

THE FRONT RANGE FUELS TREATMENT PARTNERSHIP

COLORADO STATE FOREST SERVICE • NATIONAL PARK SERVICE • USDA FOREST SERVICE



2011 ANNUAL REPORT



INTRODUCTION

In 2011, Front Range Fuels Treatment Partnership (FRFTP) agencies treated 36,499 acres, bringing our eight-year total to 263,807 acres.

Since 2002, the Front Range Fuels Treatment Partnership (FRFTP) has addressed the challenges of making Colorado's Front Range forests more resistant to catastrophic wildfires, insects and diseases.

The 2011 FRFTP accomplishments report highlights the actions of homeowners, communities, government agencies and others to reduce wildfire risk on the Front Range. The report provides a summary of fuels

treatment projects, research on Front Range forest ecology, forestry legislation and activities of the Front Range Roundtable.

The intent of this report is to serve as a catalyst for promoting understanding of the benefit of forest management relative to fire risk reduction and community safety.

Front Range Fuels Treatment Partnership agencies are committed to continuing their efforts to implement fuels treatment projects in areas determined to be most at risk to catastrophic wildfires. This will require a shared vision and the wisdom to learn from the past, while looking to the future.

SUMMARY OF ACCOMPLISHMENTS

Eight-year Fuels Treatment Total Reaches 263,807 Acres

In 2011, partnership agencies collectively treated 36,499 acres, bringing our eight-year total to 263,807 acres (40,086 acres were treated in 2010; 38,907 in 2009; 31,023 in 2008; 30,777 in 2007; 34,629 in 2006; 24,908 in 2005; and 26,978 in 2004).

Following are the 2011 accomplishment highlights by each partner agency.

COLORADO STATE FOREST SERVICE

GUIDING FOREST TREATMENTS IN COLORADO

The Colorado State Forest Service (CSFS) completed the *Colorado Statewide Forest Resource Assessment* and *Colorado Statewide Forest Resource Strategy* (Forest Action Plan) in 2010. The CSFS uses the Forest Action Plan and Community Wildfire Protection Plans to identify priority forest management needs and implement treatments. In 2011, Colorado had more than 190 CWPPs, half of which apply to communities along the Front Range.

In addition, the Colorado General Assembly passed three bills focused on forest health, fuels mitigation and public safety. The level of legislative support over the past several years is evidence of the importance and value Coloradans place on our forests. For more information about the bills, visit www.csfs.colostate.edu.

CSFS DISTRICT TREATMENT ACCOMPLISHMENTS

In 2011, the Colorado State Forest Service districts participating in the FRFTP – Boulder, Fort Collins, Franktown, Golden, Granby and Woodland Park – treated a total of 15,504 acres on state and private land along the Front Range. Of the total acres treated to help reduce wildfire hazards, 14,279 were completed with mechanical and non-mechanical methods; 1,225 acres with prescribed burns.

Following are highlights of on-the-ground accomplishments for these six Front Range CSFS districts:

| CSFS District | Thinning | Prescribed Fire | Total Acres |
|---------------|----------|-----------------|-------------|
| Boulder | 1,046 | 0 | 1,046 |
| Fort Collins | 1,049 | 69 | 1,118 |
| Franktown | 2,037 | 56 | 2,093 |
| Golden | 3,319 | 122 | 3,441 |
| Granby | 3,689 | 170 | 3,859 |
| Woodland Park | 3,139 | 808 | 3,947 |

BOULDER DISTRICT HIGHLIGHTED PROJECT

The CSFS Boulder District and Boulder County Parks and Open Space completed 150 acres of treatment on the 6,800-acre Heil Valley Ranch. Treatments included forest restoration through mechanical treatment with utilization of tree boles. The property now has 254 acres of continuous treatment; an additional 200 acres adjacent to this project area will be treated in the future.



A completed fuels treatment area on Heil Valley Ranch, Boulder County.

FORT COLLINS DISTRICT HIGHLIGHTED PROJECT

The CSFS Fort Collins District helped the YMCA of the Rockies in Estes Park implement a 112-acre forest restoration project through manual thinning and chipping, focusing along two streams that cut through the YMCA property to reduce risk of catastrophic fire and help prevent dead and dying trees from entering the watershed.

