

# **PROTOTYPE LAND AND RESOURCE MANAGEMENT PLAN**

## **Arapaho-Roosevelt Example**

**January 2003**

The following documents are intended to provide an example of what a Forest Plan may look like under the proposed rule for National Forest System Land and Resource Management Planning (67 FR 72770). Although the example documents are based on the actual 1997 Revision of the Land and Resource Management Plan for the Arapaho and Roosevelt National Forests and Pawnee National Grassland (Forest Plan), actual guidance for management of the Arapaho and Roosevelt National Forests and Pawnee National Grassland is based on their 1997 Forest Plan. The example documents were developed by a team of Forest Service planning specialists without the aid of public participation. Any actual future revision of a Forest Plan would include collaboration with the public.

# Prototype Land and Resource Management Plan Arapaho-Roosevelt Example

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ARAPAHO-ROOSEVELT NATIONAL FORESTS - PAWNEE NATIONAL GRASSLAND  
LAND AND RESOURCE MANAGEMENT PLAN

# VISION

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## **Understanding The Forest Plan**

This document is one of three parts of the Land and Resource Management Plan (Forest Plan) for the Arapaho and Roosevelt National Forests and the Pawnee National Grassland.

This document provides the context for management of the Forests and Grassland. It describes a vision for the future. It describes the niche that these public lands provide to local communities, the state of Colorado, the Region and the Nation. It describes the desired future condition of the landscape and disturbance processes and the acceptable limits of the system. It describes the benefits and experiences that these lands can supply. It also describes how we will address the challenges we may face.

A second document is the strategy. It describes suitable uses and how the strategy will be monitored. It contains a prospectus for anticipated levels of uses and activities.

The third document is the design criteria. This document contains the legally required standards governing timber harvest, as well as an index of Forest Service Handbook and other guidance that governs use of the Forests and Grassland.

## **Understanding The Arapaho And Roosevelt National Forests And Pawnee National Grassland**

The Arapaho and Roosevelt National Forests and Pawnee National Grassland are located in northern Colorado and include over 1.5 million acres of federally managed land. [Click HERE for map.](#)

The Continental Divide and the Front Range of the Rocky Mountains form the “backbone” of the Forests. From this winding, high crest, with some peaks over 14,000 feet, foothills slope down to meet mesas and high prairie at 5,000 to 6,000 feet elevation on the east and to

prairie at 5,000 to 6,000 feet elevation on the east and to broad, often open, mountain valleys at 7,000 to 8,000 feet elevation on the west. The glacially carved peaks, snowfields, lakes, alpine tundra, and towering canyon walls carved by rivers through the foothills, together with dramatic changes in vegetation over an altitude span of 9,000 feet, create breathtaking vistas for sightseers. [Click HERE for elevational view.](#)

Between the Forest and the Grassland, along the western edge of the Great Plains, lies the heavily populated urban corridor stretching from Colorado Springs to Fort Collins, home to three million residents but interspersed with agricultural lands that since early settlement have benefited from irrigation waters flowing from the mountains. [Click HERE for population density.](#)

The Pawnee National Grassland is primarily Great Plains shortgrass prairie and is backed by a panorama of beige and coral rock ledges. The Pawnee Buttes are a well-known landmark on the Grassland. The prairie is home to over 200 bird species, pronghorn antelope, coyote, prairie dog and many other mammals.

Counties containing lands covered by the Forest Plan include Boulder, Clear Creek, Gilpin, Grand, Jefferson, Larimer, Park and Weld Counties, all in Colorado. [Click HERE for county map.](#)

## Special Area Designations

Portions of the forest have been designated in one or more of the following special area categories:

- Wilderness
- Wild and Scenic Rivers
- National Recreation Area
- Other National Designations
- Research Natural Areas
- Experimental Forests
- Special Interest Areas
- Scenic Byways and Scenic Corridors
- High-Use Recreation Areas

[Click here for a map of areas with special designations.](#)

See appendix A for the list of areas that have been designated. See **Part 2 - Strategy** for areas that have been proposed for designation.

## Sub-Forest Geographic Area Descriptions

The Forests and Grassland not included in special areas described above have been subdivided into sub-forest geographic areas. These geographic areas are intended to provide more detail to the policy and vision.

[Click here for a map of geographic areas.](#)

See appendix B for a description of the geographic areas.

**Forests And Grassland  
Vision And Niche**

National Forests and Grasslands that are located near large metropolitan areas have issues, opportunities and challenges that are significantly influenced by the large number of people who frequently visit them or are adjacent neighbors. The Arapaho and Roosevelt National Forests and Pawnee National Grassland are located along the Front Range of the Colorado Rocky Mountains. Both feel the urban influence of not only the metropolitan Denver area but also the rapidly growing population that stretches from Colorado Springs north to Fort Collins. This corridor is home to more than three million people who live and work in a largely urban environment with its associated experiences and life styles.

The attitudes, values, needs and expectations of these people differ markedly from those of people who live in more rural settings. Urban dwellers usually work and spend their daily lives in close proximity to many other people in a highly developed infrastructure that provides minimal exposure to natural settings and processes.

**Management Challenges**

The Arapaho and Roosevelt National Forests and Pawnee National Grassland are easily accessible to large numbers of people from these urban settings as well as to millions of visitors to Colorado. The Forests and Grassland are served by an extensive transportation system that provides fast and easy year-round access to much of the public land. Because of the close proximity and ease of access, visitors come frequently and repeatedly for short-term day use, overnight use, and extended vacations. Land-management activities are readily seen and tracked by these repeat visitors who have an ongoing stake in what is happening at areas familiar to them. Much of the Forest provides a scenic backdrop to the Front Range urban corridor. The corridor's backdrop provides both a value and an expectation for those within the Forests and Grassland boundaries as well as for those who view it from a distance.

The landownership pattern of Forest, Grassland and private land creates another special challenge. Approximately 750,000 acres of small private parcels are intermixed with federal lands. Those parcels, and the people who live on them, are neighbors of the ARNF-PNG. Intensive interaction with them is needed to conserve public interest in federal lands. A key element of this intensive interaction is the development and implementation of strategies for managing fire and fuels.

Roles and contributions  
of the Forests and  
Grassland:  
Globally and Nationally

On a global and national scale, the Forests and Grassland:

- Rank among the top National Forests for year-round recreation use
- Offer some of the most popular downhill skiing in the country
- Include the Arapaho National Recreation Area and Colorado's first nationally designated Wild and Scenic River, the Cache la Poudre
- Have over 300 miles of National Scenic Byways, including the Mount Evans highway, the highest paved road in North America
- Are the setting for part of the Continental Divide National Scenic Trail and several National Recreation Trails
- Include nationally designated historic sites: Homestead Meadows, Arrowhead Lodge, Denver Northwestern & Pacific Railway Historic District, the Boulder & Western Railway Historic District, and the West Stoneham Archaeological District
- Encompass eight nationally designated wilderness areas, in 295,512 acres of National Forest System land
- Surround Rocky Mountain National Park, one of the treasures of the National Park system
- Provide internationally acclaimed birding opportunities on the Grassland

Roles and Contributions  
to the surrounding  
Region

The Forests and Grassland:

- Are a recharge area for numerous reservoirs that provide water for community, agricultural, and industrial uses
- Include several 14,000 foot mountain peaks, Mount Evans and Grays and Torreys peaks
- Are the setting for the scenic Pawnee Buttes
- Provide diverse habitats to maintain population viability of native and introduced plant, fish and animal species
- Offer a landscape setting ranging from high plains to rugged mountain areas with alpine conditions
- Contribute to local communities with economic returns-to-counties, employment and wildfire protection

Vision

In this setting with its strong urban influence, the Forests and Grassland are managed to meet legal mandates for providing multiple uses. *Meeting Congressional intent to provide a sustainable flow of resources is accomplished while assuring long-term ecosystem health and biological diversity.* The Forests and Grassland provide traditional commodities such as timber, grazing and minerals as well as an important source of water for both municipal and agricultural use in support of the large urban population. Much of the vegetation treatment that is done through timber harvest is to improve wildlife habitat, reduce forest fuels in areas of high potential wildfire risk, restore forest and grasslands to healthier conditions, and retain an aesthetically pleasing natural environment.

Strategic Goals And  
Desired Conditions

The USDA Forest Service Strategic Plan (2000 Revision) provides a framework for Land and Resource Management Plan. As stated in the Strategic Plan, the mission of the Forest Service is:

**To sustain the health, diversity and productivity of the Nation's Forests and Grasslands to meet the needs of present and future generations.**

Strategic goals:

1. **Ecosystem Health:** Promote ecosystem health and conservation using a collaborative approach to sustain the Nation’s forests, grasslands and watersheds.
2. **Multiple Benefits to People:** Provide a variety of uses, values, products and services for present and future generations by managing within the capability of sustainable ecosystems.
3. **Scientific and Technical Assistance:** Develop and use the best scientific information available to deliver technical and community assistance and to support ecological, economic and social sustainability.
4. **Effective Public Service:** Ensure the acquisition and use of an appropriate corporate infrastructure to enable the efficient delivery of a variety of uses.

The following describes the desired conditions for the Arapaho and Roosevelt National Forests and the Pawnee National Grassland and the contribution to these strategic goals.

**Strategic Goal 1:  
Ecosystem Health**

**Promote ecosystem health and conservation using a collaborative approach to sustain the Nation’s forests, grasslands and watersheds.**

**Strategic Objective 1a: Watershed Conditions** Improve and protect watershed conditions to provide the water quality and quantity and soil productivity necessary to support ecological functions and intended beneficial water uses.

Forest-wide Desired  
Conditions

**FDC1.** Manage the soil resource, Forest Service activities and those activities permitted by the Forest Service, such that the physical, chemical and biological processes and functions of the soil in an ecosystem are maintained or enhanced.

In the water influence zone next to perennial and intermittent streams, lakes, and wetlands, allow only those land treatments that maintain or improve long-term stream health. Activities that have the ability to affect the continuity of structure, composition, and function within riparian ecosystems shall be managed to sustain riparian areas.

Watershed improvement projects will be implemented to bring class III non-functional and class II at-risk watersheds into class I function condition. Watershed health will be improved through judicious daily decisions in overall Forest management, not just through watershed improvement projects alone.

[Click HERE for a map of watersheds](#)

Evaluation Questions: Has the Forest made progress toward moving sixth-level watersheds from at-risk or non-functional to functional? Which watersheds were improved and how was this accomplished?

Measure: Sixth-level watersheds in Satisfactory Condition

**FDC2.** Maintain water quantity and quality to provide for the maintenance of riparian areas, aquatic habitat, and fish populations. Stream flows sufficient to sustain aquatic life and maintain stream processes will be obtained in accordance with legal authorities.

Evaluation Questions: Has the Forest made progress toward obtaining (through negotiation, trade or purchase) stream flows to sustain aquatic life and maintain stream processes on up to 5 reaches of stream channels? What were the most effective and cost efficient methods?

Measures: Stream flows and stream processes

**Geographic Area  
Desired Conditions**

**GDC1.** In the following geographic areas, recreation uses and road and trail networks will be managed to reduce erosion or deterioration of riparian areas and watershed conditions.

Boulder Creeks	Brainard	Caribou
James Creek	Lump Gulch	Mammoth
Middle St. Vrain	Niwot Ridge	North St. Vrain
Sugarloaf	Thorodin	

Evaluation Questions: Has the Forest made progress toward moving Ecological Landtype Units from at-risk to a maintenance or higher functioning level? How was this accomplished?

Measures: Soil Erosion Rates, Riparian Proper Functioning Condition, Soil Compaction

**Strategic Objective 1b: Conditions for Species**

Provide ecological conditions to sustain viable populations of native and desired nonnative species and to achieve objectives for Management Indicator Species (MIS)/focal species.

**Forest-wide  
Desired Conditions**

**FDC3.** Maintain the function of key or unique habitats such as primary feeding areas, winter ranges, riparian habitat, breeding areas, birthing areas, rearing areas, migration corridors, animal concentration areas, wooded draws, and riparian areas. Human disturbance should be minimized during periods critical for wildlife.

In riparian areas where cover that would provide wildlife travel corridors does not presently exist due to past human activities, such areas should be managed to provide corridors in the future along the entire length of riparian zones, on at least one side of the drainage.

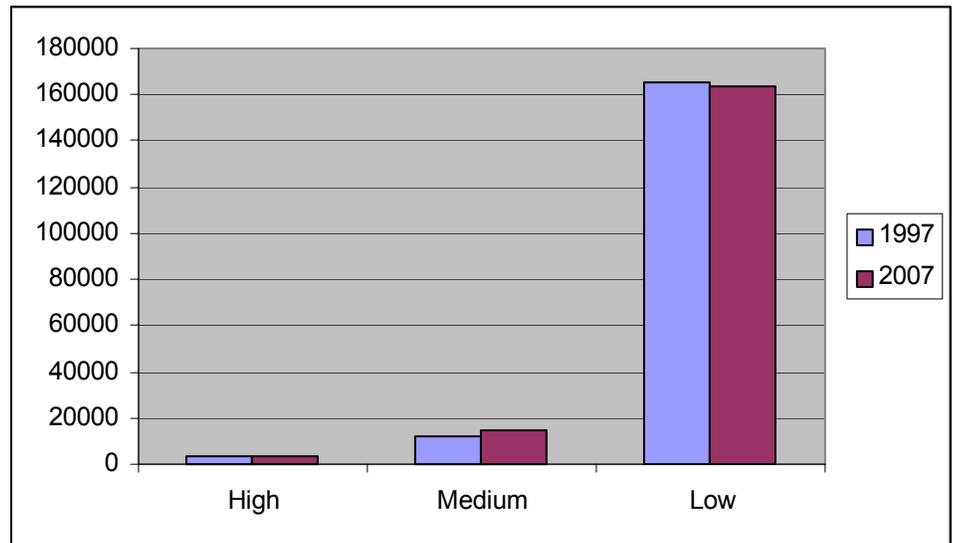
For any activity likely to affect existing aquatic habitats, favor improvement or maintenance of natural aquatic habitats over replacement or substitution, unless benefits of replacement or substitutions are higher. Rehabilitate aquatic habitats where past management activities have adversely affected their ability to support fish populations.

