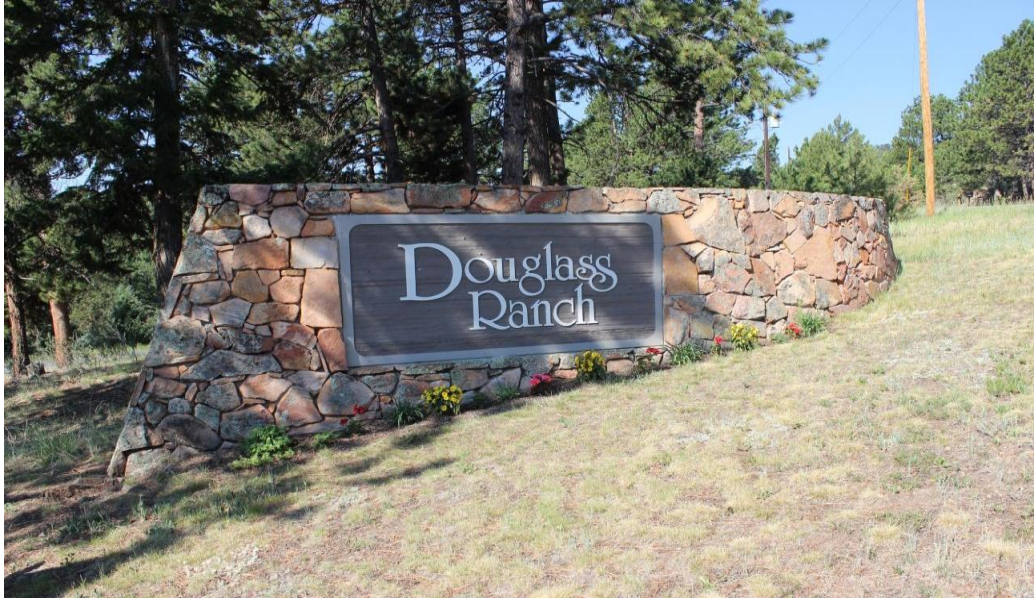


# FOREST MANAGEMENT PLAN

Douglass Ranch Property Owners Association

Pine Junction, Jefferson County, Colorado



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3 December 2018

# **Douglass Ranch Forest Management Plan**

# Douglass Ranch Forest Management Plan

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# **Douglass Ranch Forest Management Plan**

## **Douglass Ranch Forest Management Plan**

### **I. Purpose**

The purpose of this plan is to consolidate the natural resource, forestry, access and fire and fuel reduction recommendations addressed in the Douglass Ranch Property Owners Association (DRPOA) Official Development Plan and the Elk Creek Fire Department Community Wildfire Protection Plan. In addition, this plan will help consolidate forest management objectives and create priorities for the development of a multi-year action plan.

### **II. Objectives**

The objective of this Forest Management Plan are necessarily intertwined with the existing POA governing documents – notably the Declaration of Protective Covenants and Restrictions (CC&Rs) and the Articles of Incorporation.

The Articles describe the purpose of the DR POA with the words “health, safety and welfare” and the phrase “desirable community and environment for all owners.” While each property owner can essentially live as they please, they also should remember that actions with respect to wildfire mitigation can affect their neighbors.

#### **A. Declaration of Protective Covenants, Conditions and Restrictions**

The DR POA Covenants, Conditions and Restrictions (CC&Rs), Section 5.6, discusses the POA’s intention to “implement a Forest Management Program in cooperation with the Colorado State Forest Service to assure review of

- proposed building improvements in connection with mitigation of wildfire safety problems,
- control of infestation of harmful insects and
- regulation of wildfire protection measures.”

#### **B. Articles of Incorporation for the DR POA**

The DR POA Articles of Incorporation, section IV-b-x, states the implementation of a Forest Management Program is a ‘power’ assigned to the Association.

## **Douglass Ranch Forest Management Plan**

### **C. Forest Management Plan Objectives**

1. To reduce the risk of catastrophic fire to property and residences.
2. To maintain a healthy forest less prone to insect and disease attacks.
3. To enhance forest stand structures that reflect natural forest vegetative characteristics for the benefit of home values, esthetics, and wildlife habitats.
4. To maintain natural meadows and openings for the benefit of vegetative diversity, beauty and wildlife habitat.
5. To protect riparian areas and wetlands to help assure soil stability and high quality water.

### **D. Desired Future Condition Objective**

Diverse, healthy forests, residential lots and open space are being managed to provide quality of life for residents while reducing the risks of fire, insects and disease and maintaining high value landscapes for clean water, wildlife and scenery.

## **III. General Description**

### **A. Location**

The Douglass Ranch community is located within portions of Sections 5 and 6, Township 7 South, Range 71 West 6th PM, Jefferson County, Colorado. This mountain home subdivision covers about 269 acres and includes 42 individual lots that average 3 – 5 acres each. Common open space is about 31.5 acres. The property is within the upper reaches of Upper Elk Creek, south of US Highway 285 between the communities of Pine Junction and Schaffer's Crossing.

Douglass Ranch averages about 8000 feet in elevation with aspects that vary with topography. Slopes vary from 5-40 percent. This property is within the montane ecological zone in Jefferson's County Front Range. The dominant forest species include Ponderosa pine and Douglas-fir with scattered aspen. This montane forest zone supports a rich understory of mountain grasses, brush and wildflower species.

Access is by US Highway 285, Old Highway 285 and south on Douglass Ranch Drive. It is located about 3 miles from the Elk Creek Fire Station. Adjoining neighbors include: Elk

## Douglass Ranch Forest Management Plan

Creek Estates, Glenelk Association, Culman Trust, Meadow Creek Bed and Breakfast and Emmaus Catholic Conference and Retreat Center.

### B. Climatic Characteristics

The climate here is the result of the relationship to the Continental Divide and Colorado's Front Range seasonal weather conditions.

Average yearly daily maximum temperature is 48 degrees. Extreme is 84 degrees.

Average yearly daily minimum temperature is 25 degrees. Extreme is -28 degrees.

Average precipitation is 18.6 inches with July and August the wettest months.

Snowfall averages 127 inches per year with the heaviest snows in March and April.

Frost-free period ranges from 25 to 75 days.

Winds in this area change with frontal passages but tend to prevail from the south-southwest.

These averages seasonally affect forest health, growing conditions, light fuel development, and fire behavior.

### C. Vegetation

This property can generally be described in its natural condition as a montane forest with an uneven-aged stand of ponderosa pine and Douglas-fir. The vegetative patterns and species mixes have been the result of ecological disturbance over time by fire, insect infestations and forest diseases and later vegetative succession as the result of fire suppression. The undeveloped parts of individual homeowner lots still represent this natural condition. As a result of a tussock moth invasion about 30 years ago, the Douglas-fir stands have regenerated and created over-stocked post and pole stands. These native stands also include Aspen and scattered Rocky Mountain Juniper. In many cases the old Aspen clones have been overgrown by the Douglas-fir stands and are becoming overgrown and decadent.

Brush species in the forested understory and predominantly Colorado current and mountain mahogany. Grass species include Arizona fescue, wheatgrass, blue grama, stipa



## Douglass Ranch Forest Management Plan

spp., and June grass. Herbs and wildflowers are present and are typical of species in the montane system.

The Douglass Ranch home owners have all landscaped their properties to some extent and have introduced and encouraged other forest species that include: Blue spruce and Bristlecone pine.



Figure 1 - Mixed Conifer Stand

Mixed conifer stand of Douglas-fir and Ponderosa pine with heavy Douglas-fir reproduction typical of the Severe Wildfire Hazard Areas.



## Douglass Ranch Forest Management Plan



Figure 2 - Remnant Aspen Stand

Example of remnant Aspen stand overgrown by Douglas-fir. A good opportunity for small patch cuts to re-establish clone.

### D. Insects and Disease

There is only an endemic level of mountain pine beetle activity on this property in the pine stands. The Association and home owners have aggressively managed their properties to treat individual infected trees, and have actively treated and thinned stands to help increase forest health and reduce risks of further insect attacks. There is still evidence of tussock moth attacks from 30-40 years ago in the Douglas-fir portions of the uneven-aged mixed conifer stands. Some heavy Douglas-fir reproduction has occurred and remains as an overstocked understory and ladder fuel issue regarding fire behavior.

Dwarf Mistletoe in pine is at a low endemic level and will continue to affect pine reproduction in areas where it occurs.

## **Douglass Ranch Forest Management Plan**

### **E. Fire Hazard**

Colorado State Forest Service's Colorado Wildfire Risk Assessment Portal (CSFS COWRAP) indicates that this property has moderate to high risk of wildfire, a moderate to high Burn Probability rating, and a moderate to high Fire Intensity rating. See Appendices G, H, I for COWRAP maps.

The Douglass Ranch area is largely built out with residences and altered landscapes and vegetation. Many owners/residents have completed their Defensible Space projects and some roads and driveways have completed roadside fuel cleanup, thinning, and shaded-fuel breaks through volunteer homeowner association projects. There are some homeowners who have not fully completed fuel reduction work on their property. The DRPOA has a very active Firewise program that reaches out to all homeowners with educational programs and volunteer projects.

The Douglass Ranch Official Development Plan identifies six areas that have been rated as "Severe Wildfire Hazards". See Maps in Appendices D and E. This severe rating is the result of forest stand density, stand size, overstocking, ladder fuels, slope and aspect. This will become the high priority areas for treatment to reduce risks for catastrophic fire.

