



WISSLER RANCH
COMMUNITY
WILDFIRE
PROTECTION
PLAN

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COMMUNITY WILDFIRE PROTECTION PLAN

WISSLER RANCH

EL PASO COUNTY COLORADO

May - 2010

Submitted by

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5-25-2010

Date

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WISSLER RANCH COMMUNITY WILDFIRE PROTECTION PLAN

I INTRODUCTION

After the devastating wildfire season of 2002, Congress passed the Healthy Forest Restoration Act of 2003 that, among other provisions, allowed communities to develop plans to reduce their risk from wildfire. Community Wildfire Protection Plans provide a framework for a community to assess its wildfire risk, and develop specific projects to reduce that risk. Additional legislation passed by the Colorado General assembly in 2009 requires that plans list and prioritize the community's mitigation projects. Once a plan is completed, the community may apply for cost sharing to implement the projects within the plan.

Wissler Ranch began developing this plan in 2009. A core group was established consisting of representatives from the Wissler Ranch Homeowners Association, the Colorado State Forest Service, and the Tri Lakes-Monument Fire Protection District. Representatives from the El Paso County Environmental Services Division were unable to join the core group due to severe budget cuts within the County. The core team individuals were:

Rhoda Musella, Chair	Wissler Ranch HOA
Jack Windeler	Wissler Ranch HOA
Mike Keough, Lieutenant	Tri Lakes-Monument FPD
Dave Root, Assistant District Forester	Colorado State Forest Service

Development of the plan has proceeded through the summer of 2009 with three meetings and fire mitigation presentations to homeowners. The first draft of the plan was completed in summer of 2009, but the final draft was postponed until the new standards for community wildfire protection plans were published.

Plan Objectives

The purpose of this plan is to guide Wissler Ranch for a period of ten years toward the objective of reducing the wildfire hazard within the subdivision. This plan is will be a living document, and will be revised and updated as conditions require. Specific objectives of the plan are:

1. Assess the wildfire hazard within and adjacent to the Wissler Ranch community.
2. Make recommendations to reduce the ignitability of home and other structures within the community.
3. Develop a prioritized plan to reduce the wildfire hazard within the community while improving the health of the forest.

Wissler Ranch Location

Wissler Ranch is located in northern El Paso County just south of the Douglas County line. The community is located south of County Line Road (also known as Palmer Divide Road) about 13 miles east of Palmer Lake. All lands surrounding the subdivisions are privately owned residential lots. There is no public land within the immediate vicinity, and the nearest federal land is the Pike National Forest 15 miles west of the community.

There are 133 lots within the 550 acre subdivision. Average lot size is 3-5 acres. There is one 25 +/- acre open space (Common Area) that is owned and managed by the Wissler Ranch HOA. Most of this open space is grassland, but there are approximately six acres of forest along the eastern boundary.

Watershed

The community is situated on the north slope of the Palmer Divide (Monument Hill) on the headwaters of Cherry Creek. West Cherry Creek follows Highway 83 to the west of Wissler Ranch and East Cherry Creek flows about one-half mile to the east of the community. Cherry Creek runs north directly into a greenbelt through central Denver and meets the South Platte River in Confluence Park near 15th and Platte Streets. Severe wildfire along the Palmer Divide could degrade the water quality in the stream with severe consequences to people and communities far from Wissler Ranch.

Community Values at Risk

The purpose of a CWPP is to reduce the threat of wildfire to the values a community holds dear. The forested, semi rural setting of the community is highly prized by the residents. Their homes and property represent their largest investments. Loss of any of these values would devastate the community.

Although structures would most likely be replaced by insurance after a wildfire, valued family possessions would be lost forever. After a severe crown fire, the loss in value of the property would create a severe financial loss for most families.

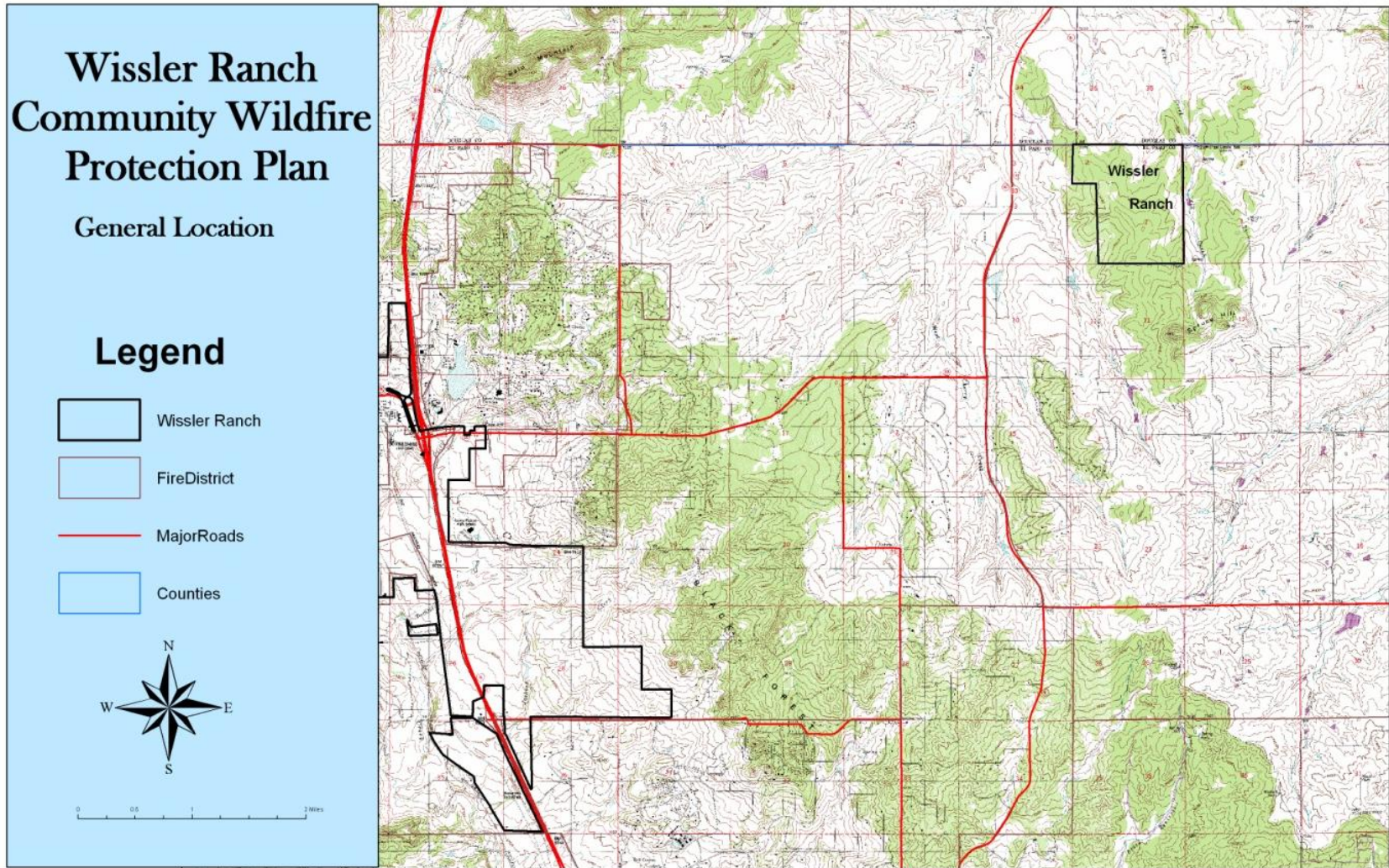


Figure 1: Location of Wissler Ranch within northern El Paso County

II CURRENT FOREST CONDITION

The forest in Wissler Ranch is typical of those along the Palmer Divide area. Ponderosa pine is the dominant species, and there are no significant numbers of other species. These forests were extensively logged during the late nineteenth and early twentieth century. The current forest consists of trees that grew back after the early logging, and is 120 to 140 years old.

The present fire hazard in Wissler Ranch is the direct result of the past logging and regrowth. Before settlement, ponderosa pine forests burned every twenty to thirty years. Lightning was the most frequent cause, but some fires were started by native populations. Low intensity fires were the primary factor that shaped the forest, and the pre-settlement forest was an open pine savannah with approximately 40 large trees per acre. Such large trees with thick bark were rarely harmed by the fires that passed under them. Mature trees were often 400 years old, and the openings between trees had several age classes of younger trees, again thinned by frequent fires. The frequent low intensity fire regime had a cleansing effect on the forest and fuel build up between fires was minimal. Such fires rarely reached the upper canopy of the forest and recovery from the fire was quick.

After the Pikes Peak gold rush, this ancient process changed forever. Farms and ranches were established, and were later replaced by subdivisions. By necessity, fires were suppressed as quickly as possible, and the present forest grew back without maintenance by man or fire. Consequently it is denser than the forest it replaced—often containing several thousand trees per acre. Competition between trees for water, sunlight, and nutrients is severe. In the dense canopy, the hazard of severe wildfires increases. Furthermore, trees stressed by severe competition and drought are more susceptible to attack from insects and disease.