**FDC4.** Provide a range of successional stages of community types across the Forests and Grassland landscapes that:

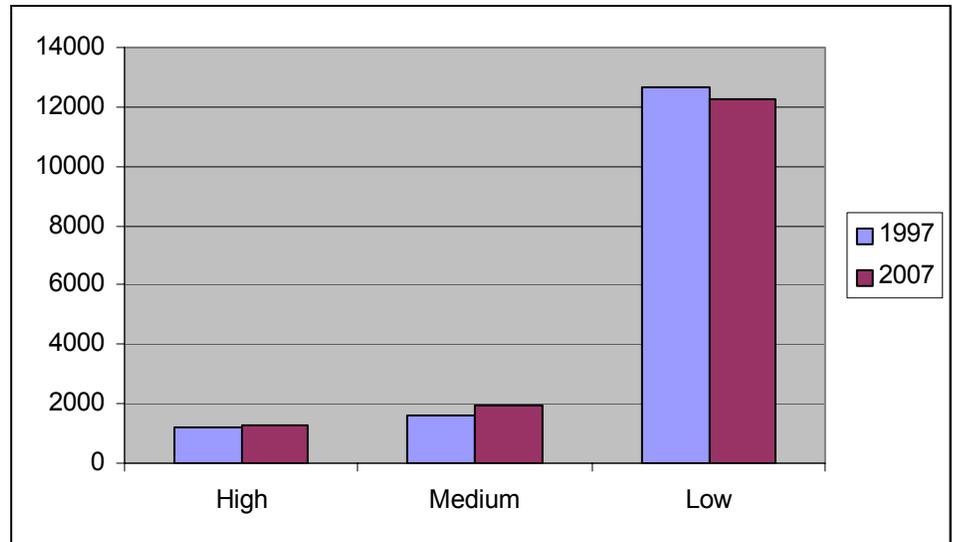
- maintains ecosystem integrity
- maintains or improves habitats for management indicator species
- protects adjacent property values
- reduces wildfire hazards
- minimizes wildfire suppression costs.

[Click HERE for a map of the existing structural composition of the forest.](#)

**FDC5.** The overall structural composition of grass will generally change as shown.



**FDC6.** The overall structural composition of shrub communities will generally change as shown in the following chart:



Evaluation Questions: Have the Forests and Grassland made progress toward assuring adequate representation of the full range of successional or structural stages of community types across the forest or landscapes? How has the representation of successional stages been accomplished?

Measures: Acres as shown for forest, grass or shrub structural stages

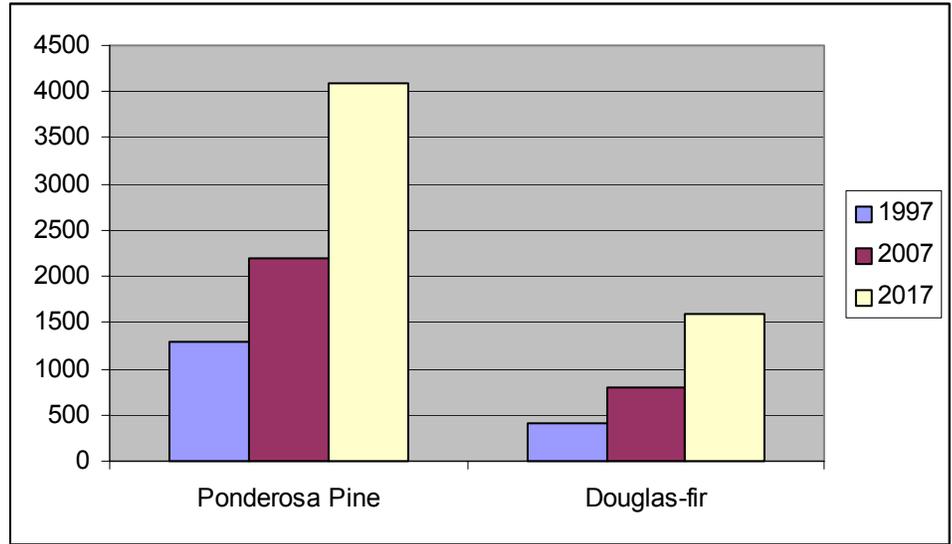
**FDC7.** Maintain or develop a network of existing and future old growth that provides adequate habitat that is well dispersed, effective and accessible to associated wildlife species.

Retain all existing Douglas-fir and ponderosa pine old growth and increase amounts in the future. Provide for the most rapid development of future Douglas-fir and ponderosa pine old growth conditions within identified areas.

Maintain or increase habitat effectiveness within identified old growth areas and all old growth sites that are not planned for harvest. Retain some connectivity of existing forested corridors within identified map areas, and between old-growth sites that are not planned for harvest, or manage for future forested corridors where connectivity is potential but absent.

Allow through vegetation protection, or encourage through vegetation treatments the development of future Douglas-fir and ponderosa pine old growth conditions within identified old-growth areas. The amount of old growth will generally increase as shown.

[Click HERE for map of mature PP and DF](#)



Evaluation Questions: Have old-growth quantity and quality been maintained and have management activities assured adequate/sufficient old growth for the future? How has this been accomplished?

Measure: Acres of old growth

***Geographic Area  
Desired Conditions***

**GDC2.** In the following geographic areas, nonsystem “ways” will be converted to Forest System roads or obliterated to improve wildlife habitat or watershed conditions.

Brainard            Caribou            James Creek  
James Peak        Lump Gulch        Middle St. Vrain  
North St. Vrain

Evaluation Questions: Has progress been made toward improving Forest and grassland wildlife habitat and watershed condition through modification of system roads, trails and ways? How has this been accomplished?

Measure: Presence of nonsystem “ways” in these geographic areas

**GDC3.** The following geographic areas may contain habitats for greenback cutthroat that will be maintained. The Forest Service will cooperate with other agencies to determine the presence or absence, status and genetic purity of greenback cutthroat trout in area streams.

Boulder Creeks      Caribou      James Peak Special Interest Area  
Mammoth              Niwot Ridge Biosphere Reserve

Evaluation Questions: Have habitat-improvement projects resulted in protection, restoration and enhancement of habitat for greenback cutthroat? What management practices have been most effective?

Measure: Greenback cutthroat population trend

**GDC4.** The following rare or special communities will be restored, enhanced or maintained in the geographic areas shown.

Geographic Area	Mountain Grassland	Willow/Wetlands	Shrub Comm	Aspen Comm
Boulder Creeks	X			X
Caribou	X	X		X
Mammoth	X		X	X
Middle St. Vrain	X	X		X
Niwot Ridge	X			X
North St. Vrain			X	X
Thorodin	X			X

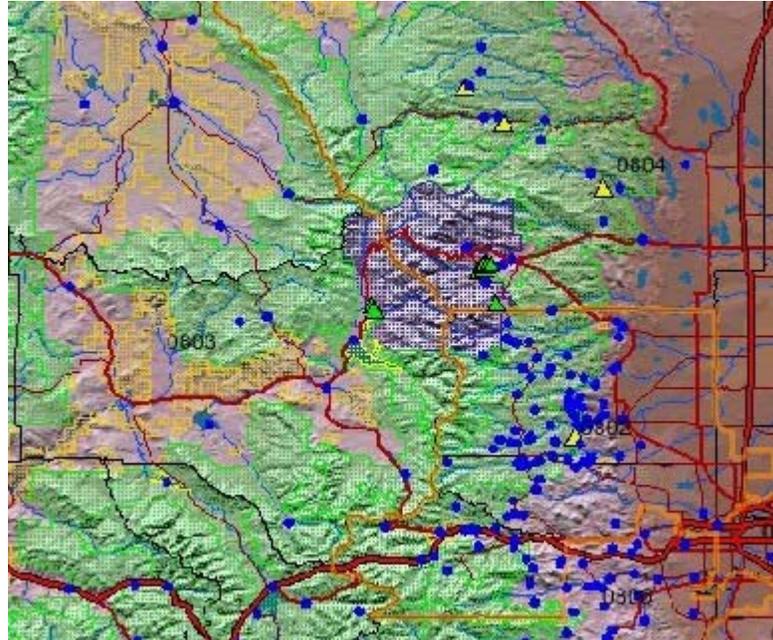
**Strategic Objective 1c: Forest Health**

Increase the amount of forests and grasslands restored to or maintained in a healthy condition with reduced risk and damage from fires, insects and diseases, and invasive species.

***Forest-wide Desired Conditions***

**FDC6.** The amount of high risk/high values acres will be reduced.

The following image depicts National Fire Plan communities at risk and planned fuel reduction projects on the ARNF.



Evaluation Questions: Has the Forest made progress toward reducing the number of high fire hazard, high value, and high and moderate risk acres? How was this accomplished? What was the most effective method?

Measures: Acres of high risk/high values

**FDC8.** Ponderosa pine will be managed where allowed to emulate conditions representative of a nonlethal understory fire regime. A typical example is shown below.



**Strategic Goal 2:  
Multiple Benefits to  
People**

**Provide a variety of uses, values, products, and services for present and future generations by managing within the capability of sustainable ecosystems.**

**Strategic Objective 2.a Outdoor Recreation**

Improve the capability of the Forests and Grassland to provide diverse, high-quality outdoor recreation opportunities.

***Forest-wide Desired  
Conditions***

**FDC9.** A satisfactory recreational experience will be provided for at least 70 percent of Forests and Grassland visitors annually, as determined from comment forms that show ratings of “acceptable” or higher.

Evaluation Question: Has the Forest made progress toward providing satisfactory recreational experiences to visitors?

Measure: Customer satisfaction surveys

**FDC10.** High-impact dispersed camping areas will be reconstructed or rehabilitated.

Evaluation Questions: Has the Forest made progress toward reconstructing or rehabilitating impacted dispersed areas and sites, providing new designated dispersed campsites consistent with future use projections? How has this been accomplished?

**FDC11.** Substandard recreational facilities will be upgraded.

Evaluation Question: Has the Forest made progress toward upgrading recreation facilities?

Measure: Facilities at standard

***Geographic Area  
Desired Conditions***

**GDC5.** The following geographic areas will be managed for year-round recreation use. These areas may contain dispersed campsites, trailheads and other recreation developments. Use may be restricted to

prevent damage to riparian areas or watershed conditions.

Boulder Creeks	Brainard	James Creek
James Peak Special Interest Area		
Lump Gulch	Mammoth	
Middle St. Vrain	Niwot Ridge	
North St. Vrain	Sugarloaf	Thorodin

Evaluation Questions: Has the Forest made progress toward providing a mix of facility reconstruction, expansion, and where possible, new development consistent with future use projections? Has this been done to assure quality developed recreational opportunities?

Measures: Recreation sites constructed or rehabilitated

### **Strategic Objective 2.b Wilderness and Protected Areas**

Improve the capability of wilderness and protected areas to sustain a desired range of benefits and values.

#### ***Forest-wide Desired Conditions***

**FDC12.** Quality wilderness recreational opportunities will be provided within the resource capacity of the area.

Evaluation Question: Is the Forest making progress toward providing designated wilderness campsites where resource impacts from users are evident?

Measure: Recreation sites constructed or rehabilitated

### **Strategic Objective 2.c Sustainable Uses, Values, Products and Services**

Improve the capability of the Forests and Grassland to provide desired sustainable levels of uses, values, products and services.

#### **Objective 2.c-1 Public Access and Landownership Adjustments**

**Forest-wide Desired  
Conditions**

**FDC13.** The NFS boundaries will be identified and maintained. Public land resources will be protected or enhanced through significantly improved boundary management, access and adjustments in landownership.

Evaluation Questions: Has the Forest made progress toward improving boundary management, access, and land ownership adjustments to protect and enhance Forest and Grassland resources and to increase management efficiencies? Which approaches have been effective?

Measures: Boundaries located and maintained;  
Lands not meeting resource objectives due to inefficient ownership pattern

**Objective 2.c-2 Wood Products**

**FDC14.** Commercial timber will be offered for sale consistent with this Plan.

Evaluation Questions: How has the supply of commercial timber matched the demand? What is the condition of lands suitable for timber production?

Measures: Supply and demand for wood products;  
Acres suitable for timber production

**FDC15.** Fuelwood, Christmas tree and other miscellaneous products will be available where consistent with this Plan.

Evaluation Question: How has the supply of miscellaneous products matched the demand?

Measures: Supply and demand for miscellaneous forest products

**Objective 2.c-3 Livestock Grazing**

**FDC16.** Forage for both wildlife and domestic livestock will be provided consistent with the Plan.

Evaluation Questions: How has the supply of forage matched the demand? How is forage being utilized?

Measures: Utilization; Range condition and trends

#### **Objective 2.c-4 Locatable Minerals**

**FDC17.** Locatable minerals will be developed consistent with Federal law.

#### **Objective 2.c-5 Oil and Gas Development**

**FDC18.** Oil and gas well development will occur consistent with the Plan.

Evaluation Question: Has development occurred as predicted?

Measure: Comparison to Reasonably Foreseeable Development Scenarios

#### **Objective 2.c-6 Other Uses, Values, Products and Services**

**FDC19.** The Forests and Grassland are suitable for a variety of public uses, unless an area is determined unsuited for a particular use or activity.

Evaluation Questions: What other demands for uses, values, products or services have occurred? Have these demands been satisfied?

Measures: Supply and demand for other uses, values, products, and services

#### **Strategic Objective 2.d Accessibility**

Increase accessibility to a diversity of people and members of underserved and low-income populations to the full range of uses, values, products and services.

