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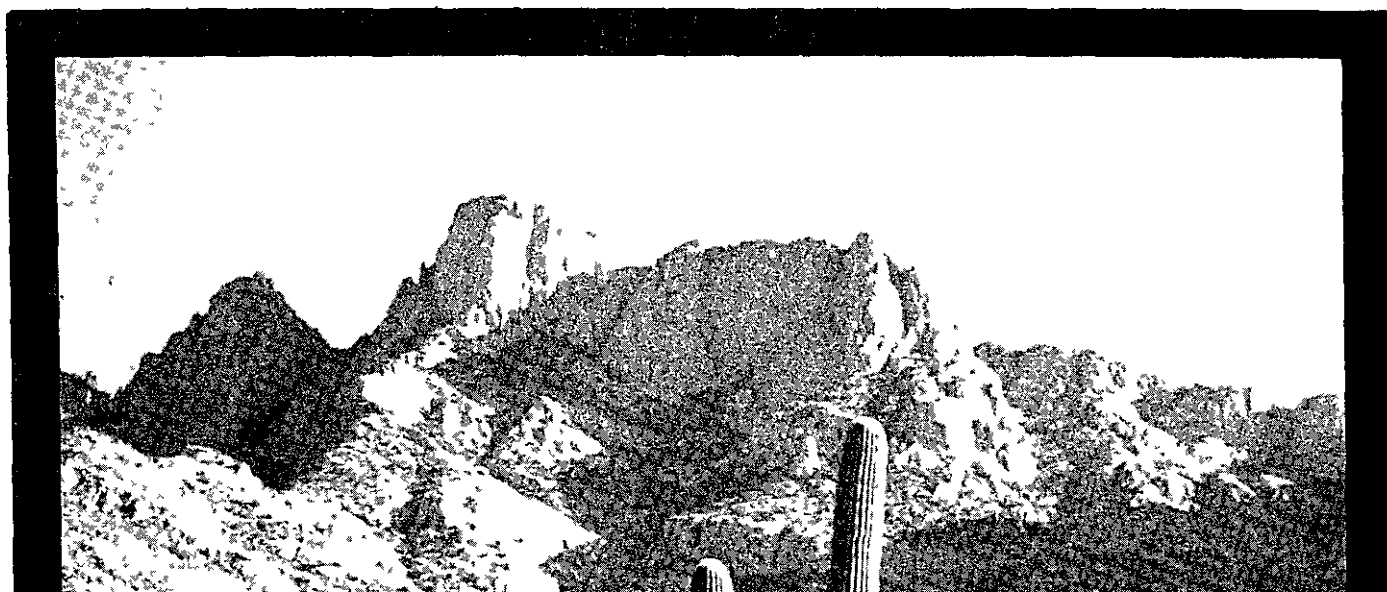
Forest  
Service

Southwestern  
Region

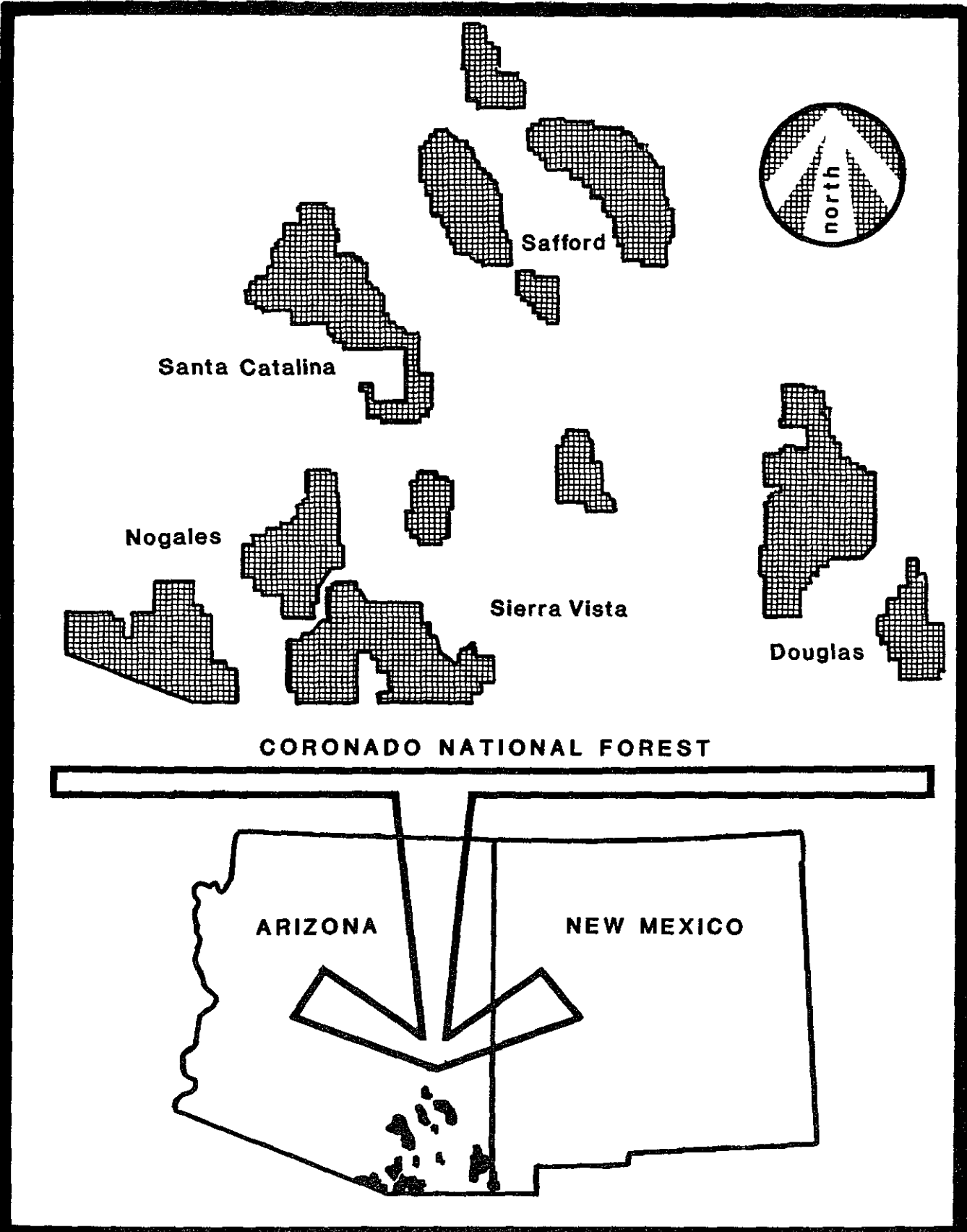
July 1986



# Summary of the Coronado National Forest Environmental Impact Statement and Forest Plan



# Vicinity Map



Summary  
Final Environmental Impact Statement  
Coronado National Forest Plan  
Pima, Pinal, Cochise, Graham and Santa Cruz  
Counties, Arizona  
Hidalgo County, New Mexico

EIS # 03-05-86-1

Type of Action	Administrative
Lead Agency	USDA Forest Service Coronado National Forest 300 West Congress Street Tucson, AZ 85701
Cooperating Agency	USDI Bureau of Land Management Arizona State Office P. O. Box 16563 Phoenix, AZ 85011  New Mexico State Office P. O. Box 1449 Santa Fe, NM 87501
Responsible Official	Sotero Muniz, Regional Forester
For Further Information	R. B. Tippeconnic Forest Supervisor Coronado National Forest 300 West Congress Street Tucson, AZ 85701 (602) 629-6805
Abstract	<p>A Proposed Action and five alternatives for a Forest Plan (Land and Resource Management Plan) for the Coronado National Forest are described and compared. The Proposed Action and alternatives are:</p> <ul style="list-style-type: none"><li>- PA (Proposed Action): emphasis on simultaneously addressing all issues, concerns and opportunities and producing a mix of commodity and amenity outputs within anticipated budget constraints;</li><li>- A (Current): emphasis on a continuation of management as of 1980 or the No Action alternative;</li><li>- B (RPA): emphasis on producing recreation and livestock grazing targets assigned in the Regional Guide;</li><li>- C: emphasis on economic efficiency in management of the Forest.</li><li>- D: emphasis on a natural environment and opportunities for dispersed recreation, wildlife recreation, and wilderness recreation.</li><li>- E: emphasis on a mix of resource opportunities to equally address the maximum number of issues and concerns.</li></ul> <p>The Proposed Action (PA) alternative constitutes the Forest Service preferred alternative. The Coronado National Forest Plan will guide management of the Forest for the next 10-15 years. Revisions can be made whenever necessary.</p>

# Summary of the Environmental Impact Statement

## Forest Plan Development

### BENEFITS OF FOREST PLAN

Each National Forest in the country is developing a Forest Plan that looks into the future and coordinates all the resources and activities in relation to the needs of the public to whom the Forests belong. The Coronado National Forest Plan will benefit us all because it:

- Involves you, the concerned public, in deciding what issues are of special importance on the Coronado National Forest.
- Draws on the expertise of various specialists, such as wildlife biologists, who work with management to develop a range of choices for managing the Forest for the next 10 to 15 years and look at impacts over the next 50 to 100 years.
- Offers more complex alternative choices than have been possible in the past.
- Sets up a better system for monitoring, (evaluating) management actions.
- Allows information to flow in two directions, from the Forest to regional and national levels, and back again. New decisions are based on the most recent data from the local level. The local situation is linked with national goals.
- Provides a common planning approach for all Forests throughout the country.
- Enables planners to better consider economic efficiency as well as production of resources because more detailed information is available.
- Considers all resource plans within the Forest at one time, instead of considering each one separately.
- Highlights present needs, estimates future supplies of resources, and makes projections into the future.
- Displays the standards and guidelines by which the Forest will be managed.

The 1976 National Forest Management Act (NFMA), requires each National Forest to develop a plan for managing its resources. It must be based on current Federal guidelines, comply with environmental regulations, be economically feasible and bring maximum long and short-term benefits to the public.

Production targets are set by the Forest Service at the National and Regional levels, but those decisions depend on the latest information developed by individual Forests. Decisions are a constant two-way process, with feedback from each Forest leading to new directives from above that align the capacity of each Forest with national needs and goals set by the President and Congress. Forest Plans will be revised every 10 to 15 years, but changes can be made whenever they are necessary.

### PUBLIC INVOLVEMENT

Although the broad goals and objectives are set by higher levels of Forest Service management, each Forest has a range of choices in meeting these goals. For example, they can emphasize one resource, such as recreation, if that is an important concern of local people. This is why public involvement is so important throughout the planning process. When the Coronado Forest Plan was in its early stages several years ago, many individuals, organizations, and agencies helped pinpoint issues of special importance to them. These issues were incorporated into the planning process and taken into consideration when alternative choices were developed.

