

Facilities such as gas, groceries, telephones and lodging are in LaPorte, five miles northeast of Lory. The nearest hospital is in Fort Collins.



Nearby Facilities

Lory offers five picnic areas with a variety of settings. The Timber Group Picnic Area accommodates up to 100 people and has a horseshoe pit, volleyball court, covered tables, grills, fire ring and restrooms. Soldier Canyon Group Picnic Area will accommodate up to 150 people and has an open air stage that is perfect for outdoor weddings, day camps or other special events. South Eltuck Group Picnic Area which has wonderful panoramic views of the sandstone hogbacks will hold more intimate groups of 50 or less. Please call (970) 493-1623 as these sites are by reservation only. Other sites are available on a first come, first serve basis.



Picnicking

Hunting in the park is controlled. Information regarding special closures, seasons and regulations is available at the Visitor Center. Target shooting is prohibited at all times. Hunting is prohibited at the Horseshoe Mountain Open Space, adjacent to Lory to the south, so be aware of boundary lines.



Hunting



Lory State Park offers excellent bouldering opportunities along with traditional climbing. The majority of the bouldering is 30-45 minutes up Arthur's Rock Trail. You'll see signage that directs you off Arthur's Rock trail to the Bouldering Access Trail. Arthur's Rock Main Buttress offers great traditional climbing. Safety is your responsibility, don't climb beyond your abilities and understand all risks that are involved.



Rock Climbing

Lory State Park allows primitive backcountry camping by permit. No other camping is allowed in the park. The sites are approximately two miles from the trailhead and no open fires are allowed. The campsites offer the perfect weekend getaway to forget about the hustle and bustle of the city just over the hill.



Backcountry Camping

Lory has unlimited possibilities for nature study with an abundance of wildflowers, animals and insects. Guided hikes are available to groups by reservation. Checklists of Lory plants and birds are available at the Visitor Center.



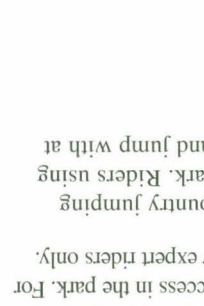
Nature Study

Lory's diverse terrain is home to a variety of wildlife, such as mule deer, wild turkey, black bear, mountain lion, coyote, Albert's squirrel, cottontail rabbit, blue grouse, mourning dove, songbirds and many reptile species.



Wildlife

This unique area is a new addition that was designed and constructed by free riding enthusiasts offering 69,600 sq. ft. of riding excitement for all levels of mountain bike riders. The area offers dirt jumps, a pump track and a skills area for honing off-road riding skills. The park is open year round except for wet or hazardous conditions. There is no additional fee to use this area.



The Corral Center Mountain Bike Park

Lory is an excellent place to take a horseback ride. Riders are welcome to bring their own horses to the park. There are 21.7 miles of trails for equestrians of all levels to access in the park. For your safety, Timber and Howard Trails are for expert riders only. In addition to the trail system, a cross-country jumping course is located at the south end of the park. Riders using the jumping course should wear helmets and jump with at least one "buddy".



Horseback Riding

Varying from rolling valleys to mountainous hillsides, Lory's 26 miles of trails rarely exceed a 12 percent grade. The variety of trails makes the park suitable for short or long hikes, mountain biking, horseback riding and jogging. During the winter months, Lory's trails provide excellent opportunities for cross-country skiing and snowshoeing. Snowmobiling is not allowed.



Trails

Located just inside the park entrance, the Visitor Center serves as an entrance station for purchasing park passes as well as an environmental education center. Here, visitors can learn about the park's wildlife and other natural resources through interpretive displays that are provided. Also, be sure to browse through the many books, maps, park apparel and other souvenirs available for purchase. A conference room is also available for rent to small groups for business meetings, club meetings, etc. Call (970) 493-1623 for rates.



Visitor Center

Formerly ranchland, Lory State Park was purchased in 1967. It was named and dedicated in honor of Dr. Charles A. Lory (1872-1969), president of Colorado State University from 1909 until 1940. Please call (970) 493-1623 for more information about the park.

Hidden in the foothills twenty minutes west of Fort Collins, Lory State Park has it all! Its 2,591 acres provide a variety of activities such as hiking, picnicking, mountain biking, horseback riding, primitive backcountry camping, rock climbing, and wildlife viewing. The park offers terrain suitable for any getaway, from an afternoon to a weekend. There are unique rock outcroppings, sandstone hogbacks, grassy open meadows, shrubby hillsides and ponderosa pine forests. Overlooking the Fort Collins area from a breathtaking elevation of 6,780 feet is Arthur's Rock, a jutting granite formation named for an early settler.



Lory State Park



A Place For Everyone

Lory has facilities to accommodate all types of visitors. The restrooms and some picnic areas are suitable for use by the physically challenged.

Please remember the wide variety of users during your visit and observe the "Rules of the Trail": bikers yield to hikers and horseback riders; hikers yield to horseback riders.



Park Passes

Visitors to Lory State Park are required to display a current Colorado State Parks Pass on their auto windshield or purchase an individual pass if hiking, biking or horseback riding into the park.

A **DAILY PASS** is valid from the day purchased until noon the following day. A **YEARLY PASS** is valid at any state park. For yearly pass holders who own additional vehicles, a multiple pass is available for an additional fee. A walk-in fee is required for hikers, bikers and horseback riders. Passes are sold at the Visitor Center or self-service station.

Colorado residents 64 years of age or older qualify for a special **ASPEN LEAF YEARLY PASS**, available at a discounted rate. This pass allows admission to all state parks every day. Colorado Disabled Veterans who display Colorado Disabled Veteran (DV) license plates are admitted free to all state parks without a pass.

In The Wild

Lory is an island for wildlife in an area that is rapidly developing. As visitors, we should respect their homes. Most animals such as mountain lions, black bears, golden eagles and rattlesnakes are reclusive and would prefer not to come into contact with people. For more information about chance encounters with wildlife, ask for brochures and suggestions at the Visitor Center.



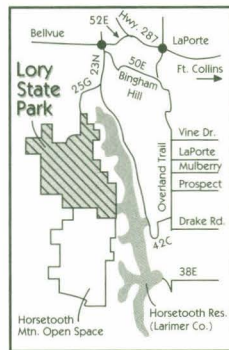
Help Protect Our Natural Resources

Lory State Park is maintained for your enjoyment. In the interest of safety and the preservation of your park, please observe the following regulations.

1. Place your trash in the receptacles provided. Litter can be dangerous to people and wildlife.
2. Keep ALL vehicles on designated roads or parking areas. Off-road driving can damage the resource and wildlife habitat as well as scar the terrain for several years.
3. Keep your pets under control and on a maximum six-foot leash to avoid accidents with vehicles, wildlife and other visitors. Pet bag stations are located at major trailheads – please dispose of your pet's waste while in the park to help keep the environment clean and for the courtesy of other park users.
4. **The speed limit in the park is 25 mph.** Please be alert for horses, mountain bikers, hikers and wildlife on the roadway.
5. Fires within the park should always be placed in a grill or approved metal fire ring. This prevents the outbreak of wildfires during the dry season. Backpackers are required to use camp stoves.

NO OPEN FIRES ARE ALLOWED IN THE BACKCOUNTRY!

Location Map



Lory State Park

708 Lodgepole Dr. • Bellvue, CO 80512
Phone: (970) 493-1623 • Fax: (970) 493-4104
E-mail: lory.park@state.co.us
www.cpw.state.co.us



Funded in part by Great Outdoors Colorado through Colorado Lottery proceeds.



Become our friend and follow us.

CSP_HPLO_12K_3/13

COLORADO PARKS & WILDLIFE

Lory State Park

42 STATE PARKS FOR YOU TO ENJOY

www.cpw.state.co.us

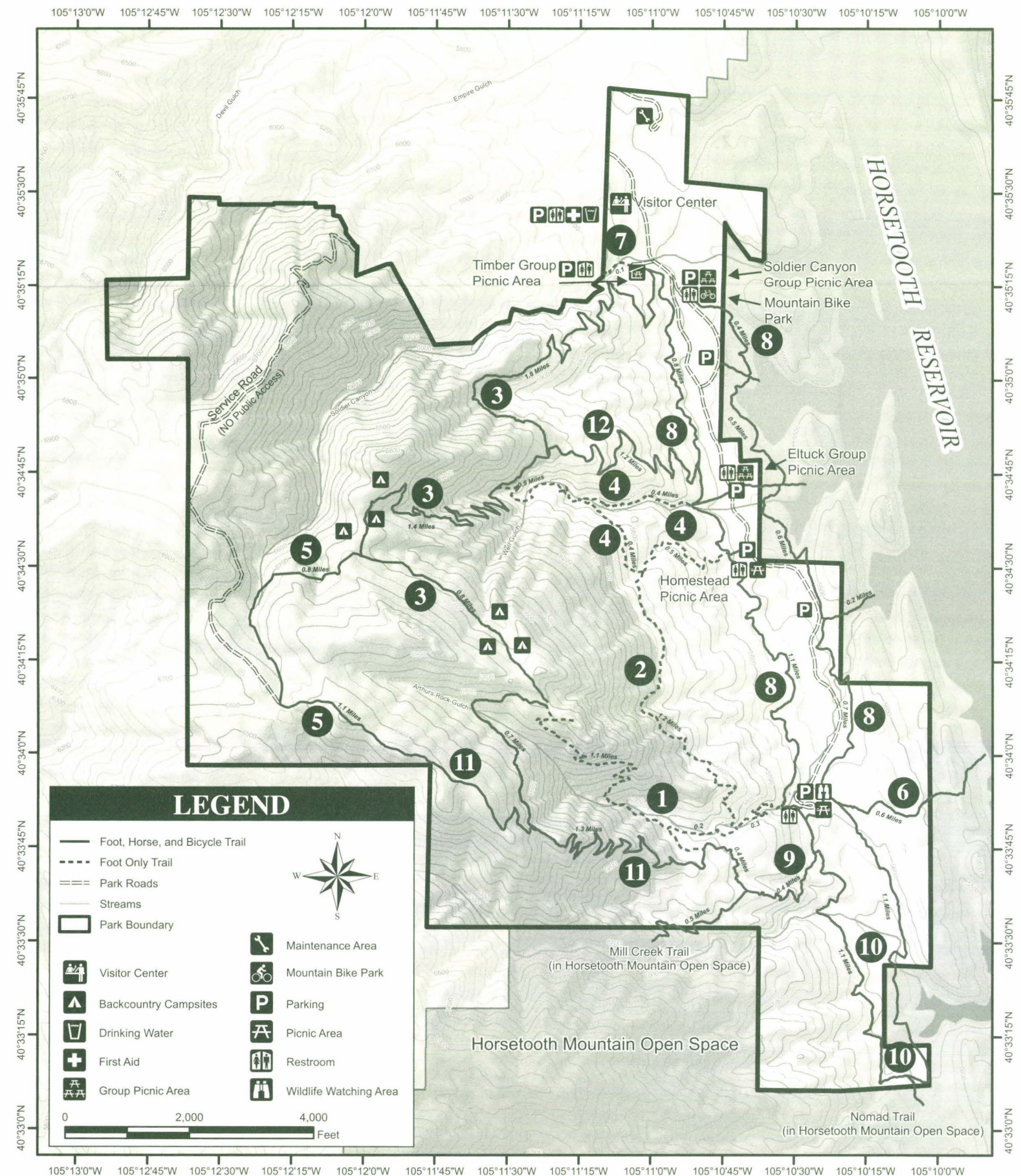
Trails Map

(All Trail Distances Are One Way)



- | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------------------------------|------------------|
| 1 Arthur's Rock Trail | Foot only | Moderate to Difficult | 1.7 miles |
| This 1.7 mile hiking trail winds through forested mountainsides and open meadows to the summit of Arthur's Rock. Along the trail, hikers can travel through different ecosystems because of the change in elevation. Upon reaching the summit of Arthur's Rock, one is offered a impressive view of Horsetooth Reservoir and the Front Range from an elevation of 6,780 feet. | | | |
| 2 Overlook Trail | Foot only | Moderate | 1.2 miles |
| Mule deer, wildflowers, Abert's squirrels and views of the eastern plains can be seen along this 1.2 mile trail connecting Arthur's Rock Trail to the Well Gulch Nature Trail. Starting from Well Gulch, the trail strolls along the ridge below Arthur's Rock, until meeting with the Arthur's Rock Trail. | | | |
| 3 Timber Trail | Foot, Expert Mountain Bike and Expert Equestrian | Moderate to Difficult | 4.2 miles |
| This 4.2 mile trail ascends from the group picnic area to the ridge behind Arthur's Rock. The trail climbs through meadows and mountain shrub, changing to pine and fir in the upper elevations, where the park's six primitive back-country sites can be found. This trail has some steep switchbacks and rocky scrambles to cross in getting to the top of the Well Gulch drainage. | | | |
| 4 Well Gulch Nature Trail | Foot only | Easy to Moderate | 1.4 miles |
| Wildflowers and riparian ecosystem line this lush 1.4 mile trail. A self-guided nature tour takes you through the meadow, mountain shrub, Douglas fir, and ponderosa ecosystems, with stations along the way illustrating botany, geology and animal life in Lory State Park. For those looking for a longer hike, the trail branches off into the Timber and Overlook Trails. | | | |
| 5 Westridge Trail | Foot, Horse, Mountain Bike | Moderate | 1.9 miles |
| Converging with Howard Trail via singletrack, Westridge mostly follows an old Jeep road along the ridgeline near Lory's western boundary, dropping down into the forest as it turns back east through the center of the Park, merging with Timber and Arthur's Rock. The only trail in the Park that provides views of the snow-capped Continental Divide, with perfect views of 14,259' Longs Peak, and portions of the Indian Peaks to the south. | | | |
| 6 Shoreline Trail | Foot, Horse, Mountain Bike | Easy | 1.0 miles |
| This comfortable one mile hike leads down to the edge of Horsetooth Reservoir. The red sandstone hogbacks offer a striking background to the grassy meadows, where deer can be found grazing. | | | |
| 7 Waterfall Trail | Foot only | Easy | 0.1 miles |
| This 0.1 mile trail leads back to a series of waterfalls during the spring and early summer. Picturesque rock outcroppings abut this quick hike through a riparian zone offering shade and wildlife-viewing under the cottonwood canopy. | | | |
| 8 East & West Valley Trails | Foot, Horse, Mountain Bike | Easy | 2.2 miles |
| These trails run parallel to the main road, branching to coves at Horsetooth Reservoir or meeting with the mountain trails. East Valley 2.2 mile, West Valley 2.3 mile. | | | |
| 9 Mill Creek Link | Foot, Horse, Mountain Bike | Difficult | 0.9 miles |
| From the South Valley trail, this 0.9 mile link offers passage to the upper elevations of Horsetooth Mountain Park by way of the Mill Creek Trail, and a connection to Lory's Howard Trail. This link also connects across the meadow to Arthur's Trail. | | | |
| 10 South Valley Trail Loop | Foot, Horse, Mountain Bike | Easy | 2.4 miles |
| This easy 2.4 mile loop trail takes you to the south border of Lory State Park. This link offers an easy transition into Horsetooth Mountain Open Space. | | | |
| 11 Howard Trail | Foot, Expert Mountain Bike and Expert Equestrian | Moderate to Difficult | 2.1 miles |
| This challenging 2.1 mile trail connects the upper mountain trails to Lory's valley trails on the south end of the park. Howard Trail offers an alternative route of return from the Arthur's Rock Trail and connects upper Timber Trail and Westridge Trail to create loop opportunities for all backcountry trail users. | | | |
| 12 Kimmons Trail | Foot, Horse, Mountain Bike | Moderate | 1.1 miles |
| This 1.1 mile trail provides views of Horsetooth reservoir and the eastern plains and offers a moderate connection between the West Valley and Timber Trail. This is the preferred route for mountain bikers and horseback riders seeking an intermediate level loop trail through a mountain shrub ecosystem. | | | |

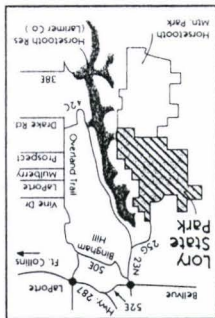
Lory State Park



Washington, D.C. 20013-7127
 telephone (303) 866-3437 or the National Park Service, P.O. Box 37127,
 nearest local regional office, the Division headquarters in Denver, Colorado.
 Division of Parks and Outdoor Recreation on the grounds of the park manager, the
 sex, age, handicap, or national origin, should contact the park manager, the
 otherwise subjected to discrimination under any program of the Colorado
 Any person who is excluded from participation in, denied the benefits of, or

Colorado State Parks are operated in compliance with the Americans with
 Disabilities Act. Questions, complaints and requests for additional information
 may be directed to: ADA Coordinator, Department of Natural Resources, 1313
 Sherman St., Room 718, Denver, CO 80203.