FRANKTOWN DISTRICT HIGHLIGHTED PROJECT

On the east slope of the Rampart Range in Douglas County, the CSFS Franktown District helped residents improve forest health and fire resiliency by treating 275 acres of forest land. As a result of this

project, the trees will be more resilient to insects and disease, the quantity and quality of wildlife forage will increase, and the risk of a wildfire running through the tree tops will be reduced.



An all-terrain excavator removes fuels from a steep slope of the Rampart Range, Douglas County.

GOLDEN DISTRICT

HIGHLIGHTED PROJECT

Partnering with the Colorado Division of Parks & Wildlife, the CSFS Golden District continues its fuels reduction project to reduce fire hazard and improve forest health on Staunton State Park, located north of Conifer. The additional 123-acre treatment project focuses on four units in the northwest section of the park and will create a fuelbreak along a future trail corridor once the park is opened to the public.

GRANBY DISTRICT

HIGHLIGHTED PROJECT

The CSFS Granby District worked with Mountain Parks Electric (MPE) to treat 212 acres throughout Grand County. The purpose of the project was to remove all MPB-killed trees and green trees along primary powerlines to a 60-foot wide right of way (30 feet on each side of the powerline). This protects powerlines from tree blowdown and reduces the risk of fire ignitions. Mountain Parks Electric worked closely with adjacent property owners. In many cases, the right of way crossed property boundaries and MPE was required to gain permission to remove hazardous trees from these properties.

WOODLAND PARK DISTRICT

HIGHLIGHTED PROJECT

The CSFS Woodland Park District helped thin hazardous fuels in the Black Forest School Section to illustrate how a well-managed forest resists bark beetles. In 2011, a private contractor was awarded a

contract to mechanically thin 35 acres of the highest risk areas surrounding the section. An AmeriCorps crew with a chipper from the El Paso County Fire Marshal's Office performed hand work in areas that were not accessible by machines. El Paso County maintains a trail around the school section perimeter, the Black Forest Slash and Mulch site occupies an old gravel pit on the section, and Academy School District 20 operates the School in the Woods with a 4th grade curriculum geared to forests and nature.

NATIONAL PARK SERVICE

ROCKY MOUNTAIN NATIONAL PARK

During 2011, several fuels reduction projects were implemented in the wildland-urban interface at Rocky Mountain National Park; projects were completed by both Park staff and contracted resources. A total of 2,066 acres were treated.

2011 HAZARDOUS FUELS REDUCTION PROJECTS

Small Pile Burns: 462 acres

- 350 acres of small piles were burned along US Highway 34 between Kawuneeche Visitor Center and the Colorado River Trailhead
- 60 acres of small piles were burned on Deer Mountain
- 52 acres of small piles were burned along the park boundary near Grand Lake and near the Kawuneeche Visitor Center

Large Pile Burns: 10 acres

- 5 acres of large piles of material from the vicinity of the Longs Peak Ranger Station were burned by park staff
- An additional 5 acres of material was burned from the Highway 7 corridor

Manual Fuels Reduction (Park Staff): 324 acres

- 280 acres were treated near the Beaver Meadows Visitor Center
- 44 acres were treated in the East Portal area

Manual Fuels Reduction (Contracted): 1,270 acres

- 530 acres of manual fuels reduction work was completed along the US Highway 34 corridor between the Kawuneeche Visitor Center and the Colorado River Trailhead
- 260 acres were treated on Deer Mountain
- 110 acres were treated in the Sleepy Hollow area (east slope of Deer Mountain)
- 100 acres were treated in the North Inlet area

- 76 acres were treated along US Highway 34 between Horseshoe Park and Deer Ridge Junction
- 64 acres were treated along the Bear Lake corridor
- 54 acres were treated along US Highway 34 between the Kawuneeche Visitor Center and the park boundary
- 40 acres were treated along Tonahutu Road north of Grand Lake
- 36 acres were treated along US Highway 34 between Deer Ridge Junction and Hidden Valley

COMMUNITY OUTREACH AND EDUCATION

The park conducts an active fire education program that raises awareness among the general public, and facilitates collaborative efforts with adjoining private landowners, local municipal, county and state governments.