The term condition class describes how far current forests differ from the pre-settlement condition. Condition Class I is a forest that closely resembles the natural condition of an open canopy with widely spaced large trees. Condition Class II represents a moderate amount of variance from the natural state with the trees in closer proximity and fuels—known as ladder fuels—in the understory. Areas within the Wissler Ranch where there has been moderate thinning of the forest are in condition class II. Most of the forest in Wissler Ranch is Condition Class III which indicates a wide variance from pre-settlement conditions.

Foresters would characterize the present forest as even aged. That is all of the trees, regardless of their diameter, are about 140 years old. It is a common misconception in even aged stands that tree diameter is indicative of the trees age. As the photo in figure two illustrates this is not the case. Trees of smaller diameter are frequently older than the larger diameter tree next to them.

It may be difficult for people to distinguish a young ponderosa from a suppressed one (see Figure 2). Sun loving trees like ponderosa rarely sprout in shaded areas beneath larger trees. Thus truly young ponderosa are usually found in openings. Note how young trees have sprouted in the cut banks of roads throughout the subdivision. The shape of young trees often provides the best clue to their age, and young trees have full crowns with conical shapes. Suppressed trees usually have one sided crowns and flattened tops as a result of crowding by adjacent trees.



Figure 2: The ponderosa sections in this photo illustrate how tree diameter is not a reliable indicator of age. The center section is 100 years old; section 2 is 99; section 3 is 101; section 4 is 90; section 5 is 85; section 6 is 130; section 7 is 81. (Sculpture by Bill Wallace. Photo by Bill Buckman, courtesy of the Black Forest Slash & Mulch Program)

The structure of the forest directly affects wildfire risk. Wildfires can be broadly categorized into two types based on the intensity with which they burn and the damage caused to the environment. The first is a crown fire (sometimes called a catastrophic fire). Locally, the Hayman Fire is the most well known crown fire. Crown fires burn in the canopy of the forest, jumping from tree top to tree top killing most every tree in their path. The heat produced is tremendous. Not only are the trees killed, but the heat damages the soil making the upper layer impervious to water. Consequently, when rains fall long after a crown fire is extinguished, water runs off the impermeable soil causing flash flooding and further environmental degradation far from the burn area.

The less severe type of fire is the so called ground fire. This is the type of fire that is typical of open ponderosa pine forests, and they typically burn the surface fuels such as grasses and litter. The heat does not damage the soil and new herbaceous plants resprout quickly after the fire cools. Most prescribed fires emulate this type of fire.

The current forest condition in Wissler Ranch is a closed canopy conducive to an intense crown fire. The branches of the largest trees, called dominants by foresters, are often in close proximity to one another. The dominant trees are characterized by large diameter trunks and their crowns are in the full sunlight. Unless diseased or infested with insects, the dominants are the most vigorous trees in the forest.

The spaces between the dominant trees are occupied shorter trees—called co-dominants and intermediates. These are suppressed by the larger trees around them, and do not receive full sunlight. Their limited supply of energy is used in an attempt to reach the sunlight, and the trunks are smaller in diameter than the dominant trees.

In the lowest level of the forest canopy are even smaller trees that are completely overtopped. Again, these may be as old as the largest trees, but are the least vigorous trees in the forest. The overtopped trees represent a significant fire hazard as so called “ladder fuels”. Ladder fuels are those fuels near the ground that provide a pathway for ground fires to reach the upper forest canopy. Lower branches of dominant trees, dead branches, and shrubs can also be ladder fuels. Once in the canopy, a fire becomes wind driven, produces intense heat, and cannot be controlled by firefighters with hand tools.

There are some small, usually less than one-tenth acre, isolated clumps of Gambel oak within the subdivision, but this species is not extensive. Most of the oak clumps are directly underneath larger trees, so the oak adds to the fire hazard as a ladder fuel. North of the community along County Line Road, there are extensive stands of Gambel oak. Oak can be highly flammable and could present a hazard to residents evacuating Wissler Ranch along County Line Road.

Lack of forest management, recent droughts and unnaturally dense forests conspire to create a serious wildfire threat to the community. There have been several large fires in the area over the last thirty years, and all of them were of human origin. Largest was the Berry Fire from the late 1980s. This fire started in late April in the oak shrub lands south of Monument and burned the hills west of the present Monument Fire Center. The fire scar can be seen on the hillsides to this day.

In April of 2002, the Pine Glen Fire ignited when a landowner was mowing dry grass about ten miles south of Wissler Ranch. Fortunately, westerly winds pushed the fire away from the Pine Glen Subdivision and onto undeveloped ranch land owned by the Pineries Ranch. The fire was controlled after three days and scorched approximately 70 acres. That same week, there were smaller fires in the Glen neighborhood of Palmer Lake and another fire near the west end of Baptist Road that threatened homes in that area.

It is interesting to note that all of these fires started in April, indicating that the fire season in the area is a year round phenomenon. Even in winter, Chinook winds along the Front Range have resulted in wildfires with snow cover on the ground. Thankfully, this is a rare occurrence. As lightning scars as many trees attest there have been many lightning strikes and associated small fires, but these have been quickly extinguished. Records do not exist for these small fires.

III COMMUNITY ASSESSMENT AND RESPONSE

The term wildland urban interface (WUI) refers to those areas where high density developments are located in areas of wildland fire fuels. Wissler Ranch has approximately 138 lots in forest fuels, and homes on these lots have various risks of being destroyed by a wildfire. The amount of risk depends on the vegetative fuels, materials used in house construction, topography, and current weather events.

Most homes are of newer construction, and are built with stucco siding, and with tile or asphalt shingle roofs, but some are constructed with wood siding. Most homes have wooden decks. Many have done at least some thinning in the zones closest to the homes. Some have some ornamental landscaping near the home.

Wissler Ranch Wildland Urban Interface Boundary

As used in Community Wildfire Protection Plans, the term “WUI boundary” refers to the area within and adjacent to the community where a wildfire would directly impact the community. The WUI boundary is often used in communities adjacent to Federal lands, such as national forests, to indicate to Federal land managers those areas where fire mitigation should receive a high priority. Since all adjoining lands are residential lots, this is not a consideration in the Wissler Ranch CWPP.

The WUI boundary for Wissler Ranch was developed to include the entire forested area of which the subdivision is a part. The boundary is extended to the west to include Colorado Highway 83 which would be the primary evacuation route in the event of a fire. The boundary extends north into Douglas County reflecting the importance of County Line Road for ingress and egress.

Factors Affecting Fire Behavior

In order to understand the wildfire hazard in Wissler Ranch, it is necessary to understand some of the influences on how fires burn. Fire behavior is the term used to describe the intensity with which a fire may burn on any given day. There are three factors responsible for determining fire behavior: fuel, topography, and weather.

Fuels: The amount of fuel available to a fire influences how much heat is produced. As anyone who has ever been near a campfire knows, more wood on the fire produces more heat. More fuel available to a wildfire produces more severe fire behavior.

The diameter of fuel also affects fire behavior. Small diameter fuels, such as dry grass or small branches, ignite more easily than large diameter fuels, such as large logs. Again consider the example of a campfire. Fires are started with small kindling before larger sizes of wood are added. In a wildfire the smaller diameter fuels act as kindling, spreading the fire to the larger fuels. It is more difficult to control a fire burning in larger diameter fuels.

Fires burning in duff and litter underneath trees usually do not move rapidly. The surrounding trees tend to slow the wind and thus reduce the rate of fire spread. This is, of course, dependant on the wind speed, and fires will move faster on very windy days. This situation can change markedly if

the ground fire reaches a closed forest canopy. In strong winds, crown fires are wind driven and can move rapidly through the forest.

Some areas within the subdivision and much of the WUI area are grasslands. Typically, grass fires ignite more easily, and move faster. The flame front moves quickly, and the fire intensity decreases shortly after the flame front has passed. Grass fires can be extremely hazardous to life and property. In 2007, a grass fire moved through the town of Ordway, in southeastern Colorado. It severely damaged the town, and caused the deaths of two local firefighters.

The two types of fuel in a WUI are vegetative and structural. Vegetative fuels consist of living and dead trees, bushes, and grasses. Non-vegetative fuels include houses, ancillary buildings, fences, and firewood piles.

Topography: Topography is the lay of the land. The influence of topography is simply that heat rises. On a slope heat rises above a fire, pre-heating and drying the fuel above. The drier upslope fuels ignite easier and burn more quickly than down slope fuels. The steeper the slope, the more pronounced is this effect. During the day, warming air rises and pushes wildfires up slope. Fires may move four times faster up slopes than on flat ground.

Drainages act as natural chimneys that funnel heat and wind up the drainage. Homes in drainages or at the tops of drainages are particularly vulnerable to wildfires. The chimney effect is more pronounced in steeper and narrower drainages.