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LOCATION MAP

HELP PROTECT OUR NATURAL RESOURCES
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1. Place your trash in the receptacles provided.
2. Keep ALL vehicles on designated roads or parking areas. Off-road driving can damage the resources and wildlife habitat as well as scar the terrain for several years.
3. Keep your pets under control and on a maximum six-foot leash to avoid accidents with vehicles, wildlife and other visitors.
4. The speed limit in the park is 25 m.p.h. Please be alert for horses, mountain bikers, people and wildlife on the roadway.
5. Fires within the park should always be placed in a grill or approved metal fire ring. This prevents the outbreak of wildfires during the dry season. Backpackers are required to use camp stoves. **NO OPEN FIRES ARE ALLOWED IN THE BACKCOUNTRY!**



Lory is an island for wildlife in an area that is rapidly developing. As visitors, we should respect their homes. Most animals such as mountain lions, black bears, golden eagles and rattlesnakes are reclusive and would prefer not to come into contact with people. For more information about chance encounters with wildlife, ask for brochures and suggestions at the visitor center.

PARK PASSES
 Visitors to Lory State Park are required to display a current Colorado State Parks Pass on their auto windshield or purchase an individual pass. A **DAILY PASS** is valid from the day purchased until noon the following day. An **ANNUAL PASS** is valid at any state park for the remainder of the calendar year. For annual pass holders who own additional vehicles, a multiple pass is available for an additional fee. A \$2.00/per day walk-in fee is required for hikers, bikers and horseback riders. Passes are sold at the visitor center. Colorado residents 62 years of age or older qualify for a special **ASPEN LEAF ANNUAL PASS**, available at a discounted rate. This pass allows admission to all state parks every day. Colorado Disabled Veterans who display Colorado Disabled Veteran (DV) license plates are admitted free to all state parks without a pass.

A PLACE FOR EVERYONE
 Lory has facilities to accommodate all types of visitors. The restaurants and some picnic areas are suitable for use by the physically challenged. Please remember the wide variety of users during your visit and observe the "Rules of the Trail": bikers yield to hikers and horseback riders; hikers yield to horseback riders.



COLORADO STATE PARKS

L O R Y



LORY STATE PARK

Hidden in the foothills twenty minutes west of Fort Collins, Lory State Park has it all! Its 2,400 acres provide for a variety of activities such as hiking, picnicking, mountain biking, horseback riding, backcountry camping and wildlife viewing. The park offers terrain suitable for any getaway, from an afternoon to a weekend. There are unique rock outcroppings, sandstone hogbacks, grassy open meadows, shrubby hillsides and ponderosa pine forests. Overlooking the Fort Collins area from a breathtaking elevation of 6,780 feet is Arthur's Rock, a jutting granite formation named for an early settler. Formerly ranchland, Lory State Park was purchased in 1967. It was named and dedicated in honor of Dr. Charles A. Lory (1872-1969), president of Colorado State University from 1909 until 1940. Please call (970) 493-1623 for more information about the park.

VISITOR CENTER
 Located just inside the park entrance. The visitor center serves as an entrance station for purchasing park passes as well as an environmental education center. Here, visitors can learn about the park's wildlife and other natural resources through interpretive displays that are provided. Also, be sure to browse through the many books, maps, postcards and other souvenirs available for purchase.

RECYCLE
 When you are finished with your visit and no longer need this brochure, please leave it at the park visitor center.

TRAILS

Varying from rolling valleys to mountainous hillsides, Lory's 20 miles of trails rarely exceed a 12 percent grade. The variety of trails makes the park suitable for short or long hikes, mountain bikes, horseback riders and joggers. During the winter months, Lory's trails provide excellent opportunities for cross-country skiing, sledding and tubing. Snowmobiling is not allowed. Safe drinking water and restroom facilities are not available on the trails. An adequate water supply should be carried and may be obtained at the visitor center.

HORSEBACK RIDING

Lory is an excellent place to take a horseback ride. The Double Diamond Stables provides many activities for the Lory visitor including guided trail rides, surrey and hay rides. For more information, call the stables at (970) 224-4200. Riders are also welcome to bring their own horses to the park. In addition to the trail system, a cross-country jumping course is located at the south end of the park. Riders using the jumping course should wear helmets and jump with at least one "buddy."

WILDLIFE

Lory's diverse terrain is home to a variety of wildlife, such as mule deer, wild turkey, black bear, mountain lion, coyote, Abert's squirrel, cottontail rabbit, blue grouse, mourning dove, songbirds and many reptile species.

NATURE STUDY

Lory has unlimited possibilities for nature study with an abundance of wildflowers, animals and insects. Guided hikes are available to groups by reservation. Checklists of Lory plants and birds are available at the visitor center.

FIRST AID

First Aid is available at the visitor center or from any park ranger.

BACKCOUNTRY CAMPING

Lory State Park allows primitive backcountry camping by permit. No other camping is allowed in the park. The sites are approximately two miles from the trailhead and no open fires are allowed. The campsites offer the perfect weekend getaway to forget about the hustle and bustle of the city just over the hill.

WATER SPORTS

Horsetooth Reservoir borders Lory State Park to the east and is operated by the Larimer County Parks Department. From Lory, the reservoir is accessible by foot only. There are five coves that offer bass, trout, and walleye fishing. All Colorado fishing regulations apply. The reservoir also offers boating, water-skiing and many other water activities. For more information about Horsetooth Reservoir, call the Larimer County Parks Department at (970) 679-4570.

HUNTING

Hunting in the park is controlled. Information regarding special closures, seasons and regulations is available at the visitor center. Target shooting is prohibited at all times. Hunting is prohibited at the Horsetooth Mountain Park, adjacent to Lory to the south, so be aware of boundary lines.

PICNICKING

Lory offers five picnic areas with a variety of settings. The Timber Group Picnic Area accommodates up to 150 people and has horseshoe pits, a volleyball court, covered tables, grills, a fire ring and restrooms. South Eltuck Picnic Area may be reserved for special events by calling (970) 493-1623. Other sites are available on a first come, first serve basis.

NEARBY FACILITIES

Facilities such as gas, groceries, telephones and lodging are in LaPorte, five miles northeast of Lory. The nearest hospital is in Fort Collins.



LORY STATE PARK TRAILS

1 ARTHUR'S ROCK TRAIL

Foot only
Moderate to Difficult

The 1.7 mile hiking trail winds through forested mountainsides and open meadows to the summit of Arthur's Rock. Along the trail, hikers can experience many different types of plants and wildlife because of the change in elevation. Upon reaching the summit of Arthur's Rock, one is offered a breathtaking view of Horsetooth Reservoir and the Front Range from an elevation of 6,780 feet.

2 OVERLOOK TRAIL

Foot only
Easy to Difficult

Mule deer, wildflowers, Abert's squirrels and spectacular views of the eastern plains can be seen along this 1.9 mile trail connecting Arthur's Rock Trail to the Well Gulch Nature Trail. Starting from Well Gulch, the trail maintains a relatively flat stroll along the ridge below Arthur's Rock, until meeting with the Arthur's Rock trail.

3 TIMBER TRAIL

Foot only
Moderate to Difficult

This 3.5 mile trail ascends from the Group Picnic Area to the ridge behind Arthur's Rock. The trail climbs steeply through grass and shrub lands, leveling off in the pine forest, where the park's six primitive back-country sites can be found. This trail has some steep switchbacks and rocky scrambles to cross in getting to the top of the Well Gulch drainage.

4 WELL GULCH NATURE TRAIL

Foot only
Easy to Moderate

Wildflowers and wetland vegetation line this plush 1.5 mile trail. A self-guided nature tour takes you through the grasslands, mountain shrub, and timber life zones, with stations along the way illustrating botany, geology and animal life in Lory State Park. For those looking for a longer hike, the trail branches in the Timber and Overlook trails.

5 WESTRIDGE TRAIL

Foot only
Moderate

Following old jeep and fire roads, this 1.5 mile trail takes you along the west boarder of Lory. Tucked down in the pine forest broken by open meadows filled with wildflowers, its easy to forget about how close you are to civilization

6 SHORELINE TRAIL

Foot, Horse, Mountain Bike
Easy

This comfortable one mile hike leads down to the edge of Horsetooth Reservoir. The red sandstone hogbacks offer a striking background to the grassy meadows, where deer can be found grazing.

7 WATERFALL TRAIL

Foot only
Easy

This 0.1-mile trail leads back to a series of waterfalls during the spring and early summer. Wetland vegetation can be found along the trail throughout the summer.

8 VALLEY TRAILS

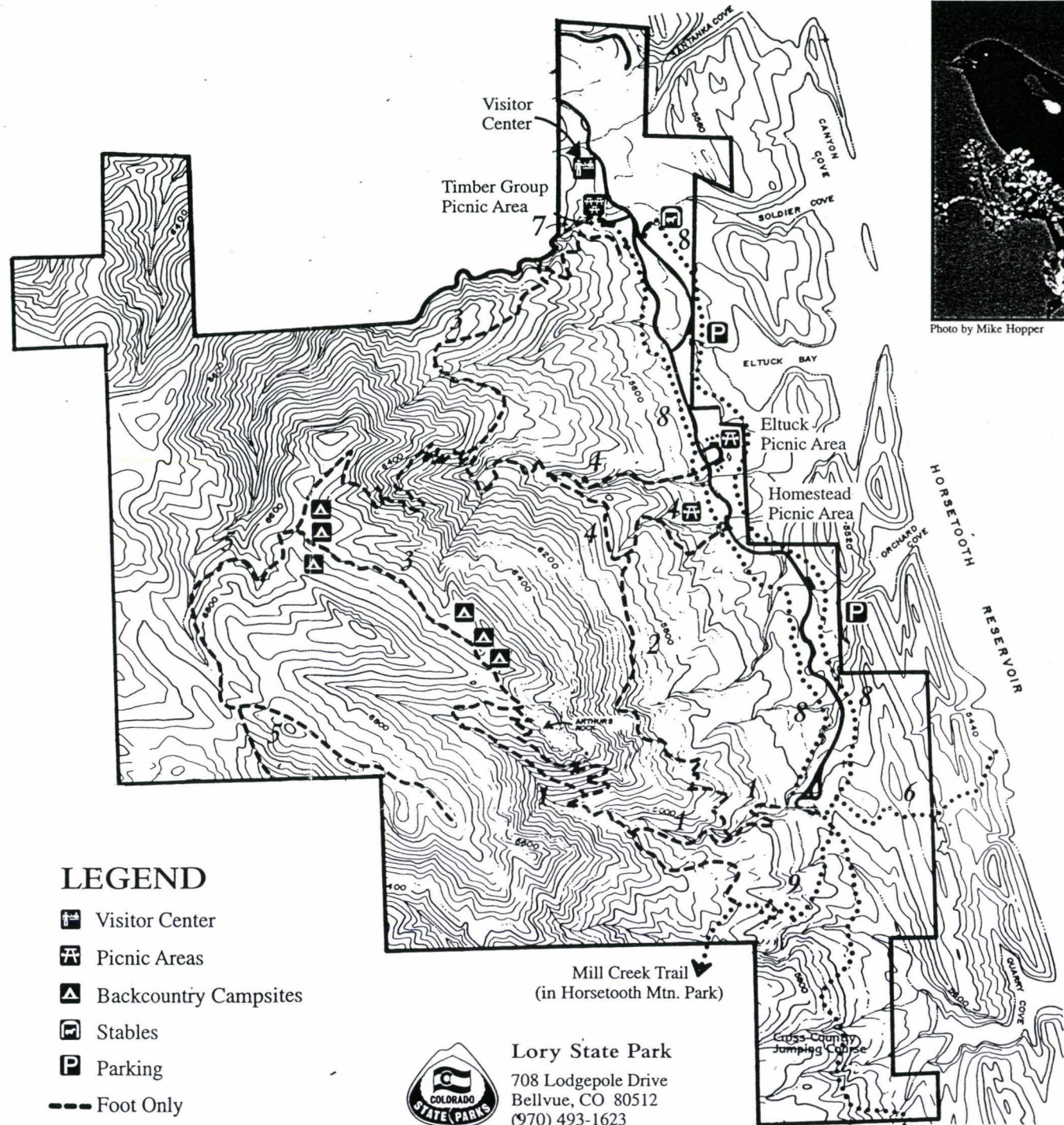
Foot, Horse, Mountain Bike
Easy

These trails run parallel to the main road, branching to coves at Horsetooth Reservoir or meeting with the mountain trails.

9 MILL CREEK LINK

Foot, Horse, Mountain Bike
Difficult

From the south valley trail, this link offers passage to the upper elevations of Horsetooth Mountain Park by way of the Mill Creek Trail.



LEGEND

- Visitor Center
- Picnic Areas
- Backcountry Campsites
- Stables
- Parking
- Foot Only
- Foot, Horse, and Bike



Lory State Park
708 Lodgepole Drive
Bellvue, CO 80512
(970) 493-1623

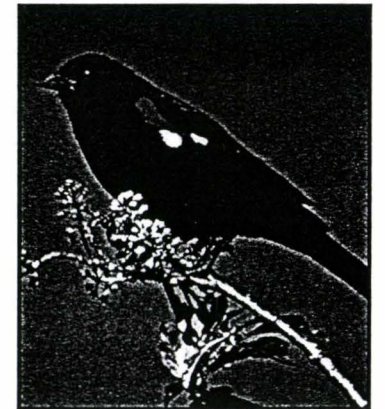


Photo by Mike Hopper



Sawmill Trail (in Horsetooth Mtn. Park)

Late 1800s

1897 – The Howard Family from Walden exchanged lands with Kimmons, forming the Howard Ranch consisting of 160 acres – Howard Family House was located at the present site of Homestead Picnic Area.