FEIS

The Final Environmental Impact Statement (FEIS) describes a Proposed Action and five other alternatives for the management of the land and resources of the Coronado National Forest. Each alternative furnishes a different way of addressing issues, provides for the use and protection of resources and meets all legislative requirements. Every alternative generates a different mix of goods and services and maximizes benefits to the public in an environmentally sound manner.

The FEIS also describes the affected environment and discloses environmental consequences of each potential decision. It is written in keeping with guidelines set by the National Environmental Policy Act (NEPA). The Proposed Action is the alternative chosen by Forest management and is the basis for the Forest Plan which is a separate document.

## Conflicting Concerns Are Inevitable

ISSUES, CONCERNS,  
AND OPPORTUNITIES  
(ICOs)

In shaping the Forest Plan, Coronado National Forest staff contacted private individuals, Native Americans, public agencies, civic groups, organizations, Forest permittees, and many others. Contacts were by telephone, mail, radio, posters, meetings, personal contacts, and the press. People were encouraged to mention what issues they considered important and specific things they were concerned about. A booklet outlining various possible management practices also drew good response.

The opinions from public and private sources helped Forest managers develop a list of items to be considered in each alternative. They were labeled Issues, Concerns, and Opportunities (ICOs).

National Forests are committed to a policy of multiple use management while staying sensitive to public needs. Some interests think of the Forest in terms of a livelihood such as livestock grazing while others think of the Forest only in terms of recreation. Demands of various groups conflict, and the Forest Plan must make compromises among their competing interests.

## The Forest Belongs to Everyone

CURRENT  
SITUATION  
AS IT RELATES  
TO ICOs

This section describes the environment or setting that will be affected by future management actions which are designed to respond to the identified issues, concerns, and opportunities.

Recreation

Population growth, more leisure time, longer life spans and other factors are increasing the need for Arizonans to escape the hot, high-tech, high-stress environment of the metro areas. The open space, natural beauty and climatic relief of the seventeen mountain ranges of the Coronado National Forest are currently meeting this need as it becomes an increasingly critical attribute to the quality of life in Southern Arizona.

As a result of these trends, recreation has become the most dynamic activity on the Forest and management direction must be responsive to projected needs, directions, and demands.

A vast array of recreational opportunities are currently available--many of them yearlong--and the potential for expansion of existing, as well as addition of new opportunities, is substantial. However, even with optimum development and intensive management, it is not likely the Forest alone can meet the needs of the anticipated increase in recreation pursuits.

Resource damage is already obvious in some popular areas where carrying capacity has not been established and other areas are seldom visited due to lack of access. Potential for conflict between various activities is increasing as they compete for the ever-shrinking acreage necessary to a quality experience.

In order to maximize the capacity of the Forest without detriment to the resource, the plan emphasizes activities that are dependent upon natural beauty, solitude, and other amenities typical of the Forest, as opposed to those that require highly developed facilities and would be more appropriate to development by the private sector.

Expansion of Information Services and Environmental Education Programs are planned to satisfy the desires of our publics as well as to gain their acceptance and support of responsible Land-Use Ethics.

Cooperative efforts or "Partnerships" with other recreation agencies and the private sector are being established to plan and develop a well-balanced spectrum of recreation opportunities for Southern Arizona and the Southwest corner of New Mexico. Continuation of this endeavor, along with management within carrying capacities and securing public access is crucial to the future of a quality recreation program on the Forest and its environs.

Recreation ICOs can be grouped into two general types. One is the identification and management of areas where the recreational use or activities exceed the capacity of the land to provide opportunities. Actual resource damage may be occurring or the recreation experience level may be low. Other issues are related to what types of recreational opportunities can and should be provided on the National Forest and what opportunities can and should be provided on private or other public lands.

Wilderness

Approximately 20 percent of the Forest is within eight designated wilderness areas (339,190 acres). These were designated by the 1964 Wilderness Act, the 1978 Endangered American Wilderness Act, and the 1984 Arizona Wilderness Act.

<u>Name</u>	<u>Acres</u>
Chiricahua	87,700
Galiuro	76,317
Pusch Ridge	56,933
Miller Peak	20,190
Mt. Wrightson	25,260
Pajarita	7,420
Rincon Mountain	38,590
Santa Teresa	26,780

These areas are utilized for a wide variety of non-motorized recreation activity. Actual use varies from very light in remote areas to very high near urban areas. The wilderness experience and wilderness resource may deteriorate in some areas as demands increase for all recreation opportunities. Livestock grazing is also a current use in some wilderness areas of the Forest.

Three areas on the Forest have been designated as Wilderness Study Areas (WSAs). These are Bunk Robinson (15,960 acres in the Peloncillo Mountains); Mt. Graham (62,000 acres in the Pinaleno Mountains); and Whitmire Canyon (12,840 acres in the Peloncillo Mountains).

In addition, this FEIS will address wilderness suitability for four Wilderness Study Areas administered by the Bureau of Land Management which are contiguous to lands administered by the Forest. These are BLM Galiuro (640 acres contiguous to existing Galiuro Wilderness), Bowie Mountain (6,156 acres contiguous to former North End Roadless Area), Baker Canyon (4,812 acres contiguous to Bunk Robinson WSA), and Guadalupe Canyon (4,145 acres contiguous to Bunk Robinson WSA). The wilderness evaluation of BLM lands is being done under an interagency agreement of April 1980, as amended. For the purpose of this analysis, BLM lands are being evaluated only for wilderness suitability. Allocations of other resource uses analyzed and proposed by this planning effort apply only to Forest Lands, not public lands administered by BLM. Future management consideration of BLM WSAs not recommended for wilderness will be determined through BLM planning processes.

All of these WSAs meet basic wilderness suitability requirements. They are essentially roadless and provide outstanding opportunities for solitude and primitive recreation.

The wilderness issue for the Coronado consists of two questions. The first has to do with how much new wilderness designation should be made to insure future wilderness values and opportunities are provided. The second question involves the level of management intensity for the various uses permitted under the Wilderness Acts.

**Visual Resources** Natural beauty is an important aspect of the Coronado N.F. Many parts of the Forest provide scenic backdrops to the urbanized areas scattered throughout Southeast Arizona.

As demands for other uses and activities increase, there is a concern that careful planning be done to retain the visual quality of these Forest lands.

**Cultural Resources** Southeastern Arizona has been occupied by humans for at least 12,000 years. The Forest contains sites representative of many of the early and late cultures. Documentation, protection, and interpretation of these sites is an ongoing process coordinated with other uses and activities on the Forest:

The concern for the Coronado N.F. is the amount of time and investment spent for interpretation of cultural resources.

**Wildlife and Fish** The wide range of elevations and vegetation provide favorable conditions for a variety of wildlife species on the Forest. Of the 576 vertebrate species found in this area, 64 species are classified as threatened or endangered (T&E) by federal or state wildlife agencies. Because of the close proximity to Mexico, several wildlife species unique to the United States are found on the Forest. Demand for wildlife related recreation opportunities will remain high.

At this time there are no federally classified T&E plants on the Coronado N.F. However, 61 species are being considered by the U.S. Fish & Wildlife Service for formal status or are considered sensitive by the Forest Service.

Many people feel that wildlife and plant resources are the greatest value of the Coronado N.F. This perception generates concern about the amount of time and effort given to protecting and perpetuating the various habitats for wildlife. There is also concern about the level of effort given to threatened, endangered, or unique species in relation to other flora and fauna. Other concerns include the appropriateness of predator and rodent control and the maintenance or construction of fishing lakes.

**Range** Over 84 percent of the suitable grazing land is in satisfactory or better condition. Ongoing efforts are being made to bring about a balance between capacity of the land to produce forage and permitted livestock use through range development, improved management, and reduction in numbers. It is expected that future demand for livestock use will equal or exceed available forage.

There is agreement that livestock grazing on the Forest should be balanced with the capacity of the land to produce forage. The issues are how to best achieve this balance and what the ultimate level of livestock grazing should be in relation to other resources such as recreation and wildlife.

Timber and  
Forest Products

Three local sawmills harvest a limited amount of sawtimber from the coniferous forest areas on the Coronado N.F. Local residents harvest firewood from both the coniferous forests and the oak woodlands. Firewood and timber harvest is done primarily to benefit other resources such as wildlife. The Forest will probably never be able to meet the total demands for firewood. Demand for other forest products such as cactus and beargrass fluctuate with local situations.

Concerns have been expressed about objectives for wood harvest which in turn affect the silvicultural systems and harvest techniques used and ultimately the level of harvest.

Additional concerns have to do with distribution of forest products between commercial users and personal use including non-citizens.

Plant and  
Animal Diversity

The Coronado N.F. contains an unusually wide diversity of vegetation because of its unique geographical location. Wild animals are habitat dependent, therefore, animal diversity tends to be proportional to plant diversity.

The following are the current acres by vegetative groups.

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Vegetation Grouping	Acres
Southwestern Desert Scrub	227,193
Desert Grassland	186,188
Plains Grassland	28,102
Mountain Grassland	930
Interior Chaparral	78,299
Broadleaf Woodland	847,078
Oak Savannah	30,201
Coniferous Woodland	155,667
Deciduous Forest	309
Coniferous Forest	115,088
Higher Ecosystem Extensions:	
Mesquite	4,669
Oak	15,983
Riparian Types:	
Deciduous	25,976
Coniferous	10,831
TOTAL	1,726,514

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In the past, vegetation has been manipulated through the use of fire, wood harvest, grazing animals, direct plant control, and other activities.

Riparian areas are especially important ecosystems. Because of the presence of water and high potential for vegetative growth, these areas fulfill many resource needs. Riparian areas have been damaged from past livestock grazing, intensive recreation use, fire, floods, and poor road location. Permitted livestock use in excess of capacity, low intensity management and the tendency of livestock to concentrate in cool, shady areas where forage and water are plentiful has contributed to the problem, as has the attractiveness of these areas to recreationists. Meeting these various needs often results in conflicting activities and uses.

Concerns have been expressed about the location and extent of vegetation manipulation practices, including the selection of species for revegetation projects. There is also concern over the type of uses that will be permitted in riparian areas and how these uses will be managed to insure protection of these important ecosystems.



Soil and  
Water Resources

There is little opportunity to increase water yield from the Forest. Management efforts are directed at maintaining and increasing water quality and soil productivity by improving any unsatisfactory watershed conditions.

There is growing concern over quality and quantity of available water which in turn reflect concern over the condition of watersheds. The conflict (issue) is over how to best improve these conditions while considering other resource uses.

Minerals and  
Energy

The Coronado has a considerable area which is mineralized. There are areas that are being actively explored and two major copper ore bodies have been identified. Currently there is interest in reworking tailings from old mines to recover gold, silver, or other precious metals and some interest in exploration for deep oil and gas reserves.

Approximately 75 percent of the Forest is open to some type of mineral exploration. Areas designated for specific purposes, such as wilderness or research natural areas, have been withdrawn from mineral entry or are protected by lease restrictions.