Weather: High temperatures, low humidity, and strong winds increase the intensity of wildfires. Simply consider how much easier it is to start a campfire on a warm dry day than a cold damp day. Short and long-term droughts exacerbate the problem.

Weather is the “wild card” of fire behavior. Topography is constant over time, and the amount of fuel can be measured far in advance of a fire. What sort of weather there might be on the day a wildfire starts cannot be known in advance.

Of the three factors that determine fire behavior, only fuels can be altered to reduce the spread and intensity of a wild fire.

Structures burn when the heat from a wildfire is transferred to the structure. Heat transfer can be from surrounding burning vegetation to structures or from burning structures to the surrounding vegetation. There are three ways that heat can be transferred: Radiation, convection, and firebrands.

Radiation: Wildfires can spread to a home by radiated heat in the same way a radiator heats rooms in the wintertime. Radiated heat is capable of igniting combustible materials from a distance of 100 feet.

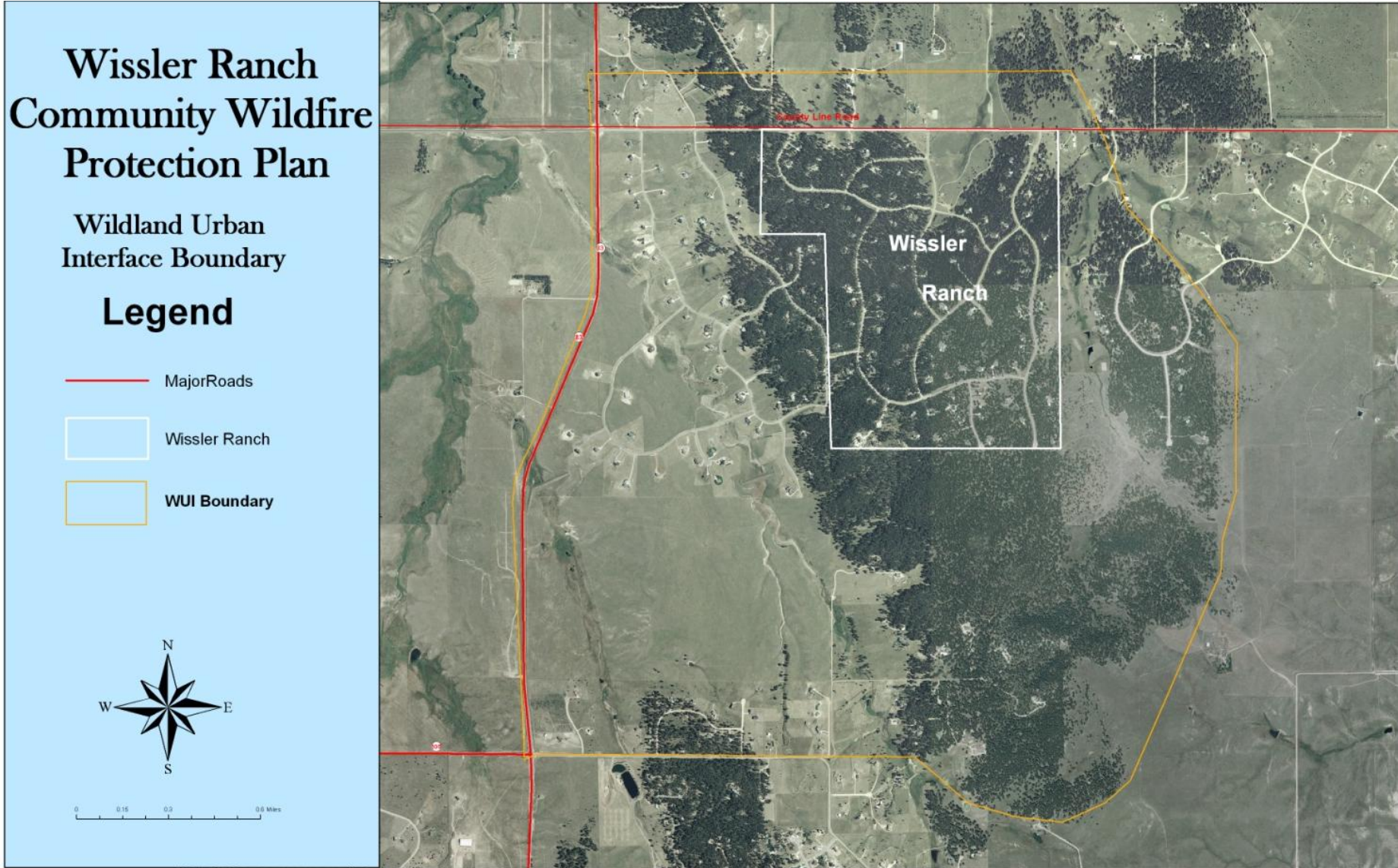


Figure 3: Wissler Ranch wildland urban interface (WUI) boundary

Convection: Direct contact with flames, or the wildfire’s convective heat column, may also ignite a home. This is most likely to occur when trees or brush near a structure ignite and the flames touch a flammable part of the structure.

Firebrands: Firebrands are embers that are blown ahead of a fire on strong updrafts created by the fire. Firebrands can be carried long distances – more than a mile – by the winds associated with a wildfire. Roofs and decks are the most vulnerable parts of a structure to fire brands. “Autopsies” of many homes lost during wildfires has shown that the majority were burned when firebrands fell on combustible roofs or decks – not from direct contact with the flames.

The 2002 Hayman Fire was Colorado’s most devastating forest fire. It burned 138,000 acres and 132 homes in 20 days. Surprisingly, 662 homes within the perimeter of the fire were not destroyed.

USDA Forest Service scientists Jack Cohen and Rick Stratton reported on the causes of home destruction in the “Hayman Fire Case Study”¹. Many of the homes that survived did so without intervention by firefighters. The study objective was to determine if there were common factors among these surviving homes that might be helpful in preventing loss of homes in future wildfires.



Figure 4: Survivable space around a home in the Hayman Fire. Note that zone one nearest the house did not burn. In zone two the fire burned on the ground but did not kill the trees. In the upper right a crown fire killed all the trees.

They found that “torching” or intense crown fires within 30 feet of a structure destroyed 70 homes. If a house was destroyed but the surrounding trees did not burn, they assumed that embers or firebrands ignited it. Based on this logic, they concluded that 62 of the 132 homes destroyed in the Hayman Fire were ignited by surface fires or firebrands.

Cohen and Stratton found that home destruction was related more to a house and its site-specific surroundings than to the context of the larger Hayman Fire. If the vegetation around a house allowed high intensity fires to burn near them, they did not survive. If the vegetation permitted only low intensity fires, the structures had a good probability of surviving. Flammability of roofs, decks, siding materials, and other house construction features raised or lowered the risk of flames igniting homes.

¹ “Hayman Fire Case Study” compiled by Russell T. Graham, Sept. 2003, USDA Rocky Mountain Research Station, Report RMRS-CTR-114, 396 pages.

Tri-Lakes Monument Fire Authority Resources and Wildfire Strategy

Tri-Lakes Monument Fire Authority is the first responder to all residential and wildfires in Wissler Ranch. The Authority is a member of a consortium of seven fire departments in northern El Paso County and southern Douglas County. A fire alarm call to Tri-Lakes automatically goes to these other departments, who send a least one truck and crew to the address of the potential fire. Thus, up to 10 trucks and 40 firefighters are initially dispatched to every fire. All fire personnel cooperate under a common command structure, according to the principles established by the Incident Command System (ICS).

Tri-Lakes operates out of three fire stations; the station on Roller Coaster and Hwy 105 is closest to Wissler Ranch. The current daily staffing of 12 personnel includes: 1 Battalion Chief, 2 Captains, 1 Lieutenant, and 8 Firefighter/Emergency Medical Technicians (EMT). They are organized into teams, or crews, that operate two Advanced Life Support Ambulances, two Engine Companies and one Truck Company. In the event of a structure or wildland fire the ambulance crews become members of the Engine, Truck, or Brush truck crews.

The response time goal for the department is to reach any location in the Tri-Lakes Monument district in 8 minutes or less. If the severity of the fire warrants, additional personnel and equipment can be requested from other fire departments in El Paso County or the city Colorado Springs, as well as state and federal agencies.

The El Paso County Sheriff's Office (EPSO), through the Deputy Fire Marshal, maintains several capabilities to assist local fire departments. A local Incident Commander (officer in charge of the fire) may request any, or all, of the following:

- The EPSO Wildland Fire Suppression Team is a volunteer wildfire crew that can deploy up to three brush truck crews, or function as a hand crew.
- The Mobile Command Post can provide work space and enhanced communications for eight to ten fire commanders.
- The El Paso County Emergency Operations Center (EOC), located in downtown Colorado Springs, can mobilize other county and community resources, and request assistance from other counties or the state.