1897 – 1963 – Howard Ranch acquires surrounding homesteads, growing to about 3,600 acres.

1898 – First Ft. Collins City Council was formed, marking the formation of Ft. Collins as a City.



Empire Mine sometime before World War I

1898 – Copper was found at the end of Empire Gulch northwest of the park, forming the Empire Mine – Test pits were done in the surrounding area, including the park.

1930s Through Present

1937 – Construction of Horsetooth Reservoir dams began as part of the Big Thompson Project.

1949 – Construction of the dams were completed.

1951 – Horsetooth Reservoir began to fill, reaching full capacity by 1956.

1963 – Howard Ranch is sold to a Real Estate dealer.

1967 – 1976 - 2,600 acres was sold to the State of Colorado to be used as a State Park – Area referred to as The Howard Ranch or Horsetooth Recreation Area.

1975 – 2,492 acres were designated as Charles A. Lory State Park in honor of Charles Lory, president of Colorado Agricultural College (Currently Colorado State University) from 1909 to 1940.

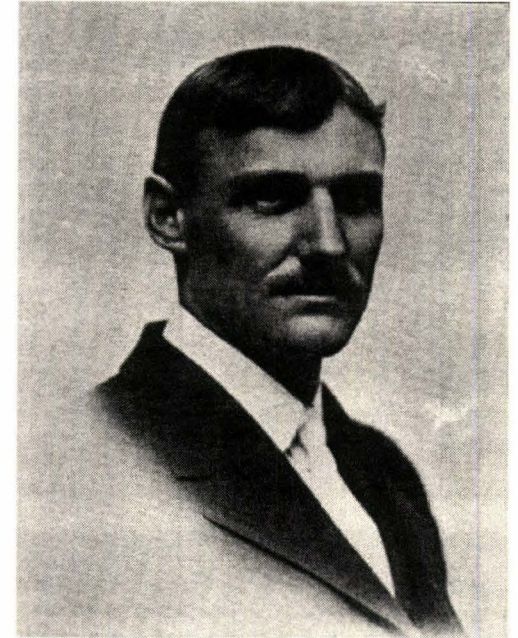
Acknowledgments:

Designed by: Jonathan D. Kelly

Photos from: Fort Collins Library Historical Archives

THE HISTORY *of Lory State Park*

A brief History of the Park and the Surrounding Area



Charles A Lory, 1911

Lory State Park

708 Lodgepole Drive
Bellvue, CO 80512
(970) 493-1623
lory.park@state.co.us



Early-History Through Early 1800s

4000 BCE – Hunter Gather Tribes inhabit the Horsetooth Valley Area

900 – 1200 CE – Athapascan Tribes from the north migrate along the Old North Trail, later named the Cherokee Trail (US287)

1700s – 1800s – Cherokee Trail and Area was used by various Native American Tribes, traders, trappers, army explorers, and gold hunters.



French-Canadian Trapper Antonie Janus with Ogallala Indians

1803 – Colorado was added to the Union through the Louisiana Purchase

Early to Late 1800s

Early 1800s – French-Canadian Trappers frequented the present day area of Bellvue along the Cache la Poudre River

1836 – Fur Traders camped along the Cache la Poudre River and built a gun powder cache, establishing the current name for the river.

Early – Mid 1800s – the Park area formed a buffer between the plains tribes of the Arapahoe, Apache, and Cheyenne from the mountain dwelling tribes of the Ute and Shoshone.

1860s-1870s – Pioneers started to settle in Pleasant Valley (Present Day Bellvue) and Spring Canyon

1861 – Colorado becomes a Territory, split from the Nebraska Territory

1862 – 1864 – Camp Collins is built near La Porte

1867 – Fort Collins was built along the Cache la Poudre River near present day downtown Ft. Collins

Late 1800s

Early 1870s – First sandstone quarries were developed at Stout (under Inlet Bay of Horsetooth Reservoir) and Bellvue, providing white, gray, and red sandstone for construction in Local Colorado towns including Ft. Collins and Denver, along with a few eastern cities.

August 1, 1876 – Colorado becomes the 38th State.

1881 – Union Pacific and Colorado Central Railroads had rail running from the local quarries to Denver, Greeley, Ft. Collins, Cheyenne, WY, and Omaha, NE.

1891 – John Kimmons was one of the first park area settlers to switch to ranching and farming, with his homestead near Arthur's Rock.

1893 – The Panic of 1893 followed by a depression that lasted until 1896 reduced quarry extraction to an on demand basis, closing several of the area quarries.



Lory State Park

FY 02-03 PARK FACTS

about the park

Lory State Park is located just fifteen minutes northwest of Fort Collins, adjacent to Horsetooth Reservoir. The park boasts a variety of rugged terrain and stunning vistas. The park covers more than 2,400 acres and features 25 miles of backcountry trails that lead through forest, meadows and rock-outcroppings, offering visitors great terrain for mountain biking, hiking and horseback riding. Visitors can experience Lory's wildlife and colorful wildflowers along any trail. Horseback riding enthusiasts enjoy the Double Diamond Stables and cross-country jumping course. Visitors can tour the park by foot, horseback, mountain bike, buggy or hay wagon. Beautiful Lory State Park is open to explore and enjoy all year long.

total visitation, FY 02-03
(July 1, 2002 to June 30, 2003)

54,482

county

Larimer

congressional district

4

state legislative districts

Senate 15

House 49

year became a state park

1975

ownership

100% State Parks

0% other

land acres

2,492 acres

water acres

0 acres

park inventory

miles of road

paved 0.1

unpaved 2.5

miles of trails

hiking 25.0

biking 15.0

horseback 15.0

number of boat ramps

0

number of campsites

6

number of cabins/yurts

0

number of picnic sites

20

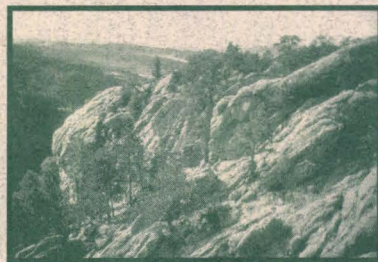
concessions at the park

Double Diamond Stables

major buildings/structures

visitor center

group picnic area



economic impact

projected expenditure by park visitors

within 50 miles of park, FY 02-03

\$648,817*

*Source: Colorado State Parks Market Assessment Study, 2002.

top attractions

- The trail system at the park is very popular. The most popular trail is the Arthur's Rock trail that leads to this prominent feature. From this rock, hikers can get spectacular views of the Front Range, Rocky Mountain National Park and even Pikes Peak on clear days.
- Access to Horsetooth Reservoir for fishing and boating also attracts visitors.
- The visitor center is a big attraction with its beautiful architecture, plentiful interpretive displays and Rocky Mountain Nature Association bookstore.

contact information

Lory State Park • Park Manager: Kathy Seiple • 708 Lodgepole Dr. • Bellvue, CO • 80512 • 970-493-1623 • lory.park@state.co.us • www.parks.state.co.us



challenges

- Fire danger at the park is extreme many months of the year. The forest is over-grown in many areas and is in need of fuel mitigation.
- About 8,000 trees died due to low water conditions along the Horsetooth Reservoir shoreline. Larimer County Parks, which manages Horsetooth Reservoir for the Bureau of Reclamation, has informed state parks of a massive tree-thinning project to occur along the shoreline.
- The popularity of the Arthur's Rock trail has led to a parking capacity problem at the two closest trailhead parking lots.
- There has been expressed interest from athletic event management companies to hold large special events at Lory State Park. One event is described as drawing up to 1,000 mountain-bikers for a two-day event. The organizers would like permission to allow registrants to camp on the park. There are only six backcountry sites. Organizers would like to allow the use of open fields for tent camping. The event would draw new users and considerable revenue to the park.



budget and operations

number of full-time employees

3.0

number of seasonal employees*

8.0

**seasonal employees are hired for periods ranging from two to six months in length*

number of volunteers

150

total volunteer hours contributed

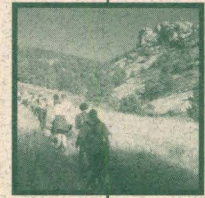
1,210

operating budget

\$245,494

capital construction budget

\$0



land acquisitions since 1993

none

partners

- Larimer County Parks and Recreation
- Friends of Lory Trails
- Diamond Peaks Mountain Bike Patrol
- Northern Colorado Mounted Patrol
- Eye Openers Kiwanas

ratios

full-time staff to annual visitors

1:18,161

self-sufficiency percentage*

39%

**Based on total park revenues and expenditures for FY 02-03; includes some prorated systemwide administrative costs and revenue.*

revenue per visitor

\$2.23

operating cost per visitor

\$5.78

volunteerism

- The annual Friends of Lory Trails Day event occurs each fall and attracts about 80 volunteers to work on high priority trail projects.
- The park also promotes and recruits the use of park host volunteers to operate the visitor center.
- Next season, one seasonal employee will be devoting a significant amount of time towards developing and recruiting volunteers.

mission statement for Colorado State Parks

To provide a spectrum of safe, quality outdoor recreation experiences for our visitors while effectively managing the natural resources under our authority.

Front Range Fuels Treatment Partnership
Vegetation Management Program
Project Funding Proposal Form

CSFS District: Ft. Collins

Date: 12/28/04

Project Name: State Parks Fuel Reduction

Funding Type Requested: *Companion Funds* _____ *FRFTP Funds* X *Planning Funds* _____

- Have you applied for any other grants for this project? Yes _____ No X* _____
- If so, which other grants have you applied for? State Parks will be funding a 50% match using Great Outdoor Colorado (GOCO) funds.

Legal Description: SW $\frac{1}{4}$ and SW $\frac{1}{4}$, NW $\frac{1}{4}$, Section 14, Township 7 North, Range 70 West

Common Name of Property or Parcel: Lory State Park

Parcel Number: 07140-00-916

County: Larimer

Prescription: Remove dwarf mistletoe and manage as a lower elevation, ponderosa pine stand. All trees with any amount of dwarf mistletoe will be removed or girdled. If available, an average of at least two large infested trees per acre will be girdled and left for wildlife use. Use Growing Stock Level (GSL) 60 or lower for marking remaining trees to be thinned (maintaining fewer poorly formed trees to maintain park aesthetics and selecting against Douglas-fir). Residual trees will be left in an uneven pattern with a representation of all diameter classes. Slash will be piled and burned or chipped with the chips distributed throughout the stand. Ephemeral areas will not be used as skid trails and only dwarf mistletoe infested trees will be taken within 10 feet.

Size of Practice: 66 acres

Species: ponderosa pine, Douglas-fir

Product to be Harvested: posts and poles

Volume of Product: unknown, depends on markets

Estimated Direct Costs: \$98,250.00

Estimated Value (Gross): unknown, depends on markets

Estimated Duration: 2 years

* **Other Benefits:** This project has been designed to:

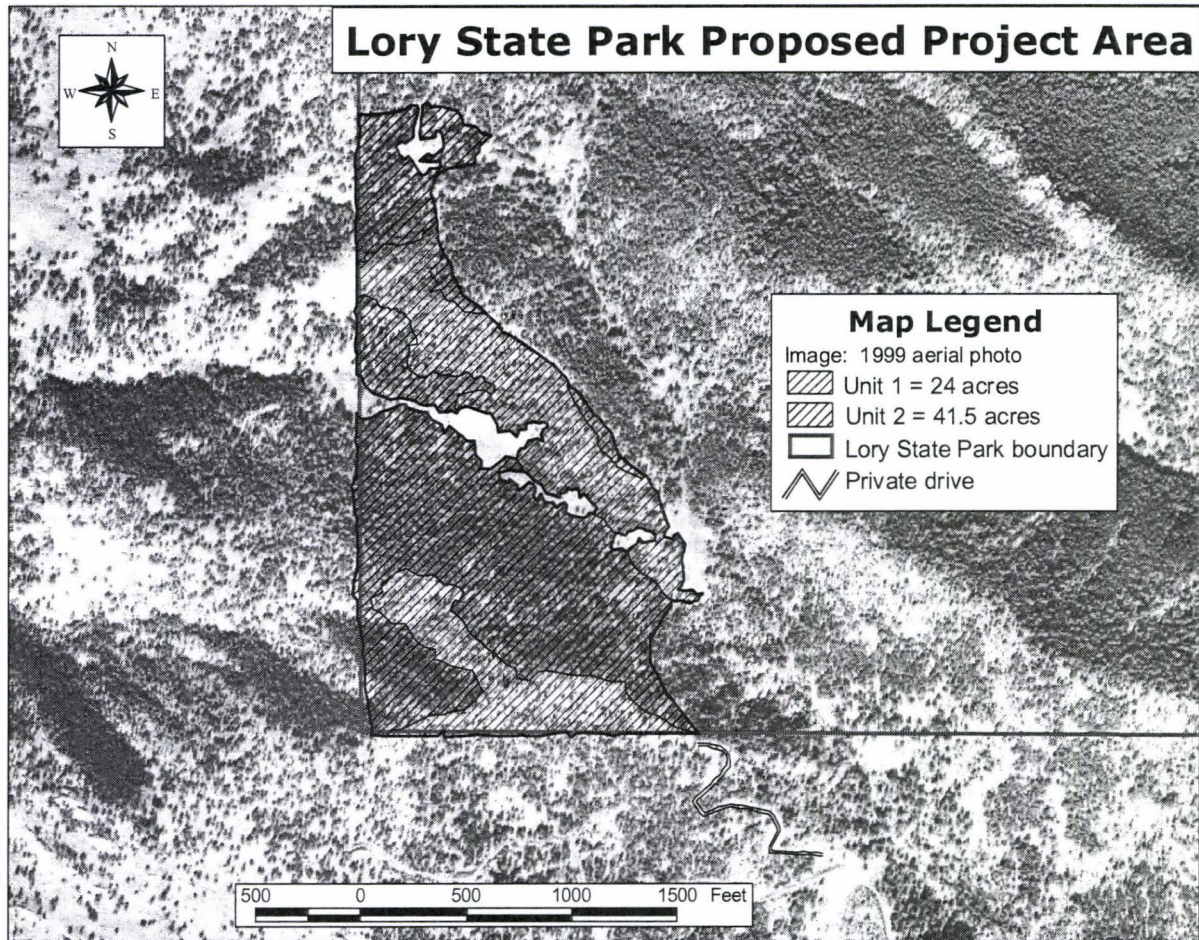
- a. Eradicate dwarf mistletoe to improve stand health. (primary units to achieve goal = units 1 & 2)
- b. Expand current openings/meadows to allow for increased forage for wildlife. (primary unit to achieve goal = unit 1, secondary unit to achieve goal = unit 2)
- c. Reduce fuel loading to decrease the chance of fire passing to or from private lands to the west. (primary units to achieve goal = units 1 & 2)
- d. Reduce the number of Douglas-fir on the northern slopes. (primary unit to achieve goal = unit 2)