Generally, the stands surrounding the individual residential lots and in the open spaces are in Anderson Fire Behavior Models 2 and 8. Model 2 is where ground fire is spread primarily through fine herbaceous fuel, curing or dead. Model 8 behavior has slow-moving ground fires with possible "jackpots" where fuel is concentrated.

A recent (2018) 2.6 acre shaded fuel break work has been completed in the neighborhood's southwest corner ("Open Space") in cooperation with the Colorado State Forest Service and the Elk Creek Fire Department Mitigation Crew.

The POA has developed a water cistern and cooperatively manages access to a pond on Lot 7 for drawing water to resupply firefighting equipment including pumpers and tankers.

### **F. Noxious Weeds**

There are no large concentrations of noxious weeds on the Douglass Ranch. However, there are small scattered noxious weeds around the properties including open space that include: Canada thistle, common mullein and dalmatian toadflax and will require annual treatments to minimize spread.

## Douglass Ranch Forest Management Plan

### G. Wildlife

Wildlife habitats on the Ranch provide good diversity for many species common to the montane zone including: elk, mule deer, black bear, mountain lion, coyote and bobcat. There is a wide variety of bird species that include: Steller's jay, white breasted nuthatch, dark eyed junco, downy woodpecker, hairy woodpecker, northern flicker, and Clark's nutcracker. These species present indicate a healthy, natural forest system is still in place and functioning.

### H. Threatened and Endangered Species

No threatened or endangered (T&E) species have been identified on the Douglass Ranch properties. There is a population of Abert squirrels that requires old growth Ponderosa pine habitats with interlocking crowns on the Ranch, and while they are a species of unique interest, they are not a listed T&E species.

## IV. Management Units

In order to facilitate communications, assign responsibility for action projects, and reporting, four management units representing sub-parts of the neighborhood have been organized as follows:

Mgmt Unit	Description	Responsibility	Primary Objectives
Mgmt Unit #1	42 Individual member lots	Lot owner	Safety, defensible space, and forest health
Mgmt Unit #2	Severe Wildfire Hazard Areas	POA and lot owners	Safety, defensible space, and forest health
Mgmt Unit #3	Main roads, private drives, emergency egress road	POA and lot owners	Safe Access, escape, and defensible space
Mgmt Unit #4	Open Space	POA	Defensible space, wildlife habitat, forest health

Table 1 - Management Units

# Douglass Ranch Forest Management Plan

## V. Management Prescriptions

Recommended wildfire mitigation actions (prescriptions) are recommended to each management unit identified in Table 1.

### Management Unit #1      Lot Owner

Apply the Guidelines as established in the Colorado Guide Series, “Fire 2012-1”, formerly CSU Extension Factsheet 6.302, “Protecting Your Home from Wildfire: Creating Wildfire-Defensible Zones”, and “Fuel Break Guidelines for Forested Subdivisions and Communities”. See Appendices J, K, and L for details.

Summary Zone 1: Area around the perimeter of a structure (within 15 to 30 feet) that must be made non-combustible.

1. Remove flammable material a minimum distance of 15-30 feet from the structure.
2. Prune and maintain any remaining plants to prevent excessive growth.
3. Mow any grass to below 6 inches in height. Irrigate grass and other vegetation during growing season.
4. Any trees left in Zone 1 are to be considered a part of the structure, pruned to ten feet, remove any branches over hanging the roof or within 10 feet of the chimney.
5. Remove pine needles from gutters and rake up and remove needles 10 feet away from decks or structures.
6. Store any firewood at least 30 feet away from structures.
7. Remove slash, wood chips and other woody materials from Zone 1.

Summary Zone 2: All ground typically 100 feet from the structure depending on slope of the property. These thinning and pruning guidelines also apply to driveways to develop a shaded fuel-break and provide a safe ingress and egress to the house and garage for emergency vehicles.

1. Remove trees to create 10 feet between crowns of remaining trees. One or two dead “snag” trees per acre may be left for cavity nesting birds.
2. Remove ladder fuel out from under crowns of remaining trees. Also prune these trees up ten feet or no more than 1/3 the height of the tree.
3. Dispose of slash or chip slash and scatter to a depth not to exceed 1 ½ inches.

## Douglass Ranch Forest Management Plan

Summary Zone 3: All property beyond Zone 2 out to the property boundary.

1. Apply good forest health standards to maintain un-even aged stands, tree diversity, and adequate growing room over time. A basal area of 80 square feet per acre would be a target objective for optimizing forest health objectives.
2. Remove ladder fuels where necessary to lower hazards, especially on steeper slopes.
3. Slash treatment may include removal, chipping or lop and scatter.

### Management Unit #2 Severe Wildfire Hazard Areas

See maps in Appendices D and E for a view of Severe Wildfire Hazard Areas in Douglass Ranch.

Apply Zone 1, Zone 2, or Zone 3 management prescriptions (ref: above guidelines) depending on distance to structures or residences.

Where possible in these areas develop a 1/10th to ¼ acre clear cut patches around decadent aspen stands to release and restore these old and overgrown stands. This will help reduce fire risk and re-establish more diversity, habitat and color to the forest.

### Management Unit #3 Street and Roads

Apply Zone 2 and Fuel Break Guidelines to thinning and pruning of forest vegetation along rights-of-ways along the Ranch road and street system. This should include the removal and brushing out of ladder fuels under the remaining trees and the removal and/or chipping of all slash.

An emergency, secondary escape route needs to be established as the current Douglass Ranch Road is the only way out should there be a need for an emergency evacuation. There is a proposed secondary route, a primitive “two-track” on an old trail out through Lot 30. This secondary emergency egress is critical to meet community safety objectives and needs priority attention. This route out needs to be “pioneered”, thinned and pruned to meet Zone 2 guidelines, and a gate installed in cooperation and agreement with the adjoining

## Douglass Ranch Forest Management Plan

land owner, Glenelk Ranch. Annual vegetative maintenance and travel (driveability) testing of this emergency route should be a priority of the lot owner and POA.

### Management Unit #4 POA Open Space

Apply the standard guidelines of CSFS Zone 2 Defensible Space Guidelines and “Fuel Break Guidelines for Forested Subdivisions & Communities”. Three areas are identified on map in Appendix F and include the north, east and south sides of the Ranch identified by yellow boundaries. Priority should be given to the south open space area to help reduce potential for fire threats that are predominately and historically from the south.

The forest management for this unit is by applying a sanitation cut prescription also known as thinning from below. Priority attention should be given to removal of ladder fuels, trees with disease or dwarf mistletoe, standing dead, snow bends and small diameter weak trees.

Work with adjoining land owners to the north and east and Douglass Ranch lot owners to coordinate alignment of fuel break projects along common boundaries to take advantages of natural openings and availabilities of beneficial landscapes, slopes and aspects.

Take advantage of opportunities to manage the removal of dwarf mistletoe infested trees and create clear-cut patches for aspen regeneration.

Avoid removal of vegetation for a distance of 50 feet either side of center line of ephemeral drainage ways to maintain soil stability, riparian streamside vegetation and wildlife travel corridors.

Remove slash by piling and burning with approval of Fire district, chipping where equipment is accessible, or lopping and scattering.



## Douglass Ranch Forest Management Plan

Table 2 summarizes priority actions identified in this Forest Management Plan.

Mgmt Unit	Description	Responsibility	Priority Action
Mgmt Unit #1	42 Individual member lots	Lot owner	Make zone 1 area non-combustible Ref: Section V - Mgmt Unit #1
Mgmt Unit #2	Severe Wildfire Hazard Areas	POA and lot owners	Mitigation of Severe Wildfire Hazard Areas Ref: Section III – E
Mgmt Unit #3	Main roads, private drives, emergency egress road	POA and lot owners	Emergency escape route Ref: Section V - Mgmt Unit #3
Mgmt Unit #4	Open Space	POA	Open Space mitigation Ref: Sections III - E and V - Mgmt Unit #4

Table 2 - Priority Actions in Management Units

## **Douglass Ranch Forest Management Plan**

# **Douglass Ranch Forest Management Plan**

## Appendices

## **Douglass Ranch Forest Management Plan**

# Douglass Ranch Forest Management Plan

## Appendix A – Neighborhood Topography Map

A topographical map of the Douglass Ranch neighborhood.