U.S. FOREST SERVICE

ARAPAHO AND ROOSEVELT NATIONAL FORESTS

The Arapaho and Roosevelt National Forests (ARNF) treated a total of 13,544 acres to reduce hazardous fuels. In addition, forest personnel assisted local communities in developing Community Wildfire Protection Plans; continued the efforts of the Colorado Bark Beetle Cooperative and Northern Front Range Mountain Pine Beetle Working Group; and implemented projects through the Collaborative Forest Landscape Restoration Project.

ARAPAHO AND ROOSEVELT NATIONAL FORESTS – DISTRICT ACCOMPLISHMENTS

BOULDER & CLEAR CREEK RANGER DISTRICTS

In 2011, hazardous fuels reduction treatments were completed on 2,753 acres within the districts' wildland-urban interface. Of these acres, 2,468 were accomplished through mechanical thinning and 285 through prescribed fire. Activity occurred in the following project areas: Evergreen, James Creek, Lump Gulch, St Vrain, Sugarloaf and Yankee Hill.

CANYON LAKES RANGER DISTRICT

In 2011, hazardous fuels reduction treatments were completed on 9,394 acres; more than 85 percent of the treatments occurred within the wildland-urban interface. Of the total acres, 7,036 were treated through mechanical thinning and 2,358 acres through prescribed fire. Activity occurred in the following project areas: Cache La Poudre Wilderness, Crystal Lakes, Estes

Valley, Lone Tree, Pingree Hill, Red Feather, Sheep Creek 1, Sheep Creek 2, Stringtown West and Thompson River.



Piles stacked during a fuels thinning project in the Estes Valley Project area, Canyon Lakes Ranger District.

SULFUR RANGER DISTRICT

In 2011, hazardous fuels reduction treatments were completed on 1,397 acres to reduce the adverse effects of the mountain pine beetle epidemic. Of the total acres, 1,290 were accomplished through mechanical treatments and 107 through prescribed fire. Activity occurred in the following project areas: Arapaho National Recreation Area, Upper Fraser Valley, Willow Creek, Winter Park and recreation sites (picnic, campgrounds and trailheads) throughout the district.

PIKE NATIONAL FOREST

In 2011, the Pike National Forest treated a total of 5,385 acres. In addition to further implementation of the 10-Year Long-Term Stewardship Project, the forest continues working with other land managers, fire managers, emergency managers, community groups and private landowners to reduce wildfire risks along the Front Range of Colorado. Roller-chopping, crushing and piling projects also were completed across the forests.

PIKE NATIONAL FOREST – DISTRICT ACCOMPLISHMENTS

PIKES PEAK RANGER DISTRICT

Guided by the Woodland Park Healthy Forest Initiative (WPHFI), the district thinned 2,320 acres. In addition, plans were finalized for more hazardous fuels projects in 2012. In 2011, treatments occurred in the Crazy Gulch, Phantom 2 and 3, and Ryan Quinland 2 areas.

SOUTH PARK RANGER DISTRICT

The South Park Ranger District completed 1,522 acres of hazardous fuels treatments. Prescribed fire was used to treat 87 percent of these acres. The remaining acres were mechanically thinned. All treatments were completed in the wildland-urban interface areas of Caylor Gulch and the Rocky Messenger project areas, which includes Eleven Mile Canyon Recreation Area and numerous subdivisions.

SOUTH PLATTE RANGER DISTRICT

Through an agreement and continued cooperation with Denver Water, the district mechanically treated fuels on 1,543 acres in the Upper South Platte Watershed. During FY 2011, layout, pre-treatment monitoring and other preparatory work were completed on 2,345 acres; implementation will be included in FY 2012 and FY 2013 programs of work.