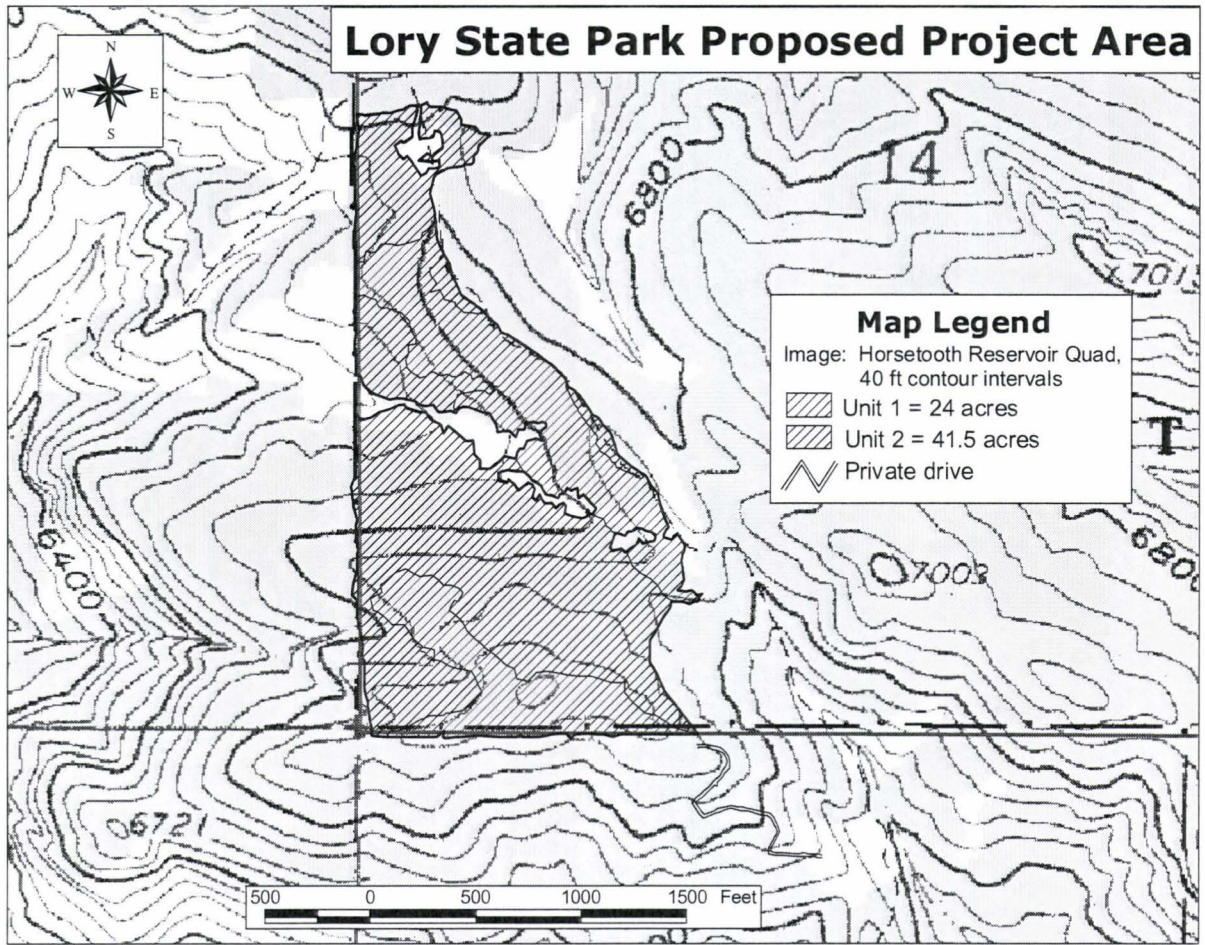
Removal of dwarf mistletoe will allow for healthy regeneration of the stand. The Park has a disproportionately extensive amount of dwarf mistletoe. Increased crown separation and lower surface fuel loading will reduce the wildfire threat in the Park, as well as improve forage value for wildlife.

Long-term benefits: The treatments proposed for Management Area 1 will result in a more open, healthy, aesthetically pleasing stand that will have drastically increased resistance to catastrophic wildfire, insects, and diseases. There will be greater age

distribution and a new generation of healthy trees will be able to reforest the area and replace the aging trees.

Project Narrative and Comments: See above





(Attach Project Map)

**Be sure to describe multiple resource and landscape level benefits when appropriate. This information could be critical to acceptance, and during any public meeting process.*

SCOPE OF WORK

Lory State Park Forest Health and Fuels Reduction

Purpose

This project has been designed to:

- Eradicate dwarf mistletoe to improve stand health.
- Reduce fuel loading to decrease the chance of fire passing to or from private lands to the West.
- Reduce the number of Douglas-fir on the northern slopes.
- Expand current openings/meadows to allow for increased forage for wildlife.

General Description of Work

Work will be performed based on the prescriptions listed below and as described during the pre-work site visit of the project. The work involves removal of dwarf mistletoe-infected trees and general thinning to be conducted through mechanical mulching. Chainsaws will be needed to girdle wildlife trees.

Legal Description and Location

This 67-acre unit is located along the western boundary of Lory State Park in Larimer County. The unit is within the West ½ of Section 14, Township 7 North, Range 70 West, which is found on the Horsetooth Reservoir topographic quadrangle map.

The Colorado State Forest Service will administer the project on behalf of the landowner, Colorado State Parks.

Contract Period

Contractor may operate any time of day, seven days a week from March 1, 2006 to June 2, 2006, with the exception of May 20 and May 21, when the contractor may not operate. Project must be completed by June 2, 2006. No contract extensions will be allowed for this project.

Additional Performance Standards

The contract administrator may suspend or limit operations in the case of extreme fire danger, excessive damage due to mud or snow, excessive residual tree damage, or failure to meet contract specifications.

The project area will be divided into three blocks. The project administrator must approve the first completed block before work may begin on the second block and the second block must be approved before starting work on the third block. Once each block is approved by the project administrator the contractor may submit an invoice for the completed block(s).

Ruts and/or depressions in the soil caused by contractor equipment will be less than eight inches deep. Any soil contaminated by loss of fuel, oil, grease, hydraulic fluid, coolant, or other fluids shall be removed and placed in covered drums or other acceptable containers for proper disposal by the contractor. In areas where machines have used a path repeatedly waterbars will be installed by the contractor if the project administrator determines they are necessary.

The contract administrator may require the contractor to mulch leave trees that have been significantly damaged (broken top, multiple equipment scars, equipment scarring in excess of 12" x 6" on the trunk, or an area encompassing more than two-thirds of the trunk circumference) by the contractor. The contractor must minimize damage to residual trees. The contractor will be charged \$20 for each significantly damaged tree that is 4 inches dbh or greater.

All access roads will be kept passable at all times. Roads and other improvements will be repaired to the same condition as found prior to the start of work. This repair may include repairing or replacing drainage control features. Significant damage to existing roads or other improvements caused by the contractor will be repaired by the contractor as soon as practical. The contract administrator and State Parks staff will determine if road repair is necessary. Any significant accumulations of mulch on the access road will be removed by the contractor at the end of the project.

Damaged gates, fences, or signs will be repaired or replaced by the contractor, at the discretion of the contract administrator or State Parks staff.

Smoking will only be allowed in vehicles. Each vehicle must have a Class A fire extinguisher and a minimum of one fire tool per cutting crew member. All vehicles and motorized equipment must utilize effective manufacturer-certified spark arresters and muffler systems.

The undercarriage and tires of all trucks and equipment must be washed offsite before entering the project area to reduce the spread of noxious weeds from other projects. Machine operations should avoid driving through weed areas.

Neither trash nor litter will be left by the contractor anywhere on the Park, access route, or vicinity. Daily hauling of any trash generated by the contractor is the contractor's responsibility.

No camping will be allowed on Park property.

It is the responsibility of the contractor to follow all rules and regulations established for Lory State Park. Kathy Seiple of Colorado State Parks is the manager for Lory State Park and can be contacted at (970) 493-1623.

All issues and concerns of adjacent property owners and others shall be referred to the project administrator.

Damage Deposit

A damage deposit in the amount of 15% of the contract value will be required upon contract award. The deposit shall be in the form of cashier's check, certified check, money order, or irrevocable letter of credit payable to the Colorado State Forest Service. One deposit per contractor is required. The deposit shall be used in part or in full, to correct deficiency in any work not completed to agreement specifications. The deposit will be retained in full should the contractor fail to complete the contracted work in the time frame specified in the Independent Services Contract. The deposit or its balance will be released to contractor promptly upon satisfactory completion of the contract.

Subcontracting

All subcontractors must be approved by CSFS in writing prior to contract signing and bid approval.

Access

Access to the project area will be from North County Road 25G, a paved road north of the entrance to Lory State Park. From 25G, travel is on a narrow public gravel road (Red Cedar Drive), which winds through a subdivision for approximately 1.4 miles. Then a private road is accessed through a private locked gate. This section of road is narrower, has very steep inclines, contains sharp turns, and may require a 4-wheel drive vehicle. It is approximately 1 mile in length. A gate owned by Lory State Park is located near the property boundary. The project area begins approximately 1 mile south of this gate along a poorly-maintained Park access road. This access road forms the eastern boundary of the project area for approximately 2500 feet.

The speed limit on Park property is 25 miles per hour. Posted and un-posted speed limits must be observed on all roads leading to the project area.

The vehicle and trailer used to haul the masticating equipment may not be taken on Red Cedar Drive. These may be left at a designated area on Lory State Park property.

The contractor must provide a lock for both access gates and leave the gates locked in a way that allows others access with separate locks.

Boundary

The unit boundary will be delineated in blue paint, except most of the south and west boundaries which are delineated by fencing. Trees bordering the project will be painted with vertical blue stripes, facing the interior of the project. The contractor will mulch all painted boundary trees.

Prescription

The trees to be removed in a small demonstration area will be marked with a dot of yellow paint at dbh. Other than this marked demonstration area, the contractor will determine which trees to remove based on the management prescription, unless otherwise specified by the Park or contract administrator. Work will begin in the demonstration area.

With the exceptions stated below, all live ponderosa pine trees with any amount of dwarf mistletoe will be mechanically mulched. Exceptions: The contractor will mechanically girdle and leave for wildlife use all live 10-inch dbh or larger dwarf mistletoe infected trees with a limit of 200 for the entire project and a maximum of five per each acre. This means that some acres may not have any girdled trees and other acres will have up to five girdled trees. Any live 10-inch dbh or larger infected trees beyond 200 will be felled and masticated down to a 6-inch top. All limbs will be masticated. Tree boles below the 6-inch top will be left intact. Mechanical girdling is defined as removing a 2-inch wide band of bark and cambium completely around a bole.

Existing snags being used by wildlife or snags greater than 10 inches dbh will be retained.

Target basal area is 60 square feet per acre for choosing remaining trees to be thinned, maintaining fewer poorly formed (often suppressed), damaged, diseased (such as western gall rust), and dead trees to maintain park aesthetics, selecting against Douglas-fir, and leaving no less than 10 feet between Douglas-fir trees less than 5 inches dbh. Some live "character" trees may be left. The use of a prism or angle gauge may be needed to meet the target basal area. Residual trees will be left in an uneven and clumpy pattern with a representation of all diameter classes.

All trees to be removed shall be mechanically masticated and no mulched material shall be larger than four feet long and eight inches in diameter. Also, chip depth will not exceed ten inches. Previously dead and down woody material should not be mulched and larger diameter down logs should be left intact as much as possible. All stumps will be cut as close to the ground as possible, but in no circumstances will stump height exceed four inches on the uphill side. Ephemeral drainage areas will not be used as primary travel routes.

Administration

Start date must be approved by project administrator. No work will begin without the presence of the project administrator. Work must be started within 5 working days of the contractor's receipt of the signed contract.

Upon project completion, the contractor must request a final inspection by the contract administrator. This final inspection will be no later than May 26, 2006. Any additional work must be completed by June 2, 2006. Final invoicing for the work must be submitted to the contract administrator by June 5, 2006. Payment will be processed upon successful completion of the project and after final inspection is complete.

Denise White

From: Billerbeck, Rob [Rob.Billerbeck@state.co.us]
Sent: Tuesday, August 09, 2005 2:34 PM
To: denise@lamar.colostate.edu
Subject: RE: Lory

Denise,
I forgot to respond to this question in my last reply:

I'm finally responding to this email you sent a while back. We had previously talked about the clearcutting over two years issue and you were going to talk to "someone" (wildlife biologist?) to make sure we could do the cuts in one year. If you're fine with it then I'm fine with it as long as I don't have anyone getting upset over it after the fact or we get stopped at the last minute. I prefer to ask for permission rather than forgiveness.

If my memory served, we discussed the wording in the BE, which says:
Patch cuts of this size will likely be performed over a period of two or more years.

My interpretation is that the word 'likely' does not lock us in to 2 years, and we could do a large patch cut in one year if we deemed necessary and still be in agreement with the BE. I also just double checked the letter back from USFWS and it doesn't place any additional restrictions on that. I don't need to check with any other biologists to say that I think we could be allowed to do a bigger patch cut if necessary, but as always, we will review each project individually and talk it through with you. We'd prefer to keep the cuts smaller per year, but I understand your desire for this first project to go for it in one year and keep the cost down.

So hang on to this email - its the proof its my fault if the USFWS disagrees.

The information contained within this email is intended for the addressed recipients only. Any other use of this information is prohibited.

Denise White

From: Billerbeck, Rob [Rob.Billerbeck@state.co.us]
Sent: Monday, May 09, 2005 10:20 AM
To: 'denise@lamar.colostate.edu'
Cc: Kraft, Lisa
Subject: RE: April 11th Demonstration Finalized

Denise,

I keep meaning to send this email, but I've been swamped lately. You might have already taken care of some of this, but I but wanted to pass on some post-meeting thoughts:

First, great job at the meeting! Now you can say you've done public meetings!

Second, here a few thoughts about how to get to through the next steps:

1. Sounds like we need to know quickly which if routes are possibilities on that west side. If you talk to fire department, they might have a good idea which routes are workable since they probably have been maintaining them for fire access. If you do, please let us know and we'll work up some rough maps showing the route in full that trucks would have to use.

2. If you can find out possible dates for Redstone HOA meetings, I can see what lines up with Lyle's calendar. If we find a likely date, then we can decide how best to get ourselves invited and get the date set.

3. Sounds like it would be good to estimate the potential traffic and truck weights, sizes, as well potential road maintenance costs. We could also write out what restrictions we could agree to on the traffic (i.e. what days and times). Might be good for you to talk those through with Scott Woods - he probably has good estimates for the loads and an idea of road maint costs, and he knows what restrictions the neighbors asked for at Staunton.

Thanks and let's keep in touch. If you can't get through to me, then try Lisa Kraft (303-866-3203 x 340).

-----Original Message-----

From: Denise White [mailto:denise@lamar.colostate.edu]
Sent: Friday, April 01, 2005 3:50 PM
To: Kathy Seiple
Cc: Rob Billerbeck
Subject: FW: April 11th Demonstration Finalized

Hello Kathy,

This email talks about a mechanical mastication demonstration being held in Boulder on April 11th. Mechanical mastication (where the trees get "chipped" on the stump into large pieces) might be one of the cheapest options for getting the work done at Lory State Park. Last year you had expressed interest in seeing an area that had been treated this way. I won't be able to attend this but if you are interested in attending I will fax the map to you. Have a good weekend!

