manage road densities at the lowest level possible. Where timber harvesting has been prescribed to achieve desired forest condition, use small, skid trails in lieu of roads.

Piling of debris should be limited. When necessary, hand or grapple piling should be used to minimize soil compaction within piles and to minimize forest floor and herbaceous layer displacement and destruction.

Limit dozer use for piling or scattering of logging debris so that the forest floor and herbaceous layer is not displaced or destroyed.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
080	C01	All	<p data-bbox="967 312 1045 333"><u>Plants</u></p> <p data-bbox="967 363 1495 527">Monitor management practices within occupied and potential habitat of plants listed as threatened, endangered or on the Regional Forester's Sensitive Plant List. Manage sensitive species to sustain viability and prevent the need for listing as threatened or endangered.</p> <p data-bbox="967 556 1430 623">Habitat locations will remain confidential to prevent unauthorized removal of specimens.</p> <p data-bbox="967 653 1495 699">Recovery activities will be pursued where pertinent.</p> <p data-bbox="967 728 1495 795">If proposed for listing, monitor actions to determine affect of management practices on habitat and the need for a</p>

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

	<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
				Conference with U.S. Fish and Wildlife Service.
				Monitor status of federal listings. If elevated to threatened or endangered status, determine if consultation with U.S. Fish and Wildlife Service is required.
Lands and Minerals	270	G02	All	Administer and process oil and gas cases, per FSM 2822.41, R-3 Supplement 6, dated August, 1983.
	270	G04, G05	All	Process lease applications for geothermal and uranium
	280	G03	All	Integrate planning for coal exploration and leasing with BLM Management Framework Plans.
	280	G01	All	Act on Plans of Operation for locatable minerals within 30 days. Thirteen-hundred cases per period in all periods estimated.
	270 280	G01	All except 4	Review existing withdrawals to insure compliance with FLPMA in cooperation with BLM to complete review by 1989.
	280	G01	All	All mining claims will be contested when the lands involved are designated for other Federal programs (such as land exchanges and wilderness withdrawals) or when mining claims are used for nonmining purposes.
	280	G01		Mining operations shall be conducted so as to minimize adverse environmental impacts. Operations will be controlled by means of Forest Service approval of Plans of Operations and by periodic inspections of the operation.
	280	G06	All except 4, 5	Cooperate with State to inventory and mitigate hazardous abandoned mine workings.
	280	G07	All except 1, 3	Administer and process minerals material cases. Manage minerals material pits for progressive development and rehabilitation outlined in a pit plan. One-hundred cases per period in all periods estimated.
	270 280	G01-G09	All except 1, 3	Provide information to the public regarding the Forest lands and minerals program through a variety of methods.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

	<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
				Forest employees will be available to make presentations to various organizations.
	270 280	G09	All except 4, 5	Cooperate with other agencies in inventory of mined area rehabilitation needs and mitigation work. Two-hundred cases per period in all periods estimated.
	420	J01 J02	All except 1, 3	Process perfected applications and administer nonrecreation permits, and rights-of-way grants. Seven-thousand cases per period in all periods estimated.
	270 280	G02-G06	All except 1, 3	Mineral Leasing Category. Control surface uses in mineral operations through plans of operation and permits which provide for: protection of water quality and watershed values; monitoring of pertinent water quality constituents when water quality is adversely affected by mining activities; reclamation to use surface resource opportunities afforded by mine contours, roads and facilities, or reclamation to original or characteristic contours (when practicable); and reforestation or revegetation with appropriate species to attain soil stability and protect threatened, endangered and sensitive species.
Lands and Minerals	270	G02	All except 1 and 3	<p>Recommend oil and gas leasing for areas having 0-15 percent slopes as part of standard component with no restrictions.</p> <p>Recommend oil and gas leasing for areas having 16-40 percent slopes with the Information Notices [FSM 2822.41.3.b (7)] to provide more stringent protection.</p> <p>Recommend oil and gas leasing for areas having slopes in excess of 41 percent and riparian areas. Surface occupancy will be allowed but limited to specific sites jointly agreed upon by Forest Supervisor and Leasee.</p> <p>Recommend oil and gas leasing without surface occupancy for all developed recreation sites.</p> <p>Recommend oil and gas leasing without surface occupancy for all electronic sites.</p>
	270	G02	1	Recommend oil and gas without surface occupancy for Elena Gallegos addition to Sandia Mountain Wilderness to exercise reserved rights.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
270	G02	17	Recommend withdrawal from leasing for the Department of Energy Withdrawal.
270	G02	7	Recommend oil and gas leasing with surface occupancy for all the Langmuir Research Site except the Principle Research Site which may be leased without surface occupancy.
280	G01	8, 14	The following waters are closed to recreational prospecting that involves mechanized suction dredging and mechanized sluicing as per Permit Number NM-OYT-0315A dated October 27, 1983, issued by Albuquerque District of the Corps of Engineers. This permit expires on October 26, 1988. 1. Zuni River - All perennial reaches of the main stem and its tributaries in McKinley and Cibola Counties.
270 280	G10 G11		Mineral/geologic resources inventory will be conducted during Period 1. Analysis, interpretation, and integration of mineral/geologic resources in Period 1 Forest Planning will be accomplished by providing for full interdisciplinary participation of a geologist in the Forest Plan process.
410	J01	All except 1, 3	Designate existing communication, power, oil, and gas transmission rights-of-way as corridors except the powerline ROWs across the Bernalillo Watershed and Embudo Canyon which are established as rights-of-way for existing use only.
420	J01	All except 1, 3	A corridor plan has been developed using the following classifications: 1. Corridors 2. Windows 3. Avoidance Areas 4. Exclusion Areas 5. Unclassified Areas Provide for joint use in corridors and combine uses to extent possible in light of technical and environmental constraints. Accomplish in Period 1.
420	J01	2, 8-12	Management emphasis for electronic sites will be as follows:

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
			<p>1. Encourage formation of user improvement associations and administer sites in cooperation with associations.</p> <p>2. Incorporate site operation technical standards in permits developed by user groups after being reviewed and recommended by Forest Supervisor. Sandia Crest Improvement Association technical standards have been implemented. The remainder will be incorporated as user groups are formed.</p> <p>3. Develop site plans for each electronic site. Plans for priority sites will be completed in Period 1. The remainder will be completed in Period 2.</p> <p>4. Implement cooperatively developed site management standards for each site to provide for frequency and power separation.</p> <p>5. Manage structural density at electronic sites to meet electronic requirements.</p> <p>6. All new medium and high power installations will be coordinated with the Very Large Array (VLA) installation.</p> <p>7. Interconnecting and cellular systems involving other Forests will be coordinated at the Regional level. Microwave paths will be protected.</p>
420	J09	All	Identify and process title claims as needed in all periods.
420	P24	All	Identify occupancy trespass and resolve sensitive cases of those causing resource damage.
420	J11	All	<p>Classify private lands as desirable for acquisition in period 1 according to the following priorities:</p> <ol style="list-style-type: none"> 1. Lands in Wilderness 2. Lands or T&E Species 3. Lands containing cultural resources 4. High Recreation Potential 5. Productive Lands 6. Consolidate ownership to improve management
420	J11	All except 1, 3	<p>Thirty-nine thousand five hundred and sixty-three acres of National Forest lands are classified as available for exchange according to the following guidelines:</p>

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

	<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>																		
				lands 5. Improves management 6. Meets overriding public needs																		
	420	J13	All	Acknowledge receipt of land exchange proposals within 30 days and evaluate proposals.																		
	420	J18	All	Acquire rights-of-way as needed to support management and administration activities at the following rates: <table border="1" style="margin-left: 40px;"> <thead> <tr> <th></th> <th><u>Roads</u></th> <th><u>Trails</u></th> </tr> </thead> <tbody> <tr> <td>Period 1</td> <td>6.9 mi</td> <td>0.9 mi</td> </tr> <tr> <td>Period 2</td> <td>13.4 mi</td> <td>0.9 mi</td> </tr> <tr> <td>Period 3</td> <td>14.4 mi</td> <td>0.6 mi</td> </tr> <tr> <td>Period 4</td> <td>14.4 mi</td> <td>0.6 mi</td> </tr> <tr> <td>Period 5</td> <td>18.9 mi</td> <td>0.6 mi</td> </tr> </tbody> </table>		<u>Roads</u>	<u>Trails</u>	Period 1	6.9 mi	0.9 mi	Period 2	13.4 mi	0.9 mi	Period 3	14.4 mi	0.6 mi	Period 4	14.4 mi	0.6 mi	Period 5	18.9 mi	0.6 mi
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Period 5	18.9 mi	0.6 mi																				
Transportation/ Travel	010 080 140 150 160 220 230 270 280 410 420	L01	All except 1, 3	Perform transportation planning on all Forest System roads Update the Transportation Information System annually Manage roads through seasonal and temporary closures to reduce maintenance costs.																		
	470	L19		Maintain roads to meet resource demands.																		
	480	L01	All except 1, 3	Develop audio visual program(s), brochures and news articles as methods of informing the public about the Forest transportation system and what is planned. Forest employees will be available to make presentations to various organizations.																		
	420	J06, J07	All	1. Search, locate and record corners. 2. Survey, mark, and post property boundaries to Forest Service standards at the following rate: <table border="1" style="margin-left: 40px;"> <thead> <tr> <th></th> <th colspan="5"><u>Period</u></th> </tr> <tr> <th></th> <th><u>1</u></th> <th><u>2</u></th> <th><u>3</u></th> <th><u>4</u></th> <th><u>5</u></th> </tr> </thead> <tbody> <tr> <td>Miles/ year</td> <td>36.8</td> <td>46.2</td> <td>48.2</td> <td>49.2</td> <td>51.2</td> </tr> </tbody> </table>		<u>Period</u>						<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	Miles/ year	36.8	46.2	48.2	49.2	51.2
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Miles/ year	36.8	46.2	48.2	49.2	51.2																	
				3. Maintain corners and property boundaries. Do in high conflict areas first. 4. Update landline location records and atlas.																		

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
480	C01 D01 L02, L14	All except 1, 3	Revegetate new road construction cut and fill slopes, landings and skid trails during construction at specific times to ensure germination of seed.
500	L24	All except 1, 3	Construct/reconstruct FA&O Facilities to support management administration activities at the rate of three facilities per period in all periods.
160 480	L02-L14 L29	8-12	Perform arterial/collector road (Timber Program) preconstruction and construction engineering at the following rates: Period 1--100 miles Period 2--230 miles Construct/reconstruct arterial/collector roads (Timber Program) at the following rate: Period 1--100 miles Period 2--230 miles
010 160 480	L01-L13 L14, L29	All except 1, 3-5	Perform arterial/collector road preconstruction and construction engineering at the following rate: Period 1--100 miles Period 2 to 5--50 miles per period
		All except 1, 3-5	Construct/reconstruct arterial/collector roads at the following rate: Period 1--100 miles Period 2 to 5--50 miles per period
230 480 470	F05 K05 L01 L19	All except 1, 3	Provide temporary road closures (seasonal) to maintain investments, reduce costs and reduce soil loss.
520	779	All except 1,3	1. Conduct future use determination studies on all facilities prior to performance of any major maintenance. 2. Maintain existing FA&O Facilities to maximize building life and ensure safety. 3. Conduct condition surveys on Forest Service owned facilities and prepare work plans annually for routine maintenance. 4. Obtain potable water samples and conduct analysis of all water systems to State and local regulations. 5. Maintain waste water treatment at fire and general purpose facilities.

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MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

	<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>																		
	500 520	L30, L31	All except 1, 3	1. Construct, reconstruct potable water systems on a priority basis with high risk areas concerning health and safety first. 2. Maintain potable water systems annually.																		
	350 520	L26	All except 1, 3	Maintain radio network for communications.																		
	010 050 110 150 160 230 270 280 360 420 470 480	L04, L05 L08, L09 L12-L24 L26-L29	All except 1, 3	Establish vegetation cover to stabilize soils and minimize loss of site productivity within 1 year after disturbance. Within 5 years after disturbance meet Visual Quality Objectives and provide forage.																		
Law Enforcement	010 050 080 380	P24	All	Provide Level IV Law Enforcement at the following rate: <table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td colspan="5" style="text-align: center;">Period</td> </tr> <tr> <td></td> <td style="text-align: center;"><u>1</u></td> <td style="text-align: center;"><u>2</u></td> <td style="text-align: center;"><u>3</u></td> <td style="text-align: center;"><u>4</u></td> <td style="text-align: center;"><u>5</u></td> </tr> <tr> <td>Man-Years Per Year</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">4</td> <td style="text-align: center;">4</td> <td style="text-align: center;">4</td> </tr> </table> <p>Develop audio visual program(s), brochures, and news articles which describe the various law enforcement problems, the effects of these problems on other resources (including Forest visitors), and what can be done to reduce these problems. Forest employees will be available to make presentations to various organizations.</p>		Period						<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	Man-Years Per Year	3	4	4	4	4
	Period																					
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Man-Years Per Year	3	4	4	4	4																	
	380	P25	All except 5	Provide an equivalent of five man-years per year of Cooperative Law Enforcement in all periods.																		
Land Management Planning	410	J22	All	Develop, maintain and monitor a Forest Plan. To facilitate Plan implementation and communications with Native American Indian and Spanish Land Grant communities the Forest will hold preliminary meetings with Pueblos, including but not limited to Acoma, Laguna, Islets, Zuni, and Sandia; Jicarilla Apache Tribe; Navajo Ranchers Association, Eastern Land District Boards, Navajo Heritage Program, Eastern Chapter																		

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MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
Research Natural Areas		2, 4, 5, 8, 14, 18	<p>Managers; Navajo Medicine Men's Association; and with Land Grants, including but not limited to San Mateo, Cebolleta, Tajique, Torreon, Manzano and Chilili will be held followed by issue sessions.</p> <p>Prior to issue sessions, community contacts will be asked to submit to the Forest Service a list of appropriate information needed to participate effectively in the issue session.</p> <p>The Forest Service realizes that this information, many times, is technical, therefore, adequate time is needed between information dissemination and the actual issue session for community people to understand and use the data.</p> <p>The following areas will be studied for possible designation as Research Natural Areas (RNAs):</p> <ol style="list-style-type: none"> 1. Approximately 990 acres of the Bernalillo Watershed in Management Area 2.

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MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Analysis Areas</u>	<u>Standards and Guidelines</u>
			has been designated for establishment as a Research Natural Area.
			2. Approximately 882 acres in Little Water Canyon in Management Area 8 and 28 acres in Management Area 14 have been designated for establishment as a Research Natural Area
			3. Approximately 300 acres (Black Kettle) in Management Area 4 for the protection and study of the native vegetation.
			4. Approximately 300 acres on Kiowa NG and 300 acres on Rita Blanca NG in Management Area 5 for the protection and study of native vegetation.
			Establishment of the Bernalillo Watershed and Little Water Canyon RNAs, and study of the other potential sites in Management Areas 2, 4 and 5 will be completed in Period 1. Once designated as a RNA, the following standards and guidelines will apply:
			Emphasize natural processes, protect natural features, and preserve examples of naturally occurring ecosystems in an unmodified condition for research and educational purposes.
080	C03		Allow vegetation manipulation only when necessary to preserve the vegetation for which the area is being studied.
			Emphasize diversity of vegetation species that can result in wildlife species diversity.
140			Allow use by livestock as a tool to apply effects of grazing and animal impact emulating previous herds of large ungulates (bison, elk, and pronghorn). Maintain existing fence surrounding study areas.
270, 280			Maintain mineral withdrawal on the Bernalillo Watershed. Permit mineral leasing, but exclude surface occupancy.
270	G02		Propose withdrawal of Research Natural Areas from mineral entry but not from mineral leasing.
160			Prohibit all firewood activities within the study areas.
480			Allow no new road construction.
010	A15		Allow nonmotorized dispersed recreation activities provided they do not modify the area or threaten or impair the research or educational value of the study areas.

MANAGEMENT PRESCRIPTIONS
 APPLICABLE TO ALL AREAS
 (Continued)

<u>Decision Variables</u>	<u>Activities</u>	<u>Applicable Management Areas</u>	<u>Standards and Guidelines</u>
			Prohibit recreation use if degradation results.
	A15		Require recreation users to pack out all their trash.
			No open campfires will be permitted within the study areas. Only butane or gasoline stoves may be used for cooking purposes.
			Prohibit recreation signs or marking within the area.
350	P01		Allow prescribed natural fires within the study areas unless they threaten persons or property outside the area or the uniqueness of the potential RNA.
			Planned ignition fires will be considered in consultation with research objectives for the areas.
			Limit suppression action to the use of hand tools and prohibit fire retardant chemical unless necessary to protect life and property outside the study areas.
010	A03		The Visual Quality Objective for the study areas will be maintained at the inventories classification.
420			Issue no special use permits within areas which would affect potential RNA status.
420			Prohibit new utility corridors.
230			Do not allow watershed treatment activities within the areas until studies and determination are completed.
			All other research activities will be approved on a case by case basis.
			Develop audio program(s) and brochures describing the national RNA program and the unique qualities of RNAs located on the Forest
			Make contact with at least the appropriate State agencies, colleges and universities in New Mexico, Arizona, Colorado, Utah and Texas and advise them of the RNAs and their scientific opportunities.

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Wild/ Scenic/ Recreation Eligible River Areas

River corridors identified in the National River inventory or otherwise identified for study, will be protected in the following ways:

- *Manage wild and scenic river study areas to protect existing characteristics through the study period and until designated or released from consideration. [FSM 2354.21]*
- *Rivers identified for study are managed to maintain their outstanding values. [FSM 1924.03]*
- *To the extent the Forest Service is authorized under law, control stream impoundments and diversions. The tree flowing characteristics of the identified river cannot be modified. [FSH 1909.12, 8.12]*
- *Outstandingly remarkable values of the identified river area must be protected and, to the extent practicable, enhanced. [FSH 1909.12, 8.12]*
- *Management and development of the identified river and its corridor cannot be modified to the degree that eligibility or classification would be affected (i.e., classification cannot be changed from wild to scenic or scenic to recreational). [FSH 1909.12, 8.12]*
- *The protection requirements will continue until a decision is made as to the future use of the river and adjacent lands. [FSH 1909.12, 8.12]*
- *Congressionally authorized rivers will be protected, as specified in Section 12(a) of the Wild and Scenic Rivers Act, until action is taken by the Congress. [FSH 1909.12, 8.12]*
- *The standards/guidelines in Management Area 18 - Wild, Scenic and Recreation Rivers also govern interim management of study rivers. [FSH 1909.12, 8.2]*

Wild Rivers [FSH 1909.12, 8.2]

- *Timber Production: Cutting of trees will not be permitted except when needed in association with a primitive recreation experience (such as clearing for trails and protection of users) or to protect the environment (such as control of fire). Timber outside the boundary but within the visual corridors, will be managed and harvested in a manner to provide special emphasis to visual quality.*
- *Water Supply: All water supply dams and major diversions are prohibited.*
- *Hydroelectric Power: No development of hydroelectric power facilities would be permitted.*
- *Flood Control: No flood control dams, levees, or other works are allowed in the channel or river corridor. The natural appearance and essentially primitive character of the river area must be maintained.*
- *Mining: New mining claims and mineral leases are prohibited within ¼ mile of the river. Valid claims would not be abrogated. Subject to regulations (36 CFR 228) that the Secretaries of Agriculture and Interior may prescribe to protect the rivers included in the National System, other existing mining activity would be allowed to continue. Existing mineral activity must be conducted in a manner that minimizes surface disturbance, sedimentation, and visual impairment. Reasonable access will be permitted.*
- *Road Construction: No roads or other provisions for overland motorized travel would be permitted within a narrow incised river valley or, if the river valley is broad, within ¼ mile of the river bank. A few inconspicuous roads leading to the boundary of the river area at the time of study will not disqualify wild river classification. Also, unobtrusive trail bridges could be allowed.*
- *Agriculture: Agricultural use is restricted to a limited amount of domestic livestock grazing and hay production to the extent currently practiced. Row crops are prohibited.*
- *Recreation Development: Major public-use areas, such as large campgrounds, interpretive centers, or administrative headquarters are located outside the wild river area. Simple comfort and convenience facilities, such as fireplaces or shelters may be provided as necessary within the river area. These should harmonize with the surroundings.*
- *Structure: A few minor existing structures could be allowed assuming such structures are not incompatible with the essentially primitive and natural values of the viewshed. New structures would not be allowed except in rare instances to achieve management objectives (i.e. structures and activities associated with fisheries enhancement programs could be allowed).*

- *Utilities:* New transmission lines, gas lines, water lines, etc. are discouraged. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are indicated, the scenic recreational, and fish and wildlife values must be evaluated in the selection of the site.
- *Motorized travel:* Motorized travel on land or water could be permitted, but is generally not compatible with this classification.

Scenic Rivers [FSH 1909.12, 8.2]

- *Timber Production:* A wide range of silvicultural practices could be allowed provided that such practices are carried on in such a way that there is not substantial adverse effect on the river and its immediate environment. The river area should be maintained in its near natural environment. Timber outside the boundary but within the visual[ly] scene area should be managed and harvested in a manner which provides special emphasis on visual quality.
- *Water Supply:* All water supply dams and major diversions are prohibited.
- *Hydroelectric Power:* No development of hydroelectric power facilities would be allowed.
- *Flood Control:* Flood control dams and levees would be prohibited.
- *Mining:* Subject to regulations at 36 CFR 228 that the Secretaries of Agriculture and the Interior may prescribe to protect the values of rivers included in the National System, new mining claims and mineral leases could be allowed and existing operations allowed to continue. However, mineral activity must be conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.
- *Road Construction:* Roads may occasionally bridge the river area and short stretches of conspicuous or longer stretches of inconspicuous and well-screened roads or screened railroads could be allowed. Consideration will be given to the type of use for which roads are constructed and the type of use that will occur in the river area.
- *Agriculture:* A wider range of agricultural uses is permitted to the extent currently practiced. Row crops are not considered as an intrusion of the "largely primitive" nature of scenic corridors as long as there is not a substantial adverse effect on the natural-like appearance of the river area.
- *Recreation Development:* Larger scale public use facilities, such as moderate size campgrounds, public information centers, and administrative headquarters are allowed if such structures are screened from the river. Modest and unobtrusive marinas also can be allowed.
- *Structures:* Any concentrations of habitations are limited to relatively short reaches of the river corridor. New structures that would have a direct and adverse effect on river values would not be allowed.
- *Utilities:* This is the same as for wild river classifications.
- *Motorized Travel:* Motorized travel on land or water may be permitted, prohibited or restricted to protect the river values.

Recreational Rivers [FSH 1909.12, 8.2]

- *Timber Production:* Timber harvesting would be allowed under standard restrictions to protect the immediate river environment, water quality, scenic, fish and wildlife, and other values.
- *Water Supply:* Existing low dams, diversion works, rip rap and other minor structures are allowed provide the waterway remains generally natural in appearance.
- *New structures are prohibited.*
- *Hydroelectric Power:* No development of hydroelectric power facilities is allowed.
- *Flood Control:* Existing flood control works may be maintained. New structures are prohibited.
- *Mining:* Subject to regulations (36 CFR 228) that the Secretaries of Agriculture and the Interior may prescribe to protect values of rivers included in the National System, new mining claims and mineral leases are allowed and existing operations are allowed to continue. Mineral activity must be conducted in manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.
- *Road Construction:* Paralleling roads or railroads could be constructed on one or both riverbanks. There can be several bridge crossings and numerous river access points.
- *Agriculture:* Lands may be managed for a full range of agricultural uses, to the extent currently practiced.
- *Recreation Development:* Campgrounds and picnic areas may be established in close proximity to the river. However, recreational classification does not require extensive recreation development.
- *Structures:* Small Communities as well as dispersed or cluster residential developments are allowed. New structures are allowed for both habitation and for intensive recreation use.

- *Utilities: This is the same as for wild and scenic river classifications.*
- *Motorized Travel: Motorized travel on land or water may be permitted, prohibited or restricted. Controls will usually be similar to surrounding lands and waters.*

MANAGEMENT AREA 1

Description: The management area is composed of the 37,232 acre Sandia Mountain Wilderness. The area is adjacent to the Albuquerque metropolitan area and received heavy wilderness use. Forty-three percent of the area has slopes exceeding 40 percent. Elevations range from 6,000 to 10,500 feet. Vegetation varies from desert grassland through spruce-fir forests. Livestock grazing (except recreation pack and saddle stock), ORV use, and mineral location and leasing are prohibited.

Analysis Area(s) 1

Management Emphasis: Management emphasis is to provide quality wilderness experience opportunities, including heavy day use, through maintenance of wilderness character and values. Dispersed recreation managed within established capacities and compatible with the needs of important wildlife species is the key objective. New trails will be constructed to improve access within the Elena Gallegos tract and to provide improved hiking opportunities and distribution of use in the wilderness.

Wilderness wildlife diversity and ecosystem health will be maintained or improved through preplanned prescribed fire and prescribed natural fire management practices. Fire will be allowed to play a more natural role within the context of County and State air quality standards and the objectives established within the Wilderness Implementation Schedule.

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Range	140	D02	1	Manage area to Level A. No livestock will be allowed except for recreation pack and saddle stock.
Recreation	010	A03	1	Manage for a visual quality objective of preservation Coordinate with Albuquerque Academy to meet intent of 270 acre scenic easement for Bear Canyon tract in Elena Gallegos Grant.
	050	B01	1	Coordinate trail and trailhead construction. Provide for user contacts, education and capacity management techniques through annual implementation plans.
	010	A14, A15, C01, F01	1	Maintain area closed to ORV use as required by wilderness designation. Publish Sandia Wilderness map by the end of calendar 1986.
	050	B02, B03		Install new portal signs at all major trailheads to provide better use distribution and direct users seeking greater solitude to less visited wilderness areas. Manage for the following maximum group size and acres by Wilderness Opportunity Spectrum (WOS) classification: 10 PAOT-Semi-primitive (28,650 acres) 25 PAOT-Transition (8,582 acres)
	050	B02	1	Manage use at capacity by WOS classification. Use visitor contacts and self-registration techniques. Establish permit system or other mechanism to relieve over utilized conditions in Sandia Mountain Wilderness during Period 1.
	050	B02, B03, C01, D01	1	Permit only processed horse feed to be used.

MANAGEMENT AREA 1
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
050	B02, B03	1	Do not permit new organized events which
050	B02, B03	1	Limit La Luz Trail run to 400 people. Minimize impacts of the run to wilderness resource and recreation experience. Start and finish run outside of wilderness.
050	B02, B03	1	Emphasize low-impact no-trace use of wilderness through the volunteer Wilderness Information Specialist Program, information service brochures and media.
050	B02, B03	1	Provide one full-time Wilderness Ranger. Consider additional personnel during peak use periods.
050	B02, B03, J06	1	Annually post wilderness boundary at major entry points and problem areas where motor vehicle entry occurs.
050, 010	B03, J06, L21, L22	1	Perform trail preconstruction and construction at following rates: Period 1: Middle Ridge (Gallegos tract)-4.0 mi. Pino Crossing (Gallegos tract)-3.0 mi. Embudo Canyon-2.0 mi. Faulty-Cienega Canyon-Bill Spring-1.0 mi. Period 2: Embudito Middle Ridge (Gallegos tract)-3.0 mi. Embudito Bypass-City Park (Gallegos tract)-4.0 mi. Piedra Lisa-Tunnel Spring-2.0 mi. Period 3: Embudo-Tree Gun-2.5 mi. Domingo-Pino-Crest (Gallegos tract)-4.0 mi. Del Agua Loop-1.0 mi. Period 4: As needed-5.5 mi. Period 5: As needed-5.0 mi.

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MANAGEMENT AREA 1
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	050	L21, L22	1	Minimize cross-cut damage at switchbacks on the La Luz Trail. Use Adopt-A-Trail Program.
Protection	320	P01-P04, P07, P19- P22	1	For fire suppression, restrict use of helicopters and portable power tools to standards in FSM 2326.11. Restrict use of bulldozers to extreme conditions and only upon approval of the Regional Forester or his designated acting.
Fire Management	050, 360	P12, B02,B03	1	Define the appropriate role that fire should have in each wilderness to meet wilderness objectives. Planned and unplanned ignitions may be used to achieve desired wilderness fire objectives.
Insect and Disease Control	050	P34	1	Monitor and report insect and disease conditions on a continuous basis. Integrated pest management of epidemic populations will only be recommended if a thorough analysis shows that wilderness values are directly threatened or if resource values adjacent to wilderness will be severely impacted.
Wildlife	120	C12, C15, P24	1	Close designated areas to public entry to protect T and E species during key use period (March 15-August 15).
	080	C12	1	In cooperation with New Mexico Department of Game and Fish, analyze habitat requirements necessary to stabilize and allow successful reintroduction of Rocky Mountain Bighorn Sheep on Sandia Mountain, per goals established in the Terrestrial Operation Plan.
Lands and Minerals	420	J11	1	Private inholdings as Priority 1 for acquisition.

MANAGEMENT AREA 2

Description: The 44,648 acre management area is the Sandia Ranger District excluding the Sandia Mountain Wilderness and the military withdrawals. The area is adjacent to the Albuquerque metropolitan area and receives heavy dispersed and developed recreation use. There are 17 developed recreation sites, the Sandia Peak Tram and Ski Area, and Sandia Crest Observation Site.

Elevations range from approximately 5,500 to 10,500 feet. Thirteen percent of the area (5,599 acres) is on slopes in excess of 40 percent.

Major vegetation types include: 1) 4,721 acres of grass and shrub land (11%); 2) 26,836 acres of pinyon-juniper (60%); 3) 11,369 acres of coniferous forest (25%) of which 6,646 acres is available and suitable for timber harvest; 4) 906 acres of riparian acreage predominately along Las Huertas and Cedro Creeks. Acreage figures do not account for 775 acres acquired on the recent Elena Gallegos Grant Exchange for which resource information is not available. Livestock grazing has been excluded since the late 1950's to protect the soil and watershed resources. Acreages do not include approximately 1,096 acres of the military withdrawal to be returned to public access. Upon modification of the withdrawal boundaries, the area will be managed under the standards and guidelines for Management Area 2.

Analysis Area(s) 2

Management Emphasis: Management emphasis is on providing opportunities for a variety of year round recreational experiences consistent with guidelines established for maintaining viable wildlife populations and ecosystem health.

Wildlife diversity and population viability will be maintained or improved through habitat management using such tools as prescribed fire, timber or fuelwood harvest, or structural improvements to attain identified goals and objectives for the management area.

Pinyon-juniper on slopes of less than 15 percent will be managed for personal use firewood.

MANAGEMENT AREA 2
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Range	140	D02	2	Manage area at Level A. No commercial livestock will be allowed except for recreation pack and saddle stock.
Recreation	010	A01	2	<p>Manage the following acreages in each Recreation Opportunity Spectrum (ROS) class:</p> <p style="padding-left: 40px;">1,932 acres-Semi-primitive Nonmotorized 22,096 acres-Semi-primitive Motorized 20,159 acres-Roaded Natural 372 acres-Rural</p> <p>Allow rock climbing to occur in Cedro Canyon except in those areas marked closed to protect heritage resources.</p>

MANAGEMENT AREA 2
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines																					
010	A03	2	<p>Manage the following acres at the indicated Visual Quality Objectives:</p> <p>11,996 Retention 28,623 Partial Retention 2,666 Modification</p>																					
010	A14, A15	2	<p>Maintain 10,725 acres closed to snowmobile use:</p> <p>3,103 acres snowmobile closure in high winter use area on eastern slope of Sandia Mountain 7,622 acres ORV and snowmobile closure south of I-40 and west of Highway 337</p>																					
010	A11, A13	2	Administer developed sites at design capacities and maintain facilities at Condition Class 2.																					
010, 050	A14, A15, B02, L23	2	<p>Perform annual trail maintenance as follows:</p> <table border="1"> <thead> <tr> <th></th> <th colspan="2">Miles</th> </tr> <tr> <th></th> <th>Level 1</th> <th>Levels 2-5</th> </tr> </thead> <tbody> <tr> <td>Period 1</td> <td>7</td> <td>2</td> </tr> <tr> <td>Period 2</td> <td>13</td> <td>4</td> </tr> <tr> <td>Period 3</td> <td>19</td> <td>4</td> </tr> <tr> <td>Period 4</td> <td>26</td> <td>5</td> </tr> <tr> <td>Period 5</td> <td>31</td> <td>6</td> </tr> </tbody> </table>		Miles			Level 1	Levels 2-5	Period 1	7	2	Period 2	13	4	Period 3	19	4	Period 4	26	5	Period 5	31	6
	Miles																							
	Level 1	Levels 2-5																						
Period 1	7	2																						
Period 2	13	4																						
Period 3	19	4																						
Period 4	26	5																						
Period 5	31	6																						
010	A11	2	<p>Manage developed sites at design capacity. Provide Full Service Management at developed sites during the major season (May 15 through September 14 or longer if that season is extended). Provide at least Reduced Service Management at developed sites during other seasons.</p>																					

Amendment No. 11, July 2008

MANAGEMENT AREA 2
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
010	A05	2	Construct developed sites at the following rate: Period 1 - 1,470 PAOTs Period 2 - 2,700 PAOTs Period 3 - 200 PAOTs Period 4 - 50 PAOT Period 5 - 750 PAOT
010	A05	2	Rehabilitate developed sites at the following rates to condition class 1: Period 1 - 3,300 PAOTs Period 2 - 545 PAOTs Period 3 - 2,920 PAOTs Period 4 - 420 PAOTs Period 5 - 2,500 PAOTs
010	A08	2	Provide and maintain Interpretive Service (IS) signs and printed material.
010	A09	2	Provide mobile Interpretive Service station. Renovate Four Seasons Visitor Center exhibits and interpretive signs on the following sites/trails: Summit Nature Trail, Crest Nature Trail, Cienega Nature Trail, and Sandia Cave Documentary Site. Restrict discharging of firearms on lands south of Interstate 40. Cooperate with the State Game and Fish Department on restrictions for lands north of Interstate 40.
010	All	2	Provide volunteer hosts at all reservation fee areas and selected intensive day-use areas. Manage winter season use to facilitate snow removal operations and provide safe access for dispersed recreation.
010	A16	2	Expand Sandia Peak Tram and Sandia Crest House permittee services to provide cooperative interpretative services for customers. Expand Sandia Peak Ski Area base parking capacity to provide average peak day PAOT capacity. Administer Capulin Snowplay Area in partnership with private concessionaire for year round operations.

June 2012 Amendment - Casa Loma Decision

MANAGEMENT AREA 2
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
010	A05	2	Manage upper Las Huertas Canyon to maintain its potential for nordic and alpine skiing. An environmental analysis considering development of alpine ski area will not be undertaken until Period 2.
010	A01	2	Reconstruct Las Huertas Canyon Road (SR 165) as outlined in the Record of Decision for the Environmental Impact Statement "Management Strategies for Las Huertas Canyon and Amendment to the Cibola National Forest Land and Resource Management Plan." Implementation of Alternative I will begin upon expiration of the appeal period and as soon as funding becomes available. Subsequent site specific analysis will be completed prior to construction of all capital investment improvements. Since funding for administration and capital investments may require an undetermined time period, an implementation plan titled "Implementation Plan for Las Huertas Canyon" will be followed until all capital investments have been completed and funding for administration has reached planned levels. This may require periodic revision of the Implementation Plan within the overall guidelines established in the Forest Plan.
010	A05	2	Construct the following trailheads (each facility is 50 PAOT except for North Sandia Parking and Trailhead which is 125 PAOT); and Big Block Trailhead which is 30 PAOTs. Period 1 - North Sandia Parking and Trailhead, Tree Springs, Tunnel Canyon, Cienega, Piedra Lisa South, Three Gun, Canyon Estates Period 2 - Case Loma, Canoncito, Mars Court, Otero Canyon, Big Block Trailheads Period 3 - North Piedra Lisa, La Cueva Period 4 - West Trail No. 82 Period 5 - Cuchilla Lupe

MANAGEMENT AREA 2
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			Enter into a joint use agreement and acquire rights-of-way necessary to allow public parking at A. Montoya Elementary School and Trail 238 from there onto National Forest Lands.
010	A04, A08	2	Manage Sandia Crest Scenic Byway corridor to provide for its scenic qualities and interpretive opportunities.
010	A04	2	Develop vistas at selected locations along the Sandia Crest Scenic Byway. Enhance viewing opportunities by selective removal of vegetation while maintaining the visual integrity of the foreground.
010	L22	2	Construct trails at the following rate: Period 1: Period 1 0.5 miles-North Sandia Trailhead-Trail 88 2.0 miles-Bill Spring to Tree Spring 2.0 miles-Tecolote Ridge to Barro Canyon 0.5 miles-Pave Trails at High Finance 0.5 miles-Faulty Cienega Canyon, Bill Spring 1.0 miles-La Luz Trailhead to Piedra Lisa Trailhead 1.0 miles-Cienega Bridle Path 1.5 miles-Capulín to Nine Mile 7.0 miles-Foothills Trail

MANAGEMENT AREA 2
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	010	L22	2	<p>Period 2</p> <p>Trail 238 from A. Montoya E. Sch. - 1.0 mi. Other trails in David, Otero and Tunnel Canyons - 6.0 mi.</p> <p>Period 3: 9.0 miles</p> <p>Period 4: 5.5 miles</p> <p>Period 5: 5.5 miles</p> <p>All trails south of FR 530 and Trail 236B and Trail 238 are to be closed to all public motorized uses.</p> <p>Use Forest Service personnel and Adopt-A-Trail volunteers for trail maintenance.</p>
	010	A16	2	<p>Expand Sandia Peak Tram and Ski Area to next ridge south of existing area and lower end for additional parking, base facility, runs and lift. Expansion as shown on map on file in Supervisor's Office.</p>
	010	A16	2	<p>Administer private sector recreation sites consistent with Region 3 standards supplement FSM 2342 and 7320 and in accordance with monitoring direction.</p>
	010	A16	2	<p>Coordinate with hang gliding users and other affected users and activities for operation and maintenance of:</p> <ol style="list-style-type: none"> 1. Sandia Crest electronic site launch area 2. Launch site north of upper tram terminal 3. Addition of a landing site near Simms Park in cooperation with the City of Albuquerque
Timber	160	E06, C01	2	<p>Objectives of timber harvesting will be for wildlife habitat improvement, fuels reduction, and visual resource enhancement, with secondary benefits of providing firewood to the Albuquerque Metropolitan area. To the extent possible harvesting will be accomplished through personal use cutting. The following standards and guidelines only apply to acres identified as suitable for timber production.</p>
		E06	2	<p>Plan, prepare, and offer timber sales in accordance with silvicultural prescription after environmental analysis.</p>

Amendment No. 8, November 1996

MANAGEMENT AREA 2
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	E06, E07, C01		<p>Leave existing snags and create additional, if needed, to average three snags/acre. Within two chains of water, leave or create an average of five snags/acre. Snags will be created by girdling damaged, poorly formed, cull or dying trees.</p> <p>Maintain 8 to 10 usable turkey roost trees on two sites per 640 acres. Roost trees are open crowned with large horizontal branches at least 18 inches d.b.h. and 50 feet tall and within ½ mile of water.</p> <p>Maintain two Abert squirrel sites per 100 acres, except where basal area of trees over eight inches d.b.h. is between 150 and 200 square feet per acre, then maintain one Abert squirrel site per 100 acres. Abert squirrel sites consist of at least six trees, 11 to 16 inches d.b.h., in a 1120 acre group.</p>

MANAGEMENT AREA 2
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	E03, E06, C01	2	<p>Apply uneven age management where appropriate to achieve site specific resource needs.</p> <p>Apply primarily uneven-aged management. Where even-aged management is applied, a shelterwood system will be used in accordance with the following guidelines:</p> <ol style="list-style-type: none"> 1. No precommercial thinning. 2. Intermediate harvest at 40 year intervals to control for GSL appropriate for wildlife. 3. First preparatory cut 40 years before end of rotation to remove 35 percent of overstory volume. 4. Seed cut 20 years before rotation age to remove 50 percent of remaining volume. 5. Final removal of remaining overstory before regeneration reaches age 20. Plant if natural regeneration is inadequate for acceptable stocking. <p>Silvicultural examinations may indicate that the above ages and percentages need to be modified.</p> <p>Manage for equal acreage in the following age classes:</p> <p>Rotation 250 years:</p> <ul style="list-style-type: none"> 1-40 41-80 81-120 121-160 161-200 201-250 <p>Twenty percent of the acreage will be managed for the 201-250 age class.</p> <p>Twenty percent of the acreage will be managed at GSL 150 in the 140 age classes. Six percent of the acreage will be managed for wildlife openings in 3-5 acre clearcuts with an edge to area ratio of 1.4 to 1.</p>

Overstory Removal Guidelines

AA	Acres	Age of existing O.S./U.S.	Period to begin removal of existing O.S.	Removal steps for existing O.S.	Rotation	GSL	Manage 20% for GSL 150 (1/)	Manage 6% as Wildlf. Openings
2	332	150/70	1	2	250	60	Yes	Yes

1/ The 20 percent managed for high GSL will have both overstory and understory removed to reduce mistletoe and achieve long term objective of GSL 150.

MANAGEMENT AREA 2
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Intermediate Harvest Guidelines				
Cutting period entries are scheduled for 40 year intervals.				
AA	Decade Scheduled for Intermediate Harvest	Acres/Period of Intermediate Harvest		
2	1	230		
	160	E06, E07	2	Manage pinyon-juniper woodlands on slopes less than 15 percent on a sustained yield basis with a 180 year rotation. Regenerate through natural seeding by leaving 10 to 12 vigorous cone bearing trees per acre. Control volume cut by acres harvested per decade.
		E06, E07	2	Firewood sales will come from those woodland acres to be managed on a sustained yield of firewood products, as well as those acres managed for wildlife habitat improvement and fuels management projects. Guidelines are as follows on a decade basis: Mgmt. Area AA Firewood Acres MBF
				2 2 2,500 3,750
Fire Management	350	P01-P04	2	Protect Public and private facilities to prevent loss. Utilize prescribed fire to achieve resource objectives. Manage fire to maintain soil tolerance levels. Fuels reduction treatments in the urban interface zone are a high priority and will be accomplished on an on-going basis.
Insect and Disease Control	160	P34, E03	2	Habitat requirements for threatened endangered, and sensitive species will take precedence over insect and disease control. Where there are no conflicts with TES species habitat requirements, all silvicultural examinations will integrate insect and disease considerations in the final stand prescriptions to maintain stand vigor and composition in resistant conditions. Special attention will be give to removal of mistletoe infected trees during intermediate and regeneration harvests.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			<p>1. Dwarf Mistletoe - Remove infected overstories as soon as regeneration is accomplished. Thin understories to densities which will maximize fiber production over the length of the rotation, using yield simulation models as guides. Eliminate the mistletoe by clearcutting (in conformance with Regional Standards for clearcut size) and regenerate artificially when yield simulation models indicate that stands will not reach maturity because of mistletoe.</p>
			<p>2. Spruce Beetle - Salvage windthrow spruce trees and treat accumulated slash. Reduce spruce/fir type susceptibility from high risk to low risk by scheduling over-mature stands for harvesting first. A low risk stand has the following characteristics:</p> <ul style="list-style-type: none">Avg. dia. 12'B.A. 10050% space in canopy <p>Treat spruce slash by removing all material over 6" in diameter.</p>
			<p>3. Western Spruce Budworm - Susceptible mixed conifer stands are multi-storied, overmature stands with a high percentage of true fir.</p> <p>Control of potential problems will be achieved through silvicultural treatments if possible.</p> <p>Direct suppression, using insecticides, will be carried out during outbreaks when it is necessary to prevent or minimize stand damages. Suppression will receive priority consideration in areas where harvesting has or will be focused or accelerated.</p> <p>In the susceptible mixed conifer type, even-aged stands dominated by Douglas fir, ponderosa pine, and aspen will be created. This can be accomplished by:</p> <ul style="list-style-type: none">1. Patch cutting followed by site preparation, broadcast burning, and planting a mixture of ponderosa pine and Douglas fir.2. Regeneration cuts which retain a uniformly spaced overstory, composed

MANAGEMENT AREA 2
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines	
			<p>principally of dominant and co-dominant Douglas fir. Advance regeneration is destroyed by tractor scarification or underburning. Regeneration is accomplished by planting ponderosa pine and Douglas fir. The overstory is removed as soon as the regeneration becomes established.</p> <p>3. Regeneration cuts which retain a mixture of species in the overstory. Dominant and codominant, mistletoe free or lightly infested trees are used for seed trees; advance reproduction will be protected during site preparation, and will be supplemented by natural seed fall.</p> <p>4. Removal of all trees larger than sapling size. Advance regeneration to be protected during logging activities. Supplemental planting of ponderosa pine and Douglas fir on all disturbed, understocked areas.</p> <p>When pesticides are used for pest control, project plans will contain appropriate and necessary monitoring procedures and mitigation measures.</p> <p>Monitor and report insect and disease conditions on a continuing basis and initiate appropriate control methods in early stages of potential outbreaks.</p>	
Watershed	230	F05, K05	2	<p>Road management will be applied to obliterate poorly located or constructed roadways to improve watershed condition and reduce soil loss. Management will take the form of standard roadway obliteration. Roads will be obliterated at the following rates in Period 1.</p> <p>35.8 miles of local roads</p>
Wildlife	110, 306	C01, C03, C06, C12	2	<p>Construct/reconstruct structural and nonstructural wildlife habitat improvements to provide habitat enhancement and insure diversity for the following management indicator species and major game species:</p> <p>Red Breasted Nuthatch Hairy Woodpecker Pygmy Nuthatch Plain Titmouse</p> <p>Manage Cedro Canyon, between Otero Canyon and Big Block Trailheads, as a special area featuring riparian ecosystems and heritage resources. The emphasis on trail use shall be as an environmental discovery experience.</p> <p>Restore meadows in David Canyon where tree encroachment is occurring and create openings where meadows historically existed.</p>

MANAGEMENT AREA 2
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines																
			House Wren Yellow Bellied Sapsucker Merriam's Turkey Mule Deer																
			Wildlife Waters - Construct seven waters per period in Periods 1 through 4. Reconstruct water facilities every 40 years.																
080	C09		Maintain all water facilities annually.																
080	C12		Cooperate with New Mexico Game and Fish in stabilizing the Rocky Mountain Bighorn sheep populations to the goals established in the New Mexico Game and Fish Department Comprehensive Plan.																
Lands and Minerals	420	J01	2	Coordinate with DOE and DOD to acquire approximately 1,096 acres of withdrawn lands for return to public access. Upon modification of PLO's 995 and 4596, those lands will become part of Management Area 2 and will be managed accordingly.															
			Designate the following sites as electronic sites in Period 1:																
			<table border="0"> <tr> <td>Sandia Crest</td> <td>21 acres</td> </tr> <tr> <td>Sandia Crest No. 2</td> <td>6 acres</td> </tr> <tr> <td>Cedro Peak</td> <td>10 acres</td> </tr> <tr> <td>Cerro Pelon (partial)</td> <td>25 acres</td> </tr> <tr> <td>Arroyo del Coyote</td> <td>10 acres</td> </tr> </table>	Sandia Crest	21 acres	Sandia Crest No. 2	6 acres	Cedro Peak	10 acres	Cerro Pelon (partial)	25 acres	Arroyo del Coyote	10 acres						
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Arroyo del Coyote	10 acres																		
			Cedro Peak is designated for low power use by the Forest Service, AT&T and others. Development will be guided by a site specific management plan.																
270, 280	G01		2	Withdraw the following electronic sites from mineral location in Period 1:															
			<table border="0"> <tr> <td>Portion of Sandia Crest</td> <td>20 acres</td> </tr> <tr> <td>Sandia Crest No. 2</td> <td>20 acres</td> </tr> <tr> <td>Cedro Peak</td> <td>40 acres</td> </tr> <tr> <td>Portion of Cedro Pelon</td> <td>90 acres</td> </tr> </table>	Portion of Sandia Crest	20 acres	Sandia Crest No. 2	20 acres	Cedro Peak	40 acres	Portion of Cedro Pelon	90 acres								
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270, 280	G01		2	Withdraw the following recreation sites from mineral location:															
			<table border="0"> <tr> <td>Period 1 - Nine Mile/Capulin</td> <td>100 acres</td> </tr> <tr> <td>Tunnel Spring PG</td> <td>45 acres</td> </tr> <tr> <td>Sandia Peak Ski Area</td> <td>700 acres</td> </tr> <tr> <td>Period 2 - Tunnel Canyon PG</td> <td>40 acres</td> </tr> <tr> <td>Juan Tabo I.S. and PG</td> <td>35 acres</td> </tr> <tr> <td>Tijeras Pueblo I.S.</td> <td>30 acres</td> </tr> <tr> <td>Las Huertas Ski Area</td> <td>300 acres</td> </tr> <tr> <td>Period 4 - Nine Mile Capulin ad.</td> <td>50 acres</td> </tr> </table>	Period 1 - Nine Mile/Capulin	100 acres	Tunnel Spring PG	45 acres	Sandia Peak Ski Area	700 acres	Period 2 - Tunnel Canyon PG	40 acres	Juan Tabo I.S. and PG	35 acres	Tijeras Pueblo I.S.	30 acres	Las Huertas Ski Area	300 acres	Period 4 - Nine Mile Capulin ad.	50 acres
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Period 4 - Nine Mile Capulin ad.	50 acres																		
			Abandon road easements on FR 244, north of the Military Withdrawal.																

MANAGEMENT AREA 2
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Transportation/ Travel	010	L19	2	Maintain roads to Level 3, 4, and 5 in developed recreation sites.
	010, 110, 230	A03, C03, F01, K03, L01	2	Manage an average road density of 1.5 miles of road per square mile. All Forest System roads south of I-40 and west of Highway 337 are to be closed to public passenger vehicle use, except when opened for public wood product sales. These roads are available for administrative use and for recreational trail use.
	010	L21	2	Perform trail preconstruction engineering at the rates indicated below: Period 1 - 8.5 miles Period 2 - 7.0 miles Period 3 - 9.0 miles Period 4 - 5.5 miles Period 5 - 5.5 miles
	010, 160, 480	L01-L14, L29	2	Perform preconstruction and construction engineering at the following rate with emphasis on existing old roads: Period 3 - 2 miles Period 5 - 1 mile
			2	Construct/reconstruct timber purchaser roads to FSM standards at the following rate: Period 3 - 2 miles Period 5 - 1 mile
	010, 470	L19	2	Maintain Forest System roads to Levels 3, 4, and 5 at the rate of 90 miles per period.
		L19	2	Maintain Forest System roads to Level 2 at the rate of 45 miles per period.

MANAGEMENT AREA 3

Description: The 100,007 acre management area is composed of the Manzano Mountain Wilderness (36,402 acres) on the Mountainair Ranger District and the Apache Kid (44,530 acres) and the Withington (19,075 acres) Wilderness on the Magdalena Ranger District. Recreation use is light.

Ninety-two percent of the area is over 40 percent in slope. Vegetation ranges from grassland to spruce-fir. There are 5,782 acres of the management area classified as full capacity range, 1,309 acres as potential capacity and 93,315 acres as not capacity. Nearly 972 acres of the full capacity range are in satisfactory condition.

Analysis Area(s) 3

Management Emphasis: The primary management emphasis is to provide dispersed recreation opportunities compatible with maintaining wilderness values and protecting resources. Preserving the primitive-pristine character of the Apache Kid Wilderness is an important management concern. Livestock grazing will be permitted on full and potential capacity range. Ranges will be managed to balance grazing use with grazing capacity in a manner consistent with the wilderness grazing guidelines.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines	
Range	140	D02	3	<p>Manage rangelands at or above the following intensity levels:</p> <p style="padding-left: 40px;">Period 1--Level A-- 3,324 ac. Level B-- 41,448 ac. Level C-- 0 ac. Level D-- 0 ac. Level X-- 55,235 ac.</p> <p>Adjustments will occur during Periods 2 through 4 so that by Period 5 management of rangelands will be at or above the following intensity level:</p> <p style="padding-left: 40px;">Level A-- 3,324 ac. Level B-- 96,683 ac. Level C-- 0 ac. Level D-- 0 ac. Level X-- 0 ac.</p> <p>Intensity level codes reflect management of allotments. Therefore, acres shown for each level include full capacity, no capacity and potential capacity range.</p> <p>Through development of improved allotment management plans, the full capacity rangelands in unsatisfactory condition will be treated. The treatments will include, but may not be limited to:</p> <ol style="list-style-type: none"> 1. structural range improvements; and 2. correction of stocking problems which include reduction in permitted use in those instances where management will not correct the unsatisfactory condition.
	140	D02	3	<p>The condition class of full capacity rangelands may decline during Period 1</p>

MANAGEMENT AREA 3
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines									
				but will not decline further throughout the remainder of the planning horizon.									
				<table border="1"> <thead> <tr> <th>Condition</th> <th>Period 2</th> <th>Period 5</th> </tr> </thead> <tbody> <tr> <td>Satisfactory</td> <td>972 acres</td> <td>3,435 acres</td> </tr> <tr> <td>Unsatisfactory</td> <td>4,810 acres</td> <td>2,347 acres</td> </tr> </tbody> </table>	Condition	Period 2	Period 5	Satisfactory	972 acres	3,435 acres	Unsatisfactory	4,810 acres	2,347 acres
Condition	Period 2	Period 5											
Satisfactory	972 acres	3,435 acres											
Unsatisfactory	4,810 acres	2,347 acres											
	150	D05	3	<p>Construction, replacement and maintenance of structural range improvements will be to standards identified in the R-3 Range Structural Handbook. These will be directed toward improvements that correct management problems. Replacement of structural improvements is planned on a recurring basis of 20-30 years for waters and 40 years for fences. Maintenance of structural improvements will be scheduled on a planned basis that is defined in the allotment management plan or annual operating plan. Maintenance will continue until replacement is scheduled.</p> <p>Improvements should, to the extent possible, blend into the wilderness character.</p>									
	150	D05	3	<p>Structural Range improvements will be constructed and/or replaced at the following rate:</p> <ul style="list-style-type: none"> 3 miles of fence per period in Periods 1 through 4 2 waters per period in Periods 1 through 4 3 storage-drinkers per period in Periods 1 through 4 1 mile of pipeline per period in Periods 1 through 4 									
Recreation	010	A03	3	Manage for visual quality objective of preservation.									
	050	B01	3	Coordinate trails and trailheads. Provide for fire management, user contacts and education and capacity management techniques. Manage these activities through annual implementation plan.									
	050	B02 B03	3	<p>Manage for the following maximum group size by Wilderness Opportunity Spectrum (WOS) class:</p> <ul style="list-style-type: none"> 5 PAOT-Pristine 5 PAOT-Primitive 10 PAOT-Semi-Primitive 25 PAOT-Transition 									

MANAGEMENT AREA 3
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines																					
050	B02 B03	3	<p>Manage the following acreage by WOS classification:</p> <p>10,013—Pristine 1,045—Primitive 82,283—Semi-Primitive 6,666—Transition</p>																					
050	B02	3	<p>Manage use at capacity by WOS classification by use of visitor information techniques.</p> <p>Provide visitor contact and Forest Service presence during peak use periods. Publish map for Manzano Mountain Wilderness by March 1987. Complete Forest preparation work for Mt. Withington and Apache Kid Wilderness maps in F.Y. 1987.</p>																					
050	B02, B03 C01, D01	3	<p>Permit only processed horse feed to be used.</p>																					
050	B02 B03	3	<p>Emphasize low-impact no-trace use of wilderness through the volunteer wilderness information specialist program, information service brochures, and media.</p>																					
050	B02, B03 J06	3	<p>Annually post wilderness boundary at major entry points and problem areas where motor vehicle entry occurs or can occur.</p>																					
010 050	A14, A15 B02, B03 L23	3	<p>Perform annual trail maintenance as follows:</p> <table border="1"> <thead> <tr> <th></th> <th colspan="2">Miles</th> </tr> <tr> <th></th> <th>Level 1</th> <th>Levels 2-4</th> </tr> </thead> <tbody> <tr> <td>Period 1:</td> <td>134</td> <td>11</td> </tr> <tr> <td>Period 2:</td> <td>145</td> <td>10</td> </tr> <tr> <td>Period 3:</td> <td>152</td> <td>11</td> </tr> <tr> <td>Period 4:</td> <td>155</td> <td>12</td> </tr> <tr> <td>Period 5:</td> <td>158</td> <td>12</td> </tr> </tbody> </table> <p>Use Forest Service personnel and Adopt-A-Trail volunteers for trail maintenance.</p>		Miles			Level 1	Levels 2-4	Period 1:	134	11	Period 2:	145	10	Period 3:	152	11	Period 4:	155	12	Period 5:	158	12
	Miles																							
	Level 1	Levels 2-4																						
Period 1:	134	11																						
Period 2:	145	10																						
Period 3:	152	11																						
Period 4:	155	12																						
Period 5:	158	12																						
050 010	B03 J06 L21, L22	3	<p>Perform trail preconstruction and construction/reconstruction at the following rates:</p> <p>Period 1:</p> <table border="1"> <tbody> <tr> <td>Trigo and 4th of July Trails</td> <td>-8.0 mi.</td> </tr> <tr> <td>Capilla-Comanche</td> <td>-3.0 mi.</td> </tr> <tr> <td>Bosque Peak-Manzano</td> <td>-1.5 mi.</td> </tr> <tr> <td>Salas-Monte Largo Loop</td> <td>-2.5 mi.</td> </tr> </tbody> </table>	Trigo and 4 th of July Trails	-8.0 mi.	Capilla-Comanche	-3.0 mi.	Bosque Peak-Manzano	-1.5 mi.	Salas-Monte Largo Loop	-2.5 mi.													
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Bosque Peak-Manzano	-1.5 mi.																							
Salas-Monte Largo Loop	-2.5 mi.																							