There is a concern that some sensitive areas need to be withdrawn or restricted from mineral entry or leasing to protect other resource values. This concern conflicts with a need or desire to keep the Forest open to possible future mineral exploration and development.

Land Uses

Special use permits allow for needed developments such as, utility corridors, pipelines, electronic sites, and astrophysical sites. Demand for these uses will continue as population centers expand.

A proposal has been made to develop astrophysical facilities on or near Mt. Graham in the Pinaleno Mountains. Due to the complexity, controversy, and timing of this proposal, it will be handled in a separate EIS.

There is ongoing concern about the use of National Forest land for these special needs and concerns about management restrictions imposed on other activities including public access to the sites.

Land Exchange

Some public lands within the Forest have been identified for exchange primarily for the purpose of consolidating public or private lands to improve management efficiency. Private lands are identified as desirable for acquisition if they would provide a benefit or value to the public, such as, additional recreation opportunity or unique natural habitats.

There are occasional concerns about changes or revisions to the landownership adjustment plans.

Research Natural  
Areas

There are six established research natural areas (RNAs) on the Forest. These areas typify important forest, shrubland, and grassland types having special or unique characteristics of scientific interest or importance. Other potential areas are now being evaluated for designation.

While there is a need to improve the RNA System by including appropriate candidate areas, there is also a concern about future resource opportunities foregone due to the restrictive nature of the designation.

Zoological and  
Botanical Areas

Currently there are no lands within the Coronado National Forest designated as zoological or botanical areas. In 1977 there was a proposal to consider the South Fork of Cave Creek (Chiricahua Mountains) for a zoological designation. Since that time, other areas have also been proposed for consideration. This formal classification is given to lands that contain outstanding or unique examples of fauna and/or flora and because of their recreational and educational values.

The issue is whether or not any of the proposed lands should be given this formal classification and what does this imply for management direction.

Fire Management	<p>Many years of intensive fire control has resulted in significant changes in vegetative composition of the Coronado. In some cases this shift has been towards a less desirable plant community with attendant increase in fire hazard, decrease in forage production, and declining wildlife habitat. Management philosophies have evolved from one of fire control to fire management. There is support for more use of fire, including natural, in the management of ecosystems.</p> <p>There is an opportunity to make more use of fire as a management tool while also reducing the cost of suppressing wildfires.</p>
Roads and Trails	<p>The Forest is crossed by a network of roads and trails which are generally adequate to meet current resource use needs. In some areas, road and trail maintenance needs to be increased for user comfort and resource protection. There is a lack of legal public access to parts of the Forest. This is being addressed through cooperation with landowners and local and state agencies.</p> <p>Concerns have been expressed that public access to Forest lands is becoming increasingly restricted as development occurs on adjacent lands and as some users cause increasing damage on neighboring private lands. There also are some concerns over the extent of the transportation system (roads and trails) needed and the level of reconstruction or maintenance needed. Conflicts between trail users (hikers, horses, motorized vehicles, bikes) have been identified on some parts of the Forest.</p>
Law Enforcement	<p>Illegal activities occur on some sections of the Forest. These include such things as removal of forest products without permit and unauthorized occupancy of public land. Population growth will continue to create a need for law enforcement.</p> <p>The concern is how to balance a freedom from burdensome regulations with maintaining a climate of "law and order" to protect people and resources.</p>
Social and Economic Setting	<p>Revenue earned from sale of Forest products goes to the Federal Treasury, which returns about 25 percent to state and local governments for roads and schools. Most of the revenues from the Coronado N.F. come from fees charged for livestock grazing. Minor amounts are generated from special use fees, recreation use fees, and sale of wood products.</p> <p>In addition to employing area residents, the Forest brings revenue to nearby communities. Wood harvest, mineral industries, grazing allotments, and recreation developments furnish employment and income. Forest visitors from outside the area bring income to tourist-oriented businesses. These visitors come for recreational pursuits such as, birdwatching and backcountry hiking.</p>

## What Should We Do?

DESCRIPTION OF ALTERNATIVES	<p>Six different approaches to resolving conflicting ICOs and reducing adverse environmental effects are described in Alternatives A through E and the Proposed Action (PA). Each would provide the public with a diverse mix of goods and services and develop resources to varying degrees. Many other alternatives were considered and rejected from detailed study. Reasons included a significant departure from the multiple use concept, not adequately addressing ICOs or inefficiency.</p> <p>Resource outputs, costs and benefits are estimated for five time periods of ten years each (50 years). The alternatives also take into consideration those resources that cannot be quantified in terms of dollars or other units, such as scenic beauty or maintenance of threatened and endangered species habitat. The following describes the alternatives displayed in the Final EIS.</p>
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Proposed Action Alternative (Preferred Alternative) The Proposed Action addresses ICOs with management realistically charted according to anticipated budgets. Emphasis is on providing a mix of resource opportunities while improving the condition of all basic resources.

Alternative A (Current) Alternative A projects current resource management direction as of 1980. This is the No Action Alternative. It provides a base for comparison of other alternatives by projecting existing management into the future. Budgets are constrained to actual 1980 funding levels.

Alternative B (RPA) Emphasis is on meeting or exceeding targets (recreation and livestock grazing) assigned in the Regional Guide that are oriented toward regional and national resource goals. This Alternative deals more with the regional and national topics as viewed during the 1980 RPA Assessment. Costs are unconstrained.

Alternative C This Alternative emphasizes economic efficiency in management of the Forest. No constraints are placed on total costs. It provides a variety of recreational opportunities including the maximum amount of new site development and rehabilitation.

Alternative D Alternative D was developed by a citizen group to emphasize recreation, watershed, and wildlife values while maintaining a natural environment. Special designations for wilderness, research natural areas, zoological-botanical areas, and primitive recreation areas are maximized. Management costs are unconstrained.

Alternative E Emphasis is on a balanced resolution of all ICOs by sustaining a mix of resource opportunities on lands that are most suitable for providing a particular type of use. Cost of management is unconstrained.

COMPARISON OF ALTERNATIVES

The following table describes The Proposed Action and Alternatives A through E in an easy to compare format. It shows the anticipated average annual output, cost and benefit levels for the first ten years of implementation and also 50 years after implementation. A further comparison of alternatives is provided in the next section which discusses the relationship to the identified ICOs. The following are some of the terms used in the table:

MA-F - Thousands of acre-feet. A water volume measurement equal to the amount of water that would cover one acre to a depth of one foot (43,560 cubic feet or 325,850 gallons).

MAUM - Thousands of animal unit months. An AUM is the amount of feed or forage required by one mature (1,000 lb.) cow or equivalent for one month.

MBF - Thousands of board feet. The measure of an amount of timber equivalent to a piece 12"x12"x1".

MRVD - Thousands of Recreation Visitor Days. One visitor day equals 12 hours of recreation (one person for 12 hours, or 12 people for one hour, or any combination thereof).

M\$ - Thousand of 1980 dollars.

MMS\$ - Millions of 1977 dollars.

Cord - Stack of firewood measuring 4'x4'x8'. Contains approximately 85 cubic feet of solid wood depending on the species.

WSA - Wilderness Study Area.

RNA - Research natural area.

ZBA - Zoological or botanical area.

Comparative Description of Alternatives (Average annual values)

Item		PA	A	B	Alternatives		D	E
					C			
Developed Recreation (MRVD)	Period 1	1317	1287	1547	1547	1435	1435	
	Period 5	1565	1435	2715	2715	2152	2152	
Dispersed Recreation (MRVD)	Period 1	815	839	856	801	818	801	
	Period 5	1798	1852	1888	1767	1804	1767	
Wilderness Recreation (MRVD)	Period 1	343	260	290	361	368	362	
	Period 5	758	575	641	797	813	798	
FS WSAs (Acres)	Wilderness	62,000	0	0	84,528	90,800	73,034	
	Nonwilderness	28,800	90,800	90,800	6,272	0	17,766	
BLM WSAs (Acres)	Wilderness	640	0	0	13,494	14,420	7,338	
	Nonwilderness	15,113	15,753	15,753	2,259	1,333	8,415	
Wildlife Recreation (MRVD)	Period 1	330	324	326	349	331	339	
	Period 5	646	626	602	698	665	672	
Grazing Capacity (MAUM)	Period 1	333	334	348	335	334	336	
	Period 5	360	370	406	376	372	377	
Grazing Use (MAUM)	Period 1	350	350	357	353	352	353	
	Period 5	360	370	406	376	372	377	
Sawtimber Harvest (MBF)	Period 1	2880	2150	3575	0	2100	2345	
	Period 5	2880	2150	6695	0	2100	2345	
Fuelwood Harvest (Cords)	Period 1	2500	2700	4000	2200	2300	2900	
	Period 5	2700	2800	4200	1100	1200	2900	

Comparative Description of Alternatives (Average annual values) (Continued)

Item		PA	A	B	Alternatives		D	E
					C			
Water Yield (MA-F)	Period 1	146	146	146	146	146	146	146
	Period 5	146	146	146	146	146	146	146
Satisfactory Watershed Condition (M Acres)	Period 1	1197	1191	1216	1206	1204	1206	1206
	Period 5	1317	1231	1507	1406	1384	1373	1373
Special Area Designation (Number)	RNA	8	6	7	6	14		6
	ZBA	2	0	1	1	7		0
Total FS Budget (M\$)	Period 1	5997	5751	12,628	9653	8402	8639	8639
	Period 5	6033	5907	12,713	9715	8561	8870	8870
Returns to U.S. Treasury (M\$)	Period 1	824	817	872	841	837	842	842
	Period 5	873	872	1121	1020	957	972	972
Distribution to State & Local Governments (M\$)	Period 1	206	204	218	210	209	211	211
	Period 5	218	218	280	255	239	243	243
Local Employment (Jobs)	Period 1	4992	4820	5291	5149	5062	5062	5062
	Period 2	5812	5532	6128	6099	5955	5955	5955
Local Income (MM\$)	Period 1	71.7	69.4	76.6	74.0	72.7	72.7	72.7
	Period 2	82.8	79.0	87.6	86.8	84.8	84.8	84.8

## Decisions Require Tradeoffs

Sometimes there are adverse effects that are unavoidable. Decisions affecting one set of resources may damage or diminish others. Allowing ORVs to travel cross-country, for example, may frighten animals. Those who press for more wilderness are in conflict with others who prefer their outdoor recreation motorized.

Wood harvesting and the associated construction of access roads increase fire hazard, create dust and noise and discourage some wildlife use in the area. Less activity, on the other hand, means fewer jobs for local people, less available fuelwood and timber products and reduced opportunity for improving habitat for some wildlife.

Soil erosion is chiefly due to heavy rain, drought that kills vegetation and naturally unstable slopes. Man's activities, however, can increase the sediment washed into streams, thereby affecting water quality.

Construction projects, wood harvest, revegetation or mineral exploration can affect archaeological sites. Any such planned action requires a preliminary archaeological survey. Since sites in the Forest are usually small in area, the activity can usually be relocated nearby.