Denise

Denise White
Forester
Fort Collins District
Colorado State Forest Service

Colorado State University
5075 Campus Delivery
Fort Collins, CO 80523-5075
(970) 491-8348

FAX: (970) 491-8645

-----Original Message-----

From: Dave Farmer [mailto:dfarmer@lamar.colostate.edu]
Sent: Wednesday, March 30, 2005 4:33 PM
To: blebeda@lamar.colostate.edu; alowen@lamar.colostate.edu; mhughes@lamar.colostate.edu;
Denise White; Wendy McCartney; 'Cory Secher'; Bob Bundy
Cc: James White
Subject: FW: April 11th Demonstration Finalized

James White (CLRD) has set up the demo referenced below. Contact James at the number below if you are interested in attending or for more information. I have asked James to forward the map to Boyd, Allen and Mike in case I don't get the map prior to going to SD next week. When you get the map you may want to forward the info to your district's service contractors.

Have a great day!

Dave Farmer
Fire Management Field Coordinator
Colorado State Forest Service
Fort Collins Zone
Building #1053, Foothills Campus
Fort Collins, CO 80523-5075
(970) 491-8078
dfarmer@lamar.colostate.edu

-----Original Message-----

From: James A White [mailto:jamesawhite@fs.fed.us]
Sent: Wednesday, March 30, 2005 12:15 PM
To: Dave Hattis; Dyce Gayton; Michael Montgomery; Bruce A Lewis; Terra L Mascarenas; Amy J Krommes; Kristen R Thompson; Cambria N Armstrong; James A White; Lenora Arevalos; Ellen Hodges; Richard S Edwards
Subject: April 11th Demonstration Finalized

The mastication demonstration @ Boulder is finalized for April 11th, 0900 hours. This will most likely be an all day event with travel time. I will be sending a map to the location at a later date. The following people have confirmed their attendance:

Amy Krommes
Dave Hattis
Dyce Gayton
Mike Montgomery
Bruce Lewis
Terra Mascarenas
Kristen Thompson
Cambria Armstrong
James White

James White
Canyon Lakes Ranger District
Arapaho-Roosevelt N.F.
2150 Centre Ave., Bldg. E
Fort Collins, CO 80526-8119
jamesawhite@fs.fed.us
970-295-6783

Lory State Park Forest Health and Fuels Reduction Project

Operating Period: April 17, 2006 to May 22, 2006

Size: 67 acres

Equipment: 2 Hydro-Ax machines (large articulated tractors with eight foot wide mower-mulcher heads mounted on the front and rubber flotation-type tires)

Costs: \$888/acre; \$59,498.68 Total

Notes and Lessons Learned:

- Trees that have been girdled for wildlife will likely harden and probably not be suitable for cavity-nesting wildlife. However, they will still serve other purposes for wildlife.
- To leave down logs, trees may be pushed over with the Hydro-Ax and the tops, limbs, and tops of rootballs masticated.
- In order to meet the dwarf mistletoe eradication goal, the forester needed to spend a lot of time looking at residual trees and marking infected trees that the contractor missed. The Hydro-Ax operators could not see dwarf mistletoe plants very well from the cab. The unit will need to be monitored for the next few years as not all infections have produced fruiting bodies yet.
- Consider flagging instead of painting the demonstration area. Large machinery may not be able to take or leave specific trees because of accessibility, cutting head size, or tree damage.
- Consider marking the wildlife trees or state in the contract that snags are not to be created in high visibility areas.

- volunteer work

SCOPE OF WORK

- units placed strategically based on prevailing winds

Purpose

- easiest area to control DM

This project has been designed to:

- Eradicate dwarf mistletoe to improve stand health.
- Reduce fuel loading to decrease the chance of fire passing to or from private lands to the West.
- Reduce the number of Douglas-fir on the northern slopes.
- Expand current openings/meadows to allow for increased forage for wildlife.

General Description of Work

Work will be performed based on the prescriptions listed below and as described during the pre-work site visit of the project. The work involves removal of dwarf mistletoe-infected trees and general thinning to be conducted through mechanical mulching. Chainsaws will be needed to girdle wildlife trees.

The Colorado State Forest Service will administer the project on behalf of the landowner, Colorado State Parks.

Contract Period

Contractor may operate any time of day, seven days a week from March 1, 2006 to June 2, 2006, with the exception of May 20 and May 21, when the contractor may not operate. Project must be completed by June 2, 2006. No contract extensions will be allowed for this project.

Additional Performance Standards

The contract administrator may suspend or limit operations in the case of extreme fire danger, excessive damage due to mud or snow, excessive residual tree damage, or failure to meet contract specifications.

The project area will be divided into three blocks. The project administrator must approve the first completed block before work may begin on the second block and the second block must be approved before starting work on the third block. Once each block is approved by the project administrator the contractor may submit an invoice for the completed block(s).

Ruts and/or depressions in the soil caused by contractor equipment will be less than eight inches deep. Any soil contaminated by loss of fuel, oil, grease, hydraulic fluid, coolant, or other fluids shall be removed and placed in covered drums or other acceptable containers for proper disposal by the contractor. In areas where machines have used a path repeatedly waterbars will be installed by the contractor if the project administrator determines they are necessary.

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All access roads will be kept passable at all times. Roads and other improvements will be repaired to the same condition as found prior to the start of work. This repair may include repairing or replacing drainage control features. Significant damage to existing roads or other improvements caused by the contractor will be repaired by the contractor as soon as practical. The contract administrator and State Parks staff will determine if road repair is necessary. Any significant accumulations of mulch on the access road will be removed by the contractor at the end of the project.

Damaged gates, fences, or signs will be repaired or replaced by the contractor, at the discretion of the contract administrator or State Parks staff.

Smoking will only be allowed in vehicles. Each vehicle must have a Class A fire extinguisher and a minimum of one fire tool per cutting crew member. All vehicles and motorized equipment must utilize effective manufacturer-certified spark arresters and muffler systems.

The undercarriage and tires of all trucks and equipment must be washed offsite before entering the project area to reduce the spread of noxious weeds from other projects. Machine operations should avoid driving through weed areas.

Neither trash nor litter will be left by the contractor anywhere on the Park, access route, or vicinity. Daily hauling of any trash generated by the contractor is the contractor's responsibility.

No camping will be allowed on Park property.

It is the responsibility of the contractor to follow all rules and regulations established for Lory State Park. Kathy Seiple of Colorado State Parks is the manager for Lory State Park and can be contacted at (970) 493-1623.

All issues and concerns of adjacent property owners and others shall be referred to the project administrator.

Damage Deposit

A damage deposit in the amount of 15% of the contract value will be required upon contract award. The deposit shall be in the form of cashier's check, certified check, money order, or irrevocable letter of credit

payable to the Colorado State Forest Service. One deposit per contractor is required. The deposit shall be used in part or in full, to correct deficiency in any work not completed to agreement specifications. The deposit will be retained in full should the contractor fail to complete the contracted work in the time frame specified in the Independent Services Contract. The deposit or its balance will be released to contractor promptly upon satisfactory completion of the contract.

Subcontracting

All subcontractors must be approved by CSFS in writing prior to contract signing and bid approval.

Access

Access to the project area will be from North County Road 25G, a paved road north of the entrance to Lory State Park. From 25G, travel is on a narrow public gravel road (Red Cedar Drive), which winds through a subdivision for approximately 1.4 miles. Then a private road is accessed through a private locked gate. This section of road is narrower, has very steep inclines, contains sharp turns, and may require a 4-wheel drive vehicle. It is approximately 1 mile in length. A gate owned by Lory State Park is located near the property boundary. The project area begins approximately 1 mile south of this gate along a poorly-maintained Park access road. This access road forms the eastern boundary of the project area for approximately 2500 feet.

The speed limit on Park property is 25 miles per hour. Posted and un-posted speed limits must be observed on all roads leading to the project area.

The vehicle and trailer used to haul the masticating equipment may not be taken on Red Cedar Drive. These may be left at a designated area on Lory State Park property.

The contractor must provide a lock for both access gates and leave the gates locked in a way that allows others access with separate locks.

Boundary

The unit boundary will be delineated in blue paint, except most of the south and west boundaries which are delineated by fencing. Trees bordering the project will be painted with vertical blue stripes, facing the interior of the project. The contractor will mulch all painted boundary trees.

Prescription

The trees to be removed in a small demonstration area will be marked with a dot of yellow paint at dbh. Other than this marked demonstration area, the contractor will determine which trees to remove based on the management prescription, unless otherwise specified by the Park or contract administrator. Work will begin in the demonstration area.

With the exceptions stated below, all live ponderosa pine trees with any amount of dwarf mistletoe will be mechanically mulched. Exceptions: The contractor will mechanically girdle and leave for wildlife use all live 10-inch dbh or larger dwarf mistletoe infected trees with a limit of 200 for the entire project and a maximum of five per each acre. This means that some acres may not have any girdled trees and other acres will have up to five girdled trees. Any live 10-inch dbh or larger infected trees beyond 200 will be felled and masticated down to a 6-inch top. All limbs will be masticated. Tree boles below the 6-inch top will be left intact. Mechanical girdling is defined as removing a 2-inch wide band of bark and cambium completely around a bole.

Existing snags being used by wildlife or snags greater than 10 inches dbh will be retained.

Target basal area is 60 square feet per acre for choosing remaining trees to be thinned, maintaining fewer poorly formed (often suppressed), damaged, diseased (such as western gall rust), and dead trees to maintain park aesthetics, selecting against Douglas-fir, and leaving no less than 10 feet between Douglas-fir trees less than 5 inches dbh. Some live "character" trees may be left. The use of a prism or angle gauge may be needed to meet the target basal area. Residual trees will be left in an uneven and clumpy pattern with a representation of all diameter classes.


All trees to be removed shall be mechanically masticated and no mulched material shall be larger than four feet long and eight inches in diameter. Also, chip depth will not exceed ten inches. Previously dead and down woody material should not be mulched and larger diameter down logs should be left intact as much as possible. All stumps will be cut as close to the ground as possible, but in no circumstances will stump height exceed four inches on the uphill side. Ephemeral drainage areas will not be used as primary travel routes.

Administration

Start date must be approved by project administrator. No work will begin without the presence of the project administrator. Work must be started within 5 working days of the contractor's receipt of the signed contract.

Upon project completion, the contractor must request a final inspection by the contract administrator. This final inspection will be no later than May 26, 2006. Any additional work must be completed by June 2, 2006. Final invoicing for the work must be submitted to the contract administrator by June 5, 2006. Payment will be processed upon successful completion of the project and after final inspection is complete.

The Hawksworth six-class dwarf mistletoe rating system

Instructions		Example
Step 1 Divide live crown into thirds.		If this third has no visible infections, its rating is (0).
Step 2 Rate each third separately. Each third should be given a rating of 0, 1, or 2 as described below:		
(0) no visible infections	—	If this third is lightly infected, its rating is (1).
(1) light infection (1/2 or less of total number of branches in the third infected)	—	
(2) heavy infection (more than 1/2 total number of branches in the third infected).		If this third is heavily infected, its rating is (2).
Step 3 Add ratings of thirds to obtain rating for total tree.		The tree in this example gets a rating of: $0 + 1 + 2 = 3$.

On a tree or stand basis, light infection is a rating of 1 to 2; moderate is 3 to 4; and severe is 5 to 6.

Lory State Park Forest Health and Fuels Reduction Project-2006 Unit

This project was designed to:

- Reduce fuel loading to decrease the chance of fire passing to or from private lands to the West. *- units placed strategically based on prevailing winds*
- Eradicate dwarf mistletoe to improve stand health.
- Meet forest restoration goals, which include reducing the number of Douglas-fir trees on the northern slopes, expanding current openings/meadows to allow for increased forage for wildlife, and recreating a patchy/clumped pattern of trees.

Operating Period: April 17, 2006 to May 22, 2006

Size: 67 acres

Equipment: 2 Hydro-Ax machines (large articulated tractors with eight foot wide mower-mulcher heads mounted on the front and rubber flotation-type tires)

Costs: \$888/acre; \$59,498.68 Total

Notes:

- The unit will need to be monitored for the next few years as not all infections have produced fruiting bodies yet.
- Dwarf mistletoe-infected trees that were too big to masticate were girdled (removal of a 2-inch wide band of bark and cambium around the trunk) for wildlife. These will likely harden and probably not be as suitable for cavity-nesting wildlife. However, they will still serve other purposes for wildlife.
- To reduce the spread of noxious weeds from other projects the undercarriage and tires of all trucks and equipment was washed offsite before entering the project area.
- Smoking was only allowed inside vehicles. Each vehicle contained a Class A fire extinguisher and a fire tool. All vehicles and motorized equipment utilized effective manufacturer-certified spark arresters and muffler systems.
- The vehicle and trailer used to haul the masticating equipment was not taken on Red Cedar Drive.
- The contractor provided a lock for both access gates and left the gates locked in a way that allowed others access with separate locks.

Prescription (partial)

The trees to be removed in a small demonstration area were painted by the forester. Other than this marked demonstration area, the contractor determined which trees to remove based on the management prescription. This was closely monitored by the forester.

With the exceptions stated below, all live ponderosa pine trees with any amount of dwarf mistletoe will be mechanically mulched. Exceptions: The contractor will mechanically girdle and leave for wildlife use all live 10-inch dbh (diameter at breast height or 4.5 feet above ground) or larger dwarf mistletoe infected trees with a limit of 200 for the entire project and a maximum of five per each acre. This means that some acres may not have any girdled trees and other acres will have up to five girdled trees. Any live 10-inch dbh or larger infected trees beyond 200 will be felled and


masticated down to a 6-inch top. All limbs will be masticated. Tree boles below the 6-inch top will be left intact.

Existing snags being used by wildlife or snags greater than 10 inches dbh will be retained.