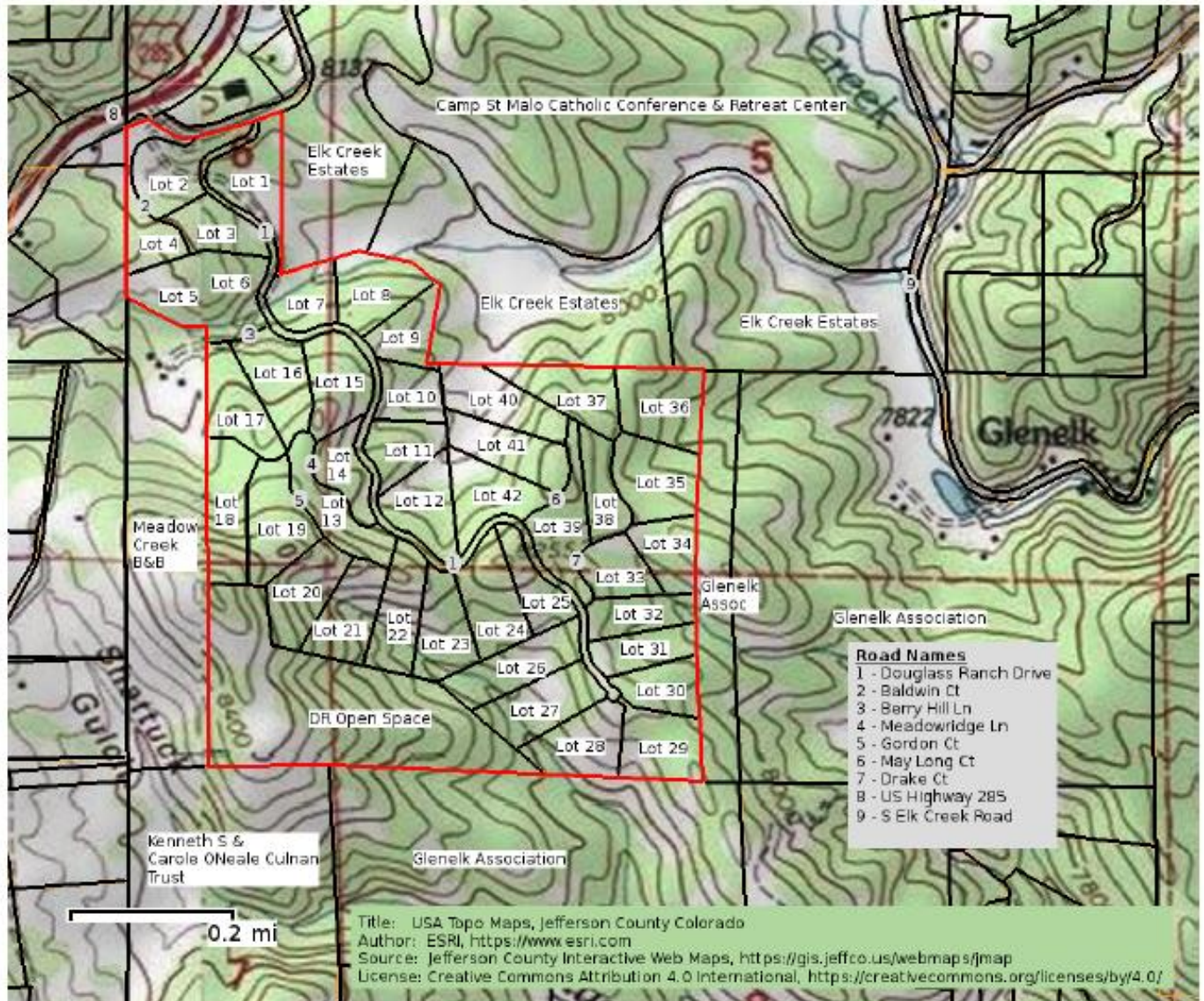
Source: Jefferson County Interactive Maps: <https://gis.jeffco.us/webmaps/jmap>

Creation Date: October 2018

## **Douglass Ranch Forest Management Plan**



## Douglass Ranch Forest Management Plan



General Location and Topography Map

Douglass Ranch

## **Douglass Ranch Forest Management Plan**

# **Douglass Ranch Forest Management Plan**

## **Appendix B – Neighborhood Ownership Map**

A map of the Douglass Ranch neighborhood with lot numbers and adjacent property owners.

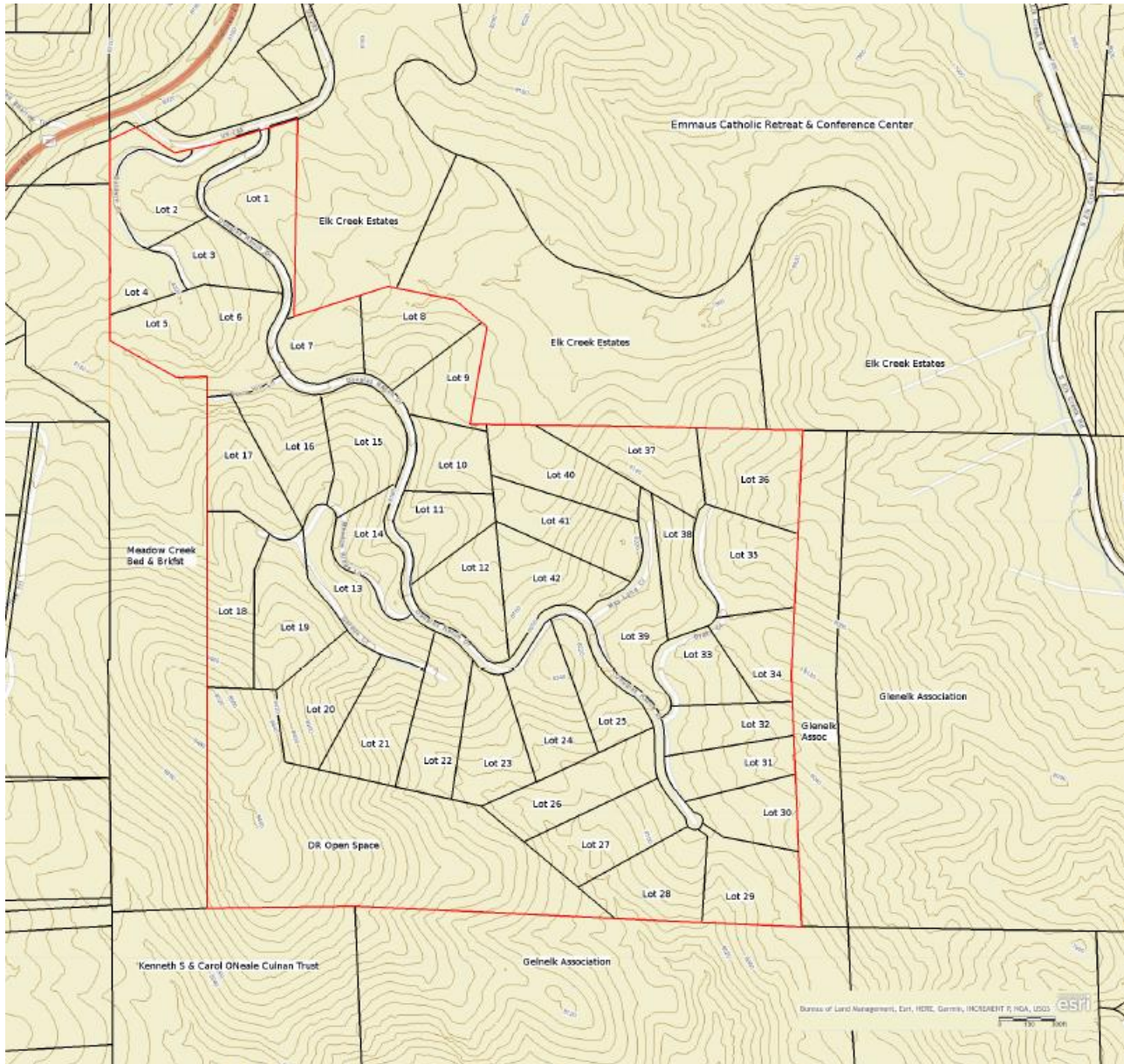
Source: Jefferson County Interactive Maps: <https://gis.jeffco.us/webmaps/jmap>

Creation Date: October 2018

## **Douglass Ranch Forest Management Plan**



# Douglass Ranch Forest Management Plan



Neighborhood Ownership Map

Douglass Ranch, Jefferson County Colorado

## **Douglass Ranch Forest Management Plan**



## **Douglass Ranch Forest Management Plan**

### **Appendix C — Forest Cover and Ownership Aerial Photo**

An aerial view of the Douglass Ranch neighborhood based on 2016 aerial photography.

Source: Jefferson County Interactive Maps: <https://gis.jeffco.us/webmaps/jmap>

Creation Date: 2018

## **Douglass Ranch Forest Management Plan**

## Douglass Ranch Forest Management Plan



Neighborhood Ownership Map

Douglass Ranch,

## **Douglass Ranch Forest Management Plan**

## **Douglass Ranch Forest Management Plan**

### **Appendix D – Official Development Plan Severe Wildfire Hazard Map**

Douglass Ranch Official Development Plan (ODP) with red-highlighted areas of Severe Wildfire Hazard.

