

CHAPTER 2

ALTERNATIVES

This chapter describes the action alternatives that wholly or partially meet the Purpose and Need. A No-Action alternative is also discussed. The two action alternatives each respond to identified issues, resulting in a slightly different approach to achieving the purpose and need. This chapter describes the public involvement process, scoping and issues identification, and development of alternatives. The issues that were developed from the scoping process are discussed in terms of their incorporation into the alternatives. The elements of the alternatives are described, followed by a detailed discussion of each alternative. Finally, alternatives are briefly compared by the major issues that were part of alternative development.

MANAGEMENT DIRECTION

The Land and Resource Management Plan: Pike and San Isabel National Forests; Comanche and Cimarron National Grasslands (Forest Plan, USFS 1994a) provides the overall guidance for management of the land within its borders through its goals, standards and guidelines and Management Area (MA) direction. These goals and MA direction usually provide guidance for proposed actions on the Forest. However, the proposed actions in this Environmental Assessment (EA) are in response to concerns regarding the sustainability of the Forest, fire risk as evidenced by the Buffalo Creek fire of 1996, and the protection of the water supply, all elements that were not specifically part of the forest planning process in 1984. Therefore, the proposed activities may fall outside of the Forest Plan's MA direction and potentially some standards and guidelines. In this section, the general guidance of the MA directions is discussed. In Chapter 4, Environmental Consequences, the MA direction is compared to the proposed actions for each resource to determine whether the proposed activities are within or outside of the MA direction.

FOREST GOALS AND OBJECTIVES

The Forest Plan's goals and objectives provide broad, overall direction regarding the type and amount of goods and services that the Forest will provide. The goals are concise statements describing a desired condition to be achieved sometime in the future. They are expressed in broad, general terms and are timeless in that they have no specific date by which they are to be completed. The goal statements are the principal basis for the objectives. Goals are also in response to appropriate laws, regulations, and policies.



Forest Plan goals that are met by the proposed action are listed below (USDA Forest Service, 1984, pages III-4 and III-5):

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- ❖ **Provide a cost-effective level of fire protection to minimize the combined costs of protection and damages, and prevent loss of human life.**
 - ❖ **Conserve water and soil resources and prevent significant or permanent impairment of land productivity.**
 - ❖ **Protect riparian areas and wetlands from degradation.**
 - ❖ **Maintain or improve water quality to meet Federal and State standards and increase the average annual water yield.**
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The objectives are concise, time-specific, measurable results that respond to the Forest Plan goals. These objectives are the basis for the management requirements listed in the Forest Plan and MA Directions (see Management Area Descriptions).

FOREST-WIDE DIRECTION, STANDARDS AND GUIDELINES

The Forest-wide management requirements set the baseline conditions that must be maintained throughout the Forest in order to implement the Forest Plan as it was intended. They establish the environmental quality and natural resource requirements and mitigating measures that apply to all areas of the Forest. Individual MAs (see below) may have additional requirements that must be followed. Substantive changes that alter the intent of these management requirements may not be made without amending or revising the Forest Plan.

The Forest Plan provides direction, and standards and guidelines that are specific to individual resources. These directions, as they pertain to this EA, are outlined in Chapter 4, Environmental Consequences, for each resource.

Management Areas

The Forest Plan divides the Forest into individual MAs, each of which has an emphasis that directs management activities within the MAs borders. The Forest Plan designates specific direction, goals, and standards and guidelines to be used in the management of these areas to more completely meet the MA emphasis (called “management area prescriptions”). Each MA is described by its management emphasis, or general direction and goals, and specific standards and guidelines to help achieve those goals for the MA.

There are 10 MAs in the Project Area. A brief description of these MAs, and the percentage of the Project Area, is included below (see also Figure 2-1). Approximately 85 percent of the Project Area is designated MA 2B (Rural and roaded-natural recreational opportunities, 7A (Wood-fiber production and utilization) or 8B (Primitive wilderness opportunities).



Management Area 2A – (2 percent of the Project Area)

MANAGEMENT EMPHASIS—SEMIPRIMITIVE MOTORIZED RECREATIONAL OPPORTUNITIES

The management emphasis is for semiprimitive motorized recreational opportunities, such as snowmobiling, four-wheel driving, and motorcycling, both on and off roads and trails. Motorized travel may be restricted or seasonally prohibited to designated routes to protect physical and biological resources.

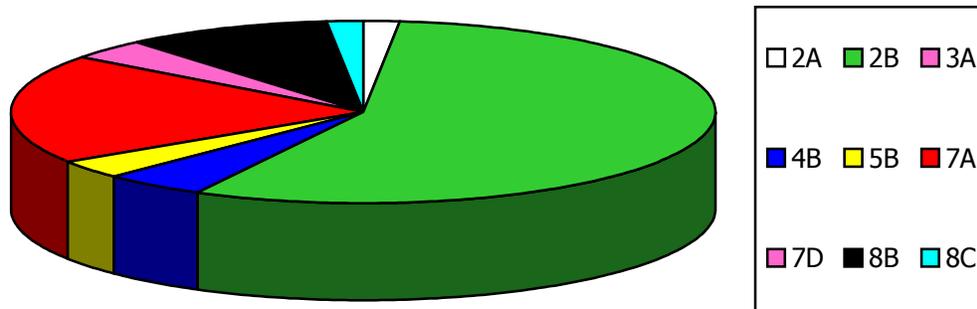


Figure 2-1. Project Area Management Areas

Management Area 2B– (55 percent of the Project Area)

MANAGEMENT EMPHASIS—RURAL AND ROADED-NATURAL RECREATIONAL OPPORTUNITIES

This MA covers the greatest percentage of the Project Area. MA 2B provides opportunity for outdoor recreation in roaded natural and rural settings, including developed recreational facilities and year-round motorized and nonmotorized recreation. Motorized and nonmotorized recreational activities, such as driving for pleasure, viewing scenery, picnicking, fishing, snowmobiling, and cross-country skiing, are possible. Conventional use of highway-type vehicles is provided for in facility design and construction. Motorized travel may be prohibited or restricted to designated routes to protect physical and biological resources.