ROCKY MOUNTAIN RESEARCH STATION

2011 Science Update

ECOSYSTEM CHANGES AFTER MOUNTAIN PINE BEETLE AND TIMBER HARVEST IN COLORADO LODGEPOLE PINE FORESTS

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Recent mountain pine beetle outbreaks in western North America have set millions of acres of lodgepole pine forest on new development trajectories. In Colorado, concerns over increased wildfire risk and threats to human safety and infrastructure have prompted an unprecedented amount of harvesting, focused on the removal of dead lodgepole pine. Here, we report on multiple ongoing studies that are assessing the effects of overstory loss from mountain pine beetle and harvesting on a variety of ecosystem properties, including tree recruitment, forest development, fuel loads, potential fire behavior and understory plant communities.

These studies were conducted at four management areas across northern Colorado, with one located on the Arapaho National Forest, one located on the Colorado State Forest and two located on the Routt National Forest. Data collection occurred on six paired, harvested and untreated stands at each management area, for a total of 24 study sites. Data were gathered two to three years post-harvest.



Increased wildfire risk and threats to human safety and infrastructure have prompted an unprecedented amount of harvesting, focused on the removal of dead lodgepole pine.

Effects of Harvesting on Trees and Fuels

The immediate impacts of harvesting on residual overstory trees and tree regeneration were dramatic. Harvesting operations removed 87 percent of the residual live overstory basal area and left 43 trees ac^{-1} on average. Though the density of tree seedlings colonizing harvest units was 2.5-fold higher than in untreated stands on average, both harvested and unharvested stands had abundant tree regeneration (1670 vs. 653 seedlings ac^{-1}). However, seedling composition varied markedly, with 10-fold more lodgepole pine, seven-fold more aspen, and eight-fold less subalpine fir in harvested than in untreated stands.

Field measurements of residual trees and tree regeneration were input into the Forest Vegetation Simulator (FVS) to project forest stand development over the next 200 years. These modeling results suggest that pre-beetle basal area will recover in 80 to 110 years regardless of treatment, though species composition is expected to differ between untreated and harvested stands, untreated stands will be dominated by subalpine fir, while harvested stands will be dominated by lodgepole pine.

Fuel measurements indicated harvest treatments increased fine (<3 inch) and coarse (>3 inch) woody surface fuels more than three-fold compared to untreated stands. Projecting forward with FVS, however, we expect that untreated stands will experience a substantial increase in coarse fuels as dead trees topple within three decades of beetle infestation.

Harvesting Impacts on Potential Fire Behavior

We combined local climate records with projections of forest stand development and fuel loads to simulate potential fire behavior using the Fire and Fuels

Extension to the Forest Vegetation Simulator (FFE-FVS). Modeling results suggest that the lack of canopy fuels initially will generate similar fire behavior in untreated and harvested areas. However, as the forest overstory develops in untreated stands in the following decades, abundant subalpine fir will increase the canopy bulk density and lower canopy base height relative to harvested stands, while toppled trees will increase coarse surface fuel loads. These conditions will allow torching at lower wind speeds and increase active crown fire potential during extreme weather.

As a result, passive crown fires (i.e., fires that ignite individual tree crowns, but do not spread between canopies) are expected to occur in untreated stands under 50th percentile weather conditions; in contrast, under similar weather conditions, surface fires are expected in harvested areas.

Changes in Understory Plant Communities Due to Harvesting

Total understory plant cover declined from 71 to 47 percent in the first two to three years post-harvesting, driven primarily by losses in shrub cover. Among the hardest hit was whortleberry (*Vaccinium* spp.), one of the most prevalent understory species in Colorado's lodgepole pine forests. Whortleberry cover fell from 19 percent in untreated stands to 6 percent in harvested stands, accounting for more than half of the loss in total plant cover.

Exotic species, in contrast, appeared to be stimulated by salvage logging, though even in salvaged areas they were not particularly abundant. Common dandelion (*Taraxacum officinale*) and Canada thistle (*Cirsium arvense*) were the most commonly encountered exotic species. Common dandelion occurred in 44 percent of untreated plots and 81 percent of harvested plots, while Canada thistle occurred in 9 percent and 28 percent of untreated and harvested plots, respectively.

For more information about these studies or for copies of related publications, contact Chuck Rhoades by email at crhoades@fs.fed.us.



Harvested lodgepole pine stands in northern Colorado.