Source: <http://www.douglassranch.org/firewise-maps>

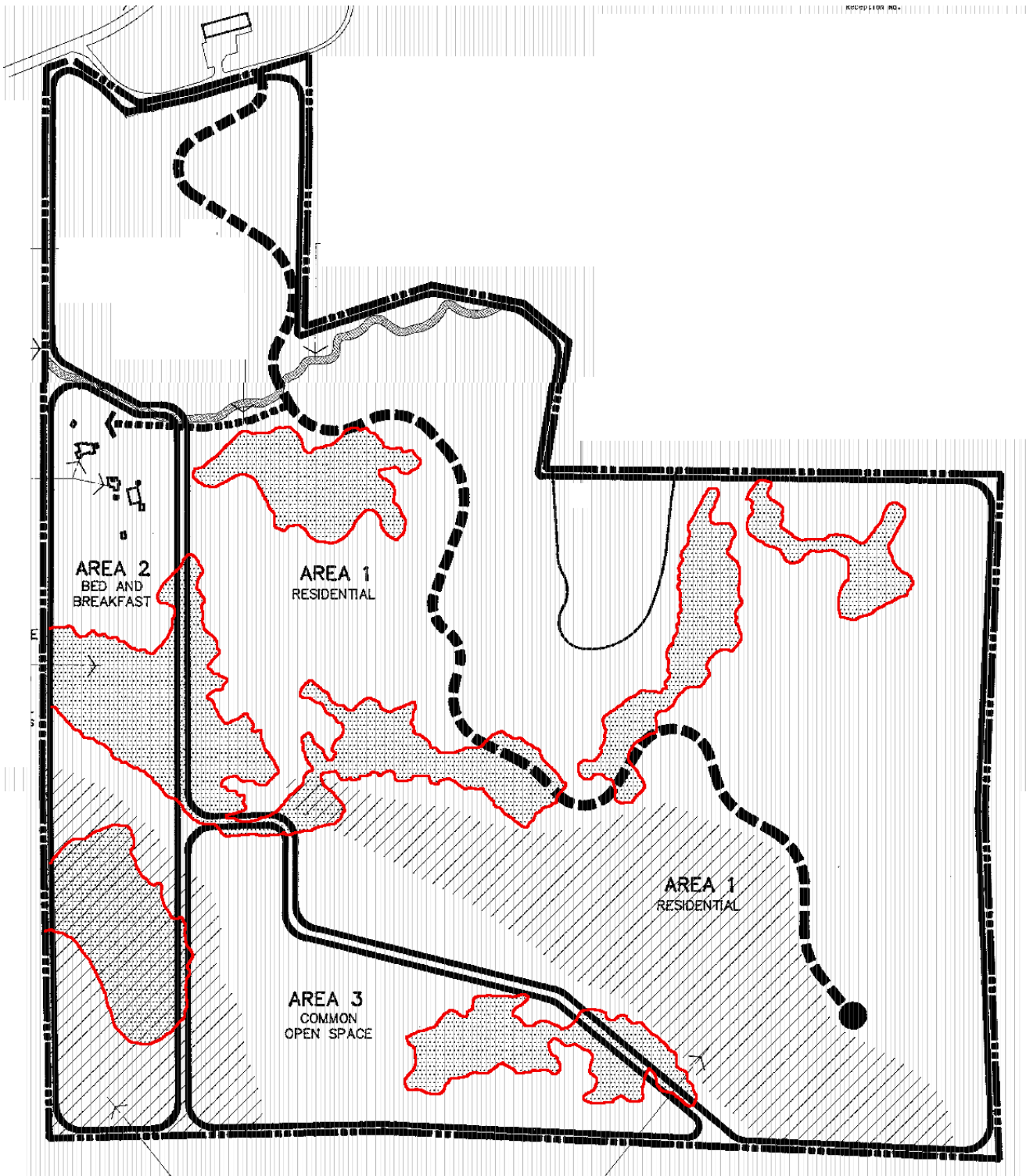
Source: Douglass Ranch ODP, Jefferson County ODP Book 56, Page 53, Recording Number 88036979, 4/19/88 – electronic copy available at <http://www.douglassranch.org/official-development-plan-and-plat>

Map created: 2017

## **Douglass Ranch Forest Management Plan**



# Douglass Ranch Forest Management Plan



Severe Wildfire Hazard Areas

# **Douglass Ranch Forest Management Plan**

Douglass Ranch Official Development Plan

## **Douglass Ranch Forest Management Plan**

### **Appendix E – Douglass Ranch Severe Wildfire Hazard Overlay Map**

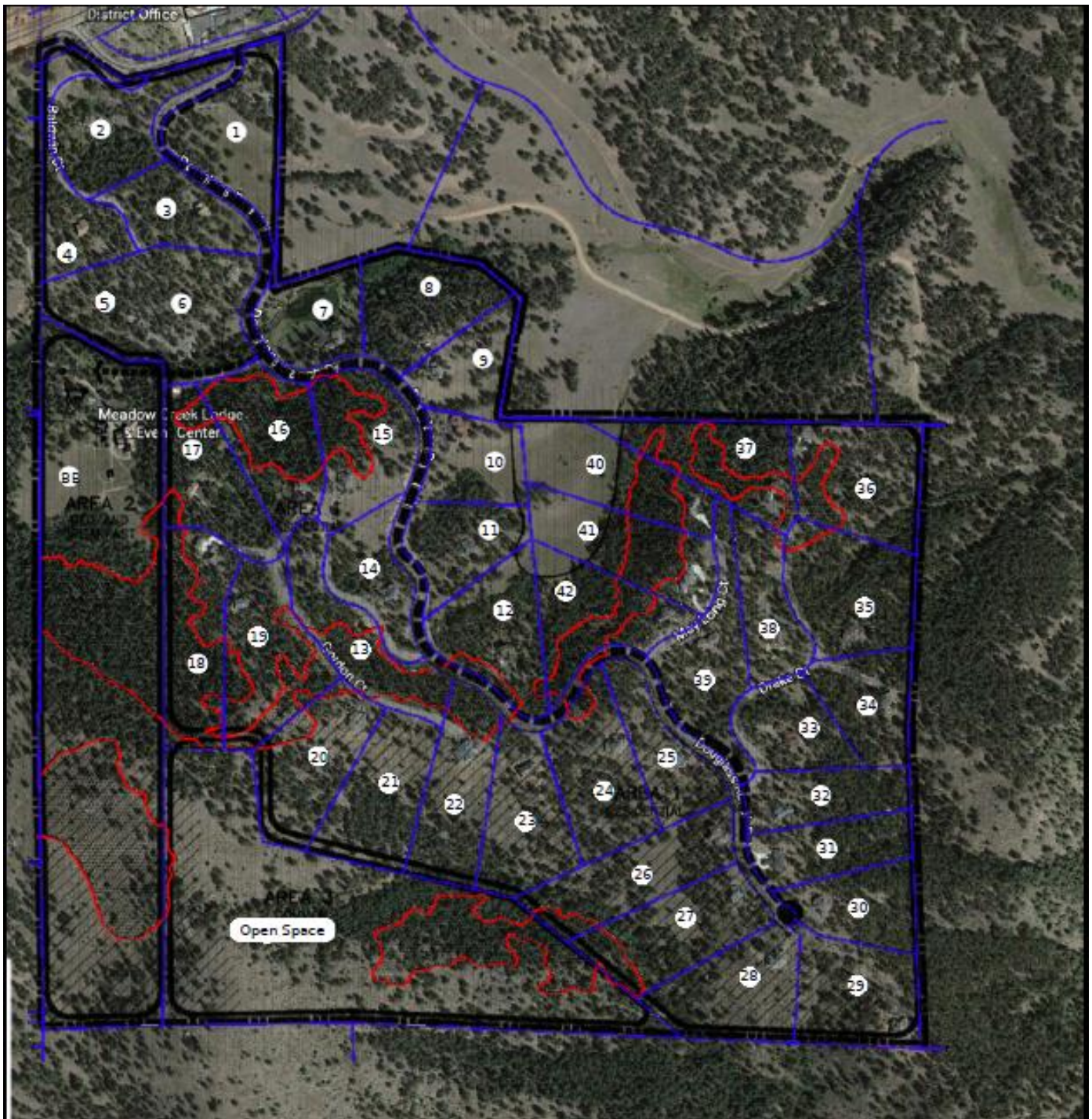
An overlay of Douglass Ranch ODP Severe Wildfire Hazard areas with Jefferson County aerial view. North slopes typically have highest tree density.

Source: <http://www.douglassranch.org/firewise-maps>

Creation Date: 2017

## **Douglass Ranch Forest Management Plan**

## Douglass Ranch Forest Management Plan



Douglass Ranch Severe Wildfire Hazard Overlay

Jefferson County Colorado

Red outline denotes Severe Wildfire Hazard areas from the DR ODP.

## **Douglass Ranch Forest Management Plan**

## **Douglass Ranch Forest Management Plan**

### **Appendix F – Shaded Fuel-Break Map**

Proposed shaded fuel break areas for Douglass Ranch. Actual shaded fuel breaks might take in naturally occurring breaks in the forested areas.

Source: Derived from Douglass Ranch ODP and from Douglass Ranch Assessment

Source: Douglass Ranch ODP, Jefferson County ODP Book 56, Page 53, Recording Number 88036979, 4/19/88 – electronic copy available at <http://www.douglassranch.org/official-development-plan-and-plat>