Management Area 3A – (Less than 1 percent of Project Area)

MANAGEMENT EMPHASIS—SEMIPRIMITIVE NONMOTORIZED RECREATION IN ROADED OR NONROADED AREAS

This MA provides opportunity for nonmotorized recreation in a nonwilderness, semiprimitive setting, both roaded and unroaded. Recreational opportunities, such as hiking, horseback riding, hunting, cross-country skiing, etc., are available.

Management Area 4B – (5 percent of Project Area)

MANAGEMENT EMPHASIS—HABITAT FOR MANAGEMENT INDICATOR SPECIES

The management emphasis is on the habitat needs of one or more management indicator species for wildlife. Species with compatible habitat needs are selected for an area. The goal is to optimize habitat capability and thus numbers of the species. The prescription can be applied to emphasize groups of species, such as those that are early succession dependent, in order to increase species richness and diversity.

Vegetative characteristics and human activities are managed to provide optimum habitat for the selected species or to meet population goals jointly agreed to with the State Fish and Wildlife agencies. Tree stands are managed for specific size, shape, interspersion, crown closure, age structure, and edge contrast. Grass, forb, and browse vegetative characteristics are regulated. Rangeland vegetation is managed to provide needed vegetative species composition and interspersed grass, forb, and shrub sites or variety in age of browse plants. Recreation and other human activities are regulated to favor the needs of the designated species.

Management Area 5B – (3 percent of Project Area)

MANAGEMENT EMPHASIS—BIG GAME WINTER RANGE

The management emphasis provides for forage and cover on big game winter ranges. Winter habitat for deer, elk, bighorn sheep, and mountain goats is emphasized. Treatments to increase forage production or to create and maintain thermal and hiding cover for big game are applied. Investments in compatible resources occur. Livestock grazing is compatible but managed to favor wildlife habitat.

New roads other than short-term temporary roads are located outside of the MA. Short-term roads are obliterated within one season after intended use. Existing local roads are closed and new motorized recreational use is managed to prevent unacceptable stress on big game animals during the primary big game use season.

Management Area 7A - (19 percent of Project Area)

MANAGEMENT EMPHASIS—WOOD-FIBER PRODUCTION AND UTILIZATION

MA 7A is the second largest MA designation in the Project Area. This MA provides for wood-fiber production and utilization of large roundwood of a size and quality suitable for sawtimber. The area generally will have a mosaic of fully stocked stands that follow natural patterns and avoid straight lines and geometric shapes.

Roaded-natural recreational opportunities are provided along Forest arterial and collector roads. Semiprimitive motorized recreational opportunities are provided on local roads and trails that remain open; semiprimitive nonmotorized opportunities are provided on roads and trails that are closed.



Management Area 7D – (3 percent of Project Area)

MANAGEMENT EMPHASIS—WOOD-FIBER PRODUCTION AND UTILIZATION FOR PRODUCTS OTHER THAN SAWTIMBER

This MA provides for the production and utilization of small roundwood of a size and quality suitable for products such as fuelwood, posts, poles, props, etc. Management activities, although they may be visually dominant, harmonize and blend with the natural setting.

Management Area 8B – (10 percent of Project Area)

MANAGEMENT EMPHASIS—PRIMITIVE WILDERNESS OPPORTUNITIES

The management emphasis provides for the protection and perpetuation of natural biophysical conditions. On-site regulation of recreational use is minimal. Travel is cross-country or by use of a low-density constructed trail system. MA 8B is the third largest MA designation in the Project Area.

Management Area 8C – (2 percent of the Project Area)

MANAGEMENT EMPHASIS—SEMIPRIMITIVE RECREATIONAL OPPORTUNITIES

This area provides for the protection and perpetuation of essentially natural biophysical conditions. Solitude and a low level of encounters with other users or evidence of past use are not an essential part of the social setting. Human travel is principally on system trails. Designated campsites are used and show evidence of repeated but acceptable levels of use.

All resource management activities are integrated in such a way that current human use leaves only limited and site-specific evidence of their passing. Areas with unacceptable levels of past use are rehabilitated and the affected area restored.

Management Area 9A – (3 percent of the Project Area)

MANAGEMENT EMPHASIS – RIPARIAN AREA MANAGEMENT

The emphasis of this MA is on the management of all of the component ecosystems of riparian areas. These components include the aquatic ecosystem, the riparian ecosystem (characterized by distinct vegetation) and adjacent ecosystems that remain within approximately 100 from both edges of all perennial streams and from the shores of lakes and other still water bodies. All of the components are managed together as a land unit comprising an integrated riparian area.

The goals of this MA are to provide healthy, self-perpetuating plant communities, meet water quality standards, provide habitats for viable populations of wildlife and fish, and provide stable stream channels and still water-body shorelines. The aquatic ecosystem may contain fisheries habitat improvement and channel stabilizing facilities that harmonize with the visual setting. Forest riparian ecosystems are treated to improve wildlife and fish habitat diversity with specified silvicultural objectives. Fish habitat improvement treatments are applied to lakes and streams to enhance habitats and increase fish populations. This MA is not mapped in the Forest Plan, therefore the percentage is estimated and not included in Figure 2-1.



PUBLIC INVOLVEMENT, SCOPING, AND ISSUE IDENTIFICATION

INTRODUCTION

Public involvement is a process that continues throughout the development and refinement of the EA. However, there are two specific times when public and agency comments are solicited —before the environmental analyses are conducted to define the scope of the studies (scoping) and following publication of the EA.

Scoping is an early and open process that involves identification of issues regarding the proposed activities. During scoping, input is solicited from the public, the interdisciplinary team conducting the analyses, and governmental agencies to identify and define the issues and concerns. The issues and concerns can then be used to develop a range of alternatives to the proposed action. The alternatives attempt to meet the purpose and need of the proposed project and address the issues that were brought forward during the scoping process.

Scoping for this restoration project actually began during preparation of the Landscape Assessment in 1999 (see Chapter 1, Purpose and Need). Many of the project's goals and issues for this project were identified at that time. Scoping continued with the initiation of this specifically defined project in February, 2000.