MANAGEMENT AREA 3
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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Period 2:

Water Canyon-Potato Canyon-1.5 mi.
Little Monica-Potato Canyon-4.0 mi.
Ojito Trail-8.5 mi.
Vigil Trail-3.0 mi.
Yellowstone Trail-1.5 mi.
Encino Trail-5.0 mi.
Monte Largo-5.5 mi.

Period 2:

Road 138-Water Canyon-3.0 mi.

MANAGEMENT AREA 3
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
				Period 4: Vic's Peak-0.5 mi. Trail Reconstruction-3.0 mi.
	010	A14, A15, C01, F01	3	Maintain 100,007 acres of wilderness closed to ORV use as required by wilderness designation.
Protection	350	P01, P04, P07, P19, P22	3	Restrict use of bulldozers to extreme conditions and only upon approval of the Regional Forester or his designating acting. Restrict use of helicopters and portable power tools to standards established according to FSM 2236.11.
Fire Management	050, 360	P12, B02, B03	3	Define the appropriate role that fire should have in each wilderness to meet wilderness objectives. Planned and unplanned ignitions may be used to achieve desired wilderness fire objectives.
Insect and Disease Control	050	P34	3	Monitor and report insect and disease conditions on a continuous basis. Integrated pest management of epidemic populations will only be implemented if a thorough analysis shows that wilderness values adjacent to wilderness will be severely impacted.
Lands and Minerals	050, 270, 280	B01, G03, G03	3	Oil and gas leasing is prohibited within the designated wilderness.
Wildlife	080	C12	3	Cooperate with New Mexico Game and Fish in stabilizing the Rocky Mountain Bighorn sheep population to goals established in the New Mexico Game and Fish Department Comprehensive Plan. Bighorn sheep occur only in portions of analysis area located in Manzano Mountains.

MANAGEMENT AREA 4

Description: The 33,112 acre management area consists of the Black Kettle and McClellan Creek National Grasslands, which are administered by the Black Kettle Ranger District.

Most slopes are under 40 percent. Nearly 70 percent of the area is bluestern-shinnery oak. The remaining 7 percent is riparian. The 2,352 riparian acres represent 21 percent of the Forest's total riparian acreage. The areas are predominately located around reservoirs which are intensively used for water oriented recreation. These are 14 developed sites adjacent to these impoundments.

The area is also intensively managed for livestock grazing with 31, 499 acres classed as full capacity range, 1,000 acres as potential capacity range and 613 acres as no capacity range. All of the full capacity range is in satisfactory condition.

Analysis Area(s) 4

Management Emphasis: The primary management emphasis is on range management and promotion and demonstration of grassland agriculture. National Grassland units will be integrated with associated lands of other ownership into management units. Range management practices and systems will result in increased grazing capacity and grazing use.

Wildlife value are an important management concern. Range activities will be compatible with wildlife habitat needs. Wildlife habitat carrying capacity will increase through structural and nonstructural habitat improvements.

Recreation is an important management concern. Construction and rehabilitation of recreational facilities will generate a significant increase in developed sited capacity.

Oil and gas leasing is a major activity in the management area.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Range	D02	4	Manage rangelands at or above the following intensity levels-Period 1: Level A 550 ac. Level B 17,912 ac. Level C 8,080 ac. Level D 2,770 ac. Level E 3,882 ac. Level X 0 ac. Adjustments will occur during Periods 2 through 4 so that by Period 5 management of rangelands will be at or above the following intensity levels:

MANAGEMENT AREA 4
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines						
			Level A 500 ac. Level B 11,168 ac. Level C 3,232 ac. Level D 2,262 ac. Level E 15,590 ac. Level X 0 ac.						
			Intensity level codes reflect management of units. Therefore, acres shown for each level include full capacity, no capacity and potential capacity range.						
140	D02	4	Condition class of full capacity rangelands will not decline below existing levels during Period 1. During Periods 2 through 5 condition will improve with management.						
			<table border="1"> <thead> <tr> <th>Condition</th> <th>Period 2</th> <th>Period 5</th> </tr> </thead> <tbody> <tr> <td>Satisfactory</td> <td>31,499 ac.</td> <td>31,499 ac.</td> </tr> </tbody> </table>	Condition	Period 2	Period 5	Satisfactory	31,499 ac.	31,499 ac.
Condition	Period 2	Period 5							
Satisfactory	31,499 ac.	31,499 ac.							
			Condition class will change from moderately high to high condition.						
150	D05	4	Construction and replacement of structural range improvements will be at standards identified in the Range Structural Handbook. These will be directed toward improvements that improve condition in the management area. Replacement of structural improvements are planned on a recurring basis of 20 to 30 years for water and 40 years for fences. Maintenance of structural improvements will be scheduled on a planned basis that is defined in the allotment management plan or annual operating plan. Maintenance will continue until replacement is scheduled.						
150	D03	4	Nonstructural (shinnery oak control) improvements will be accomplished on slopes less than 15 percent with moderate or high revegetation suitability where improvement of vegetation condition can be obtained. Accomplishment will be by chemical or mechanical means. Reseeding where necessary will be included. This improvement will be conducted in Periods 1 through 4.						
150	D05	4	Structural Range improvements will be constructed/replaced at the following rate: <ul style="list-style-type: none"> 55.6 miles of fence per period in Periods 1 through 4 36 waters per period in Periods 1 through 4 28 storage-drinkers per period in Periods 1 through 4 3 miles of pipeline per period in Periods 1 through 4 						

MANAGEMENT AREA 4
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	150	D03	4	Nonstructural Range improvements will be accomplished using the following rate: 1,100 acres of shinnery oak control per period in Periods 1 through 4
	220	254	4	File for one water right per period in Periods 1 through 4
Recreation	010	A01	4	Manage the following acreages in each ROS classification: 3,583 acres-Semi-primitive Motorized 29,529 acres-Roaded Natural
	010	A03	4	Manage the following acreages in each Visual Quality Objective: 4,100 acres-Partial Retention 29,012 acres-Modification
	010	A14, A15, C01, F01	4	All units of the Black Kettle National Grasslands are closed to motor vehicle entry except for roads signed open.
	010	A11, A13	4	Administer 20 developed sites at a 1,445 PAOT capacity and maintain facilities to condition class 2.
	010	A11	4	Manage developed sites at design capacity.
	010	A06	4	Rehabilitate developed sites at the following rate: Period 1-295 PAOT; McClellan CG, Bluff PG, Marvin No. 7 PG Period 2-190 PAOT Period 3-120 PAOT Period 4-500 PAOT Period 5-500 PAOT During Period 1, rehabilitate to condition class 1 all developed sites scheduled for rehabilitation during that Period.
	010	A05	4	Add the following PAOT capacity to sites in Period 1: 100 PAOT, McClellan CG 90 PAOT, East Bluff PG 90 PAOT, Lake Marvin No. 7 PG
	010	A05	4	Construct developed sites at the following rate: Period 1-280 PAOT; McClellan CG, East Bluff PG, Lake Marvin No. 7 PG Period 2-120 PAOT; Marvin No. 1 CG, Skipout PG Period 3-120 PAOT; Dead Indian CG,

MANAGEMENT AREA 4
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
				Spring Creek CG
	010	A11 A13	3	Provide at least Region 3 Reduced Service Management at all facilities during all seasons when sites are open.
Wildlife	110	C01, C03, C06, C12, 306	4	<p>Construct/reconstruct structural and nonstructural wildlife habitat improvements to provide habitat enhancement and insure diversity for the following management indicator species and major game species:</p> <p style="padding-left: 40px;">Rio Grande Turkey White-Tailed Deer Bobwhite Quail</p> <p>Guidelines:</p> <p><u>Wildlife Waters/Protection Fencing</u></p> <p>Construct two dirt tanks in Period 1. Fence two acres around each tank (four acres) to control livestock movements.</p> <p>Reconstruct each water and fence every 40 years.</p> <p><u>Openings</u></p> <p>Create 100-foot wide openings in Shinnery Oak with 200-foot wide leave strips between openings; design treatment for high edge contrast with edge to area ratio of 1.4:1. Accomplish 38 acres per period in Periods 1 through 4.</p> <p><u>Fencing</u></p> <p>Provide protective fencing for selected shelterbelts and motts to control livestock movements. Fencing will be in accordance with standards established in the Range Handbook.</p> <p style="padding-left: 40px;">Shelterbelt--10 acres per period in Periods 1 and 2 Motts--fence one acre plots; two plots in Period 1</p> <p><u>Planting</u></p> <p>Interplant native tree species in shelterbelts that have been fenced; five acres per period in Periods 1 and 2.</p> <p><u>Wood Duck Boxes</u></p> <p>Construct and install Wood Duck nesting boxes at Lakes McClellan and Marvin at the rate of nine boxes per lake in Period 2.</p>

Amended 1-9-87

MANAGEMENT AREA 4
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	100	C01, C03, C06, C12	4	<p>Aquatic Vegetation Control</p> <p>Treat aquatic vegetation in the three Oklahoma lakes with approved, appropriate herbicides at the rate of:</p> <p style="padding-left: 40px;">10.6 acres per lake per year, Period 1 18.7 acres per lake per year, Period 2</p>
	100	C01, C03, C04, C12	4	Coordinate and cooperate with Oklahoma Department of Wildlife Conservation in their effort to control aquatic vegetation with grass carp.
	080	C09	4	Maintain fencing, plantings, openings, and Wood Duck boxes annually. Maintain existing structural and nonstructural habitat improvements annually.
	080	C01	4	All mature and over-mature trees within 20 feet of the shoreline of Lake Marvin and McClellan will be retained for bald eagle roosts except those determined to be a hazard to human safety or dam structural stability. Consideration will be given to reestablishing or preserving younger trees to replace roost trees that will eventually die out and be removed.
	080	C01	4	Monitor management practices within occupied and potential bald eagle habitat and evaluate impacts.
Watershed	230	F06, K06	4	Monitor watershed improvements where necessary repair or protect structures.
	230	F05, K05	4	<p>Road management will be applied to obliterate poorly located or constructed roadways to improve watershed condition and reduce soil loss. Management will take the form of standard roadway obliteration. Roads will be obliterated at the following rates in Period 1:</p> <p style="padding-left: 40px;">50.8 miles of local roads</p>
Lands and Minerals	270, 280	G10, G11		Review all conveyance documents and take necessary action to protect the Government's interest in cases involving mineral reversionary clauses.
	120	J01		The Forest Service will work with the FAA and Town of Cheyenne, Oklahoma, to restrict the height of improvements in Tract 7 within Unit 106, off the south end of Mignon Laird Municipal Airport to the following limitations. All improvements, trees or other objects on Tract 7 will not exceed a height above the clear zone approach surface with is an inclined plane

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
270,280	G02	4	<p>with a slope of 20:1 (one foot of elevation for each 20 feet of horizontal distance) located directly above the clear zone approach area. The inclined plane has an elevation of 2,111.25 feet (above mean level) at its inner and lower edge along line AB as shown on Exhibit "A", and an elevation of 2,132 feet (above mean sea level) at its outer and upper edge line CD as shown on said Exhibit "A." Exhibit "A" is on file at the District Ranger's office in Cheyenne, Oklahoma, and the Cibola Forest Supervisor's office in Albuquerque, New Mexico, for anyone wishing to review it.</p> <p>The Forest Service will cooperate with the Town of Cheyenne in monitoring the area for compliance.</p> <p>Stipulations for Oil and Gas Leasing</p> <p>Controlled Surface Use. A closed loop drilling system will be used for all oil and gas drilling. No open pits will be allowed.</p> <p>No Surface Occupancy. Within the boundaries of heritage resource sites that have been listed on or determined eligible for inclusion on the National Register of Historic Places, or whose eligibility remains undetermined. Minimum distance for surface occupancy will vary depending on the nature and setting of the site, and will be determined during site specific analysis.</p> <p>No Surface Occupancy. Within 300 feet of riparian areas or wetlands as determined by Grassland staff, and/or by on-site inspection by the Grassland Authorized Officer, and/or where the Forest's Terrestrial Ecosystem Survey and vegetation data indicates riparian or wetland conditions (hydrology, hydrophytic plants, hydric soil), including active floodplains.</p> <p>No Surface Occupancy. Developed campgrounds, picnic grounds, recreational loading/unloading ramps, recreational buildings, shelters, and all other developed recreational facilities and interpretive sites.</p> <p>No Surface Occupancy of Lake McClellan, within 500 feet of the high water level and Lake Marvin, within 500 feet of the high water mark.</p>

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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Timing Limitation for bald eagle, within 0.25 mile of known roosting sites during November 1 through March 31.

No Surface Occupancy within a minimum of 500 feet from the segment of the historic military trail between Fort Supply and Fort Elliot that traverses the Lake Marvin Unit. Distance will be determined during site specific analysis.

No Surface Occupancy on slopes over 30%. An exception, modification or waiver may be granted if on-site inspection shows that unstable or steep slopes do not exist on a specific site, or if the operator can demonstrate in a SUPO that adverse effects can be minimized and activities safely conducted without loss of long-term site productivity.

Transportation/
Travel

010
470

L01
L19

4

Maintain roads to Levels 3, 4, and 5 on administrative and developed recreation sites through agreement with county.

010

L28
788

4

Perform routine dam maintenance annually.

Perform preconstruction/construction engineering and administration on two dams as follows:

Period 2-Reconstruct Lake McClellan Dam
Period 5-Reconstruct Lake Marvin Dam

MANAGEMENT AREA 5

Description: The 230,842 acre management area consists of 137,079 acre Kiowa and the 93,763 acre Rita Blanca National Grasslands. The area is administered by the Kiowa and Rita Blanca Ranger Districts, respectively.

Ninety-seven percent of the area has slopes under 40 percent with only the Canadian River gorge on the Kiowa containing steep slopes.

Grasslands cover 214,772 acres (93 percent) with only 14,680 acres of pinyon-juniper (6 percent) occurring along the Canadian River. Riparian acres total 1,390 acres along the Canadian River. This is 12 percent of the Forest's total riparian acreage.

There are 224,042 acres of full capacity range, 460 acres of potential capacity range and 6,340 acres if no capacity in the management areas. Nearly 223,414 acres of the full capacity range are in satisfactory condition.

Analysis Area(s): 5

Management Emphasis: Management Area 5 will be managed to promote and demonstrate grassland agriculture. Grazing capacity and permitted use will increase significantly. National Grassland units will be integrated with associated lands of other ownership into management units.

Wildlife values are an important management concern. Range activities will be compatible with wildlife habitat needs. Wildlife structural improvements will increase habitat carrying capacity.

Developed site capacity will increase slightly through construction and rehabilitation of recreational facilities.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Range	140	D02	5
			Manage rangelands at or above the following intensity levels-Period 1:
			Level A 3,088 ac.
			Level B 54,620 ac.
			Level C 68,022 ac.
			Level D 82,612 ac.
			Level E 22,500 ac.
			Level X 0 ac.
			Adjustments will occur during Periods 2 through 4 so that by Period 5 management of rangelands will be at or above the following intensity levels:
			Level A 3,088 ac.
			Level B 54,340 ac.

MANAGEMENT AREA 5
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines									
			Level C 59,995 ac. Level D 20,421 ac. Level E 95,000 ac. Level X 0 ac.									
			Intensity level codes reflect management of units. Therefore, acres shown for each level include full capacity and potential capacity range.									
140	D02	5	The condition class of full capacity rangelands will not decline below existing levels during Period 1. During Periods 2 through 5 it will improve with management. <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>Condition</th> <th>Period 2</th> <th>Period 5</th> </tr> </thead> <tbody> <tr> <td>Satisfactory</td> <td>223,414 ac.</td> <td>224,042 ac.</td> </tr> <tr> <td>Unsatisfactory</td> <td>628 ac.</td> <td>0 ac.</td> </tr> </tbody> </table>	Condition	Period 2	Period 5	Satisfactory	223,414 ac.	224,042 ac.	Unsatisfactory	628 ac.	0 ac.
Condition	Period 2	Period 5										
Satisfactory	223,414 ac.	224,042 ac.										
Unsatisfactory	628 ac.	0 ac.										
150	D05	5	In addition to improving 628 acres to satisfactory condition, the overall condition of the full capacity rangelands in satisfactory condition will improve from moderately high to high. <p>Construction and replacement of structural range improvements will be standards identified in the Range Structural Handbook. These will be directed toward improvements that improve condition class through management. Replacement of structural improvements is planned on a recurring basis of 20 to 30 years for waters and 40 years for fences. Maintenance of structural improvements will be scheduled on a planned basis that is defined in the allotment management plan or annual operating plan. Maintenance will continue until replacement is scheduled.</p>									
150	D05	5	Structural Range improvements will be constructed/replaced at the following rate: <ul style="list-style-type: none"> 365 miles of fence per period in Periods 1 through 4 235 waters per period in Periods 1 through 4 279 storage-drinkers per period in Periods 1 through 4 21 miles of pipeline per period in Periods 1 through 4 									

MANAGEMENT AREA 5
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	220	254	5	File for water rights in Periods 1-4, as needed per period.
Recreation	010	A01	5	Manage the following acreages in each ROS classification: 361,942 acres-Semi-primitive Motorized 68,900 acres-Roaded Natural
	010	A03	5	Manage for the following acreages in each Visual Quality Objective: 8,186 acres-Partial Retention 222,656 acres-Modification
	010	A11, A13	5	Administer two developed sites at a 75 PAOT capacity and maintain facilities at condition class 2.
	010	A11	5	Maintain developed sites at design capacity.
	010	A11, A13	5	Provide at least Region 3 Reduced Service Management at all developed recreation sites when sites are open.
	010	A05	5	Construct developed sites at the following rates: Period 1-30 PAOT Period 2-60 PAOT Period 4-20 PAOT Period 5-40 PAOT
	010	A06	5	Rehabilitate existing developed sites at the following rates: Period 2- 75 PAOT Period 4-135 PAOT
	010		5	Manage Canadian River to preserve its wild, scenic, or recreation river potential. As the opportunity becomes available, acquire private lands within the Canadian River Canyon areas to preserve the unique qualities of the river.

MANAGEMENT AREA 5
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Wildlife	110	C01, C03, C06, C12, 306		Construct/reconstruct structural and nonstructural wildlife habitat improvements to provide habitat and ensure diversity for the following management indicator species and major game species: Long Billed Curlew Pronghorn Scaled Quail Grasshopper Sparrow Wildlife Water/Fencing
			5	For selected playas construct eight waters in Period 1 and fence 2 acres around each water (18 acres total) to control livestock movements.
			5	For selected playas construct three waters per period in Periods 2 and 3 and fence 2 acres around each water (6 acres per period) to control livestock movements.
			5	Construct five overflow pits at existing windmills in Period 4 and fence 2 acres around each pit (10 acres total) to control livestock movements)
			5	Reconstruct waters and fencing every 40 years.
	080	C09	5	Maintain waters and fencing annually.
Lands and Minerals	270, 280	G02	5	Oil and Gas Leasing Stipulations Controlled Surface Use. A closed loop drilling system will be used for all oil and gas drilling. No open pits will be allowed. No Surface Occupancy. Within the boundaries of heritage resource sites that have been listed on or determined eligible for inclusion on the National Register of Historic Places, or whose eligibility remains undetermined. Minimum distance for surface occupancy will vary depending on the nature and setting of the site, and will be determined during site specific analysis. No Surface Occupancy. Within 300 feet of riparian areas or wetlands as determined by Grassland staff, and/or by on-site inspection by the Grassland Authorized Officer, and/or where the Forest's Terrestrial Ecosystem Survey and vegetation data indicates riparian or wetland conditions (hydrology, hydrophytic plants, hydric soil), including active floodplains.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			<p>No Surface Occupancy. Developed campgrounds, picnic grounds, recreational loading/unloading ramps, recreational buildings, shelters, and all other developed recreational facilities and interpretive sites.</p>
			<p>No Surface Occupancy of slopes over 40%. An exception, modification or waiver may be granted if on-site inspection shows that unstable or steep slopes do not exist on a specific site, or if the operator can demonstrate in a SUPO that adverse effects can be minimized and activities safely conducted without loss of long-term site productivity. No Surface Occupancy Mills Canyon of the Canadian River.</p>
			<p>No Surface Occupancy within 500 feet of the canyon rims along a 17-mile segment of the Canadian River and its major side canyons.</p>
			<p>No Surface Occupancy within 500 feet from the centerline of the Santa Fe Trail where it traverses East Kiowa. Distance will be determined during site specific analysis.</p>
			<p>No Surface Occupancy of Mills Orchard and Ranch Site, a historic property on the New Mexico State Register of Cultural Properties, and Trujillo Homestead, a historic property eligible for listing on the National Register of Historic Places. No Surface Occupancy Playa lakes as determined by Grassland staff, and /or by on-site inspection by the Grassland Authorized Officer.</p>
			<p>No Surface Occupancy of prairie dog towns as already delineated by Grassland and/or by on-site inspection by the Grassland Authorized Officer during site-specific analysis.</p>
			<p>Timing Limitation on drilling operations and construction activities on ferruginous and Swainson's hawks, and burrowing owls: March 1 to June 30 within 0.5 mile of any suitable nesting sites; and/or April 1 to August 31 within 0.5 mile of any active nest.</p>
			<p>No Surface Occupancy within 0.25 mile of the Wanette cemetery in Management Unit K-54.</p>
			<p>No Surface Occupancy on the Clayton livestock research center in Management Unit K-41, within the administrative area or the cultivated area under irrigation.</p>

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines	
			No Surface Occupancy of the Rocky Mountain Research Station Kiowa Long Term Experimental Fire Research Site in Management Unit K-46 within Section 2 of T. 26 N., R. 36 E.	
270, 280	G10, G11	5	Review all conveyance documents and take necessary action to protect the Government's interest in cases involving mineral reversionary clauses.	
420	J01	2	The Long Range Aid to Navigation (LORAN-C) antenna site near Boise City, Oklahoma is designated as an exclusive communication site for use by the U.S. Coast Guard.	
Transportation/ Travel	010	L19	5	Maintain roads to Levels 3, 4, and 5 in developed recreation sites except for East Mills Canyon Road which will be maintained at Level 2.
	010, 470	L19	5	Maintain Mills Canyon Road as part of cooperative maintenance agreement with county. Maintain roads to Level 2 to 5 at the rate of 40 miles per period.

MANAGEMENT AREA 7

Description: The 30,606 acre management area consists of the Langmuir Research site on the Magdalena Ranger District. The area is legislatively designated for atmospheric and astronomical research. Seventy-two percent of the area has slopes in excess of 40 percent. Vegetation ranges from grassland to spruce fir.

Recreation use is light and there are no developed sites.

There are 4,917 acres of full capacity range, 3,065 acres of potential capacity range and 22,572 acres of no capacity range in Management Area 7. Nearly 3,662 acres of the full capacity range are in satisfactory condition.

Analysis Area(s): 6

Management Emphasis: The primary management emphasis is to preserve conditions necessary to meet the research needs of Langmuir Laboratory.

Regulated even-age timber management is planned on 5,760 acres of suitable land. Harvest activities will be coordinated with wildfire habitat needs. Slash from timber harvests will be made available to the public as personal use firewood. Timber activities will be managed to minimize disturbance to Langmuir Laboratory.

Providing for dispersed recreation opportunities, especially for hiking, is also an important management goal.

Livestock grazing will be permitted on full and potential capacity range. Permitted use will balance with grazing capacity.

Wildlife habitat and species diversity will be maintained within the management area, particularly for Federal and State listed species.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Range	140	D02	6
			Manage rangelands at or above the following intensity levels-Period 1:
			Level A 3,910 ac.
			Level B 22,889 ac.
			Level C 0 ac.
			Level D 0 ac.
			Level E 0 ac.
			Level X 3,755 ac.
			Adjustments will occur during Periods 2 through 4 so that by Period 5 management of rangelands will be at or above the following intensity levels:

MANAGEMENT AREA 7
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines									
			Level A 3,910 ac. Level B 26,644 ac. Level C 0 ac. Level D 0 ac. Level E 0 ac. Level X 0 ac.									
			Intensity level sides reflect management of allotments. Therefore, acres shown for each level include full capacity, no capacity and potential capacity range.									
140	D02	6	Full capacity rangelands in unsatisfactory condition will be treated through development of improved allotment management plans. The treatment identified will include, but may not be limited to: <ol style="list-style-type: none"> 1. structural range improvements, and 2. correction of stocking problems which includes improved management and reductions in permitted used if necessary. 									
140	D02	6	Condition class of full capacity rangelands may decline during Period 1 but will not decline further throughout the remainder of the planning horizon. <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>Condition</th> <th>Period 2</th> <th>Period 5</th> </tr> </thead> <tbody> <tr> <td>Satisfactory</td> <td>3,662 ac.</td> <td>4,051 ac.</td> </tr> <tr> <td>Unsatisfactory</td> <td>1,255 ac.</td> <td>866 ac.</td> </tr> </tbody> </table>	Condition	Period 2	Period 5	Satisfactory	3,662 ac.	4,051 ac.	Unsatisfactory	1,255 ac.	866 ac.
Condition	Period 2	Period 5										
Satisfactory	3,662 ac.	4,051 ac.										
Unsatisfactory	1,255 ac.	866 ac.										
150	D05	6	Construction and replacement of structural range improvements will be to standards identified in the Region 3 Range Structural Handbook. They will be directed to correcting management problems. Replacement of structural improvements are planned on a recurring basis of 20 to 30 years for waters and 40 years for fences. <p>Maintenance of structural improvements will be scheduled on a planned basis that is defined in the allotment management plan or annual operating plan. Maintenance will continue until replacement is scheduled.</p>									
150	D05	6	Structural Range improvements will be constructed or replaced at the following rate: <ul style="list-style-type: none"> 7 miles of fence per period in Periods 1 through 4 2 waters per period in Periods 1 through 4 2 storage-drinkers per period in Periods 1 through 4 1 mile of pipeline per period in Periods 1 through 4 									

MANAGEMENT AREA 7
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	220 110 140 500	254	6	File for water rights for one water development per period.
Recreation	010	A01	6	Dispersed recreation will be featured, especially hiking.
	010	A01	6	Manage for the following acreages of ROS classifications: 27,348 acres-Semi-primitive Nonmotorized 3,258 acres-Semi-primitive Motorized
	010	A03	6	Manage for the following acreages of Visual Quality Objectives: 22,135 acres-Partial Retention 8,468 acres-Modifications
	010	A03	6	At the Langmuir Research Site manage principal facility for partial retention with allowances for structures required for research purposes. Paint buildings with colors specified by Forest Landscape Architect, except where specified colors are required for scientific purposes. Remove temporary installations by the season following termination of use.
	010	A14 A15	6	Maintain the entire Langmuir Research Area, 30,606 acres, closed to ORV use.
	010	A14 A15	6	The area is closed to motor vehicle use off designated roads. Use positive signing and regulatory techniques.
	010	A14, A15 L23	6	Perform annual trail maintenance as follows:
	010	A14, A15	3	Perform annual trail maintenance as follows:
	050	B02, B03 L23		
				<u>Miles</u>
				<u>Level 1</u> <u>Levels 2-5</u>
				Period 1: 17 4
				Period 2: 17 4
				Period 3: 17 4
				Period 4: 17 4
				Period 5: 17 4
				Use Forest Service personnel and Adopt-A-Trail volunteers for trail maintenance.
	010 420	A14 A15 J01	6	Identify time periods and locations where public use will be restricted because of research activities. Publicize restrictions annually, May through August. The following standards and guidelines only apply to acres identified as suitable for timber production.

MANAGEMENT AREA 7
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Timber	160	E06	6	Plan, prepare and offer timber sales in accordance with silvicultural prescriptions and environmental analyses. Minimum harvest volume will be 800 bd.ft.acre. Consider YUM yarding. Coordinate sale planning with Langmuir Lab to avoid conflict with research activities.
		E06, E07, C01	6	On all of the areas scheduled for treatment, leave existing snags with an objective of two snags/acre average and sufficient live culls for replacement with a minimum 12 inch d.b.h. and 15 foot height. No recruitment of snags. Leave known and potential turkey roost trees with an objective of one group per 640 acres within ½ mile of water. Maintain 2 Abert's squirrel sites per 100 acres, except where basal area of trees over 8 inches d.b.h. is between 150 and 200 square feet per acre, then maintain 1 Abert's squirrel site per 100 acres. Abert's squirrel sites consist of at least 6 trees, 11 to 16 inches d.b.h. in a 1/20 acre group.
	160	E03, E06, C02	6	Apply uneven age management where appropriate to achieve site specific resource needs. Apply primarily uneven-aged management. Where even-aged management is applied, a shelterwood system will be used in accordance with the following guidelines: <ol style="list-style-type: none"> 1. No precommercial thinning. 2. Intermediate commercial harvest at 20 year intervals to control for appropriate GSL 3. First preparatory cut of 20 years before rotation age. Remove 50 percent of overstory volume. 4. Seed cut at rotation age to remove 65 percent of remaining volume. Site preparation if needed by discing (on suitable sites). 5. Final removal of all remaining overstory before regeneration reaches age 20. Plan if natural regeneration is inadequate for acceptable stocking. 6. Silvicultural examination may indicate that the above ages and percentages need to be modified. <p>Manage for equal acreage distribution of age classes appropriate for the rotation period.</p> <p style="text-align: right;">Rotation 120: 1-20 21-40 41-60 61-80 81-100 101-120</p>

Amendment No. 7, September 1996

MANAGEMENT AREA 7
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Fire Management	360	P15	6	Utilize prescribed fire to achieve resource objectives. Manage fire to maintain soil tolerance levels.
	350	P01-P04, P07, P10, P19, P20-P22	6	<p>Conduct fire prevention training for Langmuir Research Site personnel early in annual operating season. Conduct inspection of site.</p> <p>Detection will be supplemented by Langmuir Research Site personnel during times of high fire danger.</p> <p>Control all fires to prevent loss of research facilities.</p>
	350	P19-P21	6	Forest Service aerial activities will be coordinated with Langmuir Laboratory for use of the restricted air space.
	160	P34, E03	6	Habitat requirements for threatened, endangered, and sensitive species will take precedence over insect and disease control. Where there are no conflicts with TES species habitat requirements, all silvicultural examinations will integrate insect and disease consideration in the final stand prescriptions to maintain stand vigor and composition in resistant conditions. Special attention will be given to removal of mistletoe infected trees during intermediate and regeneration harvests.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			<p>1. Dwarf Mistletoe - Remove infected overstories as soon as regeneration is accomplished. Thin understories to densities which will maximize fiber production over the length of the rotation, using yield simulation models as guides. Eliminate the mistletoe by clearcutting (in conformance with Regional Standards for clearcut size) and regenerate artificially when yield simulation models indicate that stands will not reach maturity because of mistletoe.</p> <p>3. Western Spruce Budworm - Susceptible mixed conifer stands are multi-storied, over-mature stands with a high percentage of true fir.</p> <p>Control of potential problems will be achieved through silvicultural treatments if possible.</p> <p>Direct suppression, using insecticides, will be carried out during outbreaks when it is necessary to prevent or minimize stand damages. Suppression will receive priority consideration in areas where harvesting has or will be focused or accelerated.</p> <p>In the susceptible mixed conifer type, even-aged stands dominated by Douglas fir, ponderosa pine, and aspen will be created. This can be accomplished by:</p> <ul style="list-style-type: none">a. Patch cutting followed by site preparation, broadcast burning, and planting a mixture of ponderosa pine and Douglas fir.b. Regeneration cuts which retain a uniformly spaced overstory, composed principally of dominant and co-dominant Douglas fir. Advance regeneration is destroyed by tractor scarification or underburning. Regeneration is accomplished by planting ponderosa pine and Douglas fir. The overstory is removed as soon as the regeneration becomes established.c. Regeneration cuts which retain a mixture of species in the overstory. Dominant and co-dominant, mistletoe free or lightly infested trees are used for seed

MANAGEMENT AREA 7
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
				trees; advance reproduction will be protected during size preparation, and will be supplemented by natural seed fall.
				d. Removal of all trees larger than sapling size. Advance regeneration to be protected during logging activities. Supplemental planting of ponderosa pine and Douglas fir on all disturbed understocked areas.
				When pesticides are used for pest control, project plans will contain appropriate and necessary monitoring procedures and mitigation measures.
				Monitor and report insect and disease conditions on a continuing basis and initiate appropriate control methods in early stages of potential outbreaks.
Watershed	230	F05, K05	6	Road management will be applied to obliterate poorly located or constructed roadways to improve watershed condition and reduce soil loss. Management will take the form of standard roadway prescriptions for obliteration.
	230, 110	F05, C03	6	Obliterate roads at the following rates: 4.4 miles of local roads in Period 1
Lands and Minerals	270, 280	G01	6	Withdraw the Principle Research Site within the Langmuir Research Area from mineral location. 1,250 acres in Period 1.
	420	J01	6	Designate West Knoll as an electronic site for Forest Service use only, 1 acre in Period 1.
	420	J01	6	Administer permit to meet objectives of Langmuir Research site section of New Mexico Wilderness Act of 1980.
	420	J01, J04, J06	6	Amend Langmuir Research Site boundary as shown on the map submitted December 2, 1982.
Transportation/ Travel	010, 110, 230	A03, C03, F01, K03, L01	6	Manage the road system for an average road density of 0.3 miles of road per square mile. Road density will increase temporarily to 2-3 miles per square mile in active timber harvest areas.
	160	E00, L01, L10-L13, L29		Construct local roads at 14 feet width for timber sales where cable logging is planned.

MANAGEMENT AREA 7
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	010 160 480	L01-L13 L14, L29	6	Perform preconstruction and construction engineering (timber program) at the following rate: 20 miles per period in Periods 2 through 5 Construct and/or reconstruct 20 miles of timber purchaser road per period in Periods 2 through 5 to FSM standards.
	010 160 470	L19	6	Maintain Forest System roads at the rate of 120 miles per period. Maintain roads at Levels 3, 4, and 5.
		L19	6	Perform road maintenance at the rate of 20 miles per period. Maintain roads to Level 2.
Land Management Planning	410 420	J01 J22	6	Consult with special interest groups in managing Langmuir Research Site to achieve research objectives.

MANAGEMENT AREA 8

Description: The 194,099 acre management area is located on the Mt. Taylor Ranger District. It is composed of ponderosa pine seedlings and saplings (28,261 acres), poles (27,756 acres) and sawtimber (138,082 acres). Only two percent of this area has slopes in excess of 40 percent.

There are four developed recreation sites.

There are 164,663 acres of full capacity range and 29,436 acres of no capacity range in the management area. Nearly 76,874 acres of the full capacity range are in satisfactory condition.

Analysis Area(s): 7, 8, 9

Management Emphasis: The primary management emphasis is on regulated even-aged timber management. Slash from timber harvests will be made available to the public as free use firewood. Opportunity for dispersed and developed recreational experiences will increase through new construction and rehabilitation of existing facilities. Wildlife habitat will be enhanced through structural and nonstructural improvements and through coordination of timber management activities. Grazing use will be balanced with grazing capacity.

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Range	140	D02	All	<p>Manage rangelands at or above the following intensity levels-Period 1:</p> <p>Level A 5,846 ac. Level B 105,615 ac. Level C 23,883 ac. Level D 1,752 ac. Level E 0 ac Level X 56,803 ac.</p> <p>Adjustments will occur during Periods 2-4 so that by Period 5 management of rangelands will be at or above the following intensity levels:</p>

MANAGEMENT AREA 8
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines									
			Level A 5,846 ac. Level B 127,227 ac. Level C 23,883 ac. Level D 1,752 ac. Level E 0 ac Level X 35,391 ac.									
			Intensity level codes reflect management of allotments. Therefore, acres shown for each level include full capacity, no capacity and potential capacity range.									
140	D02	All	Full capacity rangelands in unsatisfactory condition will be treated through development of improved allotment management plans. The treatment identified will include, but may not be limited to: <ol style="list-style-type: none"> 1. structural range improvements, and 2. correction of stocking problems which includes improved management and reductions in permitted used if necessary. 									
140	D02	All	Condition class of full capacity rangelands may decline during Period 1 but will not decline further throughout the remainder of the planning horizon. <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>Condition</th> <th>Period 2</th> <th>Period 5</th> </tr> </thead> <tbody> <tr> <td>Satisfactory</td> <td>76,874 ac.</td> <td>104,089 ac.</td> </tr> <tr> <td>Unsatisfactory</td> <td>87,789 ac.</td> <td>60,574 ac.</td> </tr> </tbody> </table>	Condition	Period 2	Period 5	Satisfactory	76,874 ac.	104,089 ac.	Unsatisfactory	87,789 ac.	60,574 ac.
Condition	Period 2	Period 5										
Satisfactory	76,874 ac.	104,089 ac.										
Unsatisfactory	87,789 ac.	60,574 ac.										
150	D05	All	Construction and replacement of structural range improvements will be to standards identified in the R-3 Range Structural Handbook and will be directed toward improvements that keep vegetation condition class in the management area from declining. Replacement of structural improvements is planned on waters and 40 years of fences. Maintenance of structural improvements will be scheduled on a planned basis that is defined in the allotment management plan or annual operating plans. Maintenance will continue until replacement is scheduled.									
150	D05	7	Structural Range improvements will be constructed or replaced at the following rate: <ul style="list-style-type: none"> 26 miles of fence per period in Periods 1 through 4 9 waters per period in Periods 1 through 4 8 storage-drinkers per period in Periods 1 through 4 3 miles of pipeline per period in Periods 1 through 4 									

MANAGEMENT AREA 8
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	150	D05	8	Structural range improvements will be constructed and/or replaced at the following rate: 3.5 miles of fence per period in Periods 1 through 4 1 water per period in Periods 1 through 4 1 storage-drinker per period in Periods 1 through 4 0.5 miles of pipeline per period in Periods 1 through 4
	150	D05	9	Structural range improvements will be constructed and/or replace at the following rate: 7 miles of fence per period in Periods 1 through 4 2 waters per period in Periods 1 through 4 2 storage-drinkers per period in Periods 1 through 4 1 mile of pipeline per period in Periods 1 through 4
Recreation	010	A01	All	Manage the following acreages of ROS classifications: 25,480 acres-Semi-primitive Nonmotorized 132,195 acres-Semi-primitive Motorized 36,242 acres-Roaded Natural
	010	A03	All	Manage for the following acres of Visual Quality Objectives: 989 acres-Retention 10,838 acres-Partial Retention 182,272 acres-Modification
	010	A05	7	Construct developed sites at the following rate: Period 1-200 PAOT, La Jara/Mirabal CG Period 2-200 PAOT, Salazar CG Period 4-300 PAOT, Pine Valley CG Wingate Group CG Period 5-200 PAOT, Lobo CG
	010	A06	7, 9	Rehabilitate existing developed sites at the following rate: Period 1-365 PAOT Period 3- 80 PAOT Period 4-505 PAOT Period 5-200 PAOT During Period 1, rehabilitate to condition class 1 all facilities scheduled for rehabilitation during that Period.

MANAGEMENT AREA 8
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
010	All	7, 9	Manage existing developed sites at design capacity. Provide a host at all fee campgrounds. Provide at least Region 3 Reduced Service Management at all facilities during all seasons that sites are open.

MANAGEMENT AREA 8
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines																					
010	A13	7, 9	Administer two fee sites with 265 PAOT capacity and maintain facilities at Condition Class 2.																					
		7, 9	Operate developed sites at full service level commensurate with design and ROS classes.																					
010	L01	7	Plan Continental Divide Trail on or near divide. Activities of other resources will be subordinate to VQC's and landscape plan within 600-foot wide corridor. Construct trail at the following rate: Period 2-23 miles Period 3-10 miles Period 4- 6 miles Period 5- 6 miles																					
010	A16	7	Construct 2.5 miles of ski touring trails on Mt. Taylor in Period 1.																					
010	A16	7	Conduct an environmental assessment of Cienega Springs for a ski touring, snow play, summer activities area in Period 1.																					
010	L23	A11	Perform annual trail maintenance as follows: <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th colspan="2" style="text-align: center;"><u>Miles</u></th> </tr> <tr> <th></th> <th style="text-align: center;"><u>Level 1</u></th> <th style="text-align: center;"><u>Levels 2-5</u></th> </tr> </thead> <tbody> <tr> <td>Period 1:</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Period 2:</td> <td style="text-align: center;">6</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Period 3:</td> <td style="text-align: center;">21</td> <td style="text-align: center;">8</td> </tr> <tr> <td>Period 4:</td> <td style="text-align: center;">22</td> <td style="text-align: center;">17</td> </tr> <tr> <td>Period 5:</td> <td style="text-align: center;">28</td> <td style="text-align: center;">17</td> </tr> </tbody> </table> Use Forest Service personnel and Adopt-A-Trail volunteers for trail maintenance.		<u>Miles</u>			<u>Level 1</u>	<u>Levels 2-5</u>	Period 1:	1	2	Period 2:	6	2	Period 3:	21	8	Period 4:	22	17	Period 5:	28	17
	<u>Miles</u>																							
	<u>Level 1</u>	<u>Levels 2-5</u>																						
Period 1:	1	2																						
Period 2:	6	2																						
Period 3:	21	8																						
Period 4:	22	17																						
Period 5:	28	17																						
010, 420	A16, J13	7	Administer McGaffey summer home area to end of Period 1. Conduct tenure study during Period 2.																					
010, 080	A14, A15, C12	A11																						

MANAGEMENT AREA 8
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
010	A01, A02 A03, A05 A07, A11 A13, A14 A15, A16	All	<p>Proposed recreational developments in the Mt. Taylor area (generally included in Management Area 8) of the Cibola National Forest shall consider the following criteria.</p> <ol style="list-style-type: none"> 1. <u>Compatibility with other Resource Activities</u> <ol style="list-style-type: none"> a. Grazing b. Firewood gathering c. Recreation d. Timber e. Minerals f. Other uses 2. <u>Compatibility with American Indian Religious Freedom</u> <ol style="list-style-type: none"> a. Prior consultation with Indian religious leaders of all affected Tribes. b. Development of a mechanism for sustained communication with the tribal religious leaders. 3. <u>Consultation with affected Land Grant Commissioners, Land Grant Officers and Mayordomos</u> 4. <u>Protection of Cultural Resources</u> <ol style="list-style-type: none"> a. Compliance with applicable laws. b. Consideration of impacts on cultural resources on private lands adjacent to and within the Forest. c. Control of unauthorized uses. 5. <u>Compatibility with Resources</u> <ol style="list-style-type: none"> a. Water Quantity-Applicants for special use permits for private sector development must demonstrate adequate water rights. b. Water Quality <ol style="list-style-type: none"> 1) Maximum road density of 1.9 miles of road per square mile.

Amended 1-9-87

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			2) Use of Best Management Practices with specific practices identified and implemented for specific sites
			3) Adequate provision for effluent and waster water treatment.
			4) Control sediment, particularly resulting from soil movement caused by dirt roads.
			c. Visual Quality Objectives
			1) Favor developments that will cause no deviation in the visual quality classification.
			2) Limit change in visual quality objectives so that one project will not utilize all of the deviation for any management area.
			d. Riparian Areas-Establish_buffers or other mitigative measures to protect and maintain riparian and wetland habitat.
			e. Recreation
			1) Favor dispersed recreation over developed recreation.
			2) Design developed recreation sites to facilitate dispersed recreation opportunities.
			3) Favor nonstructural development.
			4) Design facilities with consideration of overall recreation program manageability.
			f. Transportation
			1) Design for low volume and low impact traffic.
			2) Consider using shuttle services to alleviate traffic problems in the high use areas.
			3) Minimize mid-slope roads.
			g. Protect endangered plants, animals and critical habitat, in consultation with the State Natural Resources

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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Department, Department of Game and Fish, and U.S. Fish and Wildlife Service.

h. Soils - Assure that soils can withstand proposed activities.

i. Fire

1) Manage fire risk related to recreation through season of use and through appropriate closures.

2) Manage fire hazards through fuel management.

6. Landownership

a. Favor public ownership of lands and the facilities that are to be build on them.

b. No ownership exchanges except to reduce in holdings and to consolidate Forest ownership pattern.

7. Economics

a. Demonstration of existing need for recreational opportunities through established use.

b. Development should not reduce the economic base of any existing community. For example, proposed development should not reduce trade within an existing community in order to create new business on Forest land.

The following standards and guidelines only apply to acres identified as suitable for timber production.

MANAGEMENT AREA 8
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Timber	180	E06	All	<p>Plan, prepare, and offer timber sales in accordance with silvicultural prescriptions and environmental analyses. Minimum harvest volume will be 300-500 bd. ft. per acre. Consider YUM yarding in sale planning.</p> <p>Snag Management</p> <p>Leave all existing snags intact within the constraints of safety. Snags are defined as standing dead trees with a minimum 12 inches d.b.h. and 15 feet height. On critical areas (as determined by the staff biologist) recruit snags as needed to bring densities up to the following minimum standards. Snags will be recruited as needed from the ranks of damaged, poor form, cull, or dying trees with emphasis given to establishing scattered clumps of snags as opposed to a uniform distribution. Within 4 chains of water, manage for a minimum of 5 snags per acre. Within 2 chains of meadow areas, manage for a minimum of 3 snags per acre. On the balance of the area, manage for a minimum of 2 snags per acre average. On all areas have a minimum ratio 2:1 (cull:snags) for replacement with a minimum 15 inches d.b.h. and 20 feet height.</p> <p>Turkey Habitat:</p> <p>Protect known and potential turkey roost tree groups with an objective of 2 groups per section in summer range and 4 groups per section in winter range. Roost trees are usually open crowned with large horizontal branches and are 18+ inches d.b.h., 50+ feet tall, and within a half mile of water. Roost tree groups are composed of 8 or more trees with a central or primary roost tree usually evident. Protect and emphasize turkey winter habitat in areas within 40 chains of pine stringers. Pine stringers are defined as non-contiguous linear communities of predominantly ponderosa pine that extend into pinyon/juniper woodlands.</p> <p>Provide a minimum of 10 acres of nesting habitat within ½ mile of water. This may be accomplished through thicket protection, retention of and/or creation of down woody material e.g. slash piling, and protection of known nesting areas. Consider slope, canopy, distribution and distance to water in selection of treatment areas.</p>

MANAGEMENT AREA 8
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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Peregrine Falcon Habitat:

In Peregrine Falcon Habitat areas, restrict activities in nesting areas April 15 to July 1. Prohibit activities which disturb nesting birds between March 15 and August 15. If birds arrive in their territories before March 15 suspend disturbing activities immediately. Extend the period if the birds are strongly attached to the nest site after August 15. Take all reasonable precautions, consistent with policies regarding jeopardy to human life and property, during fire suppression, search and rescue, or other emergency operations from March 15 through August 15 to protect peregrine nesting sites and their confidentiality.

MEXICAN SPOTTED OWL

Standards: Provide three levels of habitat management - protected, restricted, and other forest and woodland types to achieve a diversity of habitat conditions across the landscape.

Protected areas include delineated protected activity centers, mixed conifer and pine-oak forests with slopes greater than 40 percent where timber harvest has not occurred in the last 20 years; and reserved lands which include wilderness, research natural areas, wild and scenic rivers, and congressionally recognized wilderness study areas.

Restricted areas include all mixed-conifer, pin-oak, and riparian forests outside of protected areas.

Other forest and woodland types include all ponderosa pine, spruce-fir, woodland, and aspen forests outside protected and restricted areas.

Survey all potential spotted owl areas including protected, remitted, and other forest and woodland types within an analysis area plus the area ½ mile beyond the perimeter of the proposed treatment area.

Establish a protected activity center at all Mexican spotted owl sites located during surveys and all management territories established since 1989.

Allow no timber harvest except for fuelwood and fire risk abatement in established protected activity centers. For protected activity centers destroyed by fire, windstorm, or other natural disaster, salvage timber harvest or declassification may be allowed after evaluation on a case-by-case basis in consultation with US Fish and Wildlife Service.

Allow no timber harvest except for fire risk abatement in mixed conifer and pine-oak forests on slopes greater than 40% where timber harvest has not occurred in the last 20 years.

Limit human activity in protected activity centers during the breeding season.

In protected and restricted areas, when activities conducted in conformance with these standards and guidelines may adversely affect other threatened, endangered, or sensitive species or may conflict with other established recovery plans or conservation agreements; consult with US Fish and Wildlife Service to resolve the conflict.

Monitor changes in owl populations and habitat needed for delisting.

MANAGEMENT AREA 8
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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Guidelines:

A. GENERAL

Conduct surveys following Region 3 survey protocol.

Breeding season is March 1 to August 31.

B. PROTECTED AREAS

Protected Activity Centers

Delineate an area of not less than 800 acres around the activity center using boundaries of known habitat polygons and/or topography features. Written justification for boundary delineation should be provided.

The Protected Activity Center boundary should enclose the best possible owl habitat configured in as compact a unit as possible, with the nest or activity center located near the center.

The activity center is defined as the nest site. In the absence of a known nest, activity center should be defined as a roost grove commonly used during breeding. In the absence of a known nest or roost, the activity center should be defined as the best nest/roost habitat.

Protected Activity Center boundaries should not overlap.

Submit protected activity center maps and descriptions to the recovery unit working group for comment as soon as possible after completion of surveys.

Road or trail building in protected activity centers should be avoided but may be permitted on a case-by-case basis for pressing management reasons.

Generally allow continuation of the level of recreation activities that was occurring prior to listing.

Require bird guides to apply for and obtain a special use permit. A condition of the permit shall be that they obtain a sub-permit under the US Fish and Wildlife Service Master endangered species permit. The permit should stipulate the sites, dates, number of visits and maximum group size permissible.

Harvest fuelwood when it can be done in such a way that effects on the owl are minimized. Manage within the following limitations to minimize effects on the owl.

- Retain key forest species such as oak.
- Retain key habitat components such as snags and large downed logs.
- Harvest conifers less than nine inches in diameter only within those protected activity centers treated to abate fire risk as described below.

Treat fuel accumulations to abate fire risk.

- Select for treatment 10 percent of the protected activity centers where nest sites are known in each recovery unit having high fire risk conditions. Also select another 10 percent of the protected activity centers where nest sites are known as a paired sample to serve as control areas.
- Designate a 100 acre "no treatment" area around the known nest site of each selected protected activity center. Habitat in the no treatment area should be as similar as possible in structure and composition as that found in the activity center.

MANAGEMENT AREA 8
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			<ul style="list-style-type: none">• Use combinations of thinning trees less than nine inches in diameter, mechanical fuel treatment and prescribed fire to abate fire risk in the remainder of the selected protected activity center outside the 100 acre "no treatment" area.• Retain woody debris larger than 12 inches in diameter, snags, clumps of broad-leaved woody vegetation, and hardwood trees larger than 10 inches in diameter at the root collar.• Select and treat additional protected activity centers in 10 percent increments if monitoring of the initial sample shows there were no negative impacts or there were negative impacts which can be mitigated by modifying treatment methods.• Use light prescribed burns in non-selected protected activity centers on a case-by-case basis. Burning should avoid a 100 acre "no treatment", area around the activity center. Large woody debris, snags, clumps of broad-leaved woody vegetation should be retained and hardwood trees larger than 10 inches diameter at the root collar.• Pre and post treatment monitoring should be conducted in all protected activity centers treated for fire risk abatement. (See monitoring guidelines)

Steep Slopes (Mixed conifer and pine-oak forests outside protected activity centers with slopes greater than 40 percent that have not been logged within the past 20 years)

No seasonal restrictions apply.

Treat fuel accumulations to abate fire risk.

- Use combinations of thinning trees less than nine inches in diameter, mechanical fuel removal, and prescribed fire.
- Retain woody debris larger than 12 inches in diameter, snags, clumps of broad-leaved woody vegetation, and hardwood trees larger than 10 inches in diameter at the root collar.
- Pre- and post-treatment monitoring should occur within all steep slopes treated for fire risk abatement (see monitoring guidelines).

Reserved Lands (Wilderness, Research Natural Areas, Wild and Scenic Rivers, and Congressionally Recognized Wilderness Study Areas)

Allow prescribed fires where appropriate.

C. RESTRICTED AREAS (Mixed conifer, pine-oak, and riparian forests)

Mixed Conifer and Pine-oak Forests (see glossary definition)

Manage to ensure a sustained level of owl nest/roost habitat well distributed across the landscape. Create replacement owl nest/roost habitat where appropriate while providing a diversity of stand conditions across the landscape to ensure habitat for a diversity of prey species.

The following table displays the minimum percentage of restricted area which should be managed to have nest/roost characteristics. The minimum mixed conifer restricted area includes 10 percent at 170 basal area and an additional amount of area at 150 basal area. The additional area of 150 basal area is + 10 percent in BR-E and + 15 percent in all other recovery units. The variables are for stand averages and are minimum threshold values and must be met simultaneously. In project design, no stands simultaneously meeting or exceeding the minimum threshold values should be reduced below the threshold values unless a district-wide or larger landscape analysis of restricted areas shows that there is a surplus of restricted area acres simultaneously meeting the threshold values. Management should be designed to create minimum threshold conditions on project areas where there is a deficit of stands simultaneously meeting minimum threshold conditions unless the district-wide or larger landscape analysis shows there is a surplus.