#### **Strategic Objective 2.e Urban Communities**

Improve delivery of services to urban communities.

**Strategic Goal 3:  
Scientific and Technical  
Assistance<sup>1</sup>**      **Develop and use the best available scientific information available to deliver technical and community assistance and to support ecological, economic and social sustainability.**

**Strategic Goal 4:  
Effective Public Service**      **Ensure the acquisition and use of an appropriate corporate infrastructure to enable the efficient delivery of a variety of uses.**

**Strategic Objective 4.a Fiscal Accountability**

Improve financial management to achieve fiscal accountability.

***Forest-wide Desired  
Conditions***

**FDC20.** The cost of permit application, review, and administration will be borne primarily by the benefiting parties.

Evaluation Questions: Have the Forest and grassland made progress toward working with potential permittees to insure that benefiting parties assume the costs of permit review and administration? How has this been accomplished?

Measure: Costs of permit review

**Strategic Objective 4.b Roads, Trails, Facilities,  
Operations**

Limit roads and other disturbed sites to the minimum feasible number, width, and total length consistent with the purpose of specific operations, local topography, and climate. Improve the safety and economy of Forest Service roads, trails, facilities and operations and provide greater security for the public and employees.

Evaluation Questions: Have priorities been established and implemented for managing travel to best meet future travel and access needs of Forest users? How has this been accomplished?

Measure: Customer surveys

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<sup>1</sup> This goal was not part of the USDA Forest Service Strategic Plan in 1997, when the Arapaho-Roosevelt NF plan was revised. It was added here to show the complete set of current strategic goals.

## Appendix A Special Area Designations

This appendix lists areas currently designated. See **Part 2- Strategy** for information about areas proposed for designations, but not yet formally acted upon. The desired condition for areas proposed for designation is usually the same as if the designation process has been completed.

### A. [Wilderness Areas](#) (click for map)

#### **Indian Peaks Wilderness**

The Indian Peaks Wilderness is located between Rocky Mountain National Park and Rollins Pass along both sides of the Continental divide. It contains a mix of subalpine and alpine plant communities consisting of Engelmann spruce, subalpine fir, lodgepole and limber pine, meadows, tundra, willow carrs, wet areas, rock outcrops, snow and ice fields, glacial lakes and remnant glaciers. Elevations range from 9,800 to 13,502 feet. The Indian Peaks are the key geographic features.

The Wilderness is close to an urban population base of more than 2 million people with quick highway access to the Indian Peaks. Indian Peaks is consequently one of the most frequently visited wilderness areas in Colorado, with the majority of use occurring on the east side of the Continental Divide.

The Indian Peaks is a Class II wilderness with respect to air-quality. The east side of the area is in the Front Range Airshed and within 40 miles of several potential air pollution sources such as coal-fired power plants and major population centers. There are several important visual corridors in this eastern portion of the wilderness that is in the Boulder County non-attainment area for PM-10 (particulate matter). The remainder of the wilderness is in the Granby Airshed west of the Continental Divide.

#### **Mountain Evans Wilderness (Northern Portion) - Mount Goliath Botanical Area**

The northern portion of the Mount Evans Wilderness is in the Arapaho National Forests; the southern portion is in the Pike National Forest. The area also includes the Mount Goliath Botanical Area, which contains a large old-growth stand of bristlecone pine. The area includes

two Denver Mountain Parks. The area encompasses the upper north and east faces of Mount Evans with elevations ranging from 8,600 feet to the Mount Evans summit at 14,264 feet.

Approximately one-third of the area is above timberline and consists of alpine meadow and rock. The lower portions contain mostly subalpine forests of spruce and fir and lodgepole pine. The lowest areas contain a small component of aspen and ponderosa pine. Significant bristlecone pine stands occur at elevations from 11,000 to 12,000 feet. The area provides important summer habitat for elk, and the upper elevations are habitat for a reintroduced population of mountain goat.

### **Cache La Poudre Wilderness**

The area is congressionally designated wilderness south of Cache la Poudre Canyon and north of the Flowers Road. Seven miles of Cache la Poudre Wild and Scenic River flow in this area. The area is a mix of foothills shrub-grass communities, juniper-ponderosa pine communities on south slopes, and Douglas-fir on north slopes. There are stands of lodgepole pine at higher elevations. Elevations vary from 6,200 to 8,300 feet. Greenback cutthroat trout may be present in some streams.

The area experiences frequent nonlethal understory and mixed/variable wildland fires. Fire exclusion and insect-caused mortality in the Douglas-fir and ponderosa pine have resulted in areas of very high fuel loading. The Cache la Poudre Wilderness is a Class II area with respect to air quality. Livestock grazing occurs in the area on four active grazing allotments.

The Mount McConnell Trail is the primary trail within the area. Emphasize protection of wilderness processes and attributes while providing for reasonable public visitation to a pristine wilderness setting.

**Comanche Peak  
Wilderness**

The area consists of Congressionally designated Wilderness north and east of Rocky Mountain National Park. Vegetation consists of ponderosa pine and Douglas-fir at lower elevations, lodgepole pine at mid-levels, Engelmann spruce-subalpine fir at higher elevations and alpine above 10,500 feet. Elevations vary from 8,000 to 12,702 feet. The main stem of the Cache la Poudre Wild and Scenic River flows through this area. Moose populations are increasing. Greenback cutthroat trout habitat may exist in some streams.

Comanche Peak Wilderness is a Class II area with respect to air quality. The area is infrequently burned by wildfire but has experienced fires of large-stand-replacement severity in the past. There are six livestock grazing allotments, four of them vacant. Primary trailheads used to access the area are the Big South, Corral Creek, Zimmerman and Dunraven. A network of National Forest System trails provides good access to the area. Less than 100 acres of this area is in non-federal ownership.

**Neota Wilderness**

The Neota Wilderness is located at the upper end of the Cache la Poudre Canyon. A mixed conifer forest dominated by lodgepole pine and aspen on the south- and east-facing slopes and Engelmann spruce and subalpine fir on the north and west slopes exists below treeline. Krummholz spruce and fir are found at timberline. Elevations range from 10,000 to 12,000 feet. Greenback cutthroat trout may be present in some streams.

The Neota Wilderness is a Class II area with respect to air quality. The area is administratively withdrawn from timber harvest. The area is infrequently burned by wildfire. There is one vacant livestock grazing allotment. The area receives some recreational use year-round. Travel into the area is crosscountry. The northeast portion of the area adjacent to Highway 14 receives the majority of winter use with very little use occurring in the remainder of the area.

## **Rawah Wilderness**

The Rawah Wilderness is located west of the Laramie River Valley, along the Medicine Bow Divide. Vegetation includes a mixed conifer forest dominated by lodgepole pine and aspen on the south- and east-facing slopes and Engelmann spruce and subalpine fir on the north and west slopes. Krummholz spruce and fir are found at timberline. The northern part of the area is characterized by open parks surrounded by ponderosa and lodgepole pine which gradually lead to a landscape dominated by sagebrush as it approaches the Wyoming border. The southern part of the area is dominated by thick stands of lodgepole pine with openings mostly restricted to stream courses. Elevations range from 8,400 to 13,000 feet. Open parks with riparian zones with large willow components serve as important big-game habitat. Moose populations are increasing. Greenback cutthroat trout populations may be present in some streams.

## **Never Summer Wilderness**

The Never Summer Wilderness is located approximately 18 miles north of the Town of Granby, and totals 14,100 acres, of which 301 acres are privately owned. The area was declared a Wilderness by Congress in 1980. Elevations vary from 12,706 feet at the top of Mt. Nimbus to 8,944 feet along Baker Gulch. The area is forested with lodgepole pine, Engelmann spruce, subalpine fir, and aspen. Much of the area is above timberline, with alpine meadows and tundra on the high ridges and peaks. The major streams are Bowen and Baker Gulches. The area contains Bowen, Parika and Blue lakes. The area was mined early in the century, and the old mines are still visible. Grand Ditch, built in the 1890s, is a non-wilderness intrusion to the area. There are no roads, but a network of trails, including the Continental Divide National Scenic Trail, provides access to most of the area.

**Vasquez Wilderness**

The area is located approximately 4 miles south of the Town of Winter Park, and includes 13,239 acres of National Forest lands. There are no private inholdings. Elevations vary from 12,947 feet at the top of Vasquez Peak to 9,440 feet near Vasquez Creek. Approximately half the area lies above timberline, with alpine meadows and tundra occurring along the high ridges and peaks. The area below timberline is forested with lodgepole pine, subalpine fir, Engelmann spruce and aspen. The major streams are Vasquez Creek and its tributaries. The area also includes Vasquez Lake.

**B. Wild and Scenic Rivers**

**Cache La Poudre**

The main stem of the Cache La Poudre River has been designated as a Wild and Scenic River. A management plan has been developed. This plan governs developed recreational facilities, potential land acquisition, river-access needs, commercial rafting use, special-use permits for river-outfitter guiding and potential trails.

**C. National Recreation Areas**

**Arapaho National  
Recreation Area**

The Arapaho National Recreation Area (ANRA) is located approximately 4 miles northwest of the town of Granby and adjacent to the Town of Grand Lake, in Grand County. National Recreation Areas are showcases for excellence in outdoor recreation and environmental and economic assets to the states and local communities where they are located. When Congress created the ANRA, it directed that the area be administered primarily to provide for public recreation and enjoyment.

The ANRA is adjacent to Rocky Mountain National Park and the Indian Peaks Wilderness. The ANRA consists of 35,802 acres, of which 3,981 acres are privately owned. Elevations vary from 11,831 feet near Columbine Lake to 8,035 feet along U. S. Highway 34. Most of the area is forested with lodgepole pine, Engelmann spruce, subalpine fir and aspen.

The area is one of the premier year-round recreational areas in the United States, with water-based recreation being its key attraction. There is a wide range of public recreational facilities such as campgrounds, boat launches, picnic grounds, and trails, including the Continental Divide National Scenic Trail, all on or adjacent to a lake. The major streams are Meadow, Arapaho, Stillwater and Willow Creeks and the Colorado River. One quarter of the ANRA is lake surface. A portion of the Hells Canyon Research Natural Area (RNA) is within the ANRA along the north shore of Lake Granby adjacent to the Indian Peaks Wilderness.

#### **D. Other National Designations**

**Niwot Ridge Biosphere Reserve** The Niwot Ridge Biosphere Reserve was established by the United Nations as part of the Man and the Biosphere Program in 1979. Several decades of high-altitude alpine research have been conducted on this site.

Natural processes are allowed to dominate in this area. Road access into the area is provided primarily by the Peak-to-Peak Scenic Byway and the Rainbow Lakes Road. A limited number of secondary roads and a few trails provide access to other portions of the area. Fire is allowed to play as natural a role as possible. Any vegetation management that does occur is primarily for purposes of manipulative research. Insect and disease outbreaks are generally allowed to run their course. Timber harvest is not allowed.

Physical and biological high-altitude research is emphasized, maintenance of existing habitats through natural and research-related processes of both a manipulative and non-manipulative nature, and backcountry nonmotorized recreation. The Biosphere Reserve is managed for limited recreational use that occurs primarily along roads and trails during summer and fall. Hunting is permitted under State Division of Wildlife laws and regulations. Hunting access will be managed to minimize risks to ongoing research projects.

**Bowen Gulch  
Protection Area**

This area was Congressionally designated as the Bowen Gulch Protection Area in 1992 because of its unique blend of historical recreational use and pristine character. Management emphasis is on retaining its pristine nature, while providing opportunities for moderate to heavy winter motorized use and summer use that have occurred historically and are specified in the Bowen Gulch legislation.

The area is located approximately 6 miles northwest of the Town of Grand Lake and adjacent to both the Never Summer Wilderness and Rocky Mountain National Park. The area includes 10,649 acres with no private inholdings, and has been designed as the Bowen Gulch Protection Area. Elevations range from 11,686 feet on Blue Ridge to 8,806 feet near the Colorado River. Most of the area is forested with lodgepole pine, subalpine fir, Engelmann spruce, and aspen. Alpine meadows occur on Blue Ridge. A large portion of the geographic area includes one of the best examples of the spruce-fir, old-growth ecosystem on the Arapaho National Forest. The major streams in the area include the headwaters of Bowen Gulch, North, South, and Middle Supply, and Stillwater Creeks. There are no lakes. The northwest portion of the area contains a portion of the Bowen Gulch Research Natural Area.

## **E. Research Natural Areas**

### **Mount Goliath RNA**

The Mount Goliath RNA contains a large old-growth stand of bristlecone pine which is easily accessible and visited by thousands of people yearly for its scenic and educational values. The management emphasis is on protecting the natural conditions of the bristlecone pine stand while providing opportunities for interpretation, enjoyment, and study of the area.

## **F. Experimental Forests**

### **Fraser Experimental Forest**

The area is located approximately 3 miles southwest of the Town of Fraser and consists of 22,400 acres. Elevations vary from 12,804 feet at the top of Byers Peak to 8,800 feet along FDR 160.2. Most of the area is forested with lodgepole pine, Engelmann spruce, subalpine fir, and aspen. Alpine meadows and tundra occur on the high ridges and peaks. The area has been used as an experimental forest, with primary emphasis on water-yield experiments, since the 1930s. The major stream is St. Louis Creek and its tributaries. The area includes St. Louis Lake as well as several minor tarns.

Research is emphasized as the primary purpose of the Fraser Experimental Forest. Recreational use is limited to prevent interference with existing and potential research.

## **G. Special Interest Areas**

### **Stuck Creek Splash Dam SIA**

The area around the dam on Stuck Creek is designated as an SIA because of the dam's historical significance. There are only four known dams remaining from the tie-cutting era in logging history. The dam structure's two towers are still intact, although much of the support structure has deteriorated. The structure is eligible for listing on the National Register of Historic Places. The surrounding area also contains remains of what is thought to have been a logging hamlet.