PUBLIC INVOLVEMENT

Scoping Notice

The public scoping process was initiated with distribution of a scoping notice to local newspapers, and individuals, organizations, and government agencies on the project mailing list. This notice described the project, presented the purpose and need for the proposal, and provided information on how to participate in the scoping process. Interested parties were invited to comment on the proposal.

Public Comments

Oral comments and 12 written responses from individuals were received during the scoping period. Seven additional written responses were received at the open houses. These responses supported the restoration project and expressed few concerns regarding the proposed activities. The letters were reviewed and discussed by the project leaders.

Responses were received from two environmental groups: the local Sierra Club and the Upper Arkansas and South Platte Restoration. Both groups supported the restoration project and goals. The primary concerns were impacts to the roadless area, including potential new roads, mechanical methods for



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removing trees, and potential commercial logging in the roadless area. There was also concern regarding any new roads that may be proposed in the Project Area.

The Upper Arkansas and South Platte Restoration comments also expressed concern that the term “sustainable” is being defined as manipulating the whole assessment area to fit human uses. The comments objected to human uses taking precedence in the wild portions of the study area. This group acknowledged that management is necessary, and that the status quo would inevitably lead to human or natural fires that may damage large areas, but they asked that values for both residential and wild areas be considered. In terms of trail improvements, the organization supports this activity, but indicated that Gill Trail improvements must not jeopardize the wild designation under the Wild and Scenic Rivers Act.

Public Meetings

A series of public meetings was held to inform the public about the restoration project and to solicit public input. The first set of six meetings was held by the Colorado State Forest Service, the U.S. Forest Service, and Denver Water between February 22 and March 3, 2000 in various locations. The purpose of the meetings was to give the public an opportunity to learn about and comment on four restoration projects that the U.S. Forest Service would like to complete as part of the Upper South Platte

The meetings were held in an open house format and included brief presentations about the projects, displays, maps, and a question and answer period. The meetings also provided an opportunity for one-on-one discussions with project panel members. Those attending the meetings were asked to complete feedback sheets that asked for input as to what individuals liked about the project, their suggestions and any questions or concerns they may have.

Responses to what people liked about the project covered three main areas.

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- ❖ **People commented positively on the amount of research that has gone into the process.**
 - ❖ **They thought the timing was right for the project.**
 - ❖ **They appreciated the coalition of federal, state, and local agencies and thought that the public involvement effort was well done.**
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The suggestions were broad in nature and seemed to reflect individual interests. One theme that emerged was a concern for involvement of all interested parties, i.e., environmental groups such as the Sierra Club, Audubon, Conifer Community Plan, and individual outdoor enthusiasts and homeowners in the affected area. Other suggestions involved continued publicity regarding actions contemplated or to be taken, educational outreach programs and materials for affected homeowners, and more cutting and thinning in old-growth areas.

Questions and concerns were quite specific to peoples’ particular interests. Attendees wanted to know the specific implications for individual land owners, how fragile ecosystems would be protected, how surveys were conducted, how the Forest Service would reach remote, upland areas, and how insect issues would be handled.

The second set of meetings were held between May 2 and May 4, 2000, in three locations, including Buffalo Creek, Conifer, and Deckers, Colorado. The meetings had an open-house format and participants were free to review project maps and discuss ideas and concerns with project leaders.

Those attending these meetings were mostly residents who lived near Project Area attended the meetings in Buffalo Creek, Conifer and Deckers. The first of these two meetings drew only two individuals and the



final meeting drew eight. In general, those who attended supported the project and were very concerned with fire risk, especially those with vivid memories of the Buffalo Creek fire. One concern was that the proposed reclamation of unclassified roads would limit access within the Project Area. However, clarification that only roads that are currently closed would be reclaimed appeared to ease this concern.

Continued Involvement

Comments will also be solicited following publication of the EA. A 30-day comment period will start when the EA is published. The EA will be sent to those on the project mailing list that request a copy and will also be available for review at the South Platte Ranger District office.

INTERNAL SCOPING AND ISSUE IDENTIFICATION

The primary issues and goals for this project were determined by completing and reviewing the Upper South Platte Watershed Landscape Assessment (Foster Wheeler, 1999). Chapter 1, Purpose and Need, presents a summary of the Landscape Assessment. The public scoping and resulting issues were considered in order to develop alternatives. Internal scoping, which included participation of the Forest Service and the technical team completing the analysis, included recognition of the impending changes to the national roadless policy (Roadless Area Conservation Draft EIS, May, 2000). The public comment period on the Draft EIS was recently completed and the Final EIS is currently being prepared. None of the action alternatives would allow road construction in roadless areas in this Project Area. Regardless, the decision for the Roadless Area Conservation Proposed Rule will most likely not be issued until after the decision for this EA.

Scoping identified four key issues for alternative development. These issues and the objectives of the actions proposed by this EA to address the issues are presented in Table 2-1.



Table 2-1. Issues and Management Objectives for the Action Alternatives

Issue	Objectives for proposed actions
Deviation of the character and function of the forest from its historic condition.	Restore the Project Area to a more sustainable condition that emulates the historic functionality of the ecosystem, including reintroduction of the historical fire regime, where possible. Use timber harvesting, or vegetation treatments, to thin the forest and create openings that more closely emulate the historic vegetation patterns in treated areas.
The high risk of catastrophic wildfires due to the existing forest conditions.	Reduce the risk of large, intense wildfires that are outside of the historical fire regime and could put human life, water supplies, and property at high risk for loss or damage.
Excessive erosion, resource damage and stream sedimentation in the Project Area.	Reduce existing and potential stream sedimentation due to erosion and transport of the highly erodible soils throughout the Project Area. Specific objectives include improving the trail system to discourage use of social trails, and reducing erosion from the burn area and unclassified roads
Minimal management activity in roadless areas.	Minimal activity in the roadless area while striving to meet the project's objectives, including no mechanical entry or removal of harvested trees.

ALTERNATIVE DEVELOPMENT AND DESCRIPTIONS

Three alternatives (Alternatives A, B, and C) were developed in response to the issues identified during the scoping process, one of which is the proposed action (Alternative B). A primary goal for restoring the forest to a sustainable condition is to reduce tree density and create persistent openings in the forest canopy. The proposed action was designed to change the forest by thinning and creating openings over large areas. The other two alternatives include the “no-action” alternative and an action alternative that addresses the issue of activity in roadless areas.