LIVING WITH FIRE IN COLORADO

Patricia Champ

USDA Forest Service, Rocky Mountain Research Station

Following major wildfires that occurred in Boulder and Larimer counties in 2010, a revised version of a 2007 survey was administered to homeowners living in the wildland-urban interface areas of the two counties who had responded to the original survey. Comparing 2007 to 2010 responses suggests important changes in homeowners' experiences and views on wildfire. While we cannot assign causation for the observed changes in the survey responses, we speculate that the results may be driven by a combination of more wildfires in the area and community education programs.

The survey respondents were aware of wildfire risk in 2007, but even more aware in 2010. As expected, many more respondents (43 percent) reported evacuating their home due to a wildfire in 2010 compared to 2007 (19 percent). Likewise relative to 2007, respondents in 2010 reported higher levels of concern about wildfire damaging or affecting their house, their property, local water sources and their pets.

While awareness seemed to have increased from 2007 to 2010, barriers to taking action to reduce wildfire risk also appeared to have increased. Relative to 2007, significantly more respondents in 2010 reported cost, time and physical difficulty as strong considerations when deciding whether to take action to reduce wildfire risk.

FRONT RANGE ROUNDTABLE

ANNUAL REPORT



In 2011, the Front Range Roundtable continued its mission to “serve as a focal point for diverse stakeholder input into efforts to reduce wildland fire risks and improve forest health through sustained fuels treatment along the Colorado Front Range.”

The Roundtable is a coalition of approximately 200 individuals from state and federal agencies, local governments, environmental and conservation organizations, academic and scientific communities, and industry and user groups, all with a commitment to forest health and fire risk mitigation along Colorado’s Front Range. The focus area of the Roundtable encompasses Boulder, Clear Creek, Douglas, El Paso, Gilpin, Grand, Jefferson, Larimer, Park and Teller counties.

In 2011, the Roundtable accomplished the following:

- The Roundtable’s Collaborative Forest Landscape Restoration Program (CFLRP) Monitoring Team published the first CFLRP Monitoring Guide for the Front Range in June 2011.¹
- The Outreach and Policy Team and the Uncompahgre Partnership² organized a Colorado CFLRP delegation to Washington, D.C., to advocate for CFLRP. CFLRP received full funding from Congress for the 2012 fiscal year.
- Through a competitive application process, the Implementation and Mapping Team selected the Western Boulder County Healthy Forest Initiative as a partner to demonstrate forest restoration and wildfire mitigation.
- At its second annual meeting, the Roundtable Biomass Utilization and Slash Sites Team agreed on existing and additional talking points regarding trucking weight limits on federal highways and Colorado’s biomass climate.³
- Roundtable representatives participated in a forest stakeholder meeting at the State Capitol in January to discuss policy proposals.
- The Roundtable hosted approximately 20 elected officials and their staff on field trips of the Fourmile Canyon burn area in August.⁴
- In November, the Roundtable reconvened its Science and Monitoring (SM) Team after a year-long break to allow members to serve on the CFLRP Monitoring Team. (The SM Team continues to serve as the CFLRP collaborative monitoring group.)
- The Roundtable Executive and Outreach and Policy teams launched a wildland-urban interface policy effort exploring ways to advance the 2006 Roundtable recommendation to “change local policy to limit the growth of fire risk in the Wildland-Urban Interface.”

¹http://frontrangeroundtable.org/uploads/Roundtable_CFLRP_Monitoring_Plan_062511.pdf

²http://frontrangeroundtable.org/uploads/Roundtable_UP_DC_trip_briefing_091311_v6.pdf

³http://frontrangeroundtable.org/uploads/New_2011_BUSS_Talking_Points-Draft.pdf

⁴http://frontrangeroundtable.org/uploads/Roundtable_Fourmile_Tour_082411.pdf



Front Range Roundtable 2011 Goals

Executive Team

- Lead in forming a coalition to recommend policy initiatives to limits fire risks in the WUI.
- Lead the Roundtable to agree on a collaborative adaptive management process
- Fundraise at least \$40,000

Implementation and Mapping (IM) Team

- Select one or more communities to partner with on developing and attracting funding for a turn-key project around at least one of the highest priority landscape identified.