The priorities of the "first responding" firefighters are:

- 1 – Ensure the safety of the firefighters, and residents in and near the fire
- 2 – Evaluate the fire situation, assign firefighters to specific duties to control and suppress the fire, and inform the Sheriff and other agencies about the situation.
- 3 – Restrict the loss of homes and other property.

In the event of an evacuation the El Paso County Sheriff's Office—not the firefighters—would be in charge of evacuating residents. The Sheriff's Office would be notified soon after the Incident Commander evaluates the fire situation. Upon their arrival, Sheriff's deputies would receive instructions from the Incident Commander on which roads should be closed and what neighborhoods should be evacuated.

The Sheriff's Office typically distributes evacuation information three ways:

- GeoCast telephone notification system (commonly called “reverse 911”)
- Local news media
- Whenever possible, Sheriff’s deputies go door-to-door to ensure that all residents have been warned

According to the records of the Tri-Lakes Monument Fire Authority, the most likely causes of wildfire ignitions in Wissler Ranch are, in order of frequency are: 1) lightning strikes, 2) a house fire igniting adjacent vegetation that spreads through tree crowns to other homes, and 3) careless or thoughtless acts by people who smoke, set off fireworks, build open fires, etc.

Fire Hazard Assessment

Fire hazard (see Figure 4) within Wissler Ranch was judged to be moderate or high in most areas. Hazard ratings were first estimated with aerial photographs superimposed onto USGS topographic maps. Slope and density of the forest stands were the primary determinants of the hazard rating, and hazard ratings were then verified on the ground. The hazard areas drawn on the map are generalizations of the broad area. Some homes in moderate or high hazard areas have survivable space or the forest has been thinned to some degree.

Most homes in the subdivision are constructed of stucco or other fire resistant materials, and no homes have cedar shake roofs. Many of the homes have gables which may tend to catch debris and embers in the roof corners, most have wooden decks.

Electric lines are all underground, and natural gas is provided by underground lines. There are no propane tanks. Water service is provided by wells, and there are no fire hydrants in Wissler Ranch. Also, there are no open ponds or other significant water sources within the subdivision. However nearby fire departments, including Tri Lakes-Monument, are equipped and trained to haul water to fire scenes.

The length of driveways is usually not excessive and most homes are well marked with the address at the end of the driveway that is visible day or night. However, driveways are often crowded by trees and need additional clearance for fire vehicles to access them safely. Turnaround areas at the end of many driveways are inadequate for a large structural fire engine.

Hazard descriptions are as follows:

Low Hazard: Low hazard areas are those that are primarily open grasslands and open areas with widely scattered trees. It should not be inferred that low hazard is no hazard. Fires can burn in grass as well as timber. Grass fires move quickly as they are driven by the wind. The flame front from a fire burning in tall grass can easily cause injury or destroy property.

Moderate Hazard: The areas identified as moderate hazard are typified by a closed canopy with ladder fuels. These areas are typified by generally flat slopes. Fire may reach the crowns of the trees, but would not be intensified by steep topography.

High Hazard: There is a low ridge in the southern area of Wissler Ranch, the topography is steeper, and hazard was rated as high. The slightly steeper topography increases the risk that fuels ahead of the fire will be preheated from any flames on the slope below.

Soils are often damaged during severe wildfire events. Frequently soils repel water after a severe wildfire, and the inability of water to penetrate the soil causes increased runoff after rains. Increased runoff can cause flash flooding, severe soil erosion and loss of life long after the fire is controlled. Data from the USDA Natural Resources Conservation Service indicates that 80% of the soils in the area have a high potential for damage, and the remaining 30% have a moderate potential for damage. Complete soils data and maps are in Appendix Five.

There are no significant insect and disease problems in Wissler Ranch at this time. Some small pockets of dwarf mistletoe may exist that can be treated as part of mitigation projects. Mountain pine beetle is at endemic levels within the community. Trees should be checked for beetles in late October of each year, and any infested trees should be treated soon after.

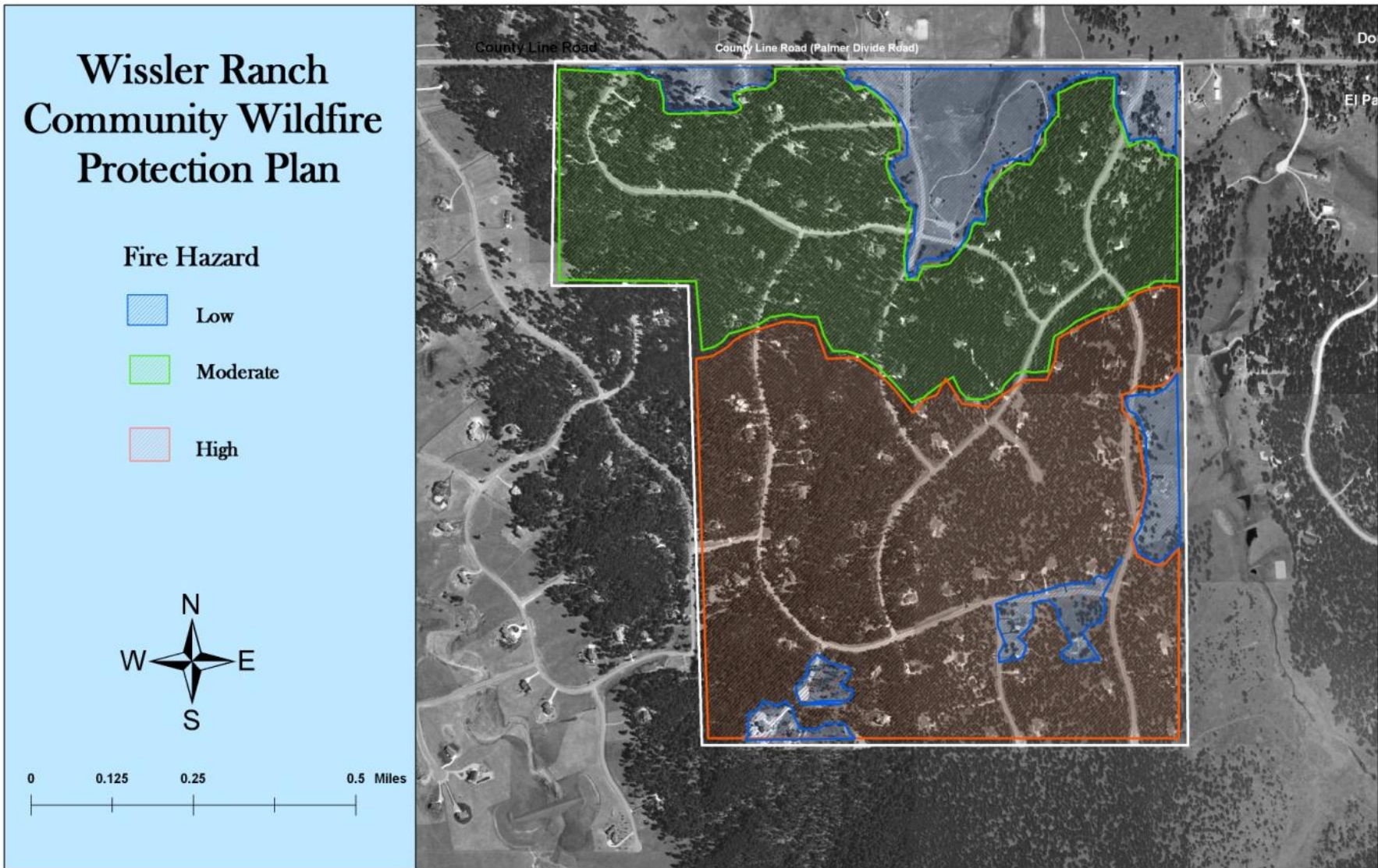


Figure 5: Fire hazard ratings of Wissler Ranch

IV INGRESS AND EGRESS

Roads within the subdivision are paved and wide enough for two way traffic (see Figure Six). Unlike many forested subdivisions, there are several points of ingress or egress. This would be of primary importance in the event of a wildfire since traffic may evacuate on one route while emergency equipment may access the community from another. There are four routes in and out of the community. First is via Wissler Ranch Road, second is via Wavy Oak Drive, third is via Lockridge Drive, and fourth via Kersdale Way and Soaring Wing Drive. There are many dead end cul-de-sacs within the community, but these are not excessively lengthy and all have sufficient area for engines to turn around at the ends.

All subdivision roads exit onto County Line Road. County Line Road is a paved two lane road without shoulders, and, in the event of a major wildfire in the area, many residents evacuating along County Line could become a serious safety concern. The most likely evacuation route during a fire would be from the subdivision to County Line Road and then west to Colorado Highway 83. Traffic can go north or south on Highway 83 or east to Interstate 25 via County Line or Colorado Highway 105. It is likely that residents of nearby subdivisions would also be using this road, adding to the traffic.