ALTERNATIVE CONSIDERED BUT DROPPED FROM FURTHER ANALYSIS

One alternative, which was considered but dropped from further analysis, would have eliminated activity in all habitat for the pawnee montane skipper, a threatened butterfly. The alternative was dropped because it was determined that habitat could actually be improved through vegetative treatments. The US Fish and Wildlife Service was consulted on this issue. See Chapter 4, Environmental Consequences, for more information.



ALTERNATIVE A: NO ACTION

Key Issues

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- ❖ **Satisfaction of NEPA requirements – no actions are proposed by this alternative**
 - ❖ **No management activities in the roadless area**
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Discussion and Description of Alternative

This alternative defers all U.S. Forest Service management decisions to some future date. The No-Action alternative, which is required by NEPA, addresses several of the issues and concerns expressed during scoping, such as no activity in roadless areas. The current forest management would be continued with no different action taken to reduce fire risks or stream sedimentation.

In the Buffalo Creek burn area, natural revegetation processes would be allowed to occur by relying on natural seeding. Riparian sediments would be stabilized over time by natural accumulation of woody debris and reforestation of the uplands under natural succession. The existing sediment deposits would gradually erode into streams until stabilized by natural processes.

Existing roads would be maintained as necessary to control erosion, including maintenance of drainage structures and use of vegetation. There would be no active road reclamation, except for the previous decisions in the Wildcat Area.

All designated trails would continue to be maintained to reduce erosion. There would be no additional trail improvements, except for maintenance of drainage structures and vegetation to control erosion

ALTERNATIVE B: PROPOSED ACTION

Key Issues

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- ❖ **Deviation of the character and function of the forest from its historic condition.**
 - ❖ **The high risk of catastrophic wildfires due to the existing forest conditions.**
 - ❖ **Excessive erosion, resource damage and stream sedimentation in the Project Area.**
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Discussion of Alternative

This alternative was designed to fully address the purpose and need. The overall concept of the alternative would be to meet the purpose and need for landscape restoration and catastrophic wildfire risk reduction by thinning, creating openings, and using prescribed fire. This approach would begin moving the area toward a more historical, mosaic pattern of vegetation than currently exists in the Project Area.



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Large areas of dense forest would remain untreated. The openings and thinned forest would create firebreaks between areas of dense tree cover.

Table 2-2. Alternative Comparison of Proposed Activities

Proposed Action	Alternative A	Alternative B	Alternative C
Vegetative Treatment			
Thinning (acres)	0	13,400	Same as Alternative B
Openings (acres)	0	4,400	
Total treatment area (acres)	0	17,400	
Use of conventional log removal (acres)	0	8,600	8,600
Use of forwarders for log removal (acres)	0	3,000	500
Area of logs left on site (acres)	0	5,800	8,300
Buffalo Creek Burn Area Revegetation			
Area of planting in riparian zones (acres)	0	60	Same as Alternative B
Area of planting in uplands (acres)	0	1,000	
Use of biosolids as soil amendment	No	Yes	No
Road Reclamation			
Unclassified roads (miles)	0	25	Same as Alternative B
Use of biosolids as soil amendment	No	Yes	No
South Platte River Access Trail Improvements			
Trail improvements along South Platte River (miles)	0	7.5	Same as Alternative B

The current fire policy for the Project Area would remain. This policy requires controlling wildfires with emphasis on protecting property or developments. This would include crown fires, which are part of the historical fire regime, in areas of dense forest. However, the potential for large, catastrophic fires would be reduced in the Project Area due to openings and less dense forest conditions that would be created in the treatment areas.

The proposed harvesting would be completed without building new roads, permanent or temporary. Existing unclassified roads may be used to remove logs. These unclassified roads would be obliterated after use. The treatment areas were designed to use existing roads and stay on gentle slopes as much as possible. Off-road heavy equipment (skidders and forwarders) would be used as necessary to remove logs



from areas that are reachable by existing roads, eliminating the need to build access roads to these areas. Where the use of equipment is not feasible, logs would be left on-site.

The issue of stream sedimentation is also addressed through the landscape modifications, which reduce the risk of large-scale sedimentation from wildfire followed by flooding (see Background, in Chapter 1, Purpose and Need). Additional measures to reduce existing and potential future erosion problems include burn-area revegetation, road reclamation, and trail improvements. Soil amendments would be used to accelerate reestablishment of indigenous plant communities on reclaimed areas. These activities also address the issue of forest restoration.