### **Rist Canyon SIA**

This area provides habitat for many plant and animal species including neotropical migrant birds, orchids and other species that depend on open space. It is

important because it is surrounded by highly developed private lands. Management emphasis is on preserving this unique foothills environment.

**Homestead Meadows SIA**

The Homestead Meadows area is designated as an SIA because of the historical significance of the old home sites. Management emphasis is on preserving and interpreting the National Register of Historic Places sites within the area's boundaries.

**Todd Gulch Fen SIA**

This area contains the unusual characteristics typical of quaking fens throughout the Central Rockies biophysical region. Management emphasis is on preserving and enhancing the character of the area.

**James Peak SIA**

The James Peak SIA was designated because it contains unusual opportunities for recreation in an undeveloped area. Management emphasis is on protecting or enhancing the undeveloped character of the area while providing for public education and compatible recreational opportunities. Natural ecological processes are the principal dynamic forces at work in this area; management activities will be limited to maintaining and restoring the area to conditions characteristic of natural forest ecosystems. Motorized recreational use is prohibited all year.

The area is located between Rollins Pass and Berthoud Pass along the Continental Divide. It contains a mix of upper montane, subalpine and alpine plant communities consisting of Engelmann spruce, subalpine fir, lodgepole, limber, and bristlecone pine, aspen, krummholz, meadows, tundra, willow carrs, wet areas, glacial lakes and rock outcrops. Elevations range from 9,200 to 13,391 feet. Mount Eva, Mount Flora, and James and Parry Peaks are the prominent geographic features.

The area currently provides excellent opportunities for semiprimitive and primitive backcountry nonmotorized recreation. Cattle grazing occurs in the vicinity of Mammoth Gulch and on Nebraska Hill which is part of the Mammoth Allotment.

Access into and through the area is provided on a limited trail network that includes the Continental Divide National Scenic Trail.

**Prairie Ecosystem  
Demonstration Areas  
SIA**

These are actually two areas on the Grassland that are designated for the same reasons and will be managed the same way. Management emphasis is on providing representative native shortgrass prairie ecosystems that provide habitat for associated plant and animal species, to permit trial application of research in the shortgrass, and to emphasize information and education.

**Pawnee Buttes SIA**

The Pawnee Buttes on the Grassland were designated as an SIA because of the area's unique combination of characteristics. Management emphasis is on protecting and interpreting the special wildlife, recreational, scenic, and geological features.

**Grays Peak SIA**

The Grays Peak SIA contains two peaks over 14,000 feet tall, Grays Peak and Torreys Peak, that are hiked by thousands of people yearly. Hiking trails in the area include the Grays Peak National Recreation Trail and a portion of the Continental Divide National Scenic Trail. Management emphasis is on providing opportunities for a high level of nonmotorized recreational use and protecting the high-quality scenic and recreational values of the area while maintaining important habitat for bighorn sheep and mountain goats.

**West Stoneham  
Archaeological District  
SIA**

This area was placed on the National Register of Historic Places in 1995. Significant evidence of Native American habitation from 8,500 years ago to the mid 1800s occurs in this shortgrass prairie area of the Pawnee National Grassland. Management emphasis is on protecting and interpreting the nonrenewable heritage resources.

## H. Scenic Byways and Scenic Corridors

### **Mt. Evans National Scenic Byway**

Mount Evans National Scenic Byway (Colorado Highway 5) is the highest paved road in North America, reaching the summit of Mount Evans. The byway corridor receives a high level of recreational use, mostly motorized travel and viewing scenery and wildlife. Mount Evans Wilderness also receives a very high level of nonmotorized recreational use. The University of Denver operates under a special-use permit an observatory at the summit of Mount Evans and a research facility at Echo Lake.

High-quality developed recreational opportunities will be provided along the Mount Evans National Scenic Byway corridor. New and expanded facilities will be added to improve developed recreational opportunities and increase developed camping capacity.

### **Guanella Pass Scenic Byway**

Along the Guanella Pass Scenic Byway (County Road 381), improvements will be made to trailheads, dispersed sites. Interpretive sites will be provided.

### **Interstate 70 Scenic Corridor**

The I-70 corridor will be managed to protect the scenic quality of the area, provide viewing opportunities of the natural landscape, increase trailhead and day-use developed facilities, and improve universal access. There will be bicycling opportunities within the I-70 and U.S. Highway 6 corridors. Low-impact telecommunication sites may occur along the I-70 corridor. Existing permitted recreation residences will be allowed. The Forest Service will work with the Colorado Department of Transportation to reduce impacts of I-70, emphasizing protection of soil and water quality and wildlife habitat.

## **I. High-Use Recreation Areas**

### **Eldora Ski Area**

Downhill skiing at Eldora Ski Area will be allowed under their special-use permit and master development plan. Further improvements of the base facilities, infrastructure, and ski runs within the current boundary are expected. There will be no expansion of the area outside the boundaries currently specified in the Master Development Plan. It is anticipated that actual use levels will increase. There will, however, be no increase in the established maximum daily capacity.

The Forest Service will work and cooperate with the Eldora Mountain Resort to develop a sustainable vegetation management plan for the Eldora Ski Area and to formalize access through the ski area for the Jenny Creek cross country ski trail.

### **Berthoud Pass Ski Area**

A developed ski area will be allowed under a special-use permit at Berthoud Pass. Trailhead facilities and access to the Continental Divide will be provided for winter and summer dispersed recreation, including the Continental Divide National Scenic Trail. The appearance of the Mines Peak electronics site will be improved with emphasis on removing large structures and consolidating users.

**Winter Park Recreation Area**

The area is located approximately 1 mile south of the Town of Winter Park, and includes 13,645 acres, of which 440 acres are private inholdings. Elevations vary from 12,391 feet at the top of Russell Peak to 8,950 feet along U.S. Highway 40. Most of the area is forested with lodgepole pine, subalpine fir, Engelmann spruce and aspen. Alpine meadows and tundra occur above timberline along ridges and peaks.

The major streams are Little Vasquez, Zero, First, Second, Current, and Parsenn Creeks and the Fraser River. Zero, First, Second, and Currant Creeks drainages are characterized by open cirques with large wetlands below; the creeks originate from these wetlands and branch several times before reaching the Fraser River. These drainages are very popular with winter recreationists who use them for backcountry skiing.

The City of Denver owns and operates the Winter Park/Mary Jane Ski Areas under special use permit. Ski area development includes 20 lifts, over 1,300 acres of skiable terrain, and several on-area mountain restaurants. Summer activities include an alpine slide, outdoor concerts, mini-golf, mountain biking, and other recreational events and festivals.

The Winter Park Ski Area (WPSA) will be managed as a premier, four-season resort. The Forest Service will administer a 40-year term permit to Winter Park Ski Area. The Forest Service will review for approval WPSA's updated Master Development Plan for facility reconstruction and expansion. Development and use that is compatible with the environment will be permitted, although the area will continue to look like a large resort with many runs cut through the forest. The private land at the base of the ski area will be developed to enhance the resort's desirability as a destination resort.

**Loveland Pass Recreation Area**

Day-use developed alpine skiing and snowboarding opportunities and facilities will continue to be provided at the Loveland Pass and Mine Dumps areas, including undeveloped backcountry alpine and nordic skiing and

snowboarding. Trails and other facilities will concentrate and accommodate recreational use within 1.5 miles on either side of Loveland Pass. Both winter and summer use will be accommodated at high levels. Loop trails, interpretation, and viewing areas will be provided.

The wildlife migration corridor over the Eisenhower Tunnel will be protected, which functions as a land bridge over I-70.

The Forest Service will recognize proposals for possible expansion of Loveland Valley Ski Area to the east along the north-facing slope of Mount Sniktau.

**Saint Mary's Glacier  
Recreation Area**

Saint Mary's Glacier is an easily accessed permanent snow field in the area, and receives a very high amount of dispersed winter and summer recreational use, including skiing and snowboarding. The Forest Service will allow ski-area development as an economic-development opportunity for the Saint Mary's Glacier and Alice community.

## Appendix B Geographic Areas (incomplete list)

### **Boulder Creeks Geographic Area**

The area is located between the Town of Eldora, Rollins Pass, and 4th of July Campground. It contains a mix of upper montane, subalpine, and alpine plant communities consisting of aspen, Douglas-fir, limber pine, lodgepole pine, Engelmann spruce, subalpine fir, krummholz, grass, tundra, and rock outcrops. Elevations range from 8,400 to 11,987 feet. Rollins Pass, the Town of Eldora, Eldora Ski Area, the Moffat Road, Yankee Doodle and Jenny Lakes, East Portal, the Historic Hessie Townsite, and the 4th of July and Hessie trailheads are key geographic features in the area.

A significant portion of the land in this area (7,074 acres) is privately owned. Landownership patterns in the geographic area are extremely fragmented. Access into the area is provided via the Eldora, Fourth of July, East Portal, and Moffat Roads. All are county roads suitable for passenger car travel. An extensive network of secondary roads and numerous trails provide access to other portions of the geographic area.

### **Brainard Geographic Area**

The area is located west of the town of Ward and immediately east of the Indian Peaks Wilderness along the Brainard Lake access road. It contains a mix of subalpine plant communities consisting of Engelmann spruce, subalpine fir, lodgepole pine, limber pine, aspen, meadows, tundra, willow carrs, wet areas and rock outcrops. Elevations range from 9,700 to 11,200 feet. Brainard and Redrock Lakes, Lefthand Reservoir, South St. Vrain Creek, the Long and Mitchell Lake trailheads, and the numerous developed recreation sites in the area are the key geographic features.

This geographic area is one of the most popular recreational complexes along Colorado's Front Range. Over 100,000 people per year visit the area, with about 40 percent using the area to access the adjacent Indian Peaks Wilderness. Most visitation

occurs between late June and mid October, although the area is a popular four-season destination. A parking fee is collected during the summer and fall seasons.

The current transportation system consists of the Brainard Lake and Lefthand Reservoir access roads (Boulder County Road 102 and Forest Development Road 232, respectively) and a major network of trails. About half of the trails are currently suitable for winter use only.

### **Caribou Geographic Area**

The area is located between the town of Eldora on the south and the City of Boulder's municipal watershed on the north. It contains a mix of upper montane and subalpine plant communities consisting of aspen, Douglas-fir, lodgepole pine, limber pine, ponderosa pine, Engelmann spruce, subalpine fir, meadows, krummholz, willow carrs, alpine tundra, and rock outcrops. Elevations range from 8,330 to 11,000 feet. Bald Mountain, the Caribou Flats willow carr, Nederland, the old Caribou Townsite and Rainbow Lakes Campground are the key geographic features.

The majority of the land in the geographic area (13,181 acres) is not National Forest System Land. A large portion of this non-federal land is the City of Boulder's municipal watershed which consists of one large block of land that does not allow public access. In addition, the City of Boulder and Boulder County own about 2,500 acres of open space lands, purchased from Caribou Ranch in 1996. Landownership patterns in the remainder of the area are extremely fragmented.

The area contains extensive wetland and riparian habitats that are significant ecological features. Cattle grazing occurs in the southern and western portions of the geographic area which is part of the Caribou Allotment.

Primary access into the area is via the Caribou and Rainbow Lakes Roads. These are both county roads suitable for passenger car travel. The major through-

route from Eldora to Rainbow Lakes Campground is the Caribou Flats 4WD road. This road and the 4WD roads to the Pandora, Anchor, and Canadian mines are also county roads. There are many other two-track roads in the area, the highest concentration being between Caribou Hill and Rainbow Lakes Campground.

**James Creek  
Geographic Area**

The area is located between the towns of Lyons and Ward. It contains a mix of lower and upper montane plant communities consisting of aspen, Douglas-fir, lodgepole pine, ponderosa pine, meadows, willow carrs, and rock outcrops. Elevations range from 5,600 to 9,441 feet. Jamestown, Gold Lake, Fairview Peak, and Lefthand Canyon are the prominent geographic features.

The Deer Creek Allotment is in the geographic area and is currently open to livestock grazing. Our 1996 NEPA decision closes the allotment to future grazing after the 1997 season.

A significant portion of the land in this area (37 percent) is privately owned, and landownership patterns are highly fragmented. Many private inholdings are individual building sites with single family residences or parts of mountain subdivisions. Many year-round residents live in the area.

There is an extensive transportation system in the geographic area. Primary access is via Colorado Highways 7 and 72 and Boulder County's Lefthand Canyon and James Canyon Drives, which are all major paved routes. State Highway 72 is part of the Peak-to-Peak Scenic Byway. Many county and private roads provide passenger-car access to numerous subdivisions, private parcels, and the National Forests. There is an extensive network of 4WD routes and single track trails, particularly in the Lefthand Canyon OHV area. There is a limited trail network.

**Lump Gulch  
Geographic Area**

The area is located between the town of Nederland and the hydrographic boundary between Boulder

Creek and Clear Creek. It contains a mix of lower and upper montane and subalpine plant communities consisting of aspen, Douglas-fir, limber pine, lodgepole pine, ponderosa pine, Engelmann spruce, subalpine fir, and meadows. Elevations range from 7,600 to 10,929 feet. South Boulder Creek, Kelly-Dahl Campground, the Peak-to-Peak Scenic Byway, the western portion of the Winiger Ridge critical elk winter range, and the towns of Nederland and Rollinsville are the prominent geographic features.

The geographic area is located in Boulder and Gilpin Counties. A significant portion of the land (47 percent) is privately owned, and landownership patterns are extremely fragmented. A large portion of the private lands is subdivided and many year-round residents live in the area.

Several portions of the area receive significant dispersed recreational use. The most notable of these is along Haul Road (also known as West Magnolia) where recreational use by large groups has historically occurred.