MANAGEMENT AREA 8
(Continued)

Decision Variables Activities Applicable Analysis Areas Standards and Guidelines

VARIABLE	MC ALL RU	MC BR-E RU	MC OTHER RU	PINE-OAK
Restricted Area %	10%	-10%	+15%	10%
Stand Averages for: Basal Area	170	150	150	150
18 inch + trees/ac	20	20	20	20
Oak basal area	NA	NA	NA	20
Percent total existing stand density index by size class:				
12-18"	10	10	10	15
18-24"	10	10	10	15
24+"	10	10	10	15

Attempt to mimic natural disturbance patterns by incorporating natural variation, such as irregular tree spacing and various patch sizes, into management prescriptions.

Maintain all species of native trees in the landscape including early seral species.

Allow natural canopy gap processes to occur, thus producing horizontal variation in stand structure.

Emphasize uneven-aged management systems. However, both even-aged and uneven-aged systems may be used where appropriate to provide variation in existing stand structure and species diversity. Existing stand conditions will determine which system is appropriate.

Extend rotation ages for even-aged stands to greater than 200 years. Silvicultural prescriptions should explicitly state when vegetative manipulation will cease until rotation age is reached.

Save all trees greater than 24 inches dbh.

In pine-oak forests, retain existing large oaks and promote growth of additional large oaks.

Encourage prescribed and prescribed natural fire to reduce hazardous fuel accumulation. Thinning from below may be desirable or necessary before burning to reduce ladder fuels and the risk of crown fire.

Retain substantive amounts of key habitat components:

- Snags 18 inches in diameter and larger
- Down logs over 12 inches midpoint diameter
- Hardwoods for retention, recruitment, and replacement of large hardwoods

Riparian Areas

Emphasize maintenance and restoration of healthy riparian ecosystems through conformance with forest plan riparian standards and guidelines. Management strategies should move degraded riparian vegetation toward good condition as soon as possible. Damage to riparian vegetation, stream banks, and channels should be prevented.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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Domestic Livestock Grazing

Implement forest plan forage utilization standards and guidelines to maintain owl prey availability, maintain potential for beneficial fire while inhibiting potential destructive fire, maintain and restore riparian ecosystems, and promote development of owl habitat. Strive to attain good to excellent range conditions.

Old Growth

Except where otherwise noted, implement forest plan old growth standards and guidelines to maintain and promote development of owl habitat.

D. OTHER FOREST AND WOODLAND TYPES

Apply ecosystem approaches to manage for landscape diversity mimicking natural disturbance patterns, incorporating natural variation in stand conditions and retaining special features such as snags and large trees, utilizing appropriate fires, and retention of existing old growth in accordance with forest plan old growth standards and guidelines.

E GUIDELINES FOR SPECIFIC RECOVERY UNITS

Colorado Plateau

No special additional guidelines apply

Southern Rocky Mountain - New Mexico

No special additional guidelines apply

Upper Gila Mountains

No special additional guidelines apply

Basin and Range - West

Emphasize restoration of lowland riparian habitats

Management activities necessary to implement the Mt. Graham red squirrel recovery plan, which may conflict with standards and guidelines for Mexican spotted owl, will take precedence and will be exempt from the conflicting Mexican spotted owl standards and guidelines.

Basin and Range - East

Emphasize restoration of lowland riparian habitats

Management activities necessary to implement the Sacramento Mountain thistle recovery plan, which may conflict with standards and guidelines for Mexican spotted owl, will take precedence and will be exempt from the conflicting Mexican spotted owl standards and guidelines.

F. MONITORING GUIDELINES

Monitoring and evaluation should be collaboratively planned and coordinated with involvement from each national forest, USFWS Ecological Services Field Office, USFWS Regional Office, USFS Regional Office, Rocky Mountain Research Station, recovery team, and recovery unit working groups.

Population monitoring should be a collaborative effort with participation of all appropriate resource agencies.

Habitat monitoring of gross habitat changes should be a collaborative effort of all appropriate resource agencies.

Habitat monitoring of treatment effects (pro- and post-treatment) should be done by the agency conducting the treatment.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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Prepare an annual monitoring and evaluation report covering all levels of monitoring done in the previous year. The annual report should be forwarded to the Regional Forester with copies provided to the recovery unit working groups, USFWS Ecological Services field offices, and the USFWS Regional Office.

Range-wide.

Track gross changes in acres of owl habitat resulting from natural and human caused disturbances. Average changes in vegetation composition, structure, and density should be tracked, evaluated, and reported. Remote sensing techniques should provide an adequate level of accuracy.

In promoted and restricted areas where silvicultural or fire abatement treatments are planned, monitor treated stands pre and post treatment to determine changes and trajectories in fuel levels; snag basal areas; live tree basal areas; volume of down logs over 12 inches in diameter; and basal area of hardwood trees over 10 inches in diameter at the root crown.

Upper Gila Mountain, Basin and Range East, and Basin and Range West Recovery Units.

Assist the recovery team and recovery unit working groups to establish sampling units consisting of 19 to 39 square mile quadrats randomly allocated to habitat strata. Quadrats should be defined based on ecological boundaries such as ridge lines and watersheds. Quadrat boundaries should not traverse owl territories. Twenty percent of the quadrats will be replaced each year at random.

Using the sample quadrats, monitor the number of territorial individuals and pairs per quadrat; reproduction; apparent survival; recruitment; and age structure. Track population density both per quadrat and habitat stratum.

ECOSYSTEM MANAGEMENT IN NORTHERN GOSHAWK HABITATS

Applicability: The northern goshawk standards and guidelines apply to the forest and woodland communities described below that are outside of Mexican spotted owl protected and restricted areas. Within Mexican spotted owl protected and restricted areas, the Mexican spotted owl standards and guidelines take precedence over the northern goshawk standards and guidelines. One or the other set of standards and guidelines apply to all forest and woodland communities but the Mexican spotted owl standards always take precedence in areas of overlap.

Standards: Survey the management analysis area prior to habitat modifying activities including a ½ mile beyond the boundary.

Establish, and delineate on a map, a post-fledging family area that includes six nesting areas per pair of nesting goshawks for known nest sites, old nest sites, areas where historical data indicates goshawks have nested there in the past, and where goshawks have been repeatedly sighted over a two year or greater time period but no nest sites have been located.

Manage for uneven-age stand conditions for live trees and retain live reserve trees, snags, downed logs, and woody debris levels through out woodland, ponderosa pine, mixed conifer and spruce-fir forest cover types. Manage for old age trees such that as much old forest structure as possible is sustained over time across the landscape. Sustain a mosaic of vegetation densities (overstory and understory), age classes and species composition across the landscape. Provide foods and cover for goshawk prey.

Limit human activity in nesting areas during the breeding season.

Manage the ground surface layer to maintain satisfactory soil conditions, i.e. to minimize soil compaction and to maintain hydrologic and nutrient cycles.

When activities conducted in conformance with these standards and guidelines may adversely affect other threatened, endangered, or sensitive species or may conflict with other established recovery plans or conservation agreements; consult with US Fish and Wildlife Service to resolve the conflict.

Within the ranges of the Kaibab pincushion cactus, *Pediocactus paradinei*, and the Arizona leatherflower, *Clematis hirsutissima arizonica*, management activities needed for the conservation of these two species that may conflict with northern goshawk standards and guidelines will be exempt from conflicting northern goshawk standards and guidelines until conservation strategies or recovery plans (if listed) are developed for the two species.

MANAGEMENT AREA 8
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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Guidelines:

General

Emphasize maintenance and restoration of healthy riparian ecosystems through conformance with forest plan riparian standards and guidelines. Management strategies should restore degraded riparian areas to good condition as soon as possible. Damage to riparian vegetation, stream banks, and channels should be prevented.

Refer to USDA Forest Service General Technical Report RM-217 entitled "Management Recommendations for the Northern Goshawk in the Southwestern United States for scientific information on goshawk ecology and management which provide the basis for the management guidelines. Supplemental information on goshawk ecology and management may be found in "The Northern Goshawk: Ecology and Management" published by the Cooper Ornithological Society as Studies in Avian Biology No. 16. In woodland forest cover types, use empirical data to determine desired habitat conditions.

Inventory

Use the R3 survey protocol to get complete coverage of the management analysis area (Kennedy and Stahlecker 1993, as modified by Joy, Reynolds, and Leslie 1994). Management analysis areas should be entire ecosystem management areas if possible.

Complete at least one year of survey, but two years of survey should be done to verify questionable sightings, unconfirmed nest sites, etc. If nesting goshawks are found during the first year of inventory, a second year of inventory is not needed in that territory.

For areas where complete inventories cannot be done, use aerial photographs to locate vegetative structural stages (VSS) 4-6 within the project area and inventory just those sites for goshawk nest areas using R3 inventory protocol. All un-inventoried areas (VSS 1-3) will be managed to post-fledging family area (PFA) specifications while in that stage. If, while using that inventory option, evidence suggests goshawks are present (such as finding plucking perches or molted goshawk feathers) conduct a complete inventory as outlined above.

If forests have goshawks commonly nesting in stands classified as VSS 1-3, use the complete inventory methods for those areas. There may be situations where an area is classified as a VSS 3, based on the predominant VSS class, but in actuality a combination of VSS 4 and 5 predominate the area. For those situations, use the complete inventory methods.

Home Range Establishment

Post-fledging family areas (PFA) will be approximately 600 acres in size. Post-fledging family areas will include the nest sites and consist of the habitat most likely to be used by the fledgings during their early development.

Establish a minimum of three nest areas and three replacement nest areas per post-fledging family area. The nest areas and replacement nest areas should be approximately 30 acres in size. A minimum total of 180 acres of nest areas should be identified within each post-fledging family area.

Nest site selection will be based first on using active nest sites followed by the most recently used historical nest areas. When possible, all historical nest areas should be maintained.

Manage for nest replacement sites to attain sufficient quality and size to replace the three suitable nest sites.

Management Scale

Distribution of habitat structures (tree size and age classes, tree groups of different densities, snags, dead and down woody material, etc.) should be evaluated at the ecosystem management area level, at the mid-scale such as drainage, and at the small scale of site.

Vegetation Management

Landscapes outside Goshawk post-fledging family area's

MANAGEMENT AREA 8
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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General: The distribution vegetation structural stages for ponderosa pine, mixed conifer and spruce-fir forests is 10 percent grass/forb/shrub (VSS1), 10 percent seedling-sapling (VSS2), 20 percent young forest (VSS 3), 20 percent mid-aged forest (VSS4), 20 percent mature forest (VSS 5), 20 percent old forest (VSS6). NOTE: The specified percentages are a guide and actual percentages are expected to vary + or - up to three percent.

The distribution of VSS, tree density, and tree age are a product of site quality in the ecosystem management area. Use site quality to guide in the distribution of VSS, tree density and tree ages. Use site quality to identify and manage dispersal PFA and nest habitat at 2-2.5 mile spacing across the landscape.

Snags are 18" or larger DBH and 30 feet or larger in height, downed logs are 12 inches in diameter and at least eight feet long, woody debris is three inches or larger or the forest floor canopy cover is measured with vertical crown projection on average across the landscape.

The order of preferred treatment for woody debris is: 1) prescribed burning; 2) lopping & scattering; 3) hand piling or machine grapple piling; and 4) dozer piling.

Canopy Cover: Canopy cover guidelines apply only to mid-aged to old forest structural stages (VSS 4, VSS 5, and VSS 6) and not to grass/forb/shrub to young forest structural stages (VSS 1, VSS 2, and VSS 3).

Spruce-Fir: Canopy cover for mid-aged forest (VSS 4) should average 1/3 60 percent and 2/3 40 percent, mature forest (VSS 5) should average 50+ percent, and old forest (VSS 6) should average 60+ percent. Maximum opening size is one acre with a maximum width of 125 feet. Provide two groups of reserve trees per acre with six trees per group when opening size exceeds 0.5. Leave at least three snags, five downed logs, and 10-15 tons of woody debris per acre.

Mixed Conifer: Canopy cover for mid-aged forest (VSS 4) should average 1/3 60+ percent and 2/3 40+ percent, mature forest (VSS 5) should average 50+ percent, and old forest (VSS 6) should average 60+ percent. Maximum opening size is up to four acres with a maximum width of up to 200 feet. Retain one group of reserve trees per acre of 3-5 trees per group for openings greater than one acre in size. Leave at least three snags, five downed logs, and 10-15 tons of woody debris per acre.

Ponderosa Pine: Canopy Cover for mid-aged forest (VSS 4) should average 40+ percent, mature forest (VSS 5) should average 40+ percent, and old forest (VSS 6) should average 40+ percent. Opening size is up to four acres with a maximum width of up to 200 feet. One group of reserve trees, 3-5 trees per group, will be left if the opening is greater than an acre in size. Leave at least two snags per acre, three downed logs per acre, and 5-7 tons of woody debris per acre.

Woodland: Manage for uneven age conditions to sustain a mosaic of vegetation densities (overstory and understory), age classes, and species composition well distributed across the landscape. Provide for reserve trees, snags, and down woody debris.

Within post-fledging family area's

General: Provide for a healthy sustainable forest environment for the post-fledging family needs of goshawks. The principle difference between within the post-fledging family area and outside the post-fledging family area is the higher canopy cover within the post-fledging family area and smaller opening size within the post-fledging family area. Vegetative Structural Stage distribution and structural conditions are the same within and outside the post-fledging family area.

Spruce-Fir: Canopy Cover for mid-aged forest (VSS 4) should average 60+ percent and for mature (VSS 5) and old forest (VSS 6) should average 70+ percent.

Mixed Conifer: Canopy Cover for mid-aged (VSS 4) to old forest (VSS 6) should average 60+ percent.

Ponderosa Pine: Canopy Cover for mid-aged forest (VSS 4) should average 1/3 60+ percent and 2/3 50+ percent. Mature (VSS 5) and old forest (VSS 6) should average 50+ percent.

Woodland: Maintain existing canopy cover levels.

Within Nesting Areas

General: Provide unique nesting habitat conditions for goshawks. Important features include trees of mature to old age with high canopy cover.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
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The structure of the vegetation within nest areas is associated with the forest type, and tree age, size, and density, and the developmental history of the stand. Table 5 of RM-217 presents attributes required for goshawks on locations with "low" and "high" site productivity.

Preferred treatment to maintain the desired structure are to thin from below with non-uniform spacing and use of handtools and fire to reduce fuel loads. Lopping and scattering of thinning debris is preferred if prescribed fire cannot be used. Piling of debris should be limited. When necessary, hand piling should be used to minimize compaction within piles and to minimize displacement and destruction of the forest floor and the herbaceous layer. Do not grapple or dozer-pile debris. Manage road densities at the lowest level possible to minimize disturbance in the nest area. Use small, permanent skid trails in lieu of roads for timber harvesting.

Spruce fir, Mixed Conifer and Ponderosa Pine Cover Types: The nesting area contains only mature to old forest (VSS 5 & 6) having a canopy cover (measured vertically) between 50-70 percent with mid-aged VSS 6 trees 200-300 years old. Non-uniform spacing of trees and clumpiness is desirable.

Woodland: Maintain existing canopy cover levels.

Human Disturbance

Limit human activities in or near nest areas and post-fledging family area's during the breeding season so that goshawk reproductive success is not affected by human activities.

The breeding season extends from March 1 through September 30.

Low intensity ground fires are allowed at any time in all forested cover types, but high intensity crown fires are not acceptable in the post-fledging family area or nest areas. Avoid burning the entire home range of a goshawk pair in a single year. For fires planned in the occupied nest area, a fire management plan should be prepared. The fire management plan should minimize the risk of goshawk abandonment while low intensity ground fire burns in the nesting area. Prescribed fire within nesting areas should be planned to move with prevailing winds away from the nest tree to minimize smoke and risk of crown fire developing and driving the adults off or consuming the nest tree.

Ground Surface Layer (All forested cover types)

Manage road densities at the lowest level possible. Where timber harvesting has been prescribed to achieve desired forest condition, use small, skid trails in lieu of roads.

Piling of debris should be limited. When necessary, hand or grapple piling should be used to minimize soil compaction within piles and to minimize forest floor and herbaceous layer displacement and destruction.

Limit dozer use for piling or scattering of logging debris so that the forest floor and herbaceous layer is not displaced or destroyed.

Raptor Habitat:

Prohibit road construction in roost areas and buffer zones. Retain raptor nest tree-groups and a non-activity buffer around raptor nest sites as follows:

Cooper's hawk: seven chain buffer zone around nest

Sharp-shinned hawk: six chain buffer zone around nest

Others: three chain buffer zone around nest

Bald eagle: Provide a 10 chain uncut buffer zone around existing and potential bald eagle

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			<p>winter roosts. Identify and protect foraging perches and potential roost sites.</p> <p>Osprey: Provide an 8 chain uncut buffer around existing (occupied or unoccupied) nests. Restrict logging activities within 20 chains of active nest sites between April 1 and August 15. Provide for every 5 to 10 surface acres of water, not less than 5 acres of mature and overmature trees with not less than 4 snags, with heights, equal to, or greater than, the surrounding trees, and not less than 20 inch in d.b.h. per acre, for potential osprey nesting sites. Provide uneven-aged and, or irregular-aged stands within a 10 chain zone around aquatic areas with 5 or more surface-acres of water. Provide artificial nesting platforms as needed for habitat improvement.</p> <p>Abert Squirrel Habitat:</p> <p>Maintain 2 Abert Squirrel sites per 100 acres, except where basal area of trees over 8 inches d.b.h. is between 150 and 200 square feet per acre, then maintain 1 Abert Squirrel site per 2 acres. Abert Squirrel sites consist of at least 6 trees, 11 to 16 inches d.b.h., on a 1/20 acre group.</p>
160	E03, E06, C01	All	<p>Apply primarily uneven-aged management. Where even-aged management is applied, a shelterwood system will be used in accordance with the following guidelines:</p> <ol style="list-style-type: none"> 1. Precommercial thin stands by age 20 to appropriate growing stock levels. 2. Intermediate commercial harvests at 20 year intervals to control for appropriate GSL. 3. First preparatory cut 20 years before rotation age. Remove 50 percent of overstory volume. 4. Seed cut at rotation age. Remove 65 percent of remaining volume. 5. Final removal of all remaining overstory before regeneration reaches age 20. Plant if natural regeneration is inadequate for acceptable stocking. Site preparation, if needed, by discing. <p>Apply uneven age management where appropriate to achieve site specific resource needs.</p>

MANAGEMENT AREA 8
(Continued)

Decision Variables Activities Applicable Analysis Areas Standards and Guidelines

Silvicultural examinations may indicate that the above ages and percentages need to be modified.

Manage for equal acreage distribution of age classes appropriate for the rotation period.

Rotation 100 ²	Rotation 120 ¹	Rotation 250
1-20	1-20	1-40
21-40	21-40	41-80
41-60	41-60	81-120
61-80	61-80	121-160
81-100	81-100	161-200
	101-120	201-250

¹ Where specified by prescription manage 5 percent of the acreage as old growth for wildlife and visual quality.

² Twenty percent of the acreage will be managed for the 201-250 age class.

E03

All

Twenty percent of the acreage managed with a wildlife emphasis (250 year rotation) will be managed at GSL 150 in the 1 to 80 year age classes. Six percent of the acreage will be managed for wildlife openings with an edge to area ratio of 1.4 to 1. Size and dispersal of created opening will be a specified in the Southwestern Regional Plan.

The objective is to achieve dispersal of the wildlife treatments within each contiguous 25,000 acre unit.

Overstory Removal Guidelines

AA	Acres	Age of existing O.S./U.S.	Period to begin removal of existing O.S.	Removal steps for existing O.S.	Regen. Rotation	GSL	Manage 20% for GSL 150	Manage 6% as wldlf. Openings	Manage 5% for old growth
7	27,616	160/40	1	2	120	50	No	No	No
	4,142	160/40	1	2	250	50	Yes	Yes	N/A
	2,762	160/40	1	2	120	80	No	No	Yes
	4,660	160/40	1	2	100	80	No	No	Yes
	27,616	160/40	2	2	120	50	No	No	No
	7,166	160/40	2	2	250	50	Yes	Yes	N/A
	36,456	160/40	3	2	120	50	No	No	No
	4,134	160/40	3	2	250	50	Yes	Yes	N/A
	2,787	160/40	4	2	250	50	Yes	Yes	N/A
	15,812	160/40	4	2	120	80	No	No	Yes
	4,932	160/40	5	2	120	50	No	No	No

MANAGEMENT AREA 8
(Continued)

AA	Acres	Age of existing O.S./U.S.	Period to begin removal of existing O.S.	Removal steps for existing O.S.	Regen. Rotation	GSL	Manage 20% for GSL 150	Manage 6% as wldlf. Openings	Manage 5% for old growth
8	2,776	90/40	1	2	120	60	No	No	No
	1,388	90/40	1	2	250	60	Yes	Yes	N/A
	1,388	90/40	1	2	120	100	No	No	Yes
9	1,413	150/40	1	2	250	60	Yes	Yes	N/A
	1,413	150/40	1	2	120	80	No	No	Yes

The acreages shown in the tabs will be identified during silvicultural examinations and sale area planning and will be made a part of the compartment records to ensure that the desired mix of treatments is implemented to achieve the intended results. Annually review progress towards achievement of mix and adjust outyear programs as needed.

The 5 percent old growth will be managed at GSL 150 through age 80 for wildlife cover benefit

Intermediate Harvest Guidelines

AA	Period Scheduled for Intermediate Harvest	Acres/Period of Intermediate Harvest
9	1	2,320

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Fire Management	350	P01-P04, P10		Control fire to prevent loss of public and private facilities.
	360	P15	All	Utilize prescribed fire to achieve resource objectives. Manage fire to maintain soil tolerance levels.
Insect and Disease Control	160	P34, E03	All	Habitat requirements for threatened, endangered, and sensitive species will take precedence over insect and disease control. Where there are no conflicts with TES species habitat requirements, all silvicultural examinations will integrate insect and disease considerations in the final stand prescriptions to maintain stand vigor and composition in resistant conditions. Special attention will be given to removal of mistletoe infected trees during intermediate and regeneration harvests.

MANAGEMENT AREA 8
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
				<p>Dwarf Mistletoe - Remove infected overstories as soon as regeneration is accomplished. Thin understories to densities which will maximize fiber production over the length of the rotation, using yield simulation models as guides. Eliminate the mistletoe by clearcutting (in conformance with Regional Standards for clearcut size) and regenerate artificially when yield simulation models indicate that stands will not reach maturity because of mistletoe.</p> <p>When pesticides are used for pest control, project plans will contain appropriate and necessary procedures and mitigation measures.</p> <p>Monitor and report insect and disease conditions on a continuing basis and initiate appropriate control methods in early stages of potential outbreaks.</p>
Watershed	230	P05, K05	All	<p>Road management will be applied to obliterate poorly located and poorly constructed roadways. This treatment is being applied to improve watershed condition and reduce soil loss. Management will take the form of standard roadway prescriptions for obliteration and use of gates for seasonal and temporary closures.</p> <p>Obliterate roads at following rate:</p> <p>119.1 miles of local roads in Period 1</p>
Wildlife	110	C01, C03, C06, C12, 306	All	<p>Construct/reconstruct structural and nonstructural wildlife habitat improvements to provide habitat enhancement and ensure diversity for the following management indicator species and major game species on the Zuni Mountain portion of the Mt. Taylor Ranger District:</p> <p>Pygmy Nuthatch Merriams Turkey Mule Deer, Black Bear</p> <p>On the balance of the Mt. Taylor District, construct/reconstruct structural and nonstructural wildlife habitat improvements to provide habitat enhancement and ensure diversity for the following management indicator species and major game species:</p> <p>Pygmy Nuthatch Merriams Turkey Mule Deer, Black Bear, Elk</p>

MANAGEMENT AREA 8
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
				Wildlife Waters:
			7	Construct eight waters in Period 1 and seven waters per period in Periods 2-4
			8, 9	Construct two waters in each analysis area in Period 1
			All	Reconstruct water every 40 years
				Fencing:
			7	Provide fencing for 10 acres of openings on winter deer and elk range in Period 1.
				Seeding and Planting:
			7	Seed and plant 10 acres of opening with preferred wildlife forage species in Period 1.
	080	C09	All	Maintain all waters, fencing, and planted areas annually.
Lands and Minerals	270, 280	G01	9	Withdraw area from mineral location for 140 PAOT La Jara/Mirabal CG, in Period 1 and 200 PAOT Pine Valley CG, in Period 4.
	220, 280	G01	9	Withdraw Microwave Ridge and Microwave Ridge No. 2 from mineral location, 130 acres in Period 1
	420	J01	9	Designate Microwave Ridge and Microwave Ridge No. 2 as electronic sites, 67 acres in Period 1.
	420	J01	9	Oso Ridge Lookout on the Mt. Taylor Ranger District is designated as an exclusive electronic site for federal agency use only.
Transportation/ Travel	010	L19	7, 9	Maintain roads to Levels 3, 4, and 5 in developed recreation sites.
	010, 110, 230	A03, C03, F01, K03, L01	7, 8 9	
	160	E00, L01, L10, L12- L14, L29	All	Construct local roads to 12-foot width for timber sales. Fourteen foot wide roads will be required in areas having slopes greater than 40 percent where cable logging will occur.
	010	L21	7	Perform trail preconstruction work at the following rate:

MANAGEMENT AREA 8
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines																														
			2.5 miles in Period 1 23.0 miles in Period 2 10.0 miles in Period 3 6.0 miles in Period 4 6.0 miles in Period 5																														
010 160 480	L01-L13 L14, L29		Perform road preconstruction and construction engineering (timber program) at the following rate: <table border="1" style="margin-left: 40px;"> <thead> <tr> <th></th> <th colspan="5">Period/Miles</th> </tr> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> </tr> </thead> <tbody> <tr> <td>7</td> <td>120</td> <td>140</td> <td>260</td> <td>210</td> <td>190</td> </tr> <tr> <td>8</td> <td>8</td> <td>72</td> <td>14</td> <td>29</td> <td>4</td> </tr> <tr> <td>9</td> <td>6</td> <td>98</td> <td>10</td> <td>0</td> <td>2</td> </tr> </tbody> </table>		Period/Miles						1	2	3	4	5	7	120	140	260	210	190	8	8	72	14	29	4	9	6	98	10	0	2
	Period/Miles																																
	1	2	3	4	5																												
7	120	140	260	210	190																												
8	8	72	14	29	4																												
9	6	98	10	0	2																												
			Construction and/or reconstruct timber purchaser roads to FSM standards at the following rate: <table border="1" style="margin-left: 40px;"> <thead> <tr> <th></th> <th colspan="5">Period/Miles</th> </tr> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> </tr> </thead> <tbody> <tr> <td>7</td> <td>120</td> <td>140</td> <td>260</td> <td>210</td> <td>190</td> </tr> <tr> <td>8</td> <td>8</td> <td>72</td> <td>14</td> <td>29</td> <td>4</td> </tr> <tr> <td>9</td> <td>6</td> <td>98</td> <td>10</td> <td>0</td> <td>2</td> </tr> </tbody> </table>		Period/Miles						1	2	3	4	5	7	120	140	260	210	190	8	8	72	14	29	4	9	6	98	10	0	2
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010 160 470	L19		Maintain Forest System roads to Levels 3, 4, and 5 <table border="1" style="margin-left: 40px;"> <tbody> <tr> <td>7</td> <td>2230 miles per period in Periods 1-5</td> </tr> <tr> <td>8</td> <td>660 miles per period in Periods 1-5</td> </tr> <tr> <td>9</td> <td>240 miles per period in Periods 1-5</td> </tr> </tbody> </table>	7	2230 miles per period in Periods 1-5	8	660 miles per period in Periods 1-5	9	240 miles per period in Periods 1-5																								
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8	660 miles per period in Periods 1-5																																
9	240 miles per period in Periods 1-5																																
010 160 170	L19	All	Perform road maintenance at the rate of 105 miles per period in Periods 1-5. Maintain roads to Level 2.																														

MANAGEMENT AREA 9

Description: This is a 4,377 acre management area located on the Mt. Taylor Ranger District. It is composed of 2,438 acres of spruce-fir sawtimber and poles under 40 percent slopes and 1,939 acres of spruce-fir on slopes over 40 percent.

There are no recreation sites.

Management Area 9 has 331 acres of full capacity range (all in Analysis Area 11) and 4,046 acres of no capacity range. All of the full capacity range is in satisfactory condition.

Analysis Area(s) 11, 12

Management Emphasis: Primary emphasis is on wildlife, especially those species favoring late successional stage vegetation.

Grazing use will be balanced with grazing capacity.

Precommercial thinning is not cost effective because of limited release response in mixed conifer and is not planned for.

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Range	140	D02	11	<p>Manage rangelands at or above the following intensity levels throughout the planning horizon.</p> <p>Level A 0 ac. Level B 844 ac. Level C 61 ac. Level D 0 ac. Level X 1,533 ac</p> <p>Intensity level codes reflect management of allotments. Therefore, acres shown for each level include full capacity, no capacity and potential capacity range.</p>
	140	D02	11	<p>Unsatisfactory rangelands will be treated through development of improved allotment management plans. The treatment identified will include, but may not be limited to: 1) structural range improvements, and 2) correction of stocking problems, which includes reduction in permitted use where necessary.</p>
	140	D02	11	<p>Condition class of full capacity rangelands may decline during Period 1 but will not</p>

MANAGEMENT AREA 9
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines											
			decline further throughout the remainder of the planning horizon.											
			<table border="1"> <thead> <tr> <th>Condition</th> <th>Period 2</th> <th>Period 5</th> </tr> </thead> <tbody> <tr> <td>Satisfactory</td> <td>331 ac.</td> <td>331 ac.</td> </tr> <tr> <td>Unsatisfactory</td> <td>0 ac.</td> <td>0 ac.</td> </tr> </tbody> </table>	Condition	Period 2	Period 5	Satisfactory	331 ac.	331 ac.	Unsatisfactory	0 ac.	0 ac.		
Condition	Period 2	Period 5												
Satisfactory	331 ac.	331 ac.												
Unsatisfactory	0 ac.	0 ac.												
150	D05	11	<p>Construction of new and replacement of structural Range improvements will be to standards identified in the Region 3 Range Structural Handbook. They will be directed toward improvements that correct management and stocking problems. Replacement of structural improvements are planned on a recurring basis of 20 to 30 years for waters and 40 years for fences. Maintenance of structural improvements will be scheduled on a planned basis that is defined in the allotment management plan or annual permittee instructions. Maintenance will continue until replacement is scheduled.</p>											
150	D05	11	<p>Structural range improvements will be constructed and/or replaced at the following rate:</p> <p>1 mile of fence per period in Periods 1 through 4 1 storage-drinker per period in Periods 1 through 4</p>											
Recreation	010	A01	<p>Manage the following acreages of ROS classification:</p> <p>2,046 acres--Semi-primitive Nonmotorized 1,037 acres--Semi-primitive Motorized 1,294 acres--Roaded Natural</p>											
	010	A03	<p>Manage the following acres of Visual Quality Objectives:</p> <p>306 acres--Retention 2,188 acres--Partial Retention 1,883 acres--Modification</p>											
	010	A14, A15 C01 F01												
	010	A14, A15 L23	<p>Perform annual trail maintenance as follows:</p> <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Miles</th> </tr> <tr> <th>Level 1</th> <th>Level 2-5</th> </tr> </thead> <tbody> <tr> <td>Period 1:</td> <td>0.3</td> <td>0.4</td> </tr> <tr> <td>Period 2:</td> <td>0.3</td> <td>0.4</td> </tr> </tbody> </table>		Miles		Level 1	Level 2-5	Period 1:	0.3	0.4	Period 2:	0.3	0.4
	Miles													
	Level 1	Level 2-5												
Period 1:	0.3	0.4												
Period 2:	0.3	0.4												

MANAGEMENT AREA 9
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
				Period 3: 0.5 0.2 Period 4: 0.5 0.2 Period 5: 0.3 0.4
				Use Forest Service personnel and Adopt-A-Trail volunteers for trail maintenance.
Timber	160	E06	All	The following standards and guidelines only apply to acres identified as suitable for timber production. Plan, prepare, and offer timber sales in accordance with silvicultural prescriptions and environmental analyses. Minimum harvest volume is 300-500 bd. ft. /acre on slopes less than 40 percent and 3,000 bd. ft. /acre on slopes over 40 percent. Requires YUM yarding.
		E03, P34	All	Silvicultural prescriptions will be primarily uneven-aged management. Where even-aged management is prescribed, a shelterwood regeneration system will be used in accordance with the following guidelines: Precommercial thinning of young stands may be considered if needed to reduce insect attack susceptibility. Commercially thin stands at age 60 and 80 to control GSL. Preparatory cut at age 100 to remove 30 percent of basal area. Seed cut at age 110 to remove 50 percent of remaining basal area. Final removal of remaining overstory before regeneration reaches age 20. Plant if natural regeneration is inadequate for acceptable stocking. Silvicultural examinations may indicate that the above ages and percentages need to be modified. If wind throw risk is above average, clearcut at age 120 and reforest by planting. Apply uneven age management where appropriate to achieve site specific resource needs.

MANAGEMENT AREA 9
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Fire Management	350	P01-P04	All	Control fires to prevent loss of public and private facilities.
	360	P15	All	Utilize prescribed fire to achieve resource objectives. Manage fire to maintain soil tolerance levels.
Insect and Disease Control	160	P34	All	<p>Habitat requirements for threatened, endangered, and sensitive species will take precedence over insect and disease control. Where there are no conflicts with TES species habitat requirements, all silvicultural examinations will integrate insect and disease considerations in the final stand prescriptions to maintain stand vigor and composition in resistant conditions. Special attention will be given to removal of mistletoe infected trees during intermediate and regeneration harvests.</p> <p>1. Dwarf Mistletoe - Remove infected overstories as soon as regeneration is accomplished. Thin understories to densities which will maximize fiber production over the length of the rotation, using yield simulation models as guides. Eliminate the mistletoe by clearcutting (in conformance with Regional Standards for clearcut size) and regenerate artificially when yield simulation models indicate that stands will not reach maturity because of mistletoe.</p> <p>2. Spruce Beetle - Salvage windthrow spruce trees and treat accumulated slash.</p> <p>Reduce spruce/fir type susceptibility from high risk to low risk by scheduling overmature stands for harvesting first. A Low Risk stand has the following characteristics:</p> <p style="padding-left: 40px;">Avg. Dia. 12" B.A. 100 50% spruce in the canopy</p> <p>Treat spruce slash by removing all material over 6" in diameter.</p> <p>3. Western Spruce Budworm - Susceptible mixed conifer stands are multi-storied, overmature stands with a high percentage of true fir.</p> <p>Control of potential problems will be achieved through silvicultural treatments, if possible.</p> <p>Direct suppression, using insecticides, will be carried out during outbreaks when</p>

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			<p>it is necessary to prevent or minimize stand damages. Suppression will receive priority consideration in areas where harvesting has or will be focused or accelerated.</p> <p>In the susceptible mixed conifer type, even-aged stands dominated by Douglas fir, ponderosa pine, and aspen will be created. This can be accomplished by:</p> <p>a. Patch cutting followed by site preparation, broadcast burning, and planting a mixture of ponderosa pine and Douglas fir.</p> <p>b. Regeneration cuts which retain a uniformly spaced overstory, composed principally of dominant and co-dominant Douglas fir. Advance regeneration is destroyed by tractor scarification or underburning. Regeneration is accomplished by planting ponderosa pine and Douglas fir. The overstory is removed as soon as the regeneration becomes established.</p> <p>c. Regeneration cuts which retain a mixture of species in the overstory. Dominant and co-dominant, mistletoe free or lightly infested trees are used for seed trees; advance reproduction will be protected during site preparation, and will be supplemented by natural seed fall.</p> <p>d. Removal of all trees larger than sapling size. Advance regeneration to be protected during logging activities. Supplemental planting of ponderosa pine and Douglas fir on all disturbed understock areas.</p> <p>When pesticides are used for pest control, project plans will contain appropriate and necessary monitoring procedures and mitigation measures.</p> <p>Monitor and report insect and disease conditions on a continuing basis and initiate appropriate control methods in early stages of potential outbreaks.</p>
Watershed	230	F05 K05	12
			<p>Road management will be applied to obliterate poorly located or constructed roadways to improve watershed condition and reduce soil loss. Management will take the</p>

MANAGEMENT AREA 9
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
				form of standard roadway prescriptions for obliteration.
	230, 110	P05, C03	12	Obliterate roads at the following rate: 1.2 miles of local roads in Period 1
Wildlife	110	C01, C03, C06, C12, 306	All	Construct/reconstruct structural and nonstructural wildlife habitat improvements to provide habitat enhancement and ensure diversity for the following management indicator species and major game species: Red Breasted Nuthatch Elk Mule Deer Wildlife Waters
			12	Construct one wildlife water development in Period 1. Reconstruct the water in 40 years.
	080	C09	12	Maintain all water developments annually.
Lands and Minerals	420	J01	12	Designate 5 acres of existing La Mosca Electronic Site as an electronic site in Period 1.
	270, 280	G01	12	Withdraw 20 acres for the existing la Mosca Electronic Site from mineral location in Period 1.
Transportation/ Travel	010, 110, 230	A03, C03, F01, K03, L01	11 12	
	010, 160	L19		Maintain Forest System roads to Levels 2 to 4 at the following rates:
	470		11 12	60 miles per period in all periods 20 miles per period in all periods

MANAGEMENT AREA 10

Description: This 5,932 acre management area located on the Mt. Taylor Ranger District. Slopes exceed 40 percent on 19 percent of the area. Mixed conifer covers 3,322 acres while aspen is found on 2,610 acres.

There are no recreation sites.

There are 3,390 acres of full capacity range and 2,542 acres of no capacity range in Management Area 10. Nearly 2,632 acres of the full capacity range are in satisfactory condition.

Analysis Area(s) 13

Management Emphasis: Maximum commercial timber production through regulated timber management is the primary emphasis. Slash will be made available to the public for personal use. Timber management activities will be compatible with preserving wildlife habitat diversity. Precommercial thinning is not cost effective because of limited release response in mixed conifer and is not planned for.

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Range	140	D02	13	<p>Manage rangelands at or above the following intensity levels in Period 1:</p> <p>Level A 196 ac. Level B 3,083 ac. Level C 41 ac. Level D 0 ac. Level E 0 ac. Level X 2,612 ac.</p> <p>Adjustments will occur during Periods 2 through 4 so that by Period 5 management of rangelands will be at or above the following intensity levels:</p> <p>Level A 196 ac. Level B 5,627 ac. Level C 41 ac. Level D 0 ac. Level E 0 ac. Level X 68 ac.</p>

MANAGEMENT AREA 10
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines									
			Intensity level codes reflect management of allotments. Therefore, acres shown for each level include full capacity, no capacity and potential capacity range.									
140	D02	13	<p>Full capacity rangelands in unsatisfactory condition will be treated through improved allotment management plans. The treatment identified will include, but may not be limited to:</p> <ol style="list-style-type: none"> 1. structural range improvements, and 2. correction of stocking problems, which includes reduction in permitted use where necessary. 									
140	D02	13	<p>Condition class of full capacity rangelands may decline during Period 1 but will not decline further throughout the remainder of the planning horizon.</p> <table border="1"> <thead> <tr> <th>Condition</th> <th>Period 2</th> <th>Period 5</th> </tr> </thead> <tbody> <tr> <td>Satisfactory</td> <td>2,632 ac.</td> <td>2,867 ac.</td> </tr> <tr> <td>Unsatisfactory</td> <td>758 ac.</td> <td>523 ac.</td> </tr> </tbody> </table>	Condition	Period 2	Period 5	Satisfactory	2,632 ac.	2,867 ac.	Unsatisfactory	758 ac.	523 ac.
Condition	Period 2	Period 5										
Satisfactory	2,632 ac.	2,867 ac.										
Unsatisfactory	758 ac.	523 ac.										
150	D05	13	<p>Construction of new and replacement of structural range improvements will be to standards identified in the Region 3 Range Structural Handbook. These will be directed toward improvements that correct management problems. Replacement of structural improvements is planned on a recurring basis of 20 to 30 years for waters, and 40 years for fences.</p> <p>Maintenance of structural improvements will be scheduled on a planned basis that is defined in the allotment management plan or annual operating plan. Maintenance will continue until replacement is scheduled.</p>									
150	D03	13	<p>Structural range improvements will be constructed/replaced at the following rate:</p> <p>2 miles of fence per period in Periods 1 through 4 1 water per period in Periods 1 through 4 1 storage-drinker per period in Periods 1 through 4</p>									
Recreation	010	A01	<p>13</p> <p>Manage for the following acreages of ROS classifications:</p> <p>1,133 acres—Semi-primitive Nonmotorized 2,969 acres—Semi-primitive Motorized 1,830 acres—Roaded Natural</p>									

MANAGEMENT AREA 10
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines														
	010	A03	13	<p>Manage for the following acreages of Visual Quality Objectives:</p> <p style="padding-left: 40px;">440 acres-Retention 3,030 acres-Partial Retention 2,462 acres-Modification</p>														
	010	A14, A15, C01, F01	13															
Timber	160	E03, E06, C01		<p>Silvicultural prescriptions will be primarily uneven-aged management. Where even-aged management is prescribed, a shelterwood regeneration system will be used in accordance with the following guidelines:</p> <ol style="list-style-type: none"> 1. Precommercial thinning of young stands may be considered if needed to reduce insect attack susceptibility. 2. Intermediate commercial harvests at 20 year intervals to control for appropriate GSL. 3. First preparatory cut 20 years before rotation age. Remove 50 percent of overstory volume. 4. Seed cut at rotation age. Remove 65 percent of remaining volume. Site preparation, if needed, by discing. 5. Final removal of all remaining overstory before regeneration reaches age 20. Plant if natural regeneration is inadequate for acceptable stocking. <p>Silvicultural examinations may indicate that the above ages and percentages need to be modified.</p> <p>Manage for equal acreage distribution of age classes within the rotation period.</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Rotation 120</th> <th>Rotation 250</th> </tr> </thead> <tbody> <tr> <td>1-20</td> <td>1-40</td> </tr> <tr> <td>21-40</td> <td>41-80</td> </tr> <tr> <td>41-60</td> <td>81-120</td> </tr> <tr> <td>61-80</td> <td>121-160</td> </tr> <tr> <td>81-100</td> <td>161-200</td> </tr> <tr> <td>101-120</td> <td>201-250 <u>1/</u></td> </tr> </tbody> </table> <p><u>1/</u> Twenty percent of the acreage will be managed for the 201 to 250 age class.</p> <p>Twenty percent of the acreage managed with a wildlife emphasis (250 year rotation) will be managed at GSL 150 in the 1 to 80 year age classes. This also meets visual quality needs. Six percent of the acreage will be managed for wildlife openings with</p>	Rotation 120	Rotation 250	1-20	1-40	21-40	41-80	41-60	81-120	61-80	121-160	81-100	161-200	101-120	201-250 <u>1/</u>
Rotation 120	Rotation 250																	
1-20	1-40																	
21-40	41-80																	
41-60	81-120																	
61-80	121-160																	
81-100	161-200																	
101-120	201-250 <u>1/</u>																	

MANAGEMENT AREA 10
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
160	E06	13	<p>an edge to area ratio of 1.4 to 1. Size and dispersal of created openings will be as specified in the Southwest Regional Plan. The objective is to achieve dispersal of the wildlife treatments within contiguous 25,000 acre units. Coordinate with adjacent management areas.</p> <p>Apply uneven age management where appropriate to achieve site specific resource needs.</p>
	E06, E07, C01	13	<p>The following standards and guidelines only apply to acres identified as suitable for timber production.</p> <p>Plan, prepare, and offer timber sales in accordance with silvicultural prescriptions and environmental analyses. Minimum harvest volume will be 300-500 bd.ft./acre. Consider YUM yarding on all sales.</p> <p>On 96 percent of the area, leave existing an objective of two snags/acre average and sufficient live culls for replacement with a minimum 12 inches d.b.h. and 15 foot height. No recruitment of snags. Maintain known and potential turkey roost trees with an objective of one group per 640 acres within ½ mile of water.</p> <p>Maintain 2 Abert's squirrel sites per 100 acres, except where basal area of trees over 8 inches d.b.h. is between 150 and 200 square feet per acre, then maintain 1 Abert's squirrel site per 100 acres. Abert's squirrel sites consist of at least 6 trees, 11 to 16 inches d.b.h., in a 1/20 acre group.</p> <p>On 4 percent of the area leave existing snags and create additional snags if needed for an average of three snags per acre. Within two chains of water, leave or create five snags/acre average. Snags will be created where needed by girdling damaged, poor form, cull, or dying trees. Maintain 8 to 10 usable turkey roost trees on two sites per 640 acres. Roost trees are open crowned with large horizontal branches and are 18 inches d.b.h. and 50 feet tall within ½ mile of water.</p>

Overstory Removal Guidelines

AA	Acres	Age of existing O.S./U.S.	Period To Begin Re-moval of Existing O.S.	Re-moval Steps for Existing O.S.	Regen. Rotation	GSL	Manage 20% GSL 150	Manage 6% as Wildlife Opening	Manage 5% for Old Growth
13	119	110/50	1	2	250	80	Yes	Yes	N/A

The acreages shown in this table will be identified during silvicultural examinations and sale area planning and will be made a part of the compartment records to ensure that the desired mix of treatments is implemented to achieve the intended results. Annually review progress towards achievement of mix and adjust outyear programs as needed.

The 5 percent old growth will be managed at GSL 150 through age 80 for wildlife cover benefit. The old growth will also provide visual benefits.

Intermediate Harvest Guidelines

AA	Period Scheduled for Intermediate Harvest	Acres/Period of Intermediate Harvest
13	1	820

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Fire Management	350	P01-P04, P19		Control fire to prevent loss of public and private facilities.
	360	P15	13	Utilize prescribed fire to achieve resource objectives. Manage fire to maintain soil tolerance levels.
Insect and Disease Control	160	P34, E03	13	Habitat requirements for threatened, endangered, and sensitive species will take precedence over insect and disease control. Where there are no conflicts with TES species habitat requirements, all silvicultural examinations will integrate insect and disease considerations in the final stand prescriptions to maintain stand vigor and composition in resistant conditions. Special attention will be given to removal of mistletoe infected trees during intermediate and regeneration harvests.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			<p>given to removal of mistletoe infected trees during intermediate harvest and regeneration harvests.</p> <p>1. Dwarf Mistletoe - Remove infected overstories as soon as regeneration is accomplished. Thin understories to densities which will maximize fiber production over the length of the rotation; using yield simulation models as guides. Eliminate the mistletoe by clearcutting (in conformance with Regional Standards for clearcut size) and regenerate artificially when yield simulation models indicate that stands will not reach maturity because of mistletoe.</p> <p>2. Spruce Beetle - Salvage windthrow spruce trees and treat accumulated slash.</p> <p>Reduce spruce/fir susceptibility from high risk to low risk by scheduling overmature stands for harvesting first. A <u>Low Risk</u> stand has the following characteristics:</p> <p style="padding-left: 40px;">Avg. dia. 12" B.A. 100 60% spruce in the canopy.</p> <p>Treat slash by removing all material over 6" in diameter.</p> <p>3. Western Spruce Budworm - Susceptible mixed conifer stands are multi-storied, overmature stands with a high percentage of true fir.</p> <p>Control of potential problems will be achieved through silvicultural treatments, if possible.</p> <p>Direct suppression, using insecticides, will be carried out during outbreaks when it is necessary to prevent or minimize stand damages. Suppression will receive priority consideration in areas where harvesting has or will be focused or accelerated.</p> <p>In the susceptible mixed conifer type, even-aged stands dominated by Douglas fir, ponderosa pine, and aspen will be created. This can be accomplished by:</p> <p>a. Patch cutting followed by site preparation, broadcast burning, and planting a mixture of ponderosa pine and Douglas fir.</p> <p>b. Regeneration cuts which retain a uniformly spaced overstory, composed</p>

MANAGEMENT AREA 10
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			<p>principally of dominant and co-dominant Douglas fir. Advance regeneration is destroyed by tractor scarification or underburning. Regeneration is accomplished by planting ponderosa pine and Douglas fir. The overstory is removed as soon as the regeneration becomes established.</p> <p>c. Regeneration cuts which retain a mixture of species in the overstory. Dominant and co-dominant, mistletoe tree or lightly interested trees are used for seed trees: advance reproduction will be protected during site preparation, and will be supplemented by natural seed fall.</p> <p>d. Removal of all trees larger than sampling size. Advance regeneration to be protected during logging activities. Supplemental planning of ponderosa pine and Douglas fir on all disturbed understocked areas.</p> <p>When pesticides are used for pest control, project plants will contain appropriate and necessary monitoring procedures and mitigation measures.</p> <p>Monitor and report insect and disease conditions on a continuing basis and initiate appropriate control method in early stages of potential outbreaks.</p>
Watershed	230	F05, K05	13
			<p>Road management will be applied to obliterate poorly located or constructed roadways to improve watershed condition and reduce soil loss. Management will take the form of standard roadway prescriptions for obliteration.</p> <p>Obliterate roads at the following rates:</p> <p>8.7 miles of local roads in Period 1</p>
Transportation/ Travel	010, 110, 230	A03, C03, F01, K01, L01	13
	010, 160, 480	L01-L13, L14, L29	13
			<p>Perform preconstruction and construction Engineering (timber program) at the rate of 20 miles per period in Periods 2 and 4.</p> <p>Roads will be designed and constructed to standards in accordance with Forest Service Manual and Handbook guidelines.</p>

MANAGEMENT AREA 10
 (Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			Construct and/or reconstruct 20 miles of timber purchased road per period in Periods 2 and 4 to FSM standards.
	L19		Perform road maintenance at the rate of 60 miles per period in all periods. Maintain roads to Level 2.
010 160 470	L19	13	Grade Forest System roads at the rate of 50 miles per period in all periods. Maintain to Levels 3, 4, and 5.

MANAGEMENT AREA 11

Description: The 102,430 acre management area located on the Magdalena (67,539 acres) and Mountainair Ranger Districts (34,891) is composed of 72,607 acres of ponderosa pine Saw timber and poles on slopes under 40 percent slopes and 29,823 acres of pine Saw timber and poles on slopes over 40 percent.

There are two developed recreation sites.

There are 65,148 acres of full capacity range, 3,499 acres of potential capacity range and 3,746 acres of no capacity range in Analysis Area 14. Nearly 24,627 acres of the full capacity ranges are in satisfactory condition. All of Analysis Area 15 is no capacity range (over 40 percent slope).

Analysis Area(s) 14, 15

Management Emphasis: Maintain the forest and watershed health, vigor, and productivity. Provide and maintain wildlife habitat diversity and old growth. Slash from harvest activities will be made available to the public for personal use firewood. Developed recreation sites will be maintained. Trail construction and new trailhead facilities will provide increased opportunities for dispersed recreation use.

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Range	140	D02	13	<p>Manage rangelands at or above the following intensity levels - Period 1:</p> <p>Level A 8,311 ac. Level B 33,294 ac. Level C 0 ac. Level D 0 ac. Level E 0 ac. Level X 30,788 ac.</p> <p>Adjustments will occur during Periods 2 through 4 so that by Period 5 management of rangelands will be at or above the following intensity levels:</p> <p>Level A 8,311 ac. Level B 64,082 ac. Level C 0 ac. Level D 0 ac.</p>

MANAGEMENT AREA 11
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines									
			<p>Level E 0 ac. Level X 0 ac.</p> <p>Intensity level codes reflect management of allotments. Therefore, acres shown for each level include full capacity, no capacity and potential capacity range.</p>									
140	D02	14	<p>Full capacity rangelands in unsatisfactory condition will be treated through development of improved allotment management plans. The treatment identified will include, but may not be limited to: 1) structural range improvements, and 2) correction of stocking problems, which includes reduction in permitted use where necessary.</p>									
140	D02	14	<p>Condition class of full capacity rangelands may decline during Period 1 but will not decline further throughout the remainder of the planning horizon.</p> <table border="1"> <thead> <tr> <th>Condition</th> <th>Period 2</th> <th>Period 5</th> </tr> </thead> <tbody> <tr> <td>Satisfactory</td> <td>24,627 ac.</td> <td>37,188 ac.</td> </tr> <tr> <td>Unsatisfactory</td> <td>40,521 ac.</td> <td>27,960 ac.</td> </tr> </tbody> </table>	Condition	Period 2	Period 5	Satisfactory	24,627 ac.	37,188 ac.	Unsatisfactory	40,521 ac.	27,960 ac.
Condition	Period 2	Period 5										
Satisfactory	24,627 ac.	37,188 ac.										
Unsatisfactory	40,521 ac.	27,960 ac.										
150	D02	14	<p>Construction and replacement of structural range improvements will be to standards identified in the R-3 Range Structural Handbook. These will be directed toward improvements that correct management problems. Replacement of structural improvements is planned on a recurring basis of 20-30 years for waters and 40 years for fences.</p> <p>Maintenance of structural improvements will be scheduled on a planned basis that is defined in the allotment management plan or annual operating plan. Maintenance will continue until replacement is scheduled.</p>									
150	D02	14	<p>Structural Range improvements will be constructed/replaced at the following rate:</p> <ul style="list-style-type: none"> 23 miles of fences per period in Periods 1-4 1 water development per period in 1-4 1 storage/drinker per period in Periods 1-4 1 mile of pipeline per period in Periods 1-4 									

MANAGEMENT AREA 11
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines																		
Recreation	010	A01	All	<p>Manage for the following acreages of ROS classifications:</p> <p>23,519 acres-Semi-primitive Non-motorized 53,020 acres-Semi-primitive Motorized 25,891 acres-Roaded Natural</p>																		
	010	A03	All	<p>Manage for the following acres of Visual Quality Objectives:</p> <p>3,214 acres-Retention 39,469 acres-Partial Retention 59,747 acres-Modification</p>																		
	010	A11	14	Administer 2 developed sites at 95 PAOT capacity and maintain facilities to condition class 2.																		
	010	A11	14	<p>Manage developed sites at design capacity.</p> <p>Provide at least Region 3 Reduced Service Management at all sites during all sessions when sites are open.</p>																		
	010	A05	14	<p>Construct developed sites at the following rate:</p> <p>Period 5-25 PAOT near Bosque Trailhead</p>																		
	010	A06	14	<p>Rehabilitate developed sites at the following rate:</p> <p>Period 2-90 PAOT, Red Canyon CG. Period 4-60 PAOT</p> <p>During Period 1 rehabilitate to condition class 1 all facilities scheduled for rehabilitation during that Period.</p>																		
	010, 050	A14, A15, L23	All	<p>Perform annual trail maintenance as follows:</p> <table border="1"> <thead> <tr> <th></th> <th colspan="2"><u>Miles</u></th> </tr> <tr> <th></th> <th><u>Level 1</u></th> <th><u>Level 2-5</u></th> </tr> </thead> <tbody> <tr> <td>Period 1:</td> <td>10</td> <td>2</td> </tr> <tr> <td>Period 2:</td> <td>10</td> <td>3</td> </tr> <tr> <td>Period 3:</td> <td>11</td> <td>3</td> </tr> <tr> <td>Period 4:</td> <td>13</td> <td>3</td> </tr> </tbody> </table> <p>Use Forest Service personnel and Adopt-A-Trail volunteers for trail maintenance.</p>		<u>Miles</u>			<u>Level 1</u>	<u>Level 2-5</u>	Period 1:	10	2	Period 2:	10	3	Period 3:	11	3	Period 4:	13	3
	<u>Miles</u>																					
	<u>Level 1</u>	<u>Level 2-5</u>																				
Period 1:	10	2																				
Period 2:	10	3																				
Period 3:	11	3																				
Period 4:	13	3																				

MANAGEMENT AREA 11
 (Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
010	L22	All	Construct trails at the following rate: Period 1: Red Canyon Loop-1.0 mile Period 2: New Canyon-1.0 mile Period 3: East Manzano-2.0 miles Jaral Trail-1.5 miles Low Country Trail-8.0 miles
010	L22	18	Construct trailheads at the following rate: Period 1-50 PAOT; Bosque Trailhead 50 PAOT; Albuquerque Trailhead 50 PAOT; Ox Canyon Trailhead Period 2-50 PAOT; Kayser Mill Trailhead 50 PAOT; Rosedale Trailhead 50 PAOT; Little Monica Trailhead

MANAGEMENT AREA 11
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
				The following standards & guidelines only apply to acres identified as suitable for timber production.
Timber	160	E06	14, 15	Plan, prepare, and offer timber sales in accordance with silvicultural prescriptions and environmental analyses. Minimum harvest volume will be 800 bd.ft per acre on slopes less than 40 percent and 3,000 bd.ft per acre on slopes over 40 percent. Consider YUM yarding on all sales.
		E06, C01	14, 15	On 100 percent of the area, leave existing snags with an objective of two snags/acre average and sufficient live culls for replacement with a minimum 12 inches d.b.h. and 15 foot height. No recruitment of snags. Maintain known and potential turkey roost trees with an objective of one group per 640 acres within ½ mile of water. Maintain 2 Abert's squirrel cites per 100 acres, except where basal area of trees over 8 inches d.b.h. is between 150 and 200 square feet per acre, then maintain 1 Abert's squirrel site per 100 acres. Abert's squirrel sites consist of at best 6 trees, 11 to 16 inches d.b.h., in a 1/20 acre group.
		E03, E06, C01	14, 15	Silvicultural prescriptions will be primarily uneven-aged management. Where even-aged management is prescribed, a shelterwood regeneration system will be used in accordance with the following guidelines: <ul style="list-style-type: none"> 1. Precommercially thin stands by age 20 to appropriate growing stock levels 2. Intermediate commercial harvests at 20 year intervals to control for appropriate GSL. 3. First preparatory cut 20 years before rotation age. Remove 50 percent of overstory volume 4. Seed cut at rotation age. Remove 65 percent of remaining volume. Site preparation, if needed by discing 5. Final removal of all remaining overstory before regeneration reaches age 20. Plant if natural regeneration is inadequate for acceptable stocking. <p>Silvicultural examinations may indicate that the above ages and percentages need to be modified.</p> <p>Apply uneven age management where appropriate to achieve site specific resource needs.</p>

MANAGEMENT AREA 11
(Continued)

Decision Variables Activities Applicable Analysis Areas Standards and Guidelines

Manage for equal acreage of age classes within the rotation period.