VEGETATION TREATMENTS

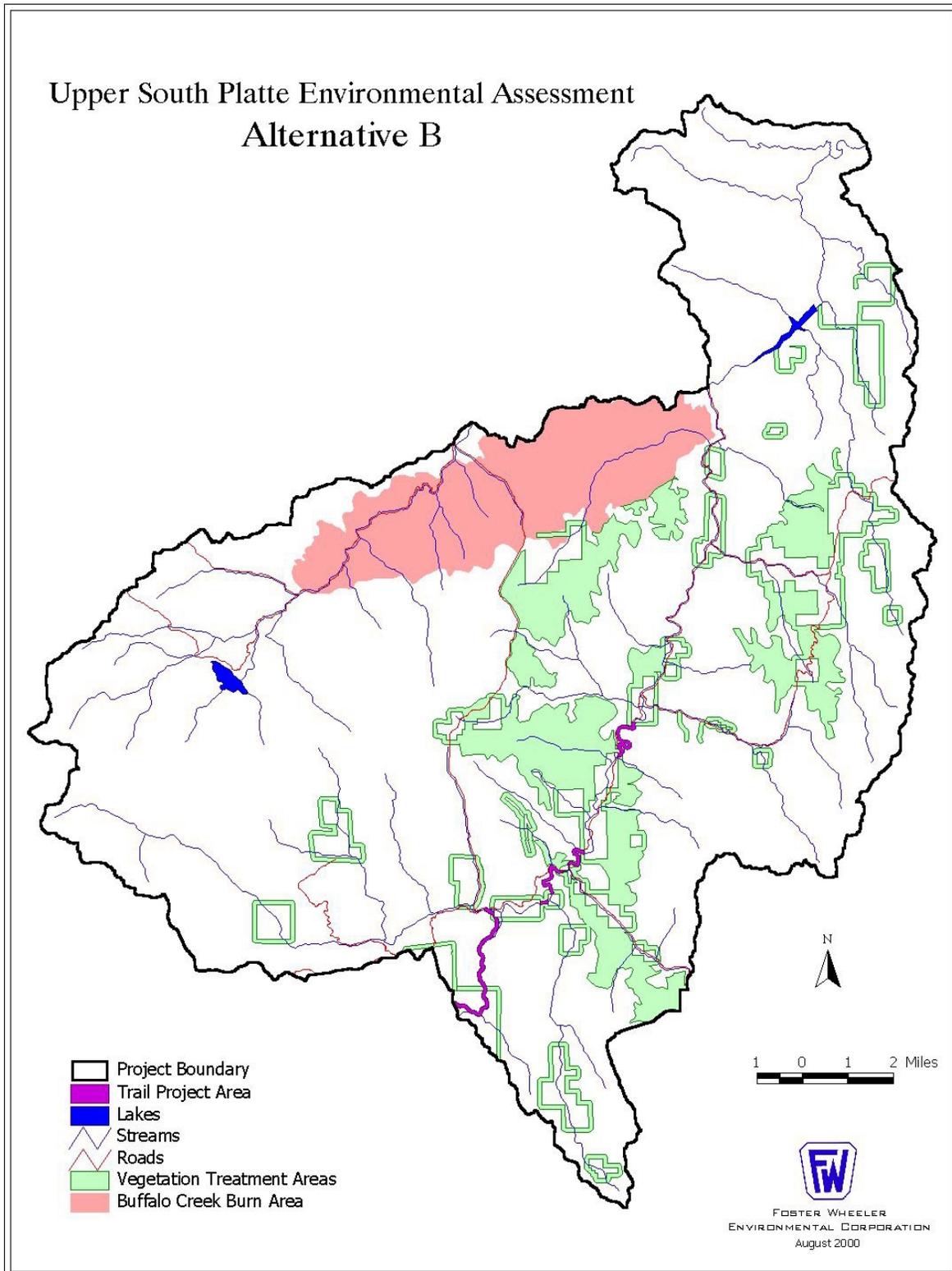
This alternative proposes to treat 17,400 acres of dense forest vegetation (Map 2-1). The forest would be thinned to a canopy closure of 25 percent on 13,000 acres. On the remaining 4,400 acres of treatment area, openings of 1 to 40 acres would be created. These openings would be dispersed within the thinned areas and would not be revegetated. The openings would be maintained by prescribed burns every 10 to 30 years, as appropriate. The thinning would be selective by age class and species to emulate the types of conditions found historically (see Background in Chapter 1, Purpose and Need). In all areas, the larger, more mature trees would typically be left. In most treated areas, ponderosa pine would be selected to remain, although some larger Douglas-fir may also be selected. The exception would be the Christmas tree cutting area near highway 126 where Douglas-fir are produced for Christmas trees.

Logs would be removed from approximately 11,600 acres of the treated area. Logs would not be removed from slopes that are too steep, are too far from existing roads, or have trees that are of little or no economic value. The areas where trees would be left on-site would be determined on the ground before harvest activities. Logs and slash left on-site would be crushed by the harvesting and yarding equipment. The slash and logs would then be allowed to dry for one to two years. At that time, burning would be prescribed to consume the most of the remaining downed materials.

The logging systems used would include both conventional systems and forwarders. Conventional systems would be used where there are existing roads (approximately 8,600 acres). In these areas, skidders would be used to yard the downed trees off the site. Skidders drag the trees, creating skid trails. Forwarders would be used in areas without existing roads that meet the criteria for removal discussed above (approximately 3,000 acres). Forwarders are larger machines and have 6 or more wheels. They pick the trees up off the ground and place them in a bunk so they do not drag on the ground. They can carry approximately 20 times the load of a skidder. This reduces the number of trips and associated disturbance. They do create paths or trails, similar to a skidder. Because of the way they can pick up and transport downed trees, forwarders create less disturbance than skidders, particularly where there are no roads to use as skid trails. However, forwarders are more expensive to use than skidders.

Private landowners would be consulted to determine if they are interested in having the National Forest land harvested around their property. If so, a 500-foot strip around their land would be treated using the above techniques. Landowners may be responsible for removing the trees, if they so choose. To be conservative in the analysis of effects, it is assumed that all property owners will choose this option. However, it is likely that many will choose not to have the harvest completed.





Map 2-1. Alternative B



The majority of the vegetation treatments would be located in MA 2B, Rural and roaded natural recreational opportunities or 7A, Wood-fiber production and utilization (66 percent, and 24 percent, respectively). There would be no treatment in the following MAs: MA 3A, Semiprimitive nonmotorized recreation in roaded or nonroaded areas; MA 8B, Primitive wilderness opportunities; MA 8C, Semiprimitive wilderness opportunities, MA 9A, Riparian area.

BUFFALO CREEK BURN AREA REVEGETATION

The objective of this proposed action is to reestablish vegetation on riparian and upland forested areas that have not successfully regenerated following the 1996 wildfire. Successful completion of this revegetation would reduce erosion from the exposed areas and subsequent stream sediment loading. The proposed activities would occur in Buffalo Creek and/or Spring Creek.

In the riparian areas, 60 acres of exposed sediments along streams and washes would be planted using certified weed-free indigenous plant material. Woody debris and boulders would be selectively placed in the stream channel to help stabilize the channel. The sediment deposits in the riparian zones would be reshaped as needed to facilitate plant reestablishment. In this alternative, conventional equipment would be used to complete this task.

In the upland areas, 1,000 acres of the burn area that have not successfully revegetated would be planted with ponderosa pine seedlings. In both the upland and riparian areas, appropriate types of biosolids would be used as a soil amendment to improve conditions for revegetation.

Suction dredging is also proposed in the Buffalo Creek stream channel as part of the monitoring program. A 100-meter section of the channel would be dredged to remove and measure accumulated sediments. The structure and composition of the stream channel would be assessed, both in the dredged area and in adjacent undredged areas. The objective would be to measure the effects of sediment on stream habitat. The removed sediments could possibly be used for road reclamation or would be disposed of off-site.