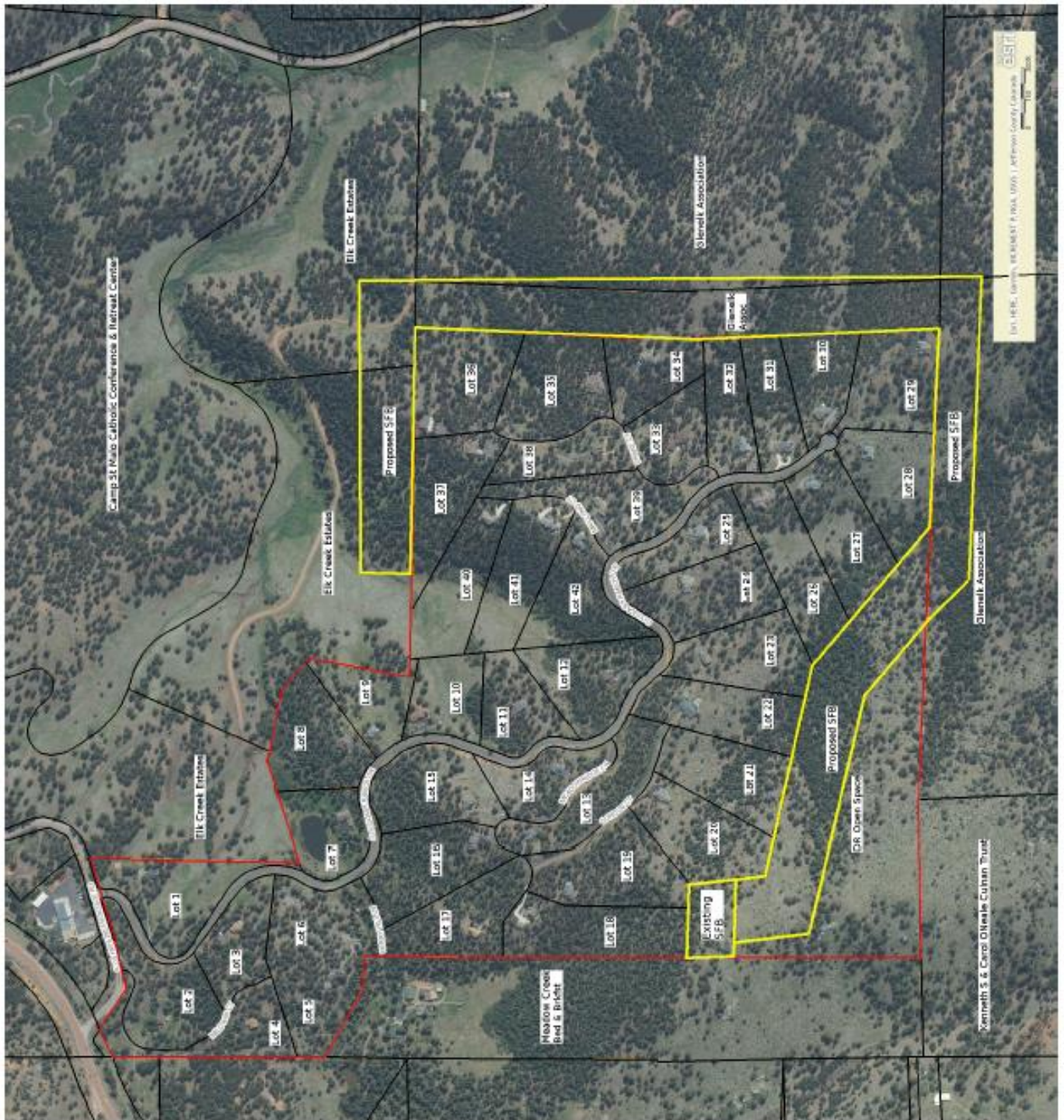
Source: Douglass Ranch Firewise Community Assessment, Elk Creek Fire Protection District, October 13, 2016– electronic copy available at <http://www.douglassranch.org/firewise-references>

Creation Date: 2018

## **Douglass Ranch Forest Management Plan**



# Douglass Ranch Forest Management Plan



### Proposed Shaded Fuel Break Location Map

Douglass Ranch

## **Douglass Ranch Forest Management Plan**

# **Douglass Ranch Forest Management Plan**

## **Appendix G – CSFS Fire Risk Map**

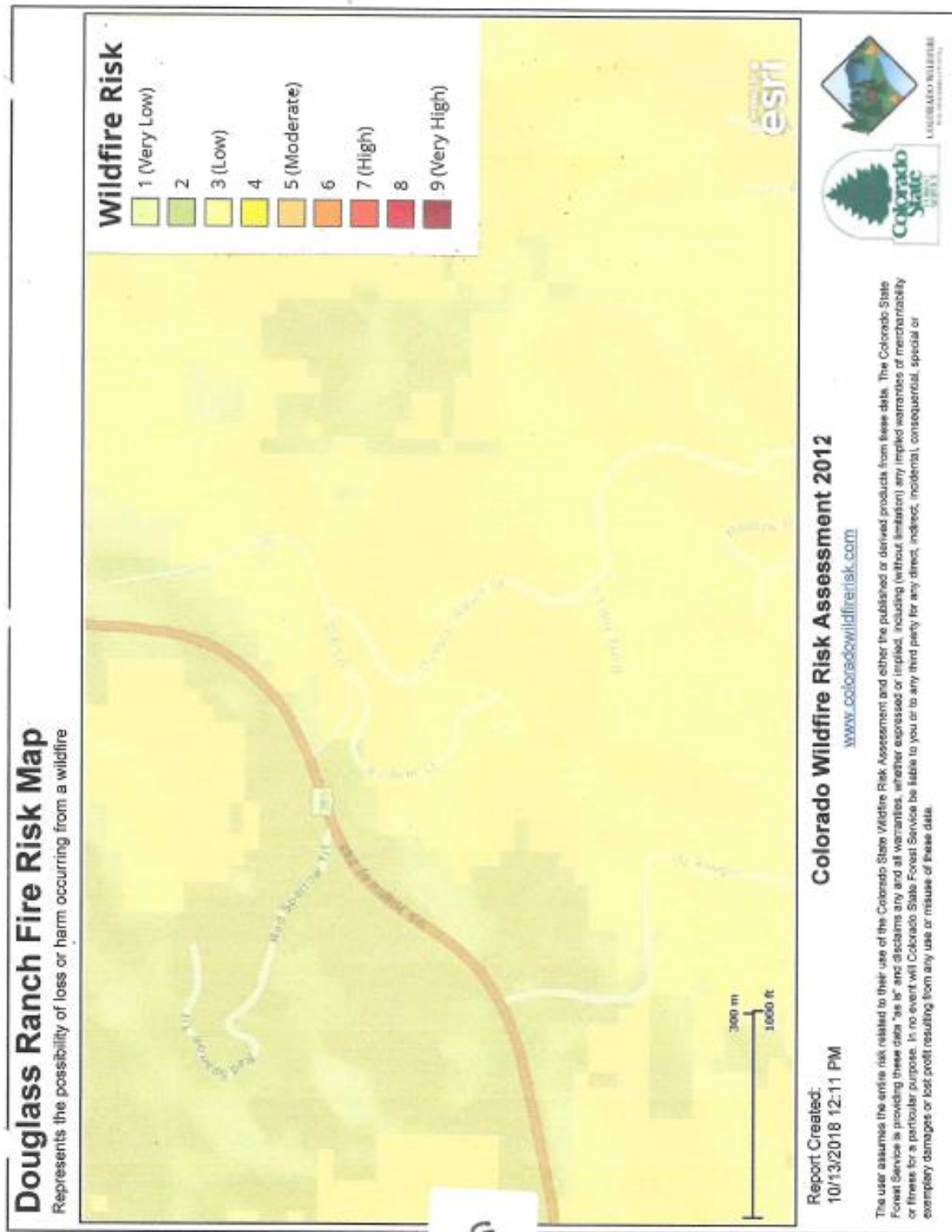
A Fire Risk map from the Colorado State Forest Service (CSFS) CO-WRAP tool showing the possibility of loss or harm occurring from a wildfire.

Source: Colorado Wildfire Risk Assessment Portal, CO-WRAP,  
<https://www.coloradowildfirerisk.com/>

Creation Date: November 2018

## **Douglass Ranch Forest Management Plan**

## Douglass Ranch Forest Management Plan



Colorado State Forest Service Fire Risk Map

Douglass Ranch

## **Douglass Ranch Forest Management Plan**

# **Douglass Ranch Forest Management Plan**

## **Appendix H – CSFS Burn Probability Map**

A Burn Probability map from the Colorado State Forest Service (CSFS) CO-WRAP tool representing the annual probability of any location burning due to wildfire.