Rotation 100	Rotation 120	Rotation 140	Rotation 180
1-20	1-20	1-20	1-40
21-40	21-40	21-40	41-80
41-60	41-60	41-60	81-120
61-80	61-80	61-80	121-160
81-100	81-100	81-100	161-180
101-120	101-120	101-120	
		121-140	

The acreages shown in this table will be identified during silvicultural examinations, sale area planning, and made a part of the compartment records to insure the desired mix of treatments is implemented to achieve the intended results. Annually review progress towards achievement of mix and adjust out year programs as needed.

The 5 percent old growth will be managed at 150 GSL through age 80 for wildlife cover benefits.

Overstory Removal Guidelines

AA	Acres	Age of Existing O.S./U.S.	Period To Begin Removal of Existing O.S.	Removal Steps for Existing O.S.	Regeneration Rotation	GSL	Manage 20% GSL 150	Manage 6% as Wildlife Openings	Manage 5% for Old Growth
	3,370	140/60	1	2	140	60	No	No	Yes

Intermediate Harvest Guidelines

AA	Periods Scheduled for Intermediate Harvest	Acres/Period of Intermediate Harvest
	14	3,620

MANAGEMENT AREA 11
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Fire Management	350	P01-P04, P10	14, 15	Control fires to prevent loss of public and private facilities.
	360	P15	All	Utilize prescribed fire to achieve resource objectives. Manage fire to maintain soil tolerance levels.
Insect and Disease Control	160	P34, E03	14, 15	<p>Habitant requirement for threatened endangered and sensitive species will take precedence over insect and disease control. Where there are no conflicts with TES species habitat requirements, all silvicultural examinations will integrate insect and disease considerations in the final stand prescriptions to maintain stand vigor and composition in resistant conditions. Special attention will be given to removal of mistletoe infected trees during intermediate and regeneration harvests.</p> <p>Dwarf Mistletoe - Remove infected overstories as soon as regeneration is accomplished. Thin understories to densities which will maximize fiber production over the length of the rotation, using yield simulation models as guides. Eliminate the mistletoe by clear cutting (in conformance with Regional Standards for clear cut size and regenerate artificially when yield stimulation models indicate the stands will not reach maturity because of mistletoe.</p> <p>When pesticides are used for pest control, project plans will contain appropriate and necessary monitoring procedures and mitigation measures.</p> <p>Monitor and report insect and disease conditions on a continuing basis and initiate appropriate control methods in early stages of potential outbreaks.</p>

MANAGEMENT AREA 11
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Wildlife	110	C01, C03, C06, C12		Construct/reconstruct structural and nonstructural wildlife habitat improvements to provide habitat enhancement and insure diversity for the following management indicator species and major game species. Pygomy Nuthatch Merram's Turkey Mule Deer Elk
			14	Construct one water per period in Periods 1 to 4. Reconstruct waters every 40 years.
	080	C09	14	Maintain waters annually.
	080	C12	All	Cooperate with New Mexico Game and Fish in stabilizing the Rock Mountain Bighorn sheep population to goals established in the New Mexico Game and Fish Department Comprehensive Plan. Bighorn sheep occur only in portions of analysis areas located in the Manzano Mountains.
	Transportation/ Travel	010, 470	L19	14
160, 480				L14, L29
010		L21	All	

MANAGEMENT AREA 11
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines				
010, 160, 480	L01-L13, L14, L29		Perform road preconstruction and construction engineering (timber program) at the following rate:				
		14, 15	Period/Miles				
			1	2	3	4	5
			9	58	86	260	125
			0	0	129	0	150
			Construct and/or reconstruct roads to FSM standards at the following rate:				
		14, 15	Period/Miles				
			1	2	3	4	5
			9	58	86	260	125
			0	0	129	0	150

MANAGEMENT AREA 12

Description: The 35,428 acre management area is located on the Mountainair (9,798 acres) and Magdalena (25,630 acres) Ranger Districts. The area is composed of 6,868 acres of suitable mixed conifer and aspen sawtimber and poles under 40 percent slopes and 28,560 acres of mixed conifer and aspen sawtimber and poles on slopes exceeding 40 percent.

There are three developed recreation sites.

There are 3,117 acres of full capacity range, 433 acres of potential capacity range and 3,437 acres of no capacity range in Analysis Area 16. Nearly 849 acres of the full capacity range is in satisfactory condition. All of Analysis Area 17 is no capacity range (over 40 percent slope).

Analysis Area(s) 16, 17

Management Emphasis: Maintain the forest and watershed health, vigor, and productivity. Provide and maintain wildlife habitat diversity and old growth. Slash from harvest activities will be made available to the public for personal use firewood.

Developed site capacity will increase through construction/rehabilitation of recreational facilities. Trail maintenance is planned.

Grazing use will be balanced with grazing capacity.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Range	140	D02	14
			Manage rangelands at or above the following intensity levels-Period 1:
			Level A 1,776 ac.
			Level B 1,542 ac.
			Level C 639 ac.
			Level D 0 ac.
			Level E 0 ac.
			Level X 3,030 ac.

MANAGEMENT AREA 12
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines												
			<p>Adjustments will occur during Periods 2-4 so that by Period 5 rangeland will be at or above the following levels:</p> <table border="0"> <tr><td>Level A</td><td>1,776 ac.</td></tr> <tr><td>Level B</td><td>2,890 ac.</td></tr> <tr><td>Level C</td><td>639 ac.</td></tr> <tr><td>Level D</td><td>0 ac.</td></tr> <tr><td>Level E</td><td>0 ac.</td></tr> <tr><td>Level X</td><td>1,682 ac.</td></tr> </table> <p>Intensity level codes reflect management of allotments. Therefore, acres shown for each level include full capacity, no capacity and potential capacity range.</p>	Level A	1,776 ac.	Level B	2,890 ac.	Level C	639 ac.	Level D	0 ac.	Level E	0 ac.	Level X	1,682 ac.
Level A	1,776 ac.														
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Level C	639 ac.														
Level D	0 ac.														
Level E	0 ac.														
Level X	1,682 ac.														
140	D02	16	<p>Full capacity rangelands in unsatisfactory condition will be treated through development of improved allotment management plans. The treatment identified will include, but may not be limited to:</p> <ol style="list-style-type: none"> 1. Structural range improvements, and 2. correction of stocking problems, which includes reduction in permitted use where necessary. 												
140	D02	16	<p>Condition class of full capacity rangelands may decline during Period 1 but then will not decline further throughout the remainder of the planning horizon.</p> <table border="0"> <thead> <tr> <th>Condition</th> <th>Period 2</th> <th>Period 5</th> </tr> </thead> <tbody> <tr> <td>Satisfactory</td> <td>849 ac.</td> <td>1,552 ac.</td> </tr> <tr> <td>Unsatisfactory</td> <td>2,268 ac.</td> <td>1,565 ac.</td> </tr> </tbody> </table>	Condition	Period 2	Period 5	Satisfactory	849 ac.	1,552 ac.	Unsatisfactory	2,268 ac.	1,565 ac.			
Condition	Period 2	Period 5													
Satisfactory	849 ac.	1,552 ac.													
Unsatisfactory	2,268 ac.	1,565 ac.													
150	D05	16	<p>Construction and replacement of structural range improvements will be to standards identified in the Region 3 Range Structural Handbook. These will be directed toward improvements that correct management problems. Replacements are planned on a recurring basis of 20 to 30 years for waters and 40 years for fences.</p> <p>Maintenance of structural improvements will be scheduled on a planned basis that is defined in the allotment management plan or annual operating plan. Maintenance will continue until replacement is scheduled.</p>												
150	D05	16	<p>Structural range improvements will be constructed and/or replaced at the following rate:</p> <p>2.5 miles of fence per period in Periods 1 through 4 1 water per period in Periods 1 through 4</p>												

MANAGEMENT AREA 12
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines																						
			0.5 miles of pipeline per period in Periods 1 through 4 1 storage drinker per period in Periods 1 through 4																						
Recreation	010	A01	All	Manage for the following acreages of ROS classification: 8,965 acres-Primitive 12,369 acres-Semi-primitive Nonmotorized 11,268 acres-Semi-primitive Motorized 2,826 acres-Roaded Natural																					
	010, 050	A11, A13	All	Administer three developed sites at 200 PAOT capacity and maintain facilities to condition class 2.																					
	010, 050	A14, A15, B02, B03, L23	All	Perform annual trail maintenance as follows: <table style="margin-left: 40px;"> <thead> <tr> <th></th> <th colspan="2" style="text-align: center;"><u>Miles</u></th> </tr> <tr> <th></th> <th style="text-align: center;"><u>Level 1</u></th> <th style="text-align: center;"><u>Level 2-5</u></th> </tr> </thead> <tbody> <tr> <td>Period 1:</td> <td style="text-align: center;">9</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Period 2:</td> <td style="text-align: center;">11</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Period 3:</td> <td style="text-align: center;">13</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Period 4:</td> <td style="text-align: center;">13</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Period 5:</td> <td style="text-align: center;">14</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>		<u>Miles</u>			<u>Level 1</u>	<u>Level 2-5</u>	Period 1:	9	2	Period 2:	11	2	Period 3:	13	2	Period 4:	13	2	Period 5:	14	2
	<u>Miles</u>																								
	<u>Level 1</u>	<u>Level 2-5</u>																							
Period 1:	9	2																							
Period 2:	11	2																							
Period 3:	13	2																							
Period 4:	13	2																							
Period 5:	14	2																							
	010	A11, A13	16, 17	Use Forest Service personnel and Adopt-A-Trail volunteers for trail maintenance. Manage developed sites at design capacity. Provide at least Region 3 Reduced Service Management at all sites during all seasons when sites are open.																					
	010	A05	16	Construct developed sites at the following rate: Period 1-50 PAOT; Red Canyon Trailhead Period 2-50 PAOT; Cerro Blanco Trailhead 60 PAOT; Bear Trap CG Period 3-20 PAOT; Red Cloud CG Exp. Period 5-50 PAOT; Red Canyon CG																					
	010	A06	16, 17	Rehabilitate developed sites at the following rate: Period 1-135 PAOT Period 2-30 PAOT Period 3-15 PAOT																					

MANAGEMENT AREA 12
 (Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
010	A14, A15, L22	16	Period 4-50 PAOT Period 5-24 PAOT During Period 1, rehabilitate to condition class 1 all facilities for rehabilitation during that Period. Construct trail at the following rates: Period 1-1.5 miles Period 2-2.5 miles Period 3-1.25 miles Period 4-0.5 miles

MANAGEMENT AREA 12
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
				The following standards and guidelines only apply to acres identified as suitable for timber production.
Timber	160	E06	All	Plan, prepare and offer timber sales in accordance with silvicultural prescriptions and environmental analyses. Minimum harvest volume will be 800 bd.ft per acre on slopes less than 40 percent. Consider YUM yarding on all sales.
		E06, E07, C01	All	On 100 percent of the area leave existing snags with an objective of two snags/acre average and sufficient live culls for replacement with a minimum 12 inches d.b.h. and 15 foot height. No recruitment of snags. Maintain known and potential turkey roost trees with an objective of one group per 640 acres within ½ mile of water. Maintain 2 Abert's squirrel sites per 100 acres, except where basal area of trees over 8 inches d.b.h. is between 150 and 200 square feet per acre, then maintain 1 Abert's squirrel site per 100 acres. Abert's squirrel sites consist of at least 6 trees, 11 to 16 inches d.b.h. in a 1/20 acre group.
		E03, E06, C01	All	Silvicultural prescriptions will be primarily uneven-aged management. Where even-aged management is prescribed, a shelterwood regeneration system will be used in accordance with the following guidelines: <ol style="list-style-type: none"> 1. Precommercially thinning of young stands may be considered if needed to reduce insect susceptibility. 2. Intermediate commercial harvests at 20 year intervals to control for appropriate GSL. 3. First preparatory cut 20 years before rotation age. Remove 50 percent of overstory volume. 4. Seed cut at rotation age. Remove 65 percent of remaining volume. Site preparation, if needed by discing. 5. Final removal of all remaining overstory before regeneration reaches age 20. Plant if natural regeneration is inadequate for acceptable stocking. <p>Silvicultural examinations may indicate that the above ages and percentages need to be modified.</p> <p>Apply uneven age management where appropriate to achieve site specific resource needs.</p>

Decision Variables Activities Applicable Analysis Areas Standards and Guidelines

Manage for equal acreage distribution of age classes within the rotation period.

Age Classes for Rotation 120	Age Classes for Rotation 180
1-20	1-40
21-40	41-80
41-60	81-120
51-80	121-160
81-100	161-180
101-120	

Overstory Removal Guidelines

AA	Acres	Age of Existing O.S./U.S.	Period To Begin Removal of Existing O.S.	Removal Steps for Existing O.S.	Regeneration Rotation	GSL	Manage 5% for Old Growth
17	2,285 ^{1/}		1	1	180	30	Yes

1/ Overstory removed in one step to reduce basal area down to 30 square feet for water yield purposes. Cutting periods are 40 year intervals rather than the usual 20 year periods

Intermediate Harvest Guidelines

AA	Periods Scheduled for Intermediate Harvest	Acres/Period of Intermediate Harvest
	17	110

This leaves 6,594 acres in Analysis Area 16 and 5,829 acres in Analysis Area 17 that are not scheduled for any type of timber management activity. Because of potential insect and disease problems, it may be necessary at some point in time to schedule harvesting to control developing epidemic populations.

The acreages shown in this table will be identified during silvicultural examinations and sale area planning and will be made a part of the compartment records to ensure the desired red mix of treatments is implemented to achieve the intended results. Annually review progress towards achievement of mix and adjust outyear programs as needed.

The 5 percent old growth will be managed at

MANAGEMENT AREA 12
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
				150 GSL through age 80 for wildlife cover benefits. The old growth will also provide visual benefits.
Fire Management	350	P01-P04, P10	All	Control fires to prevent loss of public and private facilities.
	360	P15	All	Utilize prescribed fire to achieve resource objectives. Manage fire to maintain soil tolerance levels.
Insect and Disease Control	160	P34, E03	All	<p>Habitat requirements for threatened, endangered and sensitive species will take precedence over insect and disease control. Where there are no conflicts with TES species habitat requirements, all silvicultural examinations will integrate insect and disease considerations in the final stand prescriptions to maintain stand vigor and composition in resistant conditions. Special attention will be given to removal of mistletoe infected trees during intermediate and regeneration harvests.</p> <ol style="list-style-type: none"> 1. Dwarf Mistletoe - Remove infected overstories as soon as regeneration is accomplished. Thin understories to densities which will maximize fiber production over the length of the rotation, using yield simulation models as guides. Eliminate the mistletoe by clear-cutting (in conformance with Regional Standards for clear-cut size) and regenerate artificially when yield simulation models indicate that stands will not reach maturity because of mistletoe. 2. Spruce Beetle - Salvage windthrow spruce trees and treat accumulated slash. <ul style="list-style-type: none"> Reduce spruce. Fir type susceptibility from high risk to low risk by scheduling overmature stands for harvesting first. A low risk stand has the following characteristics: <ul style="list-style-type: none"> Avg. Dia. 12" B.A. 100 50% spruce in the canopy Treat spruce slash by removing all material over 6" in diameter. 3. Western Spruce Budworm - Susceptible mixed conifer stands are multi-storied, overmature stands with a high percentage of true fir.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			<p>Control of potential problems will be achieved through silvicultural treatments, if possible.</p> <p>Direct suppression, using insecticides, will be carried out during outbreaks when it is necessary to prevent or minimize stand damages. Suppression will receive priority consideration in areas where harvesting has or will be focused or accelerated.</p> <p>In the susceptible mixed conifer type, even-aged stands dominated by Douglas fir, ponderosa pine, and aspen will be created. This can be accomplished by:</p> <ul style="list-style-type: none">a. Patch cutting followed by site preparation, broadcast burning, and planting a mixture of ponderosa pine and Douglas fir.b. Regeneration cuts which retain a uniformly spaced overstory, composed principally of dominant and co-dominant Douglas fir. Advance regeneration is destroyed by tractor scarification or under burning. Regeneration is accomplished by planting ponderosa pine and Douglas fir. The overstory is removed as soon as the regeneration becomes established.c. Regeneration cuts which retain a mixture of species in the overstory. Dominant and co-dominant, mistletoe free or lightly infested trees are used for seed trees; advance reproduction will be protected during site preparation, and will be supplemented by natural seed fall.d. Removal of all trees larger than sapling size. Advance regeneration to be protected during logging activities. Supplemental planting of ponderosa pine and Douglas fir on all disturbed understock areas. <p>When pesticides are used for pest control, project plans will contain appropriate and necessary monitoring procedures and mitigation measures.</p> <p>Monitor and report insect and disease conditions on a continuing basis and initiate appropriate control methods in early stages of potential outbreaks.</p>

MANAGEMENT AREA 12
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Wildlife	110	C01, C03, C06, C12,306		Construct/reconstruct structural and nonstructural wildlife habitat improvements to provide habitat enhancement and insure diversity for the following management indicator species and major game species: Hairy Woodpecker Yellow Bellied Sapsucker Mule Deer Elk Wildlife Waters
			16	Construct one water development in Periods 1-2.
			17	Construct one water development in Periods 1-3.
			16, 17	Reconstruct waters every 40 years.
	080	C09	16, 17	Maintain water developments annually.
	080	C12	16, 17	Cooperate with New Mexico Game and Fish in stabilizing the Rocky Mountain Bighorn sheep population to goals established in New Mexico Game and Fish Department Comprehensive Plan. Bighorn sheep occur only in portions of analysis area located in the Manzano Mountains.
Lands and Minerals	420	J01	17	Designate Gallinas Peak as an electronic site, 5 acres in Period 1.
			17	Designate West Turkey Cone as an electronic site, 50 acres in Period 1.
	270, 280	G01	17	Withdraw the following electronic sites from mineral location in Period 1: Gallinas Peak 60 acres West Turkey Cone 80 acres
Transportation/ Travel	010, 470	L19	All	
	010, 110, 230	A03, C03, F01		
		K03	16	
		L03	17	

MANAGEMENT AREA 12
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines																																								
010	L21	16	<p>Perform trail preconstruction engineering at the following rate:</p> <p>Period 1-1.5 miles Period 2-2.5 miles Period 3-0.5 miles Period 4-0.5 miles</p>																																								
010 160 480	L01-L13 L14, L29	16 17	<p>Perform road preconstruction and construction engineering (timber program) at the following rate:</p> <table border="1"> <thead> <tr> <th colspan="5">Period/Miles</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>20</td> <td>0</td> <td>10</td> <td>0</td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>200</td> </tr> </tbody> </table> <p>Construct and/or reconstruct timber purchaser roads to FSM standards at the following rate:</p> <table border="1"> <thead> <tr> <th colspan="5">Period/Miles</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>20</td> <td>0</td> <td>10</td> <td>0</td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>200</td> </tr> </tbody> </table>	Period/Miles					1	2	3	4	5	0	20	0	10	0	0	0	0	0	200	Period/Miles					1	2	3	4	5	0	20	0	10	0	0	0	0	0	200
Period/Miles																																											
1	2	3	4	5																																							
0	20	0	10	0																																							
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Period/Miles																																											
1	2	3	4	5																																							
0	20	0	10	0																																							
0	0	0	0	200																																							
160	L14, L29	17	<p>Construct local roads to 12-foot width for timber sales. Fourteen foot wide roads will be required in areas having slopes greater than 40 percent where cable logging will occur.</p>																																								

MANAGEMENT AREA 13

Description: The 215,552 acre management area occurs on the Mountainair (7,845 acres), Mt. Taylor (60,465 acres), and Magdalena (147,242 acres) Ranger Districts. Seventy-seven percent of the area has slopes in excess of 40 percent and this steep topography effectively isolates the areas with more gentle slopes.

Vegetation types are varied with 69,339 acres (32%) in grassland and shrubs, 113,316 acres (53%) in pinyon-juniper, 27,297 acres (13%) in coniferous and deciduous forest, and 111 acres of riparian.

The area has three developed recreation sites. There is no rangeland classed as full capacity.

Analysis Area(s) 18

Management Emphasis: The primary emphasis is on wildlife management activities. Wildlife habitat carrying capacity will increase through structural and nonstructural improvements. Firewood will be provided as a result of wildlife management practices.

Existing developed recreation sites will be maintained.

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Range	150	D05	All	Construction of new and replacement of structural range improvements will be to standards identified in the Range structural Handbook. They will be directed toward improvements that correct management problems. Replacement of structural improvements is planned on a recurring basis of 20-30 years for waters and 40 years for fences. Maintenance of structural improvements will be scheduled on a planned basis that is defined in the allotment management plan or annual operating plans. Maintenance will continue until replacement is scheduled.
Recreation	010	A01	18	Manage for the following acreages of ROS classifications: 105,887 acres-Semi-primitive Nonmotorized 82,423 acres-Semi-primitive Motorized

MANAGEMENT AREA 13
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines																		
			27,242 acres-Roaded Natural																		
010	A03	18	Manage for the following acres of Visual Quality Objectives: 5,120 acres-Retention 49,479 acres-Partial Retention 180,963 acres-Modification																		
010	A14, A15, C01, F01	18																			
010	A11, A13	18	Administer 3 developed sites at 155 PAOT capacity and maintain facilities to condition class 2.																		
010	A11, A13	18	Manage sites to design capacity. Provide at least Region 3 Reduced Service Management at all developed sites when sites are open.																		
010, 050	A14, A15, L23	18	Perform annual trail maintenance as follows: <u>Miles</u> <table border="0"> <thead> <tr> <th></th> <th><u>Level 1</u></th> <th><u>Level 2-5</u></th> </tr> </thead> <tbody> <tr> <td>Period 1:</td> <td>22</td> <td>4</td> </tr> <tr> <td>Period 2:</td> <td>22</td> <td>4</td> </tr> <tr> <td>Period 3:</td> <td>24</td> <td>4</td> </tr> <tr> <td>Period 4:</td> <td>24</td> <td>4</td> </tr> <tr> <td>Period 5:</td> <td>24</td> <td>4</td> </tr> </tbody> </table> Use Forest Service personnel and Adopt-A-Trail volunteers for trail maintenance.		<u>Level 1</u>	<u>Level 2-5</u>	Period 1:	22	4	Period 2:	22	4	Period 3:	24	4	Period 4:	24	4	Period 5:	24	4
	<u>Level 1</u>	<u>Level 2-5</u>																			
Period 1:	22	4																			
Period 2:	22	4																			
Period 3:	24	4																			
Period 4:	24	4																			
Period 5:	24	4																			
010	A06	18	Rehabilitate developed sites at the following rate: Period 1-125 PAOT Period 5- 33 PAOT During Period 1, rehabilitate to condition class 1 all facilities scheduled for rehabilitation during that Period.																		
010	L01	18	Plan Continental Divide Trail on or near divide. Activities of other resources will be subordinate to VQOs and landscape plan within 600 foot wide corridor. Construct trail at the following rate: Period 3-2 miles																		

MANAGEMENT AREA 13
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	010	A14, A15, L22	18	Reconstruct trails at the following rate: Period 1-0.9 miles Period 2-1.9 miles
	010	L22	18	Construct trailheads at the following rate: Period 1-50 PAOT; Capilla Period 2-50 PAOT; Monte Largo
Timber	160	E06	18	Manage pinyon-juniper woodlands on areas with less than 15 percent slope on a sustained yield basis with a 180 year rotation. Regenerate through natural seeding by leaving 10 to 12 vigorous cone bearing trees per acre. Control volume cut by acres per period.
		C01		In those areas that are harvested for

MANAGEMENT AREA 13
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
				firewood for wildlife benefit, leave the following in the openings: 1) Cavity excavated trees 2) Large open crowned cone bearing pinyon 3) Alligator juniper 4) Shrubs 5) Oak Emphasize openings on existing and potential big game winter range. Retain cover on north and east exposures. Leave 2 slash piles per acre at least 6 feet in diameter and 4 feet high within ½ mile of water. Design treatment for high edge contrast with an edge to area ratio of 1.4:1.
Fire Management	350	P01-P04, P10	18	Control fires to prevent loss of public and private facilities.
	360	P15	18	Utilize prescribed fire to achieve resource objectives. Manage fire to maintain soil tolerance levels.
Watershed	230	P05, K05	18	
	230, 110	P05, C03	18	

MANAGEMENT AREA 13
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Wildlife	110	C01, C03, C06, C12, 306		Construct/reconstruct structural and nonstructural wildlife habitat improvements to provide habitat enhancement and insure diversity for the following management indicator species and major game species: Mule deer Elk Merriam's turkey Wildlife Water/Protection Fencing
			18	Construct 13 water developments per period in Periods 1-4.
			18	Reconstruct waters and fencing every 40 years. Prescribed Burning
			18	Utilize prescribed fire as a tool to maintain productivity of Mt. Shrub, Gambel Oak, and other shrub vegetation associations.
	080	C09	18	Maintain all water developments and fences annually.
	080	C12	18	Cooperate with New Mexico Game and Fish in stabilizing the Rock Mountain Bighorn sheep population to goals established in New Mexico Game and Fish Department Comprehensive Plan. Bighorn sheep only occur in portions of analysis area located in the Manzano Mountains.
Lands and Minerals	420	J01	18	Designate Capilla Peak as an electronic site, 42 acres in Period 1.
			18	Designate La Mosca #2 as an electronic site, 33 acres in Period 1. Designate Wingate Ridge as an electronic site, 10 acres in Period 1.
	270, 280	G01	18	Withdraw the following electronic sites from mineral location in Period 1: Capilla-120 acres La Mosca #2-60 acres Wingate Ridge-40 acres
Transportation/ Travel	010, 110	A03, C03	18	

MANAGEMENT AREA 13
 (Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
230	F01, K03, L01		
010, 160, 470	L19	18	
		18	

MANAGEMENT AREA 14

Description: This 236,185 acre management area is located on the Mt. Taylor Ranger District. Slopes are less than 40 percent.

Vegetation types are: 1) Grama grassland/shrub-67,929 acres (29 percent), 2) pinyon-juniper-125,839 acres (53 percent), 3) coniferous forest-41,033 acres (17 percent), and 4) 1,384 acres of riparian area.

There are two developed recreation sites.

There are 231,176 acres of full capacity rangeland and 5,009 acres of potential capacity range in the management area. Nearly 47,479 acres of the full capacity range are in satisfactory condition.

Analysis Area(s) 19, 20, 21, 22

Management Emphasis: Pinyon-juniper will be managed for personal use and commercial firewood. Grazing use will be balanced with capacity. Wildlife habitat will be enhanced through structural and nonstructural improvements and from integrating range and firewood management activities with wildlife habitat needs. Zuni Bluehead Sucker habitat will be protected. Maintenance and protection of sensitive soils is an important management objective.

Existing developed recreation sites will be maintained. Developed site capacity will increase slightly through construction/rehabilitation of recreational facilities. Trail maintenance and construction are planned.

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Range	140	D02	All	Manage rangelands at or above the following intensity levels in Period 1: Level A 5,344 ac. Level B 100,161 ac. Level C 12,238 ac. Level D 22,275 ac.

MANAGEMENT AREA 14
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines									
			Level E 12,800 ac. Level X 83,367 ac.									
140	D02	All	Adjustments will occur during Periods 2-4 so that by Period 5 management of suitable rangelands will be at or above the following intensity levels: Level A 1,379 ac. Level B 153,576 ac. Level C 4,706 ac. Level D 19,355 ac. Level E 56,300 ac. Level X 869 ac.									
140	D02	All	Full capacity rangelands in unsatisfactory conditions will be treated through development of allotment management plans that intensity livestock management. The treatment identified will include, but not be limited to: <ol style="list-style-type: none"> 1. structural range improvements, 2. non-structural range improvements, and 3. correction of stocking problems, which includes reduction in permitted use where necessary. 									
140	D02	All	Condition class of full capacity range will not decline below existing levels during Period 1. During Periods 2 through 5 vegetation condition class will improve as stocking and management corrections are made. <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>Condition</th> <th>Period 2</th> <th>Period 5</th> </tr> </thead> <tbody> <tr> <td>Satisfactory</td> <td>47,479 ac.</td> <td>104,425 ac.</td> </tr> <tr> <td>Unsatisfactory</td> <td>183,697 ac.</td> <td>126,751 ac.</td> </tr> </tbody> </table>	Condition	Period 2	Period 5	Satisfactory	47,479 ac.	104,425 ac.	Unsatisfactory	183,697 ac.	126,751 ac.
Condition	Period 2	Period 5										
Satisfactory	47,479 ac.	104,425 ac.										
Unsatisfactory	183,697 ac.	126,751 ac.										
150	D05	All	Construction of new and replacement of structural range improvements will be to standards identified in the Range Structural Handbook. They will be directed toward improvements that correct management problems. Replacement of structural improvements is planned on a recurring basis of 20-30 years for waters and 40 years for fences. Maintenance of structural improvements will be scheduled on a planned basis that is defined in the allotment management plan or annual operating plans. Maintenance will continue until replacement is scheduled.									

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			<p>Non-structural range improvements will be accomplished on slopes less than 15% with moderate to high productivity potential. Overstory removal of pinyon/juniper, rabbit brush control, and shinnery oak control will occur where an increase in the forage base for livestock and wildfire can be achieved. Seeding where necessary will be included. Non-structural range improvements will be accomplished in Periods 1 & 2. Retreatment of sites treated in Periods 1 & 2 will be accomplished as necessary. Where applicable, pinyon/juniper treatments occurring in Periods 1 & 2 will be scheduled for retreatment every two decades after the initial treatment.</p> <p>Tools available are prescribed burning, mechanical and chemical treatments, forest product harvesting, and livestock management or a combination of these. Tool selection will be based on cost effectiveness and soil conditions. The following guidelines are offered in determining the treatment tool in pinyon/juniper overstory modification:</p> <p>Where herbicide treatment is the selected tool for treatment:</p> <p>Individual tree: 40-150 trees per acre, 80% of trees less than 6 feet tall. Broadcast: 150+ trees per acre, 50-80% of trees less than 6 feet tall.</p> <p>Where prescribed fire is the selected tool for treatment:</p> <p>Tree density and crown cover are not factors. No more than 10% of the stand is over 8 feet tall.</p> <p>Where harvest of forest products is the selected tool for treatment:</p> <p>Firewood: Tree density and crown cover are not factors. Tree height is 80% over 8 feet tall. Vehicle access is available.</p> <p>Other Forest Products: Tree height is 80% under 6 feet tall. Tree crown density is under 50%. Vehicle access is available.</p> <p>Retreatment of pinyon/juniper overstory removal which occurs in Periods 1 & 2 or which occurred in 1950-1970 decades will be done where:</p>

MANAGEMENT AREA 14
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			<p>1. The objective for the area is to maintain an open savanna grassland to provide a continual forage base for livestock and wildlife and improve watershed condition.</p> <p>2. Retreatment can be scheduled 5 years prior to losing the original investment. When a decision is reached not to retreat areas of pinyon/juniper overstory removal, the site will be allowed to return to a stocked stand.</p> <p>3. Diversity of the pinyon/juniper vegetation type is maintained on the allotment.</p>
150	D05	19	<p>Structural range improvements will be constructed/replaced at the following rate:</p> <p>11 miles of fence per period in Periods 1 through 4 6 water per period in Periods 1 through 4 6 storage-drinkers per period in Periods 1 through 4 4 miles of pipeline per period in Periods 1 through 4</p>
150	D03	19	<p>Nonstructural range improvements will be accompanied at the following rate:</p> <p>312 acres of pinyon-juniper overstory removal per period in Periods 1 and 2</p> <p>1,560 acres of brush control and/or reseeding per period in Periods 1 and 2. Approximately 520 acres of rabbit brush will be treated per period.</p>
150	D05	20	<p>Structural range improvements will be constructed and/or replaced at the following rate:</p> <p>5 miles of fence per period in Periods 1 through 4 17 water per period in Periods 1 through 4 13 storage-drinkers per period in Periods 1 through 4 6.5 miles of pipeline per period in Periods 1 through 4</p>

MANAGEMENT AREA 14
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
150	D03	20	<p>Nonstructural range improvements will be accomplished at the following rate:</p> <p>400 acres of pinyon-juniper overstory removal per period in Periods 1 and 2 475 acres of brush control and/or reseeding per period in Periods 1 and 2. Approximately 158 acres of rabbit brush will be treated per period</p>
150	D05	21	<p>Structural range improvements will be constructed and/or replaced at the following rate:</p> <p>30 miles of fence per period in Periods 1 through 4 16 waters per period in Periods 1 through 4 19 storage-drinkers per period in Periods 1 through 4 11.5 miles of pipeline per period in Periods 1 through 4</p>
150	D03	21	<p>Nonstructural range improvements will be accomplished at the following rate:</p> <p>1,166 acres of pinyon-juniper overstory removal per period in Periods 1 and 2 3,600 acres of brush control and/or reseeding per period in Periods 1 and 2. Approximately 1,200 acres of rabbit brush will be treated per period.</p>
150	D05 D03	21	<p>Sixty acres of riparian habitat in low or moderately low condition will be treated per period during Periods 1 and 2.</p>
150	D05	22	<p>Structural range improvements will be constructed and/or replaced at the following rate:</p> <p>4.5 miles of fence per period in Periods 1 through 4 3 waters per period in Periods 1 through 4 3 storage-drinkers per period in Periods 1 through 4 1.5 miles of pipeline per period in Periods 1 through 4</p>
150	D03	22	<p>Nonstructural range improvements will be accomplished at the following rate:</p> <p>58 acres of pinyon-juniper overstory removal per period in Periods 1 and 2 313 acres of brush control and/or reseeding per period in Periods 1 and 2. Approximately 100 acres of rabbit brush will be treated per period.</p>
150	D05	22	<p>Fifty-three acres of riparian habitat in</p>

MANAGEMENT AREA 14
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines																		
	D03		low or moderately low condition will be treated per period during Periods 1 and 2.																		
220	254	19	File for one water right per period in Periods 1-4.																		
220	254	20	File for one water right per period in Periods 1-4.																		
220	254	21	File for five water rights per period in Periods 1-4.																		
220	254	22	File for two water rights per period in Periods 1-4.																		
Recreation	010	A01	All Manage for the following acreages of ROS classifications: 36,337 acres—Semi-Primitive Nonmotorized 157,104 acres—Semi-Primitive Motorized 42,744 acres—Roaded Natural																		
	010	A03	All Manage for the following acres of Visual Quality Objectives: 8,019 acres—Retention 19,174 acres—Partial Retention 208,992 acres—Modification																		
	010	A14 A15 C01 F01	19, 20																		
	010	A11 A13	20 Administer one fee site with a 100 PAOT capacity and maintain facilities to condition class 2.																		
	010	A14 A15 L23	20, 21, 22 Perform annual trail maintenance as follows: <u>Miles</u> <table border="1"> <thead> <tr> <th></th> <th><u>Level 1</u></th> <th><u>Levels 2-5</u></th> </tr> </thead> <tbody> <tr> <td>Period 1:</td> <td>1</td> <td>4</td> </tr> <tr> <td>Period 2:</td> <td>5</td> <td>3</td> </tr> <tr> <td>Period 3:</td> <td>8</td> <td>2</td> </tr> <tr> <td>Period 4:</td> <td>8</td> <td>2</td> </tr> <tr> <td>Period 5:</td> <td>8</td> <td>2</td> </tr> </tbody> </table> Use Forest Service personnel and Adopt-A-Trail volunteers for trail maintenance.		<u>Level 1</u>	<u>Levels 2-5</u>	Period 1:	1	4	Period 2:	5	3	Period 3:	8	2	Period 4:	8	2	Period 5:	8	2
	<u>Level 1</u>	<u>Levels 2-5</u>																			
Period 1:	1	4																			
Period 2:	5	3																			
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Period 4:	8	2																			
Period 5:	8	2																			

MANAGEMENT AREA 14
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	010	A06	20, 21	<p>Rehabilitate existing developed sites at the following rate:</p> <p>Period 1-385 PAOT; Coal Mine CG, Lobo Canyon CG, McGaffey PG. Period 3-385 PAOT Period 5-300 PAOT</p> <p>During Period 1, rehabilitate to condition class 1 all facilities scheduled for rehabilitation during that Period.</p>
	010	A05	21	<p>Construct developed sites at the following rate:</p> <p>Period 5-125 PAOT</p>
	010	A14, A15, L22	20	<p>Perform trail construction at the following rate:</p> <p>Period 1-Guadalupe Rim; 3 miles Period 2-Guadalupe Rim; 2 miles</p>
	010	A11, A13	20, 21	<p>Manage existing sites to design capacity</p> <p>Provide at least Region 3 Reduced Service Management at all developed sites during all seasons when sites are open.</p>
	010	A11	20	Provide a host at all fee campgrounds
	010	A05	21	Construct two parking areas in Bluewater Canyon for 300 PAOT in Period 1.
Timber	160	E06, E07	All	<p>Manage pinyon-juniper woodlands on slopes less than 15 percent on a sustained yield basis with a 180 year rotation. Regenerate through natural seeding by leaving 10-12 vigorous cone bearing trees per acre.</p> <p>479</p> <p>Free use firewood will be restricted to dead and down material in designated areas and will be administered through a permit system.</p> <p>C01</p> <p>In those areas that are harvested for firewood for wildlife benefit, leave the following in the openings:</p> <ol style="list-style-type: none"> 1. Cavity excavated trees 2. Large open crowned cone bearing pinyon 3. Alligator juniper 4. Shrubs 5. Oak

Amended 1-9-87

MANAGEMENT AREA 14
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines																														
160	E06, E07, C01, D02	All	<p>Create openings on existing and potential big game winter range. Retain cover on north and east exposures. Leave two slash piles per acre at least 6-feet in diameter and 4-feet high within ½ mile of water. Design treatment for high edge contrast with an edge to area ratio of 1.4:1.</p> <p>Period 1:</p> <p>All green firewood harvests will be supplied from those woodland areas designated for range improvement and wildlife habitat improvement openings. Those areas will be opened to the public and commercial operations to remove the suitable firewood prior to other range and wildlife treatments.</p> <p>Guidelines are as follows on a period basis:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="5" style="text-align: center;">Acres</th> </tr> <tr> <th style="border-top: 1px solid black;">AA</th> <th style="border-top: 1px solid black;">Range</th> <th style="border-top: 1px solid black;">Wildlife</th> <th style="border-top: 1px solid black;">Total</th> <th style="border-top: 1px solid black;">MBF</th> </tr> </thead> <tbody> <tr> <td>19</td> <td>312</td> <td>36</td> <td>348</td> <td>696</td> </tr> <tr> <td>20</td> <td>400</td> <td>814</td> <td>1,214</td> <td>2,428</td> </tr> <tr> <td>21</td> <td>1,166</td> <td>1</td> <td>1,167</td> <td>2,334</td> </tr> <tr> <td>22</td> <td>58</td> <td>121</td> <td>179</td> <td>358</td> </tr> </tbody> </table>	Acres					AA	Range	Wildlife	Total	MBF	19	312	36	348	696	20	400	814	1,214	2,428	21	1,166	1	1,167	2,334	22	58	121	179	358
Acres																																	
AA	Range	Wildlife	Total	MBF																													
19	312	36	348	696																													
20	400	814	1,214	2,428																													
21	1,166	1	1,167	2,334																													
22	58	121	179	358																													
Fire Management	350	P01-P04, P10	All	Control fires to prevent loss of public and private facilities.																													

MANAGEMENT AREA 14
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	360	F15	All	Utilize prescribed fire to achieve resource objectives. Manage fire to maintain soil tolerance levels.
Watershed	230	F05, K05	20, 22	<p>The use of direct investment and management changes will be used in watershed projects. Direct watershed treatments will be applied on lands suitable for revegetation with slopes less than 40 percent where current range condition is poor or very poor. This treatment is being applied to improve watershed condition and reduce soil loss. It may consist of water spreading, shaping, and/or seeding and will conform to accepted methods.</p> <p>Indirect methods will also be applied to watersheds to improve effective ground cover. These may consist of controlling impacts through management by allocating grazing capacity to only moderately high or high condition range. 32,232 acres will be treated per period in Periods 1 and 2 on Mt. Taylor.</p> <p>380 acres will be treated per period in periods 1 and 2 in the Zuni Mountains.</p>
	230	F05	22	<p>Riparian treatments will be applied to areas of low to moderately low condition. This treatment may consist of protection fencing and seeding and/or plantings. These treatments are being applied to improve watershed condition and water quality by reducing direct sedimentation.</p> <p>Treat 10.4 acres per period in Periods 1 and 2.</p>
	230	F05, K05	All	<p>Road management will be applied to obliterate poorly located or poorly constructed roadways. This treatment is being applied to improve watershed condition and reduce soil loss. Management will take the form of standard roadway prescriptions for obliteration and use of gates for seasonal and temporary closure.</p> <p>Obliterate roads at following rates:</p> <p>354.9 miles of local roads in Period 1</p>
Wildlife	110	C01, C03, C06, C12, 306		Construct/reconstruct structural and nonstructural wildlife habitat improvements to provide habitat enhancement and ensure diversity for the following management indicator species and major game species on the Zuni Mountain portion of the Mt. Taylor Ranger District:

MANAGEMENT AREA 14
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			House Wren Merriams Turkey Mule Deer Plain Titmouse
			On the balance of the Mt. Taylor District construct/reconstruct structural and nonstructural wildlife habitat improvements to provide habitat enhancement and ensure diversity for the following management indicator species and major game species:
			House Wren Merriams Turkey Mule Deer Elk Plain Titmouse
			Wildlife Water
		19	Construct five water developments per period in Periods 1 through 4.
		20	Construct 17 water developments per period in Periods 1 through 4.
		21	Construct one water development per period in Periods 1 through 4.
		22	Construct four water developments per period in Periods 1 through 4.
		All	Reconstruct water developments every 40 years.
080	C09	All	Maintain all water developments annually. Opening creation, planting, interseeding and fencing.
110	C01-C03, C12 E06, E07	All	Utilize slash created from canopy removal to provide ground cover. Lop and scatter slash in these areas to a one foot height. Interseed or plant as needed. Give priority to game winter range.
		19	Create and interseed/plant 36 acres per period in Periods 1-4.
		20	Create and interseed/plant 832 acres per period in Periods 1-4.
		21	Create and interseed/plant one acres per period in Periods 1-4.
		22	Create and interseed/plant 121 acres per period in Periods 1-4.

MANAGEMENT AREA 14
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
		All	Construct 10 acres per period of protection fencing for seeded/planted openings on winter game range in Periods 1-3.
080	C09	All	Maintain fencing and seeded/planted openings annually.
120 230 140	C01 C07 F05 D05	21	Complete protection fencing of habitat occupied by Zuni Bluehead Sucker in Radosevich Creek. Stream having potential to provide habitat for Zuni Bluehead sucker (e.g., Tampico Draw, Dean Creek, Grasshopper Creek and others) may also be fenced to restore riparian vegetation and perennial water. Fencing will be built in accordance with standards established in the range handbook. Fencing will be coordinated with watershed and range riparian restoration work. Fence three acres with wildlife funds and 70 acres with range and watershed funds. Work will be completed within first three years following plan implementation.
080	C11	21	Maintain fencing annually.
080	C10	21	Activities having a detrimental effect on sucker habitat will be modified so as not to impact the species. The existing livestock may be permitted to graze within the fenced areas if this is determined not to have a detrimental impact on the Zuni Bluehead sucker habitat.
420	J13	21	Efforts will be made to acquire private lands containing existing or potential Zuni Bluehead sucker habitat.
080	C01	21	Actions identified in the Zuni Bluehead sucker Habitat Management Plan will be carried out. The Zuni Bluehead sucker Habitat Management Plan will be updated by 1985 to incorporate new knowledge regarding the species and its habitat.
080	C01	21	Determine limiting factors of Zuni Bluehead Sucker habitat and prescribe actions to reduce their effects.
080	C12	21	Assist New Mexico Department of Game and Fish in carrying out transplant operations to establish or supplement Zuni Bluehead Sucker populations.
Transportation/ Travel	L19	20	Maintain roads to levels 3, 4, and 5 in developed recreation sites.

MANAGEMENT AREA 14
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
010	A03		
230	F01, K03, L01	19, 20 21 22	
010	L21	20	Perform trail preconstruction at the following rates: Period 1-3 mi. Period 2-2 mi.
010, 160, 470	L19	19 20 21 22	Maintain Forest System roads at the following rate. Maintain roads to levels 3, 4, and 5. 16 miles per period in all periods 34 miles per period in all periods 170 miles per period in all periods 4 miles per period in all periods
010, 470	L19	All	Perform road maintenance along 355 miles of Forest System road per period in all periods. Maintain roads to level 2.

MANAGEMENT AREA 15

Description: This 118,723 acre management area is located on the Mountainair Ranger District. Slopes are less than 40 percent.

Vegetation types are: 1) grama grassland/shrub-26,670 acres (34 percent), 2) pinyon-juniper-76,191 acres (64 percent), 3) 2,033 acres (2 percent) coniferous forest, and 4) 298 acres riparian.

There are three developed recreation sites.

There are 116,882 acres of full capacity rangeland and 1,707 acres of potential capacity range in the management area. Nearly 2,817 acres of the full capacity range are in satisfactory condition.

Analysis Area(s) 23, 24

Management Emphasis: Emphasis is on range and wildfire management activities which will increase both grazing capacity and wildfire habitat capacity. Firewood management will be integrated with range and wildlife needs.

Developed site capacity will be increased through construction of additional recreation facilities. New trailheads will benefit dispersed recreation. Developed site and trailhead construction will provide alternative camping and group site opportunities near the Albuquerque metropolitan area.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Range	140	D02	All
			Manage rangelands at or above the following intensity levels in Period 1:
			Level A 663 ac.
			Level B 17,598 ac.
			Level C 25,379 ac.
			Level D 34,201 ac.
			Level E 7,200 ac.
			Level X 33,488 ac.

MANAGEMENT AREA 15
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines												
140	D02	All	<p>Adjustments will occur during Periods 2-4 so that by Period 5 management of rangelands will be at or above the following intensity levels:</p> <table> <tr> <td>Level A</td> <td>663 ac.</td> </tr> <tr> <td>Level B</td> <td>44,594 ac.</td> </tr> <tr> <td>Level C</td> <td>15,113 ac.</td> </tr> <tr> <td>Level D</td> <td>16,069 ac.</td> </tr> <tr> <td>Level E</td> <td>35,600 ac.</td> </tr> <tr> <td>Level X</td> <td>6,490 ac.</td> </tr> </table>	Level A	663 ac.	Level B	44,594 ac.	Level C	15,113 ac.	Level D	16,069 ac.	Level E	35,600 ac.	Level X	6,490 ac.
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Level B	44,594 ac.														
Level C	15,113 ac.														
Level D	16,069 ac.														
Level E	35,600 ac.														
Level X	6,490 ac.														
140	D02	All	<p>Full capacity rangelands in unsatisfactory conditions will be treated through development of allotment management plans that intensify livestock management. The treatment identified will include, but not be limited to:</p> <ol style="list-style-type: none"> 1. structural range improvements, 2. non-structural range improvements, and 3. correction of stocking problems, which includes reduction in permitted use where necessary 												
140	D02	All	<p>Condition class of full capacity rangelands will not decline below existing levels during Period 1. During Periods 2 through 5 vegetation condition class will improve as stocking and management corrections are made.</p> <table> <thead> <tr> <th>Condition</th> <th>Period 2</th> <th>Period 5</th> </tr> </thead> <tbody> <tr> <td>Satisfactory</td> <td>2,817 ac.</td> <td>38,219 ac.</td> </tr> <tr> <td>Unsatisfactory</td> <td>114,065 ac.</td> <td>78,663 ac.</td> </tr> </tbody> </table>	Condition	Period 2	Period 5	Satisfactory	2,817 ac.	38,219 ac.	Unsatisfactory	114,065 ac.	78,663 ac.			
Condition	Period 2	Period 5													
Satisfactory	2,817 ac.	38,219 ac.													
Unsatisfactory	114,065 ac.	78,663 ac.													
150	D05	All	<p>Construction of new and replacement of structural range improvements will be to standards identified in the R-3 Range Structural Handbook. They will be directed toward improvements that correct management problems. Replacement of structural improvements is planned on a recurring basis of 20-30 years for waters and 40 years for fences.</p> <p>Maintenance of structural improvements will be scheduled on a planned basis that is defined in the allotment management plan or annual operating plans. Maintenance will continue until replacement is scheduled.</p>												

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
150	D03	All	<p>Non-structural range improvements will be accomplished on slopes less than 15% with moderate to high productivity potential. Overstory removal of pinyon/juniper, rabbit brush control, and shinnery oak control will occur where an increase in the forage base for livestock and wildlife can be achieved. Seeding where necessary will be included. Non-structural range improvements will be accomplished in Periods 1 & 2. Retreatment of sites treated in Periods 1 & 2 will be accomplished as necessary. Where applicable, pinyon/juniper treatments occurring in Periods 1 & 2 will be scheduled for retreatment every two decades after the initial treatment.</p> <p>Tools available are prescribed burning, mechanical and chemical treatments, forest product harvesting, and livestock management or a combination of these. Tool selection will be based on cost effectiveness and soil conditions. The following guidelines are offered in determining the treatment tool in pinyon/juniper overstory modification:</p> <p>Where herbicide treatment is the selected tool for treatment:</p> <p style="padding-left: 40px;">Individual tree: 40-150 trees per acre, 80% of trees less than 6 feet tall. Broadcast: 150+ trees per acre, 50-80% of trees less than 6 feet tall.</p> <p>Where prescribed fire is the selected tool for treatment:</p> <p style="padding-left: 40px;">Tree density and crown cover are not factors. No more than 10% of the stand is over 8 feet tall.</p> <p>Where harvest of forest products is the selected tool for treatment:</p> <p style="padding-left: 40px;">Firewood: Tree density and crown cover are not factors. Tree height is 80% over 8 feet tall. Vehicle access is available.</p> <p style="padding-left: 40px;">Other Forest Products: Tree height is 80% under 6 feet tall. Tree crown density is under 50%. Vehicle access is available.</p> <p>Retreatment of pinyon/juniper overstory removal which occurs in Periods 1 & 2 or which occurred in 1950-1970 decades will be done where:</p>

MANAGEMENT AREA 15
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			<ol style="list-style-type: none"> 1. The objective for the area is to maintain an open savanna grassland to provide a continual forage base for livestock and wildlife and improve watershed condition. 2. Retreatment can be scheduled 5 years prior to losing the original investment. When a decision is reached not to retreat areas of pinyon/juniper overstory removal, the site will be allowed to return to a stocked stand. 3. Diversity of the pinyon/juniper vegetation type is maintained on the allotment.
150	D05	23	<p>Structural range improvements will be constructed/replaced at the following rate:</p> <ul style="list-style-type: none"> 17.9 miles of fence per period in Periods 1 through 4 10 water per period in Periods 1 through 4 12 storage-drinkers per period in Periods 1 through 4 6.9 miles of pipeline per period in Periods 1 through 4
150	D03	23	<p>Nonstructural range improvements will be accomplished at the following rate:</p> <ul style="list-style-type: none"> 1,360 acres of pinyon/juniper overstory removal in Period 1 5,161 acres of brush control and/or reseeding per period in Periods 1 and 2. Approximately 1,200 acres of rabbit brush will be treated per period.
150	D05, D03	23	<p>Sixty-one acres of riparian habitat in low or moderately low condition will be treated per period during Periods 1 and 2.</p>
150	D05	24	<p>Structural range improvements will be constructed and/or replaced at the following rate:</p> <ul style="list-style-type: none"> 21.3 miles of fence per period in Periods 1 through 4 11 waters per period in Periods 1 through 4 11 storage-drinkers per period in Periods 1 through 4

MANAGEMENT AREA 15
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
				6.6 miles of pipeline per period in Periods 1 through 4
	150	D03	24	Nonstructural range improvements will be accompanied at the following rate: 1,550 acres of pinyon-juniper overstory removal in Period 1. 1,444 acres of brush control and/or reseeding per period in Periods 1 and 2. Approximately 483 acres of rabbit brush will be treated per period.
	150	D05, D03	24	Four acres of riparian habitat in low or moderately low condition will be treated per period during Periods 1 and 2.
	220	254	23	File for two water rights per period in Periods 1-4.
	220	254	24	File for 4 water rights per period in Periods 1-4.
Recreation	010	A01	All	Manage for the following acreages of ROS classification: 35,184 acres—Semi-primitive Nonmotorized 58,221 acres—Semi-primitive Motorized 25,318 acres—Roaded Natural
	010	A03	All	Manage for the following acres of Visual Quality Objectives: 2,105 acres—Retention 23,199 acres—Partial Retention 25,318 acres—Modification
	010	A11, A13	23	Administer three developed sites at a 170 PAOT capacity and maintain facilities to condition class 2.
	010	A11, A13	23	Manage developed sites to design capacity. Provide at least Region 3 Reduced Service Management at all developed sites when sites are open.
	010	A06	23	Rehabilitate developed sites at the following rate: Period 1—105 PAOT Period 2— 56 PAOT Period 3— 60 PAOT During Period 1, rehabilitate to condition class 1 all facilities scheduled for rehabilitation during that Period.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
010	A05	24	<p>Construct developed sites at the following rate:</p> <p>Period 1-300 PAOT; Pine Shadow Cg. Visitors to Pine Shadow Cg. will be given recommended route via I-25 and Route 6 to Highway 60.</p> <p>PINE SHADOW DEVELOPMENT GUIDELINES</p> <p>1. <u>Compatibility with the resources</u></p> <ul style="list-style-type: none">a. Land Type<ul style="list-style-type: none">1) Topography2) Erodibility3) Productivity4) Geologic hazard5) Resistance to compactionb. Vegetation<ul style="list-style-type: none">1) Height2) Density3) Resiliency to use4) Revegetation potentialc. Water<ul style="list-style-type: none">1) Quantity2) Quality3) Riparian area protectiond. Wildlifee. Minimize visual quality impactsf. Fire management risks and hazards <p>2. <u>Compatibility with other resources and activities</u></p> <ul style="list-style-type: none">a. Impacts on surrounding communities (Land Grants) and Native American ruins.<ul style="list-style-type: none">1) Minimize access through and near rural communities.2) Impacts on local activities such as firewood gathering.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			<ul style="list-style-type: none">b. Impacts on undeveloped uses<ul style="list-style-type: none">1) Trail use2) Throw-down uses
			<p>3. <u>Demonstration of need</u></p> <ul style="list-style-type: none">a. Current use patternsb. Development options<ul style="list-style-type: none">1) Individual family use2) Group usec. Manageability<ul style="list-style-type: none">1) Assigned recreation patrols2) Regular maintenance (trash, repairs, barrier control)d. Length of seasone. Occupancy lengthf. Economics of use<ul style="list-style-type: none">1) Local2) Urban

MANAGEMENT AREA 15
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines																		
	010, 050	A14, A15, B02, B03, L23	All	<p>Perform annual trail maintenance as follows:</p> <p style="text-align: center;"><u>Miles</u></p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th><u>Level 1</u></th> <th><u>Levels 2-5</u></th> </tr> </thead> <tbody> <tr> <td>Period 1:</td> <td>1</td> <td>1</td> </tr> <tr> <td>Period 2:</td> <td>1</td> <td>2</td> </tr> <tr> <td>Period 3:</td> <td>1</td> <td>2</td> </tr> <tr> <td>Period 4:</td> <td>1</td> <td>2</td> </tr> <tr> <td>Period 5:</td> <td>1</td> <td>2</td> </tr> </tbody> </table> <p>Use Forest Service personnel and Adopt-A-Trail volunteers for trail maintenance.</p>		<u>Level 1</u>	<u>Levels 2-5</u>	Period 1:	1	1	Period 2:	1	2	Period 3:	1	2	Period 4:	1	2	Period 5:	1	2
	<u>Level 1</u>	<u>Levels 2-5</u>																				
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Period 3:	1	2																				
Period 4:	1	2																				
Period 5:	1	2																				
	010, 050	A05, B02, B03	All	<p>Construct trailheads at the following rate:</p> <p style="margin-left: 40px;">Period 1- 50 PAOT; Pine Shadow Period 2- 50 PAOT; Trail Canyon Period 3-100 PAOT; JFK and Encino</p>																		
	010	L22	All	<p>Construct/Reconstruct trails at the following rate:</p> <p style="margin-left: 40px;">Period 1-Reconstruct 1.4 miles Period 2-Construct Red Canyon-New Canyon Loop-0.5 miles</p>																		
Timber	160	E06, E07	All	<p>Manage pinyon-juniper woodlands on slopes less than 15 percent slope on a sustained yield basis with a 180 year rotation. Regenerate through natural seeding by leaving 10-12 vigorous some bearing trees per acre. Control volume cut by acres per period.</p>																		
		479		<p>Free use firewood will be restricted to dead and down material in designated areas and will be administered through a permit system.</p>																		
		C01		<p>In those areas that are harvested for firewood for wildlife benefit, leave the following in the openings:</p> <ol style="list-style-type: none"> 1) Cavity excavated trees 2) Large open crowned cone bearing pinyon 3) Alligator juniper 4) Shrubs 5) Oak <p>Emphasize openings on existing and potential big game winter range. Retain cover on north and east exposures. Leave two slash piles per acre at least 6 feet in diameter and 4 feet high within ½ mile of water. Design treatment for high edge contrast with an edge to area ratio of 1.4:1.</p>																		

MANAGEMENT AREA 15
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines																				
	160	E06, E07, C01, D02	All	<p>Period 1:</p> <p>All green firewood harvests will be supplied from those woodland areas designated for range improvement and/or wildlife habitat improvement openings. Those areas will be opened to the public and commercial operations to remove the suitable firewood prior to other range and wildlife treatments.</p> <p>Guidelines are as follows on a period basis:</p> <table border="1"> <thead> <tr> <th colspan="5">Acres</th> </tr> <tr> <th>MA/AA</th> <th>Range</th> <th>Wildlife</th> <th>Total</th> <th>MBF</th> </tr> </thead> <tbody> <tr> <td>15/23</td> <td>1,360</td> <td>-----</td> <td>1,360</td> <td>2,720</td> </tr> <tr> <td>24</td> <td>1,550</td> <td>164</td> <td>1,714</td> <td>3,428</td> </tr> </tbody> </table>	Acres					MA/AA	Range	Wildlife	Total	MBF	15/23	1,360	-----	1,360	2,720	24	1,550	164	1,714	3,428
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MA/AA	Range	Wildlife	Total	MBF																				
15/23	1,360	-----	1,360	2,720																				
24	1,550	164	1,714	3,428																				
Fire Management	350	P01-P04, P10	All	Control fires to prevent loss of public and private facilities.																				