ROAD RECLAMATION

This alternative proposes to reclaim and make impassible 25 miles of non-system roads that are currently closed. These roads were built for various purposes, including historic logging and mining. The origins of some roads are unknown. Some are two-track roads with no drainage systems and no apparent standards. Because of the low standards with which many of these roads were built and poor or nonexistent drainage systems, these types of roads on the area's highly erodible soils are a particular problem for erosion.

The roads would be reclaimed by ripping and seeding the roadbeds, both for erosion control and to encourage revegetation. In this alternative, biosolids would be used to increase soil fertility. Existing culverts would be removed and self-maintaining drainage would be created. The first ¼ mile of each road may be obliterated and recontoured if needed to further discourage any use. Finally, trees would be felled across the roads throughout their length.

SOUTH PLATTE RIVER ACCESS TRAIL IMPROVEMENTS

The objective of this proposed action is to improve 7.5 miles of existing trail along the South Platte River to increase safety for hikers, anglers, create conditions that are sustainable for the trail system, and reduce soil erosion and vegetation loss. Many of the improvements would encourage hikers to remain along established trails and discourage use of social trails to access favorite areas. The actions that are proposed include:



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- ❖ **Expand the existing trailhead and parking space at Wigwam Campground.**
 - ❖ **Construct new trail between the end of the Gill Trail and Cheesman Dam.**
 - ❖ **Upgrade the original Gill Trail to safer and sustainable conditions.**
 - ❖ **Construct safe and sustainable river access trails to the South Platte River. This would include constructed stairways or hardened trails on the steepest trail sections.**
 - ❖ **Construct barrier-free accessible fishing sites and trails from parking areas near the river.**
 - ❖ **Reclaim existing social trails using conventional methods.**
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ALTERNATIVE C

Key Issues

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- ❖ **Deviation of the character and function of the forest from its historic condition.**
 - ❖ **The high risk of catastrophic wildfires due to the existing forest conditions.**
 - ❖ **Excessive erosion, resource damage and stream sedimentation in the Project Area.**
 - ❖ **Minimal management activity in the roadless areas.**
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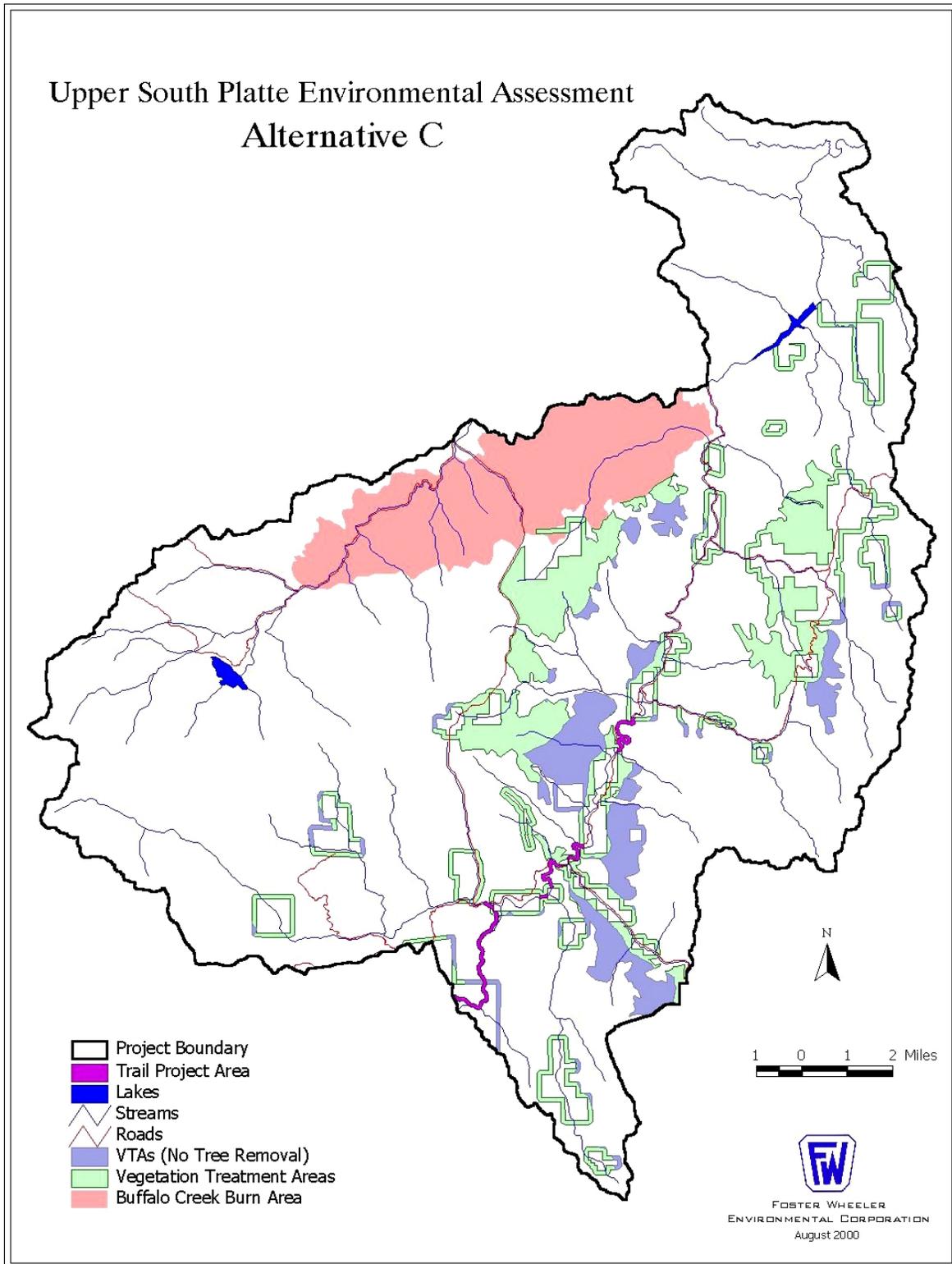
Discussion of Alternative