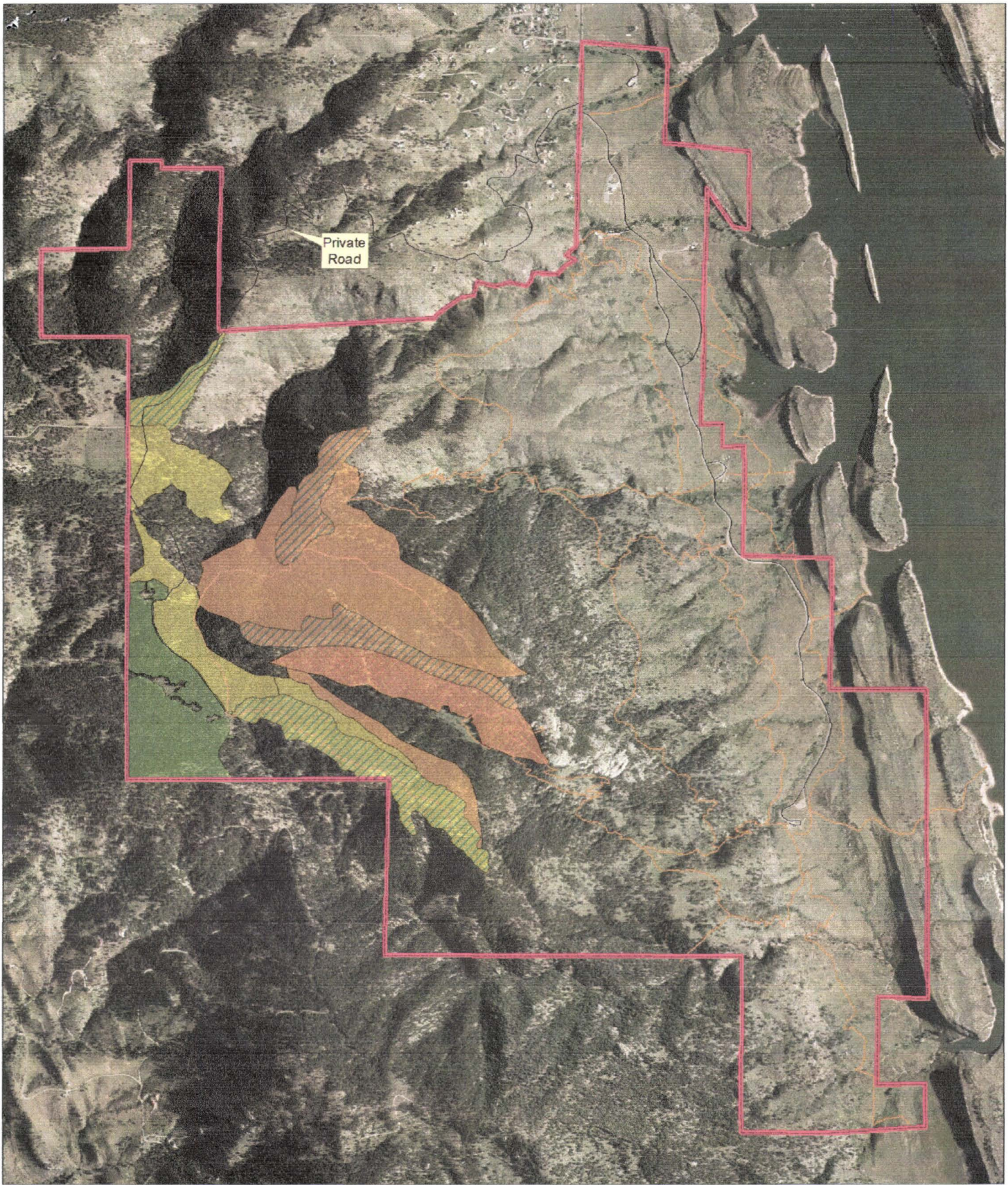
Target basal area is 60 square feet per acre for choosing remaining trees to be thinned, maintaining fewer poorly formed (often suppressed), damaged, diseased (such as western gall rust), and dead trees to maintain park aesthetics, selecting against Douglas-fir, and leaving no less than 10 feet between Douglas-fir trees less than 5 inches dbh. Some live “character” trees may be left. Residual trees will be left in an uneven and clumpy pattern with a representation of all diameter classes.

Chip depth will not exceed ten inches. Previously dead and down woody material should not be mulched and larger diameter down logs should be left intact as much as possible. All stumps will be cut as close to the ground as possible, but in no circumstances will stump height exceed four inches on the uphill side. Ephemeral drainage areas will not be used as primary travel routes.

The Hawksworth six-class dwarf mistletoe rating system

Instructions		Example
Step 1 Divide live crown into thirds.		If this third has no visible infections, its rating is (0).
Step 2 Rate each third separately. Each third should be given a rating of 0, 1, or 2 as described below: (0) no visible infections (1) light infection (1/2 or less of total number of branches in the third infected) (2) heavy infection (more than 1/2 total number of branches in the third infected).		If this third is lightly infected, its rating is (1). If this third is heavily infected, its rating is (2).
Step 3 Add ratings of thirds to obtain rating for total tree.		The tree in this example gets a rating of: 0 + 1 + 2 = 3.

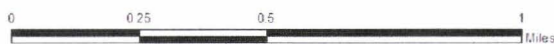
On a tree or stand basis, light infection is a rating of 1 to 2; moderate is 3 to 4; and severe is 5 to 6.



Lory State Park

Fuels Treatment Areas

- | | |
|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|  Completed 2006 - 67 acres |  Fuel Breaks - 117 acres |
|  Contracting 2007 - 140 acres |  Park Boundary |
|  Layout 2007 - 206 acres |  Roads |
|  Potential Rx Fire Area - 47 acres |  Park Trails |

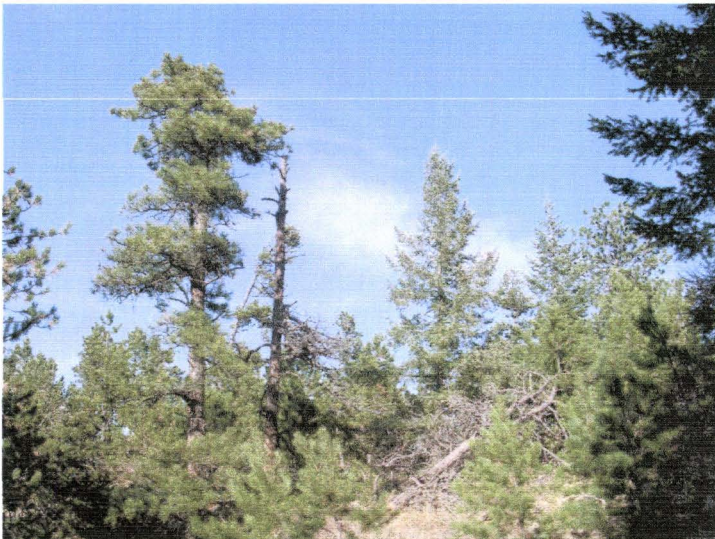
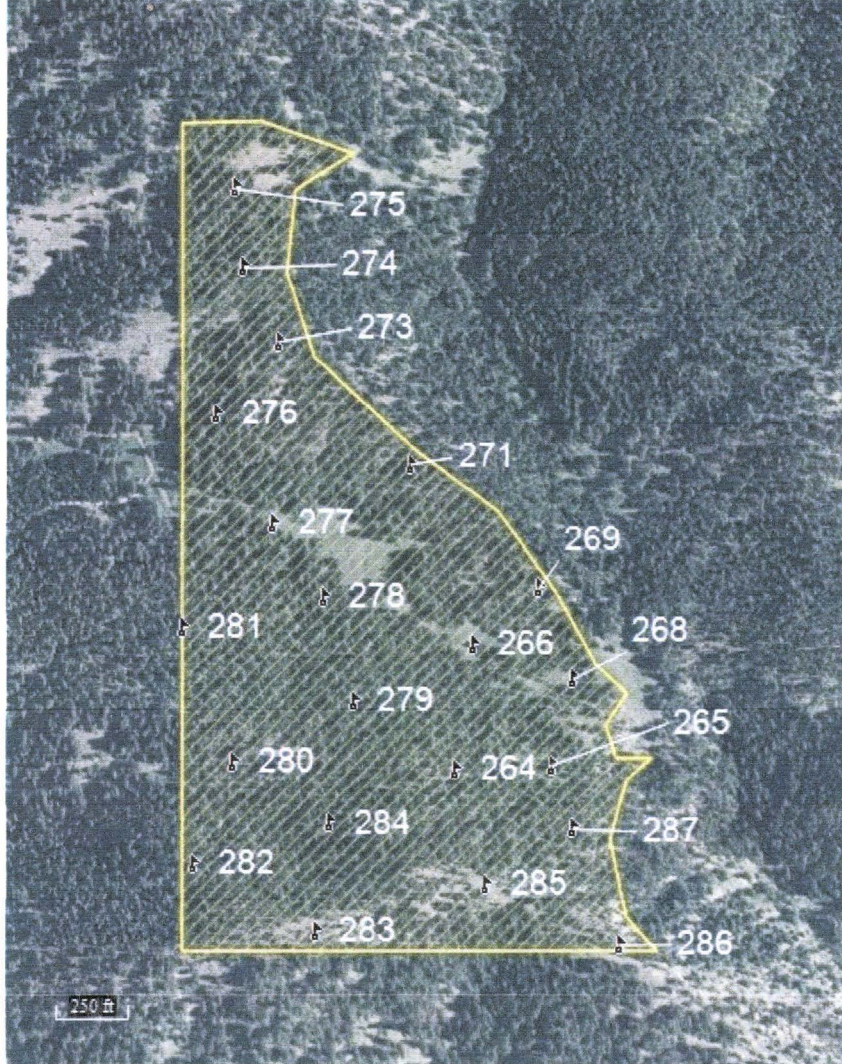


Map Document:
 lry_fuels_public_mtg_20070216.mxd
 Address PDF:
 lry_fuels_public_mtg_20070216.pdf
 Map prepared by:
 Matt Soudic
 Colorado State Parks
 Resource Stewardship Team
 Date prepared:
 February 15, 2007
 Data Source:
 Colorado State Parks CDOT
 USGS, USA
 Cartographic Information:
 Map Datum: NAD83
 Map Projection: UTM, Clarke 1866
 Units: Meters
 UTM Zone: 13 North

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Lory State Park Forest Health and Fuels Reduction Project – 2006

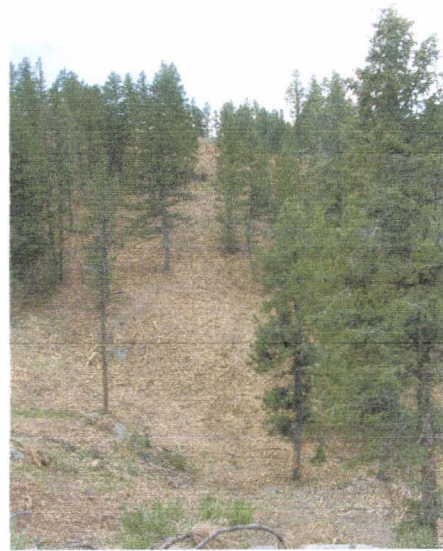
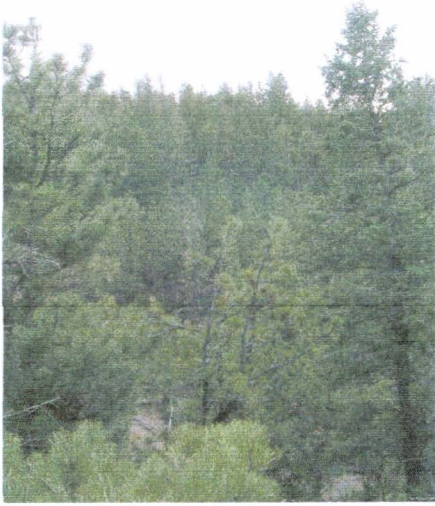
Before and After Photo Points



Point 271



Point 280



Point 283



Point 276



\$92,083.18 Total Cost \$658/ac.

EXHIBIT A TO INDEPENDENT SERVICES CONTRACT
SCOPE OF WORK

Lory State Park
West Side Fuelbreaks & Hazard Reduction (Units FB-1, FB-3, FH-1b, FH-3a & FH-4)
Colorado Department of Parks and Outdoor Recreation

Purpose:

This project has 5 primary objectives:

- Construct two fuelbreaks and three fuel modification areas.
- Reduce fuel loading to decrease the chance of fire passing to or from private lands to the west and to the north.
- Reduce levels of dwarf mistletoe to improve park aesthetics and forest resistance to insects and disease.
- Reduce the number of Douglas-fir on the northern slopes.
- Maintain or enhance recreational settings and wildlife habitat.

Project Location:

Lory State Park is located in Larimer County. The Park lies along the Front Range of the Rocky Mountains and is approximately 7 miles west of Fort Collins, Colorado. Projects are located in portions of Sections 11, 14, & 23, Township 7 South, Range 70 West.

General Description of Work:

A mandatory site inspection is required for this project. Work involves fuel reduction & restoration thinning via mechanical mulching/mastication.

Existing Conditions:

- All treatment units are classified as Ponderosa Pine Woodland. There are a few clumps of mountain mahogany, Douglas-fir and a scattering of Rocky Mountain juniper.
- Two Units (FB-1 and FB-3) are on ridge tops and part of a fuelbreak system. The other three Units (FH-1b, FH-3a, and FH-4) are on a high-elevation bench along the west edge of the Park. They are to be thinned for fuel hazard reduction as well as forest health improvement.
- All Units are considered forested although there are occasional open areas and more dense clumps of trees. Average crown closure is approximately 60%.
- Most of the ponderosa pine in all units are infected with dwarf mistletoe increasing their susceptibility to insect and disease attack that could cause wide spread tree mortality.
- The Units are very operable, with slopes less than 30% in most places. In Unit FH-1b there is an area in the NE corner where the slope is over 30%. In Unit FB-1 there is some surface rock present and there is a short steep slope on the north end.
- Access to all units is over a non-maintained 4x4 wheel drive road.

Unit Descriptions:

- This project is composed of **5 treatment units** totaling approximately **140 acres**.

- **FB 1** is approximately one mile long and is approximately **49 acres** in size. Slopes range from 0-25%. There are abundant ladder fuels within the unit and the dwarf mistletoe infection is severe. Lower mistletoe infection rates occur in the southeast end. Douglas-fir is prevalent along the northeast side of the ridge. There are a few rock outcrops that limit operability along the southeast side of the ridge. The access road on FB 1 is a two track trail.
- **FB 3** is approximately 1/3 mile long and is approximately **14 acres** in size. Slopes range from 0-30%. There is a moderate amount of ladder fuels within the unit and the presence of dwarf mistletoe is light and spotty. There are a few rock outcrops that limit operability on the northeast end. The access road bisects the unit.
- **FH 1b** is located along the west edge of the park and is approximately **36 acres** in size. Slopes range from 0-30%. There are abundant ladder fuels within the unit and the infection level of dwarf mistletoe is moderate to heavy. There are a few natural openings within the unit. The access road is in good condition and travels through the northwest side and along the southwest boundary of the unit. An additional two track road follows part of the southeast boundary of this unit.
- **FH 3a** is located along the northeast side of FB 1 and is approximately **9 acres** in size. Slopes range from 0-30%. There are abundant ladder fuels within the unit and the infection level of dwarf mistletoe is heavy. Forest vegetation is a mix of ponderosa pine and Douglas-fir.
- **FH 4** is approximately **32 acres** in size. Slopes range from 0-30%. There are abundant ladder fuels within the unit and the infection level of dwarf mistletoe is moderate to heavy. There are several natural openings in this area. The access road travels through the west side of the unit.

Current Conditions of Units

UNIT BLOCK	BASAL AREA (SQ FT/ACRE)	STEMS (#/ACRE)	AVE DBH (IN)	AVE HEIGHT (FT)
FB-1	40 to 100	140 to 1120	Ave 6 inches 2 to 8 inches	10 – 40 feet
FB-3	100 to 120	300 to 500	Ave 4 inches 2 to 14 inches	20 feet
FH-1b	80 to 120	100 to 700	Ave 5 inches 4 to 10 inches	40 feet
FH-3a	100 to 120	200 to 1120	Ave 4 inches 4 to 10 inches	40 feet
F H-4	80 to 160	200 to 900	Ave 3 inches 3 to 12 inches	15 to 50 feet

*Note: Where more than two generations dominate the units a range of average size classes are shown.