Outreach & Policy (OP) Team

- Conduct outreach to elected local officials to highlight Front Range forest health and fire risk issues (including field tours, speaking engagements, and a visit by Roundtable representatives and partners to Washington D.C)

Biomass Utilization and Slash Sites (BUSS) Team

- Share information about biomass utilization developments across the Front Range, update biomass utilization talking points at one workshop to be held during the year, and continue to track biomass status by county

Science & Monitoring Team

- Help the Roundtable agree on target metrics for ecological restoration in the Lower Montane

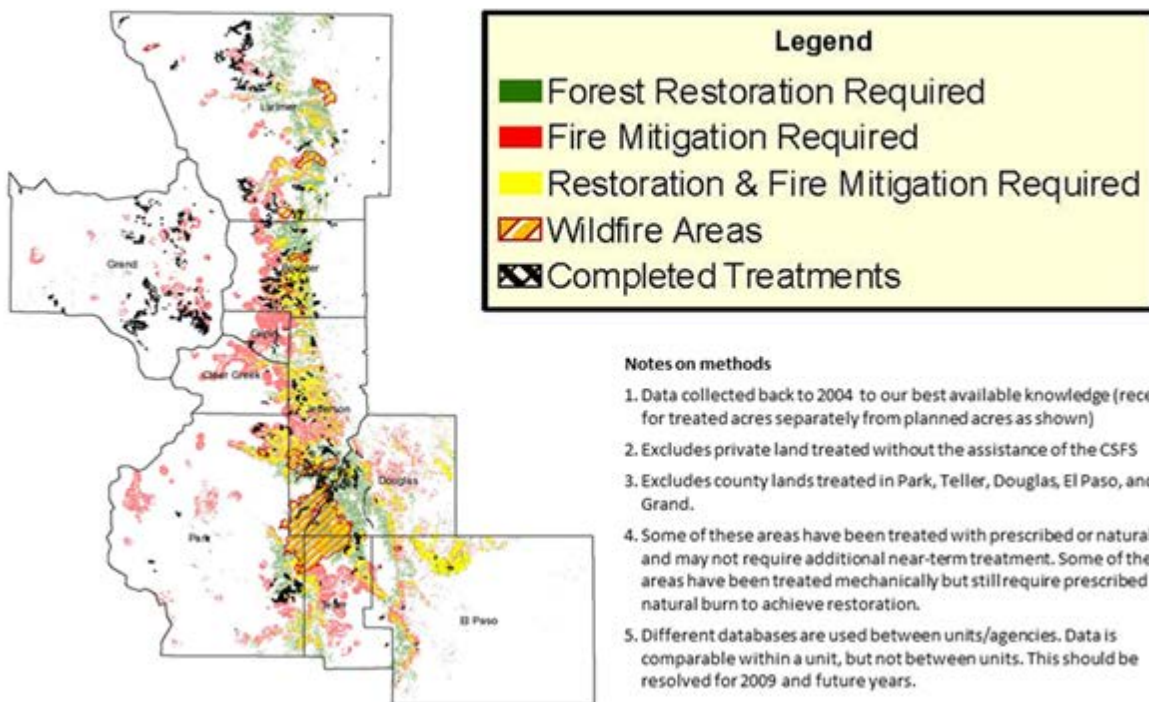
CFLRP Monitoring Team

- Develop an ecological, economic, and social monitoring plan for CLFRP grant awarded to the USFS

Contact: gali@behconsulting.com

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2009 Map of Priorities: Accomplishments vs. 2006 Recommendations