There is a very extensive transportation system in the geographic area. Primary access is via Colorado Highways 72 and 119. Portions of these highways make up part of the Peak-to-Peak Scenic Byway. Many county and private roads provide passenger car access to numerous subdivisions, private parcels, and the National Forests. There are a significant number of 4WD roads and road networks. The most well known of these are located in the Winiger Ridge, Haul Road, Dakota Hill and Jenny Lind Gulch portions of the geographic area. There is only a limited trail network.

### **Mammoth Geographic Area**

The area is located between the settlement of Tolland and Kingston Peak, along Mammoth Gulch. It contains a mix of upper montane, subalpine, and alpine plant communities consisting of aspen, Douglas-fir, lodgepole pine, limber pine, Engelmann spruce, subalpine fir, krummholz, willow carrs, rock

outcrops, alpine lakes, meadows and tundra. Elevations range from 9,100 to 12,147 feet. Kingston Peak and Nebraska Hill are the prominent geographic features.

The area currently provides excellent opportunities for both motorized and nonmotorized backcountry recreation. Cattle grazing occurs throughout the geographic area, which is part of the Mammoth Allotment.

Motorized access into and through the area is provided by the Apex and Kingston Peak roads. A limited number of secondary roads and trails provide access to other portions of the geographic area.

### **Middle St. Vrain Geographic Area**

The area is located west of Colorado Highway 72 between the towns of Allenspark and Ward. It contains a mix of upper montane and subalpine plant communities consisting of aspen, Douglas-fir, limber pine, lodgepole pine, ponderosa pine, Engelmann spruce, subalpine fir, willow carrs, meadows, and rock outcrops. Elevations vary from 8,200 to 10,964 feet. Middle St. Vrain canyon, Olive Ridge, Peaceful Valley and Camp Dick Campgrounds, the Peak-to-Peak Scenic Byway, and the towns of Allenspark, Ferncliff, and Meeker Park are the key geographic features.

Thirty-four percent of the land in this area is privately owned. Several private inholdings are mountain subdivisions and there are many year-round residents.

The area's extensive transportation network includes primary access via Colorado Highways 7 and 72 (part of the Peak-to-Peak Scenic Byway), many county roads suitable for passenger car travel and a significant number of 4WD roads and road networks. The most well known routes are located in the Rock Creek, Bunce School, Ironclads, Park Creek, Cave Creek, Middle St. Vrain, and Coney Flats portions of the area. There is also a well developed trail system.

### **North St. Vrain**

The area is located between the Town of Lyons and

**Geographic Area**

Rocky Mountain National Park, along North St. Vrain Creek. It contains a mix of montane plant communities consisting of ponderosa pine, lodgepole pine, Douglas-fir, aspen, grassy meadows and hillsides, shrubs, rock outcrops, willow carrs and other riparian communities. Elevations range from 5,600 to 9,080 feet. North and South St. Vrain Canyons, the Peak-to-Peak Scenic Byway, Buttonrock Reservoir and the Towns of Raymond and Riverside are the key geographic features.

North St. Vrain Creek is one of the last undeveloped, free-flowing stream corridors along Colorado's Front Range. It passes through a steep, narrowly incised canyon between Colorado Highway 7 and Buttonrock Reservoir. Most of the stream length in this section is unroaded.

The area's extensive transportation network includes primary access via Colorado Highways 7 and 72 (part of the Peak-to-Peak Scenic Byway), a significant number of county roads suitable for passenger car travel, and several 4WD roads, of which the Johnny Park and Buttonrock routes are the best known. There is also a significant trail system.

**Sugarloaf Geographic Area**

The area is located between the City of Boulder and the Town of Nederland. It contains a mix of lower and upper montane plant communities consisting of aspen, Douglas-fir, lodgepole pine, ponderosa pine, and meadows. Elevations range from 6,100 to 9,441 feet. Sugarloaf Mountain, Barker Reservoir, Boulder Canyon, the Black Tiger Fire, and Magnolia Townsite are the prominent geographic features. The Switzerland Trail, which is on the National Register of Historic Places, is also a key geographic feature.

Forty-three percent of the land in the area is privately owned, and landownership patterns are more fragmented than in any of the other geographic areas on the Boulder Ranger District. The majority of these private inholdings are either individual building sites with single family residences on them or parts of mountain subdivisions. There are also more year-

round residents in this geographic area than in any of the others on the District.

The fragmented ownership is primarily the result of mining activity that occurred prior to the establishment of the National Forest in 1917. There are a wide variety of mining remnants on both public and private lands which include numerous mine shafts, adits, stopes, and test holes. The Colorado Mined Land Reclamation Board is working to close hazardous mine openings throughout the geographic area.

A wide variety of human activities and uses may be contributing to an ongoing invasion of noxious weeds into the area. Major infestations of leafy spurge and toadflax are located near the Todd Gulch Quaking Fen and on Peewink Mountain.

The area's transportation network is extensive. Primary access is via Colorado Highways 119 and 72 and Boulder County's Sugarloaf and Magnolia Roads which are all major paved access routes. Portions of Highways 119 and 72 are part of the Peak-to-Peak Scenic Byway. An abundance of county and private roads provide passenger car access to the many subdivisions and private parcels as well as to the National Forests. Many 4WD roads and road networks exist (several of these are also county roads). The most well known 4WD networks are in the Peewink Mountain and Gordon and Pennsylvania Gulch portions of the area. There are no system trails.

### **Thorodin Geographic Area**

The area is located between the town of Pinecliffe and Mt. Thorodin. It contains a mix of lower and upper montane plant communities consisting of aspen, ponderosa pine, lodgepole pine, Douglas-fir, Engelmann spruce, subalpine fir, meadows and rock outcrops. Elevations range from 7,300 to 10,540 feet. Mt. Thorodin, Gross Reservoir, and the towns of Pinecliffe and Wonderview are the key geographic features.

The largest block of National Forest land in the geographic area is located west of Gross Reservoir along Winiger Ridge. In addition to being a critical elk winter range, Winiger Ridge is a small part of the area covered by the Federal Energy Regulatory Commission's permit to the City of Denver for Gross Reservoir. Ownership in the remainder of the area is moderately fragmented by fairly large blocks of private land that are in many cases subdivided.

The area's extensive transportation network includes primary access via Colorado Highway 72 and a significant number of county and private roads that provide passenger car access to the many subdivisions and other private parcels. The Winiger Ridge Road network is the best known of the isolated 4WD routes. There is also a limited trail system.



ARAPAHO-ROOSEVELT NATIONAL FORESTS -PAWNEE NATIONAL GRASSLAND  
LAND AND RESOURCE MANAGEMENT PLAN

# STRATEGY

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## **Introduction**

This document is the second of three parts of the Land and Resource Management Plan for the Arapaho and Roosevelt National Forests and the Pawnee National Grassland. This document is the strategy. It describes suitable uses. It contains a prospectus for anticipated levels of uses and activities. Finally, it describes how this strategy will be monitored.

The first document is the vision. It provides the context for management of the Forests and Grassland. It describes a vision for the future. It describes the niche that these public lands provide to local communities, the state of Colorado, the Region and the Nation. It describes the desired future condition of the landscape and disturbance processes and the acceptable limits of the system. It describes the benefits and experiences that these lands can supply. It also describes how we will address the challenges we may face.

The third document is the design criteria. This document contains the legally required standards governing timber harvest, as well as an index of Forest Service Handbook and other guidance that governs use of the Forests and Grassland.

## **Suitable Uses And Use Strategies**

As provided for in 36 CFR 219.4(a)(4) the National Forests and Grassland are suitable for a variety of uses except when specific areas are determined not be suited.

Table 1 shows where specific uses are suitable or not suitable in the Arapaho and Roosevelt National Forests and Pawnee National Grassland. Suitable uses are also subject to standards and other direction in the design criteria portion of the Plan.

**Table 1. Suitable Uses by land class zones.**

[Click HERE for a map of these six land class zones.](#)

Use (Click associated map for summary of use)	Special Designation	Ecological Processes Emphasis	Primary Recreation Emphasis	Renewable Resource Use Emphasis	Ecological/ Residential Interface	Developed Areas
<a href="#">Timber Harvest Timber.map</a>	Not Suitable	Not Suitable	Not Suitable	Suitable	Not Suitable	Not Suitable
<a href="#">Livestock Grazing Grazing.map</a>	Not Suitable	Suitable	Suitable	Suitable	Not Suitable	Not Suitable
Tree Thinning	Not Suitable	Suitable	Suitable	Suitable	Suitable	Suitable
<a href="#">Summer Motorized Recreation Summer motoriz map</a>	Not Suitable	Suitable	Suitable	Suitable	Not Suitable	Not Suitable
Summer Non-motorized Recreation Summer nonmot map	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable
<a href="#">Winter Motorized Recreation Winter motorized</a>	Not Suitable	Not Suitable	Suitable	Suitable	Not Suitable	Not Suitable
<a href="#">Winter Non-motorized Recreation Winter nonmotor map</a>	Suitable	Suitable	Suitable	Suitable	Suitable	Suitable
<a href="#">Oil and Gas Development Oil and gas Stipulations map</a>	Not Suitable	Suitable	Suitable	Suitable	Not Suitable	Not Suitable
Prescribed Fire	Suitable	Suitable	Suitable	Suitable	Suitable	Not Suitable



**Land Class Zones**      The land class zones in Table 1 are as follows:  
Special Designations – These are formally designated areas with land uses consistent with the designation.

Ecological Processes Emphasis – In these areas, ecological values are in balance with human occupation and consideration is given to both. Resource management activities may occur, but natural ecological processes and resulting patterns will normally predominate. Ecosystems are allowed to function naturally while resource use may change over time to accommodate the ecological factors. Although these areas are characterized by predominantly natural appearing landscapes, an array of management tools may be used to restore or maintain relatively natural patterns of ecological progress. This will result in some evidence of human activities. Users expect to experience some isolation from the sights and sounds of people in a setting that offers some challenge and risk.

Primary Recreation Emphasis – In these areas, ecological values are managed to provide recreational use, but are maintained well within the levels necessary to sustain overall ecological systems. Resource use for other values is not emphasized and has little impact on ecological structure, function, or composition. Human use is recreation oriented. Sights and sounds of people on the site are expected and may even be desired.

Renewable Resource Use Emphasis – These areas are primarily forested ecosystems which are managed to meet a variety of ecological and human needs. They are often characterized by a substantially modified natural environment. A wide variety of structure and composition is present; some showing the effects of past management activities; others affected by predominantly natural forces such as fire, insects and diseases. Ecological conditions are maintained, while emphasizing selected biological structures and compositions considering the range of natural variability. These lands often display high levels of investment, use and activity; density of facilities; and evidence of vegetative manipulation. Users expect to see other people and evidence of human activities. Facilities supporting the various resource uses are common

Ecological/Residential Interface – These are public lands intermingled with private lands to such an extent that ecosystem management objectives for National Forest System lands must be tempered by other landowner's uses and objectives. Human activities have altered the natural appearance of these landscapes in most areas on both the public and private lands. Sights and sounds of people predominate. Private land use is often residential. Resource use is not planned on a sustainable basis, but may occur in concert with surrounding private land values.

Developed Areas – These areas include developed recreation complexes, ski resorts, designated utility corridors, mines, nurseries, and administrative sites.

**Use  
Strategies**

**Wildland Fire Management**

[Click HERE for map](#)

Wildland fire management strategies have been selected for each geographic area. These strategies provide an overall plan for managing unplanned ignitions, with consideration given to the values threatened, potential fire behavior, legal constraints and the natural resources management objectives. All wildland fires will be controlled by one of three strategies:

Direct Control: The immediate and complete extinguishment of a wildfire. Usually this control is restricted to new fire starts, to steady-state fires that have not reached large sizes, and to selected portions of large fires. Direct control also includes exposure protection in which critical resources such as houses are shielded from a fire. Typically, the goals, vision, and management direction of the ARF does not warrant this fire management strategy. The costs, risks, and implementation of direct control strategies will be shared by the local stakeholders who require this strategy to maintain their social/economic values.

Perimeter Control: A strategy that seeks to confine the active zone that is responsible for fire spread. Actual fireline location (i.e., direct vs. indirect) will be selected to minimize the combined cost of suppression and the values that could be lost in a fire. The benefits of fire's effects may also be used to determine location.

Prescription Control: The fire is considered to be controlled as long as it burns within specified geographic boundaries and predetermined burning properties. These parameters are contained within a written prescription. The prescription allows those fires to continue to burn that are seen as advancing management goals.

**Recreation Opportunity Spectrum**

The Recreation Opportunity Spectrum (ROS) map shows the degree which an area satisfies certain recreational experience needs based on extent to which the natural environment has been modified, they ty] facilities provide, the degree of outdoor skills need to enjoy the area the relative density of recreation use.

**Proposed Special Areas**

### **Proposed Wilderness**

No new separate Wilderness areas are recommended. An addition of 8,810 acres to existing Wilderness areas are recommended.

#### *North Fork Cache la Poudre*

### **Proposed Wild and Scenic Rivers**

The eligibility and suitability studies for this river show that this river is one of the last remaining free-flowing sections along the Colorado front range with a scenic gorge and waterfalls and threatened and endangered species habitat. Recommending this fork for designation connects well with the existing designation on the main stem of the river.

#### *Hell Canyon*

### **Proposed Research Natural Areas**

This 18,312-acre area is located on the Sulphur Ranger District west of the Continental Divide; 17,067 acres lie within the Indian Peaks Wilderness. The area is bounded on the north by Rocky Mountain National Park and is adjacent to the Paradise Park Research Natural Area within the National Park. These two areas would enhance each other's values and would provide an opportunity for interagency cooperation in management, research, data-gathering, and monitoring.