As a manager of public lands, the Forest Service attempts to minimize or limit adverse effects.

Managing one set of resources at the expense of others is necessary at times in order to balance the varying needs and demands of the public and the forest's commitment to national and regional goals.

### HOW THE ALTERNATIVES RELATE TO THE ICOs AND THE EFFECT ON THE ENVIRONMENT

The following discusses the relationship of the alternatives to the issues, concerns, and opportunities. Also discussed are the environmental consequences.

#### Recreation

There is a significant difference between alternatives in the amount of recreation opportunities available in developed sites such as campgrounds or picnic areas. Existing sites will be maintained under all alternatives. Alternatives B and C would provide the maximum amount of new sites and opportunities. Alternatives D and E would provide a significant increase in sites and opportunities. Alternative A would provide no new developed sites and existing sites would reach their potential capacity in 30 years. Under the Proposed Action (PA) there would be a small increase in new sites. These would be concentrated in areas of highest demand. The first priority in the PA is to rehabilitate existing sites and improve the experience level of users.

Total dispersed recreation opportunities vary little between alternatives, however, there are variations in the types of opportunities. Alternatives C, D, and E provide the most wilderness recreation opportunities because of the most additional area recommended for wilderness designation. The PA is close behind with Alternatives A and B providing the fewest new opportunities. Alternative C gives the most emphasis to wildlife related opportunities and Alternative B the least emphasis.

In the Proposed Action and all Alternatives, motorized vehicle use is not permitted within wilderness areas or research natural areas. The total acres closed to this use varies some because of the actual acres recommended for these special designations. The Proposed Action and Alternatives C and D would continue the use of motorized vehicles on designated roads and trails on the remainder of the Forest. Travel off roads or trails by motor vehicles would not be allowed except by permit. The restrictions on off-road use of vehicles will result in less

damage to soil and water resources and less disturbance of wildlife. Alternative B would provide the most opportunity for off-road use of vehicles. Alternatives A and E would provide some opportunity for off-road use of vehicles while restricting use to roads or trails in the most sensitive areas. The following shows the percent of the Forest in each category: (1) open to off-road vehicle use; (2) closed to all vehicle use; and (3) vehicle use restricted to roads or trails.

Off Road Vehicle Management (Percent of Forest)

Management Designation	Alternatives					
	PA	A	B	C	D	E
Open	0%	56%	72%	0%	0%	34%
Closed	24	25	20	25	34	24
Restricted <sup>1/</sup>	76	19	8	75	66	42

<sup>1/</sup> Restrictions may vary by area, season, and type of use.

The quality of the recreation experience is affected by the types of opportunities available and the level of management provided to protect the users and to maintain environmental quality. Examples of this are the degree of campground cleanup and maintenance, the enforcement of use restrictions and the level of trail maintenance provided. Under Alternative A, the recreation experience would remain low in many developed and dispersed areas of the Forest due to attempting to maintain the same level of experience on all areas. The Proposed Action improves the recreational experience within a similar constrained budget by concentrating management and improvement in heavily used areas and areas identified as having high use conflicts. The other Alternatives provide a moderate to high experience level for the particular opportunities being emphasized.

WILDERNESS

The New Mexico Wilderness Act of 1980 and the Arizona Wilderness Act of 1984 resolved the issue of additional wilderness except for three Wilderness Study Areas (WSAs). The Miller Peak, Mt. Wrightson, Pajarita, Rincon Mountain and Santa Teresa Areas were designated as wilderness and additions were made to the existing Chiricahua and Galiuro Wilderness areas. The Pusch Ridge Wilderness is unchanged by these Acts.

Roadless and undeveloped areas in the nonwilderness category are now available for other multiple uses. The Acts also restrict the Forest from any further consideration of wilderness designation, except for the WSAs, until revision of the Forest Plan.

The Bureau of Land Management administered WSAs were analyzed together with contiguous Forest Service WSAs and recommendations were developed for each joint roadless area. One exception to this is the Bowie Mountain WSA. Because it is no longer contiguous to any Forest Service roadless area being considered for wilderness, BLM developed its recommendation independently. Future management considerations for all Bureau of Land Management areas not recommended for wilderness designation will be determined through the BLM planning process.

The following shows the acres to be recommended for wilderness for each WSA by alternative.

Wilderness Study Areas Proposed for Wilderness by Alternative

Study Area	Total Acres	PA	Alternatives (Acres)				
			A	B	C	D	E
<u>Forest Service Administered Lands</u>							
Bunk Robinson	15,960	0	0	0	11,034	15,960	11,034
Mt. Graham	62,000	62,000	0	0	62,000	62,000	62,000
Whitmire Canyon	12,840	0	0	0	11,494	12,840	0
<b>Total Acres</b>	<b>90,800</b>	<b>62,000</b>	<b>0</b>	<b>0</b>	<b>84,528</b>	<b>90,800</b>	<b>73,034</b>
<u>Bureau of Land Management Administered Lands</u>							
Baker Canyon	4,812	0	0	0	2,553	4,812	2,553
Bowie Mountain	6,156	0	0	0	6,156	6,156	0
BLM Galiuro	640	640	0	0	640	640	640
Guadalupe Canyon	4,145	0	0	0	4,145	2,812	4,145
<b>Total Acres</b>	<b>15,753</b>	<b>640</b>	<b>0</b>	<b>0</b>	<b>13,494</b>	<b>14,420</b>	<b>7,338</b>

Based on known resource potentials, the resource tradeoffs between wilderness, nonwilderness, or partial wilderness designations are insignificant for all WSAs. Tradeoffs were analyzed for minerals, fuelwood harvest, livestock grazing, recreation use, and wildlife habitat.

All WSAs would be managed as study areas under Alternative A. The effects would be similar to a wilderness designation except mineral exploration and development could continue within restrictions.

Vegetative manipulation practices to improve range forage in Alternative B would not be compatible with wilderness management.

All or portions of all FS and BLM WSAs would be recommended for wilderness under Alternative C. Boundary adjustments were recommended for Bunk Robinson, Baker Canyon, and Whitmire Canyon WSAs to avoid potential resource conflicts with mineral development and fuelwood harvest and to improve on-the-ground wilderness management by establishing easily identified topographic boundaries. These adjustments maintained the most suitable lands for wilderness.

Under Alternative D all suitable acres in FS and BLM WSAs would be recommended for wilderness to maximize future wilderness opportunities including solitude and primitive recreation. Boundary adjustments are recommended for Guadalupe Canyon due to the existence of a maintained road.

In Alternative E, wilderness recommendations would be made for all WSAs except Whitmire Canyon and Bowie Mountain. Boundary adjustments would be proposed for Bunk Robinson and Baker Canyon for the same reasons in Alternative C. Whitmire Canyon would not be recommended for wilderness because the area would add no unique ecosystems to the Wilderness System. Ample opportunities for solitude and primitive recreation are available elsewhere. In addition, nonwilderness management would retain opportunities to manage wildlife habitat for species such as deer, Gould's (Mexican) turkey and desert bighorn sheep. Because of the limited potential for mineral and fuelwood resources, it is not expected the character of the area will change under nonwilderness management. Bowie Mountain would not be recommended for wilderness because it can not be effectively managed to preserve its wilderness character in the long run. Because of the two private inholdings and small size of the WSA, BLM cannot ensure the wilderness values would not be impacted by activities on private lands within and adjacent to the WSA.



Under the Proposed Action, the BLM Galiuro WSA and the Mt. Graham WSA would be recommended for wilderness. The BLM Galiuro WSA is a logical extension of the existing Galiuro Wilderness. The Mt. Graham WSA would add additional representation for the Arizona Pine Forest ecosystem to the Wilderness Preservation System. Also, this area would provide additional high elevation wilderness opportunities. Other WSAs would not be recommended for wilderness designation because the areas would add no unique ecosystems to the Wilderness System. In addition, nonwilderness management would retain opportunities to manage wildlife habitat for species such as deer, Gould's or Mexican turkey and desert bighorn sheep. Ample opportunities for solitude and primitive recreation are available elsewhere. Because of the limited potential for mineral or fuelwood resources, it is not expected the character of the areas will change under nonwilderness management. Bowie Mountain would not be recommended for wilderness for the same reason in Alternative E. Unique wildlife features of Guadalupe Canyon would be recognized with a zoological area designation which would allow for future habitat manipulation if necessary. This management would be consistent with the existing BLM Outstanding Natural Area designation for lower Guadalupe Canyon.

Recommendations in the Proposed Action are preliminary administrative recommendations that will receive further review and possible modification by the Chief of the Forest Service, the Director of the Bureau of Land Management, the Secretaries of Agriculture and Interior, and the President of the United States. Final decisions on wilderness and nonwilderness designations have been reserved by the Congress to itself. Until Congress makes a decision regarding management direction, all WSAs will be managed to maintain the existing wilderness character and potential for inclusion in the National Wilderness Preservation System.

Under the Proposed Action and all alternatives, wilderness will be managed for a variety of uses compatible with The Wilderness Acts and land capability. Range management intensity and livestock grazing will remain virtually the same under all alternatives.

The Proposed Action and Alternative D concentrate recreation management, including trail maintenance, in high use areas. A more primitive experience with low management intensity is emphasized in low use areas. Alternative A provides minimal recreation management in all wilderness areas resulting in a low experience level in some areas. Alternatives B, C, and E provide moderate to high recreation management intensity in all wilderness areas.

#### VISUAL RESOURCE

The Forest has been inventoried for Visual Quality Objectives (VQOs). VQOs of preservation, retention, partial retention, modification and maximum modification are assigned to each acre based on the inventory criteria. The criteria include visibility, number of viewers, and the uniqueness or variety of landscape.

Visual Quality Objectives will be met for all management activities under all alternatives except for some small and localized exceptions. However, the Visual Condition, or degree of alteration of the natural landscape, will vary for each alternative but changes will be harmonious and VQOs will be met. Changes will not constitute unacceptable deviations to the natural landscape, but in some instances will result in a more "managed" appearing, rather than "natural" appearing landscape. Activities that affect this change include, but are not limited to: range improvements and practices; timber and fuelwood harvesting and related activities; wildlife and fish habitat improvement; soil and watershed maintenance and improvement projects; recreation development; and mineral activity. Areas designated as wilderness retain a more natural or wild character than National Forest lands at large. There is little alteration of the landscape or evidence of management activities. Ecological relationships generally take precedence over man's resource objectives. Therefore, the Forest will have a more "natural" character in Alternatives C and D which emphasize additional wilderness designation. A more "managed" character will occur in Alternative B with a minimum amount of recommended wilderness.

Irretrievable effects are the result of changes such as roading where cuts and fills pose unusual problems in revegetation and visual quality objectives cannot be met. Changes such as this are small and highly localized. Mining, utilities, oil and gas operations are not predictable for exact location or the degree of impact. Some irretrievable effects could possibly occur as a result of these activities where denial of the action is not possible.