Unit Prescriptions:

FUELBREAK TREATMENT UNITS:

FB-1 and FB-3 are units that are part of a fuelbreak system. Some of the requirements apply to both units while others are specific only to FB-1 or FB-3.

Requirements for both fuelbreaks FB-1 and FB-3:

- All trees to be removed that are less than 12 inches dbh shall be mechanically masticated. Mulched material shall be smaller than four feet long and eight inches in diameter. All material shall be well-distributed and in no case shall chip/chunk depth exceed ten inches in areas of concentration.
- **Disposal Method for trees over 12 inches dbh:** Hand fell tree; limb tree bole and buck at 6 inch DBH; masticate all limbs and top; leave main stem laying flat on the ground.
- Contractor will grind stumps to ground level or as low as possible based on slope, rock, or other features.
- Masticate all dead and down surface fuels less than 12 inches in diameter except in areas where slope, rock or other features prohibit it.
- Retain all snags currently in use by wildlife. Two snags greater than 10 inches dbh per acre will be retained. Remove or masticate all other standing and down dead trees.

Requirements specific only to FB 1:

- The treatment of FB 1 will favor the retention of well-formed, healthy-looking Douglas-fir; Rocky Mountain juniper; and ponderosa pine greater than 9" dbh with a Hawksworth Dwarf Mistletoe Rating of 2 or less. (*See Figure 1 - The Hawksworth six-class dwarf mistletoe rating system*).
- Treat the demo area first for demonstration and understanding purposes.
- All diameter classes shall be represented in the residual stand.
- Douglas-fir stands should be thinned to basal areas between 40 to 60 square feet per acre. Existing basal area is approximately 100 square feet per acre. The use of a prism or angle gauge may be needed to meet the target basal area.
- Leave no less than 10 feet of crown spacing between single Douglas-fir trees less than 5 inches DBH.
- Small isolated clumps of 3-6 healthy trees may be left. Leave no less than 20-feet of crown spacing between the clump and other trees or clumps.
- Some live "character" trees may be left. Examples of such trees will be described in the field by the Contract Administrator.
- All ponderosa pine trees less than 9 inches DBH will be masticated, unless otherwise directed by the Contract Administrator.
- Unit FB 1 may be treated only during the periods of January 1 through March 31, June 15 through September 15, and November 1 through December 31.

Requirements specific only to FB3:

- Existing basal area is approximately 120 square feet per acre. This stand shall be thinned to an average basal area of 50 square feet per acre. Acceptable range of basal area is 40 to 60 square feet per acre, based on stand variability. Residual trees or small clumps of 3 to 6 trees will be left in an uneven and clumpy pattern.

- No less than 10 feet crown spacing will be allowed between individual trees. No less than 20 feet crown spacing will be allowed between tree clumps and other individual trees or tree clumps.
- All diameter classes shall be represented in the residual stand.
- Some live “character” trees may be left. Examples of such trees will be described in the field by the Contract Administrator.
- All mistletoe infected trees will be removed. **Leave all non-mistletoe infected ponderosa pine 12 inches DBH or greater regardless of their proximity to other trees.**
- **Disposal method for trees over 12 inches dbh:** Hand fell tree; limb tree bole and buck at 6 inch DBH; masticate all limbs and top; buck main stem (> 7 inches) into 10-foot lengths or shorter so they lay flat on the ground.

FUEL HAZARD REDUCTION TREATMENT UNITS:

- **FH 1b, FH 3a and FH 4:** These three units are hazard reduction treatment units intended to improve forest health, wildlife habitat, long-term aesthetics values while reducing fire hazard.
- Treat the demonstration area first for demonstration and understanding purposes.
- Existing basal area is approximately 120 square feet per acre. Target basal area is 60 square feet per acre. Acceptable range of basal area is from 40 to 80, based on stand variability within the units. The use of a prism or angle gauge may be needed to meet the target basal area.
- All trees to be removed that are less than 12 inches DBH shall be mechanically masticated. Mulched material shall be smaller than four feet long and eight inches in diameter. All material shall be well-distributed and in no case shall chip/chunk depth exceed ten inches in areas of concentration.
- All trees less than 9 inches DBH that are mistletoe infected will be removed.
- Retain any well-formed ponderosa pine 9-inches or larger DBH that are healthy (no insect infestations or with Hawksworth Dwarf Mistletoe Rating of 2 or less).
- Leave no less than 10 feet crown spacing between residual Douglas-fir trees less than 5 inches DBH.
- Small isolated clumps of 3-6 healthy trees may be left. Residual trees or groups of trees will be left in an uneven and clumpy pattern with a representation of all diameter classes. Leave no less than 20 feet crown spacing between tree clumps and other individual trees or tree clumps.
- Some live “character” trees may be left. Examples of such trees will be described in the field by the Contract Administrator.
- The Contractor will masticate in a “feathered pattern” along the boundaries (not delineated by fence or road) according to the tree stand characteristics and operability. Feathered pattern should begin approximately 100 feet from the unit boundaries and should be done in a way to avoid a linear treatment boundary.

- **Disposal method for trees over 12 inches DBH:** Hand fell tree; limb tree bole and buck at 6 inch DBH; masticate all limbs and top; buck main stem (> 7 inches) into 10-foot lengths or shorter so they lay flat on the ground.
- Dead and down woody material should *not* be mulched and larger diameter down logs should be left intact as much as possible.
- Contractor will grind stumps to ground level or as low as possible based on slope, rock or other features.
- Retain all snags currently in use by wildlife. Two snags greater than 10 inches dbh per acre will be retained. Remove or masticate all other standing and down dead trees.
- No equipment shall enter the ephemeral stream corridor along part of the east boundary for FH 1b. The ephemeral stream corridor is delineated with orange flagging.
- Unit FH 1b and FH 3a will be treated only during the periods of June 15 through September 15 or November 1 through March 31.

Marking:

The Contractor will determine which trees to remove based on the management prescription, unless otherwise specified by the Contract Administrator.

- UNIT BOUNDARIES – Unit boundaries will be delineated with blue flagging, except the west boundaries for FB-3, and FH-4 which are delineated by fencing. The west boundary of FH-1b is delineated partly by fencing and partly by the access road.
- DEMO AREAS – *Leave trees* are marked with yellow flags. All un-flagged trees will be masticated.
- EPHEMERAL STREAM CORRIDOR - is delineated with orange flagging

PROJECT IMPLEMENTATION:

Contract period & Operational Period:

- Contractor period will run from January 1, 2007 to December 31, 2007.
- Specific Operational Periods by unit are described in the table below:

Unit	Operational Period 1	Operational Period 2	Operational Period 3
FB-1	January 1 – March 31	June 15 – September 15	November 1 – December 31
FH-1b	January 1 – March 31	June 15 – September 15	November 1 – December 31
FH-3a	January 1 – December 31	Operational Period same as Contract Period	
FB-3	January 1 – December 31	Operational Period same as Contract Period	
FH-4	January 1 – December 31	Operational Period same as Contract Period	

- Daily Operational Period: Limited to 7:00 a.m. to 7:00 p.m.
- No equipment warm up before 7:00 a.m.
- No contract extensions will be allowed for this project.

Operation Restrictions:

The Contract Administrator may suspend or limit operations in the case of extreme fire danger, excessive damage due to mud or snow, excessive residual tree damage, or failure to meet contract specifications.

Access:

- Access to the project area will be from North County Road 25G, a paved road north of the entrance to Lory State Park. From 25G, travel west on Red Cedar Drive, which winds through a subdivision for approximately 1.4 miles. Red Cedar turns into a private road accessed through a locked gate. This 1 mile section of private road is narrow, has steep inclines, contains sharp turns, and may require a 4-wheel drive vehicle. A second locked gate is located at the point where the private road accesses Lory State Park. The Contractor shall provide locks for both gates. Gates shall be locked at all times and locks must be placed in a manner that accommodates other locks in the chain.
- The mastication equipment must be “walked” approximately 2.6 miles from the Park shop area at Red Cedar Drive to the project area due to road width/condition. A secured tractor/trailer parking area is available at the shop for the duration of the project. 4-wheel drive service vehicles will have direct roaded access to the project site.
- No equipment shall be parked on the private roads at any time.
- All access roads will be kept passable at all times. Any significant accumulations of mulch on the access roads and trails will be removed by the Contractor at the end of the project.
- Roads and other improvements will be repaired to the same condition as found prior to the start of work. This repair may include repairing or replacing drainage control features. Significant damage to existing roads or other improvements caused by the Contractor must be repaired by the Contractor as soon as possible. The Contract Administrator will determine if road repair is necessary.

Additional Performance Standards:

- Soil disturbance will be as minimal as possible. Ruts and/or depressions in the soil caused by Contractor equipment will be less than eight inches deep. In areas where machines have used a path repeatedly, water-bars will be installed by the Contractor if the Contract Administrator deems necessary.
- Ephemeral drainage areas will not be used as primary travel routes.
- Fuel, hydraulic fluid or other chemical spills will be reported to State Parks immediately. Soil contaminated by loss of fuel, oil, grease, hydraulic fluid, coolant, or other fluids shall either be removed and placed in covered drums or other acceptable containers for proper disposal by the Contractor or left in place and mixed with an encapsulating product such as RamSorb I, depending on the amount of contamination.
- The Contract Administrator may require the Contractor to mulch leave trees that have been significantly damaged (broken top, multiple equipment scars, equipment scarring in excess of 12” x 6” on the trunk, or an area encompassing more than two-thirds of the trunk circumference) by the Contractor. The Contractor must minimize damage to residual trees. The Contractor will be charged \$50 for each significantly damaged tree that is 4 inches dbh or greater.

- Damaged gates, fences, or signs will be repaired or replaced by the Contractor, at the discretion of the Contract Administrator or State Parks staff.
- Boundary fences must not be damaged and the mastication debris must not be propelled onto the adjoining private land. No woody material may be left on or piled up against boundary fences. **Work may need to be completed by hand near property boundaries in order to meet this standard.**
- Smoking will only be allowed in vehicles. Each vehicle must have a properly serviced Class A, 2.5 pound fire extinguisher and a minimum of one fire tool per cutting crew member. All vehicles and motorized equipment must utilize effective manufacturer-certified spark arresters and muffler systems.
- Neither trash nor litter will be left by the Contractor anywhere on the Park, access route, or vicinity. Daily hauling of any trash generated by the Contractor is the Contractor's responsibility.
- It is the responsibility of the Contractor to follow all rules and regulations established for Lory State Park. Kathy Seiple of Colorado State Parks is the manager for Lory State Park and can be contacted at (970) 493-1623. No dogs and no camping will be allowed on the site.
- All issues and concerns of adjacent property owners and others shall be referred to the Contract Administrator.
- Site should be left in a safe manner at the end of every work day.
- Any exposed rootballs created during this project will be tipped back into an upright position or masticated by the Contractor.
- There will be no salvage rights granted to the Contractor for this project.

Performance Bond and Damage Deposit:

- A Damage Deposit in the amount of \$1000.00 will be required upon contract award. The deposit shall be in the form of cashier's check, certified check, money order, or irrevocable letter of credit payable to the CSFS. One deposit per Contractor is required. The deposit shall be used in part or in full, to correct deficiency in any work not completed to agreement specifications. The deposit will be retained in full should the Contractor fail to complete the contracted work in the time frame specified in the Independent Services Contract. The deposit or its balance will be released to Contractor promptly upon satisfactory completion of the contract.
- The Contractor will be required to furnish a Performance Bond executed by a corporate Surety authorized to do business in the State of Colorado and in the full amount of the Contract sum. The expense of this bond shall be borne by the Contractor and bond shall be filed with Colorado State University. **A sample Bid Bond, State Form SC-6.22, is attached to this Invitation for Bid.** If, at any time, the Surety on such a bond is found to be, or ceases to be in strict compliance with any qualification requirements of the Contract of the bid documents, or loses its right to do business in the State of Colorado, another Surety will be required, which the Contractor will furnish to Colorado State University within ten (10) days after receipt of notice from Colorado State University or after the Contractor otherwise becomes aware of such conditions.

Subcontracting:

All subcontractors must be approved by CSFS in writing prior to contract signing and bid approval.

Administration:

- All treatment units together have a gross acreage of approximately 140 acres. All operable areas will be treated. However, Colorado State Forest Service (CSFS) recognizes that portions of some blocks may not be treatable due to operability restrictions from slope, rock and topography. If 90% (126 acres) or more of the project is completed, the Contractor will be paid for 100% of the contract. If the Contractor completes less than 90% of the project the Contractor will be paid for the acreage completed. If the Contractor does not complete acres within each unit due to inability, the Contractor will submit a detailed invoice to Contract Administrator, displaying complete and incomplete acres. Contract Administrator will GPS completed acres to determine final completed acreage and appropriate payment.
- At the time of signing a written Operational Plan shall be agreed to between the Contractor and the Contract Administrator. Among other things, the plan shall describe projected start and end dates for the project, the order of work among the various blocks, projected times to complete each block, etc.
- Work must be started within 21 working days of the date agreed upon in the Operational Plan, except as may be approved by the Contract Administrator. For each day past this 21-day window, the Contractor may be assessed a \$250 fine.
- Contractor shall notify the Contract Administrator prior to moving any equipment into the project area and also prior to the start of work. No work will begin without the presence of the Contract Administrator.
- *Due to funding constraints, meeting time requirements in all phases of this project is critical.* Upon project completion, the Contractor must request a final inspection by the Contract Administrator. This final inspection will be no later than December 3, 2007. Any additional work to correct deficiencies identified in this final inspection must be completed by December 12, 2007. Final invoicing for the work must be submitted to the Contract Administrator by December 19, 2007. Final payment will be processed upon successful completion of the project and after final inspection is complete.

ENVIRONMENTAL & OTHER ISSUES:

Weed prevention / Rehabilitation / Reclamation:

- The undercarriage and tires of all trucks and equipment must be washed offsite before entering the project area to reduce the spread of noxious weeds from other projects. Machine operations should avoid driving through weed areas.
- No major reseeding effort is expected to be necessary for this project; however reseeding may be required of the Contractor in areas where work has exposed bare soil and in areas as may be deemed necessary by the Contract Administrator. Any and all reseeding will be done with seed mix specifications provided by the State Parks Resource Stewardship Coordinator.

Endangered and Sensitive Species:


Based on the above Biological Assessment (BA) the US Fish and Wildlife Service in a letter of March 24, 2005, determined the proposed hazardous fuels reduction projects “will not result in the taking of the bald

eagle, Preble's meadow jumping mouse, or any Federally listed threatened or endangered species. This letter notwithstanding, the Contractor is required to comply with all Endangered Species Act (ESA) regulations.

Archeological/Cultural Resources to Avoid:

If unidentified cultural resources are discovered during project activities, work must be halted by the Contractor until the resources have been evaluated in terms of Federal Register criteria, 36 CFR 60.4, in consultation with the Colorado Historical Society.