MANAGEMENT AREA 15
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	360	P15	All	Utilize prescribed fire to achieve resource objectives. Manage fire to maintain soil tolerance levels.
Watershed	230	P05, K05	All	
Wildlife	110	C01, C03, C06, C12, 306		Construct/reconstruct structural and nonstructural wildlife habitat improvements to provide habitat enhancement and ensure diversity for the following management indicator species and major game species: Plain Titmouse House Wren Elk Mule Deer Merriam's Turkey Wildlife Water
			24	Construct 13 water developments per in Periods 1-4.
			24	Reconstruct water developments every 40 years.
	080	C09	24	Maintain all water developments annually.
	110	C01, C03, C06, C12, 306		Opening creation, planting/interseeding and fencing
		E06, E07	24	Utilize slash created from canopy removal to provide ground cover. Lop and scatter slash in these areas to a one foot height. Interseed or plant as needed. Give priority to game winter range.

MANAGEMENT AREA 15
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			24	Create and interseed/plant 164 acres per period in Periods 1-4.
	080	C09	24	Maintain fencing and seeded/planted opening annually.
	080	C12	23, 24	Cooperate with New Mexico Game and Fish in stabilizing the Rocky Mountain Bighorn sheep population to the goals established in the New Mexico Game and Fish Department Comprehensive Plan. Bighorn sheep occur only in portions of analysis areas located in the Manzano Mountains.
Lands and Minerals	420	J01	24	Designate Capilla Lookout as an electronic site for Forest Service use only; 1 acre in Period 1.
	270, 280	G01	24	Withdraw Pine Shadow CG from mineral location; 135 acres in Period 1.
Transportation/ Travel	010, 470	L19	23	
	010	L19		
			23 24	
	010	L21	All	Perform trail preconstruction at the following rate: Period 1-1.4 miles Period 2-0.5 miles
	010, 160, 470	L19		
			23 24	
		L19		
			23 24	

MANAGEMENT AREA 16

Description: The 457,146 acre management area is located on the Magdalena Ranger District's four mountain ranges. Slopes are less than 40 percent.

Vegetation types are: 1) grama grassland/shrub-221,039 acres (48 percent), 2) pinyon-juniper-224,506 acres (49 percent), 3) 8,618 acres (2 percent) coniferous forest, and 4) 2,878 acres (1 percent) riparian.

There is one developed recreation site.

There are 442,058 acres of full capacity rang and 15,021 acres of potential capacity range in Management Area 16. Nearly 151,030 acres of the full capacity range are in satisfactory condition.

Analysis Area(s) 25, 26, 27, 28, 29, 30

Management Emphasis: The primary emphasis is on range and wildlife management activities which will increase both grazing capacity and wildlife habitat carrying capacity. Firewood management will be coordinated with range and wildlife needs.

Maintenance and protection of sensitive soils are important management goals.

Existing developed sites will be maintained. Planned trail maintenance and new trailheads will benefit dispersed recreation and wilderness.

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Range	140	D02	All
			Manage rangelands at or above the following intensity levels in Period 1:
			Level A 0 ac.
			Level B 163,273 ac.
			Level C 102,558 ac.
			Level D 18,799 ac.
			Level E 30,690 ac.
			Level X 141,759 ac.

MANAGEMENT AREA 16
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines												
			<p>Adjustments will occur during Periods 1 through 4 so that by Period 5 management of suitable rangelands will be at or above the following intensity levels:</p> <table> <tr><td>Level A</td><td>0 ac.</td></tr> <tr><td>Level B</td><td>163,236 ac.</td></tr> <tr><td>Level C</td><td>9,622 ac.</td></tr> <tr><td>Level D</td><td>82,246 ac.</td></tr> <tr><td>Level E</td><td>160,240 ac.</td></tr> <tr><td>Level X</td><td>41,735 ac.</td></tr> </table>	Level A	0 ac.	Level B	163,236 ac.	Level C	9,622 ac.	Level D	82,246 ac.	Level E	160,240 ac.	Level X	41,735 ac.
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Level D	82,246 ac.														
Level E	160,240 ac.														
Level X	41,735 ac.														
140	D02	All	<p>Full capacity rangelands in unsatisfactory conditions will be treated through development of improved allotment management plans that intensity livestock management. The treatment identified will include, but may not be limited to:</p> <ol style="list-style-type: none"> 1. structural range improvements, 2. non-structural range improvements, and 3. correction of stocking problems, which includes reduction in permitted use where necessary. 												
140	D02	All	<p>Condition class of full capacity rangelands will not decline below existing levels during Period 1. During Periods 2 through 5 vegetation condition class will improve as stocking and management corrections are made.</p> <table> <thead> <tr> <th>Condition</th> <th>Period 2</th> <th>Period 5</th> </tr> </thead> <tbody> <tr> <td>Satisfactory</td> <td>151,030 ac.</td> <td>241,249 ac.</td> </tr> <tr> <td>Unsatisfactory</td> <td>291,028 ac.</td> <td>200,809 ac.</td> </tr> </tbody> </table>	Condition	Period 2	Period 5	Satisfactory	151,030 ac.	241,249 ac.	Unsatisfactory	291,028 ac.	200,809 ac.			
Condition	Period 2	Period 5													
Satisfactory	151,030 ac.	241,249 ac.													
Unsatisfactory	291,028 ac.	200,809 ac.													
150	D05	All	<p>Construction of new and replacement of structural range improvements will be to standards identified in the R-3 Range Structural Handbook. They will be directed toward improvements that correct management problems. Replacement of structural improvements is planned on a recurring basis of 20-30 years for waters and 40 years for fences.</p> <p>Maintenance of structural improvements will be scheduled on a planned basis that is defined in the allotment management plan or annual operating plans. Maintenance will continue until replacement is scheduled.</p>												

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
150	D03	All	<p>Non-structural range improvements will be accomplished on slope less than 15% with moderate to high productivity potential. Overstory removal of pinyon/juniper, rabbit brush control, and shinnery oak control will occur where an increase in the forage base for livestock and wildlife can be achieved. Seeding where necessary will be included. Non-structural range improvements will be accomplished in Periods 1 & 2. Retreatment of sites treated in Periods 1 & 2 will be accomplished as necessary. Where applicable, pinyon/juniper treatments occurring in Periods 1 & 2 will be scheduled for retreatment every two decades after the initial treatment.</p> <p>Tools available are prescribed burning, mechanical and chemical treatments, forest product harvesting, and livestock management or a combination of these. Tool selection will be based on cost effectiveness and soil conditions. The following guidelines are offered in determining the treatment tool in pinyon/juniper overstory modification:</p> <p>Where herbicide treatment is the selected tool for treatment:</p> <p>Individual tree: 40-150 trees per acre 80% of trees less than 6 feet tall. Broadcast: 150+ trees per acre, 50-80% of trees less than 6 feet tall.</p> <p>Where prescribed fire is the selected tool for treatment:</p> <p>Tree density and crown cover are not factors. No more than 10% of the stand is over 8 feet tall.</p> <p>Where harvest of forest products is the selected tool for treatment:</p> <p>Firewood: Tree density and crown cover are not factors. Tree height is 80% over 8 feet tall. Vehicle access is available.</p> <p>Other Forest Products: Tree height is 80% under 6 feet tall. Tree crown density is under 50%. Vehicle access is available.</p> <p>Retreatment of pinyon/juniper overstory removal which occurs in Periods 1 & 2 or which occurred in 1950-1970 decades will be done where:</p>

MANAGEMENT AREA 16
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			<p>1. The objective for the area is to maintain an open savanna grassland to provide a continual forage base for livestock and wildlife and improve watershed conditions.</p> <p>2. Retreatment can be scheduled 5 years prior to losing the original investment. When a decision is reached not to retreat areas of pinyon/juniper overstory removal, the site will be allowed to return to a stocked stand.</p> <p>3. Diversity of the pinyon/juniper vegetation type is maintained on the allotment.</p>
150	D05	25	<p>Structural range improvements will be constructed/replaced at the following rate:</p> <p>72 miles of fence per period in Periods 1 through 4 38 water per period in Periods 1 through 4 38 storage-drinkers per period in Periods 1 through 4 22.8 miles of pipeline per period in Periods 1 through 4</p>
150	D03	25	<p>Nonstructural range improvements will be accomplished at the following rate:</p> <p>2,304 acres of pinyon/juniper overstory removal in Periods 1 and 2</p> <p>7,000 acres of brush control and/or reseeding per period in Periods 1 and 2.</p> <p>Approximately 2,230 acres of rabbit brush will be treated per period.</p>
150	D05	26	<p>Structural range improvements will be constructed /replaced at the following rate:</p> <p>19 miles of fence per period n Periods 1 through 4 10 waters per period in Periods 1 through 4 11 storage-drinkers per period in Periods 1 through 4 6.5 miles of pipeline per period in Periods 1 through 4</p>
150	D03	26	<p>Nonstructural range improvements will be accomplished at the following rate:</p> <p>915 acres of pinyon-juniper oversotry removal per period in Periods 1 and 2</p>

MANAGEMENT AREA 16
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			2,475 acres of brush control and/or reseeding per period in Periods 1 and 2. Approximately 825 acres of rabbit brush will be treated per period.
150	D05	27	Structural range improvements will be constructed/replaced at the following rate: 4 miles of fence per period in Periods 1 through 4 3 water per period in Periods 1 through 4 3 storage-drinkers per period in Periods 1 through 4 1.7 miles of pipeline per period in Periods 1 through 4
150	D03	27	Nonstructural range improvements will be accomplished at the following rate: 83 acres of pinyon-juniper oversotry removal per period in Periods 1 and 2 94 acres of brush control and/or reseeding per period in Periods 1 and 2. Approximately 31 acres of rabbit brush will be treated per period.
150	D05 D03	27	Eighty-three acres of riparian habitat in low or moderately low condition will be treated per period during Periods 1 and 2.
150	D05	28	Structural range improvements will be constructed/replaced at the following rate: 4 miles of fence per period in Periods 1 through 4 3 waters per period in Periods 1 through 4 3 storage-drinkers per period in Periods 1 through 4 1.8 miles of pipeline per period in Periods 1 through 4
150	D03	28	Nonstructural range improvements will be accomplished at the following rate: 348 acres of pinyon-juniper oversotry removal per period in Periods 1 and 2 1,500 acres of brush control and/or reseeding per period in Periods 1 and 2. Approximately 570 acres of rabbit brush will be treated per period.
150	D05	29	Structural range improvements will be constructed/replaced at the following rate: 24 miles of fence per period in Periods 1 through 4 14 waters per period in Periods 1 through 4

MANAGEMENT AREA 16
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			14 storage-drinkers per period in Periods 1 through 4 10 miles of pipeline per period in Periods 1 through 4
150	D03	29	Nonstructural range improvements will be accomplished at the following rate: 525 acres of pinyon-juniper overstory removal per period in Periods 1 and 2 3,262 acres of brush control and/or reseeding per period in Periods 1 and 2. Approximately 1,140 acres of rabbit brush will be treated per period.
150	D05 D03	29	One-hundred and fifty-eight acres of riparian habitat in low or moderately low condition will be treated per period during Periods 1 and 2.
150	D05	30	Structural range improvements will be constructed/replaced at the following rate: 41.4 miles of fence per period in Periods 1 through 4 25 waters per period in Periods 1 through 4 28 storage-drinkers per period in Periods 1 through 4 16.5 miles of pipeline per period in Periods 1 through 4
150	D03	30	Nonstructural range improvements will be accomplished at the following rate: 1,729 acres of pinyon-juniper overstory removal per period in Periods 1 and 2 7,475 acres of brush control and/or reseeding per period in Periods 1 and 2. Approximately 2,698 acres of rabbit brush will be treated per period.
150	D05 D03	30	Six-hundred and fifty acres of riparian habitat in low or moderately low condition will be treated per period during Periods 1 and 2.
220	254	25	File for five water rights per period in Periods 1-4.
220	254	26	File for two water rights per period in Periods 1-4.
220	254	27	File for one water right per period in Periods 1-4.
220	254	28	File for two water rights per period in Periods 1-4.

MANAGEMENT AREA 16
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	220	254	29	File for eight water rights per period in Periods 1-4.
	220	254	30	File for six water rights per period in Periods 1-4.
Recreation	010	A01	All	Manage for the following acreages of ROS classifications: 137,534 acres—Semi-primitive Nonmotorized 227,413 acres—Semi-primitive Motorized 92,132 acres—Roaded Natural
	010	A03	All	Manage for the following acres of Visual Quality Objectives: 1,360 acres—Retention 35,573 acres—Partial Retention 420,158 acres—Modification
	010	A11, A13	29	Administer one developed site at 15 PAOT capacity and maintain facilities to condition class 2.
	010	A11, A13	29	Manage developed sites to design capacity. Provide at least Region 3 Reduced Service Management to all sites during all seasons that sites are open.
	010	A06	29	Rehabilitate developed sites at the following rate: Period 5—30 PAOT During Period 1, rehabilitate to condition class 1 all facilities scheduled for rehabilitation that Period.
	010	A05	29	Construct trailheads and developed sites at the following rate: Period 1—100 PAOT; two trailheads: Skelton No. 46, Water Trail No. 37
	010	L01	All	Plan Continental Divide Trail on or near Divide. Activities of other resources will be subordinate to VQOs and landscape plan within 600 foot wide corridor. Construct trail at the following rate: Period 3—half mile

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines																																								
	E07		Less than 15 percent slope on a sustained yield basis with a 180 year rotation. Regenerate through natural seeding by leaving 10 to 12 vigorous cone bearing trees per acre. Control volume cut by acres per period.																																								
010	L22	All	Construct/reconstruct trails at the following rate: Period 1-Reconstruct .6 miles																																								
	479	All	Free use firewood will be restricted to dead and down material in designated areas and will be administered through a permit system.																																								
	C01	All	In those areas that are harvested for firewood for wildlife benefit, leave the following in the openings: <ol style="list-style-type: none"> 1. Cavity excavated trees 2. Large open crowned cone bearing pinyon 3. Alligator juniper 4. Shrubs 5. Oak 6. Ponderosa Pine <p>Emphasize openings on existing and potential big game winter range. Retain cover on north and east exposures. Leave two slash piles/acre at least 6 feet in diameter and 4 feet high within ½ mile of water. Design treatment for high edge contrast with an edge to area ratio of 1.4:1.</p>																																								
160	E06, E07, C01, D02	All	Period 1: All green firewood harvests will be supplied from those woodland areas designated for range improvement and/or wildlife habitat improvement openings. Those areas will be opened to the public and commercial operations to remove the suitable firewood prior to other range and wildlife treatments. Guidelines are as follows on a period basis: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="5">Acres</th> </tr> <tr> <th>MA/AA</th> <th>Range</th> <th>Wildlife</th> <th>Total</th> <th>MBF</th> </tr> </thead> <tbody> <tr> <td>16/25</td> <td>2,304</td> <td>234</td> <td>2,538</td> <td>5,076</td> </tr> <tr> <td>26</td> <td>915</td> <td>68</td> <td>983</td> <td>1,966</td> </tr> <tr> <td>27</td> <td>83</td> <td>0</td> <td>83</td> <td>166</td> </tr> <tr> <td>28</td> <td>348</td> <td>0</td> <td>348</td> <td>696</td> </tr> <tr> <td>29</td> <td>525</td> <td>0</td> <td>525</td> <td>1,050</td> </tr> <tr> <td>30</td> <td>1,729</td> <td>32</td> <td>1,761</td> <td>3,522</td> </tr> </tbody> </table>	Acres					MA/AA	Range	Wildlife	Total	MBF	16/25	2,304	234	2,538	5,076	26	915	68	983	1,966	27	83	0	83	166	28	348	0	348	696	29	525	0	525	1,050	30	1,729	32	1,761	3,522
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MANAGEMENT AREA 16
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Fire Management	350	P01-P04, P10	All	Control fires to prevent loss of public and private facilities.
	360	P15	All	Utilize prescribed fire to achieve resource objectives. Manage fire to maintain soil tolerance levels.
Watershed	230	K05, F05	25, 26, 30	The use of direct investment and management changes will be used in watershed projects. Direct watershed treatments will be applied on lands suitable for revegetation having slopes less than 40 percent where current range condition is poor or very poor. This

MANAGEMENT AREA 16
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
				<p>treatment is applied to improve watershed condition and reduce soil loss. It may consist of water spreading, shaping, and/or seeding, and will conform to accepted methods.</p> <p>Indirect methods will also be applied to watersheds to improve effective ground cover. These may consist of controlling impacts through management by allocating grazing capacity to only moderately high or high condition range.</p> <p>Periods 1, 2-treat 909 acres per period</p>
	230	F05	30	<p>Riparian treatments will be applied to areas of low to moderately low condition. This treatment may consist of protection or management fencing with seeding and/or plantings. These treatments are applied to improve watershed condition and water quality by reducing direct sedimentation. Treatments will conform to accepted methods such as seeding, planting and protection fencing.</p> <p>Periods 1, 2-treat 40 acres per period</p>
Wildlife	110	C01, C03, C06, C12, 306	All	<p>Construct/reconstruct structural and nonstructural wildlife habitat improvements to provide habitat enhancement and ensure diversity for the following management indicator species and major game species:</p> <ul style="list-style-type: none"> Plains Titmouse Pygmy Nuthatch Merriam's Turkey House Wren Mule Deer Elk

MANAGEMENT AREA 16
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
			Guideline:
			Wildlife Water
		25	Construct 24 water developments per period in Periods 1 through 4.
		26	Construct five water developments per period in Periods 1 through 4.
		27	Construct two water developments in period 1.
		30	Construct two water developments per period in Periods 1 through 4.
		25, 26, 27, 30	Reconstruct water developments every 40 years.
080	C02	25, 26, 27, 30	Maintain all waters annually.
110	C01, C03, C06, C12, 306		Opening creation, planting/interseeding and fencing:
	E06, E07		Utilize slash created from canopy removal to provide ground cover. Lop and scatter slash in these areas to a one foot height. Interseed or plant as needed. Give priority to game winter range.
		25	Create and interseed/plant 234 acres per period in Periods 1 through 4.
		26	Create and interseed/plant 70 acres per period in Periods 1 through 4.
		30	Create and interseed/plant 32 acres per period in Period 1 through 4.
		25	Construct 6 acres per period of protection fencing for planted/seeded openings on water game range in Periods 1 through 4.
		26	Construct 3 acres per period of protection fencing for planted/seeded openings on winter game range in Periods 1 through 3.
		30	Construct 3 acres of protection fencing for planted/seeded opening on winter game range in Period 1.

MANAGEMENT AREA 16
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
	080	C02	25, 26, 30	Maintain fencing and seeded/planted openings annually.
Lands and Minerals	420	J01	25	Designate the following sites as an electronic site in Period 1: Davenport 10 acres Davenport No. 2 13 acres
	270, 280	G01	25	Withdraw the following electronic sites from mineral location in Period 1: Davenport 30 acres Davenport No. 2 40 acres
Transportation/ Travel	470	L19	29	Maintain roads to Levels 3, 4, and 5 in developed sites.

MANAGEMENT AREA 17

Description: The 20,486 acre management area adjacent to the Albuquerque metropolitan area in the Sandia District is closed to public entry for security and safety purposes. Kirtland Air Force Base manages 15,891 acres under withdrawal for military purposes while Sandia Laboratories through the Department of Energy and manages a 4,595 acre area withdrawn as a safety buffer for testing in Lurance Canyon. The area contains all slope classes. Vegetation from grassland to ponderosa pine.

Analysis Area(s) 31

Management Emphasis: The area will remain under joint control of the Forest Service, U.S. Air Force, and Department of Energy. The feasibility of conducting a limited number of activities (specified in the standards and guidelines) in this area will be studied. If these activities are acceptable to the Air Force and the Department of Energy, they will be conducted in coordination with these agencies.

Management emphasis will be to improve wildlife habitat diversity and decrease the threat of escaped wildfire from either entity within intent of established Memorandums of Agreement. All public use of the area will be restricted and enforced by personnel of Department of Defense and Energy.

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Recreation	270, 280	J04, A01, G01	31	<p>Manage the following acreages in each ROS class as a means of determining suitability for recreation opportunities. No public recreation use is allowed in this management area.</p> <p>18,421 acres--semi-primitive motorized 2,056 acres--semi-primitive non-motorized</p> <p>Coordinate withdrawal amendments with Sandia Laboratories, PLO 4,569 DOE withdrawal, and Kirtland Base, PLO 995 DOA withdrawal, to provide for trail system linkages of the following trails in Management Area 2 to avoid the withdrawal area.</p> <ol style="list-style-type: none"> 1. Otero Canyon Trail (self contained loop) Sec. 14, 23 T9N R5E 2. David Canyon-Otero East Ridge (self contained loop) Sec. 1 T8N R5E Sec. 23 T9N R5E
	010	A02, A03	31	<p>Coordinate cultural resource management and visual resource management with DOE and U.S. Air Force to meet requirements of law for cultural site protection and provide mitigation of visual impacts resulting from their activities. Provide for in Memorandum of Agreement.</p>
Wildlife	110	C01	31	<p>Coordinate Forest Service wildlife habitat improvements with U.S. Air Force and Sandia Laboratories.</p> <p>Conduct upland habitat treatments along and adjacent to Forest Road 530 inside the withdrawal.</p> <p>Restore meadows in Madera Canyon where tree encroachment is occurring and create openings where meadows historically existed.</p>

MANAGEMENT AREA 17
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Timber				Objectives of timber harvesting will be for wildlife habitat improvement, fuels reduction, and visual resource enhancement, with secondary benefits of providing firewood to the Albuquerque metropolitan area. All harvesting will be done by Forest Service, DOE, or DOD crews on their contractors and will be coordinated with DOE and DOD.
Fire Management	350	P01-P04, P07, P11-12	31	Maintain Fire Mutual Aid Agreement with Kirtland Air Force Base annually.
	350	P01	31	Cooperate with Department of Energy and Defense in expansion of existing fuelbreak north from David Canyon Fuelbreak to Tunnel Canyon Ridge.
	350	P01	31	Cooperate with DOE and DOD to implement vegetation thinning and prescribed burning activities to improve forest health and decrease threat of wildfires.
Lands and Minerals	420	J01	31	Coordinate with U.S. Air Force and Sandia Laboratories to designate the following areas as electronic sites in Period 1: <ol style="list-style-type: none"> 1. Mt. Washington- 45 acres 2. Manzano Lookout (abandoned)- 50 acres 3. Cerro Pelon (partial)- 25 acres Coordinate with DOE to acquire approximately 199 acres of withdrawn lands for return to public access. Coordinate with DOD to acquire approximately 897 acres of withdrawn lands for return to public access. Upon modification of PLO's 995 and 4596, those lands will be managed in accordance with the standards and guidelines of Management Area 2.
Transportation/ Travel				Coordinate Forest Service road development and maintenance with U.S. Air Force and Sandia Laboratories. Coordinate with DOE and DOD to close and/or abandon those roads that are no longer necessary to carry out their respective missions. Coordinate with DOE and DOD to rehabilitate those roads that are contributing to soil loss and sedimentation but are still necessary to carry out their missions. Rehabilitate those portions of Madera Canyon Road that are contributing to sedimentation and close to all vehicular access.

MANAGEMENT AREA 18

Description: The 17,419 acre management area is located on the Mt. Taylor District, predominately on the Zuni Mountains. Slopes are less than 40 percent. The area is the acreage in need of reforestation.

Analysis Area(s) 10

Management Emphasis: Management direction is to plant and then maximize commercial timber production on approximately 16,000 acres in need of reforestation.

Livestock grazing will be permitted but permitted use will decrease as it is balanced with grazing capacity. Range management activities will be coordinated with reforestation to protect new plantations. The entire management area is full capacity range with 11,712 acres in satisfactory condition.

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Range	140	D02	10	<p>Manage rangelands at or above the following intensity levels--Period 1:</p> <p>Level A 0 ac. Level B 7,053 ac. Level C 0 ac. Level D 0 ac. Level E 0 ac. Level X 10,366 ac.</p>
	140	D02	10	<p>Adjustments will occur during Periods 2 through 4 so that by Period 5 management of rangelands will be at or above the following intensity levels:</p> <p>Level A 0 ac. Level B 17,419 ac. Level C 0 ac. Level D 0 ac. Level E 0 ac. Level X 0 ac.</p>
	140	D02	10	<p>Full capacity rangelands in unsatisfactory condition will be treated through development of improved allotment management plans. The treatment identified will include, but may not be limited to: 1) structural range improvement development; and 2) correction of stocking problems which includes removal of livestock where necessary.</p>

MANAGEMENT AREA 17
(Continued)

Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines									
140	D02	All	<p>Condition class of full capacity rangelands may decline during Period 1 but will not decline further throughout the remainder of the planning horizon.</p> <table border="1"> <thead> <tr> <th>Condition</th> <th>Period 2</th> <th>Period 5</th> </tr> </thead> <tbody> <tr> <td>Satisfactory</td> <td>11,712 ac.</td> <td>13,481 ac.</td> </tr> <tr> <td>Unsatisfactory</td> <td>5,707 ac.</td> <td>3,938 ac.</td> </tr> </tbody> </table>	Condition	Period 2	Period 5	Satisfactory	11,712 ac.	13,481 ac.	Unsatisfactory	5,707 ac.	3,938 ac.
Condition	Period 2	Period 5										
Satisfactory	11,712 ac.	13,481 ac.										
Unsatisfactory	5,707 ac.	3,938 ac.										
150	D05	10	<p>Construction on new and replacement of structural range improvements will be to standards identified in the R-3 Range Structural Handbook. These will be directed toward improvements that improve livestock management in the management area by correcting management and stocking problems. Replacement of structural improvements are planned on a recurring basis of 20-30 years for waters and 40 years for fences.</p> <p>Maintenance of structural improvements will be scheduled on a planned basis that is defined in the allotment management plan or annual permittee instructions.</p> <p>Maintenance will continue until replacement is scheduled.</p>									
150	D05	10	<p>Structural range improvements will be constructed/replaced at the following rate:</p> <p>4 miles of fence per period in Periods 1 through 4 1 water per period in Periods 1 through 4 1 storage/drinker per period in Periods 1 through 4 1 mile of pipeline per period in Periods 1 through 4</p>									
Recreation	010	A01	<p>10</p> <p>Manage for the following acreages of ROS classification:</p> <p>632 acres—Semi-primitive Nonmotorized 8,311 acres—Semi-primitive Motorized 8,476 acres—Roaded Natural</p>									
	010	A03	<p>10</p> <p>Manage for the following acres of Visual Quality Objectives:</p> <p>158 acres—Partial Retention 17,261 acres—Modification</p>									
	010	A14, A15, C01, F01	<p>10</p>									

MANAGEMENT AREA 18
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines																		
	010	A14, A15, L23	10	<p>Perform annual trail maintenance as follows:</p> <p style="text-align: center;"><u>Miles</u></p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th><u>Level 1</u></th> <th><u>Levels 2-5</u></th> </tr> </thead> <tbody> <tr> <td>Period 1:</td> <td>0.5</td> <td>0.2</td> </tr> <tr> <td>Period 2:</td> <td>0.5</td> <td>0.2</td> </tr> <tr> <td>Period 3:</td> <td>0.5</td> <td>0.2</td> </tr> <tr> <td>Period 4:</td> <td>0.5</td> <td>0.2</td> </tr> <tr> <td>Period 5:</td> <td>0.5</td> <td>0.2</td> </tr> </tbody> </table>		<u>Level 1</u>	<u>Levels 2-5</u>	Period 1:	0.5	0.2	Period 2:	0.5	0.2	Period 3:	0.5	0.2	Period 4:	0.5	0.2	Period 5:	0.5	0.2
	<u>Level 1</u>	<u>Levels 2-5</u>																				
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Period 3:	0.5	0.2																				
Period 4:	0.5	0.2																				
Period 5:	0.5	0.2																				
Timber	160	443, 447, 449	10	<p>This is the acreage in need of reforestation and no harvest scheduled until the area is reforested and brought into production.</p> <p>Complete planting program by 1990.</p> <p>Monitor reforestation 1, 3, and 5 years after planting for adequate stocking. Stocking objective is 300 trees per acre. Planting will be preceded by mechanical site preparation. Planting may be by machine, auger/hand tools or a combination of all these.</p> <p>Once in production it will be managed on a 120 year rotation at GSL 100. Five percent of the area will be managed for old growth at GSL 150 through age 80.</p> <p>The first harvest is projected to occur at age 60.</p> <p>Acres will be precommercially thinned if surviving trees exceed GSL objectives.</p> <p>Appropriate rodent control methods will be used if found necessary. Plantations will be protected from livestock damage.</p>																		
Fire Management	350	P01-P04	10	Control fires to prevent loss of public and private facilities.																		
	360	P15	10	Utilize prescribed fire to achieve resource objectives. Manage fire to fire to maintain soil tolerance levels.																		
Watershed	230	F05, K05	10	Road management will be applied to obliterate poorly located or constructed roadways to improve watershed condition and reduce soil loss. Management will take the form of standard roadway prescriptions for obliteration.																		
	230, 110	F05, C05	10	<p>Obliterate roads at the following rates:</p> <p style="text-align: center;">38.0 miles of local roads in Period 1</p>																		

MANAGEMENT AREA 18
(Continued)

	Decision Variables	Activities	Applicable Analysis Areas	Standards and Guidelines
Transportation/ Travel	010, 110, 230	A03, C03, F01, K03, L01	10	
	010, 160, 470	L19	10	Maintain 12 miles of Forest System roads in each decade of all periods to Levels 3, 4, and 5. Do road maintenance at the rate of 10 miles per period in all periods. Maintain roads to Level 2.

5. Monitoring Plan

INTRODUCTION

The purpose of monitoring and evaluating the implementation of the Forest Plan is to inform the decision maker of the progress toward achieving the goals, objectives, and standards and guidelines.

Monitoring will determine:

- if the management prescriptions are applied as directed.
- if standards are being followed.
- if the Forest is achieving the objectives of the Forest Plan.
- if the application of management prescriptions is responding to public issues and management concerns.
- if the effects of implementing the Forest Plan are occurring as predicted.
- if the costs of implementing the Forest Plan are as predicted and are acceptable.
- if management practices on adjacent or intermingled non-Forest lands are affecting the Forest Plan goals and objectives.

A detailed annual monitoring action plan will be prepared. This annual monitoring action plan will include the details on the amount and location of monitoring to be accomplished. Specific locations, intensity of sampling, person-days required, and costs will be identified in the annual monitoring action plan. The activities to be monitored will be selected from the list in the rest of this chapter.

Evaluation of the results of the site-specific annual monitoring action plan will be documented in the annual evaluation report. The significance of the results of the monitoring action plan will be analyzed and evaluated by the Forest interdisciplinary team.

Based on the evaluation, any need for further action is recommended to the Forest Supervisor. The recommendations can include:

- no action needed. Monitoring indicates goals, objectives, and standards are being reasonably achieved;
- refer recommended action to the appropriate line officer for improvement of application of management prescriptions;
- modify the management prescription as a Forest Plan amendment;
- modify the assignment of a prescription as a Forest Plan amendment;
- revise the projected schedule of outputs; or
- initiate revision of the Forest Plan.

The documented file of the Forest Supervisor's decisions resulting from monitoring and evaluation is maintained for future use in amending or revising the Forest Plan. An annual evaluation report of these decisions will be prepared and sent to the Regional Forester for his consideration.

The Forest Plan's monitoring requirements follow. For each activity, practice, or effect to be monitored, one or more measurement techniques and the expected future condition to be met are specified. A frequency for measuring and reporting the monitored item is established, and the expected precision and reliability of that

measurement is stated. (Precision is the exactness or accuracy with which the data will be collected; reliability is the degree to which the monitoring accurately reflects the total Forest situation.)

TIMBER 1

1. ITEM MONITORED:

Acres of overstory and final removal harvest.

2. PURPOSE:

Federal regulation; measure prescriptions and effects.

3. EXPECTED FUTURE CONDITION:

Achieve a more balanced age class distribution, appropriate growing stock levels, appropriate rotations, and provide wildlife habitat needs.

4. MONITORING METHOD:

Timber Management Information systems; Staff field reviews of 5% of treatment projects.

5. FREQUENCY:

Annual

6. EXPECTED PRECISION/RELIABILITY:

±10%; ±10%

7. TIME FOR REPORTING:

5th and 10th year

8. COST:

\$100 each report

9. EVALUATION:

If planned treatment varies ±25% from schedule at 5 year intervals, the ID Team will evaluate and Plan modification may be necessary.

TIMBER 2

1. ITEM MONITORED:

Acres of intermediate harvest.

2. PURPOSE:

Federal regulation; measure prescriptions and effects.

3. EXPECTED FUTURE CONDITION:

Achieve a more balanced age class distribution, appropriate growing stock levels, appropriate rotations, and provide wildlife habitat needs.

4. MONITORING METHOD:

Timber Management Information system; Staff field reviews of 5 percent of treatment projects.

5. FREQUENCY:

Annual

6. EXPECTED PRECISION/RELIABILITY:

±10%; ±10%

7. TIME FOR REPORTING:

5th and 10th year

8. COST:

\$100 each report

9. EVALUATION:

If planned treatment varies ±25% from schedule at 5 year intervals, the ID Team will evaluate and Plan modification may be necessary.

TIMBER 3

1. ITEM MONITORED:

Acres in need of reforestation.

2. PURPOSE:

Federal regulation, change in productivity of land.

3. EXPECTED FUTURE CONDITION:

Acres in need of reforestation will be planted by 1990.

4. MONITORING METHOD:

Annual Reforestation Needs Report, data for which is generated by qualified silviculturalist using standard inventory methods.

5. FREQUENCY:

Annual

6. EXPECTED PRECISION/RELIABILITY:

±5%/±10%

7. TIME FOR REPORTING:

Annual

8. COST: \$200

9. EVALUATION:

If accomplished by 1990 is less than 80%, the ID Team will evaluate and Plan modification may be necessary.

TIMBER 4

1. ITEM MONITORED:

Timber stand improvement acres.

2. PURPOSE:

Federal regulation, change in productivity of land.

3. EXPECTED FUTURE CONDITION:

Controlled stocking levels for accelerated growth.

4. MONITORING METHOD:

Annual TSI Needs Report, data for which is generated by qualified silviculturist using standard inventory methods.

5. FREQUENCY:

Annual

6. EXPECTED PRECISION/RELIABILITY:

±10%/±10%

7. TIME FOR REPORTING:

Annual

8. COST:

\$200

9. EVALUATION:

If cumulative deviation for 5 years falls 20 percent below planned program, the ID Team will evaluate and Plan modification may be necessary.

TIMBER 5

1. ITEM MONITORED:

Board feet of net sawtimber offered.

2. PURPOSE:

Federal regulation, measured output.

3. EXPECTED FUTURE CONDITION:

Annual sale offerings will be made on a sustained yield basis.

4. MONITORING METHOD:

PAMARS (MAR 17.1)

5. FREQUENCY:

Annual

6. EXPECTED PRECISION/RELIABILITY:

±10%/±15%

7. TIME FOR REPORTING:

Annual

8. COST:

\$100 each report

9. EVALUATION:

Evaluations by the ID Team will be made at 3rd and 6th years during the decade to insure that cumulative deviation for the decade does not vary by $\pm 10\%$. Plan modification may be necessary if $\pm 10\%$ is exceeded.

TIMBER 6

1. ITEM MONITORED:

Cords of fuelwood made available.

2. PURPOSE:

Federal regulation, sample output.
Forest related issue.

3. EXPECTED FUTURE CONDITION:

Total firewood availability from pinyon-juniper woodlands will decrease over time as existing dead material is depleted. Green wood sales will continue on a sustained yield basis. Residues from commercial timber sales will be available for firewood.

4. MONITORING METHOD:

Review annual total of firewood sale reports, firewood advertised but not sold, and free use.

5. FREQUENCY:

Annual

6. EXPECTED PRECISION/RELIABILITY:

$\pm 30\%/\pm 30\%$

7. TIME FOR REPORTING:

5th year

8. COST:

\$200 per report

9. EVALUATION:

Compare total cords made available to the projected output. If firewood exceeds projected level or is below projected 10% at the 5th year, the ID Team will evaluate and Plan modification may be necessary.

TIMBER 7

1. ITEM MONITORED:

Adequate restocking of regeneration harvests.

2. PURPOSE:

Federal regulation to insure restocking.

3. EXPECTED FUTURE CONDITION:

All stands within a sale area receiving regeneration or final removal harvests (cuttings) are adequately restocked within 5 years after final removal harvest. Adequately restocked means 85 percent of stands receiving final removal harvest have at least a minimum number of trees commensurate with site quality by forest type and management objectives (FSM 2400 R-3 Supp 264 as amended).

4. MONITORING METHOD:

Measurements will be taken on randomly placed plots within each regeneration area.

5. FREQUENCY:

At 2nd and 4th year following harvest.

6. EXPECTED PRECISION/RELIABILITY:

±20%

7. TIME FOR REPORTING:

Beginning third year and annually thereafter.

8. COST:

\$500 per timber sale area per sample year

9. EVALUATION:

If samples at the fifth year indicate inadequate stocking, i.e., less than the growing stock level needed to meet prescription objectives, and evaluation of plan will be completed by the ID Team and Plan modification may be necessary.

TIMBER 8

1. ITEM MONITORED:

Stands and acres of forested lands identified and tracked under the Integrated Stand Management System.

2. PURPOSE:

Measure prescriptions and effects.

3. EXPECTED FUTURE CONDITION:

The Mt. Taylor, Magdalena and Mountainair Ranger Districts are expected to have all stands identified within 15 years. Those areas having projected timber sales will be delineated and tracked under the Integrated Stand Management System before the sale is implemented.

4. MONITORING METHOD:

Number of stands identified and tracked under the Integrated Stand Management System. Number of timber sales operated under the Integrated Stand Management System.

5. FREQUENCY:

Annual

6. EXPECTED PRECISION/RELIABILITY:

±20%/±20%

Amended 1-9-87

7. TIME FOR REPORTING:

3rd, 5th and 9th year.

8. COST:

\$200 per report

9. EVALUATION:

Compare actual use recorded for a 3-year time period to projected use for each wilderness. If use exceeds 30 percent of the projected use or if use exceeds capabilities of the wilderness resources by 30 percent, ID Team will evaluate and Plan modification may be necessary.

WILDERNESS 1

1. ITEM MONITORED:

Wilderness use by Wilderness Opportunity Spectrum Class.

2. PURPOSE:

Federal Regulation, measure prescriptions and effects.
Forest issue related.

3. EXPECTED FUTURE CONDITION:

Wilderness use is expected to be less than capacity at 2030 on a Forest-wide basis. The Sandia Mountain Wilderness is already at capacity while in the Manzano Mountain, Apache Kid and Withington Wilderness areas use could increase use by 50, 90, and 90 percent, respectively, before capacity is reached.

Reduced use of areas of wilderness currently being over utilized or experiencing a trend towards overuse.

4. MONITORING METHOD:

Recreation information Management Report, Visitor Use Report and District Ranger estimates of use of highly impacted areas.

5. FREQUENCY:

Annual

6. EXPECTED PRECISION/RELIABILITY:

±20%/±20%

7. TIME FOR REPORTING:

3rd, 5th and 9th year.

8. COST:

\$200 per report

9. EVALUATION:

Compare actual use recorded for a 3-year time period to projected use for each wilderness. If use exceeds 30 percent of the projected use or if use exceeds capabilities of the wilderness resources by 30 percent, ID Team will evaluate and Plan modification may be necessary.

WILDERNESS 2

1. ITEM MONITORED:

Miles of wilderness trail construction/reconstruction and maintenance.

2. PURPOSE:

Federal Regulations, measure prescriptions and effects. Forest issue related.

3. EXPECTED FUTURE CONDITION:

Wilderness use is expected to be less than capacity at the end of Period 5 on a Forest-wide basis, with the exception of the Sandia Mountain Wilderness. An improved trail system through construction/reconstruction and maintenance is expected to provide a better distribution of visitor use and improve wilderness opportunities.

4. MONITORING METHOD:

Work Accomplishment Reports.

5. FREQUENCY:

Annually

6. EXPECTED PRECISION/RELIABILITY:

±5%/±5%

7. TIME FOR REPORTING:

3rd, 6th and 9th years

8. COST:

\$200 per report

9. EVALUATION:

Evaluation by the ID Team will be made at the third and sixth years during the decade to insure that cumulative deviation for the decade does not vary by ±25%. Plan modification may be necessary if ±25% is exceeded.

WILDLIFE 1/2

1. ITEM MONITORED:

Acres of browse vegetation associations treated to improve availability and productivity.

2. PURPOSE:

Improve habitat capability and productivity for all species, including indicator species.

3. EXPECTED FUTURE CONDITION:

Browse stands should be maintained in lower successional stages to provide optimum cover and forage availability.

4. MONITORING METHOD:

Review annual work accomplishment reports. - Supervisor's Office

Document pre and post-treatment utilizing standard vegetation analysis techniques.
- Districts

5. FREQUENCY:

Every year as occurs

6. PRECISION/RELIABILITY:

±10%/±20%

7. TIME FOR REPORTING:

3rd, 6th and 9th year

8. COST:

\$1,000 annually per treatment, pre and post analysis

9. EVALUATION:

Evaluation by the ID Team will be made at the third, sixth, and ninth years during the decade to insure that cumulative deviation does not vary by ±20%. Plan modification may be necessary if ±20% is exceeded.

WILDLIFE 3

1. ITEM MONITORED:

Number of water developments.

2. PURPOSE:

Federal Regulation

3. EXPECTED FUTURE CONDITION:

Maintain or improve essential habitat of indicator and other species.

4. MONITORING METHOD:

Review annual work accomplishment reports.

5. FREQUENCY:

Every three years

6. EXPECTED PRECISION/RELIABILITY:

±5%/±10%

7. TIME FOR REPORTING:

3rd, 6th and 9th year

8. COST:

\$100 per report

9. EVALUATION:

If water developments fall below numbers as indicated in the Plan by 20% at the end of the ninth year, the ID Team will evaluate and Plan modification may be necessary.

WILDLIFE 4

1. ITEM MONITORED:

Number of quality snags per acre.

2. PURPOSE:

Federal regulation

3. EXPECTED FUTURE CONDITION:

Maintain or improve essential habitat for indicator and other species.

4. MONITORING METHOD:

Field review of timber sale areas (on a sample basis).

5. FREQUENCY:

Every three years

6. EXPECTED PRECISION/RELIABILITY:

±20%/±20%

7. TIME FOR REPORTING:

3rd, 6th and 9th year

8. COST:

\$100 per report

9. EVALUATION:

If estimated number of quality snags per acre fall below numbers as indicated in the Plan by 20% at the end of the ninth year, the ID Team will evaluate and Plan modification may be necessary.

WILDLIFE 5

1. ITEM MONITORED:

Number of roost groups.

2. PURPOSE:

Federal regulation

3. EXPECTED FUTURE CONDITION:

Maintain or improve essential habitat for indicator and other species.

4. MONITORING METHOD:

Field inspection of timber sale areas (on a sample basis).

5. FREQUENCY:

Every three years

6. EXPECTED PRECISION/RELIABILITY:

±20%/±20%

7. TIME FOR REPORTING:

3rd, 6th and 9th year

8. COST:

\$700 each report

9. EVALUATION:

If estimated number of roost groups remaining in a timber sale area after harvest is less than the number of roost groups identified for the areas prior to harvest, the ID Team will evaluate and Plan modification may be necessary.

WILDLIFE 6

1. ITEM MONITORED:

Threatened or endangered animals.

2. PURPOSE:

Federal regulations

3. EXPECTED FUTURE CONDITION:

Maintain or improve habitat conditions to increase populations, and eventual downlisting to delisting.

4. MONITORING METHOD:

Christmas Audubon Bird Counts, contract, State supplied data, U.S. Fish and Wildlife Service supplied data.

5. FREQUENCY:

Annually for Federally listed species and when invited to participate by states for State listed species.

6. EXPECTED PRECISION/RELIABILITY:

±20%/±20%

7. TIME FOR REPORTING:

Annually for Federally listed species and as needed for State species.

8. COST:

\$500 for Federally listed species.
\$200 for State listed species.

9. EVALUATION:

Ultimate goal is to delist species. Time periods will vary according to individual recovery plans. Goals will be taken from them and the portion assigned to the Cibola will be applied.

WILDLIFE 7

1. ITEM MONITORED:

Threatened and endangered/sensitive plants.

2. PURPOSE:

Federal regulations and Regional Forester direction.

3. EXPECTED FUTURE CONDITION:

Maintain or improve habitat condition to increase population and eventually remove from list.

4. MONITORING METHOD:

Surveys by Forest Service personnel and contractors, and from data supplied by U.S. Fish and Wildlife Service and states.

5. FREQUENCY:

Bi-annual surveys unless habitat is threatened by resource management activities.

6. EXPECTED PRECISION/RELIABILITY:

±20%/±20%

7. TIME FOR REPORTING:

Within 3 months to one year of the surveys.

8. COST:

\$700 per species.

9. EVALUATION:

Ultimate goal is to delist. Time periods will vary according to sensitivity and populations of individual species.

WILDLIFE 8

1. ITEM MONITORED:

Population and habitat trends of management indicator species.

2. PURPOSE:

Federal regulation.

3. EXPECTED FUTURE CONDITION:

Maintain or improve essential habitat conditions.

4. MONITORING METHOD:

A. Nongame Birds:

1. Point-counting method developed by Reynolds et al.
(Reynolds, R.T., J. M. Scott, and R. A. Nussabaum, 1980. A variable circular-pilot method for estimating bird numbers. Condor 82:309-313.)
2. Monitor Management guilds as developed by Short and Burnham, and modified by Verner.
(Short M. L., and K. P. Burnham. 1982. Technique for structuring wildlife guilds to evaluate impacts on wildlife communities. USDI Fish and Wildlife Service, Special Sci. Report-Wildlife 2244.33 pp.) (Verner, J. In press. The guild concept applies to management of bird populations. Environ. Manage.)
3. Single-season monitoring by Verner.
(Verner, J. 1980 a. Birds of California oak habitats-management implications. Pages 246-264 in T. T. Plumb, tech. coord. Proceedings of symposium on the ecology, management, and utilization of California oaks. USDA Forest Service, Gen. Tech. Report PSW-44. Pacific Southwest Forest and Range Exp. Sta., Berkeley, CA 368 pp. Verner J. 1980b. Bird communities of mixed conifer forests of the Sierra Nevada. Pages 198-223 in R. M. DeGraaf, tech. coord. Workshop proceedings: management of western forest and grasslands for nongame birds. USDA Forest Service, Gen. Tech. Report INT-86. Intermountain Forest and Range Exp. Sta., Ogden, UT.)
4. Monitor trends in habitat by Thomas et al.

(Thomas, J. W., R. J. Miller, C. Master, R. G. Anderson, and B. E. Carter. 1979. Plant communities and successional stages. Pages 22-39 in J. W. Thomas, tech. ed. Wildlife habitats on managed forests: the Blue Mountains of Oregon and Washington. Agric. Handbook No. 553 USDA Forest Service, Washington, DC 512 pp.)

B. Game Animals

1. Respective State Game and Fish census techniques and resultant data.
2. Monitor trends in habitat.

5. FREQUENCY:

A. Nongame birds:

1. Monitor every two years, of management guilds of birds in habitat especially vulnerable to management actions.
2. Monitor other habitats and species using appropriate methods every five years.
3. Monitor trends in habitat diversity every five years.
4. Monitor compliance with Regional and Forest Standards and policies related to maintenance and/or improvements of nongame bird habitat annually.

B. Game animals

1. Analyze State Game and Fish data annually.
2. Monitor trends in habitat diversity every five years.
3. Monitor compliance with Regional and Forest standards and policies related to maintenance and/or improvements of game animal habitat annually.

6. EXPECTED PRECISION/RELIABILITY:

±20%/±20%

7. TIME FOR REPORTING:

A. Nongame birds:

1. Baseline data—Annually through year 5 of first period.
2. Monitor populations—Years 6, 8, 10 of first period.
3. Monitor habitat—Annually, years 1-10.

B. Game animals

1. Analyze State Game and Fish data annually.
2. Monitor habitat annually.

8. COST:

A. Baseline data collection and first 5 years of monitoring (years 1-5). The initial monitoring will be done in conjunction with baseline data collection. The effectiveness of monitoring is reduced until baseline data is collected.

1. Nongame birds—Estimated \$8,000 annually.

2. Game animals--\$500 annually.
- B. Monitoring program (Years 5-10)
 1. Nongame birds--\$8,000 biannually (Years 5, 7, 9).
 2. Game animals--\$500 annually.
9. EVALUATION:
 - A. Nongame birds--Through monitoring of habitat and populations a determination will be made to ensure the species do not fall below minimum viable populations.
 - B. Game animals--With data furnished by the respective State Game and Fish agencies on population numbers, a determination will be made to ensure the species do not fall below minimum viable populations.

RANGE 1

1. ITEM MONITORED:
Acres of overstory modification in woodland type.
2. PURPOSE:
Federal regulation; measure prescription and effects.
Forest related issue.
3. EXPECTED FUTURE CONDITION:
Increase forage production in analysis areas where overstory modification is scheduled.
4. MONITORING METHOD:
Review of annual work accomplishment reports.
5. FREQUENCY:
Annually
6. EXPECTED PRECISION/RELIABILITY:
±10%/±20%
7. TIME FOR REPORTING:
5th and 9th year
8. COST:
\$100 per report.
9. EVALUATION:
The acres of overstory modification completed for the evaluation period (ending at 9th year) should be within 10% of projection. If not, the ID Team will evaluate and Plan modification may be necessary.