The area includes 27 ponds and lakes and the complete watersheds of six small creeks. The diversity of ecosystem types is very extensive, including good representation of lodgepole pine and Engelmann spruce/subalpine fir forests and subalpine grasslands. The forests occur over a broad range of elevations, slopes, aspects, and successional stages. Areas of alpine tundra, sagebrush-bitterbrush shrublands, and montane, subalpine and alpine wetlands are also found in this site. Pleistocene glaciation has produced a landscape of peaks, high-elevation cirques, and U-shaped canyon bottoms typical of the Front Range in Colorado.

***Bowen Gulch***

This 10,126-acre area is located on the Sulphur Ranger District west of the Continental Divide near the southern end of the Never Summer Mountains. The area is contained within portions of the Never Summer Wilderness and the Bowen Gulch Protection Area and includes the complete watershed of Bowen Gulch. This proposed RNA contains one of the largest and most outstanding areas of old-growth Engelmann spruce/subalpine fir forest in Colorado. Smaller areas of lodgepole pine forest and alpine tundra are also found within the site.

***Boston Peak Fen***

This 550-acre area is located on the Redfeather Ranger District in the upper Laramie River valley. The site contains a unique wetland ecosystem supporting outstanding examples of rare plant populations and unusual fen and willow carr plant communities. The wetland is also noteworthy for its deep deposits of peat and lake sediments. The complete watershed of this wetland is contained within the proposed RNA and is primarily lodgepole pine forest with small areas of limber pine and aspen.

***Lone Pine***

This 4,558-acre area is located on the Redfeather Ranger District and borders the western boundary of the Lone Pine State Wildlife Area. This site includes a large trail less area of low-elevation ponderosa pine and Douglas-fir forests in gently rolling terrain. There are also several small canyons and excellent examples of Parry's oat-grass montane meadows. The site would also offer added protection to an extensive occurrence of a Region 2 endemic sensitive plant species, the branched cinquefoil.

***Pennock Creek***

This 6,330-acre area is located on the Estes-Poudre Ranger District and borders the northern boundary of Rocky Mountain National Park. This site provides a good representation for high-elevation limber pine forest. The north-facing drainage basin of this site includes the complete watershed of Pennock Creek and contains one of the larger examples of Engelmann spruce/subalpine fir forest east of the Continental Divide in Colorado. Much of this spruce-fir forest is old growth. Most of this area (5,698 acres) is located in

the Comanche Peak Wilderness.

*Sheep Creek*

This 1,250-acre area is located on the Estes-Poudre Ranger District approximately 12 miles west of Fort Collins. This area is notable for its dense riparian vegetation along a perennial stream in a foothills canyon of the Front Range. A variety of eastern woodland relict species such as the beaked hazelnut are found on this site. The south-facing slopes of this canyon also contain the Colorado wild rye/wax currant plant community, which is endemic to the northern Front Range of Colorado. The uplands are predominately ponderosa pine and Douglas-fir.

*West Creek*

This 2,997-acre area is located on the Estes-Poudre Ranger District and lies within the Comanche Peak Wilderness. This area adjoins the West Creek Research Natural Area in Rocky Mountain National Park. These two areas would enhance each other's values and would provide an opportunity for interagency cooperation in management, research, data-gathering, and monitoring. The area is primarily Douglas-fir, ponderosa pine and lodgepole pine forest, with a particularly large occurrence of the Douglas-fir/waxflower plant community.

*North St. Vrain*

This 4,793-acre area is located on the Boulder Ranger District and includes approximately 6 miles of North St. Vrain Creek, one of the major streams that have cut deep canyons as they flow east out of the Front Range. North St. Vrain Creek is one of the last undeveloped, free-flowing stream corridors along Colorado's Front Range. It passes through a steep, narrowly incised canyon between Colorado Highway 7 and Buttonrock Reservoir. Most of the stream length in this section is unroaded.

In addition to the diverse and high-quality examples of riparian vegetation, the area also contains the largest known expanses of the endemic shrubland plant community, antelope bitterbrush/mountain muhly, and stands of old-growth ponderosa pine. The north-facing slopes of the canyon are Douglas-fir forest and the south-facing slopes and uplands are mostly a

mixture of shrublands, grasslands, and open ponderosa pine stands. The area also offers protection to populations of the Colorado aletes, a rare plant species that is on the Region 2 sensitive species list.

*Indian Caves*

This 386-acre area is located in the northeast portion of the Pawnee National Grassland near the Logan County line. The northern part of this area is a relatively flat upland dominated by blue grama-buffalo grass prairie containing many small depressions in which spike-rush grows. Small amounts of needle-and-thread blue grama prairie and little bluestem-sideoats grama prairie are also found on the site. The uplands fall away to the south in a band of cliffs and steep slopes that are dominated by shrublands that include chokecherry and skunkbush.

*Little Owl Creek*

This 1,108-acre area is located in the western portion of the Pawnee National Grassland about 6 miles northeast of the town of Nunn. The area includes good examples of short-grass prairie on soils derived from the Laramie Formation. Most of the short-grass prairie is the blue grama-buffalo grass type, with smaller areas of plant communities containing varying mixtures of sideoats grama, needle-and-thread, fourwing saltbush, sand dropseed, and yucca. The area also contains riparian and lowland plant communities along intermittent streams and nearby perennial ponds. The area provides habitat for two Region 2 sensitive species, the ferruginous hawk, the Iowa darter, and the mountain plover, a U.S. Fish and Wildlife Service Candidate bird species.

*Keota*

This 827-acre area is located in the central portion of the Pawnee National Grassland about 3 miles southeast of the town of Keota. The area includes good examples of short-grass prairie on soils derived from the White River Formation, with a good representation of fourwing saltbush shrublands as well as the more common blue grama-buffalo grass prairie. The area provides small rock outcrops that provide habitat for a diversity of wildlife. This proposed RNA also has known occurrences of three Region 2 sensitive species, the ferruginous hawk, swift fox, and mountain plover,

a U.S. Fish and Wildlife Service Category bird species.

## **Prospectus**

The Arapaho and Roosevelt National Forests and Pawnee National Grassland are located along the Front Range of the Colorado Rocky Mountains. Both feel the urban influence of not only the metropolitan Denver area but also the rapidly growing population that stretches from Colorado Springs north to Fort Collins. The Arapaho and Roosevelt National Forests and Pawnee National Grassland are easily accessible to large numbers of people from these urban settings as well as to millions of visitors to Colorado. Land-management activities are readily seen and tracked by these repeat visitors who have an ongoing stake in what is happening at areas familiar to them. Much of the Forest provides a scenic backdrop to the Front Range urban corridor. The corridor's backdrop provides both a value and an expectation for those within the Forests and Grassland boundaries as well as for those who view it from a distance.

The following information describes recent trends and expectations regarding levels of experiences, goods and services provided by the Forests and Grassland, as well as anticipated resource improvements. The Forest Supervisor shall strive to plan and implement projects that contribute to achieving desired conditions as outlined in the vision document, while meeting the standards as outlined in the design criteria document. This information will be updated on a regular basis to reflect changes in emphasis or budgets.

**Performance History**

<b>Objectives and Activities</b>	<b>Units</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>
Road and trail obliteration	Miles	N/A	40	57
Wildlife habitat investment	Acres	475	1785	2000
Fuels treatment	Acres	600	83	586
Trail construction and reconstruction	Miles	12.7	4.1	5.2
Timber offered for sale	MBF	1033	1500	1807
Land boundaries maintained	Miles	15.8	13	8.5
Land ownership adjustments	Acres	0	1322	1053
System road construction	Miles	3.3	3.9	1.4
Reconstruct or rehabilitate dispersed camping areas	Sites	5	0	3
Upgrade developed but substandard recreation facilities	Sites	67	72	62
Etc.				

**Program Strategies**

In their strongly urban-influenced setting, the Forests and Grassland are managed to meet legal mandates for providing multiple uses. Meeting Congressional intent to provide a sustainable flow of resources is accomplished while assuring long-term ecosystem health and biological diversity. The Forests and Grassland provide traditional commodities such as timber, grazing and minerals as well as an important source of water for both municipal and agricultural use in support of the large urban population. Much of the vegetation treatment that is done through timber harvest is to improve wildlife habitat, reduce forest fuels in areas of high potential wildfire risk, restore forest and grasslands to healthier conditions, and retain an aesthetically pleasing natural environment.

In order to accomplish the multiple-use mission of the Forest Service in an area adjacent to large urban populations, forestwide management implementation must balance the demands of people’s vastly different resource-use values with maintaining ecosystem health. For example, vegetation management is a major tool for both

commodity production and maintaining wildlife habitat that protects species from being listed as threatened or endangered. To attempt to achieve this balance, the Arapaho and Roosevelt National Forests and Pawnee National Grassland will focus management emphasis on:

- biodiversity, ecosystem health and sustainability (air, soil, vegetation, water quality and water supply)
- human use (sustainable developed dispersed recreational opportunities, wilderness use, travel)
- land use and ownership

### **Program Objectives**

Many variables affect achievement of objectives that cannot be fully assessed when a plan is revised or amended. Legal mandates, Congressional intent as directed by annual budgets, and political issues over which the local Forest or Grassland manager has little or no control all influence performance. Given this situation, the mix and level of activities will be determined each year, utilizing every opportunity to move toward the Forest or Grassland desired conditions, and to contribute to the Forest Service's national strategic goals. Please see the section entitled "Performance Risks" for a discussion of these and other risks associated with implementation of this Forest plan.

### **Ecosystem Health**

#### **Watershed Conditions**

1. Where necessary, system roads, trails and "ways" will be obliterated to improve watershed condition and wildlife habitat effectiveness.

3-5 Year Trend  
xxxx miles/year

10 Year Trend  
44 miles/year

2. Following are the existing condition classes and anticipated trends for sixth-level watersheds.

**Table 1.2. Summary of Existing Watershed Condition Categories <sup>a</sup>**

Watershed Condition	Number of Watersheds		
	Class I, Functional	Class II, At-risk	Class III, Non-functional
Existing	41	87	19
10 year trend	42 - 48	83 - 86	16 - 19

3. Non-point pollution will be treated. Priority will be given to Class II and III watersheds and streams which are not fully supporting uses designated by the State of Colorado. Major sources of pollution include abandoned mines as well as human-induced sedimentation.

3-5 Year Trend	10 Year Trend
xxxx acres/year	49 to 160 acres/year

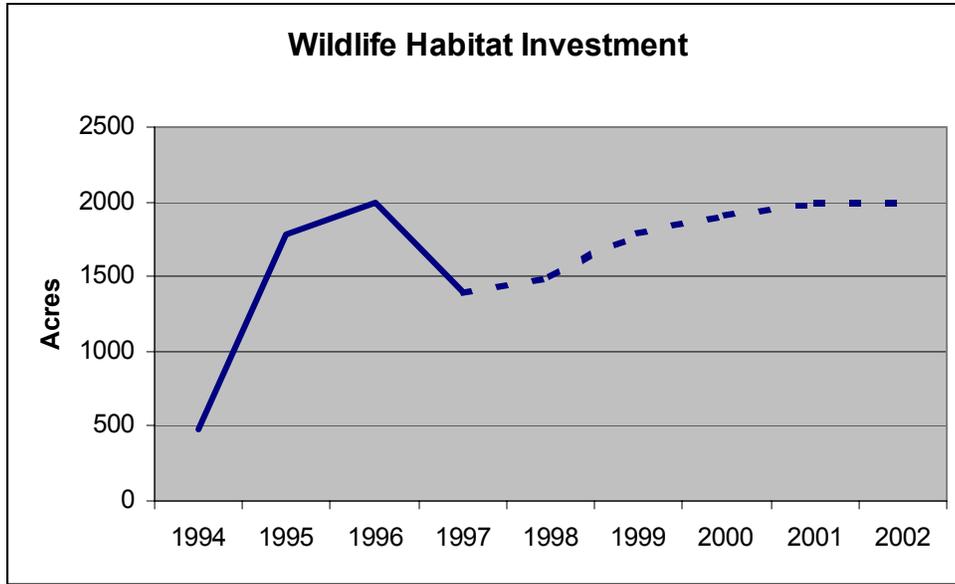
**Conditions for Species**

4. Habitat will be improved for fish, wildlife, and plant species, including threatened, endangered or sensitive species.

5. Manage for a minimum of 12 prairie dog towns on 200 acres for minimum viable populations, and a maximum of 30 towns on 1,000 acres for compatibility with other resources and neighboring landowners on the Pawnee National Grassland. Towns should occur in clusters of three or more where each is three miles or less from another town to allow interbreeding of different populations and to perpetuate genetic viability.

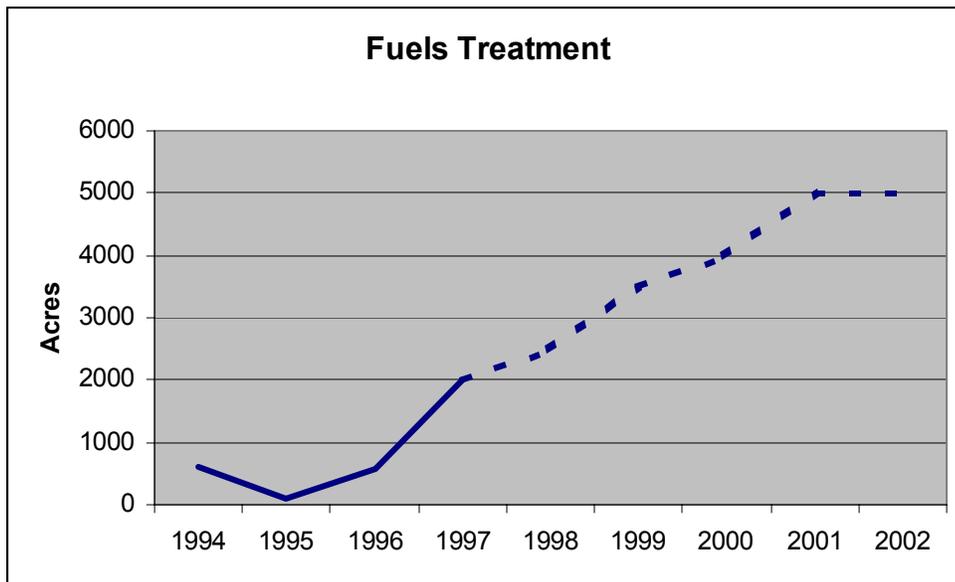
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<sup>a</sup> Watershed health is improved through judicious daily decisions in overall Forest management, not just through watershed-improvement projects alone.