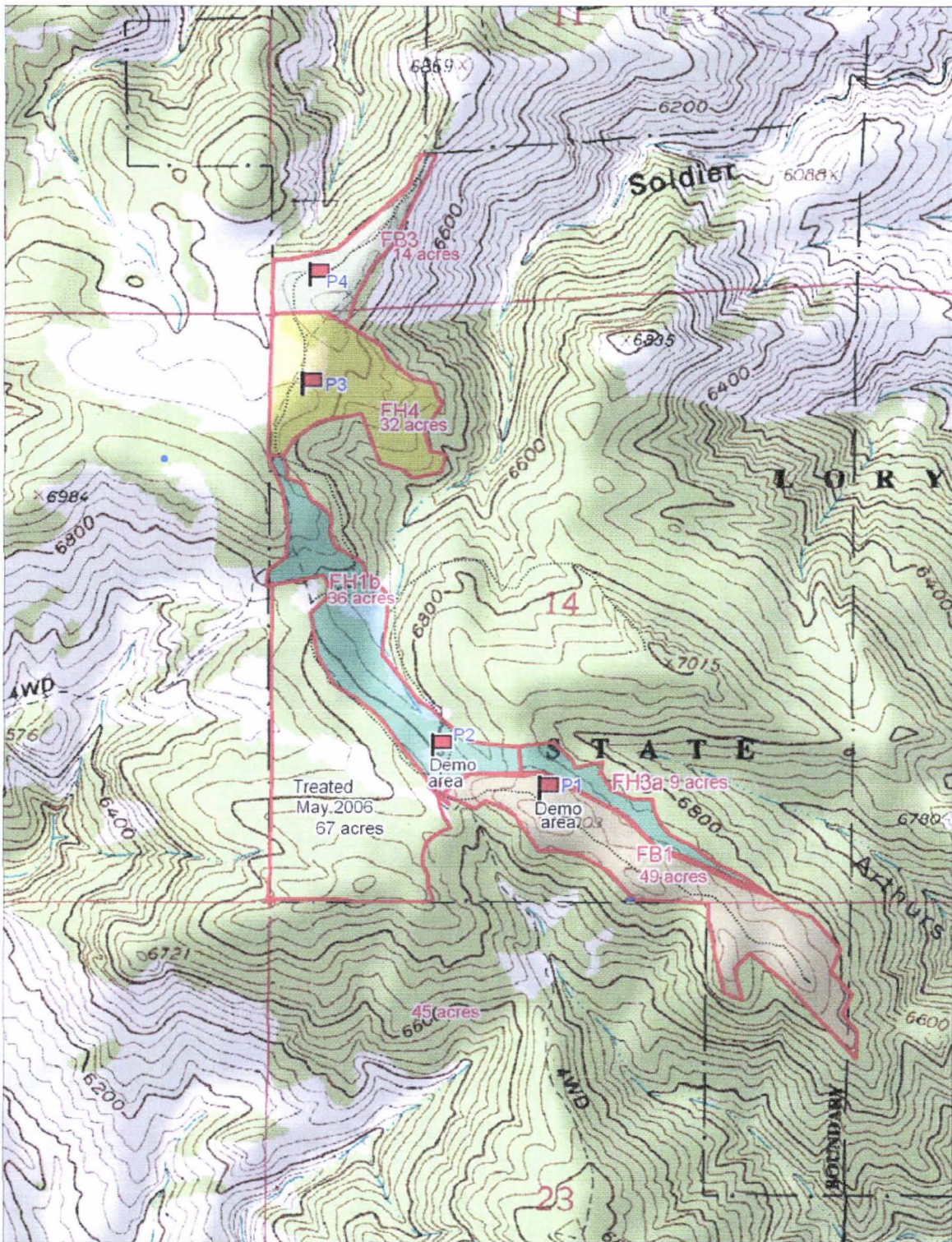
Figure 1
The Hawksworth six-class dwarf mistletoe rating system

Instructions		Example	
Step 1 Divide live crown into thirds.			If this third has no visible infections, its rating is (0).
Step 2 Rate each third separately. Each third should be given a rating of 0, 1, or 2 as described below:			If this third is lightly infected, its rating is (1).
<ul style="list-style-type: none"> (0) no visible infections (1) light infection (1/2 or less of total number of branches in the third infected) (2) heavy infection (more than 1/2 total number of branches in the third infected). 			If this third is heavily infected, its rating is (2).
Step 3 Add ratings of thirds to obtain rating for total tree.		The tree in this example gets a rating of: $0 + 1 + 2 = 3$.	

On a tree or stand basis, light infection is a rating of 1 to 2; moderate is 3 to 4; and severe is 5 to 6.

B401014 Exhibit D – Project Maps

Lory State Park - Colorado Department of Parks and Outdoor Recreation
West Side Fuelbreaks & Hazard Reduction (Units FB-1, FB-3, FH-1b, FH-3a & FH-4)



Lory State Park Project 1
Post-Work Evaluation with Kathy Seiple, Park Manager
July, 2006

- Having the two operators' RVs, dogs, and at one time kids at the shop area did not work out well because of safety concerns and generally too much traffic for the area.
 - In the future no camping will be allowed or only allow one person, one camper, no family, and no dogs in the shop area.
- Dogs should not be allowed at the work site.
- Find private road problems before the landowner and notify the landowner promptly.
- Tell the landowner that the contractor will be providing their own lock for the private gate.
- Denise's contract admin: Good attention to detail, nice and respectful communication.
- • Weeds: Mullein (native) and Canada thistle showed up in the project area after the project was completed.
 - Kathy hired Larimer County to spray for the thistle.
 - They used an ATV with an attached sprayer which resulted in overspray.

Lory State Park Project 1
Post-Work Evaluation and Recommendations
June 30, 2006

Project Description: Ponderosa pine dwarf mistletoe eradication by individual tree selection performed by Hydro-axe.

1. Include soil plasticity restrictions in SOW.
 - Should have checked soil plasticity after rain. This also would have helped to document that the road wasn't too wet to be driven on.
2. For rutting concerns, state maximum slope on which machinery may be operated.
3. Make sure that erosion will not occur if they drive in ephemeral drainages.
4. Include use of RamSorb I (and maybe RamSorb IV) with acceptable methods of light soil contamination cleanup.
5. Remove rut, slash height, damage, chunk depth, and maximum chunk size restrictions if they won't be enforced.
 - a. Consider only specifying average chunk size.
6. Stump height may be increased if rock prohibits cutting within stated maximum stump height.
7. Snags
 - a. Trees that have been girdled for wildlife will harden and not be suitable for cavity nesters. Recommend piling slash around trees desired for snags and torch the individual trees in winter.
 - b. Don't create snags in high visibility areas such as near roads, trails, and meadows.
 - c. Specifically state in the contract to not create Douglas-fir snags.
 - d. Emphasize that only the largest trees are left for snags. Might consider increasing the minimum diameter for snags if there are plenty of larger trees.
 - e. Consider marking the wildlife trees.
 - f. Do NOT let contractor decide which trees to remove for product unless you don't mind them taking the best wildlife trees.
 - g. Consider signing wildlife trees for public acceptance.
- 8. To leave down logs trees may be pushed over with tops, limbs, and top of root ball masticated. Don't push over trees in high visibility areas such as meadows.
9. State that work will need to be completed by hand near property boundaries or put a no-cut or low-cut buffer near boundaries.
10. No tree material shall be left across property boundaries or pushed up against fences.

11. If leaving clumps and using machinery slash will be pushed into the clumps.
12. Emphasize that handwork might or will need to be done to correctly complete the job.
- 13. The forester will need to spend a lot of time looking at residual trees for DM infection and marking for removal. The contractor cannot see DM plants very well from the cab.
14. State that infected trees shall be removed first before general stand thinning.
15. Specifically state what is expected when infected trees are next to or on top of rock outcrops, especially if slash is not to be left on top and trees felled and left against rocks.
16. Include biodegradable material with trash definition. State Leave No Trace guidelines.
17. Before any work starts, check that at least one *sharp* fire tool is securely attached to the outside of machinery and fire extinguisher has been serviced in last year.
 - a. Brief operator on use of fire tool.
18. After first review of demonstration area stop flagging/painting problem areas such as high stumps and slash. Let the contractor find it and they'll be more careful to do the job right the first time.
19. Allow more than one unit to be started on at a time. State that at any given time only two (or three) units may be started on and uncompleted. This allows the forester some time to review the units and not hold up the contractor.
20. Contractor's vehicle tires must stay within the established road, unless large equipment tires do not allow. No cutting corners or driving on cutbanks.
21. Check that vehicles are washed *before* allowing on property *at all*.
22. Accurately state whether camping will be allowed.
23. Hand out Park regulations and review with operator.
- 24. Consider leaving boundary trees, if they aren't painted, for easier contract administration.
- 25. Consider *not* painting the demonstration area since large machinery may not be able to take or leave desired trees because of accessibility, cutting head size, or tree damage.
- 26. Eliminate vagueness of "mastication" by specifying acceptable equipment.
- 27. Reduce bid prices by lengthening the operating period.

Lory State Park Project 1 post-work site visit
with Cambria Armstrong, James White (fuels specialists), and Terra Mascarenas (soil
scientist)
June 6, 2006

Nitrogen volatilizes easily during burning. It is more likely to volatilize when there are heavy fuels and slash burns for a longer time and smolders.

- Therefore, don't burn masticated material until maybe 15 years after treatment.

Slash piles should be a minimum of 6'X6'X6' for optimum consumption, according to USFS Canyon Lakes R.D.

Halt machine operations when soils become plastic. Refer to guide. Project 1 soils are mostly loamy.

Trees that have been girdled for wildlife will harden and not be suitable for cavity nesters. The CLRD piles slash around trees desired for snags and torch the individual trees in winter.

Wet Weather Operation and Soil Damage

Each year several questions of wet weather equipment operation arise.

- Is it too wet?
- At what point does the soil resource start to undergo adverse damages?
- When should equipment operation be shut down as a result of wet conditions?

Soil Damages fall into the following categories:

1. **Soil compaction:** A 15% increase in bulk density from the average undisturbed bulk density.
2. **Detrimental Soil Puddling:** Soil damage when soils are at or beyond plastic limits of moisture. Usually results in destruction of soil structure, loss of permeability and infiltration.
3. **Erosion:** Loss of soil materials from sheet, rill or gully erosion.

A practical method exists to determine the point at which a soil is too wet to allow equipment operation. This field method requires no specialized tools... a shovel is all that is needed. This method can be used on Forest Service sites to assess off road impacts such as logging.

One simply reaches down and collects a small quantity of soil and tries to mold it into a ball. If a ball is formed that holds together (if you toss it up and down in the palm of your hand), the soil is too wet for equipment operation.

The chart on the following page goes into a little more detail. ***The area above the line is the safe zone where equipment operation can take place without harming the soil. The area under the line is the critical zone where equipment operations will harm the soil resource; red indicates where soils will be detrimentally affected and equipment operation should be stopped.*** It should be noted that soils with higher clay contents are more susceptible to damage with lower amounts of moisture.

References:

- Buckman O.B. and N. C. Brady, 1969. The Nature and Properties of Soils. Macmillan Co. , pp. 52-54.
- Hohn, C. M. _____. The "Feel" Test Tells When to Irrigate. Plant Science Guide 400A-111. Coop Extension Service. New Mexico State University.

Field Guide to Soil Moisture Conditions Relative to Operability of Logging Equipment

Soil Textural Group and Moisture Conditions

Soil Moisture % Increases Downward	Coarse Soils loamy sands, fine sand loam, very fine sands coarse sands	Light Soils Fine sandy loams sandy loams, very fine sandy loam	Medium Soils <35% clay sandy clay loam loam, silt loam, sandy clay loam, clay loam	Heavy Soil >35% Clay clay loam, sandy clay, silty clay loam, clay
Dry Soils	Dry, loose, single grained flows thru fingers	Dry, loose, flows thru fingers	Powdery, dry, sometimes slightly crusted but breaks down into powdery conditions	Hard, baked, cracked sometimes has loose crumbs on surface
Moist Soil	Still appears dry, will not form a ball with pressure	Still appears to be dry; will not form a ball	Somewhat crumbly, but will hold together from pressure	Somewhat pliable; will form ball under pressure At Plastic Limit.
Moist Soil	Still appears dry, will not form a ball with pressure	Tends to ball under pressure but seldom will hold together	Forms a ball and is very pliable, slicks readily if high in clay. At Plastic Limit.	Easily ribbons out between fingers, has a slick feeling. >Plastic Limit.
Very Moist Soil	Tends to stick together slightly, sometimes forms a very weak ball	Forms a weak ball breaks easily, will not slick. At plastic Limit or nonplastic.	Forms a ball and is very pliable, slicks readily if high in clay. > Plastic Limit.	Easily ribbons out between fingers, has a slick feeling. > Plastic Limit.
Wet Soils	Upon Squeezing, free water may appear, Wet Outline is left on hand. Nonplastic.	Forms ball, will not slick. Upon Squeezing, free water may appear, Wet Outline is left on hand. At plastic limit	Forms a ball and is very pliable, slicks readily if high in clay. Can squeeze out free water. Wet outline. > Plastic limit	Puddles and free water forms on surface. Wet outline. > Plastic Limit.

Pliable - workable, flexible.



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Topography by photogrammetric methods from aerial photographs
taken 1958. Field checked 1962

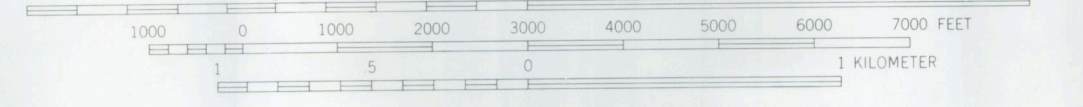
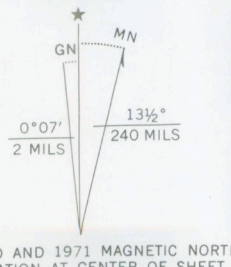
Polyconic projection. 1927 North American Datum
10,000-foot grid based on Colorado coordinate system,
north zone

1000-meter Universal Transverse Mercator grid ticks, zone 13,
shown in blue

The difference between 1927 North American Datum and North
American Datum of 1983 (NAD 83) for 7.5 minute intersections is
given in USGS Bulletin 1875. The NAD 83 is shown by dashed
corner ticks

Revisions shown in purple compiled from aerial photographs
take 1971. This information not field checked

There may be private inholdings within the boundaries of
the National or State reservations shown on this map



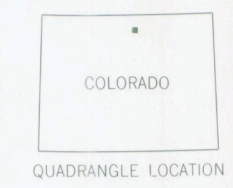
CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT 20-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225 OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Map photoinspected 1975
No major culture or drainage changes observed

HORSETOOTH RESERVOIR, COLO.
40105-E2-TF-024
PHOTOINSPECTED 1975
1962
PHOTOREVISED 1971
DMA 4865 II SW-SERIES V877

ROAD CLASSIFICATION
Medium-duty ——— Light-duty ———
Unimproved dirt - - - - -



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ISBN # 060720495 CO 24
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9780607204951