RANGE 2

1. ITEM MONITORED:

Acres of shinnery oak and brush conversion and reseeding.

2. PURPOSE:

Federal regulation; measure prescription and effects.
Forest Management Concern.

3. EXPECTED FUTURE CONDITION:

Increase forage production.

4. MONITORING METHOD:

Review of annual work accomplishment reports.

5. FREQUENCY:

Annually

6. EXPECTED PRECISION/RELIABILITY:

±10%/±20%

7. TIME FOR REPORTING:

5th and 9th year

8. COST:

\$100 per report

9. EVALUATION:

The acres of shinnery oak and brush conversion and reseeding completed for the evaluation period (ending the ninth year) should be within 25 percent of projection. If not, the ID Team will evaluate and Plan modification may be necessary.

RANGE 3

1. ITEM MONITORED:

Range development

2. PURPOSE:

Federal regulation sample prescription and effects.
Forest issue related

3. EXPECTED FUTURE CONDITION:

In order to move toward balancing range use with capacity the following structural and nonstructural improvements will be added or reconstructed: 1) 764 miles of fence; 2) 130 miles of pipeline; and 3) 446 water developments by the end of the first period.

4. MONITORING METHOD:

Data on completed range improvements (fence, water, and pipelines) can be tracked through annual work accomplishment reports.

5. FREQUENCY:

Annual

6. EXPECTED PRECISION/RELIABILITY:

±10%/±20%

7. TIME FOR REPORTING:

5th and 9th year

8. COST:

\$100 per report

9. EVALUATION:

If 90% or less of the planned improvements are not accomplished at the end of the ninth year, the ID Team will evaluate and Plan modification may be necessary.

RANGE 4

1. ITEM MONITORED:

Permitted use on Mt. Taylor, Magdalena, and Mountainair Ranger Districts.

2. PURPOSE:

Federal regulation sample prescriptions and effects.
Forest issue related.

3. EXPECTED FUTURE CONDITION:

Range permitted use will be balanced with capacity by the end of the third decade.

4. MONITORING METHOD:

Data generated from grazing permits and displayed in Annual Grazing Statistical Report.

5. FREQUENCY:

Annual

6. EXPECTED PRECISION/RELIABILITY:

±5%/±5%

7. TIME FOR REPORTING:

5th and 9th

8. COST:

\$100 per report

9. EVALUATION:

Evaluate at 5 year intervals. If permitted use exceeds projected levels or a more than 5% below projected levels, the ID Team will evaluate and Plan modification may be necessary.

RANGE 5

1. ITEM MONITORED:

Grazing capacity and range condition on Mt. Taylor, Magdalena and Mountainair Ranger Districts.

2. PURPOSE:

Federal regulation, sample output. Forest issue related.

To identify acres improved from unsatisfactory condition to satisfactory condition.

3. EXPECTED FUTURE CONDITION:

Improved management and increased range capacity and acres in satisfactory condition through implementation of management plans and additional structural and nonstructural range improvements.

4. MONITORING METHOD:

Production/utilization studies, range analysis data and intensive inspections.

5. FREQUENCY:

5th year

6. EXPECTED PRECISION/RELIABILITY:

±10%/±20%

7. TIME FOR REPORTING:

5th and 9th

8. COST:

\$800 per report

9. EVALUATION:

Evaluate at 5 year intervals to determine rate in meeting expected capacity. If range condition decreases or if below anticipated capacity or more than 10 percent above capacity, the ID Team will evaluate and Plan modification may be necessary.

RECREATION 1

1. ITEM MONITORED:

Miles of trail construction/reconstruction and maintenance (other than wilderness).

2. PURPOSE:

Federal Regulation, measure prescriptions and effects.

3. EXPECTED FUTURE CONDITION:

Demand for dispersed recreation trail use will be within capacity. Distribution and use will be improved by trail construction/reconstruction and maintenance.

4. MONITORING METHOD:

Work accomplishment reports.

5. FREQUENCY:

Annual

6. EXPECTED PRECISION/RELIABILITY:

±5%/±5%

7. TIME FOR REPORTING:

3rd, 6th and 9th year

8. COST:

\$200 per report

9. EVALUATION:

Evaluation by the ID Team will be made at the third and sixth years during the decade to insure that cumulative deviation for the decade does not vary by ±25%. Plan modification may be necessary if ±25% is exceeded.

RECREATION 2

1. ITEM MONITORED:

Developed site use, public and private sector.

2. PURPOSE:

Federal Regulation, sample output.
Forest issue related.

3. EXPECTED FUTURE CONDITION:

The projected annual demand for developed recreation at year 2030 is 2,270 MRVD's. The Plan will provide 1,321 MRVD', or 58 percent of the demand. During the first five planning periods, 9,470 PAOT capacity will be added. Of this amount 4,200 PAOT will be in the private sector.

4. MONITORING METHOD:

Recreation Information Management, Visitor Use Report, (based on District Ranger estimates and on actual count of tickets sold or other counts by private sector operators).

5. FREQUENCY:

Annual

6. EXPECTED PRECISION/RELIABILITY:

±20%/±20%

7. TIME FOR REPORTING:

3rd, 6th and 9th year

8. COST:

\$200 per report

9. EVALUATION:

Compare actual use to projected use. Average actual use for each 3 year reporting period. If actual use is under by 10% or is over by 30%, the ID Team will evaluate and Plan modification may be necessary.

RECREATION 3

1. ITEM MONITORED:

Condition of developed sites in the public sector.

2. PURPOSE:

Forest issue related and to measure prescriptions and effects.

3. EXPECTED FUTURE CONDITION:

Satisfaction for developed recreation use below demand and less than full service management will result in some site deterioration and loss in investment due to heavy use.

4. MONITORING METHOD:

Recreation Information Management, Facility Condition Inventory, (based on District Staff examination of each site and each facility using professional or technical opinion).

5. FREQUENCY:

Annual

6. EXPECTED PRECISION/RELIABILITY:

±10%/±10%

7. TIME FOR REPORTING:

4th and 9th year

8. COST:

\$200 per report

9. EVALUATION:

During fourth and ninth year, if less than 80% of the facilities forestwide are within RIM Condition Classes I or II, the ID Team will evaluate and Plan modification may be necessary.

RECREATION 4

1. ITEM MONITORED:

The provision of increased developed PAOT for recreation use.

2. PURPOSE:

Forest issue related and to measure prescriptions and effects.

3. EXPECTED FUTURE CONDITION:

Recreation developments currently have a capacity of 10.387 PAOT. An additional 11,570 PAOT are needed to demand by the end of Period 5. The Plan will provide an additional 9,470 PAOT above the current level.

4. MONITORING METHOD:

Recreation Information Management, System Special Report Number 18, (based on District Rangers maintenance of total Basic Address Report).

5. FREQUENCY:

Annual

6. EXPECTED PRECISION/RELIABILITY:

±5%/±5%

7. TIME FOR REPORTING:

4th and 9th year

8. COST:

\$200 per report

9. EVALUATION:

Compare actual availability of capacity with projected capacity. If capacity exceeds projected level by 20% or is under projected trend by 20%, the ID Team will evaluate and Plan modification may be necessary.

CULTURAL RESOURCES 1

1. ITEM MONITORED:

Cultural resources listed in or eligible for nomination to the National Register of Historic Places and/or that have been allocated to categories of active management.

2. PURPOSE:

Comply with law and executive order; resource protection.

3. EXPECTED FUTURE CONDITION:

Assure protection of cultural resource sites.

4. MONITORING METHOD:

Aerial and ground inspection in conjunction with other resource activities.

5. FREQUENCY:

Annual

6. EXPECTED PRECISION/RELIABILITY:

No variance allowed.

7. TIME FOR REPORTING:

Annually

8. COST:

\$100 per annual report

9. EVALUATION:

Protective actions will be undertaken if vandalism or natural deterioration threatens the integrity of the site.

CULTURAL RESOURCES 2

1. ITEM MONITORED:

Clearance surveys for cultural resources.

2. PURPOSE:

Comply with law and executive order; resource protection.

3. EXPECTED FUTURE CONDITION:

Timely clearance surveys will prevent disturbance of previously identified and/or unidentified cultural resources.

4. MONITORING METHOD:

Ground survey of areas which may be impacted by various resource activities.

5. FREQUENCY:

Prior to every resource activity having a potential of disturbing cultural resources.

6. EXPECTED PRECISION/RELIABILITY:

No variance allowed.

7. TIME FOR REPORTING:

Annually

8. COST:

\$100 per annual report

9. EVALUATION:

No good disturbing resource activities will be permitted until an archeological clearance survey is completed and mitigating requirements developed.

SOIL AND WATER 1

1. ITEM MONITORED:

Watershed improvement acres and watershed condition inventories.

2. PURPOSE:

Federal regulation and Forest related issue.

3. EXPECTED FUTURE CONDITION:

Increased acres of watershed in satisfactory condition and accomplishment of direct watershed treatments.

4. MONITORING METHOD:

Review of acres satisfactorily treated, management plans implemented, terrestrial ecosystem survey and watersheds receiving watershed condition inventories.

5. FREQUENCY:

Annually

6. EXPECTED PRECISION/RELIABILITY:

±10%/±15%

7. TIME FOR REPORTING:

5th and 9th year

8. COST:

\$200 per report

9. EVALUATION:

Estimated improvement acres must be no less than 20% of the predicted at the end of the ninth year or the ID Team will evaluate and Plan modification may be necessary.

SOIL AND WATER 2

1. ITEM MONITORED:

Riparian acres treated to bring to satisfactory condition.

2. PURPOSE:

Forest issue related.

3. EXPECTED FUTURE CONDITION:

Condition of all riparian areas is expected to improve through direct treatment and improved resource management. This will indirectly benefit wildlife diversity, water quality, and water oriented dispersed recreation.

4. MONITORING METHOD:

Review of work accomplishment reports and implementation of standards and guidelines.

5. FREQUENCY:

Annual

Amended 1-9-87

6. EXPECTED PRECISION/RELIABILITY:

±5%/±5%

7. TIME FOR REPORTING:

5th and 9th year

8. COST:

\$300 per report

9. EVALUATION:

Departure of 10 percent below the planned level of treatment at the end of ninth year will require ID Team evaluation and Plan modification may be necessary.

SOIL AND WATER 3

1. ITEM MONITORED:

Best Management Practices (BMPs).

2. PURPOSE:

Monitor projects to determine implementation and suitability of Best Management Practice recommendations.

3. EXPECTED FUTURE CONDITION:

Production of water from Forest lands will meet State water quality standards.

4. MONITORING METHOD:

Established Best Management Practices (i.e. revegetation of disturbed areas, water barring roads, etc.) will be checked for implementation on the ground by designated qualified personnel. Implementation will be judged on effectiveness of reducing soil loss and maintenance of channel stability of the appropriate BMPs employed.

5. FREQUENCY:

Annually, one project will be checked.

6. EXPECTED PRECISION/RELIABILITY:

±20%/±10%

7. TIME FOR REPORTING:

Years 3, 5 and 7.

8. COST:

\$500 in reporting year.

9. EVALUATION:

Failure to implement at least 80 percent required Best Management Practices will require evaluation by the ID Team.

SOIL AND WATER 4

1. ITEM MONITORED:

Successful closing and obliteration of temporary roads and trails.

2. PURPOSE:

Achieve planned road closure and obliteration of temporary roads and trails.

3. EXPECTED FUTURE CONDITION:

Ninety percent of the temporary road mileage closed and obliterated following manipulation activities will not have sustained use 3 years after closure.

4. MONITORING METHOD:

Work accomplishment reports.

5. FREQUENCY:

Annually

6. EXPECTED PRECISION/RELIABILITY:

±10%/±10%

7. TIME FOR REPORTING:

3rd, 6th, and 9th year

8. COST:

\$300

9. EVALUATION:

If the accomplishment falls below 25 percent of planned, the ID Team will evaluate the Plan and the practice and modification of the Plan or practice may be appropriate.

VISUAL QUALITY

1. ITEM MONITORED:

The effect of management activities on acres of visual quality objectives.

2. PURPOSE:

Federal Regulations, measure prescriptions and effects.

3. EXPECTED FUTURE CONDITION:

The plan requires the VQO's to be managed at current inventory objectives with emphasis on maintenance of retention and partial retention VQO's. Activities such as timber harvest, vegetation modification and road construction generally occur on modification and maximum modification acreages.

4. MONITORING METHOD:

The Visual Resource Management System will be used as a basis of the monitoring activity.

5. FREQUENCY:

4th and 9th year

6. EXPECTED PRECISION/RELIABILITY:

±10%/±10%

7. TIME FOR REPORTING:

4th and 9th year

8. COST:

\$200 each report

9. EVALUATION:

If visual quality objective acres in Retention or Partial Retention is reduced 20%, the ID Team will evaluate and Plan modification may be necessary.

LANDS 1

1. ITEM MONITORED:

The availability of electronic site acres.

2. PURPOSE:

Forest issue related and to measure prescriptions and effects.

3. EXPECTED FUTURE CONDITION:

The Forest currently has nine electronic sites. The plan provides for expansion of four of these sites and designation of five new sites. Acreage of electronic sites would increase from the current 133 acres to 422 acres with expansion and new sites.

4. MONITORING METHOD:

A review of acres dedicated to electronic sites.

5. FREQUENCY:

Every third year.

6. EXPECTED PRECISION/RELIABILITY:

±20%/±20%

7. TIME FOR REPORTING:

Every third year

8. COST:

\$50 each report

9. EVALUATION:

If acres vary ±5% per year period from the projected demand, the ID Team will evaluate and Plan modification may be necessary.

LANDS 2

1. ITEM MONITORED:

The effect of management practices conducted on adjacent or intermingled non-National Forest lands on the goals and objectives in the Forest Plan.

2. PURPOSE:

Regional direction.

3. EXPECTED FUTURE CONDITION:

Through key contacts, District Rangers will be kept informed of management practices on adjacent or intermingled non-National Forest lands.

4. MONITORING METHOD:

Periodic inter-agency meetings, meetings with concerned citizens and land owners; with local, county, state agencies, and organizations. The Forest Supervisor's Lands Staff Officer will compile, receive and review reports from Rangers and others, and formulate an opinion.

5. FREQUENCY:

Continuing on an opportunity or need basis.

6. EXPECTED PRECISION/RELIABILITY:

Precision is nonquantifiable. It will be determined to be acceptable when the evaluation is made by professional staff. Reliability will be $\pm 25\%$.

7. TIME FOR REPORTING:

As needed.

8. COST:

\$100 each report

9. EVALUATION:

If a significant issue or concern arises, the ID Team will meet to discuss a possible need to modify the Plan.

LANDS 3

1. ITEM MONITORED:

Miles of rights-of-way acquired.

2. PURPOSE:

Federal regulations, measured prescriptions and effects.
Forest issue related.

3. EXPECTED FUTURE CONDITION:

An estimated 8 miles of rights-of-way will be acquired in the first period.

4. MONITORING METHOD:

Work accomplishment reports.

5. FREQUENCY:

Annually

6. EXPECTED PRECISION/RELIABILITY:

$\pm 5\%/\pm 5\%$

7. TIME FOR REPORTING:

4th and 8th year

8. COST:

\$50 each report

9. EVALUATION:

Failure to acquire projected needed rights-of-way at the end of the seventh year will require ID Team evaluation and Plan modification may be necessary.

LANDS 4

1. ITEM MONITORED:

Effect of goals, objectives, and management activities of the Forest on adjacent intermingled and surrounding non-National Forest lands.

2. PURPOSE:

Achieve effective communication and coordination.

3. EXPECTED FUTURE CONDITION:

Through key contacts and sustained communication with local community leaders, land grant, and acequia community leaders, Native American community leaders, traditional Native American religious leaders, Federal and State officials, Forest officials will be kept informed of the effects of management practices.

4. MONITORING METHOD:

Periodic interagency meetings, meetings with concerned citizens, local community leaders, land grant and acequia community leaders, Native American community leaders, traditional Native American religious leaders, Federal and State officials. The ID Team will compile and distribute an annual report based on meeting reports, contacts and input from District Rangers.

5. FREQUENCY:

Annually

6. EXPECTED PRECISION/RELIABILITY:

Precision and reliability are not quantifiable.

7. TIME FOR REPORTING:

Annually

8. COST:

\$300

9. EVALUATION:

If a significant issue or concern arises, the ID Team will meet to discuss the immediate means of responding to the issue or concern, and evaluate the need for Plan modification.

PROTECTION 1

1. ITEM MONITORED:

Law enforcement person hours.

2. PURPOSE:

Forest issue related.

3. EXPECTED FUTURE CONDITION:

Law enforcement efforts by the Forest Service, and aided by cooperative agreements with local sheriff's departments, are adequate and commensurate with the goods and services produced in the Forest and Grasslands.

4. MONITORING METHOD:

Professional evaluation of trend based on a review of case loads, solution rates and public complaints. The evaluation will be based on a review of 1) protection of cultural resources; 2) ORV damage; 3) fuelwood theft; 4) dollar cost of vandalism; and 5) trends in user protection.

Data in the LEMAR System or system in use, will be reviewed and used as a data base.

5. FREQUENCY:

The LEMARS System is updated monthly.

6. EXPECTED PRECISION/RELIABILITY:

±1%/±1%

7. TIME FOR REPORTING:

Every 3 years.

8. COST:

\$100 each report

9. EVALUATION:

The Forest Law Enforcement Coordinator will review the level of law enforcement and make recommendations on program effectiveness. Evaluation will be made by ID Team every 3 years and Plan modification may be necessary.

PROTECTION 2

1. ITEM MONITORED:

Determine that destructive insects and disease organisms do not increase potentially damaging levels following management activities.

2. PURPOSE:

Federal regulation/Forest issue related.

3. EXPECTED FUTURE CONDITION:

Using an Integrated Pest Management approach through various silvicultural activities, slash treatment and various control methods, insect and disease problems are not expected to have serious adverse effects on the Forest Monitoring of insect and disease levels will provide information necessary to determine future impacts.

4. MONITORING METHOD:

Periodic aerial surveys. Ground checks by qualified personnel.

Amended 1-9-87

5. FREQUENCY:

Yearly aerial flights and ground checks.

6. EXPECTED PRECISION/RELIABILITY:

±40%/±30%

7. TIME FOR REPORTING:

Annually

8. COST:

\$200 annually.

9. EVALUATION:

Data will be evaluated to determine if the build-up results from a management practice. If the build-up occurs, an evaluation of significance will be made by the ID Team. If potentially damaging, the ID Team will modify management prescriptions.

COSTS 1

1. ITEM MONITORED:

Unit costs by Activity (MIH)

2. PURPOSE:

Verify ability to implement Forest Plan.

3. EXPECTED FUTURE CONDITION:

Unit costs as derived from the Range of Implementation for Proposed Action Technical Report.

4. MONITORING METHOD:

Advent Report #21.

5. FREQUENCY:

At end of each fiscal year.

Amended 1-9-87

6. EXPECTED PRECISION/RELIABILITY:

±5%/±5%

7. TIME FOR REPORTING:

3rd, 6th and 9th year

8. COST:

\$100 per report

9. EVALUATION:

If costs vary more than -10% or +5% from an average annual over 3 years, an evaluation will be made by the ID Team and Plan modification may be necessary.

COSTS 2

1. ITEM MONITORED:

Total annual budget.

2. PURPOSE:

Verify ability to implement Forest Plan.

3. EXPECTED FUTURE CONDITION:

An average annual budget of \$7,184,000.

4. MONITORING METHOD:

Annual PAMARS reporting system and Regional Forester's Program, Budgeting and Information System.

5. FREQUENCY:

At end of each fiscal year.

6. EXPECTED PRECISION/RELIABILITY:

±5%/±5%

7. TIME FOR REPORTING:

3rd, 6th and 9th year

8. COST:

\$100 per report

9. EVALUATION:

If budget varies more than -5% or +10% from an average annual over 3 years, an evaluation will be made by the ID Team and Plan modification may be necessary.

COSTS 3

1. ITEM MONITORED:

Budget by program component.

2. PURPOSE:

Verify ability to implement Forest Plan.

3. EXPECTED FUTURE CONDITION:

Average annual appropriation equal to amount allocated in cost tables for Economic Efficiency Technical Report.

4. MONITORING METHOD:

Annual PAMARS reporting system and Regional Forester's Program, Budgeting and Information System.

5. FREQUENCY:

At end of each fiscal year.

6. EXPECTED PRECISION/RELIABILITY:

±5%/±5%

7. TIME FOR REPORTING:

3rd, 6th and 9th year

8. COST:

\$100 per report

9. EVALUATION:

If budget varies more than -5% or +10% from an average annual over 3 years, an evaluation will be made by the ID Team and Plan modification may be necessary.

Regardless of budget, the Forest shall comply with applicable standards and guidelines for all objectives.

FACILITIES 1

1. ITEM MONITORED:

Miles of road construction/reconstruction.

2. PURPOSE:

Federal regulation, measured prescriptions and effects.
Forest issue related.

3. EXPECTED FUTURE CONDITION:

In order to meet various resource activities and outputs as indicated in the Forest Plan, an estimated 34 miles of road construction/reconstruction will have to be accomplished annually during the first period. Annual road maintenance is estimated to be 2,715 miles during the same time period.

4. MONITORING METHOD:

Word Accomplishment Reports.

5. FREQUENCY:

Annually

6. EXPECTED PRECISION/RELIABILITY:

±5%/±10%

Amended 1-9-87

7. TIME FOR REPORTING:

3rd, 6th and 9th year

8. COST:

\$100 each report

9. EVALUATION:

If actual accomplishment falls below 25% of planned at the end of the ninth year, the ID Team will evaluate and Plan modification may be necessary.

FACILITIES 2

1. ITEM MONITORED:

Miles of Level 3, 4 and 5 road maintenance.

2. PURPOSE:

Federal regulations, measured prescriptions and effects.
Forest issue related.

3. EXPECTED FUTURE CONDITION:

In order to meet various resource activities and outputs as indicated in the Forest Plan, an estimated 1,508 miles of road will have to be maintained at levels 3, 4 and 5.

4. MONITORING METHOD:

Word accomplishment reports.

5. FREQUENCY:

Annually

6. EXPECTED PRECISION/RELIABILITY:

±5%/±5%

7. TIME FOR REPORTING:

3rd, 6th and 9th year

8. COST:

\$100 each report

9. EVALUATION:

If actual accomplishment falls below 25% of planned at the end of the ninth year, the ID Team will evaluate and Plan modification may be necessary.

FACILITIES 3

1. ITEM MONITORED:

Miles of road obliterated.

2. PURPOSE:

Federal regulations, measured prescriptions and effects.
Forest issue related.

3. EXPECTED FUTURE CONDITION:

An estimated 895 miles of roads will be obliterated during the first period. This will be an annual average of 90 miles obliterated.

4. MONITORING METHOD:

Word accomplishment reports.

5. FREQUENCY:

Annually

6. EXPECTED PRECISION/RELIABILITY:

±5%/±10%

7. TIME FOR REPORTING:

3rd, 6th and 9th year

8. COST:

\$100 each report

9. EVALUATION:

If actual accomplishment falls below 25% of planned at the end of the ninth year, the ID Team will evaluate and Plan modification may be necessary.

STANDARDS AND GUIDELINES

1. ITEM MONITORED:

Plan implementation.

2. PURPOSE:

Federal regulation.

3. EXPECTED FUTURE CONDITION:

Applicants of standards and guidelines will assure achievement of planned management direction and objectives.

4. MONITORING METHOD:

Review District General Management Reviews. Program Reviews and Activity Reviews and public comments and ID Team reviews.

5. FREQUENCY:

Annually

6. EXPECTED PRECISION/RELIABILITY:

±10%/±15%

7. TIME FOR REPORTING:

Annual review and cumulative summary report 3rd, 6th, 9th years.

8. COST:

\$300 each report

Amended 1-9-87

9. EVALUATION:

If specific monitoring items in this Monitoring Plan do not meet established evaluation criteria, the ID Team will evaluate and Forest Plan modification may be necessary.

If standards and guidelines not specifically monitored in the Monitoring Plan are not accomplished to the level of acceptance as recommended by the ID Team and established by the Forest Supervisor, the Forest Plan will be evaluated and modification may be necessary.

The Forest shall not compromise adherence to standards and guidelines in order to meet objectives; rather, the Forest shall modify objectives if necessary to maintain standards and guidelines.

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Glossary

A

Access - See Public access.

Acquisition of land - Obtaining full ownership rights by donation, purchase, exchange or condemnation.

Acre equivalent - A unit of measure for structural and nonstructural wildlife habitat improvements converted to acres. One water = 640 acre equivalents (AcEq). Five acre equivalents are counted for every acre fenced, clearcut, seeded/planted and prescribed burn.

Acres of final removal (FREM) - A constraint used in FORPLAN to specify the minimum or maximum acres of suitable timber to be harvested by analysis area or forest-wide during any time period to insure lands to be regenerated do not exceed the Forest's manpower budget abilities to restock the area within 5 years of final harvest.

Acre-foot - A measurement of water volume. The volume of water that would cover one acre to a depth of one foot, equal to 43,660 cubic feet or 325,851 gallons.

Activity - Actions, measures, or treatments that are undertaken which directly or indirectly produce, enhance, or maintain forest and rangeland outputs or achieve administrative or environmental objectives.

Administration - Execution of an organizational policy to reach predetermined objectives.

Administrative unit - All the National Forest System lands for which one Forest Supervisor has responsibility.

Aesthetics - Pertaining to the quality of human perception of natural beauty (including sight, sound, smell, touch, taste, and movement).

Affected environment - The natural and physical environment and the relationship of people to that environment that will or may be changed by actions proposed.

Afforestation - The establishment of tree cover on an area where trees have not grown previously.

Age Class - Interval of years, commonly 20, into which trees are grouped for management. Example: 1-20 years, 21-40 years

Agriculture - A broad class of land and resource for the production of biotic crops - whether animal or plant.

Air pollution - Any substance or energy form (heat, light, noise, etc.) which alters the state of the air from what would naturally occur.

Airshed - The air encompassing a specific geographic region.

Allocation - The assignment of a land area to a particular use or uses to achieve management goals and objectives.

Allocation model - See Resource allocation models.

Allotment - See Range Allotment.

Allotment Management Plan - A 5-10 year plan for a livestock grazing allotment designed to secure the best practical use of the forage. It includes the grazing system to be practiced, areas to be revegetated and needed improvements such as water developments and fences. The grazing permittee and Forest range personnel jointly prepare the plan.

Allowable sale quantity - The quantity of timber that may be sold from the area of suitable land covered by the Forest plan for a time period specified by the plan. This quantity is usually expressed on an annual basis as the "average annual allowable sale quantity."

Alternative - In Forest planning, a mix of management prescriptions applied in specific locations to achieve a desired management emphasis as expressed in goals and objectives.

Amenity - The pleasurable, educational, or aesthetic features of the land or resources.

Analysis - In mathematics and computer science, it pertains to solving problems.

Analysis area - The basic land unit of analysis which is used to allocate and schedule management prescriptions. Each analysis area is considered to be homogenous in terms of input requirements and output response to management practices. Composed of capability areas or portions of capability areas with similar physical attributes, management costs and resource yields.

Analysis of the management situation - A determination of the ability of the planning area to supply goods and services. A phase of the planning process.

Animal unit month - The quantity of forage required by one mature cow (1,000 lbs.), or the equivalent, for one month.

Annual permittee plans - Written instructions to a grazing permittee that identifies what activities are planned and required on a range allotment during the coming grazing season. It is developed as a cooperative effort between the permittee and the Forest Service.

Arterial roads - Roads which service large land areas and usually connect with public highways or other Forest arterial roads to form an integrated network of primary travel routes. The location and standard are determined by a demand for maximum mobility and travel efficiency rather than by a specific resource management service. Usually they are developed and operated for long-term land and resource management purposes and constant service.

Aspect - The direction a slope faces (north, southeast, etc.).

AUM - See Animal unit month.

Available and suitable - See Available lands and Suitable lands.

Available lands - Those portions of the Forest not administratively excluded from use for timber harvest or livestock grazing.

Avoidance area - An area having one or more physical, environmental, institutional or statutory impediments to corridor designation.

B

Backlog - Resource jobs needing completion as directed by the deadlines in the Resource Planning Act (RPA). Includes reforestation, thinning and landline location.

Backlog reforestation - Areas needing reestablishment of tree cover due to failure of natural regeneration as a result of site conditions or lack of seed trees.

Backlog thinning - Those areas that had not previously been thinned and were in need of a precommercial thinning as of 1965.

Badlands - Regions where erosion has carved soft rocks into intricate and unique shapes and where vegetation is scanty.

Bankhead-Jones Farm Tenant Act - Authorizes the Secretary of Agriculture to develop a program of land conservation and utilization in order to correct maladjustments in land use, and to assist in controlling soil erosion; promoting

reforestation; preserving natural resources; protecting fish and wildlife; developing and protecting recreational facilities; mitigating floods; preventing impairment of dams and reservoirs; conserving surface and subsurface moisture; protecting the watersheds of navigable streams, and protecting the public's health, safety, and welfare.

Basal area - A measurement of how much of a site is occupied by trees. It is determined by measuring the square feet of the diameter of all the trees in an area of breast height (4.5 feet).

Base-in-exchange - Base-in-exchange lands are National Forest lands that have lost their wildland character. They are usually near communities and interspersed with private lands. These "base" lands are used to trade for isolated tracts of undeveloped private land that is usually surrounded by National Forest land.

Base sale schedule - A timber sale schedule formulated on the basis that the quantity of timber planned for sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade, and this planned sale and harvest for any decade is not greater than the long-term sustained yield capacity.

Benefit (value) - Inclusive terms used to quantify the results of a proposed activity, project or program expressed in monetary or nonmonetary terms.

Benefit-cost analysis - An analytical approach to solving problems of choice. Benefit-cost analysis identifies for each objective that alternative which yields the greatest benefit for a given cost or that alternative which produces the required level of benefits for the lowest cost.

Benefit-cost ratio - An economic indicator of efficiency, computed by dividing benefits by cost.

Best management practice - Application of the best available demonstrated control technology, processes, measures and operating methods that are socially, economically and technically feasible for controlling soil loss or improving water quality.

Big game - Those species of mammals normally managed as a sport hunting resource, e.g., deer, turkey, elk, bear, etc.

Biological growth-potential - The average net growth attainable in a fully stocked natural forest stand.

BLM - Bureau of Land Management, U.S. Department of the Interior.

Board foot - The amount of wood in an unfinished board 1 inch thick, 12 inches long, and 12 inches wide.

Brush disposal - The reduction of wood (residue) remaining after a logging operation. Money is collected from the logging operation to pay for this reduction. The logger is often required and paid to take the residue to a road for the firewood user. Sometime it is piled and burned if not removed by the public. Sometimes it is piled and left in place as homes for wildlife. The residue is removed to control insects and make fires easier to control.

C

Cable logging - Logs are moved from their stumps to a road by a cable. They may be dragged along the ground or lifted into the air.

Calving areas (elk) - The areas, usually on spring range, where elk cows give birth to calves and tend them during their first few days or weeks.

Canopy - The more or less continuous cover of branches and foliage formed by the crowns of trees and other woody growth.

Capability - The potential of an area of land to produce resources, supply goods

and services, and allow resource uses under an assumed set of management practices and at a given level of management intensity. Capability depends upon site conditions such as climate, slope, landform, soils, and geology, as well as the application of management practices, such as silviculture or protection from fire, insects, and disease.

Capital investment - An expenditure for long term additions or betterment, such as water developments, range fences, and campgrounds.

Carrying capacity (range or wildlife) - The maximum stocking rate possible without inducing damage to vegetation or related resources. It may vary from year to year on the same area due to fluctuating forage production.

Cavity nesters - Wildlife species that utilize tree cavities. Primary cavity nesters excavate their own hole. Secondary cavity nesters use natural cavities or cavities created by primary cavity nesters.

CEQ - See Council on Environmental Quality.

CFR - Code of Federal Regulations. A set of regulations that have been published in the Federal Register, and are used to govern Forest Service activities.

Cibola National Forest - The administrative title of the National Forest System lands administered by the Forest Service in Albuquerque, New Mexico. This includes the Cibola National Forest, and the Kiowa, Rita Blanca, McClellan Creek, and Black Kettle National Grasslands.

Clearcut - Removal of all standing trees over a given area of land in a single cut. Clearcut areas may occur in large or small blocks, patches or strips.

Clearcut harvest - Silvicultural system used to harvest mature trees at rotation age in one cut for the purpose of regenerating a new even-aged stand.

Climax - The culminating stage in plant succession for a given site; where the vegetation has reached a highly stable condition.

Closure - An administrative order restricting either the location, timing, or type of use in a specific area.

CMAI - See culmination of mean annual increment.

Cold-water fishery - Stream and lake waters which support predominantly cold-water species of game or food fishes (e.g., trout, salmon), which have maximum, sustained water temperature tolerances of about 70 degrees Fahrenheit in the summer.

Collector roads - Roads which serve smaller land areas and are usually connected to a Forest arterial road or public highway. They collect traffic from Forest local roads or terminal facilities. The location and standard are influenced by both long-term multi-resource service needs and travel efficiency. Forest collector roads are operated for constant service.

Commercial Forest - Forest land capable of producing merchantable timber, currently or prospectively accessible, and not withdrawn from such use. Excludes pinyon-juniper woodlands.

Commercial thinning - Thinning in tree stands with diameters greater than 5 inches for which there is a market value for pulpwood and/or small saw logs.

Commercial use - The use of products from the National Forest to make a profit.

Common variety minerals - See Minerals, common variety.

Compartment - A subdivision of Forest area used to gather information and plan future timber harvest. Its boundaries often correspond with topographic features.

Concern - See Management concern.

Conifer - A tree, usually an evergreen, that produces cones. Examples are: pinyon pine, ponderosa pine, Douglas-fir, white fir, juniper, spruce and bristlecone pine.

Consumptive use - A use of resources that reduces the supply—such as logging and mining. (See also Nonsumptive use.)

Contiguous analysis area - An analysis area confined within a single geographic area that is associated with a single issue, problem or management concern.

Controlled burn - A deliberate application of fire to an area where control is exercised. See prescribed fire.

Conventional ground skidding equipment - Machines that move along the ground on tracks or rubber tires and are used to skid (drag) logs to areas where they can be loaded on trucks and taken to a sawmill.

Cord - A unit of volume measurement containing 78 cubic feet of solid wood. Generally a stack of round or split wood measuring 4 feet wide by 4 feet high by 8 feet long.

Corridor - A linear strip of land identified for the present or future location of transportation or utility right-of-way.

Cost efficiency - The usefulness of specified inputs (costs) to produce specified outputs (benefits). In measuring cost efficiency, some outputs, including environmental, economic, or social impacts, are not assigned monetary values but are achieved at specified levels in the least cost manner. Cost efficiency is usually measured using present net value, although use of benefit-cost ratios and rates-of-return may be appropriate.

Council on Environmental Quality - An advisory council to the President established by the National Environmental Policy Act of 1969. It reviews federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters.

Cover - Plants or plant parts, living or dead, used by wildlife for protection from predators, weather, or in which to reproduce.

Criteria - Predetermined factors for comparing alternatives to facilitate and expedite the decisionmaking process.

Critical habitat - That portion of a wild animal's habitat that is critical for the continued survival of the species.

Cubic foot - In timber management a volume is measured as a 1 foot cube of solid wood.

Culmination of mean annual increment (CMAI) - Point in time in the age of a forest stand in which the mean annual growth increment no longer increases.

Cultural resources - The physical remains (artifacts, ruins, burial mounds, petroglyphs, etc.) which represent former human cultures.

Cultural treatment - A non-commercial treatment undertaken to assist or complete regeneration or to promote the development of a forest crop, including planting, seeding, site preparation, precommercial thinning, release and pruning.

Culture - The complex whole which includes knowledge, beliefs, are, morals, customs, and any other capabilities and habitats peculiar to a society.

Cunit - Equivalent to 100 cubic feet of solid wood.

Current direction - The program level currently being used to implement the 1980 RPA program.

Cutting cycle - The planned, recurring period of time between successive cuttings or harvests in a stand of trees.

D

Data - Any recorded measurements, facts, evidence, or observations reduced to written, graphical, tabular, or computer form.

DBH - Diameter at breast height. Diameter of a tree approximately 4 ½ feet above the ground.

Decision unit - The smallest component of an alternative for which relevant inputs (costs) and outputs (benefits) are analyzed. A general term that applies to analyses at any level. Decision units may be grouped for decisionmaking into aggregates called decision variables.

Decision variable - A component of an alternative in which input costs, outputs and benefits are identified and used for analysis and decisionmaking.

DE-FORPLAN - Acronym for Direct Entry Forest Plan. A linear programming computer model used for developing and analyzing alternatives.

DEIS - See draft Environmental Impact Statement.

Demand - The quantity of a good or service called for by society at a given price.

Departure - Timber harvest schedule which deviates from the principle of nondeclining even flow by exhibiting a planned decrease in the timber sale and harvest schedule in the future. A departure is characterized as a temporary increase over the base sale schedule without impairing the Forest's long-term sustained-yield.

Desertification - The sustained decline and/or destruction of the biological productivity of arid and semiarid lands caused by manmade stresses, sometimes in conjunction with natural extreme events. Such stresses, if continued or unchecked, over the long term may lead to ecological degradation and ultimately to desert-like conditions.

Developed recreation - Use of a developed recreation site.

Developed recreation management - The administration, operation and maintenance of developed sites to established standards and management objectives.

Developed recreation rehabilitation - Rehabilitation of recreation sites and facilities that are unsafe or otherwise unsatisfactory. This work will result in returning the site to its originally designed capacity.

Developed recreation site - A distinctly defined area where facilities are provided for concentrated public use, e.g., camp grounds, picnic areas, swimming area.

Direction - See Management direction.

Directional drilling - Oil and gas well drilling at an angle to protect surface features setting over the resource to be extracted.

Discount rate - The interest rate used in plan formulation and evaluation for discounting future benefits and computing costs, or otherwise converting benefits to a common time basis.

Dispersed recreation - Recreation use which occurs outside developed sites.

District - See Ranger district.

Diversity - The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.

Draft Environmental Impact Statement (DEIS) - The version of the 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 review and comment. 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.

Dwarf mistletoe - See mistletoe.

Dwarf mistletoe rating - The rating of a tree based on the degree of infection with dwarf mistletoe and the effect it has on growth or possible death of the tree.

E

Ecosystem - The system formed by the interaction of a group of organisms and their environment.

Edge - The place where plant communities meet or where successional stages or vegetative conditions within plant communities come together. It often contains organisms from both communities as well as those restricted to the interface area. The number of species present is often greater than the surrounding communities.

Effects - Results expected to be achieved from implementation of the alternatives relative to physical, biological, and social (cultural and economic) factors. Examples of effects are tons of sediment, pounds of forage, person-years of employment, income, etc. There are direct effects, indirect effects, and cumulative effects.

Elements - The elements relate to the activities and uses of the Forest. National and Regional planning and funding are by these elements. They are:

- Recreation
- Wilderness
- Fish and Wildlife
- Range
- Timber
- Water
- Minerals and Geology
- Human and Community Development
- Protection (law enforcement, fire, and insect and disease control)
- Lands (rights-of-way, boundaries, land trade, and acquisition)
- Soils
- Facilities (roads, trails, and buildings)

Elk calving - This usually happens between May 25 and July 10 each year, and is an extremely critical period for elk herd survival. Elk usually have their calves where there is a combination of grass, brush and thick timber. There should also be a water source within 1,000 yards.

Endangered species - A species which is in danger of extinction throughout all or a significant portion of its range—other than members of the class Insecta—and which have been designated under the provisions of the Endangered Species Act of 1973.

Endemic organism - A taxonomic category (e.g., genus, species, variety) whose natural occurrence is confined to a certain region and whose distribution is relatively limited.

Environment - All the conditions, circumstances and influences surrounding and affecting the development of an organism or group of organisms.

Environmental analysis - An environmental analysis (is) made for all (Forest Service) policies, plans, programs, and projects affecting resources, other land uses, or the quality of the physical, biological, economic, and social environment.

Environmental analysis is the decision process used to determine the significance of environmental impacts. This, in turn, determines which and when environmental documents are appropriate.

Environmental analysis (is) documented in either an environmental assessment (EA) or an environmental impact statement (EIS).

Documents must present a brief explanation of the purpose and need for the action; the criteria for evaluating alternatives; the alternatives considered; the anticipated effects of implementing the alternatives; and, in most cases, the Forest Service preferred alternative.

Environmental assessment - A document which displays a comparison of the effects of a proposed project and alternatives to it on the environment.

Environmental impact statement - See Draft environmental impact statement and Final environmental impact statement.

Environmental setting - See Management situation.

Epidemic - The population level of an organism (usually insects) increases to the point of severe damage to a resource (trees).

Evapotranspiration - Process by which water moves from the soil to the atmosphere by evaporation from the soil or transpiration through plants.

Even-aged management - The application of a combination of actions that result in the creation of stands in which trees of essentially the same age grow together. Managed even-aged forests are characterized by a distribution of stands of varying ages (and, therefore, tree sizes) throughout the forest area. The difference in age between trees forming the main canopy level of a stand usually does not exceed 20 percent of the age of the stand at harvest rotation age. Regeneration in a particular stand is obtained during a short period at or near the time that a stand has reached the desired age or size for regeneration and is harvested. Clearcut, shelterwood, or seed tree cutting methods produce even-aged stands.

Erosion - The processes whereby earthy or rocky material is worn away, loosened, dissolved and removed from any part of the earth's surface.

Erosion, natural - Wearing away of the earth's surface by natural agents under natural environmental conditions of climate, vegetation, etc., undisturbed by man.

Eyrie warden - Person assigned to locate and monitor birds of prey nests to prevent disturbance and determine reproduction success.

Exclusion area - An area having a statutory prohibition to right-of-way for lineal facilities or corridor designation.

F

Facilities - Transportation planning, road management and operation, fleet equipment and engineering services (example: administrative buildings, water and sanitation systems, sanitary landfills, dams, bridges, and communication systems).

Fawning areas - The areas, usually on spring ranges, where deer does give birth to fawns and tend them for a few days or weeks.

Feasibility - The relative advantage of managing or improving a land unit, considering its capability and suitability for specific use under the existing or projected socioeconomic climate.

Federal Register - A bulletin published daily by the Federal Government containing the schedule of hearings before Congressional and Federal Agency Committees, together with orders, proclamations, etc., released by the executive branch of the Government.

Final cut - See timber harvest.

Final Environmental Impact Statement (FEIS) - The final version of the statement of environmental effects required for major Federal actions under Section 102 of the National Environmental Policy Act (NEPA). It is a revision of the draft environmental impact statement to include published agency responses to the draft. It is a formal document which must meet legal requirements and is the document used as a basis for judicial decisions concerning compliance with NEPA.

Fire hazard - The volume, type, condition, arrangement and location of fuels (dead vegetation) that indicates the ease of starting a fire and difficulty of putting it out.

Fire risk - The probability of a fire starting from natural or manmade causes.

Firewood - Wood, either round, split or sawn, and burned primarily for heating purposes.

Fisheries habitat - Streams, lakes, and reservoirs that support fish.

Floodplain - That portion of a stream valley, adjacent to the channel which is covered, with water when the stream overflows its banks at flood stages.

Forage - All browse and nonwoody plants that are available to livestock or game animals for grazing or harvesting for feeding. The weight may be expressed as either green, air dry or oven dry. The term may also be modified as to time of production such as annual, current year's or seasonal forage production.

Forbs - Any nongrass-like plant having little or no woody material. Some people refer to these as weeds.

Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA) - An Act requiring the preparation of a program for the management of the National Forests' renewable resources and of land and resource management plans for units of the National Forest System. It also requires a continuing inventory of all forest and rangelands and renewable resources nation-wide.

Forest development roads - Roads that are part of the Forest transportation system, which includes all existing and planned roads, as well as other special and terminal facilities designated as Forest development transportation facilities.

Forest land - Land at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for non-forest use. Lands developed for non-Forest use include areas for crops, improved pasture, residential or administrative areas, improved roads of any width and adjoining clearings and powerline clearings of any width.

Forest Plan - See National Forest land and resource management plan.

Forest Service - The Forest Service of the Department of Agriculture, as directed by Congress, is dedicated to the principles of multiple-use management of the Nation's forest resources for sustained yields of water, forage, wildlife, wood, and recreation. Through management of the National Forests and National Grasslands, cooperation with the States and private forest owners, and forestry research, it strives to provide increasingly greater service to a growing Nation.

The Secretary of Agriculture has assigned to the Forest Service the major responsibility of providing leadership in the management, protection, and utilization of the natural resources on all the Nation's forest and related rangelands, which cover one-third of our Nation's surface. This delegation of duties extended the basic activities of the Forest Service beyond the management of the National Forest System as authorized in the Organic Administration Act of 1897.

Included in this delegation of duties are participation on the local and national level in designating national priorities in proper land use, formulation of selected programs that carry out broad management objectives, establishment of a pattern of cooperative Federal forestry policies and programs whose cost-sharing provisions with the respective States will assure the maximum contribution of environmental, social, and economic benefits to present and future generations.

Forest Service activities that accomplish these objectives include three major areas of operation:

1. Management, protection, and development of the 187-million acres of National Forest to produce a continuous flow of economic and social values from the water, forage, wildlife, wood, and recreation resources thereon.
2. Cooperation with State foresters, owners of private forest lands, wood processors, and private and public agencies. This cooperation extends the Nation's forest inventory by improving the quality and increasing the quantity of goods and services produced, through more scientific management and utilization of timber resources.
3. Research functions that directly or indirectly support the above activities and the management of the country's forest and rangelands in general.

Forest standard - A performance criterion indicating acceptable norms or specifications that actions must meet to maintain the minimum conditions for a particular resource. This type of standard applies to all areas of the Forest regardless of the other management area direction applied.

Forest Supervisor - The official responsible for administering the National Forest System lands in a Forest Service administrative unit. He or she reports to the Regional Forester.

FREM - See acres of final removal.

Fuelbreak - Any natural or constructed barrier used to segregate, stop, and control the spread of fire or to provide a control line from which to work.

Fuel loading - The amount of wood, grasses, and brush down on the ground.

Fuels - Anything within the Forest that will burn. Usually live and dead woody vegetation, e.g., grass, shrubs, trees.

Fuel treatment - The rearrangement or disposal of fuels to reduce the fire hazard. Fuels are defined as both living and dead vegetative materials consumable by fire.

Full capacity range - Rangelands that are accessible to livestock, produce forage or have inherent forage producing capabilities, are stable because of effective ground cover and can be grazed on a sustained yield basis under reasonable management goals.

Full service management - Management of developed sites, wilderness and dispersed areas to provide optimum service.

G

Game species - Any species of wildlife or fish normally harvested by hunters, trappers, and fishermen under state or federal Laws.

Geological area - A unit of land which has been designated by the Forest Service as containing outstanding formations or unique geological features, including caves and fossils. Areas of this type are identified and formally classified because of their recreational and educational values.

Girdling - To kill trees by cutting through the bark into the wood in a connecting

groove around the tree. This prevents the roots from getting food produced by the leaves and needles.

Goal - A concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed.

Goods and services - The various outputs, including, on-site uses, produced from forest and rangeland resources.

Grazing - Consumption of range or pasture forage by animals.

Grazing allotment - See Range allotment.

Grazing association - See Grazing district.

Grazing capacity - The maximum stocking rate possible without inducing damage to vegetation on related resources.

Grazing district - 1. An administrative unit of Federal range established by the Secretary of Interior under the provisions of the Taylor Grazing Act of 1934, as amended. 2. An administrative unit of state, private, or other rangelands, established under state laws.

Grazing permittee - An individual who has been granted written permission to graze for a specific period on a range allotment.

Grazing season- 1. A period of grazing to obtain optimum use of the forage resource. 2. On public lands an established period for which grazing permits are issued.

Ground water - Water in a saturated zone of a geologic stratum.

Growing stock level (GSL) - The stand density level, usually expressed as number of trees per acre or basal area per acre in square feet, required to maintain an optimum growth through the life of a stand. Trees per acre at 10 inch dbh and above equals the square foot basal area per acre.

GSL - See growing stock level.

Guideline - An indication or outline of policy or conduct.

H

Habitat - The natural environment of a plant or animal. The locality where the organism may generally be found and where all essentials for its development and existence are present. Habitats are described by their geographical boundaries, or with such terms as "shady woodlands," "banks of streams," "dry hillsides," etc.

Habitat diversity - See Wildlife habitat diversity.

Herbage - Herbs taken collectively, usually used in the same sense as forage, except that it may include material not palatable to grazing or browsing animals.

Herbicide - A chemical compound used to kill or control growth of undesirable plant species.

Host (Campground) - A person or persons serving as a volunteer at a developed recreation site. A camp site and available utilities are provided for the Host throughout the recreation season. The volunteer serves without pay and is present at the site to provide informational services to the public. The Host does not have cleanup, maintenance, or law enforcement responsibilities.

Human resource programs - Government programs aimed at employing people of a

variety of age classes for different types of jobs. These include such programs at:

- College Work Study Program
- Comprehensive Employment and Training Act (CETA)
- Cooperative Education Program
- Senior Conservation Employment Program (SCEP)
- Stay in School Program
- Summer Student Employment Program
- Volunteer Program
- Young Adult Conservation Corp (YACC)
- Youth Conservation Corp (YCC)

Goal - A concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed.

I

Improvement - Manmade developments such as roads, trails, fences, stock tanks, pipelines, power and telephone lines, survey monuments, and ditches.

Immature sawtimber - Trees that are nine inches in diameter and larger at breast height (dbh) but have not reached full development.

Improved range management - A system of range management to place the condition of the vegetation in an upward trend. This can result in benefits to other resources such as water, forage production, wildlife habitat and soils.

Indicator species - A wildlife species whose presence in a certain location or situation at a give population level indicates a particular environmental condition. Population changes are believed to indicate effects of management activities on a number of other wildlife species.

Information notice - A letter attached to a mineral lease advising applicant that constraints in addition to standard stipulations in lease may be added once a drilling plan is submitted.

Input/output analysis - A systematic technique for qualitatively analyzing the interdependence of producing and consuming units in an economy. It studies the interrelationship between products offered in the market place. It is a useful tool for separating the component parts of an economy to determine the influence of each on the other for short run forecasting and policy guidance.

Insect and disease - Forest insects and diseases are surveyed, monitored and sometimes controlled by the Forest Insect and Disease Management (FIDM) branch of the Forest Service. Forest diseases are usually not controllable except by removing the infected trees. There are many kinds of damaging forest insects, some of which are controlled by spraying insecticides or natural biological agents.

Integrated pest management - A process for selecting strategies to regulate forest pests in which all aspects of a pest-host system are studied and weighed. The information considered in selecting appropriate strategies includes the impact of the unregulated pest population on various resource values, alternative regulatory tactics and strategies, and benefit/cost estimates for these alternative strategies. Regulatory strategies are based on sound silvicultural practices and ecology of the pest-host system and consist of a combination of tactics such as timber stand improvement plus selective use of pesticides. A basic principle in the choice of strategy is that it be ecologically compatible or acceptable.

Integrated stand management - Integrated stand management will be used to design timber sales. Using an integrated stand management approach managers design sales that optimize the harmonious relationships of timber, wildlife, forage, soil, water, recreation, and cultural resources. By establishing equitable distribution of special habitat conditions throughout the proposed harvest area, a carefully designed mosaic of structural stages and contrasting stand conditions is created. By mapping and tracking individual Forest stands, continuity of management is established. Several alternatives are to be designed that include a variety of prescriptions.

A timber stand refers to a community of trees, 10 to 100 acres in size with similar characteristics which differentiate it from other communities of trees. Each timber sale area consists of a number of stands, some of which are considered possible cutting units. A cutting unit is an area which may receive specific harvest treatment. Cutting units may consist of one or more individual stands or may be part of a larger stand.

About three years before the scheduled date of a sale, a reconnaissance is to be completed and possible cutting units are to be developed. Cutting unit boundaries are established by means of a field reconnaissance. Cutting unit boundaries may redefine stand boundaries to facilitate management objectives such as visual quality, dwarf mistletoe management, or activities such as fuels management and timber harvest. Cutting units are assembled into various configurations, using recommendations from appropriate resource specialists that are on interdisciplinary team, to create a range of timber sale alternatives. Each alternative is designed to achieve one or more objectives. Cutting units are distributed spacially to create desired age-class distribution, lessen the area impacted by timber management activities, to provide habitat diversity for wildlife or to protect other resource values such as recreation and cultural resources. All cutting units having high priority for treatment may be selected, without regard to their distribution, to achieve the objectives of another alternative. Stands not selected for treatment may be scheduled for entry in subsequent ten year timber sale programs.

The interdisciplinary team determines the effects of each alternative on all resources. A preferred alternative is developed from the various alternatives based on the assessment of which is most effective in addressing the overall needs of the resources. The stand conditions are tracked through time which provides a continuity of management direction.

Intensive range management system - A grazing system that considers all environmental and social needs of a specific land area. These are recorded in long range management plans for allotments.

Interdisciplinary team - A group of individuals with different training assembled to solve a problem or perform a task.

Intermediate development level - A level of modification for developed recreation sites. Modification is moderate, equally protecting both site and users. Generally, facilities are made of native materials and vehicle traffic controls

are inconspicuous. Roads may be hard surfaced and trails formalized. Development density is about three family units per acre. Forest environment is essentially natural.

Interpretive services - Information services designed to present inspirational, educational, and recreational values to Forest visitors to provide the utmost in understanding, appreciation and enjoyment from their Forest experience.

Irretrievable resource commitment - Allocation decision causing loss of production or use of renewable resource.

Irreversible resource commitment - Allocation decision affecting nonrenewable resources--soil, minerals and cultural resources--causing permanent loss of these resources.

Issue - See Public issue.

K

K-V funds - In 1930, Congress passed the Knutson - Vandenberg Act (K-V Act) to authorize collection of funds (K-V funds) for reforestation and timber stand improvement work on areas cut over by a timber sale. The National Forest Management Act of 1976 provides for using these funds for multi-resource improvements within timber sale areas.

L

Land acquisition (purchases) - There is an active land purchase program on the Cibola. This program uses funds collected under the auspices of the Land and Water Conservation Fund Act, to purchase private lands within designated wilderness and relatively undeveloped private lands for recreational purposes.

The purchase program briefly works as follows:

A private landowner offers to sell a tract of land to the Forest Service. If the tract is within an approved Recreation Acquisition Composite and if purchase funds are available, the land is appraised to estimate its market value. The appraisal process estimates the highest price which a property would bring if exposed for sale in the open market.

The Forest Service then purchases a title insurance policy to insure there are no title problems associated with the tract being acquired.

Forest Service attorneys then review the case and all associated documents to be sure that all legal requirements are being met and there are no defects in the title. The seller is then paid for the land and a warranty deed is issued by the private landowner.

Land exchange - The conveyance of non-Federal land or interest in the land to the United States in exchange for National Forest System land or interest in the land.

Landing - A location along a road where logs are piled for loading onto a truck.

Landline location - Location of Forest property boundaries.

Landownership adjustments (land exchanges) - Land exchanges involve the trading of a tract of National Forest land for a tract of private land having equal value.