County Line Road could become hazardous as evacuees are attempting to leave the community while emergency equipment is attempting to access the fire. Dense fuels along both sides of the road could also present a safety issue if the fire were burning in this area. About one mile west of Wissler Ranch, County Line Road enters a broad grassland area where the hazard will be reduced.

The Colorado Department of Transportation periodically mows the right of way along Highway 83, and this will enhance the safety of the highway as an evacuation route. Along County Line Road, there are pockets of ponderosa pine and Gambel oak in the rights of way. These increase the hazard to residents and firefighters in a wildfire. El Paso and Douglas Counties should be contacted for assistance in reducing this hazard.

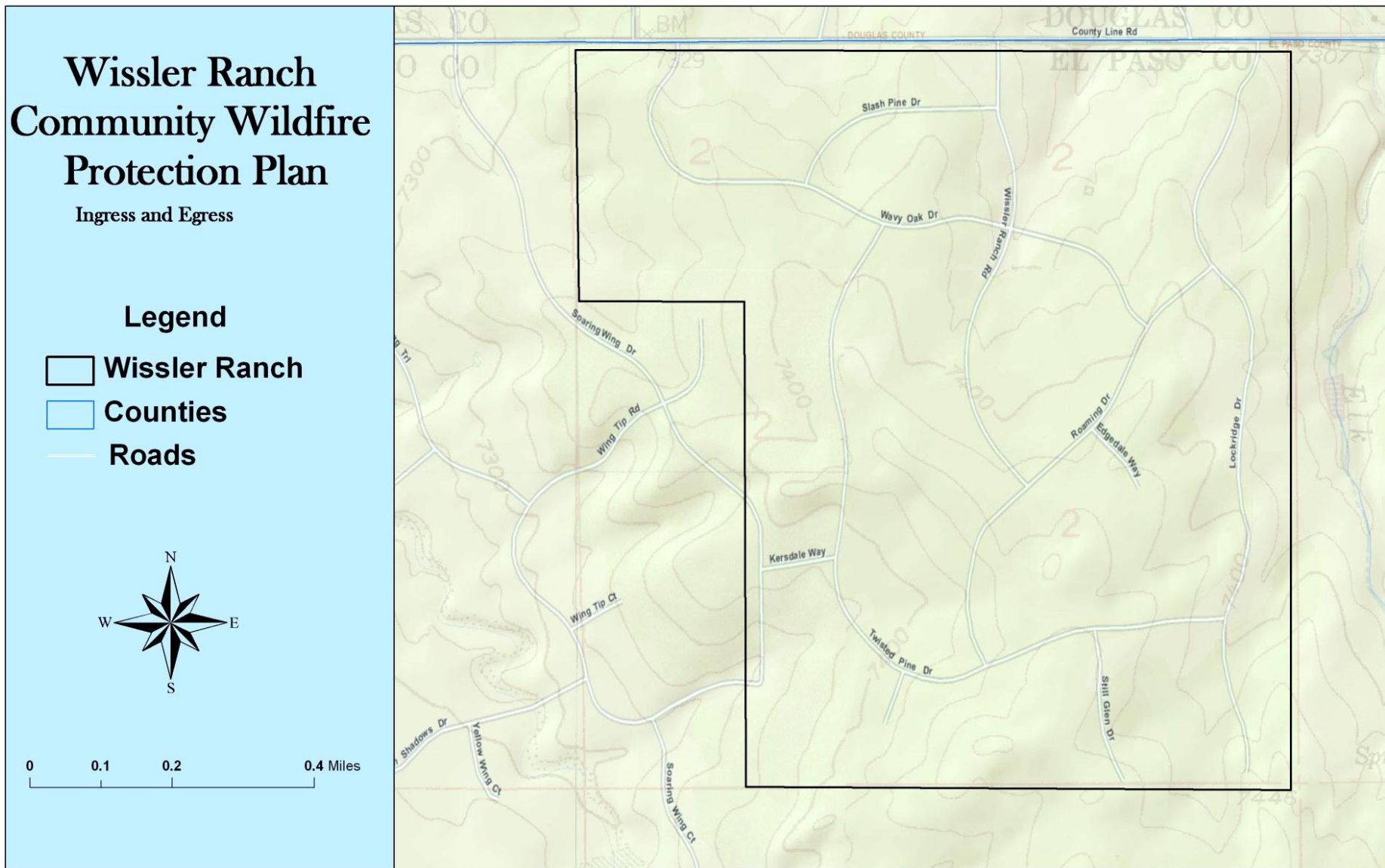


Figure 6: Wissler Ranch ingress and egress routes.

V PRIORITY PROJECTS AND PRESCRIPTIONS

The principal objective of this plan is to protect Wissler Ranch from catastrophic wildfires, and this section will prioritize projects to achieve that end. Wildfire is as much a part of the forest ecosystem as the trees themselves, and it is not reasonable to believe that any sort of mitigation will eliminate all fires. The purpose is to delineate a means to return the forest to a condition resembling the natural pre-settlement conditions so that fires can be more easily controlled.

The priority of projects is determined based on the existing hazards, safety of the community and fire fighters, and community values. The priorities are:

1. Establish a Firewise committee to personally distribute the plan to resident homeowners and oversee implementation of the CWPP.
2. Firewise committee volunteers will encourage all landowners to rid their lots of ladder fuel, and to create and improve the survivable (defensible) space around their structures. We just completed a fuel mitigation and forest thinning demonstration on the forested portion of our Common Area.
3. The committee will coordinate an annual slash disposal weekend, probably the third weekend in May beginning in 2011. Residents will be asked to collect their slash at the street. Volunteers who run the shredders will not pay the equipment rental charge. Those who provide slash, but do not work on the labor detail to run the shredders will split the equipment rental cost. If everyone elects to work the labor detail, we will prorate the equipment rental cost.
4. Volunteers will contact vacant lot owners to determine ways to reduce the fire danger from our vacant lots and encourage participation in the annual slash removal weekend.
5. Establish Wissler Ranch as a recognized Firewise Community by the National Fire Protection Association.



Figure 7: Dense forest conditions on the open space before thinning. Stands such as these are commonly called doghair because the trees are, “thicker than the hair on a dog’s back”.



Figure 8: Forest conditions on the open space after thinning. Note how space is created between dominant trees, the trees are pruned, and the younger trees are well spaced with adequate room to grow.

6. Undertake educational efforts to make residents aware of the threat from wildfire and the various mitigation strategies.
7. Remove all vehicles with fuel tanks from outside storage if they are parked over a bed of decaying pine needles and cones. A single RV with 100 gallons of fuel plus a 25 gallon propane tank parked in a ground fire area could explode and destroy our entire forest.

Generalized Fuel Reduction Recommendations

The fire hazard in Wissler Ranch can be attributed to two principal factors. First, is a dense understory of trees that will act as ladder fuels, and, second, closed upper forest canopy. Prescriptions for fuel mitigation should consider both of these factors.

Every prescription for fuel mitigation must also achieve the larger purpose of enhancing forest health. Thus, the generalized prescriptions here should be altered to reflect the specific conditions in the forest stand. Most commonly, prescriptions are altered to deal with the presence of dwarf mistletoe or bark beetles.

Actual forest conditions can vary widely over each acre on the ground, and proper design of any forest management project must begin with the conditions that exist within the forest stand. Landowner objectives, species composition, access, insect and disease and other variables all change over the landscape. Thus, it is necessary to design any project based on the existing conditions. Landowners and foresters will need to work closely to achieve the multiple objectives of any forest management project.

General fuel break guidelines are published by the CSFS in a booklet entitled *Fuel Break Standards for Forested Subdivisions & Communities* available from the Colorado State Forest Service, and available on the CSFS website at <http://www.csfs.colostate.edu> .

Fuel break thinning is most often accomplished by a process called thinning from below, and this method is best suited to the conditions existing in Wissler Ranch. Trees are usually removed or remain based on their height in the canopy. For simplicity, trees can be divided in three levels in the forest canopy. The largest trees at the highest level of the canopy are called dominants. These are usually the most vigorous since they have the largest root systems, most leaf area and



Figure 9: Thinning from below on the Black Forest School Section. These trees were first thinned in about 1980, and dense regeneration was thinned again in 2008.

receive the most sunlight. Next are the co-dominant or intermediate trees. These trees are nearly as tall as the dominants, but tend to be crowded and of smaller diameter because they use most of their available energy in an attempt to reach the sunlight. They are less vigorous with smaller root systems and fewer leaves as the result of crowding by the dominant trees. At the lowest level of the forest canopy are the overtopped (often called suppressed) trees. These are completely shaded by the dominant and co-dominant trees.

As note earlier, it is a common misconception in ponderosa pine stands that the diameter of a tree is an indicator of its age. Often the co-dominant and overtopped trees are as old as or older than the dominant trees. In pure ponderosa pine forest young trees are usually found in openings in the canopy, and can be recognized by having a diameter proportionate to the tree height, and a conical shape.