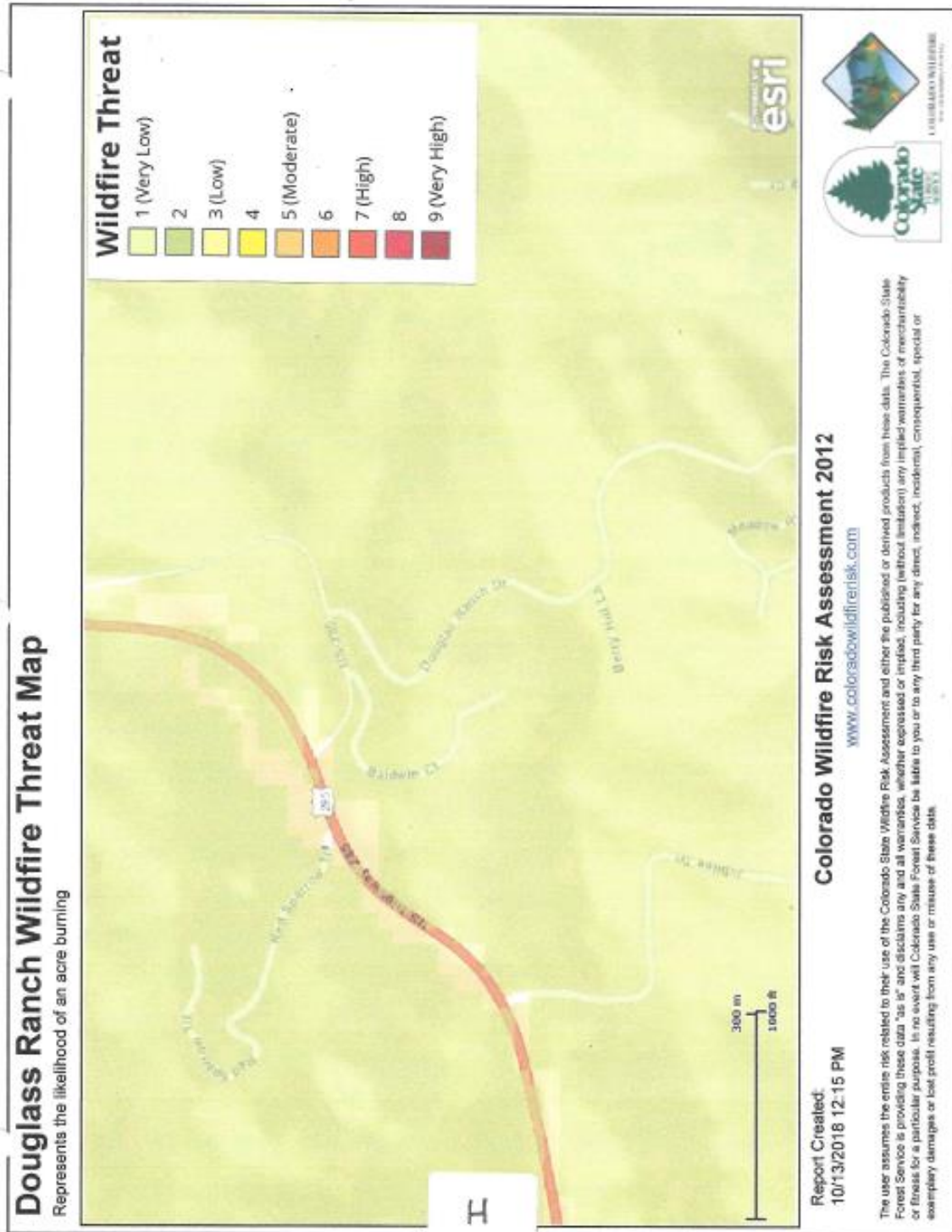
Source: Colorado Wildfire Risk Assessment Portal, CO-WRAP,  
<https://www.coloradowildfirerisk.com/>

Creation Date: November 2018



## **Douglass Ranch Forest Management Plan**

# Douglass Ranch Forest Management Plan



Colorado State Forest Service Wildfire Threat Map

Douglass Ranch

## **Douglass Ranch Forest Management Plan**

# **Douglass Ranch Forest Management Plan**

## **Appendix I – CSFS Fire Intensity Map**

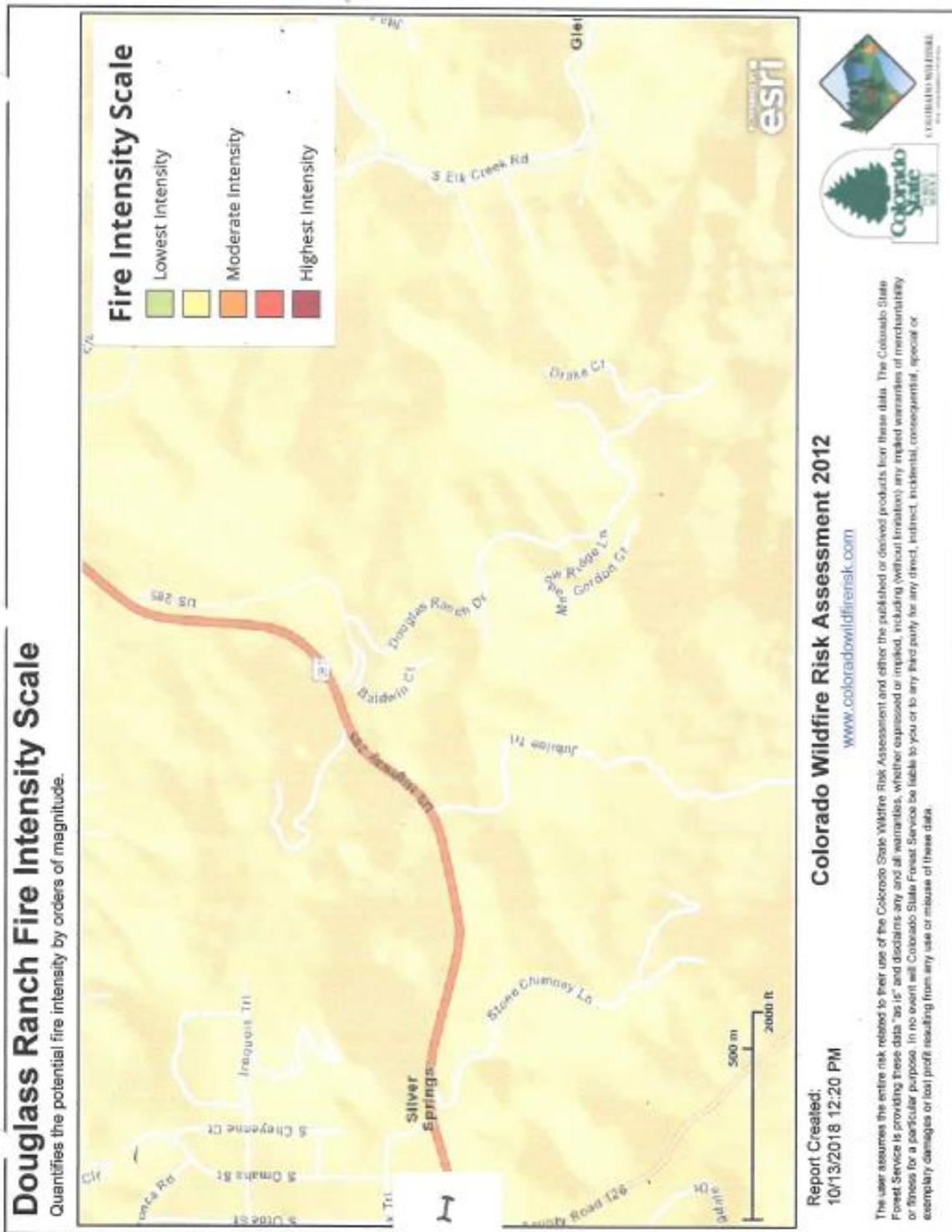
A Fire Intensity map from the Colorado State Forest Service (CSFS) CO-WRAP tool quantifies the .potential fire intensity by orders of magnitude.

Source: Colorado Wildfire Risk Assessment Portal, CO-WRAP,  
<https://www.coloradowildfirerisk.com/>

Creation Date: November 2018

# **Douglass Ranch Forest Management Plan**

# Douglass Ranch Forest Management Plan



Colorado State Forest Service Fire Intensity Scale

Douglass Ranch

## **Douglass Ranch Forest Management Plan**



# **Douglass Ranch Forest Management Plan**

## **Appendix J – Creating Wildfire-Defensible Zones**

Protecting Your Home From Wildfire: Creating Wildfire-Defensible Zones

Source: Colorado State Forest Service: [https://static.colostate.edu/client-files/csfs/pdfs/FIRE2012\\_1\\_DspaceQuickGuide.pdf](https://static.colostate.edu/client-files/csfs/pdfs/FIRE2012_1_DspaceQuickGuide.pdf)

Publication Date: 2012

## **Douglass Ranch Forest Management Plan**

## Douglass Ranch Forest Management Plan

Convert this word doc to PDF, then insert [AppJ FIRE2012 1 DspaceQuickGuide.pdf](#)



# **Douglass Ranch Forest Management Plan**

## **Appendix K – Defensible Space Zones**

The Appendix J Defensible Space Guide does not include a discussion of how the width of Zone 2 defensible space varies with ground slope. This appendix includes a graph showing Zone 2 width with respect to slope.

Source: Jefferson County Defensible Space Requirements handout.

Creation Date: October 2018

## **Douglass Ranch Forest Management Plan**

## Douglass Ranch Forest Management Plan

Convert this word doc to PDF, then insert [AppK\\_JeffcoDefensibleSpaceReqmts\\_pg\\_0065.pdf](#)





# **Douglass Ranch Forest Management Plan**

## **Appendix L – Fuel Break Guidelines**

Guidelines for the implementation of Fuel Breaks in the Rocky Mountains.

Source: Colorado State Forest Service: [https://static.colostate.edu/client-files/csfs/pdfs/fuelbreak\\_guidellines.pdf](https://static.colostate.edu/client-files/csfs/pdfs/fuelbreak_guidellines.pdf)

Creation Date: Not Available

## **Douglass Ranch Forest Management Plan**

## Douglass Ranch Forest Management Plan

Convert this word doc to PDF, then insert AppL\_fuelbreak\_guidelines.pdf

## **Douglass Ranch Forest Management Plan**

# **Douglass Ranch Forest Management Plan**

## **Appendix M – Mountain Pine Beetle**

Mountain pine beetles (MPB) are the most important insect pest of Colorado's pine forests.

Source: Colorado State Forest Service:

<http://extension.colostate.edu/docs/pubs/insect/05528.pdf>

Creation Date: September 2011

## **Douglass Ranch Forest Management Plan**

## Douglass Ranch Forest Management Plan

Convert this word doc to PDF, then insert Mountain Pine Beetle ref: AppM\_05528.pdf





# Douglass Ranch Forest Management Plan

## Appendix N – Spruce Beetle

The spruce beetle is responsible for the death of more spruce trees in North America than any other natural agent.