### Forest Health

6. The number of high risk/high value, and high and moderate risk acres will be reduced. Both mechanical and prescribed fire treatments may be used.

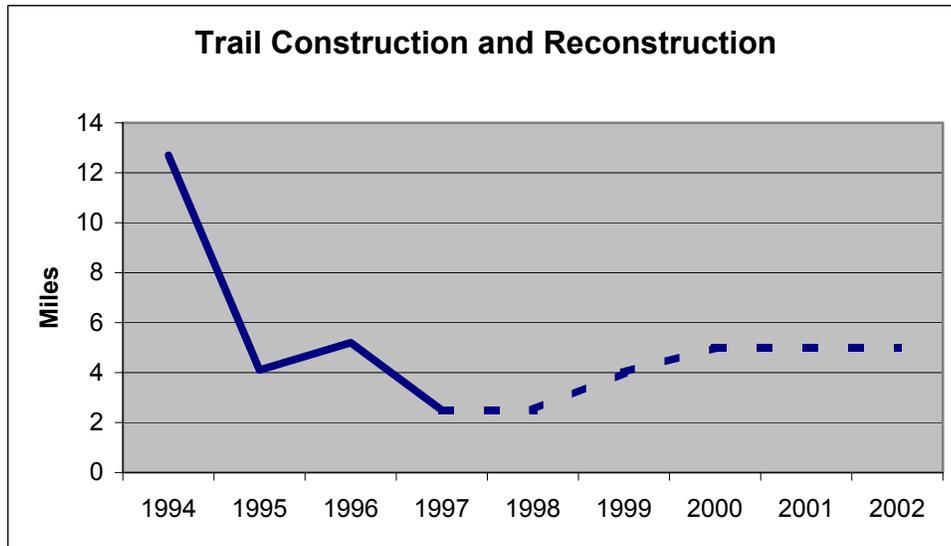


*Multiple Benefits to  
People*

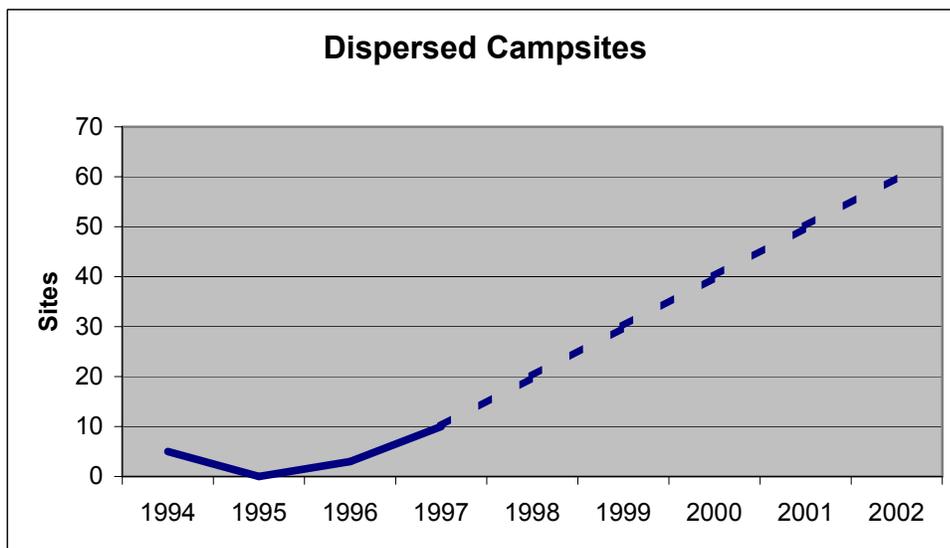
**Outdoor Recreation Opportunities**

7. Approximately 1.5 to 3.0 miles of System trails will be reconstructed annually through 2007.

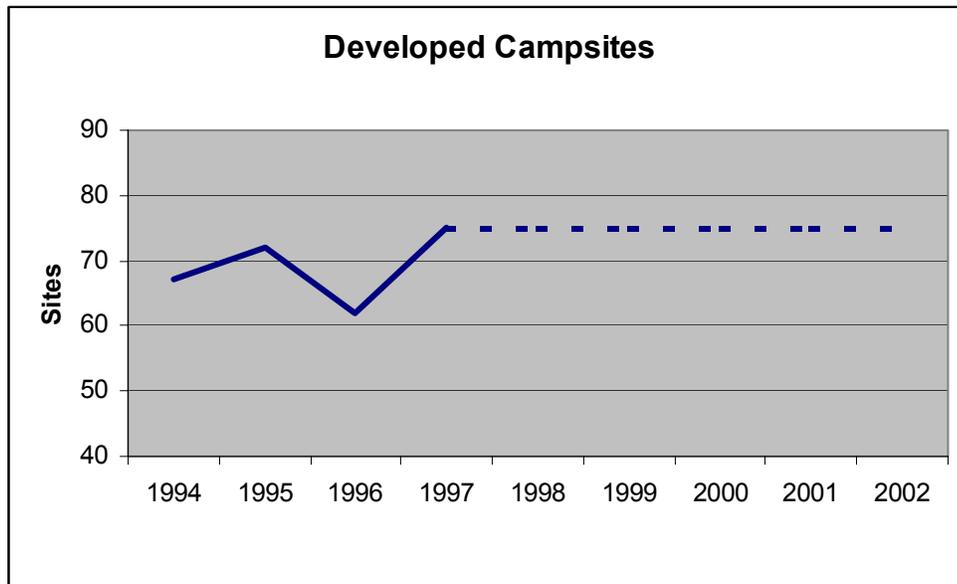
8. Approximately 1.0 to 2.0 miles of System trails will be constructed annually through 2007.



9. Reconstruct or rehabilitate 0-60 high impact dispersed camping sites per year.



10. Upgrade 60 to 75 developed but substandard recreation sites per year.

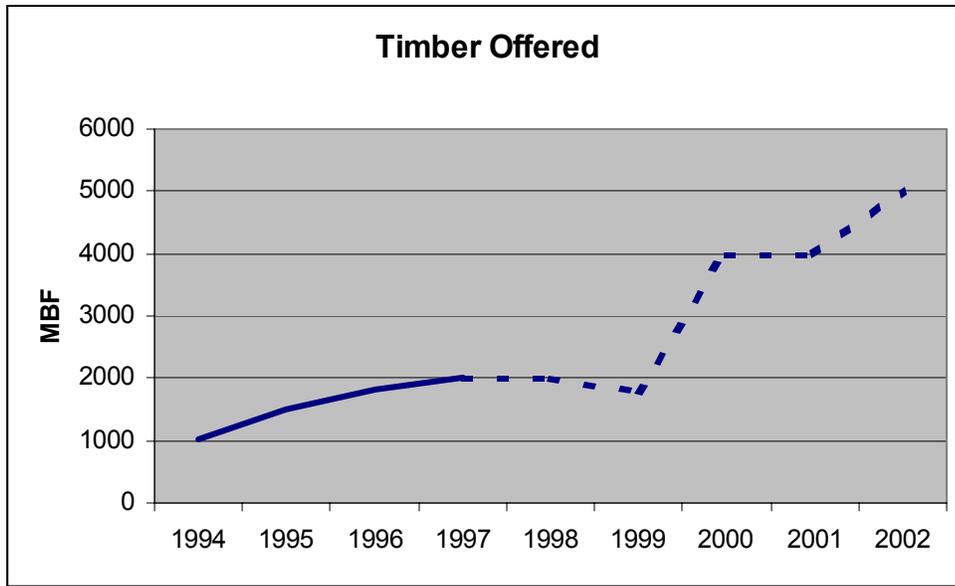


### **Wilderness Benefits and Values**

11. Designated wilderness campsites will be provided where the resource impacts of dispersed camping are severe. Numbers to be consistent with resource capacity by 2007.

### **Capability to Provide Uses, Values, Products and Services**

12. Wood products will be offered for sale to local markets where consistent with management area direction and desired future conditions.



*Scientific and Technical Assistance*

13. The Forest will develop and use the best scientific information available to deliver technical and community assistance and to support ecological, economic and social sustainability.

*Effective Public Service*

**Fiscal Accountability**

14. The Forest will implement improved financial management practices designed to achieve fiscal accountability.

**Land Uses and Ownership**

15. Forest and Grassland resources will be protected or enhanced through significantly improved boundary management, access and adjustments in land ownership.

**Table 1.6. Land Ownership/Boundary Management Strategy**

<b>Lands/Use Strategy</b>	<b>Current Needs - 10/1/97</b>	<b>10 year trend</b>
Identify National Forest System Boundaries	8400 miles	8,375 miles
Maintain NFS Boundaries	460 miles	415 miles
Reduce NFS lands without adequate access	71,567 acres	58,567 acres
Consolidate NFS lands through land ownership adjustment (land exchange, Small Tracts Act acquisitions)	66,024 acres	55,974 acres

16. The number of existing lands backlogs will be reduced for types of cases listed in Table 1.7.

**Table 1.7. Lands/Uses Backlog Strategy**

<b>Type of Case</b>	<b>Current Backlog (number)</b>	<b>10 year trend. Reductions in Current Backlog at Base Level Funding</b>
Applications on file from entities wishing to cross NFS (under Federal Land Policy and Management Act of 1976)	156 Applications	56 Applications
Encroachments	3,813 Cases	3,435 Cases
Small Tracts Act Applications	140 Applications	40 Applications
Special-Use Permit applications other than FLPMA	64 Applications	No Applications
Expired permits or permits needing new authorization	261 Permits	No Permits

## Forest Roads and Trails

17. "Ways" will be converted to National Forest System roads or trails.

3-5 Year Trend	10 Year Trend
xxx miles/year	30 miles/year

18. System roads and trails will be reconstructed as needed.

3-5 Year Trend	10 Year Trend
xxx road miles/year	7 road miles/year
xxx trail miles/year	7 trail miles/year

19. New nonmotorized and motorized trails will be developed.

3-5 Year Trend	10 Year Trend
xxx miles/year	25 to 110 miles/year

20. Where necessary, new System roads will be constructed (that will remain open.)

3-5 Year Trend	10 Year Trend
xxx miles/year	1-4 miles/year

21. System travelways will be maintained.

3-5 Year Trend	10 Year Trend
20 percent/year	20 percent/year

## Performance Risks

The Forest operates in a dynamic environment, characterized by uncertainties in both internal and external operating conditions, due to fluctuations in the natural environment and the institutional environment. If events unfold in a manner that was not anticipated when this prospectus was prepared, attainment of the objectives shown above will be affected.

## *Risks Related to the Natural Environment*

Fires, insect or disease outbreaks, and other disturbances are likely to occur, and could significantly alter current conditions.

The Forest has experienced *xx* wildfires in the last 10 years. These fires have burned *xx* acres, distributed unequally over the landscape. Analysis of the

potential for insect outbreaks indicates that approximately 45 percent of the spruce forest on the Arapaho-Roosevelt National Forest (ARNF) may have a high susceptibility to spruce beetle, and that approximately 10 percent of the pine forest may have a high susceptibility to mountain pine beetle. Predictions of where and when subsequent disturbances will occur is an inexact science, and if future events exceed historical averages, or are concentrated in areas that are particularly vulnerable (urban interface, riparian areas, or special habitats), then the extent, location, and timing of management activities could all be affected.

Species receiving special management emphasis could experience a change in status.

The mountain plover is currently proposed for listing as threatened under the Endangered Species Act. This species is known to occur on the Pawnee National Grassland (PNG). The black-tailed prairie dog also occurs on the PNG, and the US Fish and Wildlife Service (FWS) has determined that it is a candidate for listing, (i.e., warranted for listing as threatened, but precluded by other priorities). If these species receive formal listing status, consultation with the FWS will be undertaken to determine what, if any, changes would be needed to management direction contained in the Forest plan.

***Risks Related to the  
Institutional  
Environment***

The Forest budget could differ from projections.

The trends in accomplishment of objectives shown above are dependent on the Forest receiving an operating budget that is similar to its experienced budget over the last three years. Fluctuations in the budget, either upward or downward, would likely cause a change in the direction and/or magnitude of projected accomplishments. In addition, changes in the mix of funds between program areas also have the potential to affect the rate or magnitude of performance.

National or Regional strategic initiatives may emerge in response to broad-scale issues.

This Forest plan is linked to the agency's national strategic plan (see Part I - Policy and Vision) which is updated every three to five years. Historically, both Congress and the Executive have also instituted program initiatives outside of the forest planning process that affect much or all of the National Forest System (e.g., the roadless rule, the National Fire Plan, and the National Energy Policy). Such changes in national direction have the potential to add to, override, or otherwise adjust the performance objectives of the ARNF.

**Monitoring**

Monitoring will provide the Forest Supervisor with the information necessary to determine whether the Plan is sufficient to guide management of the Arapaho and Roosevelt National Forests and Pawnee National Grassland or whether modification of the plan is needed. Monitoring will examine how well the implementation of the Forest plan's strategies and program objectives is bringing the condition of the Forest and Grasslands to the desired condition specified by the plan. The monitoring program will focus on some of the risks mentioned in the previous section, to aid in adjustments to this strategy.