Thinning from below removes all of the overtopped and most of the codominant trees. It is essential when thinning for fuel breaks to remove ladder fuels and create enough openings in the forest canopy to prevent crown fires. Thinning from below is desirable in fuel reduction projects because it 1) leaves the most vigorous trees on the site, 2) creates openings in the forest canopy by removing the less vigorous co-dominants, and 3) eliminates ladder fuels by removing the overtopped trees and pruning lower limbs of remaining trees.

Protecting Homes with Survivable Space

For purposes of this plan, zones one and two surrounding each home in the community will be considered a polygon that is a high priority area for mitigation.

Thinning around homes is different than thinning for fuel breaks. Thinning for survivable space (often called defensible space) is designed to protect structures from the heat of wildfires. Survivable space includes both thinning around structures to reduce the heat from burning vegetation and reducing flammability of the structures to protect them from wind borne embers. Further information about increasing the survivability of structures is found in Appendices One through Three.

Wissler Ranch will promote the application of survivable space thinning to reduce the risks of home ignitions. Survivable space is defined as an area around a structure that is either natural or man-made where existing vegetation is modified to slow the rate and intensity of an advancing wildfire. This includes selective removal of trees around structures in two or three concentric management zones. Fuels are reduced according to prescriptions for each zone. See Appendices One through Three for complete information on this subject.

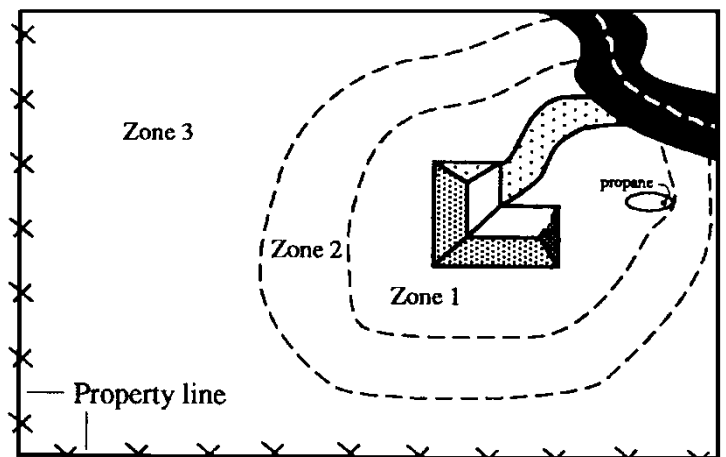


Figure 10: Diagram of survivable space showing the three thinning zones.

Zone one: This is the closest zone to a structure, and extends 15 feet from the outer most edge of a structure including any decks. The management goal is to reduce or eliminate most large trees or shrubs within this zone so that they cannot produce intense flames and heat capable of igniting the structure. A few tall trees may be left in zone one if the lowest branches are pruned so that they are well above a fire resistant roof.

Zone two: The width of zone two depends on the slope angle around the house. If the average slope angle is less than 5%, zone two extends out 55 feet from zone one (70 feet total distance around the house). If the slope is more than 5%, zone two extends 85 feet from zone one (100 feet total) on the downhill side of the house. The distances on the other house sides are 55 feet.

The main fuels reduction guideline for zone two is to thin the trees to an average spacing of 10-foot crown separation. All ladder fuels under trees should be removed. The branches of dominant trees should be pruned to a height of 8 feet above ground and small trees should have at least two-thirds of the green needles remaining.

Driveways in Wissler Ranch are often narrow. Zone two should extend along both sides of driveways for a width of 50 feet on each side of the drive. This is important to allow safe access and egress for emergency vehicles. Adequate clearance should be maintained to allow access to large structural fire trucks. Twelve feet of horizontal clearance and 13 feet of vertical clearance should be maintained. At the end of driveways, adequate room for a large fire engine to turn around should be maintained. Firefighters must be able to escape quickly if conditions suddenly deteriorate.

Zone three: The guideline for zone three is to thin the forest primarily to improve forest health. Spacing is less critical in this area but some spaces should be made in the canopy. The primary concern is to remove the codominant and overtopped trees and retain the most vigorous trees.

There is a publication available titled *Landowner Guide to Thinning* that is an excellent reference. The booklet is no longer in print, but is still available on the CSFS Website at http://csfs.colostate.edu/pdfs/landowner_g4thin_scr.pdf . One comment should be made about the publication's recommendation that trees should be thinned to an average tree spacing based on the "D+7 Rule". After reading the booklet, many landowners feel that this arbitrary spacing should be the primary objective when thinning. The spacing rule should be considered a guideline but not the objective of a thinning project. In fact, the primary objective is always to leave the healthiest trees. It should not be to achieve a predetermined spacing.

Maintenance

Survivable space, or any type of forest management, does not end when the initial project is finished. Continual maintenance is an essential part of any forest management. Even in well managed forests trees will die, storms and wind will damage trees, and new trees will germinate.

Trees should be inspected every spring for any sign of damage from winter or spring snows or wind. Prune any broken branches if they are not too high in the tree. Any trees bent by heavy

winter snows should be removed, and check for any signs of insect activity or disease. Late October is the best time to inspect trees for attack by mountain pine beetles. Any dead trees in zones one or two, or trees in zone three that may pose a hazard when they fall should be cut. In zone three it may be desirable to leave one or two large (greater than 10 inches in diameter), widely spaced, dead trees per acre, as wildlife habitat trees.

At five years check the canopy closure, especially in zones one and two. Remove any trees necessary to maintain openings in the canopy. Do any additional pruning or removal of trees and shrubs to eliminate ladder fuels.

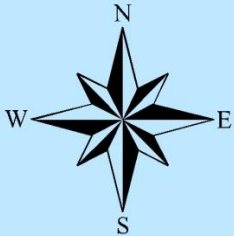
After ten years, dense thickets of young trees (regeneration) may have become established, and these will need to be thinned. Not all regeneration should be cut since trees of various ages are important for forest diversity. Trees in openings with adequate room to grow should remain, and a useful rule of thumb for spacing is that the trees should receive sunlight from all sides. Regeneration that is likely to become ladder fuel or crowded by other trees should be cut. Depending on their objectives, landowners may want to consider removing some of the larger trees to make room for the younger ones.

Wissler Ranch Community Wildfire Protection Plan

Wildfire Hazard
Priority Zones

Legend

-  Wissler Ranch
-  Open Space
Demonstration Project



0 0.05 0.1 0.2 Miles



Figure 11: Priority zone

VI IMPLEMENTATION

The CWPP cannot compel any homeowner to take action. The key to success or failure in reducing fuels hazards and increasing community safety is in the hands of the homeowners. They are the ones that will benefit most from survivable space thinning and fuels reduction projects. Owners need to see the importance of fuels reduction and thinning as this is the key to the health of their forest. This plan will be published on the HOA website so that it will be available to all residents.

The plan is intended to guide Wissler Ranch's mitigation efforts for a period of ten years, but it will not be a static document. A Firewise Committee will be established by the HOA to implement the plan that will meet as needed throughout the year, and in the fall the committee will establish a work plan for the coming year. As part of the work planning process the goals and objectives will be evaluated and amended as necessary to keep the plan current.

Wissler Ranch will apply for recognition as a Firewise Community in November of 2010, and apply for renewal each year thereafter. Requirements for this program are: 1) development of a CWPP; 2) establish a committee to oversee the plan; 3) spend a minimum of \$2.00 per capita—either cash or in kind—on mitigation annually; 4) document compliance to Firewise Communities/USA yearly.

Activities completed by the Firewise Committee each year will include:

- Sponsor a community slash disposal event to aid homeowners who are thinning their properties and completing survivable space.
- Host at least one educational event each year in spring emphasizing principles of wildfire mitigation and forest health. Literature about mitigation and thinning will be available. The first event in 2010 will feature presentation of the CWPP to the community.
- Complete renewal forms for Firewise Community status and deliver to the Colorado State Forest Service Woodland Park District office in November of each year.
- Develop the yearly work plan.
- Pursue available cost share funds through state and federal agencies.

Phase one (three acres) of the open space demonstration project was completed in 2010 and the committee will make its first priority completion of the project. The project will be completed in two additional phases in 2011 and 2012. Cost share assistance will be sought for the project.

It will be a priority of the committee to promote thinning and fuels reduction within the community. The committee will sponsor at least one event annually to promote thinning for mitigation and forest health to the community.

Once the CWPP is approved by El Paso County, The Colorado State Forest Service and The Tri Lakes-Monument FPD, property owners in Wissler Ranch will be eligible for tax incentives on their Colorado State income taxes for certain expenses related to wildfire mitigation. Further information on this program is included in appendix 6. The Firewise Committee will make this program known to residents.

Neither the Wissler Ranch HOA, Firewise Committee nor the Colorado State Forest Service are qualified to give tax advice, and residents interested in participating in this program should consult with a qualified tax adviser.