Source: Colorado State Forest Service:

<https://csfs.colostate.edu/media/sites/22/2014/02/Spruce-Beetle-QuickGuide-FM2014-1.pdf>

Creation Date: August 2014

## **Douglass Ranch Forest Management Plan**

## Douglass Ranch Forest Management Plan

Convert this word doc to PDF, then insert AppN\_Spruce-Beetle-QuickGuide-FM2014-1.pdf



# Douglass Ranch Forest Management Plan

## Appendix O – Douglas-fir Tussock Moth

In Colorado since the mid-1990s, Douglas-fir tussock moth outbreaks have occurred in numerous locations, but most frequently along the southern portion of the Front Range, west of Colorado Springs and Boulder and in the Rampart Range.

Source: Colorado State Forest Service:

<https://csfs.colostate.edu/media/sites/22/2014/02/Douglas-Fir-Tussock-Moth-QG-2015-FINAL.pdf>

Creation Date: September 2015

# **Douglass Ranch Forest Management Plan**

## Douglass Ranch Forest Management Plan

Convert this word doc to PDF, then insert AppO\_Douglas-Fir-Tussock-Moth-QG-2015-FINAL.pdf





## Douglass Ranch Forest Management Plan

### Appendix P – Treatment Options for Douglas-Fir Tussock Moth

Biological and chemical control options for ground-based and aerial application to manage infestation by Douglas-Fir Tussock Moth.

Source: Colorado State Forest Service:

[https://csfs.colostate.edu/media/sites/22/2016/05/DFTM\\_Treatment\\_Options\\_18April2016\\_ww3.pdf](https://csfs.colostate.edu/media/sites/22/2016/05/DFTM_Treatment_Options_18April2016_ww3.pdf)

Creation Date: Not Available

## **Douglass Ranch Forest Management Plan**

## **Douglass Ranch Forest Management Plan**

## Douglass Ranch Forest Management Plan

Convert this word doc to PDF, then insert AppP\_DFTM\_Treatment\_Options\_18April2016\_www3.pdf

# Douglass Ranch Forest Management Plan

## Appendix Q – Dwarf Mistletoe Management

Dwarf mistletoes are small, leafless, parasitic flowering plants and are a common problem in Colorado forests on ponderosa and lodgepole pine

Source: Colorado State Forest Service: <https://static.colostate.edu/client-files/csfs/pdfs/DMT.pdf>

Creation Date: February 1999, Revised April 2005

## **Douglass Ranch Forest Management Plan**

## Douglass Ranch Forest Management Plan

Convert this word doc to PDF, then insert AppQ\_DMT.pdf





# **Douglass Ranch Forest Management Plan**

## **Appendix R – FireWise Plant Materials**

How to choose plant species that tend to be more resistant to wildfire.

Source: Colorado State Forest Service:

<http://extension.colostate.edu/docs/pubs/natres/06305.pdf>

Creation Date: April 2002, Revised January 2006.

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## Appendix S – Jefferson County Noxious Weeds

Noxious weeds are invasive, non-native plants that have been introduced by accident or as ornamental plants. They are devastating thousands of acres of wildlife habitat and natural areas. Left uncontrolled, noxious weeds may displace native and desirable plants. Native plant loss affects wildlife that depends on the native vegetation for survival.

Source: Jefferson County Noxious Weed Information: <https://www.jeffco.us/1994/Noxious-Weed-Information>










Publication Date: 2018

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### Noxious Weed List A – Eradication

Weeds identified by the state as uncommon and are required to be eradicated. Eradication means the complete elimination of the plant prior to reproduction.











List A - Eradication			
Arundo (Giant Reed)		Knotweed	
Cypress Spurge		Myrtle Spurge	
Dyer's Woad		Orange Hawkweed	
Hairy Willowherb		Purple Loosestrife	
		Yellow Starthistle	






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### Noxious Weed List B – Eradication

Weeds identified as having varying populations throughout the state. Eradication zones may be established in areas where the weed is uncommon and complete elimination is required.

List B - Eradication			
Black Henbane		Moth Mullein	
Bull Thistle		Oxeye Daisy	
Chinese Clematis		Plumeless Thistle	
Common Tansy		Russian Knapweed	
Diffuse Knapweed		Russian Olive	








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List B - Eradication			
Jointed Goatgrass		Salt Cedar	
		Spotted Knapweed	










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### Noxious Weed List B – Control Required

Weeds identified as having varying populations throughout the state. In areas where the weed is more common, control and population containment is required.

List B – Control Required			
Bouncingbet		Leafy Spurge	
Canada Thistle		Musk Thistle	
Dalmatian Toadflax		Oxeye Daisy	
Dame's Rocket		Perennial Pepperweed	
Diffuse Knapweed		Russian Olive	

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List B – Control Required				
Eurasian Watermilfoil			Scentless Chamomile	
Hoary Cress			Scotch Thistle	
Houndstongue			Sulfur Cinquefoil	
Jointed Goatgrass			Teasel	
			Yellow Toadflax	

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## Appendix T – Jefferson County T&E Species List

A list of Threatened and Endangered (T&E) species in Clear Creek and Jefferson County, Colorado.

Source: US Department of the Interior Fish and Wildlife Service, Ecological Services

Source: Fish and Wildlife Service ECOS Environmental Conservation Online System,  
<https://ecos.fws.gov/ecp0/reports/species-listed-by-state-report?state=CO&status=listed>

Source: Platte River Recovery Implementation Program Final Environmental Impact Statement, April 2006,  
[https://platteriverprogram.org/sites/default/files/PubsAndData/ProgramLibrary/PRRIP%202006\\_FEIS%20Summary.pdf](https://platteriverprogram.org/sites/default/files/PubsAndData/ProgramLibrary/PRRIP%202006_FEIS%20Summary.pdf)

Assembly Date: 2018

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Species	Status	
Canada Lynx	Threatened	
Colorado Butterfly Plant	Threatened	
Mexican Spotted Owl	Threatened	
Pawnee Montane Skipper	Threatened	



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Species	Status	
Ute Ladies' Tresses Orchid	Threatened	
Preble's Meadow Jumping Mouse	Threatened	
Whooping Crane	Endangered	
Piping Plover	Threatened	
Pallid Sturgeon	Endangered	

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Species	Status	
Least Tern	Endangered	 A photograph of a Least Tern, a small seabird with a white body, black cap, and long yellow beak, standing on a rocky, sandy beach.
North American Wolverine	Proposed Threatened	 A photograph of a North American Wolverine, a large, brown, shaggy-furred mammal, standing on a log. The ARKive logo is visible in the top left corner of the image.

## **Douglass Ranch Forest Management Plan**

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## **Appendix U – Glossary of Forest Management Terms**

Glossary of terms often used in Forest Management.

Source: S. Deitemeyer

Date: 2018

## **Douglass Ranch Forest Management Plan**

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## GLOSSARY

Acre - 43,560 square feet.

Age Class - A distinct group of trees, or a portion of growing stock recognized as the basis of age. One of the intervals into which the age range of tree crops is divided for classification or use.

All-aged - (see uneven-aged)

Aspect - the direction towards which a slope faces (exposure).

Basal Area - the area of the cross section of a tree stem.

Bedding - the process of an animal lying down for rest.

Blight - sudden drying and browning of large, indefinite areas on shoots or limbs.

Board Foot - the amount of timber in a piece of wood 1 in x 1 ft x 1 ft. Often expressed in multiples of a thousand, such as one thousand board feet (MBF): one million board feet (MMBF) and so on.

Browse - any material that is browsed. Leaves, twigs, and shoots of vegetation eaten by wildlife.

Buffer strip - a strip of vegetation that is left or managed to reduce the impact of a treatment or action of one area on another.

Callus - tissue overgrowths at the edge of canker or wound.

Cankers - sunken areas in cortical or bark tissues.

Canopy - a more or less continuous cover of branches and foliage formed collectively by the crowns of adjacent trees.

Canopy closure - the progressive reduction of space between tree crowns as they spread laterally: a measure of the percent of potential open space occupied by the collective tree crown in a stand.

Carsonite post - A highly visible fiber glass post used to mark boundaries or section corners.

Cavity dwellers - species of birds and mammals that depend on cavities in trees for their shelter and/or nesting.

Chain - 66 feet.

Chlorosis - subnormal chlorophyll development.

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Clear cut - a silvicultural system in which the old crop is completely cleared at one time.

Climax - the culminating stage in plant succession for a given site where the vegetation has reached a highly stable condition: and is self-perpetuating and in dynamic equilibrium with the physical habitat.

Clone - a group of plants, growing in close association, derived by asexual reproduction from a single parent plant.

Closed canopy - the condition that exists when the canopy created by trees or shrubs or both is dense enough to exclude most of the direct sunlight from the forest floor.

Conifer - the most important order of the Gymnospermae, a wide range of trees, mostly evergreens that bear comprising cones and have needle-shaped or scale-like leaves; timber commercially identified as softwood.

Conk - the spore producing body of many fungi. It is usually protruding from the tree. It is microscopic, annual or perennial, and usually tough and often woody in nature.

Cord - a unit of gross volume measurement for stacked round or cleft wood. 128 cubic feet or 4ft x 4ft x 8ft.

Cover - vegetation used by wildlife for reproduction, protection from predators, or weather conditions: also a shortened version of "crown cover."

Crown - the part of a tree bearing live branches and foliage.

Crown cover - the amount of canopy provided by branches and foliage of trees, shrubs, and herbs in a plant community. May be specified by species, kind of plant, or collectively.