CULTURAL  
RESOURCES

Cultural resources are a unique nonrenewable feature of the environment. Efforts will be made under each alternative to inventory, evaluate, preserve and protect significant prehistoric and historic sites. All activities involving land disturbance require cultural resource inventories. Each alternative has the requisite budget to accomplish this work. Consultation with the State Historic Preservation Office and the Advisory Council of Historic Preservation is provided in all alternatives to determine protection and/or mitigation requirements where sites can not be avoided. Each alternative includes compliance with the negotiated settlement of the "Save the Jemez et al./State of New Mexico versus Forest Service" litigation.

The protection of known cultural resources from natural deterioration or vandalism occurs at a moderate level in all alternatives. Protection and interpretation of the Rucker Historic Site is provided for under all alternatives except A. Interpretation of cultural resources for public information and education occurs in each alternative except A. Interpretation is provided for mainly in conjunction with specific projects in each alternative.

Those alternatives that allow for a higher degree of ground disturbing activity have a relatively higher potential for adversely affecting cultural resources than alternatives that minimize such activities. However, the potential of adverse effects from even a high disturbance alternative may be reduced or eliminated by appropriate planning to avoid areas of cultural resources sensitivity.

Because ground disturbing projects in any alternative generally involve small acreages, the potential impacts to cultural resources do not vary greatly by alternative. Avoidance and protection of sites is usually possible. Timber sales are small and occur in areas where cultural resources density is very low. Fuelwood areas generally contain cultural resources, however, the nature of these projects enables avoidance and protection of sites. Maximizing livestock grazing has a higher potential to affect cultural resources because of the relatively large number of projects forest-wide. Potential impacts cultural resources also occur because of unplanned out-service projects which can not be predicted for a given alternative. Protection and proper management of cultural resources will be ensured through appropriate consultation with the SHPO and Advisory Council.

Where resources management conflicts occur, the desirability of in-place preservation of cultural resources will be weighed against the values of the proposed land use. The preferred treatment of cultural resources is preservation in place. Interactions among cultural and other resources will be considered in detail in the cultural resources management planning assessment to be prepared under each alternative.

WILDLIFE AND  
FISH

The alternatives differ in the degree to which the Forest is responsible for recovery efforts for Threatened and Endangered Species (T&E). Alternatives C, D, and E provide a moderately high level of T&E effort. These alternatives provide for needed studies of habitat requirements of T&E and unique species, and a moderate amount of habitat manipulation. Under these alternatives the Arizona listed Desert Bighorn Sheep, several T&E fishes, and the Mexican Turkey would continue to receive emphasis. The Proposed Action and Alternative A provide a somewhat reduced effort, largely because of budget constraints. Joint efforts to enhance Bighorn habitat would continue in conjunction with the Arizona Game and Fish Department and the University of Arizona. Studies of endangered plants would continue at approximately the present rate. Alternative B would meet the minimum requirements of the Endangered Species Act. The Threatened and Endangered Species effort includes participation in reaching recovery plan objectives, habitat coordination and surveys for listed species, and habitat improvement.

Any reintroduction of native wildlife species to historical habitat will be done in conjunction with state and federal wildlife agencies.

Fuelwood and grazing, under the Proposed Action would result in habitat manipulation. Most habitat changes will be beneficial to most wildlife species. Needed wildlife habitat improvements not accomplished by wood harvest and grazing improvement activities will be undertaken by direct investment in wildlife projects. Livestock-wildlife conflicts will be eliminated by the fifth period by increased emphasis on proper stocking and improved range management. Additionally, special

emphasis on riparian management will result in significant improvement in this highly valuable habitat.

Nongame animals are emphasized along with special interest and T&E species in Alternative D. Animals more commonly associated with wilderness or other "natural" habitats are favored.

In Alternative A timber harvests are closely coordinated with wildlife values. Fuelwood harvests are designed to maintain or improve wildlife habitats. Slow, but steady, progress in grazing management will decrease wildlife-livestock conflicts. Emphasis is placed on nongame, peripheral, rare, endangered, and special interest species habitat maintenance.

Alternatives C and E emphasize management of game species along with other wildlife in an effort to meet the goals of the Arizona and New Mexico wildlife comprehensive plans.

Alternative B emphasizes production of saleable commodities and therefore nongame wildlife is negatively impacted. Under this management, forage is allocated primarily to livestock, resulting in availability to some wildlife species at lower than current levels. Extensive conversion of woody areas to grasslands also impacts wildlife habitat. Only minimum legal requirements for wildlife management would be met.

All alternatives except A allow natural and planned fires to burn more frequently on the Coronado under prescribed conditions. This increased use of fire will benefit species dependent on seral stages, especially in the wilderness areas.

All alternatives call for continued maintenance of Pena Blanca, Parker Canyon, Rose Canyon, Rucker Canyon, and Riggs Flat Lakes in cooperation with the Arizona Department of Game and Fish. No new lakes are projected for development. Current lakes need continuing effort to clear out rocks and silt and keep up with weed removal. Mechanical means will generally be used for maintenance, supplemented with herbicides as needed. Native fish may be reintroduced into suitable lakes and streams. The Proposed Action calls for maintenance of Herb Martyr and Johns Hands Lakes for trout. Snow Flat Lake will continue to be maintained by the Forest Service, while the City of Safford plans to maintain Frye Reservoir.

Predator control is exercised by state game and fish departments to protect wildlife and by the U.S. Fish and Wildlife Service for livestock protection. In all alternatives, the Coronado will cooperate with these agencies following existing executive orders and regulations.

Increased human activities in project areas may temporarily displace wildlife. Roads may have a longer impact on wildlife due to human activities associated with new access into areas previously unroaded and improved access into areas that previously had low standard non-surfaced roads. Intensified livestock production could displace some species even while increasing habitat for others.

#### RANGE

Of the one and one-half million acres of suitable and available range on the Coronado, approximately 84% is currently in a satisfactory condition. Much of the remaining 16% will remain unsatisfactory until some change in management and/or stocking rate occurs.

Under all alternatives, management's goal is to bring the permitted livestock use into balance with range capacity and achieve fair or better range condition. As of 1981 it was estimated that stocking exceeded capacity by 73,000 AUMs. This overstocking, in combination with a lack of adequate range management on some allotments, causes a gradual loss of range capacity. Needed adjustment in livestock numbers will be partially offset by improved management systems. Estimated capacities are based on an analysis of each area's production potential coupled with allowable use levels.

All alternatives will bring the Forest average stocking and capacity into balance by the end of the second period. All alternatives will produce a sustained yield of livestock products for the foreseeable future, with the absolute level of outputs varying by the alternative as shown below.

Average Annual Grazing Use and Capacity

Period	Output	Thousand AUMs by Alternative					
		PA	A	B	C	D	E
1	use	350	350	357	353	352	353
	cap	333	334	348	335	334	336
2	use	338	341	370	344	343	344
	cap	340	344	372	346	344	347
3	use	344	351	393	352	349	354
	cap	348	354	393	356	354	358
4	use	354	363	402	366	363	371
	cap	355	363	402	366	363	371
5	use	360	370	406	376	372	377
	cap	360	370	406	376	372	377

The Wilderness Acts permit livestock grazing where it existed prior to wilderness designation, therefore, livestock grazing will continue in all wilderness areas on the Forest. Grazing in the wilderness varies from no use to moderate levels of use requiring structural improvements but no vegetative manipulation. Many allotments within wilderness also cross the wilderness boundaries. Increased management outside the wilderness boundaries will lessen impacts inside the wilderness.

Under all alternatives, non-native grasses and forbs will be used for revegetation purposes, when natives do not meet resource objectives. Those alternatives with the highest intensity range management practices would make the most use of non-native species. Alternative B would use the most and Alternative D the least. In all alternatives native or naturalized species would be used in wilderness and research natural areas. The only exception to this policy would occur when there is a lack of native seed and reseeding needs to be done quickly because of a fire, flood, or other unanticipated event in Wilderness and Wilderness Study Areas.

Environmental effects of grazing vary with intensity of management and density of stocking. Partial removal of livestock can be expected to cause a decrease in size of problem areas, but not to solve problems. Proper stocking, coupled with improvements and management practices which provide improved distribution and periodic rest, will produce an uptrend. Certain limited areas cannot be expected to improve without control of invading woody plants.

TIMBER AND FOREST PRODUCTS

Timber Suitability

All forest lands were categorized using criteria for biologic capability, availability, and suitability for timber production. A maximum of 23,073 acres were identified as tentatively suitable for timber production. No management alternative considered proposes to manage more than 14,558 acres for sawtimber production.

Suitable Timber Acres

Classification	PA	A	Alternative			
			B	C	D	E
Tentatively Suitable	19,273	23,073	23,073	19,273	15,473	15,473
Suitable Acres	13,729	14,558	14,268	0	14,294	14,294
Not Appropriate	5,544	8,515	8,805	19,273	1,179	1,179

## Silviculture

Silvicultural treatments are the methods by which forests are tended, harvested, and reestablished. Silvicultural treatments affect timber yields and the age structure of the regenerated stands by producing even-aged or uneven-aged stands of trees.

The Proposed Action is based on a 240-year rotation on suitable acres. A system of group selection and/or small, patch shelterwood is utilized to feature four age classes including maintaining 20% of the area in wildlife openings. Wildlife openings will rotate and tie in with regeneration needs of individual stands. Maximum cover without stand stagnation (80 to 120 square feet basal area) is to be maintained as thermal cover in the two younger age classes (0-60 and 60-120 years). For the two older age classes (120-180 and 180-240 years) 75% of the stands are to be maintained at heavy stocking (120 basal area) for dense mature and old growth. Twenty-five percent of the older stands are to be opened up as much as possible (40 basal area) to establish park-like mature and old growth stands. Patch cuts up to 40 acres in size are used to regenerate aspen. This combination of age classes and harvest systems will maximize wildlife and aesthetic values in the coniferous forest stands. Insect and disease problems are not expected to increase.

Under Alternatives A and D, timber stands continue under an unregulated uneven-aged system. Harvest techniques are single tree selection or group selection with a maximum opening size of two acres, except openings up to 40 acres are used to regenerate aspen. Stocking would generally be 120 to 200 square feet of basal area resulting in a situation of dense crowded overstory and suppressed understory of low vigor that is vulnerable to insect and disease outbreaks.

Under Alternative B, timber harvests are used primarily to increase livestock forage by reducing the stocking to 40 square feet of basal area using a shelterwood system in mixed conifer stands. The spruce-fir stands would be clearcut and converted to forage. Mature and over-mature timber would be completely removed during the first five periods, with harvest diminishing after the fifth decade.

The result would be coniferous forest stands of very open and park-like character with more ground cover in the form of grass and herbs. These would be less susceptible to wildfires once slash has been properly treated. Until slash is properly disposed of, insect problems might increase. Wildlife habitat diversity would diminish.