Also in 2010, the Firewise Committee will begin a survey of all lots within the subdivision to determine which are at the greatest risk. Residents will be recruited to do mitigation on their properties. The survey will be completed in 2011.

After five years the committee will update the plan. The objectives and priorities will be reconsidered and revised as necessary. The committee should consider how progress thus far has altered the fire hazard and needs of the community. After ten years the plan will be rewritten.

Appendix One

N A T U R A L R E S O U R C E S  S E R I E S

FORESTRY



Quick Facts...

Wildfire will find the weakest links in the defense measures you have taken on your property.

The primary determinants of a home's ability to survive wildfire are its roofing material and the quality of the "defensible space" surrounding it.

Even small steps to protect your home and property will make them more able to withstand fire.

Consider these measures for all areas of your property, not just the immediate vicinity of the house.

Creating Wildfire-Defensible Zones no. 6.302

by F.C. Dennis ¹

Fire is capricious. It can find the weak link in your home's fire protection scheme and gain the upper hand because of a small, overlooked or seemingly inconsequential factor. While you may not be able to accomplish all measures below (and there are no guarantees), each will increase your home's, and possibly your family's, safety and survival during a wildfire.

Start with the easiest and least expensive actions. Begin your work closest to your house and move outward. Keep working on the more difficult items until you have completed your entire project.

Defensible Space

Two factors have emerged as the primary determinants of a home's ability to survive wildfire. These are the home's roofing material and the quality of the "defensible space" surrounding it.

Use fire-resistive materials (Class C or better rating), not wood or shake shingles, to roof homes in or near forests and grasslands. When your roof needs significant repairs or replacement, do so with a fire-resistant roofing material. Check with your county building department. Some counties now restrict wood roofs or require specific classifications of roofing material.

Defensible space is an area around a structure where fuels and vegetation are treated, cleared or reduced to slow the spread of wildfire towards the structure. It also reduces the chance of a structure fire moving from the building to the surrounding forest. Defensible space provides *room for firefighters to do their jobs*. Your house is more likely to withstand a wildfire if grasses, brush, trees and other common forest fuels are managed to reduce a fire's intensity.

The measure of fuel hazard refers to its continuity, both horizontal (across the ground) and vertical (from the ground up into the vegetation crown). Fuels with a high degree of both vertical and horizontal continuity are the most hazardous, particularly when they occur on slopes. Heavier fuels (brush and trees) are more hazardous (i.e. produce a more intense fire) than light fuels such as grass.

Mitigation of wildfire hazards focuses on breaking up the continuity of horizontal and vertical fuels. Additional distance between fuels is required on slopes.

Creating an effective defensible space involves developing a series of management zones in which different treatment techniques are used. See Figure 1 for a general view of the relationships among these management zones. Develop defensible space around each building on your property. Include detached garages, storage buildings, barns and other structures in your plan.

The actual design and development of your defensible space depends on several factors: size and shape of buildings, materials used in their construction, the slope of the ground on which the structures are built, surrounding topography,



Putting Knowledge to Work

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Appendix One

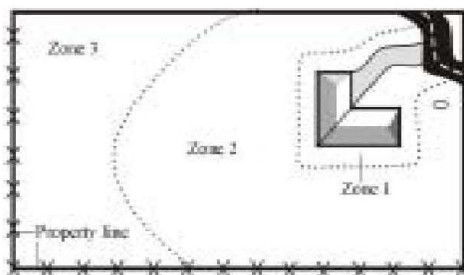


Figure 1: Forested property showing the three fire-defensible zones around a home or other structure.

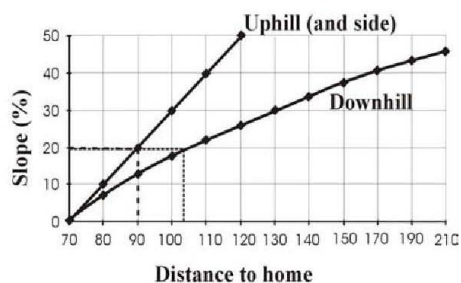


Figure 2: This chart indicates the *minimum recommended* dimensions for defensible space from the home to the outer edge of Zone 2. For example, if your home is situated on a 20 percent slope, the minimum defensible space dimensions would be 90 feet uphill and to the sides of the home and 104 feet downhill from the home.

and sizes and types of vegetation on your property. These factors all affect your design. You may want to request additional guidance from your local Colorado State Forest Service (CSFS) forester or fire department. (See the Special Recommendations section of this fact sheet for shrubs, lodgepole pine, Engelmann spruce, and aspen.)

Defensible Space Management Zones

Zone 1 is the area of maximum modification and treatment. It consists of an area of 15 feet around the structure in which all flammable vegetation is removed. This 15 feet is measured from the outside edge of the home's eaves and any attached structures, such as decks.

Zone 2 is an area of fuel reduction. It is a transitional area between Zones 1 and 3. The size of Zone 2 depends on the slope of the ground where the structure is built. Typically, the defensible space should extend *at least* 75 to 125 feet from the structure. See Figure 2 for the appropriate distance for your home's defensible space. Within this zone, the continuity and arrangement of vegetation is modified. Remove stressed, diseased, dead or dying trees and shrubs. Thin and prune the remaining larger trees and shrubs. Be sure to extend thinning along either side of your driveway all the way to your main access road. These actions help eliminate the continuous fuel surrounding a structure while enhancing homesite safety and the aesthetics of the property.

Zone 3 is an area of traditional forest management and is of no particular size. It extends from the edge of your defensible space to your property boundaries.

Prescriptions

Zone 1

The size of Zone 1 is 15 feet, measured from the edges of the structure. Within this zone, several specific treatments are recommended.

Plant nothing within 3 to 5 feet of the structure, particularly if the building is sided with wood, logs or other flammable materials. Decorative rock, for example, creates an attractive, easily maintained, nonflammable ground cover.

If the house has noncombustible siding, widely spaced foundation plantings of low growing shrubs or other "fire wise" plants are acceptable. Do not plant directly beneath windows or next to foundation vents. Be sure there are no areas of continuous grass adjacent to plantings in this area.

Frequently prune and maintain plants in this zone to ensure vigorous growth and a low growth habit. Remove dead branches, stems and leaves.

Do not store firewood or other combustible materials in this area. Enclose or screen decks with metal screening. Extend the gravel coverage under the decks. Do not use areas under decks for storage.

Ideally, remove all trees from Zone 1 to reduce fire hazards. If you do keep a tree, consider it part of the structure and extend the distance of the entire defensible space accordingly. Isolate the tree from any other surrounding trees. Prune it to at least 10 feet above the ground. Remove any branches that interfere with the roof or are within 10 feet of the chimney. Remove all "ladder fuels" from beneath the tree. Ladder fuels are vegetation with vertical continuity that allows fire to burn from ground level up into the branches and crowns of trees. Ladder fuels are potentially very hazardous but are easy to mitigate. No ladder fuels can be allowed under tree canopies. In all other areas, prune all branches of shrubs or trees up to a height of 10 feet above ground (or 1/2 the height, whichever is the least).

Appendix One

Zone 2

Zone 2 is an area of fuel reduction designed to reduce the intensity of any fire approaching your home. Follow these recommended management steps.

Thin trees and large shrubs so there is at least 10 feet between crowns. Crown separation is measured from the furthest branch of one tree to the nearest branch on the next tree (Figure 3). On steep slopes, allow more space between tree crowns. (See Figure 4 for *minimum recommended* spacing for trees on steep slopes.) Remove all ladder fuels from under these remaining trees. Carefully prune trees to a height of at least 10 feet.

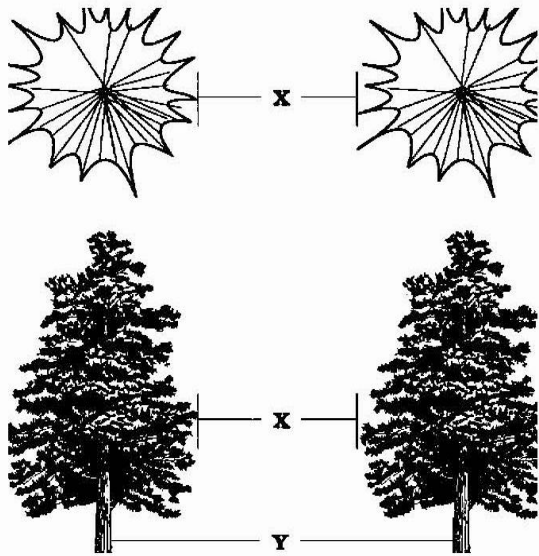


Figure 3: X = crown spacing; Y = stem spacing. Do not measure between stems for crown — measure between the edges of tree crowns.

Small clumps of 2 to 3 trees may be occasionally left in Zone 2. Leave more space between the crowns of these clumps and surrounding trees.

Because Zone 2 forms an aesthetic buffer and provides a transition between zones, it is necessary to blend the requirements for Zones 1 and 3. Thin the portions of Zone 3 adjacent to Zone 2 more heavily than the outer portions.