Cruise - a survey of forest land to locate timber and estimate its quantity by species products, size, quality, or other characteristics: the estimate from such a survey. A timber inventory.

DBH - diameter at breast height (4.5 feet).

Disease - any deviation in the normal functioning of a plant caused by some type of persistent agent.

Diversity - the relative degree of abundance of wildlife species, plant species, communities, habitats, or habitat features per unit area.

Dominant - plant species or species groups that, by means of the numbers. coverage, or size, influence or control; the existence of associated species. Also, individual animals which determine the behavior of one or more animals, resulting in the establishment of a social hierarchy.

## **Douglass Ranch Forest Management Plan**

Down material - trunks and limbs of trees in various stages of decomposition found on the forest floor.

Edge - the more or less well defined boundary between two or more elements of the environment.

Even-aged management - a system of forest management in which stands are produced or maintained with relatively minor differences in age.

Final cut - generally, removal of the last trees left in a stand: more particularly, removal of the last seed bearers or shelter trees after regeneration is considered to be established under a shelterwood system.

Forestry - the study and practice of managing forestland and associated resources.

Fuelwood - living or dead trees, or portions; thereof, suitable for burning as fuel.

Germination - the beginning of growth of a mature, generally dormant, seed. Characterized by rupture of the seed coat and the emergence of a radicle (root of the seed embryo).

Habitat - the immediate environment occupied by an organism. Harvesting - generally removing merchantable trees (contrasting with cuttings which remove immature trees). Hazard reduction - a management action designed to reduce risk from a recognized combination of factors that may lead to injury or economic loss.

Horizontal diversity - the diversity in an area that results from the number of plant communities or successional stages or both; the greater their number the greater the horizontal diversity: also, the greater the amount of edge the higher the degree of horizontal diversity.

Improvement cuts - cuttings made in a stand past the sapling stage for the purpose of improving its composition and character, by removing trees of less desirable species, form, and condition in the main crown canopy.

Intermediate cuts - cutting made in a stand between the time of its formation (regeneration) and its major harvest. Intolerant - a tree relatively incapable of developing and growing normally in the shade of and in competition with other trees.

Landing - any place where round timber is assembled for further transport.

Liberation cuts - cuttings designed to release a young stand, sapling stage (1 - 5 inch dbh) or younger, from overstory competition.

Litter - the uppermost layer of organic debris on a forest floor: essentially the freshly fallen or slightly decomposed vegetable material, mainly foliates or leaf litter, but also bark fragments, flowers and fruits.



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Log rule - a formula or table which estimates the volume of a log when diameter and length are known.

Lopping - after felling, the chopping of small trees and branches and tops of large trees so that the resultant slash will lie close to the ground and decay more rapidly.

Lopping and scattering - lopping the slash created by logging and spreading it more or less evenly over the ground without burning.

Low Thinning - the removal of trees from the lower crown classes to favor those in the upper crown classes.

Mast - the fruit of trees such as oak, beech, sweet chestnut, and also the seeds of certain pines.

Mature timber - a stand of trees at a stage (age or size) which satisfies the purpose (primarily economic) for which it is managed.

Mixed stand - a stand of trees in which less than 80% of the trees in the main crown canopy are of a single species.

Mycelium - individual or masses hyphae produced by fungi.

Natural openings - clearings in a forest or brushy area which are inherent because of site factors or have been created by natural causes, such as fire, insects, or disease.

Natural regeneration - renewal of a tree crop by natural seeding, sprouting, suckering, or layering.

Nongame - wild vertebrates not commonly subject to sport hunting or fishing.

Open canopy - a canopy condition that allows large amounts of direct sunlight to reach the ground.

Overmature - the condition that exists after an even-aged stand reaches maturity and declines in vigor, health, and soundness.

Overstocked - a situation in which so many trees exist in a stand that it is impossible to achieve maximum wood production.

Parasite - organism that obtains food from a living organism.

Partial cuts - any timber harvest that leaves live trees standing for some management purpose.

Pathogen - an agent, usually an organism, that incites infectious disease.

Permits - timber lease - the right to cut timber on another's property.

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Predisposition - the effect of one or more environmental factors that makes a plant vulnerable to attack by a pathogen.

Preparatory cut - a light partial cut, made towards the end of the cutting rotation cycle in stands under shelterwood management, in which dying, defective, and undesirable species of trees are removed to: (1) stimulate seed production, (2) prepare a seed bed, and (3) improve windfirmness of remaining trees.

Prescription - in silviculture terms, the formal written plan of action to carry out a silviculture treatment of a forest stand to achieve specific objectives.

Pruning - the cutting away of unwanted material.

Pure stand - a stand of trees in which at least 80% of the trees in the main crown canopy are of a single species.

Regeneration - the renewal of the tree crop by natural or artificial means: also, the young crop.

Release - freeing a tree or group of trees from more intermediate competition by cutting, or otherwise eliminating growth that is overtopping or closely surrounding them.

Residual stand - the stand remaining after completion of cutting.

Resinosis - excessive outflow of resin from diseased tissue.

Riparian - of, pertaining to, or situated on, the banks of a stream, body of water, or other perennial aquatic environments.

Riparian zone/area - an area identified by the presence of vegetation that requires free or unbound water or conditions more moist than normally found in the area.

Rot - dead tissue in more or less advanced stage of disintegration.

Rotation - the time between stand regeneration and even age harvest in even-aged systems.

Salvage cutting - the removal and sale of trees that are dead, dying, or deteriorating.

Sanitation cutting - the removal of dead or damaged trees or trees susceptible to death or damage -- usually to prevent the spread of pests or pathogens and so promote forest hygiene.

Sapling - a young tree less than 4 inches in diameter at DBH. The minimum diameter of saplings is usually placed at 2 inches.

Sawtimber - trees that will yield logs suitable in size and quality for the production of lumber.

Scribner - a diagram log rule used in predicting lumber yields from logs. Scribner Decimal C is typically rounded to the closest 10 bd. ft.

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Seedling - a young tree grown from seed from the time of germination until it becomes a sapling; the division between seedlings and saplings is indefinite and may be arbitrarily fixed.

Selection cutting - the annual or periodic removal of trees, individually or in small groups, from an uneven-aged forest in order to realize the yield and establish a new tree crop.

Serotinous cones - cones that remain closed without allowing dissemination of the enclosed seeds long beyond the time of maturing.

Shade-intolerant plants - plant species that do not germinate or grow well in the shade.

Shade- tolerant plants - plants that grow well in the shade.

Shelterwood - any regeneration cutting in a more or less regular and mature crop. Designed to establish a new crop under the protection of the old.

Sign - evidence of the disease other than those produced by the plant.

Silvics - the study of the life history and general characteristics of forest trees and stands with particular reference to locality factors as a basis for the practice of silviculture.

Silviculture - the art and science of cultivating forest crops based on the knowledge of silvics.

Site Index - a particular measure of site class based on the height of the dominant trees in a stand at an arbitrary age.

Skid road/trail - a prepared road or trail used for pulling logs from the stump to the landing or yard.

Skidder - a machine used for hauling loads by sliding as developed originally from the stump to roadside, deck, or other landing.

Slash - the residue left on the ground after felling, and accumulating there as a result of storm, fire, girdling, or poisoning.

Snag - a standing dead tree from which the leaves and most of the limbs have fallen; such as a tree broken off but still more than 20 feet tall is a snag; less than 20 feet tall, it is called a stub.

Soft snag - a snag composed primarily of wood in advanced stages of decay and deterioration, particularly in the sapwood portions, generally not merchantable.

Stagnated stand - a stand in which growth of individual trees is much below the potential because of crowding or high density of the trees.

Stand - a contiguous group of trees sufficiently uniform in age or size class distribution to be distinguished as a unit.

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Stocking - an indication of stand density compared to some pre-established standard.

Succession - the changes in vegetation and in animal life that takes place as the plant community evolves from bare ground to climax.

Sucker - a shoot arising from below ground level, either from a rhizome or from a root.

Sun scalding - injury to bark and cambium caused by exposure of the tree stem to high temperatures from intense sunlight.

Symptom - evidence of disease exhibited by the plant itself.

Thinning - felling of part of an immature crop or stand to accelerate growth in the remaining trees; by suitable selection, to improve the form of the trees that remain.

Timber Stand Improvement (TSI) - a term comprising all intermediate treatments made to improve the stand.

Topography - the topography of an area describes the lay of the land, that is to say, the relative slopes and elevations of the landscape. Slope can sometimes limit management alternatives.

Understory - lower level of vegetation, composed of shrubs and trees less than 15 feet.

Uneven-aged - a crop or stand that contains trees of all or almost all age classes.

Water bar - a shallow channel or raised barrier constructed diagonally across a road, trail, or control line to lead water off the surface to reduce erosion. Watershed - an area of land that is drained by a river.

Wildfire - an unplanned fire requiring suppression action, as contrasted with, a prescribed fire burning within prepared lines enclosing a designated area under prescribed conditions; a free-burning fire unaffected by fire suppression measures.

Wildlife Stand Improvements (WSI) - a term comprising all intermediate treatments made

Windfirmness - ability to withstand heavy wind.

Windthrow - a tree or trees uprooted or felled by the wind.

Wolf tree - a vigorous tree, generally of bad growth form, that occupies more growing space than its value warrants, so harming or threatening potentially better neighbors. Generally a dominant tree with a broad spreading crown.

Note: Some definitions have been taken from the Society of American Foresters Dictionary.

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