Under Alternative C, no sawtimber harvest will occur, and the coniferous forest stands will eventually approach the state normally found in wilderness or unmanaged situations. Trees will be removed if they are hazardous to public safety. Insect and disease losses would probably increase, resulting in increased fire hazards.

In Alternative E, sawtimber harvest will be higher than Alternatives A, C, and D, and will be lower than Alternative B or the Proposed Action. Harvest methods used would be group selection or small clearcuts of not more than 40 acres in size. This alternative provides for lower stocking (BA 120 square feet or less) and higher harvest than the current situation. This stocking level would be achieved through entries managed on a 20-year cycle with precommercial thinning. Overall stand health and vigor will be improved.

Under all alternatives, artificial reforestation activities would be the exception rather than the rule. Natural regeneration will be emphasized.

Under all alternatives, Christmas trees will be made available to the public on a limited basis. The number to be harvested and the location will depend on management strategies being used to maintain fuelbreaks and meadows or make wildlife habitat improvements.

## Fuelwood

Fuelwood will be harvested primarily from the oak and juniper woodland areas of the forest. Other fuelwood from coniferous forest areas will also be made available where feasible.

Under Alternatives A, E, and the Proposed Action, fuelwood will be provided on a sustained yield basis. This level of harvest would require additional roads to access new areas. Under Alternative C and D, fuelwood would be provided on a declining yield with harvest coming only from areas that now have road access.

Under Alternative B, fuelwood harvest would be used to maximize livestock forage production. As a result, fuelwood harvest would be intensive and would result in modification of some predominately oak, juniper, and mesquite ecotypes to grasslands. By period 5, available fuelwood volumes would be exhausted. Demand for fuelwood would be met in some years, depending on range management needs, but would not be satisfied on a sustained basis.

Under the Proposed Action, and all alternatives except B, fuelwood harvest will be used to maintain and/or improve wildlife habitat by increasing vegetative and wildlife diversity. Total demands for fuelwood would not be met under these alternatives. Total demand could be better satisfied if a commercial fuelwood market was developed to utilize wood fiber from coniferous forest lands that might not be utilized by conventional sawmills.

Under the Proposed Action and all alternatives, fuelwood would be available to residents of Mexico when not fully utilized by U.S. citizens.

#### Other Forest Products

In the Proposed Action and all alternatives, other forest products, such as bear-grass and manzanita, will be made available to anyone, including residents of Mexico, when not fully utilized by U.S. citizens. Removal of cactus, succulents, and other protected species requires permits from both State agencies and the Forest Service. Forest Service permits will be issued for areas where removal is consistent with other management objectives.

#### PLANT AND ANIMAL DIVERSITY

A diversity of habitats is generally believed to indicate a healthy situation for wildlife. Changes in diversity can be expected to vary with management alternatives.

Predicted changes are insignificant with the exception of Alternatives B and D. Increased livestock management in Alternative B results in more grassland ecosystems at the expense of woodland ecosystems. Overall reduced management activity in Alternative D results in a shift from desert grassland to desert scrub.

Vegetative manipulation would occur primarily through prescribed fire and wood harvest in all Alternatives. Vegetative manipulation, including some use of non-native species, would be used to improve range forage in the Proposed Action and Alternatives A, B, and E. Direct attempts at forage improvement would not occur in Alternatives C or D. With the exception of Alternative B, the vegetative manipulation activities will be beneficial to plant and animal diversity.

#### Riparian Areas

Since surface water is a scarce resource on the Forest, the 36,807 acres of riparian areas take on special importance. Riparian areas include the surrounding stream banks, lake shorelines, and flood plains of perennial interrupted streams and wetlands. The riparian areas require control of livestock and improved management on the whole watershed and increased regulation of recreational activities and road locations. The condition of riparian areas will be improved to satisfactory by the end of period 5 in all alternatives. The methods by which this would be achieved vary somewhat by alternative. Alternatives C and D would eliminate all livestock use in riparian areas with perennial water. Alternatives B and E would regulate livestock use through intensified management systems. The Proposed Action and Alternative A would utilize a combination of more intensive management and total exclusion of use.

#### SOIL AND WATER

##### Water Yield

Currently the Coronado produces an estimated average annual water yield of 146,200 acre feet. There are no known plans for water storage or transmission facilities.

Most of the water flowing from the forest fails to reach perennial streams and rivers downstream. Surface flow usually sinks into the intermittent stream channels where it recharges the ground water basins. No alternative significantly affects the Coronado's contribution to the ground water resource.

**Water Rights** In this part of the Southwest, where water is generally scarce, supplying water needs for Forest activities is often a challenge. Surface water rights and groundwater registrations have been obtained for all recreation uses. Applications, claims and registrations for range and wildlife uses are pending. Sufficient water has been applied for through various State laws to meet Forest needs.

**Water Quality** Compliance with the Safe Drinking Water Act is being met in all alternatives with monthly inspections of all potable waters. Waste water from municipalities and from developed recreation and administrative facilities is disposed of in treatment plants approved by the States in all alternatives.

Prevention of sedimentation and changes in water temperature and chemical composition is accomplished by the Forest's adherence to "Best Management Practices" as defined by the States and by treatment of the watershed resource as discussed in the following sections.

**Watershed Conditions** A watershed is considered to be in unsatisfactory condition if a significant proportion of the watershed is experiencing soil loss in excess of tolerance, and extensive gully systems are present, or gully and stream channels are unstable. Thirty-one percent of the National Forest acres are classed as unsatisfactory watershed condition. Acid mine drainage through mine tailings cause Harshaw Creek in the Sonoita Watershed to not meet water quality standards. Whenever large runoff events occur throughout the Forest, the water is sediment laden to the point of making it difficult to use. All watersheds have excessive erosion and therefore high levels of suspended sediments during high flows.

The acres in unsatisfactory watershed condition have ineffective ground cover, thus soil loss is exceeding tolerance levels and desertification is resulting on some low elevation watersheds. Unsatisfactory watershed conditions and lack of effective ground cover are sometimes the result of past land uses. Improved resource management as anticipated in all alternatives will bring about improvement in overall watershed condition.

Watershed improvement as a result of direct treatment of unsatisfactory watersheds consisting of measures such as pitting, interseeding, shaping, water spreading and travelway closure is planned as shown below.

Average Annual Soil and Water Improvement

Period	Acres by Alternative					
	PA	A	B	C	D	E
1	1053	40	4914	3010	2520	3010
2	1053	40	4914	3010	2520	3010
3	1053	40	4914	3010	2520	3010
4	1053	40	4914	3010	2520	3010
5	1053	40	4914	3010	2520	3010

All alternatives except A provide significant direct and indirect treatment of unsatisfactory watersheds. Alternative D, which emphasizes improved watershed condition also emphasizes low investment management, such as wilderness management. Such management is not compatible with direct watershed improvement measures.

Most improvements in watershed condition result from indirect effects from balancing permitted livestock use with capacity, treating ranges which have revegetation potential, and intensifying management of range allotments. To a lesser extent travelway closure, road construction to proper standards, surfacing and adequate maintenance of roads also benefit watershed condition. Fire prevention and rehabilitation is necessary on certain sensitive, high elevation watersheds. Anticipated watershed conditions are shown below.

Watershed Acres in Satisfactory Condition

Period	<u>Thousand Acres by Alternative</u>					
	PA	A	B	C	D	E
1	1197	1191	1216	1206	1204	1206
2	1218	1197	1278	1248	1240	1243
3	1251	1208	1355	1300	1288	1286
4	1284	1219	1431	1353	1336	1330
5	1317	1231	1507	1406	1384	1373

Soil

Soil is the basic resource upon which all renewable natural resources are dependent. In a semi-arid climate, such as that found at lower elevations of the Coronado, geologic erosion rates are relatively high as a result of low plant densities. In most areas of the Forest, rock cover increases with slope, effectively protecting soils on sloping areas. Man's activities on land tend to accelerate natural erosion rates, if they are not carefully managed.

Improving range conditions, regulation of wood harvest, and management of roads, trails and recreation areas will result in improving soil stability under all alternatives.

All alternatives, achieve a satisfactory or better watershed condition on all watersheds by Period 5. This reduces most adverse effects of soil erosion which could, over the long-term, decrease the productivity of numerous forest resources.

Some irreversible soil loss will occur in all alternatives where losses exceed tolerance levels within specific areas and drainages as they adjust to new hydrologic gradients. Alternative A results in the greatest irreversible soil loss.

MINERALS

Impacts from mineral prospecting, exploration and development are difficult to predict since the timing and location of work are controlled by the private sector's response to world-wide supply and market prices.

Development of locatable minerals--those minerals covered by the 1872 Mining Law such as gold, silver, lead, uranium, copper, tungsten, molybdenum and others--is governed by regulations requiring submittal of a Plan of Operation to limit environmental impacts. The greatest activity for exploration of copper has occurred on the Nogales and Sierra Vista Ranger Districts. The Nogales District is currently negotiating for a land exchange with Anamax Mining Company for lands needed during the mining of lode deposits on Anamax's patented claims. Much of the other locatable mineral activity is devoted to small mining claimants exploring for gold and silver.

All alternatives have a base level budget which covers timely review and approval of Plans of Operation for anticipated locatable mineral activity. Surface resources



Leasable minerals are generally oil and gas (energy minerals). Because of a national emphasis on energy independence, substantial activity can be expected in this area. The prospecting, exploration and development of leasable minerals are at the discretion of the Federal government. Based upon review of the potential impacts, the Forest recommends lease approval to the Bureau of Land Management with stipulations to protect the environment. The BLM administers lease exploration and development with the participation of the Forest Service. Recommendations for availability of lands for leasing and stipulations necessary to protect surface resources are based on the degree of protection needed on each area to meet multiple-use objectives.

All alternatives plan to process energy mineral lease applications in a timely manner and aid the BLM in administration of on-the-ground activities. Areas available for leasing are based on visual quality objectives, proximity to unique resources such as critical wildlife habitat, research natural areas or wilderness areas and developed recreation sites.

Areas that may be leased but have limited surface use are recreation sites, administration sites, observatories, scenic areas and research ranches. Limited surface use may depend upon time of year, wildlife needs and research and depends upon each specific area. The Forest recommends limited surface use stipulations for leasable mineral applications.

Subject to valid rights existing prior to December 31, 1983, or August 28, 1984, minerals on lands designated as wilderness are withdrawn from all forms of appropriation under the mining laws, and from disposition under all laws pertaining to mineral leasing.

Mineral activity will be relatively unaffected regardless of the alternatives selected. There will be a slight variation between alternatives in the acreage of recommended mineral withdrawals and areas withdrawn from mineral leasing.

In addition, there will be some variation in the acres which will have restrictions on locatable and leasable mineral development.