The Forest plan has identified the key monitoring questions that address each of the priority management emphases, goals and objectives. (See the Part 1 - Vision) In addition to the Forest Interdisciplinary Team's (IDT) responsibility for monitoring the progress of Forest plan implementation, both the public and stakeholders will be involved to determine their perception of how successfully the Forest and Grassland have achieved plan goals and objectives.

***Evaluation***

The evaluation of monitoring information will measure how close the Forests and Grassland are to reaching the desired conditions identified in the Forest plan (including goals, objectives and

sensitivity to emerging issues). Evaluation will serve as the springboard from which the Forest Interdisciplinary Team can identify changes needed in the Forest plan or its implementation, or research needed to clarify and better address management issues. The strategy, including suitable uses and the prospectus will be updated as needed based on this evaluation.

***Operational Plan***

The regulations at 36 CFR 219.11 describe the NFMA monitoring requirements. The specific techniques and protocols to be used are identified in the Annual Operational Plan, which is developed in conjunction with the annual budget and the work planning process. This allows monitoring to be defined based on emerging issues, forest priorities, and the budget.

ARAPAHO-ROOSEVELT NATIONAL FORESTS - PAWNEE NATIONAL GRASSLAND  
LAND AND RESOURCE MANAGEMENT PLAN

# DESIGN CRITERIA

## CONTENTS

- I. Introduction
- II. Legally Required Plan Standards
- III. Other Sources of Design Criteria



## Introduction

This document is the third of three parts of the Land and Resource Management Plan for the Arapaho and Roosevelt National Forests and the Pawnee National Grassland. This document contains the design criteria. This document contains the legally required standards in 36 CFR 219, and an index of Forest Service Handbook and other guidance that governs use of the Forests and Grassland.

The first document is the vision. It provides the context for management of the Forests and Grassland. It describes a vision for the future. It describes the niche that these public lands provide to local communities, the state of Colorado, the Region and the Nation. It describes the desired future condition of the landscape and disturbance processes and the acceptable limits of the system. It describes the benefits and experiences that these lands can supply. It also describes how we will address the challenges we may face.

The second document is the strategy. It describes suitable uses and how the strategy will be monitored. It contains a prospectus for anticipated levels of uses and activities.

## Legally Required Plan Standards

The following are to be considered standards as required by 36 CFR 219.4(a)(3) and 219.17.

### Timber Harvest

#### **TM1. Long-Term Sustained Yield (36 CFR 219.17)**

The long-term sustained yield for the Arapaho and Roosevelt National Forests is 1.5 million cubic feet per year. Within any decade, the average annual quantity of timber sold during that decade should be less than this amount on lands identified as suitable for timber production, except as provided in 36 CFR 219.17(c).

#### **TM2. Limitations on Even-Aged Timber Harvest Methods (36 CFR 219.4(a)(3)(i))**

The scientifically-defined silvicultural systems shown, by forest cover-type in Table 1.11 which meet the management objectives for the landscape or individual stands of trees within a landscape setting are acceptable. Both even-aged and uneven-aged management systems can be used and applied at scales ranging from a few acres to many hundreds of acres. These silvicultural systems are to be applied in a manner that will ensure natural regeneration

where artificial regeneration is not necessary for other resource objectives. The silvicultural systems identified in Table 1.11 can be used to convert uneven-aged stands to even-aged management and even-aged stands to uneven-aged management. (See ----- for further explanation of silvicultural systems and applications.)

**TM3. Maximum Size Openings Created by Timber Harvest**  
**(36 CFR 219.4(a)(3)(ii))**

Forty acres is the maximum allowable opening acreage for forest types. Exceptions are permitted for individual timber sales after 60 days public notice and review by the Regional Forester. This limit shall not apply to the size of areas harvested as a result of natural catastrophic conditions such as fire, insect and disease attack, or windstorm.

**TM4. Harvest at Culmination of Mean Annual Increment**  
**(36 CFR 219.4(a)(3)(vi))**

Regeneration harvests of even-aged timber stands should not be undertaken until the stands have generally reached (or surpassed 95 percent of the) culmination of the mean annual increment measured in cubic feet. Exceptions to this requirement include where specific management objectives have been identified in project planning for forest health, visual enhancement, wildlife diversity and ecosystem restoration and management.

***Aesthetic Requirements***  
***(36 CFR 219.4(a)(3)(iii))***

**AE1. Visual-Quality Objectives**

**[Click HERE for map](#)**

Prohibit management activities that are inconsistent with the visual-quality objectives shown on the map, unless a decision is made to change the visual-quality objective. A visual quality objective of Retention will be met within the foreground for all National Scenic and Recreation Trails.

**Table 1.11 Appropriate Silviculture Systems by Forest Type Cover**

Management Activity	Engelmann Spruce/Subalpine Fir	Ponderosa Pine	Lodgepole Pine	Interior Douglas-Fir and White Fir	Aspen	Mixed Conifer
<b>Silvicultural System</b>						
<b>Even-Aged</b>						
Clearcut	WJ	WJ	A	WJ	A	WJ
Shelterwood	A	A	A	A	N	WJ
Seedtree	N	WJ	WJ	WJ	N	WJ
Coppice	N	N	N	N	A	N
<b>Two-Aged</b>						
Irregular Shelterwood	A	A	A	A	N	WJ
Coppice with Standards	N	N	N	N	A	N
<b>Uneven-Aged</b>						
Group Selection	A	A	A	A	A	WJ
Single-tree Selection	A	A	N	A	N	WJ
<b>Stocking Control: (thinning)</b>						
Precommercial	A	A	A	A	N	A
Commercial	A	A	A	A	N	A
<b>Salvage of Dead Material</b>	A	A	A	A	A	WJ
<b>Site Preparation</b>	A	A	A	A	WJ	WJ
<b>Reforestation</b>						
Planting	A	A	A	A	N	WJ
Seeding	N	A	WJ	N	N	N
Natural	A	A	A	A	A	A
<b>Regeneration Protection</b>	A	A	A	A	WJ	WJ

<b>Tree Improvement</b>	A	A	A	WJ	WJ	WJ
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A = Acceptable      WJ = When Justified      N = Not Acceptable

**Fish and Wildlife Habitat**  
 (36 CFR 219.4(a)(3)(iv))

**FW1.** Close areas to activities to avoid disturbing threatened, endangered, and proposed species during breeding, young rearing, or at other times critical to survival. Exceptions may occur when individuals are adapted to human activity, or the activities are not considered a threat.

**Terrestrial**

**FW2.** Restrict seasonal use of travelways (under Forest Service jurisdiction) to reduce disturbance in sensitive big game areas such as birthing areas and winter ranges. This does not imply that all birthing areas and winter ranges are considered equally important, and not all will be considered "susceptible."

**FW3.** Structures, such as fences, roads, and canals, will be designed and built so that they do not create unreasonable or unnecessary movement barriers or hazards for wildlife.

**FW4.** Do not compromise wildlife habitat values when developing watchable wildlife opportunities for the public.

**FW5.** In riparian areas, cover that provides wildlife travel corridors will be maintained along the entire length of riparian zones on at least one side of the drainage. New corridor interruptions affecting both sides of the drainage will be of minimum width needed and no more than 60 feet.

**FW6.** When closing mines or caves for safety or protection reasons, reduce disturbance to residing bat populations and provide bat access.

**FW7.** A no-disturbance buffer around active raptor nest sites will be required from nest-site selection to fledgling (generally March through July).

Exceptions may occur when individuals are adapted to human activity.

**FW8.** Restrict new developments, including new facilities, roads and trails, and concentrations of humans, within a one-mile sight distance of bighorn sheep lambing and mountain goat kidding areas if they would adversely impact lambing or kidding. Restrictions on activities are usually required from May 1 to July 15.

**FW9.** In riparian areas, corridor interruptions affecting both sides of the drainage should be of minimum width needed and no more than 60 feet in length. Interruptions affecting one side of a drainage should be no greater than 300 feet (parallel to the drainage).

**FW10.** Exclude human activity in key elk-calving areas during a minimum period of May 15 to June 15 and in key winter range of elk and deer for a minimum period of December 1 through March 30 with the exception of through routes.

**FW11.** Avoid disconnecting or severing intact areas of effective habitat with new open roads and trails. Favor seasonal use during non-critical times for wildlife when this cannot be avoided.

**FW12.** When developing new open roads and trails, do not reduce contiguous areas of effective habitat to less than 250 acres or further reduce effective habitat of 20 to 250 acres in size, except where access is required by law.

**FW13.** Additional open roads and trails should not reduce effective habitat below 50 percent by geographic area, or further reduce effective habitat in geographic areas that are already at or below 50 percent on NFS lands.

**Aquatic**

**FW14.** Maintain sediment in streams below levels that reduce reproductive success when compared to natural conditions or cause decline in biomass or community diversity of macroinvertebrates.

**FW15.** To prevent conditions toxic to fish, human-caused disturbances should not result in suspended sediment peaks above 250 mg/l in any stream reach for over one hour duration in any stream reach, nor more than 500 mg/l at any point in time.

*Late successional forests*

**FW16.** Within existing ponderosa pine and Douglas-fir old-growth stands that are known or discovered, either exclude vegetation treatments or reduce fire hazards using prescribed fire or mechanical means if sites are at risk from fire (e.g. removal of encroaching Douglas-fir regeneration in ponderosa pine old growth sites).

**Soil and Water**

**Resources**

(36 CFR 219.4(a)(3)(v))

**Hydrologic function**

**SW1.** Maintain enough organic ground cover in each land unit to prevent harmful increased runoff.

*Riparian areas and wetlands*

**SW2.** In watersheds containing aquatic TES species, allow activities and uses within 300 feet or the top of the inner gorge (whichever is greatest), of perennial and intermittent streams, wetlands, and lakes (over 1 acre) only if onsite analysis shows that long-term hydrologic function, channel stability, and stream health will be maintained or improved.

**SW3.** Design and construct all stream crossings and other instream structures to pass normal flows, withstand expected flood flows, and allow free movement of resident aquatic life.

**SW4.** Conduct actions so that stream pattern, geometry, and habitats are maintained or improved toward robust stream health.

**SW5.** Do not degrade ground cover, soil structure,

water budgets, and drainage patterns in wetlands.

**SW6.** Maintain enough water in perennial stream reaches to sustain existing stream health. Return some water to dewatered perennial streams where needed and feasible.

**SW7.** Prevent gully erosion of slopes and to prevent sediment and bank damage to streams.

**Erosion and sediment**

**SW8.** Construct roads and other disturbed sites to minimize sediment discharge into streams lakes, and wetlands.

**SW9.** Stabilize and maintain roads, trails, and disturbed sites during and after construction to control erosion.

**SW10.** Reclaim roads and other disturbed sites when use ends, as needed, to prevent resource damage.

**Soil productivity**

**SW11.** Limit the sum of severely burned and detrimentally compacted, puddled, and displaced land to no more than 15 percent of any land unit (FSH 2509.18). If a soil is compressed more than 15 percent or if the soil pore space is decreased more than 15 percent as compared to a soil of similar texture then the soil is detrimentally compacted.

***Watershed conservation practices – water purity***

**SW12.** Place new sources of chemical and pathogenic pollutants where such pollutants will not reach surface or ground water.

**SW13.** Apply runoff controls to disconnect new pollutant sources from surface and ground water.

**SW14.** Apply chemicals using methods which minimize risk of entry to surface and ground water.

**Other Sources Of Design Criteria**

The Forest Plan is a single integrated Plan. The following references have been reviewed to assure consistency with other parts of the Plan, and are hereby incorporated by reference:

- Oil and Gas Leasing Supplemental Stipulations
- Memorandum of Understanding between the USDA Forest Service and the Advisory Council on Historic Preservation on preparing plans to implement management activities, 1977
- Rocky Mountain Region Watershed Conservation Practices Handbook
- Mountain Plover Management Strategy, EIS/ROD, 1994, FS and BLM

**Additional Information Regarding Direction Found in Other Places**      Only the NFMA minimum required standards and guidelines are included in this prototype plan. Other sections of the 1997 standards/guidelines chapter have been treated as follows.

Air Quality	The direction to “follow the law” is not necessary to repeat.
Mineral and Energy Resources	Policies could be placed in FSH. The application of stipulations is described in the suitability section of the “strategy” document.
Paleontology Resources	Policies could be placed in FSH.
Biodiversity	The desired condition should be described in the “vision” document.
Timber	Timber standards/guidelines not included here could be placed in FSH.
Grazing	The desired condition should be described in the “vision” document. Residue allowances and allowable use guidelines could be placed in FSH. Anticipated uses are in the suitability section and the prospectus in the “strategy.”
Fire	Desired ecological processes are part of the desired condition in the “vision” document. Fire strategies are included in the strategy document.
Insects and Disease Treatments Noxious Weed Treatments	Desired ecological processes are part of the desired condition in the “vision” document. Integrated pest management objectives could be placed in FSH.
Dispersed Recreation	Dispersed recreation is described in the “vision” document and the suitable uses of the “strategy” document. Specific direction about recreation management could be placed in FSH.
High Value Recreation Waters In-Stream Flow Requirements	Forest plans do not make decisions about water rights, which are a state responsibility. However, the desired condition statements in the vision document could describe key instream flow requirements.
Developed Recreation	Much of the plan direction is tactical and could be developed at a lower level based on the strategic desired conditions. Specific guidance could be placed in FSH.
Scenery Management	Aesthetic requirements not included here could be placed in the FSH.
Real Estate	Land adjustment and right-of-way priorities could

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**Part 3: Design Criteria**

	be described in the desired conditions in the “vision” document” or in the “prospectus” in the “strategy” document. Much of the specific direction could be part of a tactical plan.
Special Uses Corridors	Special uses could be included in the suitable use section of the “strategy” document. Policies regarding burial of powerlines, etc. could be placed in the FSH.
Infrastructure	Motorized uses are included in the suitable use section of the “strategy” to meet the desired conditions in the “vision” document. Other policies could be placed in the FSH.