The Forest land, which is traded to private ownership, is usually located close to or within a community. Consequently, this type of land has lost its wild land character and is better suited to be in private ownership.

The private lands which are acquired through an exchange are ordinarily isolated tracts within the Forest. They are undeveloped and wild land in character, so they are well suited for National Forest purposes.

The land exchange program allows for the consolidation of private holdings, and for community expansion through the transfer of Forest land to private owner-ship. It also provides for the addition of desirable private land within the Forest to the National Forest system.

Land exchanges are strictly regulated by various Laws and resultant regulations.

Some of the restrictions involved in the exchange program are as follows:

1. The exchange must benefit the public interest.
2. The lands being exchanged must be equal in value.
3. The lands being exchanged must be within the same state.
4. The private lands being acquired must be within the proclaimed boundaries of an established National Forest.
5. The Forest lands being traded cannot be encumbered by mining claims.
6. The Forest lands being traded cannot contain habitat for threatened and/or endangered plant and animal species.
7. The selected lands cannot be in a floodplain or have a high flood hazard.
8. The selected lands must be free of significant cultural resources such as archeological sites and paleontological deposits.
9. The selected lands must not contain significant mineral deposits.

The land exchange process, much simplified, works as follows:

A private landowner approaches a Cibola official, ordinarily a District Ranger, with a land exchange proposal. This proposal will state what Forest land the landowner wishes to acquire and what private land he is willing to trade.

Cibola officials review the proposal to make sure that it meets the nine restrictions and criteria stated earlier. The exchange proposal is then sent to the Regional Forester with appropriate recommendations.

The offered and selected tracts are then appraised, using recent private land sales as a basis for establishing the value of both tracts. The acreage of these tracts often has to be adjusted so that the value of both tracts are equal.

At this point the private landowner must furnish proof of a clear title to the land which he is trading to the Forest Service. This is done through a title insurance policy.

The case is then closely reviewed by agency attorneys to insure that all legal requirements are met.

The case is then approved, and the private landowner transfers title of the offered land to the United States with a warranty deed.

The Bureau of Land Management, Department of Interior, then issues a patent to transfer the Forest Service land to the private landowner.

Landownership adjustment schedule - A document that is prepared for each Ranger District on the Cibola. It lists private lands that are desirable for acquisition into the National Forest. It also lists National Forest lands that have lost their wild land character and can be traded into private ownership.

The schedule is then used as the governing document for the Cibola's land exchange program.

Law enforcement training levels -

Level I (8 hours): A general orientation for all employees as to law enforcement philosophy and their personal responsibilities as nonlaw enforcement personnel.

Level II (40 hours): The basic law enforcement training for personnel involved in enforcement of Federal regulations. This course is required before anyone is authorized to issue violation notices.

Level III (80 hours): Provides beginning criminal investigation skills and understanding of District level responsibilities.

Level IV (120 hours): Advanced criminal investigation training.

Laws - The major legislation authorizing activities of the Forest Service, U.S. Department of Agriculture are:

1891: Creative Act. Created the National Forest System by authorizing the President to establish Forest Reserves, comprising forest and rangelands in the public domain.

1897: Organic Administrative Act. Provided for the protection and management of the Forest Reserves, within the Department of the Interior. Granted the right of entry to persons for prospecting, locating, and developing mineral resources, in accordance with provisions of the U.S. Mining Laws. Authorized the sale of dead, matured, or large growth of trees, at not less than appraised value.

1905: Transfer Act. Transferred the Forest Reserves for the Department of the Interior to the Department of Agriculture.

1911: Weeks Law. Authorized purchase of lands to be administered as National Forest lands, for timber production and regulations of flow of navigable streams.

1924: Clarke-McNary Act. Established basis for cooperation of the Forest Service with State Foresters in fire prevention and suppression, and in the procurement, production, and distribution of forest-tree seeds and plants for reforestation and afforestation purposes. Authorized aid to farmers in forestry activities.

1928: McSweeney-McNary Act: Authorized basic forestry research providing for cooperation with others, and established Forest Service regional forest experiment stations, for conducting fire, silvicultural, and other forest-management investigations.

1930: Knutson-Vandenberg Act. Required purchasers of National Forest timber to deposit money, in addition to timber stumpage payments, to cover cost to the United States of replanting harvested areas and removing undesirable trees from the areas.

1937: Bankhead-Jones Farm Tenant Act. Established National Grasslands of 3.8 million acres, and authorized other land conservation and land utilization activities in management of acquired lands.

1947: Forest Pest Control Act. Authorized Secretary of Agriculture to cooperate with others in conducting surveys on forest lands to detect and appraise forest insect pests and tree diseases and to determine control measures. Control measures applied to non-Federal lands were to be financed cooperatively.

1950: Cooperative Forest Management Act. Authorized Secretary to cooperate with State Foresters in providing technical management and marketing services to private landowners and operators and wood processors.

1955: Agricultural Experiment Stations Act. Consolidated authorizations for appropriations of Federal funds to support agricultural experiment stations in states and territories and provided for regional projects.

1960: Multiple Use-Sustained Yield Act. Reemphasizes basic concept that the National Forests are to be administered for outdoor recreation, watershed, range, timber, and wildlife and fish purposes. Reaffirmed the right to develop mineral resources.

1962: Cooperative Forestry Research Act. (McIntire-Stennis) Made funds available to states on matching basis to help carry out research at land grant institutions and state-supported forestry schools.

1964: Wilderness Act. Established the National Wilderness Preservation System. Nucleus of the system in 1964 was the 10 million acres of wilderness, that had been so designated by the Forest Service since 1924, when the nation's first wilderness was established in New Mexico. Provided for study of additional wildernesses.

1965: Land and Water Conservation Fund Act. Established a system of financing federal grants of monies to states for recreation and various recreation programs. The Forest Service and other Federal agencies were authorized to purchase lands and water areas primarily suited for recreational development. Funds were to be derived from motorboat fuels taxes, admission and user fees in National Park and National Forest areas, and surplus property sales.

1968: National Trails Systems Act. Established a national system of recreation and scenic trails and designated Appalachian and Pacific Crest Trails as initial components in system. Provided for studies leading to establishment of other national recreation and national scenic trails.

1968: Wild and Scenic Rivers Act. Designated certain rivers in Nation as having outstanding scenic, geologic, recreation, cultural, or other attributes meriting the retention of each river in a free-flowing condition, through protected corridors. Initial components were designated and study of other rivers provided for.

1970: National Environmental Policy Act of 1969. Declared it to be a national policy to encourage harmony between man and his environment and established a Council on Environmental Quality. Required all Federal agencies to prepare a report on environmental impact of planned programs or actions by the agency, and to suggest alternative actions.

1970: Youth Conservation Corps Act. Provided for the summer employment of youths from ages 15 to 18 and the establishment of regional Corps Centers. The youths so enrolled were to be employed for conserving, developing, preserving, or maintaining public lands administered by the Departments of the Interior and Agriculture.

1973: Forestry Incentives Act. Shared the cost of tree planting and forest management with small landowners. Federal share of these costs ranged from 50 to 75 percent, distributed through Agricultural Stabilization and Conservation Committees. Landowner had to have forest management plan for property, prepared through State Forester's office.

1974: Forest and Rangeland Renewable Resources Planning Act (PL 93-378). A planning and budgetary procedure act that required Forest Service to prepare long-range programs for the National Forest System for the next 40 years in 10-year stages. It included administration, roads and trails, research, and cooperative programs. Report due December 1975 from Secretary of Agriculture must give assessment of present and anticipated supply and demand needs, an inventory of present and potential resource opportunities, plus an annual progress report.

1974: Woodsy Owl Campaign. Authorized Secretary of Agriculture to license the manufacture and distribution of Woodsy Owl merchandise and to collect royalty

fees for such licensed use, and to protect unauthorized use of the antipollution symbol.

1976: National Forest Management Act. Amends the 1974 Forest and Rangeland Renewable Resources Planning Act (RPA) and gives more specific direction.

Lifestyle - A characteristic way of living which may be an individual variant within the cultural mainstream or may be an individual expression of a subculture. "Lifestyles" are generally expressed through the means of economic sustenance, dwelling site and type, group associations, and social practices such as family form, religious practices, sexual mores, style of dress and type of diet.

Limited surface occupancy - Stipulation(s) added to standard mineral lease specifying limitation(s) on specific area(s).

Local roads - Local roads are usually one-lane roads constructed to serve a dominant use or resource. Local roads do not access large land areas since they are more site specific than arterial and collector roads.

Locatable minerals - See Minerals, locatable.

Long-term effects - Those effects which will be significant beyond the RPA planning horizon for 50 years.

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.

LTSYC - See long-term sustained yield capacity.

M

M - Thousand.

MM - Million.

MBF - One thousand board feet.

MMBF - One million board feet.

Management area - It has common direction throughout that differs from neighboring areas. The entire Forest is divided into management areas. Each is described and policies and prescriptions relating to their use are listed.

Some are similar in vegetation, soils, climate and topography. Others may have different soils and vegetation but the same management direction, such as wilderness and ski areas.

Management area standard and guidelines - Management practices selected and scheduled for application in a specific area to attain multiple use and other goals and objectives.

Management concern - An issue, problem, or a condition which constrains the range of management practices identified by the Forest Service in the planning process.

Management direction - A statement of multiple-use and other goals and objectives, the associated management prescriptions, and standards and guidelines for attaining them.

Management indicator species - See indicator species.

Management intensity - A management practice or combination of management practices and associated costs designed to obtain different levels of goods and services.

Management opportunity - A statement of general actions, measures, or treatments that address a public issue or management concern in a favorable way.

Management practice - A specific activity, measure, course of action, or treatment.

Management prescription - Management practices and intensity selected and scheduled for application on a specific area to attain multiple-use and other goals and objectives.

Management situation - A comprehensive statement of the planning area resources, its history, past and present uses, and a review of the public's concerns with the area.

Management standards and guidelines - See Standard and Guideline.

Mast - The fruit of trees suitable as food or livestock and wildlife.

Mature sawtimber - Trees that have attained full development and the growth rate has leveled off.

Maximum potential - The maximum potential output level that can be attained.

Mean annual increment - The total increment of merchantable volume growth per acre, up to a given age, divided by that age. Culmination of mean annual increment is the stand age where the mean annual increment of growth is greatest or reaches its highest point.

Mineral development - The activities and facilities associated with extracting a proven mineral deposit.

Mineral entry - Filing a mining claim on public land to obtain the right to any minerals it may contain.

Mineral exploration - The search for valuable minerals on lands open to mineral entry.

Mineral leases - A document issued by the Bureau of Land Management, Department of Interior, for the removal of certain minerals not locatable by mining claims. Leases are used for the development and removal of oil and gas, coal, and uranium on acquired lands.

Mineral production - Extraction of mineral deposits.

Mineral withdrawal - Public lands withdrawn from mineral entry under the General Mining Laws and the mineral leasing laws. Lands withdrawn usually have unique features which are highly valued by the public or are needed for administrative purposes.

Minerals, common variety - Deposits which—although they may have value for use in trade, manufacture, the sciences, or in the mechanical or ornamental arts—do not possess a distinct, special economic value. May include sand, stone, gravel, pumicite, cinders, pumice (except that occurring in pieces of two inches on a side), clay, and petrified wood.

Minerals, leasable - Coal, oil, gas, phosphate, sodium, potassium, oil shale, sulphur (in Louisiana and New Mexico), and geothermal steam.

Minerals, locatable - Those hard rock minerals which are mined and processed for the recovery of metals. May include certain nonmetallic minerals and uncommon varieties of mineral materials such as valuable and distinctive deposits of limestone or silica. May include any solid, natural inorganic substance occurring in the crust of the earth, except for the common varieties of mineral materials and leasable minerals.

Minimum viable population - A wildlife population of sufficiently large size to assure its continuous existence within the area of concern without the introduction of individuals from outside the area.

Mining claim - That portion of the public estate held of mining purposes in which

the right of exclusive possession of locatable mineral deposits is vested in the locator of a deposit.

Mining claim, patented - A mining claim to which a patent has been secured from the Government by compliance with the laws relating to such claims.

Mining patent - The patent is a legal document which conveys the title to the ground (i.e., ownership) to the claim's owner.

Mistletoe - The mistletoes are parasitic plants that cause injury to their woody hosts. The two types of mistletoe found in New Mexico are dwarf mistletoes and true mistletoes. Dwarf mistletoes live on conifers only, while true mistletoes occur on conifer and hardwood trees and shrubs. The parasitic mistletoes withdraw essential nutrients and water from their host tree resulting in injury and sometimes tree mortality.

In New Mexico, dwarf mistletoes attach ponderosa pine, southwestern white pine, pinyon, Douglas-fir, Engelmann spruce, and blue spruce while true mistletoes are found on several species of juniper, numerous species of oak, and other hardwoods. The mistletoe plant varies in color from green to red-green. Dwarf mistletoe plants vary in size from an inconspicuous bud-like structure protruding through the tree bark to shoots nearly a foot long. True mistletoe plants vary in size from several inches to several feet in length. Symptoms of mistletoe infection include swelling at infection sites and the formation of witches' brooms.

Dwarf mistletoes are spread by explosive fruits which shoot seeds 20 to 30 feet into the surrounding area. True mistletoes are spread by birds that feed on the mistletoe berries. The seeds from the berries pass through the bird unharmed and are thus spread in the bird feces.

Branches on mistletoe-infected trees may be pruned to reduce damage to the tree and to reduce further spread of the parasite. No chemical or biological controls are available for mistletoe control.

Mott - A group of trees.

Multiple use - The management of all the various renewable surface resources of the National Forest System so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some lands will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, 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.

N

National Environmental Policy Act (NEPA) - An act declaring a National policy to encourage productive and enjoyable harmony between man and his environment, to promote efforts which will prevent or eliminate damage to the environment and the biosphere and stimulate the health and welfare of man, to enrich the understanding of the ecological systems and natural resources important to the Nation and to establish a Council on Environmental Quality.

National Fire Danger Rating System (NFDRS) - System used to rate current and expected fire danger from low to extreme based upon weather, fuels and risk.

National Forest Land and Resource Management Plan - A plan developed to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended, that guides all resource management activities and establishes management standards and guidelines for the National Forest System lands of a given National Forest.

National Forest Management Act (NFMA) - A law passed in 1976 that amends the

Forest and Rangeland Renewable Resources Planning Act and requires the preparation of Forest plans.

National Forest System land - National Forests, National Grasslands, and other related lands for which the Forest Service is assigned administrative responsibility.

National Recreation Trails - Trails designated by the Secretary of the Interior or the Secretary of Agriculture as part of the national system of trails authorized by the National Trails System Act. National Recreation Trails provide a variety of outdoor recreation uses in or reasonably accessible to urban areas.

National Register of Historic Places - A list (maintained by the National Park Service) of areas which have been designated as being of historical significance. The Register includes places of local and state significance as well as those of value to the Nation.

National Wild and Scenic River System - Rivers with outstanding scenic, recreational, geological, fish and wildlife, historic, cultural, or other similar values designated by Congress under the Wild and Scenic Rivers Act for preservation of their free-flowing condition.

National Wilderness Preservation System - Pristine Federal lands designated by the Wilderness Act of 1964 and subsequent wilderness legislation. Generally these lands are untouched by "works of man."

Natural prescribed fire - See Prescribed fire.

NEPA - See National Environmental Policy Act.

Nest and escape trees - A group of six to nine trees usually 14 inches dbh or larger with interlocking branches. The escape trees provide a means of escape for Abert and red squirrels. The squirrels will not climb the nest tree when returning, but rather a nearby escape tree--then travel through the branches (canopy) to the nest.

Net public benefits - An expression used to signify the overall long-term value to the Nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs) whether they can be quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria rather than a single measure or index. The maximization of net public benefits to be derived from management of units of the National Forest System is consistent with the principles of multiple use and sustained yield.

NFMA - See National Forest Management Act.

No action alternative - The most likely condition expected to exist in the future if current management direction would continue unchanged.

No surface occupancy - Stipulation added to standard mineral lease permitting extraction but prohibiting occupancy of the surface of the lease.

Nonconsumptive use - Use of a resource that does not reduce the supply, such as many types of recreation. (See also Consumptive use.)

Noncontiguous use - Use of a resource that does not reduce the supply, such as many types of recreation. (See also Consumptive use.)

Noncontiguous analysis area - An analysis area consisting of many parcels of biologically homogeneous land scattered throughout the Forest.

Nondeclining even flow or yield - Refers to a harvest schedule in which the harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade of planning period.

Nongame wildlife - Species of animals which are not managed as a sport hunting or fishing resource.

Non-point source pollution - The Environmental Protection Agency defines non-point

source pollution in terms of activities rather than specific conveyances. Non-point sources of pollution are the result of activities which are initiated or caused by natural processes, including precipitation, drainage, seepage, percolation, and runoff; or is not traceable to any discreet or identifiable facility. The term silvicultural non-point source includes activities inherent to forest management which accelerate the effects of natural processes. Such activities include nursery operations, site preparation, reforestation and subsequent culture, thinning, prescribed burning, pest and fire control, harvesting operations, and the construction and maintenance of roads and other transportation systems associated with these activities.

Non-structural range improvement - Practices and treatments undertaken to improve range and involving construction of improvements.

O

Objective - A concise, time-specific statement of measurable planned results that respond to pre-established goals. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals.

Obliterate - The action needed to close an unneeded road and return the land to production.

Occupancy trespass - The illegal occupation or possession of National Forest land or property.

Old growth - The final successional stage of a stand of trees. Characterized by a high degree of decadence because of declining health and vigor. Tree ages are in excess of 120 years.

On site soil loss - The movement of soil from the point at which it was formed to another location.

Opportunity - See Management opportunity.

ORV - Off-road vehicle. This includes all mechanical means of transportation; passenger cars, 4-wheel drive pickups, trail bikes, snowmobiles or other ground transportation vehicles that are capable of traveling overland where no roads exist.

ORV closure - An administration order restricting a land area to specified types of off-road vehicle travel yearlong.

ORV restriction - An administrative order restricting a land area to specified types of off-road vehicle travel during specific seasons or conditions.

Outputs - The goods, services and products which are measurable and capable of being used to determine the effectiveness of programs and activities in meeting objectives. Also goods, end products, or services that are purchased, consumed, or utilized directly by people. A broad term for describing any result, product, or service that a process or activity actually produces.

Overmature sawtimber - Trees that are past the age of full development. Growth rate is declining and the trees can be more susceptible to attack by insects or disease. The age that this occurs depends on species of tree and the quality of site on which it is growing.

Overstory - The portion of trees in a forest which forms the upper most layer of foliage.

Overstory modification - Removal of 80 percent or more of the overstory to increase production of grass and browse for utilization by livestock and wildlife.

P

Pack In-Pack Out - A program to encourage the public to assist in keeping wilderness areas, dispersed areas and some developed sites clean of litter and trash. Visitors are required to remove their own trash.

PAOT (People at one time) - The number of people that can use a recreation opportunity at any one time without substantially diminishing the quality of the experience sought after.

Particulates - Small particles which are suspended in the air and generally are considered pollutants.

Pasture - An area, generally enclosed, providing grass and other growing herbage suitable as food for grazing animals.

Patented land - Public lands conveyed to private ownership most commonly by homestead, mining or land exchange laws.

Perennial interrupted stream - Water course containing occasional perennial surface water due to ground water interception with intervening intermittent reaches exhibiting a saturated moisture regime beneath the channel bed.

Permitted grazing - Use of a National Forest range allotment under the terms of a grazing permit.

Personal use - Normally used to describe the type of permit issued for removal of wood products (firewood, posts, poles, latillas, and Christmas trees) from National Forest land when the product is for home use and not to be resold for profit.

Pesticide - An organic or inorganic preparation used to control populations of injurious organism, plant or animal.

Planning area - The area covered by a Forest Plan.

Planning Criteria - Standards, tests, rules and guidelines by which the planning process is conducted and upon which judgments and decisions are based.

Planning horizon - The overall time period considered in the planning process that spans all activities covered in the analysis or plan and all future conditions and effects of proposed actions which would influence the planning decisions.

Planning period - Generally one decade. The time interval within the planning process horizon that is used to show incremental changes in yields, costs, effects, and benefits.

Planning questions - A major policy question of long range significance, derived from the public issues and management concerns, to be addressed when selecting among alternative Forest plans.

Planning records - A system that records decisions and activities that result from the process of developing a forest plan, revision, or significant amendment.

P&M funding - Protection and Maintenance funding is given to the Forest Service by Congress to perform its annual duties, such as: fire prevention and suppression, timber sale preparation and administration, recreation administration, range management, wildlife management and soils and watershed management.

Point source pollution - Silvicultural point source pollution is defined to be those forestry related activities in which any discernible, confined and discrete conveyance related to rock crushing, gravel washing, log sorting or log storage facilities from which pollutants are discharged into the waters of the United States.

Pole timber - A tree, usually four to twelve inches in diameter at breast height (dbh) and twenty to sixty years old.

Portable water system - A spring, well, or surface water which is tested, monitored and sometimes treated with chemicals to insure that it is safe for human consumption as drinking water.

Potential natural vegetation - Vegetation that would exist today if man were removed from the scene and if resulting plant succession were telescoped into a single moment.

Potential recreation site - Areas that have been inventoried as possible locations for construction of recreation facilities in the future.

Practice - See Management practice.

Precommercial thinning - Thinning trees with diameters under 5 inches where material thinned does not have a market value. Selective cutting of trees with an objective of removing the least desirable trees and improving the spacing of remaining trees to accelerate growth.

Preferred alternative - The alternative recommended for implementation as the Forest Plan based on the evaluation completed in the planning process. (See Proposed Action).

Preparatory cut - Removal of mature trees near the rotation age in a shelterwood harvest for the purpose of opening the canopy to encourage development of cone bearing crowns for seed production on the remaining trees.

Prescribed fire - The natural (unplanned ignition) or intentional (planned ignition) application of fire to wild land fuels under such conditions as to allow the fire to be confined to a predetermined area, intensity of heat and rate of spread. Required to obtain planned resource objectives.

Prescription - This is a combination of practices with standards and guidelines that can be applied to a piece of land to reach a desired future condition. A practice is an activity such as harvesting timer, building a fence or planning. A standard and guideline limits or defines a practice. An example might be to leave three standing dead trees per acre for wildlife.

Present net value (PNV) - The difference between the discounted value (benefits) of all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area.

Present value of benefits (PVB) - Cumulative discounted benefits to 2180.

Present value of costs (PVC) - Cumulative discounted costs to 2180.

Primitive roads - Roads constructed with no regard for grade control or designed drainage, sometimes by merely repeated driving over an area. These roads are single lane, usually with native surfacing and sometimes passable with 4-wheel drive vehicles only, especially in wet weather.

Productivity - See Site productivity.

Proposed action - Specified in the National Environmental Policy Act as the project, activity, or decision that a Federal agency intends to implement or undertake which is the subject of an environmental impact statement.

Public - The people of an area, state, or nation that can be grouped together by a commonality of interests, values, beliefs, or lifestyles.

Public access - Usually refers to a road or trail route over which a public agency claims a right-of-way available for public use.

Public issue - A subject or question of widespread public interest relating to the management of National Forest System.

Pulpwood tree - Trees that are ground up and made into pulp for paper.

Purchaser credit - A dollar amount allowed a timber purchaser for building a road. He is given credit in lieu of paying cash for timber on a given sale.

Put-to-bed - Action needed to place a local road in a low maintenance condition during a period of low use by surface stabilization, revegetation and drainage structures.

R

Range allotment - A designated area available for livestock grazing upon which a specified number, kind of livestock and season of use may be grazed under a term grazing permit. The basic land unit used to facilitate management of the range resource on National Forest System and associated lands administered by the Forest Service.

Range condition - Condition as elevated and ranked by the Forest Service is a subjective expression of the status of health of the vegetation and soil relative to their combined potential to produce a sound and stable biotic community. Soundness and stability are evaluated relative to a standard that encompasses the composition, density and vigor of the vegetation and the physical characteristics of the soil.

Vegetative Condition Classes

<u>Rating</u>	<u>Condition</u>	<u>Ecological Condition</u>
81-100	Excellent	High
61-80	Good	High
41-60	Fair	Mod. High
21-40	Poor	Mod. Low
0-20	Very poor	Low

(Table shows the cross walk between ecological condition and condition)

Range improvement - Any structure or nonstructural improvement to facilitate management of rangelands or livestock.

Rangeland - Land where the vegetation is predominantly grasses, grass-like plants, forbs, or shrubs suitable for livestock grazing and browsing.

RANGELAND model - Computer model developed by Region 3 to estimate available forage for livestock based on plant physiology, range condition class and overstory crown cover.

Range management intensity levels - A = Currently unstocked Forest allotments. B = Allotments that are currently stocked, are estimated to be not more than 20 percent overstocked, and have minimal levels of management currently being applied. These allotments need additional intensity of management applied. C = Currently stocked allotments are estimated to be no more than 20 percent overstocked if any, and have management systems being applied on the ground which should lead to resource improvement. Some stocking adjustments may still be needed upon evaluation of systems and followup production and utilization studies. D = Currently stocked allotments, are not overstocked more than 20 percent, if any, and have intensive management systems being applied on the ground to correct resource problems. Stocking level may still need verification by production and utilization studies. E - Livestock use permitted by grazing permit, permitted use does not exceed forage production, full development and management for livestock production using cost effective techniques to maximize AUM output without regard for other multiple use constraints, i.e., full range of vegetative type conversion. X - Currently stocked allotments which are either more than 20 percent overstocked, have significant resource deterioration continuing, and will require major adjustments in stocking or greatly improved and intensified management systems or both stocking adjustment and improved management.

Range management - The art and science of planning and directing range use to obtain sustained maximum animal production, consistent with perpetuation of the natural resource.

Range trend - A measured change in range condition over time. Vegetation and soils are usually measured to determine trend.

Ranger District - Administrative subdivisions of the Forest supervised by a District Ranger who reports to the Forest Supervisor.

Raptors - They are birds of prey, such as hawks, owls, and eagles. One of the behavior characteristics of these animals is to frequently return year after year to the same nesting area. Accordingly, the nesting sites of these protected species should be retained with minimal human disturbance.

RARE II - See Roadless Area Review and Evaluation II.

Real dollar value - A monetary value which compensates for the effects of inflation.

Reconstruction - Road or trail construction activities which take place on an existing road or trail and raise the standard of the road or trail. This can include relocation of the facility in a completely new location.

Receipt shares - The portion of receipts derived from Forest Service resource management that is distributed to State and county governments, such as the Forest Service 25 percent fund payments.

Record of Decision - A document, separate from but associated with an environmental impact statement, that publicly and officially discloses the responsible official's decision on which alternative assessed in the EIS will be implemented.

Recreation improvement construction - Construction of a new recreation site including all developed site facilities, such as: toilets, picnic tables, roads, parking sites, water systems and trails.

Recreation Opportunity Spectrum (ROS) - A method of delineating types of recreation settings. There are six ROS meetings. Only the first four are evident on the Cibola National Forest. These settings are: Primitive - Essentially unmodified natural environments; Semi-Primitive Non-Motorized - Predominantly natural or natural appearing environments without motorized use; Semi-Primitive Motorized - Predominantly natural or natural appearing environments where motorized use occurs; Roaded Natural - Predominantly natural appearing environments with moderate evidence of the sights and sounds of man; Rural - Modified natural environment with facilities for special activities; Urban - substantially urbanized environment.

Recreation Visitor Day (RVD) - A unit for measuring recreation activities which aggregate 12 visitor hours. May consist of one person for 12 hours, 12 persons for one hour or any equivalent combination of continuous or intermittent recreation use by individual or groups.

Reduced service management - Management of developed sites and wilderness and dispersed acres to provide service below established standards and objectives.

Reforestation - The natural or artificial restocking of an area usually to produce timber and other wood products, but also to protect watersheds, prevent soil erosion, and improve wildlife, recreation and other natural resources. Natural reforestation includes site preparation to reduce competing vegetation and provide a mineral seed bed for seed provided by seed trees. Artificial reforestation is the planting of seedlings, cuttings or seeds by hand or mechanical means and may include site preparation.

Reforestation backlog - See backlog reforestation.

Regeneration - The term is used two ways: 1) The actual seedlings or saplings existing in a young tree stand; or 2) The act of reforesting an area.

Regeneration cutting - The removal of trees intended for the purpose of assisting regeneration already present or to make regeneration of the stand possible.

Region - For planning purposes, the standard administrative unit of the Forest Service administered by a Regional Forester.

Region 3 - The Southwest Region. A Forest Service organizational unit consisting of all National Forests in New Mexico and Arizona plus four National Grasslands in Texas, Oklahoma and New Mexico.

Regional Forester - The official responsible for administering a single Region and preparing a Regional Guide.

Regional Guide - The plan developed to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act on 1974, as amended, that guides all natural resource management activities and establishes management standards and guidelines for the National Forest System lands of a given region. It also disaggregates the RPA objectives assigned to the Region and to the Forest within that region.

Reintroduced wildlife - Reestablishing certain species of wildlife that were once native to the area but have been destroyed by man or man-related activities. The animals are trapped from an existing herd, then transported to a release site.

Removal cut - Removal of remaining mature trees near rotation age in a shelterwood harvest to provide full sunlight to the regenerated crop.

Research Natural Area - An area set aside by the Forest Service to preserve a representative sample of an ecological community; primarily for scientific and educational purposes. Commercial exploitation is not allowed and general public use is discouraged.

Resource - An aspect of human environment which renders possible or facilitates the satisfaction of human wants and the attainment of social objectives.

Resource allocation model - A mathematical model using linear programming which will allocate land to prescriptions and schedule implementation of those prescriptions simultaneously. The end purpose of the model is to find a schedule and allocation that meets the goals of the Forest and optimizes some objective function.

Resource element - A major Forest Service mission-oriented endeavor which fulfills statutory or executive requirements and indicates a collection of activities from the various operating programs required to accomplish the mission. The eight resource elements are recreation, wilderness, wildlife and fish, range, timber, water, minerals, and human and community development.

Responsible line officer - The Forest Service employee who has the authority to select and/or carry out a specific planning action.

Restoration plan - A plan for reclamation or improvement of land damaged beyond the point of natural recovery.

Revegetation - The reestablishment and development of a plant cover. This may take place naturally through the reproductive processes of the existing flora or artificially through the direct action of man-reforestation or range reseeding.

Right-of-way - The right to pass through another person's land as obtained by condemnation or purchase.

Right-of-way acquisition - The Cibola is participating in a road and trail rights-of-way acquisition program. The purpose of this program is to provide the access needed for the administration of resource programs on the Cibola, and to provide access for the user public.

Once a landowner has agreed to grant a right-of-way to the Cibola, the proposed easement is surveyed and platted. The area is then appraised to establish the value of the right-of-way. Recent sales of private land in the area are used to help establish the value of the right-of-way. Clear title to the easement is insured through a title insurance policy which is purchased by the Forest Service.

After careful review by Forest Service officials and attorneys, the right-of-way is purchased and the seller is paid the appraised price for the easement.

The right-of-way acquisition program is hampered by the following factors:

1. The lack of willingness of private landowners to sell rights-of-way to the Forest Service.
2. The lack of adequate funding for the program.

There are provisions in the rights-of-way acquisition program which allow for the condemnation of a right-of-way. This method is used as a "last resort" when all attempts at peaceful negotiation have failed and the road cannot reasonably by-pass the private land.

Condemnation is not often used, as it is expensive, time consuming and not understood by the public. This method may have to be used more often in the future to get badly needed rights-of-way.

Riparian ecosystem - A transition between the aquatic system and the adjacent terrestrial ecosystem identified by soil characteristics and distinctive vegetation communities that require free or unbound water.

RMYLD - Acronym for Rocky Mountain Yield, a computer program used to simulate timber growth based on site index, basal area, species, mortality, mistletoe and silvicultural objectives.

Road and trail operation and management - This program deals with the proper signing, traffic counts, and other inventories of roads and trails.

Road construction - Once the need for a new road has been determined (timber sales, recreation site, etc.) a study is made to find all the alternative routes or locations for the road. Aerial photographs and contour maps are used during this phase of the project to find possible alternative locations. These routes are then located on the ground and a multi-disciplinary team reviews the routes on the ground. Each member of the team (Forester, Range Conservationist, Engineer, Soils, Scientist, Hydrologist, etc) analyze the proposed locations in relation to his field. After this review the best route or location is determined and the preliminary survey work begins. A profile of the route is made and the alignment is measured. The road design can now begin and the amount of earth to be moved is computed. The exact location of each culvert is marked after a study of the existing arroyos and streams is made. The soil characteristics may require the gravel surfacing be placed on the roadway after construction to hold up to the weight of heavy traffic. Next, plans and specifications are developed which spell out in detail exactly how the road is to be constructed. The roadway is now marked on the ground with construction stakes which tell where culverts are located, how much earth to move and where the curves are located. During this time the contract has been advertised for competitive bids from contractors in the area. The lowest bidder is usually awarded the contract to construct the road. During construction several inspectors are on the job site to insure the contractor complies with all aspects of the plans and specifications. Upon completion of the project, the newly built road is opened for public use.

Road density - The number of miles per square mile in a land area.

Road drainage - A structure within the roadway used to allow passage of a natural drainage from one side of the road to the other, remove surface water from the roadway, and to intercept and remove surface or underground water flowing towards the roadway from adjacent areas. The structure may be culverts, perforated pipes, bridges, or an earthen dike built into the roadway.

Roadless Area Review and Evaluation (RARE II) - The assessment of unroaded areas within the National Forests as potential wilderness areas. This refers to the second review which has begun in 1977 and documented in a final environmental impact statement, January 1979.

Road maintenance - Level 1 maintenance involves annual inspection to identify drainage problems in order to protect the investment and resources. The road is always closed to public use. Level 2 maintenance includes brushing, logging-out, restoring the road prism and signing necessary to provide passage for high clearance vehicles only. Traffic is usually minor and for administrative use or permittees. Level 3 maintenance provides for an average daily traffic (ADT) volume of less than 15 and provides minimal conditions for passenger cars. Level 4 maintenance covers roads with an ADT from 15 to 100. More emphasis is given to user comfort. Roads are frequently surfaced with aggregate material. Level 5 maintenance is for 100 ADT or more and is paved or has an aggregate surface to ensure safe and comfortable driving conditions.

Rollover - The second of two FORPLAN runs. The objective function of the first (output) run maximizes the output of the featured resource, e.g., sawtimber MBF or range AUMs. The second (rollover) run uses either a "minimize cost" or "maximize PNV" objective function and uses the output values obtained from the first run as constraints.

Rotation age - The period of years between initial establishment of a stand of timber and the time when it is regenerated.

Rotation grazing (rest rotation) - The range is divided into two or more pastures. They are grazed in a specific order with definite rest periods for each pasture between grazing periods.

RPA - See Forest and Rangeland Renewable Resources Planning Act.

RPA Program - The recommended direction for long range management of renewable resources of National Forest System lands. This direction serves as the basis for the Regional targets assigned to the Forest. The development of this direction is required by the Forest and Rangeland Renewable Resources Planning Act.

RVD - See Recreation Visitor Day.

S

Salables - See Minerals, common variety.

Sale schedule - The quantity of timber planned for sale by time period from an area of suitable land covered by a forest plan. The first period, usually a decade, of the selected sale schedule provides the allowable sale quantity. Future periods are shown to establish that long-term sustained yield will be achieved and maintained.

SALT - Acronym for Strata Analysis Level and Timing option, a computer program used to develop DE-FORPLAN timber yield tables from RMYLD simulations.

Salvage harvest - Removal of dead or dying trees resulting from insect and disease epidemics or wildfire.

Sanitation harvest - Removal of dead or dying trees to prevent spread of insects or disease.

Satisfactory range allotments - Allotments with management intensities A - D. Stocking is at capacity or in no case more than 20 percent overstocked. Range and watershed conditions are stable or improving.

Satisfactory range management - The planned systematic use of the range resource to achieve optimum utilization of forage for sustained maximum animal production consistent with perpetuation of all natural resources. Factors considered in achieving satisfactory management include the kind, breed and class of livestock, type of ranch operation, permitted numbers, season of use, grazing capacity and natural features which limit optimum distribution.

Sawtimber - Trees suitable in size and quality for producing logs that can be processed into lumber. For planning purpose on the Forest, trees with a nine-inch diameter were classified as sawtimber.

Scoping - Determination of the significant issues to be addressed in an EIS.

SCORP - See State Comprehensive Outdoor Recreation Plan.

Secondary modern development level - A level of modification for developed recreation sites. Modification is heavy with facilities provided strictly for comfort and convenience of users. Construction may use synthetic materials and vehicle traffic controls are usually obvious. Artificial surfacing of roads and trails is extensive. Development density is three to five family units per acre. Forest environment is pleasing and attractive but not necessarily natural.

Sediment - Solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice and has come to rest on the earth's surface either above or below sea level.

Seed cut - Removal of mature trees near rotation age in a shelterwood harvest to permanently open the stand and prepare the site for regeneration from the seed trees left for that purpose.

Seedling/sapling - A forest successional stage in which trees less than five inches in diameter are the predominant vegetation.

Selection cutting - The annual or periodic removal of trees, individually or in small groups from an uneven-aged forest in order to realize the yield and establish a new crop of irregular constitution.

Sensitive - Those plants not presently listed as Threatened or Endangered by U.S. Fish and Wildlife Service but warrant special consideration by management to assure they do not become listed.

Seral - A plant and animal community which is transitional in stage of succession, being either short- or long-term. If left alone, the seral stage will pass, and another plant and animal community will replace it. Aspen represents a seral stage that would eventually be replaced by conifers such as spruce.

Shelterwood cutting - 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.

Shelterwood harvest - Silvicultural system used to harvest mature trees at rotation age in a series of preparatory, seed and removal cuts designed to regenerate a new even-aged crop under the shelter of the old crop.

Short-term effects - Those effects which will not be significant beyond the RPA planning horizon of 50 years.

Silviculture - The science and art of growing and tending crops of forest trees.

Silvicultural prescription - Recommendations by a certified silviculturalist on the treatment needed for stands of trees based on tree species, condition of the stand, and the objective of management.

Silvicultural system - A management process whereby forests are tended, harvested, and replaced, resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the fellings that remove the mature crop and provide for regeneration and according to the type of forest thereby produced.

Site class ratings -

Site Class I - Areas that will produce a tree taller than 75 feet in 100 years.

Site Class II: Areas that will produce a tree between 55 feet and 75 feet tall in 100 years.

Site Class III - Areas that will produced a tree less than 55 feet tall in 100 years.

Site Index - How tall the better trees in a stand are when they are 100 years old.

Site preparation - Removing unwanted vegetation and debris from a site and preparing the soil before reforestation.

Site productivity - Production capability of specific areas of land.

Size class - For the purposes of Forest planning, size class refers to the intervals of tree stem diameter used for classification of timber in the Forest Plan data base: less than five-inch diameter = seedling/sapling; five to nine-inch diameter = pole timber; and greater than nine-inch diameter = saw-timber.

Skidding - Moving trees from where they were growing to a point where they are loaded on trucks and taken to a sawmill. On the Cibola this is usually done by dragging the logs with a tractor.

Skid trail - Path used to drag or transport trees from a stump to a road.

Slash - Debris left after logging, pruning, thinning, or brush cutting, and large accumulations of debris resulting from windstorms. It includes logs, bark, branches, and stumps.

Small game - Birds and small mammals normally hunted or trapped.

Snag - A standing dead tree from which the leaves and most of the branches have fallen.

Snag recruitment - Reservation of suitable live trees near death for replacement of snags in the future or killing trees to create new snags.

Social analysis - An analysis of the social (as distinct from the economic and environmental) effects of a given plan or proposal for action. Social analysis includes identification and evaluation of all pertinent desirable and undesirable consequences to all segments of society, stated in some comparable quantitative terms. It also includes a subjective analysis of social factors not expressible in quantitative terms.

Soil erosion - The detachment and movement of soil from the land surface by wind, water, or gravity.

Soil productivity - The capacity of a soil, in its normal environment, to produce a specific plant or sequence of plants under a specific system of management.

Soil survey - See Terrestrial Ecosystem Inventory.

Southwestern Region - See Region 3.

Special cutting - Logging activities in special areas, such as recreation areas and administrative sites, where other uses or values override timber production values.

Special use permits - Special uses are defined as: all use and occupancy on more than a transient basis of Cibola lands except those covered by the mining laws, or those associated with the harvesting of timber, or the grazing of livestock.

These uses include roads, all types of utilities, ski areas, cemeteries, electronic sites, and recreation residences.

These uses are ordinarily covered by one of two types of permits; either an annual or term permit.

Annual permits are for a relatively short term use and are revocable by the Forest Service. They are renewable each year by the payment of a fee.

Term permits are used to cover uses of a longer time period (up to 30 years) and having a large economic investment. Examples of when this permit would be used are large electronic transmission lines and large recreation resorts and ski areas.

An exception to the above two types of permits is when a land use is proposed by another Federal agency. This type of use is covered by a Memorandum of Understanding between the Forest Service and the other agency. This document describes the use and the responsibilities of both agencies pertaining to the use.

Some uses crossing National Forest land, such as major highways, pipelines, powerlines, railroads, and canals may be covered by an easement issued by a Federal agency other than the Forest Service. Issuance of these easements are governed by specific legislation relating to these types of uses.

There is ordinarily a fee collected for a special use. An exception to this rule is in the case of political subdivisions such as states, counties, and cities. They ordinarily qualify for a free permit since their special uses are usually for the public benefit.

Special use fees are most commonly based on a percentage of the value of Cibola land occupied.

Some large specialized uses, such as ski areas, have a fee levied on a percentage of their gross sales in proportion to their original investment in improvements, fixtures and equipment needed to generate income.

Special use permits are prepared, issued, and administered in such a way that Cibola resources are protected, public safety is insured and a fair monetary return is insured for the Federal Government.

Special uses - Special use permits.

Stand - A group of trees on a minimum of 1 acre of forest land that is at least 10 percent stocked by forest trees of any size.

Stand condition class - Classification of a stand based on damage, quality, stocking, age and size of trees.

Standard - Performance criteria indicating acceptable norms or specifications that actions must meet. A principle requiring a specific level of attainment, a rule to measure against.

Standard stipulations - Constraints added to all mineral leases to protect resource from unnecessary disturbance. Fire, erosion control, payment for damages, cattleguards, pollution, camp construction, Plan of Operation, environmental analysis, protection of threatened and endangered species and cultural resources are covered.

State Comprehensive Outdoor Recreation Plan (SCORP) - Plan prepared by the State which identifies recreation supply and demand and recommends future development actions.

State Historic Preservation Officer (SHPO) - This person is in charge of the National and State Register of historical places. The register lists the Nation's and State's official properties of historic and cultural value worthy of preservation. It describes publicly and privately owned districts, sites,

buildings, structures, and objects that are significant in American and State history, architecture, archeology, and culture.

Stocking rate - Range management usage. The actual number of animals, expressed in either animal units or animal unit months, on a specific area at a specific time.

Stock tank - An earthen livestock or wildlife watering facility normally constructed in a natural drainage by excavating a pit to collect overland water flow.

Structural range improvement - Improvement requiring construction or installation to improve the range, facilitate management, or control distribution and movement of livestock.

Stumpage value - To arrive at this value the Forest Service starts with the price of wood at the lumber yard and subtracts all the costs of getting the tree from stump to lumber.

Suitability - The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.

Suitable lands - Lands which are appropriate for the application of certain resource management practices as determined by an analysis of the economic and environmental consequences and the alternative uses foregone.

Supply potential - The output production possible from available resources.

Sustained yield of products and services - The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the National Forest System without impairment of the productivity of the land.

System road - A road that is part of the permanent transportation system for the forest and periodically receives maintenance.

T

Targets - Objectives assigned to the Forest by the Regional Plan.

Temporary roads - Temporary roads are low-level roads constructed for a single purpose and short-term use. Once use of the road has been completed, it is obliterated, and the land it occupied is returned to production.

Terrestrial Ecosystem Inventory - Systematic inventory based on the concept that within the landscape there are naturally occurring ecosystems with unique sets of properties. These terrestrial ecosystems form a continuum and can be recognized at different levels in classification systems. The soils component of the ecosystem is inventoried through the use of "Soil Taxonomy," USDA Soil Conservation Service Handbook #436, and the "Terrestrial Ecosystem Vadose and Phreatic Survey Procedure," a Forest Service handbook. The vegetation component of the ecosystem is inventoried through the use of the International Classification and Mapping of Vegetation, UNESCO, and the above mentioned Forest Service handbook. The terrestrial ecosystem inventory is sometimes referred to as "soil survey" in the planning documents.

Thinning - Cutting made in an immature stand to accelerate diameter growth and improve form of remaining trees.

Threatened and endangered species - See Threatened species and Endangered species.

Threatened species - Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range and which has been designated in the Federal Register by the Secretary of the Interior as a threatened species.

Tiering - Refers to the coverage of general matters in broad environmental impact statements (such as national program or policy statements) with subsequent narrower statements or environmental analyses such as regional or basin wide program statements or ultimately site-specified statements), incorporating by reference the general discussions and concentrating solely on the issues specific to the statement in question.

Timber - A general term for the major woody growth of vegetation in a forest area.

Timber production - The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use. The term "timber production" does not include production of fuelwood.

Timber stand improvement (TSI) - Cuttings made in an immature stand to accelerate diameter growth and improve the form of the trees that remain.

Topography - The configuration of a land surface including its relief, elevation and the position of its natural and man-made features.

Trailhead - The parking, signing, and other facilities available at the terminus of a trail.

Trail maintenance levels - The extent of maintenance done on trails will vary with the maintenance level assigned to that trail.

These maintenance levels are defined as follows:

Level I. This level is basic protection work to keep damage to the adjacent land to a minimum and provide for user safety. Drainage work is emphasized. Signs advising users of trail condition or restriction will be installed and maintained.

Level II. This level is preservation maintenance used on long term trails to perpetuate the pathway in its present location; but cannot or should not budget sufficient maintenance funds to provide for user convenience. Trails in this level are maintained at sufficient cycles to protect the investment and to prevent deferred work from adding to the backlog of other needed reconstruction work.

Level III. This is the highest level of trail maintenance and the full spectrum of service to meet management objectives for the trail type is met in this level. Maintenance is more frequent and complete than other levels.

Transportation system - All existing and planned roads and trails needed to access the Forest.

Travelway - An unconstructed two-track road resulting from repeated cross-country travel.

Trick tank - A livestock or wildlife watering facility that collects precipitation and drains it into a storage tank. The water is then transferred by pipeline to a drinking tub.

TSI - See Timber Stand Improvement.

Turkey nesting and other habitat requirements - Turkey nesting activity generally occurs in late April, May and early June in the ponderosa pine type. Turkey will usually nest within one-half mile of water. Nesting habitat can be enhanced by leaving two logging slash or thinning slash piles per acre and seeding tall species of grasses in disturbed areas. The slash piles per acre and seeding tall species of grasses in disturbed areas. The slash piles should be within one-half mile of water.

The tall grasses provide seed heads above deep snow for adult turkey during critical winter periods and slash piles provide additional nesting sites for the ground-nesting turkey.

Turkey roost trees - Turkeys prefer to roost in tall, mature, or overmature flat top ponderosa pine trees (16-42 inch dbh) on easterly and southerly exposures. Trees with relatively open crowns and large horizontal branches 20-30 feet from the ground receive the heaviest use. The roost site is a small group of trees, averaging 13 per acre with the above characteristics and sparse ground cover.

Turkey droppings can be found under roost sites and during the winter when turkeys are grouped together in large flocks, dropping accumulations become quite noticeable. Roosts are generally within one-fourth to one-half mile of water. Sites are used at irregular intervals, as the same group of turkeys will employ several roost sites.

U

Unclassified area - Refers to the classification of lands for the purpose of establishing utility corridors. It is that land area not previously classified as an exclusion area, avoidance area, window or corridor.

Understory - The trees occupying the lower level of a stand that has at least two size and age classes.

Uneven-aged management - The application of a combination of actions needed to simultaneously maintain continuous high-forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to retain within each area, thereby maintaining a planned distribution of size classes. Cutting methods that develop and maintain uneven-aged stands are single-tree selection and group selection.

Universal soil loss equation (USLE) - Empirical erosion model that computes long-term average soil losses from sheet and mill erosion under specified conditions.

Unpalatable species - In range management usage, plant species that are not readily eaten by animals.

Unsatisfactory range allotments - Allotments with management intensity of X. Stocking is at least 20 percent overstocked. Range and watershed conditions are deteriorating at a rate which will cause significant management changes and/or investments to correct.

Use season - That period of time developed recreation sites are open for public use, with routine maintenance, cleanup, and operation on a scheduled basis.

USF&WLS - U. S. Fish and Wildlife Service, Department of Interior.

Utilization standards - The specifications, such as: length, diameter, board foot volume and defect of a log. If a log meets the minimum standards, it must be removed from the woods and hauled to a sawmill for scaling.

V

Vegetative manipulation - The change of one vegetation type to another. This is most often from pinyon-juniper or sagebrush to grass. It can be done by a tractor, chemicals, or fire. Usually, this is done to increase forage for livestock and can be a beneficial tool for wildlife.

Vegetative type - A community of different plants named after one or more of the dominant plants. The ponderosa pine vegetation type has the same plant species in many different locations on the Cibola.

Viable population - A wildlife species population large enough to maintain its existence.

Viewshed corridor - The seen or potentially seen area from a travel route irrespective of vegetation. Typical foreground distance zone is 0 to $\frac{1}{4}$ or $\frac{1}{2}$ mile, middle ground zone is 3 to 5 miles and background is beyond.

Visual absorption capability (VAC) - An estimate of the relative ability of the landscape to accept management manipulations without significantly affecting its visual character. It is a measure of the relative capability of the land to absorb visual change.

Visual Quality Objective (VQO) - Measurable standards for the management of visual resources of the landscape. Refers to the degree of acceptable alterations of the characteristic landscape based on the importance of aesthetics. Visual Quality Level (VQL) was the title given during the inventory. Because of intensive review in this process, the levels will now be called "Objectives" for the land. Objectives used in the Plan are:

Preservation - provides for ecological change only.

Retention - Man's activities are generally not evident to the casual visitor.

Partial Retention - In general man's activities may be evident but must be subordinate to the characteristic landscape.

Modification - Man's activity may dominate the characteristic landscape but must, at the same time, utilize naturally established form, line, color and texture. Man's activities should appear as natural occurrences when viewed from foreground or middle ground.

Maximum Modification - Man's activity may dominate the characteristic landscape but should appear as a natural occurrence when viewed as background.

Visual resource - The composite of basic terrain, geological features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

Visual variety class - A classification system for establishing visual landscape categories according to the relative importance of the visual features.

Volunteer program - A volunteer is a nonpaid person who gives his or her time and talent to further the mission of the Forest Service.

Volunteers are recruited, trained and accepted without regard to Civil Service laws, rules or regulations.

Handicapped persons will be considered for appropriate jobs. Except for incidental expenses volunteers do not receive salary from the Forest Service.

W

Warm-water fishery - Stream and lake waters which support fishes with a maximum summer temperature tolerance of about 80 degrees Fahrenheit. Bluegills, catfish, and largemouth bass are examples.

Water-rights - The legal right(s), to use water for a specified purpose and in a given manner. The term is usually applied to the right to divert or store water for an out-of-stream use, such as irrigation, domestic or municipal water supply.

Watershed - The area that contributes water to a drainage or stream.

Water yield - That portion of the annual precipitation which contributes to stream flow and recharge of the ground water table.

Weeks Act - Passed in 1911, it set up the National Forest Reservation Commission and authorized the Secretary of Agriculture to purchase land for addition to the National Forest System, provided that such purchases were approved by the Commission and by the states in which they were made.

Wetlands - Any area that is more or less regularly wet or flooded. Where the water table stands at or above the land surface for at least part of the year.

Wild and Scenic Rivers Act - Declares that it is a policy of the United States that certain selected rivers which, with their immediate environments, possess outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved for the benefit and enjoyment of present and future generations.

Wilderness - All National Forest lands included in the National Wilderness Preservation System; an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain.

Wilderness Act - Established a National Wilderness Preservation System to be composed of Federally-owned areas designated by Congress, administered for use and enjoyment as Wilderness, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness.

Wildfire - Any fire on wild lands other than one intentionally set for management purposes and confined to a predetermined area.

Wildlife - All nondomesticated mammals, birds, reptiles, and amphibians living in a natural environment, including both game species and nongame species. Animals, or their progeny, which once were domesticated but escaped captivity and are running wild (i.e., feral animals), such as horses, burros, and hogs, are not considered wildlife.

Wildlife habitat diversity - The distribution and abundance of different plant and animal communities and species within a specific area.

Wildling - A naturally grown seedling (small tree).

Window - A critical segment of terrain through which rights-of-way could pass in traversing from points of origin to destination.

Withdrawal - An order removing specific land areas from availability for certain uses.

Woodland - Pinyon and juniper forests usually growing on drier sites in the low elevations (less than 8,000 feet).