The overall concept of this alternative is the same as discussed for Alternative B. However, this alternative would minimize off-road heavy equipment use in the roadless area and use a slightly less intensive approach in other areas. The details of the two action alternatives are the same except for the differences discussed below. Roadless areas for this document include;

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- ❖ **RARE II inventoried roadless areas plus**
 - ❖ **All National Forest System unroaded areas of more than 1,000 acres that are contiguous to RARE II inventoried roadless areas or wilderness areas (see FR vol.64, o. 29, part 212).**
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VEGETATION TREATMENTS

The amount and type of thinning and opening creation is the same as Alternative B. The difference is that there would be no removal of logs from the roadless area (Map 2-2). As in areas where logs are not removed in Alternative B, the logs in the roadless area would be allowed to degrade for one to two years. At that time, burning would be prescribed to consume the remaining slash and logs. Like Alternative B, this would also be the protocol for areas where logs are left on-site outside of the roadless area.



Map 2-2. Alternative C



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BUFFALO CREEK BURN AREA REVEGETATION

This alternative proposes the same types of activities as Alternative B, except biosolids would not be used as a soil amendment to increase fertility for revegetation. Additionally, the sediment deposits in the riparian zone would be reshaped using hand tools only, rather than conventional equipment, such as backhoes. As in Alternative B, the objective would be to reshape the deposits as needed to facilitate plant reestablishment.

ROAD RECLAMATION

This alternative proposes the same activity as Alternative B, except biosolids would not be used to encourage vegetation of the road surfaces.

SOUTH PLATTE RIVER ACCESS TRAIL IMPROVEMENTS

This alternative proposes the same trail improvements as Alternative B.

ON-GOING OR FORESEEABLE FUTURE ACTIONS

The following projects are on-going or foreseeable future actions within or near the Project Area. The need to include these actions in the individual resource analysis is dependent on the cumulative effects area and duration of effects for each resource.

Colorado State Forest Service Projects

DENVER WATER

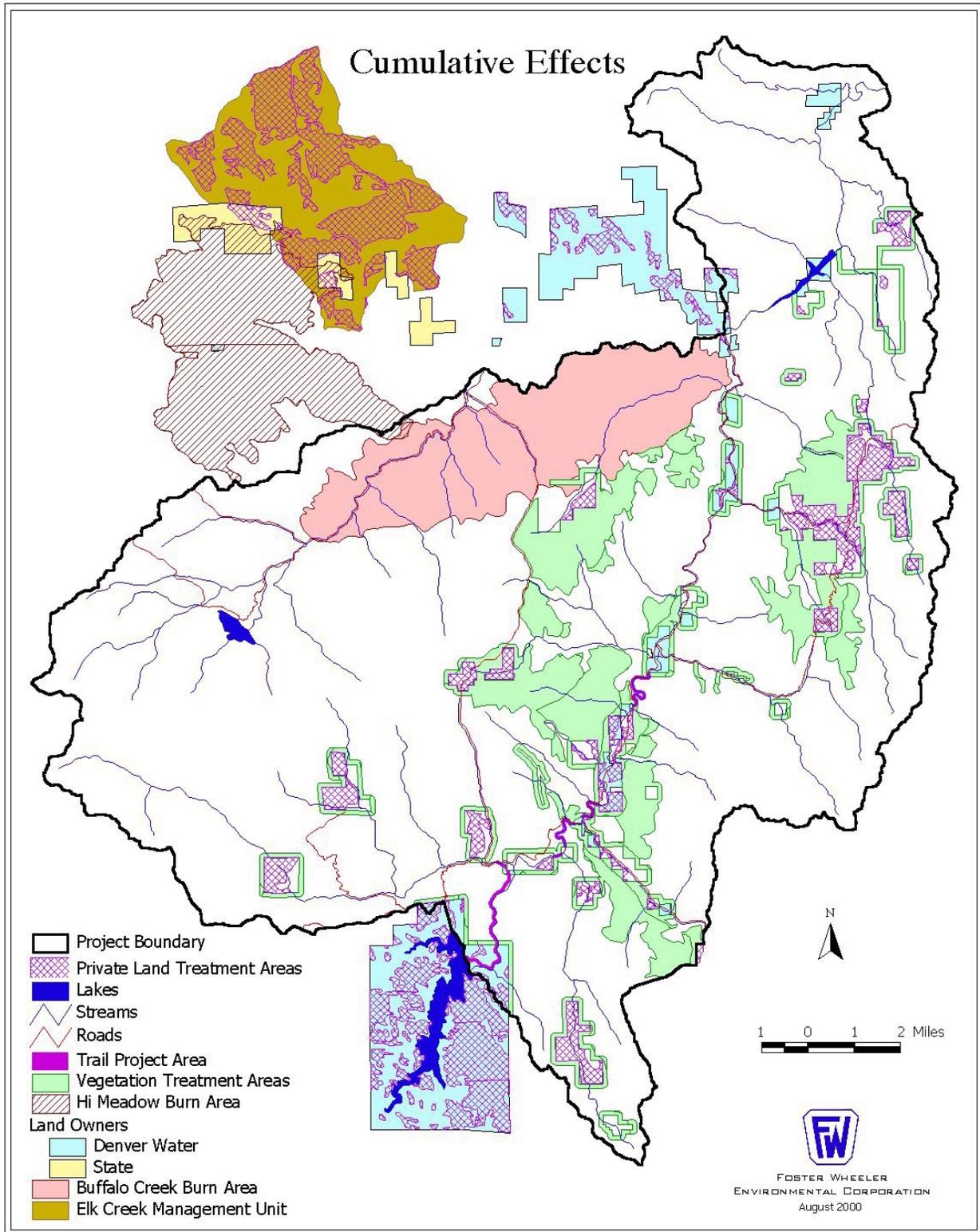
The Denver Board of Water Commissioners owns approximately 30,000 acres within the Upper South Platte Watershed. Within the Deckers-Waterton/Horse Creek project area, they are second only to the federal government in land ownership, with 2,845 acres. These lands are in various-sized parcels scattered along the main stem of the South Platte River and the North Fork of the South Platte River (Map 2-3).