Acres Available for Mineral Exploration & Development

<u>Alternative</u>	<u>Locatable</u>	<u>Leasable</u>
PA	1,306,495	1,325,324
A	1,373,070	1,296,524
B	1,369,802	1,387,324
C	1,285,182	1,302,796
D	1,239,785	1,296,614
E	1,299,195	1,314,290

With either locatable or leasable minerals, a reasonable access will be provided which will take into account soils, wildlife, visual quality objectives, high recreational use areas, and grazing. In almost all cases, except where road construction will be beneficial to the public, a performance reclamation bond will be secured in order to insure that claimant rehabilitates the access roads.

Common variety minerals such as stone, sand, gravel and pumice may be sold at the discretion of the Forest under a permit system or provided free to Federal, State and local agencies for road and highway construction and maintenance. All alternatives provide for removal of common variety minerals within management requirements designed to protect wildlife, soil, water and visual resources.

LANDS AND SPECIAL USES

Lands

Lands administration related activities support other resource management and provide administration for approximately 800 special use permits. All alternatives have support costs built in to provide needed work.

Electronic Sites All alternatives provide for continuation of the 12 existing electronic sites. In addition to these sites there are three proposed new sites in all alternatives. Mt. Hopkins and Mt. Graham should be reserved for Forest Service, Smithsonian Institute and University of Arizona use only.

Existing and Proposed Electronic Sites (Applies to all Alternatives)

Ranger District	Site Name	Status
Douglas	Dragoon	Existing
Nogales	Madera Canyon	Existing
	Mt. Hopkins	Existing
	Melendrez Pass	Existing
	KZAZ Site	Existing
	Castle Dome	Proposed
Sierra Vista	Bear Springs	Existing
Safford	Heliograph	Existing
	Mt. Graham	Proposed
	West Peak	Proposed
	Ladybug Repeater	Existing
Santa Catalina	Radio Ridge	Existing
	Bigelow Peak	Existing
	Soldier Peak	Existing
	Foothills	Existing

Roads already exist to the proposed Mt. Graham and West Peak sites. The Castle Dome Site would require road construction which could result in visual impacts. Electronic equipment could create some visual impacts at these sites.

Land Exchange and Acquisition All alternatives provide for acquisition and disposal of lands by exchange, donation or purchase. Base for exchange lands total 33,330 acres.

Lands suitable for acquisition under the Land and Water Conservation Fund have a high recreation potential. These total 10,094 acres.

Changes in Acres of Land Classification

Classification	PA	Alternatives				
		A	B	C	D	E
		(Changes from Alternative A)				
Desirable:						
Priority 1	-41	3020	-41	-41	-41	-41
Priority 2	0	11052	0	0	0	0
Priority 3	-423	28053	-423	-423	-423	-423
Undesirable	+464	24749	+464	+464	+464	+464
Base for Exchange	+3023	33330	+523	+3023	+3023	+523

In Alternative A, the land adjustment priorities will remain as they currently exist. In the Proposed Action and remaining Alternatives, there would be a change in priorities for the following four general areas:

1. East Whitetail Canyon (Chiricahua Mountains)
  - Reclassify approximately 183 acres of National Forest Land as base-for-exchange.
  - Reclassify approximately 464 acres of private land from priority 3 for acquisition to undesirable for National Forest purposes.
2. Holy Cross Area (Santa Catalina Mountains)
  - Reclassify approximately 340 acres of National Forest land as base-for-exchange.
3. Summerhaven (Santa Catalina Mountains)
  - Reclassify approximately 41 acres of private land from priority 1 to priority 3 for acquisition.
4. Rosemont Area (Santa Rita Mountains)
  - Classify approximately 2500 acres as available for exchange (portion of the Anamax selected lands).

There will be no short or long-term adverse impacts on National Forest resource management as a result of these proposed changes.

#### SPECIAL AREA DESIGNATIONS

#### Research Natural Areas

Research Natural Areas (RNAs) are designated by the Chief of the Forest Service upon approval of an establishment report prepared by the Forest.

## Existing and Proposed Research Natural Areas

Name	Plant Community	Acres Proposed by Alternative					
		PA	A	B	C	D	E
<u>Existing Areas with Proposed Changes:</u>							
Butterfly Peak	Douglas fir/Silverleaf oak	1000	1000	1000	1000	1000	1000
Goodding	Live oak; riparian hardwood	545	545	545	545	545	545
Pole Bridge	Apache, Arizona, & Chihuahua pine/oak woodland	550	460	550	460	550	460
Santa Catalina	Encinal/Rockland (oak woodland)	890	4131	890	890	4131	890
Goudy	Southwestern white pine/mixed conifer	560	560	560	560	560	560
Elgin	Desert grassland	290	290	290	290	290	290
<u>New Proposals:</u>							
Canelo	Evergreen oak savannah	350	0	350	0	350	0
Scotia Canyon	Mexican pine - oak woodland	0	0	0	0	1280	0
Sunnyside Canyon	Evergreen oak savannah	0	0	0	0	559	0
Lochiel	Grassland	0	0	0	0	1280	0
Research Ranch (except Canelo/Elgin RNAs)	Evergreen oak savannah	0	0	0	0	1635	0
Pine Canyon (Peloncillos)	Mexican pine - oak woodland	0	0	0	0	385	0
Upper Guadalupe (Peloncillos)	Bird species	0	0	0	0	1540	0
Pine and Ramanote (Atascosas)	Mexican pine/oak woodland	0	0	0	0	<u>1/</u>	0
Ramsey Canyon	Sycamore, big tooth maple/pine-oak	0	0	0	0	<u>1/</u>	0
Mt. Graham	Wet Meadows	0	0	0	0	<u>2/</u>	0
Sycamore Canyon (Extension of Goodding RNA)	Sinaloan thornscrub	1470	0	0	0	1470	0
<b>TOTALS</b>		<b>5655</b>	<b>6986</b>	<b>4185</b>	<b>3745</b>	<b>15575</b>	<b>3745</b>

Existing and Proposed Research Natural Areas (Continued)

Name	Plant Community	Acres Proposed by Alternative					
		PA	A	B	C	D	E
Research Ranch <sup>3/</sup>	Grassland and oak savannah	1635	1985	1635	1985	0	1985

<sup>1/</sup> These were proposed as zoological-botanical areas in Alternative D.

<sup>2/</sup> The Mt. Graham wet meadows will be evaluated as part of the proposed Mt. Graham Astrophysical Area EIS.

<sup>3/</sup> This area is not a designated research natural area but is being managed as a research facility under cooperative agreement with the Audubon Society (The 1985 acres includes the Canelo area identified above).

The Santa Catalina RNA size reduction will eliminate conflicts with intent of the RNA system by eliminating a heavily used dispersed recreation area along with the trails.

The proposed Lochiel area has been reviewed on the ground since the RNA proposal in 1974. The Elgin RNA represents the same grassland type and was designated in 1976.

The Sunnyside area was proposed in 1974 to represent the evergreen-oak woodland type. It has since been reviewed on the ground. There is considerable private land within the area. A road runs up the bottom of the canyon. There are existing fences and fence line clearings. There is a large dirt tank and a stock water tank. An oak push took place about 20 years ago. The Canelo area is undisturbed, represents the same type, and is therefore a better choice.

The Scotia area was proposed in 1974 to represent the pine-oak woodland type. It has since been reviewed on the ground. There is only a very small area that contains pine in the extreme upper end. The type is much better represented by the Pole Bridge Canyon addition.

The Research Ranch as a whole does not meet the undisturbed and non-manipulated criteria for RNAs.

Guadalupe Canyon is included as a Zoological-Botanical Area (ZBA) in the Proposed Action rather than an RNA.

The Mexican pine-oak woodland type is better represented in the Pole Bridge RNA addition than in the Pine Canyon (Peloncillos) proposal.

The Pine-Ramanote (Atascosas) and Ramsey Canyons need further evaluation with interested parties in the next planning period. These areas have been proposed for both research natural area and zoological/botanical area status.

The Sycamore Canyon extension of the Goodding RNA is a valuable addition to the system as a representative of a unique vegetative type, even though it is within the recently designated Pajarito Wilderness.

Reductions in the availability of timber or fuelwood, grazing lands and mineral accessibility are not significant.

Zoological-  
Botanical Areas

Zoological-Botanical Areas (ZBA) would be established in areas of unique biological significance as shown below. Management constraints are designed for each area to protect the significant biologic values while providing for continued recreational opportunities.

Proposed Action

A Zoological-Botanical Area would be recommended for the South Fork of Cave Creek (Chiricahua Mountains). The South Fork road would remain open to public travel, with speed limits or speed bumps. The campground would be converted to a day use site and rehabilitated, providing water and better sanitary facilities, and with vehicle control to protect soil and vegetation. Grazing will be allowed to 30% use of key species in key areas for a short time in the fall. The two recreation residences would remain. The road, recreation site, and recreation residences would be outside of the Zoological-botanical designation.

A Zoological designation would be recommended for Guadalupe Canyon (Peloncillo Mountains). This management would complement current management direction for the BLM administered Outstanding Natural Area in lower Guadalupe Canyon.

Alternative A

There would be no change from current management. South Fork campground facilities would continue to deteriorate. Vegetation in the campground would continue to be damaged by vehicle use. Conflicts between user groups would continue and probably escalate. Guadalupe Canyon would be managed for riparian dependent species. No ZBAs would be established.

Alternative B

A ZBA would be created in the South Fork, upstream from the campground. There would be no change in management in the canyon below the South Fork Campground. Guadalupe Canyon would be managed as in Alternative A.

Alternative C

A ZBA would be created in the South Fork similar in area to the PA. The road in the South Fork would be closed except to service or maintain recreation areas, and to provide access to summer homes, and for the handicapped. The campground would be converted to a picnic ground. Existing recreation residences would remain in place. A parking lot and sanitary facilities would be built at the junction of the South Fork and main Cave Creek roads. The Arizona Game and Fish Department would be asked to control the hunting and fishing. Guadalupe Canyon would be managed as in Alternative A.

Alternative D

South Fork management would be the same as in Alternative C, except the entire watershed would be in the ZBA. The main Cave Creek drainage would also be included in the ZBA. ZBAs would be established in Clanton Draw, Guadalupe Canyon, O'Donnell Creek, Ramsey Canyon, and Pine-Ramanote Canyons.

Alternative E

This would be the same as Alternative A with no ZBAs established.

Proposed Zoological-Botanical Areas

Area	Acres Proposed by Alternative					E
	PA	A	B	C	D	
South Fork Cave Creek	762	0	168	800	12420	0
Main Cave Creek	0	0	0	0	14720	0
Guadalupe Canyon	3478	0	0	0	3520	0
Clanton Draw	0	0	0	0	650	0
O'Donnel Creek	0	0	0	0	150	0
Ramsey Canyon	0	0	0	0	1700	0
Pine-Ramanote Canyon	0	0	0	0	4130	0
Mt. Graham	0	0	0	0	<u>1</u>	0
Total	4240	0	168	800	36740	0

<sup>1/</sup> The Mt. Graham spruce-fir forest proposal will be evaluated as part of the proposed Mt. Graham Astrophysical Area EIS.