A. RPA Decision Variable Index

<u>Decision Variable</u>	<u>Description</u>
010	Recreation
050	Wilderness
080	On-going Wildlife and Fish Operation and Maintenance
100	Fish Habitat Improvement
110	Game and Nongame Habitat Improvement
120	Threatened, Endangered and Sensitive Species Habitat Improvement
140	On-going Range Resource Operation and Maintenance
150	Range Resource Improvement
160	Timber
220	Soil, Water and Air Operation and Maintenance
230	Water and Soil Resource Improvement
270	Energy Minerals Management
280	Nonenergy Minerals and Geological
350	Forest Fire Protection
360	Fuel Treatment Investment and Maintenance
380	Law Enforcement (Administration)
410	Land Management Planning
420	Land Ownership Management
470	Road Operation and Maintenance (Arterial/Collector)
480	Road Construction/Reconstruction (Arterial/Collector)
500	FA&O Structural Construction/Reconstruction
520	FA&O Structural Maintenance
550	General Administration

B. Activity Code Index

<u>Primary Code</u>	<u>Code Description</u>
A01	Recreation Planning and Inventory
A02	Cultural Resource Management
A03	Visual Resource Inventory and Planning
A04	Visual Resource Improvement
A05	Recreation or VIS (Visitor Interpretive Services) Site Construction
A06	Recreation or VIS Site Rehabilitation
A07	Visual Information Services-Planning
A08	VIS-FSM (Full Service Management)
A09	VIS-RSM (Reduced Service Management)
A11	Developed Recreation-FSM
A13	Developed Recreation-RSM
A14	Dispersed Recreation-FSM
A15	Dispersed Recreation-RSM
A16	Recreation Management
B01	Wilderness Area-Planning and Inventory
B02	Wilderness Area-FSM
B03	Wilderness Area-RSM
C01	Fish and Wildlife Prescriptions
C02	Fish and Wildlife Impact Studies
C03	Nonstructural Wildlife Habitat Improvement
C04	Nonstructural Fish Habitat Improvement
C05	Nonstructural T&E Plant Habitat Improvement
C06	Structural Wildlife Habitat Improvement
C07	Structural Fish Habitat Improvement
C08	Structural T&E Plant Habitat Improvement
C09	Wildlife Habitat Maintenance
C11	T&E Plant Habitat Maintenance
C12	Fish and Wildlife Cooperative with State
C15	Habitat Access Controlled by Closure
D01	Range Resource Inventory and Planning
D02	Range Resource Management
D03	Range Forage Improvement
D05	Range Structural Improvement
D06	Maintenance of Range Structural Improvements
E00	Timber Resource Planning and Inventory
E03	Silvicultural Examination and Prescriptions
E05	Timber Stand Improvement
E06	Timber Sale Preparation
E07	Timber Harvest Administration
E09	Genetic Forest Tree Improvement Program
F01	Water Resource Planning
F02	Water Resource Inventory
F03	Water Resource Monitoring
F05	Water Resource Improvement
F06	Water Resource Improvement Maintenance
G01	Mining Law Compliance and Administration
G02	Minerals Management-Oil and Gas
G03	Minerals Management-Coal
G04	Minerals Management-Geothermal
G05	Minerals Management-Uranium
G06	Minerals Management--Nonenergy

Activity Code Index
(continued)

<u>Primary Code</u>	<u>Code Description</u>
G07	Minerals Management--Minerals Materials
G09	Mined Area Reclamation
G10	Mineral Character or Potential Evaluation
G11	Geological Planning and Inventory
J01	Special Use Management (Nonrecreation)
J02	ROW Grants for Roads and Trails
J03	Federal Energy Regulatory Commission License and Permits
J04	Withdrawals, Modifications and Revocations
J06	Property Boundary Location
J07	Property Boundary and Corner Maintenance
J09	Other Land Title Claims Management
J11	Land Ownership Planning/Land Classification
J13	Land Exchange
J18	ROW Acquisition
J22	Forest Land and Resource Planning
K03	Soil Resource Planning
K05	Soil Resource Improvement
L01	Transportation System Planning and Inventory
L02	Arterial Road Preconstruction
L03	Arterial Road Construction Engineering
L04	Arterial Road Construction
L05	Arterial Road Reconstruction
L06	Collector Road Preconstruction
L07	Collector Road Construction Engineering
L08	Collector Construction
L09	Collector Road Reconstruction
L10	Local Road Preconstruction
L11	Local Road Construction Engineering
L12	Local Road Construction
L13	Local Road Reconstruction
L14	Timber Purchaser Road Construction
L15	Timber Road Construction Supplementation and Contribution
L16	Bridge and Major Culvert Preconstruction
L17	Bridge and Major Culvert Construction Engineering
L18	Bridge and Major Culvert Construction/Reconstruction
L19	Road Maintenance
L20	Trail Inventory and Planning
L21	Trail Reconstruction
L22	Trail Construction/Reconstruction
L23	Trail System Management
L24	FA&O Construction/Reconstruction
L25	FA&O Facility Maintenance
L26	FA&O Radio Maintenance
L27	Radio System Replacement/Expansion
L28	Dam Administration and Maintenance
L29	Timber Purchaser Road Reconstruction
L30	Portable Water Systems Construction/Reconstruction
L31	Portable Water Systems Operation and Maintenance
P01	Fire Management Planning and Analysis
P02	Fire Prevention
P03	Fire Detection
P04	Primary Initial Attack Forces
P07	Forest Fire Support and Facility Service
P10	Fuel Management Inventory

Activity Code Index
(continued)

<u>Primary Code</u>	<u>Code Description</u>
P11	Treatment of Activity Fuels
P12	Treatment of Natural Fuels
P15	Vegetation Treated by Burning
P16	Air Resource Management
P17	Air Quality and Visibility Coordination
P19	Aerial Transport of Personnel
P20	Aerial Transport of Goods
P21	Aerial Applications of Materials
P22	Aerial Platform
P24	Law Enforcement
P25	Cooperative Law Enforcement
P27	Cooperative Search and Rescue
P34	Insect and Disease Management - Surveys and Technical Assistance
254	Administration of Water Uses
255	Water Uses Inventory
306	Cultural Resources Inventory
443	Plant and Replant on Prepared Site or Without Site Preparation
447	Site Preparation for Planning
449	Site Preparation for Natural Regeneration
479	Free Use and Administration of Free Use and All Associated Activities
552	Soil Resource Inventory—Order 3
779	FA&O Structure Maintenance
921	Administration, Maintenance and Operation of Recreation and VIS Portable Water Systems

C. Analysis Areas

1. Sandia Wilderness - 37,232 acres
2. Other Sandia - 44,648 acres
3. Other Wilderness - 100,007 acres
4. Black Kettle - 33,112 acres
5. Kiowa/Rita Blanca - 230,842 acres
6. Langmuir - 30,606
7. Mt. Taylor Suitable Ponderosa Pine Sawtimer - 138,082 acres
8. Mt. Taylor Suitable Ponderosa Pine Poles - 27,756 acres
9. Mt. Taylor Suitable Ponderosa Pine Seedlings and Saplings - 28,261 acres
10. Mt. Taylor Suitable Ponderosa Pine Nonstocked - 17,419 acres
11. Mt. Taylor Suitable Spruce-Fir Sawtimber and Poles under 40 percent Slope - 2,438 acres
12. Mt. Taylor Suitable Spruce-Fir Sawtimber and Poles over 40 percent Slope - 1,939 acres
13. Mt. Taylor Suitable Mixed Conifer/Aspen - 5,932 acres
14. Other Suitable Ponderosa Pine Sawtimber and Poles over 40 percent Slope - 72,607
15. Other Suitable Ponderosa Pine Sawtimber and Poles over 40 percent Slope - 29,823
16. Other Suitable Mixed Conifer/Aspen Sawtimber and Poles under 40 percent Slope - 6,868 acres
17. Other Suitable Mixed Conifer/Aspen Sawtimber and Poles over 40 percent Slope - 28,560 acres
18. No Capacity Range - 215,552 acres
19. Mt. Taylor Satisfactorily Managed Range - 22,236 acres
20. Mt. Taylor Unsatisfactorily Managed Range - 94,634 acres
21. Zuni Satisfactorily Managed Range - 104,195 acres
22. Zuni Unsatisfactorily Managed Range - 15,120 acres
23. Manzano/Gallinas Satisfactorily Managed Range - 53,631 acres
24. Manzano/Gallinas Unsatisfactorily Managed Range - 65,092 acres
25. Bear/Datil Satisfactorily Managed Range - 204,760 acres
26. Bear/Datil Unsatisfactorily Managed Range - 42,847 acres
27. Magdalena Satisfactorily Managed Range - 16,597 acres
28. Magdalena Unsatisfactorily Managed Range - 16,767
29. San Mateo Satisfactorily Managed Range - 59,891 acres
30. San Mateo Unsatisfactorily Managed Range - 116,284 acres
31. Military Withdrawal - 18,675 acres
32. Private Lands - 492,053 acres

Analysis Area Descriptions

1. Sandia Mountain Wilderness

The Sandia Mountain Wilderness is located on the Sandia Ranger District. Forty-three percent (16,183 acres) of the analysis area has slopes in excess of 40 percent.

Major vegetation types are: 1) grassland species and mountain shrub-12,065 acres (32%); 2) pinyon-juniper-8,092 acres (22%); 3) coniferous and deciduous forest species-9,452 acres (25%); 4) riparian-550 acres (1%) area; and 5) rock outcrop-786 acres (2%). The remaining acreage not accounted for occurs on the 6,251 acre addition to the wilderness resulting from the Elena Gallegos land exchange completed in 1983. Vegetation, slope and other data was not collected since the area was private land at the time of data collection.

2. Other Sandia

This area includes all of the Sandia District except the Sandia Mountain Wilderness and Analysis Area 31 (military withdrawals). Thirteen percent (5,599 acres) of the area has slopes in excess of 40 percent.

Major vegetation types are: 1) grassland species and mountain shrub-4,721 acres (11%); 2) pinyon-juniper-26,836 acres (60%); 3) coniferous forest-11,369 acres (25%). There are 906 acres (2%) of riparian area and 37 acres (less than 1 percent) of rock outcrop. An additional 775 acres was added to the area by the Elena Gallegos exchange for which data was not collected. Nearly 3,930 acres of National Forest System land were patented as private land in the exchange.

Fifty-eight percent (6,646 acres) of the forested acres are considered capable, available, and tentatively suitable timber land.

At the present time grazing is not permitted on the Sandia Ranger District.

The analysis area contains 19 developed recreation sites, 16 picnic grounds, 1 snow play, 1 ski area, and 1 observation area. There are 1,588 acres suitable for future development.

3. Other Wilderness

This analysis is comprised of the Manzano Mountain Wilderness (36,402 acres) on the Mountainair Ranger District and the Apache Kid (44,530 acres) and Withington Wilderness (19,075 acres) on the Magdalena Ranger District. Ninety-two percent (91,730 acres) of the total 100,007 acres have slopes exceeding 40 percent.

Major vegetation types are: 1) grassland species and mountain shrub-32,083 acres (32%); 2) pinyon-juniper-13,706 acres (14%); 3) coniferous and deciduous forest species-48,198 acres (48%). There are 848 acres (less than 1%) of riparian area and 5,182 acres (5%) of rock outcrop.

Grazing is permitted in all three wildernesses. Ninety-three percent (93,110 acres) of the analysis area is suitable (no capacity range) for grazing; 1,309 acres (1%) is classified as potential capacity range. There are 5,588 acres (5%) of range suitable for livestock use (full capacity range). Range management on sixty percent (3,375 acres) of the full capacity rangeland is unsatisfactory.

4. Black Kettle

This analysis area consists of the Black Kettle (31,699 acres) and McClellan Creek National Grasslands (1,413 acres). The entire analysis

area has slopes of 40 percent or less.

Vegetation types are: 1) bluestem-shinnery oak-8,078 acres (24%); 2) bluestem-sideoats grama-22,682 acres (69%); and 3) riparian area-2,352 acres (7%).

Two percent (613 acres) of the area is classified as no capacity range. Three percent (1,000 acres) is potential capacity range. There are 34,499 acres (95%) of full capacity range. All of the full capacity range receives satisfactory management.

The analysis area has 14 developed recreation sites-3 boating site, 8 picnic grounds, 1 campground, and 2 concessions. The area has 199 acres available for developed recreation use.

5. Kiowa/Rita Blanca

Analysis Area 5 consists of the Kiowa (137,079 acres) and Rita Blanca National Grasslands (93,763 acres). Slope exceeds 40 percent on 3 percent (6,338 acres) of the area.

Vegetation types are: 1) grassland species-214,772 acres (93%); 2) pinyon-juniper-14,680 acres (6%); and 3) riparian-1,390 acres (1%).

Three percent (6,340 acres) of the area is classified as no capacity range. Less than one-half percent (460 acres) is potential capacity range. There are 224,042 acres (97%) of full capacity range. All of the full capacity range receives satisfactory management.

Analysis Area 5 has one campground and 115 acres suitable for developed recreation use.

6. Langmuir

Analysis Area 6 consists of the Langmuir Research Area located on the Magdalena Ranger District. Seventy-two percent (21,949 acres) of the area has slopes exceeding 40 percent.

Thirty-six percent (11,141 acres) of the area is composed of grassland species and mountain shrub, 11 percent (3,400 acres) is pinyon-juniper, and 48 percent (14,612 acres) is coniferous and deciduous forest. There are 359 acres (1%) of riparian area and 1,084 acres (4%) of rock outcrop. Eighty-four percent (12,289 acres) of the forested acres is considered capable, available, and tentatively suitable timber land.

There are 22,905 acres (75%) of no capacity range, 2,772 acres (9%) of potential capacity range, and 4,929 acres (16%) of full capacity range. Seven hundred and forty-four acres (15%) of the full capacity range receives unsatisfactory management.

There are no developed recreation sites. Thirty acres are suitable for future development.

7. Mt. Taylor Suitable Ponderosa Pine SawTimber

Analysis Area 7 is located on the Mount Taylor Ranger District. Three percent (4,414 acres) of the area has slopes in excess of 40 percent.

This analysis area is composed entirely of ponderosa pine sawtimber: 127,283 acres (92%) are sparsely stocked and 10,799 acres (8%) are adequately stocked.

There are 21,355 acres (16%) of no capacity range and 116,727 acres (84%) of full capacity range. Thirty-two percent (37,742 acres) of the full capacity range is in unsatisfactory condition.

Analysis Area 7 has 2 campgrounds and 1 picnic ground. Acres suitable for future development total 750.

8. Mt. Taylor Suitable Ponderosa Pine Pole Timber

Analysis Area 8 is located on the Mount Taylor Ranger District. One percent (266 acres) of the area has slopes exceeding 40 percent.

The area consists of ponderosa pine pole timber: 6,056 acres (22%) are sparsely stocked and 21,700 acres (78%) are adequately stocked.

There are 2,052 acres (7%) of no capacity range and 25,704 acres (53%) of full capacity range. Fifty percent (12,766 acres) of the full capacity range receives unsatisfactory management.

There are no developed recreation sites. There are 220 acres suitable for future development.

9. Mt. Taylor Suitable Ponderosa Pine Seedlings and Saplings

Analysis Area 9 is located on the Mount Taylor Ranger District. Less than 1 percent (85 acres) of the area has slopes exceeding 40 percent.

The entire area consists of adequately stocked ponderosa pine seedlings and saplings.

There are 6,029 acres (21%) of no capacity range and 22,232 acres (79%) of full capacity range. Thirty-five percent (7,692 acres) of the full capacity range receives unsatisfactory management.

There is one campground and 280 acres are suitable for future development.

10. Mt. Taylor Suitable Ponderosa Pine Nonstocked

Analysis Area 10 is located on the Mount Taylor Ranger District. All slopes are less than 40 percent.

This management area includes 7,350 acres in need of reforestation on ponderosa pine sites.

The entire area is full capacity range. Seventy-four percent (12,957 acres) of the range receives unsatisfactory management.

There are no developed recreation sites. There are 30 acres suitable for future development.

11. Mt. Taylor Spruce-Fir Sawtimber and Poles, Slopes Under 40 Percent

Analysis Area 11 is located on the Mount Taylor Ranger District. All slopes are 40 percent or less.

The area consists of spruce-fir sawtimber and pole timber. There are 793 acres (33%) of adequately stocked pole timber, 61 acres (2%) of sparsely stocked sawtimber and 1,585 acres (65%) of adequately stocked sawtimber.

Eighty-six percent (2,107 acres) of the area is no capacity range. The remaining 14 percent (331 acres) is full capacity range. The entire 331 acres of full capacity range receives unsatisfactory management.

No developed recreation sites exist. There are 115 acres suitable for future development.

12. Mt. Taylor Suitable Spruce-Fir Sawtimber and Pole Timber with Slopes Exceeding 40 Percent

Analysis Area 12 is located on the Mount Taylor Ranger District. All

slopes exceed 40 percent.

The area consists of spruce-fir sawtimber and sole timber. There are 153 acres (8%) of sparsely stocked pole timber, 292 acres (15%) of adequately stocked pole timber, 482 acres (25%) of sparsely stocked sawtimber and 1,012 acres (52%) of adequately stocked sawtimber.

The entire area is no capacity range.

There are no developed recreation sites. Ninety acres are available for future development.

13. Mt. Taylor Suitable Mixed Conifer/Aspen

Analysis Area 13 is located on the Mount Taylor Ranger District. Slopes exceed 40 percent on 1,129 acres (19%).

There are 3,322 acres (56%) of mixed conifer and 2,610 acres (44%) of aspen. The mixed conifer consists of 505 acres (8%) of adequately stocked seedlings and saplings, 1,145 acres (19%) of sparsely stocked sawtimber, 493 acres (8%) of adequately stocked sawtimber and 1,179 acres (20%) of adequately stocked pole timber. The aspen consists of 300 acres (5%) of sparsely stocked pole timber and 2,310 acres (39%) of adequately stocked pole timber.

There are 2,542 acres (43%) of no capacity range, and 3,390 acres (57%) of full capacity range. Forty-one percent (1,379 acres) of full capacity range receives unsatisfactory management.

There are no developed recreation sites. Thirty acres are available for future development.

14. Other Suitable Ponderosa Pine with Slopes Under 40 Percent

There are 33,347 acres (46%) on the Mountainair Ranger District and 39,260 acres (54%) on the Magdalena Ranger District. All slopes are 40 percent or less.

The area consists entirely of ponderosa pine. There are 21,893 acres (30%) of adequately stocked seedling and saplings, 2,570 acres (3%) of sparsely stocked pole timber, 28,019 acres (39%) of adequately stocked pole timber, 17,283 acres (24%) of sparsely stocked pole timber and 2,842 acres (4%) of adequately stocked sawtimber.

Five percent (3,746 acres) of the area is no capacity range, 5 percent (3,713 acres) is potential capacity range, and 90 percent (66,148 acres) is full capacity range. Fifty-four percent (34,941 acres) of the full capacity range receives unsatisfactory management.

There are two developed campgrounds and 840 acres suitable for future development.

15. Other Suitable Ponderosa Pine with Slopes Exceeding 40 Percent

There are 1,544 acres (5%) on the Mountainair Ranger District and 28,279 acres (95%) on the Magdalena Ranger District. All slopes exceed 40 percent.

The area consists entirely of ponderosa pine. There are 2,683 acres (9%) of adequately stocked seedling and saplings, 418 acres (1%) of sparsely stocked pole timber, 15,427 acres (52%) of adequately stocked pole timber, 8,922 acres (30%) of sparsely stocked sawtimber and 2,373 acres (8%) of adequately stocked sawtimber.

The entire area is no capacity range.

There are no developed recreation sites. Ten acres have been identified as being suitable for future development.

16. Other Suitable Mixed Conifer/Aspen with Slopes Under 40 Percent

There are 4,979 acres (72%) on the Mountainair Ranger District and 1,889 acres (28%) on the Magdalena Ranger District. All slopes are 40 percent or less.

There are 5,534 acres (81%) of mixed conifer and 1,334 acres (19%) of aspen. The mixed conifer consists of 1,731 acres (25%) of adequately stocked seedlings and saplings, 1,708 acres (25%) of adequately stocked pole timber, 112 acres (2%) of sparsely stocked sawtimber, and 1,983 acres (29%) of adequately stocked sawtimber. The aspen consists entirely of adequately stocked pole timber.

There are 3,318 acres (48%) of no capacity range, 433 acres (6%) of potential capacity range, and 3,117 acres (46%) of full capacity range. Sixty-eight percent (2,133 acres) of the full capacity range receives unsatisfactory management.

There are 2 campgrounds and 90 acres available for future development.

17. Other Suitable Mixed Conifer/Aspen with Slopes Exceeding 40 Percent

There are 4,819 acres (17%) on the Mountainair Ranger District and 23,741 acres (83%) on the Magdalena Ranger District. All slopes exceed 40 percent.

The area contains 28,338 acres (99%) of mixed conifer and 222 acres (1%) of aspen. The mixed conifer consists of 1,770 acres (6%) of adequately stocked seedlings and saplings, 135 acres (1%) of sparsely stocked pole timber, 11,245 acres (39%) of adequately stocked pole timber, 4,199 acres (15%) of sparsely stocked sawtimber, and 10,989 acres (38%) of adequately stocked sawtimber. The aspen consists entirely of adequately stocked pole timber.

All of the area is classified as no capacity range.

One campground exists in the area and 20 acres have been identified as being suitable for future development.

18. No Capacity Range

Analysis Area 18 occurs on three Ranger Districts: Mountainair District—7,845 acres (4%); Mount Taylor District—60,465 acres (28%); Magdalena District—147,242 acres (68%). Seventy-seven percent of the area has slopes in excess of 40 percent.

The major vegetation types are: 1) grassland species and mountain shrub—69,339 acres (32%); 2) pinyon-juniper—113,316 acres (53%); and 3) coniferous and deciduous forest species—27,297 acres (13%). There are 111 acres (less than 1%) of riparian area and 5,489 acres (2%) of rock outcrop.

The entire area is no capacity range.

There are three campgrounds in the area. There are 150 acres suitable for potential development.

19. Mt. Taylor Satisfactorily Managed Range

Analysis Area 19 is located in the San Mateo Mountains on the Mount Taylor Ranger District. All slopes are 40 percent or less.

Vegetation types are: 1) grassland species and mountain shrub—10,697 acres (48%); 2) pinyon-juniper—9,600 acres (43%); and 3) coniferous

forest-1,939 acres (9%).

There are 2,587 acres (12%) of potential capacity range and 19,649 acres of full capacity range. All of the full capacity range receives satisfactory management.

No developed recreation sites exist. There are 20 acres suitable for future development.

20. Mt. Taylor Unsatisfactorily Managed Range

Analysis Area 20 is located in the San Mateo Mountains (Mt. Taylor) on the Mount Taylor Ranger District. All slopes are 40 percent or less.

The vegetation types are: 1) grassland species and mountain shrub-29,626 acres (31%); 2) pinyon-juniper-55,841 acres (69%); and 3) coniferous forest-8,865 acres (9%). There are 302 acres (1%) of riparian area.

There are 2,422 acres (3%) of potential capacity range. The remaining acres are full capacity range. All of the full capacity range receives unsatisfactory management.

There are two campgrounds in the area. No acres have been identified as being suitable for future development.

21. Zuni Satisfactorily Managed Range

Analysis Area 21 is located in the Zuni Mountains on the Mount Taylor Ranger District. All slopes are 40 percent or less.

Vegetation types are: 1) grassland species and mountain shrub-24,680 acres (24%); 2) pinyon-juniper-55,198 acres (53%); and 3) coniferous forest-23,847 acres (23%). There are 470 acres (1%) of riparian area.

The entire area is full capacity range with satisfactory management.

There are no developed recreation sites in the area. Twenty acres are suitable for future development.

22. Zuni Unsatisfactorily Managed Range

Analysis Area 22 is located in the Zuni Mountains on the Mount Taylor Ranger District. All slopes are 40 percent or less.

Vegetation types are: 1) grassland species and mountain shrub-2,926 acres (19%); 2) pinyon-juniper-5,200 acres (35%); and 3) coniferous forest-6,382 acres (42%). There are 612 acres (4%) of riparian area.

The entire area is full capacity range with unsatisfactory management.

No developed recreation sites exist. Twenty acres are suitable for future development.

23. Manzano/Gallinas Satisfactorily Managed Range

Analysis Area 23 is located on the Mountainair Ranger District. All slopes are 40 percent or less.

Major vegetation types are: 1) grassland species and mountain shrub-26,670 acres (50%); 2) pinyon-juniper-24,680 acres (46%); and 3) coniferous forest-2,022 acres (4%). There are 259 acres (less than 1%) of riparian area.

There are 205 acres (less than 1%) of potential capacity range. The remainder of the area is full capacity range with satisfactory management.

There are three campgrounds in the area and 150 acres are suitable for future development.

24. Manzano/Gallinas Unsatisfactorily Managed Range

Analysis Area 24 is located on the Mountainair Ranger District. All slopes are 40 percent or less.

Vegetation types are: 1) grassland species and mountain shrub-13,542 acres (21%); and 2) pinyon-juniper-61,511 acres (79%). There are 39 acres (less than 1%) of riparian area.

There are 1,502 acres (2%) of potential capacity range. The remaining acres are full capacity range with unsatisfactory management.

25. Bear/Datil Satisfactorily Managed Range

Analysis Area 25 is located in the Bear and Datil Mountains on the Magdalena Ranger District. All slopes are 40 percent or less.

Vegetation types are: 1) grassland species and mountain shrub-80,497 acres (39%); 2) pinyon-juniper-124,263 acres (61%).

There are 8,211 acres (4%) of potential capacity range. The remaining acres are full capacity range with satisfactory management.

There are no developed recreation sites in the area and no acres have been identified as being suitable for future development.

26. Bear/Datil Unsatisfactorily Managed Range

Analysis Area 26 is located in the Bear and Datil Mountains on the Magdalena Ranger District. All slopes are 40 percent or less.

Vegetation types are: 1) grassland species and mountain shrub-11,533 acres (27%); 2) pinyon-juniper-30,063 acres (70%); and 3) coniferous forest-1,251 acres (3%).

There are 3,542 acres (8%) of potential capacity range. The remaining acres are full capacity range with unsatisfactory management.

No developed recreation sites exist in the area. There are 40 acres suitable for future development.

27. Magdalena Satisfactorily Managed Range

Analysis Area 27 is located in the Magdalena Mountains on the Magdalena Ranger District. All slopes are 40 percent or less.

Vegetation types are: 1) grassland species and mountain shrub-13,880 acres (84%); 2) pinyon-juniper-2,191 acres (13%); and 3) coniferous forest-198 acres (1%). There are 328 acres (2%) of riparian area.

There are 867 acres (5%) of potential capacity range in the area. The remaining acres are full capacity range with satisfactory management.

There are no developed recreation sites. Twenty acres are suitable for future development.

28. Magdalena Unsatisfactorily Managed Range

Analysis Area 28 is located in the Magdalena Mountains on the Magdalena Ranger District. All slopes are 40 percent or less.

Vegetation types are: 1) grassland species and mountain shrub-8,072 acres (48%); 2) pinyon-juniper-7,693 acres (46%); and 3) coniferous forest-1,002 acres (6%).

There are 489 acres (3%) of potential capacity range. The remaining acres are full capacity range with unsatisfactory management.

There are no developed recreation sites within the area and no acres have been identified for future development.

29. San Mateo Satisfactorily Managed Range

Analysis Area 29 is located in the San Mateo Mountains on the Magdalena Ranger District. All slopes are 40 percent or less.

Vegetation types are: 1) grassland species and mountain shrub-46,794 acres (78%); 2) pinyon-juniper-11,679 acres (20%); and 3) coniferous forest-752 acres (1%). There are 561 acres (less than 1%) of riparian area and 105 acres (less than 1%) of rock outcrop.

There are 388 acres (less than 1%) of potential capacity range. The remaining acres are full capacity range with satisfactory management.

There is one campground in the area and 50 acres which are suitable for future development.

30. San Mateo Unsatisfactorily Managed Range

Analysis Area 30 is located in the San Mateo Mountains on the Magdalena Ranger District. All slopes are 40 percent or less.

Vegetation types are: 1) grassland species and mountain shrub-60,263 acres (52%); 2) pinyon-juniper-48,617 acres (42%); and 3) coniferous forest-5,145 acres (5%). There are 1,989 acres (2%) of riparian area.

There are 1,603 acres (1%) of potential capacity range. The remaining acres are full capacity range with unsatisfactory management.

No developed recreation sites exist. There are 100 acres suitable for future development.

31. Military Withdrawals

Analysis Area 31 is predominately pinyon-juniper. It is currently unavailable for routine Forest Service management activities. A 14,080 acre Department of Army withdrawal is restricted to military uses. It is currently administered jointly by the Forest and Kirtland Air Force Base through the Department of Defense. The instrument of withdrawal designated the primary use as military but did state that the Forest Service would retain timber management rights and responsibilities. Other National Forest activities are authorized as long as these do not interfere with military use. Locatable and leasable minerals are withdrawn.

A 4,595 acre Atomic Energy Commission withdrawal is restricted for weapons research to protect test sites in Lurance Canyon. The area, now jointly managed by the Forest and Sandia Laboratories through the Department of Energy, is designated as a safety buffer zone. Locatable minerals are withdrawn.

Analysis Area 31 was not modeled since Kirtland Base and Sandia Labs deny public access for security and safety purposes. Negotiations are underway to permit limited public use.

32. Private Lands

Analysis Area 32 was not modeled since this area is comprised of private lands.

Appendix D. Objectives

OBJECTIVES

An objective is defined as "a specific statement of measurable results to be achieved within a stated time period" [36 CFR 219.3 (w)]. Forest objectives are quantitative. They are time-oriented outputs that are associated with a given budget level. The objectives need to be achieved to accomplish goals.

Objectives for the Forest are shown in the following tables:

Table 6 Plan Outputs - Periods 1-5

Table 7 Recreation Site Construction Schedule - Periods 1-5

Table 8 Recreation Site Reconstruction Schedule - Periods 1-5

Table 9 Trail Construction/Reconstruction Schedule - Periods 1-5

Table 10 Land Line Location Program - Period 1

Table 11 Rights-of-Way Acquisition Schedule - Period 1

Table 12 Facility Construction/Reconstruction Schedule Period 1

Table 13 Road Construction/Reconstruction Schedule Period 1

Table 14 Timber Offering Schedule - Period 1

Note: Table 15, Summary of Vegetation Management Practices and Table 16, Summary of Vegetation Management Practices by Benefiting Resources were deleted with this amendment and replaced with a standard regional table now found on page 35.

Table 6. Plan Outputs - Periods 1-5

Average Annual Output	Unit of Measure	Period				
		1	2	3	4	5
Net Merch. Timber Vol.	MCF	2,329	7,522	9,532	9,532	9,532
Net Sawtimber (sales)	MBF	8,344	25,000	32,035	31,627	35,343
Net Products	MBF	232	2,843	3,595	3,975	4,126
KV Reforestation	Acres	200	674	948	867	1,196
Reforestation	Acres	7,350	-	-	-	-
Timber Stand Improvement	Acres	2,862	6,385	9,173	8,096	11,385
Firewood						
Personal (free)	MBF	900	12,763	10,145	7,618	5,661
Personal (sold)	MBF	5,400	765	765	765	482
Commercial	MBF	900				
Recreation						
Developed	MRVDs	709.4	962.7	1,142.1	1,252.9	1,321.5
Dispersed	MRVDs	521.2	688.1	859.8	989.4	1,084.7
Wildlife	MRVDs	127.1	181.0	224.6	248.8	272.1
Wilderness	MRVDs	78.4	84.3	89.2	91.0	89.6
Grazing Capacity	MAUMs	185.2	185.6	190.0	190.6	191.5
Permitted Livestock Use	MAUMs	189.7	189.2	180.9	184.0	186.7
Soil Loss	MTons	5,224.1	5,133.9	5,071.7	4,995.5	4,989.8
Water Yield	Ac-Ft.	99,390	99,435	99,491	99,429	99,554
Trail	Miles	4.78	5.6	3.2	2.1	1.65
Construction/Reconstruction						
Wildlife Habitat Improvement	MAcre Equiv.	127.2	117.3	116.3	98.8	88.7
Minerals	Plans	169	139	209	241	251
Fuels Treatment	MAcres	1.2	3.4	4.1	4.6	4.9
Lands Purchased	Acres	1	1	1	1	1
Watershed Improvement	Acres	1,578	1,271	-	-	-

Table 7. Recreation Site Construction Schedule - Period 1 1/

Site	Person at One Time (PAOT) Capacity	Forest Plan Map Symbol
MT. TAYLOR RD		
La Jara/Mirabal CG	200	A
Mt. Taylor Winter Sports	200	B
Bluewater Creek	300	C
District Total	700	

1/Completion of this schedule is dependent on funding. The schedule is a priority listing and is not totally funded.

Table 7 (continued). Recreation Site Construction Schedule - Period 1 1/

Site	Person at One Time (PAOT) Capacity	Forest Plan Map Symbol
MAGDALENA RD		
Skeleton #46 Trailhead	50	D
Water #37 Trailhead	50	E
District Total	100	
MOUNTAINAIR RD		
Pine Shadow CG	300	F
Pine Shadow Trailhead	50	G
Bosque Trailhead	50	H
Albuquerque Trailhead	50	
New Canyon Trailhead	50	
Capilla Trailhead	50	
Red Canyon Trailhead	50	
Ox Canyon Trailhead	50	
Monte Largo Trailhead	50	
District Total	700	
SANDIA RD		
Cedro CG	400	I
N. Sandia Parking & Trlhd	125	
Palo Duroso Toilet	25	
Sandia Cave Trlhd & Toilet	120	
Tunnel Canyon Trailhead	50	K
Tree Springs Trailhead	50	L
Cienega Trailhead	50	M
Piedra Lisa South Trailhead	50	N
Three Gun Trailhead	50	O
Canyon Estates Trailhead	50	P
Sandia Crest Scenic Byway Interpretive Facilities	100	
Tram Service Road Parking	100	
Capulin Parking	100	
Nine Mile Parking	100	
Doc Long Area Parking	100	
District Total	1,470	
BLACK KETTLE NG		
McClellan CG	100	Q
Marvin #7 PG	90	R
East Bluff PG	90	S
District Total	280	
RITA BLANCA NG		
Felt Picnic Area	30	
District Total	30	

1/Completion of this schedule is dependent on funding. The schedule is a priority listing and is not totally funded.

Table 7 (continued). Recreation Site Construction Schedule - Period 2

Site	Person at One Time (PAOT) Capacity	Forest Plan Map Symbol
MT TAYLOR RD		
Salazar CG	200	T
District Total	200	
MAGDALENA RD		
Bear Trap CG	60	U
Rosedale Trailhead	50	V
Little Monica Trailhead	50	W
District Total	160	
SANDIA RD		
Ponderosa/David PG (deleted)		X (deleted)
*Nordic-Alpine Ski Area	2,000	Y
Tunnel Canyon PG	200	Z
Juan Tabo Interpretive Site	20	AA
Juan Tabo PG	60	BB
Tijeras Pueblo Interpretive Site	40	CC
Casa Loma Trailhead	50	DD
Canoncito Trailhead	50	EE
10K North/South Parking	100	
Otero Canyon Trailhead	50	
Mars Court Trailhead	50	
Big Block Trailhead	50	
District Total	2,700	
*Pending study of potentials		
BLACK KETTLE NG		
Marvin #1 CG	60	FF
Skipout PG	60	GG
District Total	120	
RITA BLANCA NG		
Thompson Grove PG Expansion	60	HH
District Total	60	

Table 7 (continued). Recreation Site Construction Schedule - Period 2

Site	Person at One Time (PAOT) Capacity	Forest Plan Map Symbol
MOUNTAINAIR RD		
Red Rock CG Expansion	20	II
JFK Trailhead	50	JJ
Encino Trailhead	50	
District Total	120	
SANDIA RD		
Tijeras-Albuquerque Historic Trail	50	KK
Cedro Interpretive Trail	50	LL
Tunnel Spring Interpretive Site	50	MM
Piedra Lisa North Trailhead	50	OO
District Total	200	
BLACK KETTLE NG		
Dead Indian CG	75	PP
Spring Creek	45	QQ
District Total	120	

Table 7 (continued). Recreation Site Construction Schedule - Period 4

Site	Person at One Time (PAOT) Capacity	Forest Plan Map Symbol
MT. TAYLOR RD		
Pine Valley	200	RR
Wingate Group	100	SS
District Total	300	
SANDIA RD		
David Canyon PG (deleted)		TT (deleted)
Trail #82 West Trailhead	50	UU
District Total	50	

Table 7 (continued). Recreation Site Construction Schedule - Period 4

Site	Person at One Time (PAOT) Capacity	Forest Plan Map Symbol
KIOWA NG		
Mills Canyon Vista	20	VV
District Total	20	

Table 7 (continued). Recreation Site Construction Schedule - Period 5

Site	Person at One Time (PAOT) Capacity	Forest Plan Map Symbol
MT. TAYLOR RD		
Lobo CG	200	WW
Shuster CG	125	XX
District Total	325	
MAGDALENA RD		
Nogal Canyon CG	30	YY
District Total	30	
MOUNTAINAIR RD		
Bosque Peak CG	25	ZZ
Red Canyon CG	50	AAA
District Total	75	
SANDIA RD		
*Nine Mile/Capulin PG	400	BBB
*Palomas Gonzales CG	300	CCC
Cuchilla-Lupe Trailhead	50	DDD
District Total	750	
KIOWA NG		
Mills Canyon CG	40	EEE
District Total	40	

Table 8. Recreation Site Rehabilitation Schedule-Period 1 1/

Site	Person at One Time (PAOT) Capacity
<hr/>	
MT. TAYLOR RD	
Quaking Aspen CG	100
McGaffey CG	165
Ojo Redondo CG	100
Coal Mine CG	100
Lobo Canyon CG	40
McGaffey PG	245
District Total	750
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MAGDALENA RD	
Water Canyon CG	105
Springtime CG	30
Bear Trap CG	20
District Total	155
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MOUNTAINAIR RD	
Fourth of July CG	105
Capilla Peak CG	105
District Total	210
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SANDIA RD	
Las Huertas PG	170
Oak Flat Group PG	1,320
Oak Flat Family PG-Trailhead	100
Deadman PG	60
Pine Flat PG	150
Dry Camp PG	50
Balsam Glade PG Expansion	90
Nine Mile/Capulin Springs PG Expansion	400
Sandia Cave Parking Expansion	120
Juan Tabo PG	110
Doc Long PG	170
Sulphur PG	185
Cienega PG	375
District Total	3,300

1/ Completion of this schedule is dependent on funding. The schedule is a priority listing and is not totally funded.

Table 8 (continued). Recreation Site Rehabilitation Schedule-Period 1 1/

Site	Person at One Time (PAOT) Capacity
BLACK KETTLE NG	
McClellan CG	50
East Bluff PG	135
Marvin #7 PG	110
District Total	295

Table 8 (continued). Recreation Site Rehabilitation Schedule-Period 2

Site	Person at One Time (PAOT) Capacity
MOUNTAINAIR RD	
Red Canyon CG	90
New Canyon CG	30
District Total	120
SANDIA RD	
La Cueva PG	140
Cole Springs PG	55
Cedro Peak Group CG	200
Sandia Crest Observation	150
District Total	545
BLACK KETTLE NG	
Wherever needed	190
District Total	190
RITA BLANCA or KIOWA NGs	
Wherever needed	75
District Total	75

1/ Completion of this schedule is dependent on funding. The schedule is a priority listing and is not totally funded.

Table 8 (continued). Recreation Site Rehabilitation Schedule-Period 3

Site	Person at One Time (PAOT) Capacity
<hr/>	
MT. TAYLOR RD	
Coal Mine CGn CG	100
Lobo Canyon CG	40
McGaffey PG	245
Wherever needed	80
District Total	465
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MAGDALENA RD	
Luna Park CG	15
District Total	15
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MOUNTAINAIR RD	
Wherever needed	71
District Total	71
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SANDIA RD	
Oak Flat Group PG	1,320
Oak Flat Family PG-Trailhead	100
Deadman PG	60
Pine Flat PG	150
Dry Camp PG	50
Balsam Glade PG	90
Juan Tabo PG	110
Doc Long PG	170
Sulphur PG	185
Cienega PG	375
Wherever needed	310
District Total	2,920
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BLACK KETTLE NG	
Wherever needed	120
District Total	120
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Table 8 (continued). Recreation Site Rehabilitation Schedule-Period 4

Site	Person at One Time (PAOT) Capacity
<hr/>	
MT. TAYLOR RD	
Salazar CG	200
Wherever needed	305
District Total	505
<hr/>	
MAGDALENA RD	
Hughes Mill CG	10
Rosedale Trailhead	50
District Total	60
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MOUNTAINAIR RD	
Wherever needed	50
District Total	50
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SANDIA RD	
Ponderosa/David PG (deleted)	
Tunnel Spring PG	100
Tunnel Canyon PG	200
Juan Tabo Interpretive Site	20
Juan Tabo PG	60
Tijeras Pueblo Interpretive Site	40
District Total	420
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BLACK KETTLE NG	
Wherever needed	500
District Total	500
<hr/>	
RITA BLANCA or KIOWA NGs	
Wherever needed	135
District Total	135
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Table 8 (continued). Recreation Site Rehabilitation Schedule-Period 5

Site	Person at One Time (PAOT) Capacity
<hr/>	
MT. TAYLOR RD	
Wherever needed	500
District Total	500
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MAGDALENA RD	
Luna Park CG	15
Wherever needed	48
District Total	63
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MOUNTAINAIR RD	
Wherever needed	84
District Total	84
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SANDIA RD	
Tunnel Spring Interpretive Site	50
Cedro Interpretive Trail	50
La Cueva Trailhead	50
Oak Flat Group PG	1,080
Oak Flat Family PG-Trailhead	100
Deadman PG	60
Pine Flat PG	150
Dry Camp PG	50
Balsam Glade PG	70
Juan Tabo PG	110
Doc Long PG	170
Sulphur PG	185
Cienega PG	375
District Total	2,500
<hr/>	
BLACK KETTLE NG	
Wherever needed	500
District Total	500
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Table 9. Trail Construction/Reconstruction Schedule-Period 1 1/

Trail Name	Miles
MT. TAYLOR RD	
Ski Touring Trails	5.0
Guadalupe Rim	3.0
District Total	8.0
MAGDALENA RD	
General Reconstruction	0.5
District Total	0.5
MOUNTAINAIR RD	
General Reconstruction	2.3
Bosque Peak-Manzano Peak	1.5
Salas-Monte Largo Loop	2.5
Trigo Canyon and Fourth of July	8.0
Capilla Comanche	3.0
Fourth of July	1.5
Red Canyon Loop	1.0
District Total	19.8
SANDIA RD	
North Sandia Parking & Trailhead-Trail #88	0.5
Middle Ridge	4.0
Pino Crossing	3.0
Embudo Canyon	2.0
Faulty-Cienega-Bill Spring	1.5
Tecolote-Barro Canyon	2.0
La Luz-Piedra Lisa	2.0
Cienega Bridle	1.0
Capulin Spring-Nine Mile	1.5
Pave near High Finance Restaurant	0.5
Foothills Trail	7.0
District Total	26.0

1/ Completion of this schedule is dependent on funding. The schedule is a priority listing and is not totally funded.

Table 9 (continued). Trail Construction/Reconstruction Schedule-Period 2

Trail Name	Miles
<hr/>	
MT. TAYLOR RD	
Continental Divide National Scenic Trail	23.0
Wherever needed	2.0
District Total	25.0
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MAGDALENA RD	
Water Canyon-Potato Canyon	1.5
Little Monica-Potato Canyon	4.0
District Total	5.5
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MOUNTAINAIR RD	
New Canyon Loop	2.0
Albuquerque Trail	1.5
New Canyon-Red Canyon Loop	2.4
Ojito Trail	8.5
Vigil Trail	3.0
Yellowstone Trail	1.5
Encino Trail	5.0
Monte Largo Trail	5.5
District Total	29.4
<hr/>	
SANDIA RD	
Embudito-Middle Ridge	3.0
Embudito Bypass	4.0
Piedra Lisa-Tunnel Springs	2.0
Ranger Station - Peak	2.0
Tunnel Canyon - Canyon	1.5
Cedro Peak - Canyon	2.0
Otero-Otero Canyon	1.5
District Total	16.0
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Table 9 (continued). Trail Construction/Reconstruction Schedule-Period 3

Trail Name	Miles
<hr/>	
MT. TAYLOR RD	
Continental Divide National Scenic Trail	10.0
District Total	10.0
<hr/>	
MAGDALENA RD	
Road #138-Water Canyon	3.0
Potato Canyon-Mt. Withington	0.5
District Total	3.5
<hr/>	
MOUNTAINAIR RD	
Jaral Trail	1.5
Albuquerque/Crest Spur	0.75
Low Country Trail	8.0
East Manzano	2.0
District Total	12.25
<hr/>	

Table 9 (continued). Trail Construction/Reconstruction Schedule-Period 3

Trail Name	Miles
SANDIA RD	
Domingo-Pino-Crest	4.0
Embudo-Three Gun	2.5
Del Agua Loop	1.0
Piedra Lisa-Tunnel Spring	1.0
David Canyon-Otero	8.0
District Total	16.5

Table 9 (continued). Trail Construction/Reconstruction Schedule-Period 4

Trail Name	Miles
MT. TAYLOR RD	
Continental Divide National Scenic Trail	5.0
District Total	5.0
MAGDALENA RD	
Monica Trail-Mt. Withington	0.5
Vicks Peak	0.5
District Total	1.0
MOUNTAINAIR RD	
Wherever needed	3.0
District Total	3.0
SANDIA RD	
Dry Camp-Tree Spring	0.5
Capulin-10K	1.0
Dry Camp-Ski Area	0.5
Casa Loma-Facility Loop	2.0
Balsam Glade-Palomas Peak	1.5
As needed	5.5
District Total	11.0

Table 9 (continued). Trail Construction/Reconstruction Schedule-Period 5

Trail Name	Miles
MT. TAYLOR RD	
Continental Divide National Scenic Trail	6.0
District Total	6.0

Table 9. Trail Construction/Reconstruction Schedule-Period 5

Trail Name	Miles
SANDIA RD	
Wherever needed	5.0
Palomas Peak-Arroyo Seco	1.5
Palomas Peak-Palo Duroso	2.5
Perdiz Canyon-La Madera	1.5
District Total	10.5

Table 10. Land line Location Program-Period 1

District Priority	Project Name	Miles	Sections	TWINS.	RNG
District-	Mt. Taylor-61.8 Miles				
1	Hausner Timber Sale	2.5	18	T10N	R12W
	Cold Springs	3.0	1	T10N	R13W
	Cold Springs II	5.5	7,17	T10N	R12W
2	Agua Fria Timber Sale	5.5	21,27,34	T10N	R12W
3	Bluewater Creek	8.0	3,9	T11N	R13W
	Sawmill Timber Sale				
4	The Rincon	6.3	5,6,7	T12N	R14W
	Section Twelve	3.0	12	T12N	R15W
5	Rinconada	3.0	22,23	T11N	R8W
6	Big Notch-Muerto Timber Sale	6.0	16,19,20,22	T11N	R14W
7	Nielson	1.0	6	T11N	R8W
8	Sawyer Timber Sale	1.0	23	T12N	R14W
9	Bond Timber Sale	10.5	16,19,20,22,29	T12N	R14W
10	Divide Timber Sale	14.0	8,17,20,28,29,32,33	T12N	R14W
District-	Magdalena-73.75 Miles				
1	Hop Canyon	4.0	1,11	T8S	R4W
2	Limestone Canyon	3.0	27,34,3	T6S	R8W
3	Indian Creek/Nogalita Spring	7.0	26,27,28	T8S	R8W
4	Nastor Draw	3.25	32	T1N	R11W
			5	T1S	R11W
5	Thompson Canyon	3.3	20	T1S	R10W
6	Cold Springs	2.5	22	T7S	R5W
7	Pankey Mine	1.9	29	T8S	R5W
8	Shipman Canyon	2.0	9	T9S	R6W
9	Steel Well-Eaton	4.5	7,8,17,18	T8S	R4W
10	Texas Spring	6.5	33,34,35	T8S	R4W
11	East Boundary-Datil	21.0	Many	T1N	R9W
				T2N	R9W
				T2N	R8W
12	Al Spring	6.5	22,27	T4S	R6W
13	Nogal	7.0	31,32,36	T8S	R4,5W
14	San Mateo Canyon Forest Bdy	1.25	24	T9S	R7W

Table 10 (continued). Land line Location Program-Period 2

District Priority	Project Name	Miles	Sections	TWINS.	RNG
District-	Mountainair-47.6 Miles				
1	Canyon de Bartolo	4.4	22, 23	T5N	R5E
2	Canon del Chato	4.3	25, 26, 27	T5N	R5E
3	Padilla Springs	3.5	3, 4	T3N	R5E
4	Coyote Spring	2.5	29	T3N	R5E
5	Forest Road 422	3.0	16	T3N	R5E
6	Saladito	3.8	15, 22	T3N	R5E
7	Led Better	2.0	33	T4N	R5E
8	Apache Canyon	4.8	5, 6, 8	T6N	R6E
9	Canon de Tajique	2.0	9	T6N	R6E
10	J. B. Brown	1.5	17	T6N	R6E
11	Metzler	3.0	31	T6N	R5E
12	Canon de las Palas	5.3	24, 25	T6N	R5E
13	Canon del Venado	7.5	13, 14	T6N	R5E
District-	Sandia - 21.9 Miles				
1	Elena Gallegos	9.4	Many	T10N	R4E
2	Juan Tomas	12.5	Many	T9N	R6E
District-	Black Kettle NG - 46.25 Miles				
1	Unit 48	1.0	24	T15N	R25W
2	Unit 49	0.75	26	T15N	R25W
3	Unit 16	0.5	30	T15N	R24W
4	Units 23 and 24	4.0	30, 31	T15N	R22W
5	Unit 100	4.5	18, 19	T14N	R22W
6	Unit 38	3.0	14	T14N	R25W
7	Unit 97	3.0	7	T14N	R23W
8	Unit 85	5.0	23, 26	T15N	R24W
9	Units 71 & 66	12.25	14, 15, 22, 23	T13N	R25W
			13, 24	T13N	R25W
	Unit 86	2.25	21	T15N	R23W
10	Unit 75	3.0	23, 26	T13N	R25W
11	Unit 89	2.0	30, 31	T15N	R22W
12	Unit 26	3.6	34	T15N	R26W
District-	Kiowa NG - 48.0 Miles				
1	Unit 67	2.3	12	T28N	
2	Units 59, 60	4.0	15	T28N	
3	Unit 70	4.5	29, 30	T28N	
4	Unit 44	3.0	7, 8	T26N	
5	Unit 51	2.5	17	T27N	
6	Unit 49	4.0	29, 32	T27N	
7	Unit 79	3.5	17, 18	T28N	
8	Unit 148	4.8	23, 26	T25N	
9	Unit 32	1.5	32	T25N	
10	Unit 27	3.5	26	T25N	
	Unit 19	1.8	1	T24N	
	Unit 15	2.0	4	T24N	

Table 10 (continued). Line Location Program-Period 1

District Priority	Project Name	Miles	Sections	TWINS.	RNG
District-	Kiowa NG (continued)				
	Unit 144	4.5	35	T24N	R35E
	Unit 21	6.3	15,22,27	T24N	R35E
District-	Rita Blanca NG - 58.1 Miles				Units
1	R. B. 77	11.0	77, 78	N/A	
2	R. B. 74	4.6	74	N/A	
3	R. B. 45	4.4	45, 46	N/A	
4	R. B. 95	4.0	95	N/A	
5	R. B. 145	2.0	145	N/A	
6	R. B. 48	6.5	48	N/A	
7	R. B. 1	8.5	1, 2	N/A	
8	R. B. 69	5.0	69, 70	N/A	
9	R. B. 61	2.0	61	N/A	
10	R. B. 62	4.0	62	N/A	
	R. B. 63	2.0	63	N/A	
	R. B. 99	2.6	99	N/A	
	R. B. 4	1.5	4	N/A	

Table 11. Right-of-way Acquisition Schedule-Period 1

Road/Trail No.	Name	Miles
333	Juan Tabo Road	0.14
187	Oso Ridge Road	0.05
55	Tajique-Torreon Loop	2.40
422	Priest Canyon	2.10
546	Wingate Adm. Site	0.50
TR. 192	Embudito Trailhead and Trail	0.60
235	Water Canyon	0.70
225	Nogal Canyon/Luna Park	2.90
TR. 10	Copper Canyon	0.30
-	La Jara Mesa T13N R9W	1.20
275	Kayser Mill Road	1.00
552	Benton Road	0.40
TR. 82	La Cueva Spur	0.30
TR. 135	Piedro USA	0.30
220	Point of Rocks	2.70
547	Six Mile Canyon	1.40
330	Rosedale	0.30
52	Little Rosa	2.10
358	Bartolo	1.20
-	Aqua Sarca Spring	1.00
86	Old Spanish Trail	3.60
TR. 50	Shipman	0.20
14	Chavez Spring	0.25
100	Blue Spring	0.75
402	Polich	4.30
FR. 50	Cibola County	1.80
FR. 472	Sawmill Road	2.00
FR. 478	Park Well Road	3.50
		37.99

1/ Completion of this schedule is dependent on funding. The schedule is a priority listing and is not totally funded.

Table 12. Facility Construction and Reconstruction Schedule - Period 1 1/

Priority	District	Name	Cost M\$
1	Mt. Taylor	Office and Shop	350
2	Sandia	Heliport	125
3	Sandia	Waster Water System	55
4	Magdalena	Barn	45
5	Magdalena	Withington and Davenport LO - Toilet	22
6	Mountainair	Gallinas LO and Cabin	158
7	Mt. Taylor	Mt. Sedgwick LO	135
8	Magdalena	Baldwin Cabin	56
9	Mountainair	Gallinas Fire Station	32

Table 13. Road Construction and Reconstruction Schedule - Period 1 1/

Road #	Name	Mileage	Estimated Cost M\$
16	Las Huertas Canyon (SR 165)	7.5	2,815
482	The Notches	8.5	200
180	Pole Canyon	14.0	450
501	Bosque Springs	5.0	250
49	Zuni Canyon	11.2	1,870
50	Zuni Mountains	45.4	8,860
55	Tajique-Torreon Loop	7.0	2,000
178	Diener Canyon	15.8	311
180	Pole Canyon	14.0	311
193	Horace Mesa	15.8	311
253	Red Canyon	4.0	125
245	New Canyon	7.0	400
321	Riley Loop	10.3	500
453	La Mosca Peak	15.9	311
422	Priest Canyon	16.3	617
480	Ojo Redondo	5.0	290

Table 14. Timber Offering Schedule - Period 1

The timber sale schedule as presented in the Plan for Fiscal Years 1986-1991, has been implemented through FY 1989 and changed for FY 1990-1995, as follows:

Fiscal Year Offered	Sale Name	Actual Volume (MMBF)	Estimated Volume (MMBF)
1986	Post Office Flat	7.2	
	Total	7.2	
1987	Tusas Mesa	2.8	
	Agua Fria	1.5	
	La Jara Canyon	1.6	
	Total	5.9	

1/ Completion of this schedule is dependent on funding. The schedule is a priority listing and is not totally funded.

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Table 14 (continued). Timber Offering Schedule - Period 1

Fiscal Year Offered	Sale Name	Actual Volume (MMBF)	Estimated Volume (MMBF)
1988	Salitre Mesa	5.1	
	Copperton	4.2	
	Total	9.3	
1989	Buckhorn	1.5	
	Microwave	(Appealed-not offered)	
	Total	1.5	
1990	Microwave		3.1
	Basgal/Foster		4.7
	Willow Springs		2.9
	Chicken Salvage		0.6
	Total		11.3
1991	Sawyer Creek		3.5
	Six Mile		1.5
	Bonita Canyon		Dropped
	Total		5.0
1992	Rincon/Bond		3.0
	Mirabal		2.0
	Morgan		Dropped
	Total		5.0
1993	Spud Patch		4.0
	Alamosa		1.5
	Sawmill		1.5
	Total		7.0
1994	Redondo Canyon		3.1
	Harding		1.5
	Rocky Springs		Dropped
	Total		4.6
1995	Colorado Canyon		1.0
	McGaffey		5.0
	Chicken Ranch		To be sold as salvage sale in FY 90 due to fire
	Total		6.0

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Table 14 (continued). Timber Offering Schedule - Period 1 1/

1/ Average Annual ASQ is 8.3 MMBF. Period Total ASQ equal to 83 MMBF. Currently Scheduled Period Total is estimated at 63 MMBF. Volumes for FY 1992-1995 are estimated based on position statements only for these sales and are subject to change as sit specific analyses are completed. Sales shown as dropped or reduced in estimated or actual volume included areas with combination of unsuitable lands, non-timber size age classes, spotted owl habitat, old growth acreage to be deferred, and patented lands which made them inoperable.

Table 15 summarized vegetation management practices that are planned for implementation. In addition the table presents the extent, timing, and rationale for the management practice as referenced in the 219.15 section of NFMA. Practices are also summarized by management areas and are found prior to the standards and guidelines for specific management areas. Period 1 and 2 are displayed because the Forest Plan is normally revised every 10 years or at least every 15 years.

Table 15. Summary of Vegetation Management Practices

Practices	Vegetation Types	Acres Treated Period 1	Rationale
Two Step Shelterwood	Mixed Conifer and Ponderosa Pine		
Harvest Type			
Cable		-	
Tractor		10,050	Used to regenerate a stand by removing a portion of the mature overstory in a first cut to prepare a mineral seedbed and stimulate seed production from remaining trees. Once the regenerated crop is established a final removal cut is made to release the understory. Practice is utilized because species respond well to this method and logging damage to the regenerated stand is minimized.