Denver's interest and concern about fire and the need for vegetation and restoration management was graphically brought to point by the 1996 Buffalo Creek Fire and the ensuing floods. Their Strontia Springs reservoir received much of the sediment flowing from the burned landscape. They face future costs in the millions of dollars to restore the reservoir.

Denver became one of the founding partners in the development of the Upper South Platte Project. In March 1999, Denver Water contracted with the Colorado State Forest Service (CSFS) for the vegetation management of all of their lands within Colorado, approximately 55,000 acres. The contract prioritized management of Denver's lands within the Upper South Platte Watershed, and specifically in the Project Area.

Denver's management objectives for their lands include reducing wildfire hazards, reducing loss from insects and disease, improving forest health through harvest and prescribed fire, and re-establishing forest stands to better reflect historic conditions. They also have plans for managing noxious weeds and reducing active erosion.





Map 2-3. Cumulative Effects Map



 Chapter 2. Alternatives

To date the CSFS has completed several activities on Denver Water lands within or near the Project Area. These activities are listed in the Project File and will be considered by specialists for inclusion into the analyses of cumulative effects. The CSFS proposes treatment activities similar to the USFS proposal with the following differences:

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- ❖ **Vegetation treatments would occur only on state or private land**
 - ❖ **New temporary roads may be built to access unroaded private or state treatment areas. No new roads would be built across USFS land.**
 - ❖ **The CSFS project area would include all private and state lands within the Waterton/Deckers/Horse Creek Watershed (EA Project Area) and the Lower Elk Creek Management Unit, Denver Water land surrounding Cheesman Reservoir, and Denver Water and state lands along the North Fork of the South Platte between Pine, Colorado and Strontia Springs Reservoir.**
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The CSFS would focus treatment activities on Denver Water and state property. New roads would only be built if there were no existing roads to treatment areas and be reclaimed immediately after work was completed. These new roads would typically be short spurs less than 500 feet long. However, some areas on Denver Water property surrounding Cheesman Reservoir may require longer roads.

THE LOWER ELK CREEK MANAGEMENT UNIT

The Lower Elk Creek Management Unit includes approximately 10,000 of private and state lands. It is a highly-urbanized forest with a mixture of small-lot subdivisions, slightly larger ranchettes as well as a few remaining larger ownerships. The 1,120-acre Pine Gulch State Land is located along the southern boundary. The management unit is currently experiencing considerable development pressure.

The Colorado State Forest Service will be the lead agency for planning, project development and implementation of activities within the Lower Elk Creek Management Unit. A major cooperator and partner in this effort is the Elk Creek Fire Protection District. Other cooperators include the Jefferson County Planning Department and Office of Emergency Management, the Colorado Board of Land Commissioners and Colorado Division of Wildlife.

A primary objective for this unit is reducing the threat of damaging wildfires. The recent Hi Meadow fire underscores this concern. The unit is highly developed with high human populations and the wildfire risk is high. This concern is shared by all partners. A management plan is being developed for this area. The start of project implementation is expected to begin sometime in the Fall of 2000. The types of management activities are likely to be similar to those proposed in this EA. A portion of the Lower Elk Creek Management Unit was burned in the Hi Meadow fire. Therefore, current management plans for vegetation treatment may need to be modified in areas of the burn.

U.S. Forest Service Projects

DOUGLAS-FIR/TUSSOCK MOTH TREATMENTS

In 1993 and 1994 there was an epidemic of the Douglas-fir Tussock Moth on National Forest land in the Pike and San Isabel National Forests. This epidemic caused heavy defoliation of Douglas-fir trees on 7,000 acres on the South Platte Ranger District (US Forest Service, 1996). Much of this defoliation



occurred in the Deckers/Waterton and Horse Creek watersheds. In response to this defoliation, the Forest Service salvaged trees on 116 acres and planned prescribed burning on approximately 14,000 acres. Currently, 1,000 acres of the planned burning and all of the salvage has been completed. The Forest Service plans to complete the remaining 13,000 acres of burning at some time in the future.

RAMPART RANGE MOTORIZED TRAILS

Off-highway vehicle (OHV) use within the Waterton/Deckers composite, Horse Creek, and Trout Creek subwatersheds has increased dramatically in recent years, resulting in vegetation loss, accelerated erosion and soil loss, degraded fish and wildlife habitat, and safety problems. There are over 76 miles of motorized trails within this area.

The Forest Service will develop a comprehensive trail management plan for the Rampart Range Motorized Recreation Area as well as an Environmental Assessment by May 2001. Improvement actions will include relocating trails away from sensitive and wet areas, surface hardening, repairing drainage problems, and reclaiming unauthorized trails. About 30 miles of trails will be relocated or improved within the watershed by fiscal year 2005. This project will help ensure a high quality and safe recreational experience while protecting sensitive resources such as water quality and wildlife habitat.

Status. Preliminary planning has begun.

NOXIOUS WEEDS

Leafy spurge, diffuse knapweed, yellow and Dalmatian toadflax, and Canada and musk thistles are noxious weeds along 25 miles of the South Platte River. These noxious weeds are less palatable to wildlife; are less effective in stabilizing soil, and often out compete native vegetation. The goal is to reduce the infested acres. Two hundred acres will be treated annually using chemical, biological, mechanical, and manual methods. Known infestation areas within the proposed vegetation treatment areas would be pretreated for noxious weeds.

Status. EA completed and FONSI/Decision Notice signed.

SUGAR CREEK RIPARIAN RESTORATION

This project would be a continuation of current District efforts to limit sediment entering Sugar Creek from Douglas County Road 67, immediately adjacent to the stream. Work would include riparian enhancement and road drainage improvements to reduce water velocities and sediment run-off. Additionally, changes in road maintenance methods by Douglas County would be encouraged or negotiated.

Status. Preliminary planning begun.

ADDITIONAL VEGETATION TREATMENT

After completion of the proposed action, the US Forest Service would mechanically treat additional vegetation in high fire risk areas in the project area. These future treatments will be more difficult because they would be in steeper and less accessible areas. Therefore, the US Forest Service would adapt the best vegetation treatment techniques developed during the first phase of work as proposed to subsequent treatment efforts.

Status. Preliminary planning begun.