The upper drainage of the South Fork of Cave Creek is now within the Chiricahua Wilderness. Management direction for this area is adequate to conserve any unique flora and fauna values and allow for public use and enjoyment of these resources. An additional special designation is not necessary. The lower portion of the Canyon receives most of the recreation use and will be recommended for a zoological/botanical designation.

Part of the Main Fork of Cave Creek will be managed for the wildlife values as part of Management Area 3 under the Proposed Action. The rest of the Canyon is within the Chiricahua Wilderness. (Management Area 9). Management direction as proposed for Management Areas 3 and 9 is adequate to conserve and emphasize the wildlife values without additional special designations.

The values of Clanton Draw and O'Donnel Creek are closely tied to the existing riparian areas. Management direction for riparian areas emphasizes the unique flora and fauna values. An additional special area designation (zoological or botanical) would possibly draw additional use to these relatively small areas.

Ramsey Canyon is now within the Miller Peak Wilderness. Management direction for this area is adequate to conserve any unique flora and fauna values and allow for public use and enjoyment of these resources. An additional special designation is not necessary.

The Pine/Ramanote Canyon area is relatively inaccessible and any special values can be adequately protected by management direction as provided in the Proposed Action. A special designation at this time would possibly draw additional use to this area.

Both Ramsey Canyon and Pine/Ramanote Canyon have been proposed for research natural area and zoological/botanical designations. The Coronado National Forest will work with interested parties in the next planning period to further evaluate these areas.

Reductions in the availability of timber or fuelwood, grazing lands, and mineral accessibility due to a special area designation would not be significant under any alternative.

PROTECTION

Air

The impacts of National Forest management activities on air quality will be limited and localized under all alternatives. The primary short term impact will be the suspended particulates resulting from prescribed and unplanned burning of

wildland fuels. The Forest will work toward protecting and further refining air quality related values for Class I areas (Chiricahua and Galiuro Wilderness Areas existing prior to the Arizona Wilderness Act) under all alternatives.

**Integrated Pest Management**

Significant insect infestations for nonwilderness lands are prevented in all alternatives except C through silvicultural activities, slash treatment and through monitoring populations annually by aerial survey and ground checking.

Integrated pest management will largely be ignored in the wilderness areas and the insect and disease problems in these areas will run their course.

There are no adverse or irreversible environmental effects. Wood fiber on accessible lands which is lost to insects and disease is irretrievable, but the volume is considered insignificant.

**Fire Management**

In the Proposed Action and all alternatives, wildfires will be suppressed as needed to protect life and property. The Proposed Action and Alternatives B, C, D, and E have changes in fire suppression objectives from the current situation (Alternative A). These changes will do primarily two things: 1) reduce suppression costs, and 2) increase acreage burned. The larger acreage burned does not produce long-term adverse effects unless fires are of very high intensity.

Possible adverse environmental effects which cannot be avoided are: 1) temporary reduction in air quality; 2) temporary to long term reductions in visual quality, wildlife habitat, and recreation opportunities, depending on wildfire intensity; and 3) increased soil loss and decreased watershed condition, depending on fire intensity.

Prescribed fire (lightning or planned ignitions) will be utilized in wilderness areas under all alternatives except A. Prescribed fires will be planned to meet one or more of three objectives: 1) Permit lightning caused fires to more nearly play their natural ecological role within wilderness; 2) reduce the risk from wildfire or its consequences to life and property within wilderness or to resources, life or property outside wilderness; and 3) enhance wilderness values.

**FACILITIES**

**Transportation System**

**Roads**

The road system is managed to provide cost effective, and safe transportation for both industrial and recreation users. There are currently 310 miles of arterial and collector roads and 2506 miles of local roads.

Current maintenance levels on some system roads are inadequate. It is not cost effective to maintain these roads at higher levels until drainage and running surface are brought to standard. Some sections of all arterial and collector roads need reconstruction to meet current standards and prevent resource damage. An estimated 800 miles of local roads need drainage structures constructed to prevent further erosion. The following shows the emphasis to be placed on road and trail maintenance for each alternative.

**Road and Trail Maintenance Costs**

	Average Annual Thousand Dollars by Alternative					
	PA	A	B	C	D	E
Roads	516	399	1091	728	660	895
Trails	53	67	109	51	64	165

Although road maintenance funding for the Proposed Action increases by 29% over current funding, there will be a continued downgrading of the road system. Under Alternative B the roads could be brought back to intended standards and maintained that way. Alternative C, D, and E would stop downgrading but not correct existing conditions.



Some new road construction will be required for access to unroaded fuelwood areas and to the Forest where private owners have prevented access by the public. Forest Highway 39, the General Hitchcock (Mt. Lemmon) Highway, is scheduled for reconstruction beginning in the first period. Forest Highway funds will be used for this work which may take several years to complete. Reconstruction will be along the existing alignment and to the existing standard (two lanes with a 30mph design speed).

Reconstruction of substandard roads, maintenance of roads to standards, and obliteration of unneeded travelways indirectly benefit soil and water resources by reducing erosion and sedimentation.

Trails

Lack of adequate trail maintenance will result in deterioration and subsequent disappearance of remote trails in the Proposed Action and all Alternatives. Inadequately maintained facilities will result in higher and more frequent reconstruction cost.

Trail construction and reconstruction efforts will be concentrated in wilderness areas to maintain wilderness values.

Right-of-Way Acquisition

Over 1,000 miles of rights-of-way needed to meet multiple-use objectives on the Forest have been identified. Rights-of-way are acquired directly by the Forest or in cooperation with States and Counties or other agencies. The Proposed Action lists 40 ROWs to be acquired each period as shown below.

Right-of-Way Acquisition

Period	Average Cases by Alternative per Period					
	PA	A	B	C	D	E
All	40	5	37	28	43	30

The Proposed Action acquires only a small percent of the projected needs. Alternatives A, B, C and E are below this level while Alternative D provides only a little additional mileage. Emphasis will remain on cooperation with the various public road agencies to insure access to National Forest lands.

LAW ENFORCEMENT

Illegal occupancy of National Forest lands continues as an increasing concern. Greater numbers of people seem to be moving to remote forest areas with the idea of living off the land under the guise of the mining laws. In addition, people with little or no money are taking up residence because they have no other apparent place to live.

The Proposed Action and Alternatives B, C, D and E provide an adequate level of enforcement throughout the planning period. Alternative A limits enforcement and will reduce the Forest's ability to protect recreation users and to prevent resource loss from theft, vandalism and illegal occupancy of land and campsites.

ECONOMIC AND SOCIAL CONSIDERATIONS

Economic

Present net value (PNV) was chosen as one measure of economic efficiency. PNV is the discounted benefits less the discounted costs. It measures the net economic benefits to the public for all resources which have a market value or which were given an assigned value in the planning process.

Maximization of present net value was an objective of each alternative. Therefore, each alternative represents the most cost efficient combination of management prescriptions based on the goals and objectives of the alternative.

PNV is not a complete measure of economic efficiency because only the market or assigned prices of outputs for which prices can be estimated are counted as benefits while all costs are included. As a consequence, those alternatives with a relatively greater focus on priced outputs are characterized by the highest PNVs.

Since not all costs and benefits can be priced in the analysis, PNV was not the only index used to develop, compare, and evaluate alternatives. Alternatives were evaluated as to how well they maximized net public benefits. Net public benefits (NPB) is an overall expression of the value to the nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs) whether they can quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria rather than a single measure or index. Alternatives having the highest PNV may not always provide the highest net public benefits when nonpriced benefits and costs are considered.

Benefit/cost ratios were also calculated for each alternative as another measure of economic efficiency. Benefit/cost indicates whether the ratio of benefits to costs justifies the alternatives.

The following shows the present net values and benefit cost ratios for the alternatives. As can be seen, the ranking of alternatives is different depending on the economic criteria used.

Present Value Benefits, Present Value Costs, Present Net Value, and Benefit Cost Ratio (Millions of 1980 Fourth Quarter Dollars)

	Max PNV <sup>1/</sup>	Alternative					
		PA	A	B	C	D	E
Present Value Benefits	1263.3	901.5	742.2	1238.1	1262.0	1188.7	1193.4
Present Value Costs	274.8	184.3	183.2	354.8	274.7	245.9	253.0
Present Net Value	988.5	717.2	559.0	883.3	987.3	942.8	940.4
Benefit/cost Ratio	4.60	4.89	4.05	3.49	4.59	4.83	4.72

<sup>1/</sup> Maximize PNV Benchmark included as a reference point.

#### Community Stability

All alternatives would provide some very small increases in employment and income. These increases, however, would be insignificant. As a result of the small changes in employment and income for all alternatives, there are no expected changes in community stability within the study area.

Communities will not change as a result of Forest management direction proposed in any of the alternatives. Political and social organization will not be affected and land use patterns are not expected to change. Peoples' attitudes and values may change to some degree through their interpretation of (but not as a result of) management decisions. Minority relations within individual communities will remain unchanged.

The economies of urban areas such as Tucson, Nogales, Green Valley, Sierra Vista, Safford, and Douglas will not be affected in any way as a result of the alternatives considered. Since industry's selection of relocation sites are based at least partially on available amenities, community lifestyle could be affected by alternatives which would fail to provide for additional recreation opportunities, to keep pace with expanding population, or which would fail to provide for an adequate transportation system and adequate access. Alternatives which yield

lower amounts of fuelwood could affect the lifestyle of rural people who depend on it for heating or cooking. Individual businesses in villages such as Portal, Rodeo, and Bonita, do benefit from visitors in the National Forest, whether for hunting, camping, birdwatching, or other pursuits. This in turn, benefits the other village residents by stabilizing the availability of their services.

In summary, the Coronado National Forest is important to individuals and some small communities in and adjacent to the National Forest. It is economically important to individuals and their families and is a stabilizing influence for business and small communities near the Forest. However, for the most part, the variations between alternatives are not so large as to have a great influence on the social or economic well-being of the area as a whole. The Proposed Action probably best matches the needs of both people living in the rural areas and the urban dwellers.

Minorities and  
Women

None of the proposed management alternatives is expected to result in any significant change in present use of the National Forest lands or products by minorities. National Forest opportunities will continue to be equally available to all legal residents of the United States.

Native Americans

All alternatives continue to protect Native American religious sites and areas through cultural resource surveys. Strengthened communications with the tribes will ensure that execution of any alternative protects legal rights of Native Americans and considers impacts on local tribes and reservations as neighboring land managers and residents.

## The Way to Obtain the Forest Plan

The FEIS and Forest Plan are available from the Supervisor's Office, Coronado National Forest, 300 West Congress Street, Tucson, AZ 85701, or call (602) 629-6805.

Copies of these documents are also available for your local review at District Ranger Offices of the Coronado National Forest, District Bureau of Land Management Offices in Safford, Arizona, and Las Cruces, New Mexico, and local university and public libraries.

**Coronado National Forest  
300 West Congress Street  
Tucson, AZ 85701**