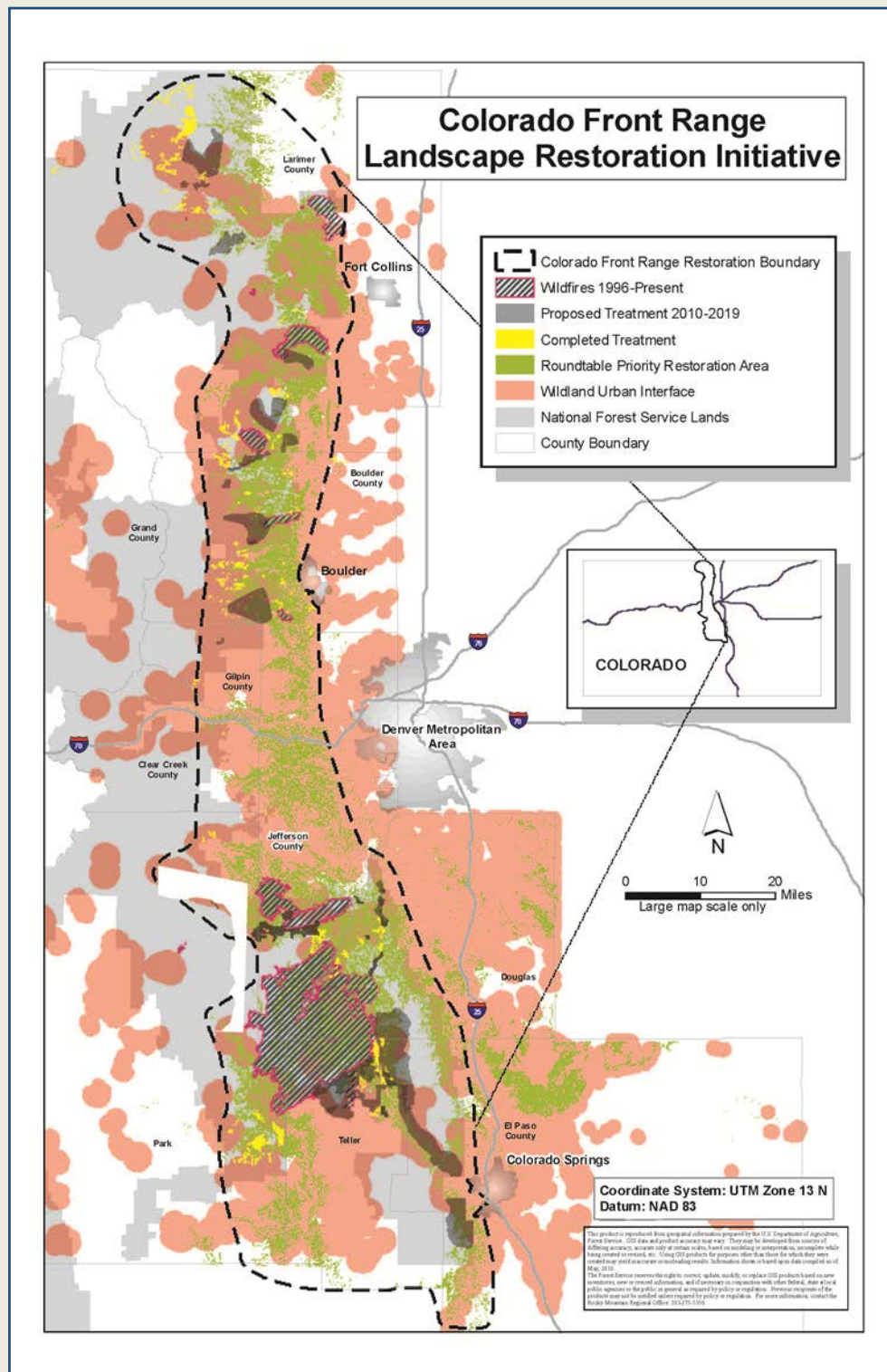


Source: Map by
USFS-ARP

Front Range Roundtable
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The Front Range Roundtable identified 1.5 million acres of lower montane forest in need of restoration and/or fuels reduction.



The Collaborative Forest Landscape Restoration Program map

ACKNOWLEDGEMENTS

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FRONT RANGE FUELS TREATMENT PARTNERSHIP AGENCIES

COLORADO STATE FOREST SERVICE

NATIONAL PARK SERVICE

ROCKY MOUNTAIN RESEARCH STATION

USDA FOREST SERVICE



FOR MORE INFORMATION, PLEASE VISIT THE WEBSITE AT:

www.frftp.org