Isolated shrubs may remain, provided they are not under tree crowns. Prune and maintain these plants periodically to maintain vigorous growth. Remove dead stems from trees and shrubs annually. Where shrubs are the primary fuel in Zone 2, refer to the Special Recommendations section of this fact sheet.

Limit the number of dead trees (snags) retained in this area. Wildlife needs only one or two snags per acre. Be sure any snags left for wildlife cannot fall onto the house or block access roads or driveways.

Mow grasses (or remove them with a weed trimmer) as needed through the growing season to keep them low, a maximum of 6 to 8 inches. This is extremely critical in the fall when grasses dry out and cure or in the spring after the snow is gone but before the plants green up.

Stack firewood and woodpiles uphill or on the same elevation as the structure but at least 30 feet away. Clear and keep away flammable vegetation within 10 feet of these woodpiles. Do not stack wood against your house or on or under your deck, even in winter. Many homes have burned from a woodpile that ignited as the fire passed. Wildfires can burn at almost any time in Colorado.

Locate propane tanks at least 30 feet from any structures, preferably on the same elevation as the house. You don't want the LP container below your house — if it ignites, the fire would tend to burn uphill. On the other hand, if the tank is above your house and it develops a leak, LP gas will flow downhill into your home. Clear and keep away flammable vegetation within 10 feet of these tanks. Do not screen propane tanks with shrubs or vegetation.

Dispose of slash (limbs, branches and other woody debris) from your trees and shrubs through chipping or by piling and burning. Contact your local CSFS office or county sheriff's office for information about burning slash piles. If neither of these alternatives is possible, lop and scatter slash by cutting it into very small pieces and distributing it over the ground. Avoid heavy accumulations

% slope	Tree Crown Spacing	Brush and Shrub Clump Spacing
0 -10 %	10'	2 1/2 x shrub height
11 - 20%	15'	3 x shrub height
21 - 40%	20'	4 x shrub height
> 40%	30'	6 x shrub height

Figure 4: Minimum tree crown and shrub clump spacing.

Appendix One

Tree Diameter (in inches)	Average Stem Spacing Between Trees (in feet)
3	10
4	11
5	12
6	13
7	14
8	15
9	16
10	17
11	19
12	21
13	23
14	24
15	26
16	28
17	29
18	31
19	33
20	35
21	36
22	38
23	40
24	42

Figure 5: Minimum tree spacing for Zone 3.

of slash. Lay it close to the ground to speed decomposition. If desired, no more than two or three small, widely spaced brush piles may be left for wildlife purposes. Locate these towards the outer portions of your defensible space.

Zone 3

This zone is of no specified size. It extends from the edge of your defensible space to your property lines. A gradual transition into this zone from defensible space standards to other management objectives you may have is suggested. Typical management objectives for areas surrounding homesites or subdivisions are: provide optimum recreational opportunities; enhance aesthetics; maintain tree health and vigor; provide barriers for wind, noise, dust and visual intrusions; support limited production of firewood, fence posts and other forest commodities; or grow Christmas trees or trees for transplanting.

Specific requirements will be dictated by your objectives for your land and the kinds of trees present. See Figure 5 for the *minimum* suggested spacing between “leave” trees. Forest management in Zone 3 is an opportunity for you to increase the health and growth rate of the forest in this zone. Keep in mind that root competition for available moisture limits tree growth and ultimately the health of the forest.

A high canopy forest reduces the chance of a surface fire climbing into the tops of the trees and might be a priority for you if this zone slopes steeply. The healthiest forest is one that has multiple ages, sizes, and species of trees where adequate growing room is maintained over time. Remember to consider the hazards of ladder fuels. Multiple sizes and ages of trees might increase the fire hazard from Zone 3 into Zone 2, particularly on steep slopes.

A greater number of wildlife trees can remain in Zone 3. Make sure that dead trees pose no threat to power lines or fire access roads.

While pruning generally is not necessary in Zone 3, it may be a good idea from the standpoint of personal safety to prune trees along trails and fire access roads. Or, if you prefer the aesthetics of a well-manicured forest, you might prune the entire area. In any case, pruning helps reduce ladder fuels within the tree stand, thus enhancing wildfire safety.

Mowing is not necessary in Zone 3.

Any approved method of slash treatment is acceptable for this zone, including piling and burning, chipping or lop-and-scatter.

Special Recommendations

Tree spacing guidelines do not apply to *mature* stands of aspen trees where the recommendations for ladder fuels have been complied with. In areas of aspen regeneration and young trees, the spacing guidelines should be followed.

Brush and shrubs

Brush and shrubs are woody plants, smaller than trees, often formed by a number of vertical or semi-upright branches arising close to the ground. Brush is smaller than shrubs and can be either woody or herbaceous vegetation.

On nearly level ground, minimum spacing recommendations between clumps of brush and/or shrubs is 2 1/2 times the height of the vegetation. Maximum diameter of clumps should be 2 times the height of the vegetation. As with tree crown spacing, all measurements are made from the edges of vegetation crowns (Figure 3).

For example: For shrubs 6 feet high, spacing between shrub clumps should be 15 feet or more apart (measured from the edges of the crowns of vegetation clumps). The diameter of shrub clumps should not exceed 12 feet (measured from the edges of the crowns). Branches should be pruned to a height of 3 feet.

Appendix One

Grasses

Keep dead, dry or curing grasses mowed to less than 6 inches. Defensible space size where grass is the predominant fuel can be reduced (Figure 5) when applying this practice.

Windthrow

In Colorado, certain locations and tree species, including lodgepole pine and Engelmann spruce, are especially susceptible to damage and uprooting by high winds (windthrow). If you see evidence of this problem in or near your forest, or have these tree species, consider the following adjustments to the defensible space guidelines. It is highly recommended that you contact a professional forester to help design your defensible space.

Adjustments: If your trees or homesite are susceptible to windthrow and the trees have never been thinned, use a stem spacing of diameter plus five instead of the guides listed in the Zone 3 section. Over time (every 3 to 5 years) *gradually* remove additional trees. The time between cutting cycles allows trees to “firm up” by expanding their root systems. Continue this periodic thinning until the desired spacing is reached.

Also consider leaving small clumps of trees and creating small openings on their lee side (opposite of the predominant wind direction). Again, a professional forester can help you design the best situation for your specific homesite and tree species. Remember, with species such as lodgepole pine and Engelmann spruce, the likelihood of a wildfire running through the tree tops or crowns (crowning) is closely related to the overabundance of fuels on the forest floor. Be sure to remove downed logs, branches and *excess* brush and needle buildup.

Maintaining Your Defensible Space

Your home is located in a forest that is dynamic, always changing. Trees and shrubs continue to grow, plants die or are damaged, new plants begin to grow, and plants drop their leaves and needles. Like other parts of your home, defensible space requires maintenance. Use the following checklist each year to determine if additional work or maintenance is necessary.

% slope	D-space size (uphill, downhill, sidehill)
0 - 20 %	30'
21 - 40%	50'
> 40%	70'

Figure 6: Minimum defensible space size for grass fuels.

Defensible Space and FireWise Annual Checklist

- Trees and shrubs are properly thinned and pruned within the defensible space. Slash from the thinning is disposed of.
- Roof and gutters are clear of debris.
- Branches overhanging the roof and chimney are removed.
- Chimney screens are in place and in good condition.
- Grass and weeds are mowed to a low height.
- An outdoor water supply is available, complete with a hose and nozzle that can reach all parts of the house.
- Fire extinguishers are checked and in working condition.
- The driveway is wide enough. The clearance of trees and branches is adequate for fire and emergency equipment. (Check with your local fire department.)
- Road signs and your name and house number are posted and easily visible.
- There is an easily accessible tool storage area with rakes, hoes, axes and shovels for use in case of fire.
- You have practiced family fire drills and your fire evacuation plan.
- Your escape routes, meeting points and other details are known and understood by all family members.
- Attic, roof, eaves and foundation vents are screened and in good condition.

Appendix One



FIREWISE is a multi-agency program that encourages the development of defensible space and the prevention of catastrophic wildfire.

Stilt foundations and decks are enclosed, screened or walled up.

- Trash and debris accumulations are removed from the defensible space.
- A checklist for fire safety needs inside the home also has been completed.
This is available from your local fire department.

References

Colorado State Forest Service, Colorado State University, Fort Collins, CO 80523-5060; (970) 491-6303:

- *FireWise Construction — Design and Materials*
- *Home Fire Protection in the Wildland Urban Interface*
- *Wildfire Protection in the Wildland Urban Interface*
- *Landowner Guide to Thinning*

Colorado State University Cooperative Extension, 115 General Services Bldg., Fort Collins, CO 80523-4061; (970) 491-6198; E-mail: resourcecenter@ucm.colostate.edu:

- 6.303, *Fire-Resistant Landscaping*
- 6.304, *Forest Home Fire Safety*
- 6.305, *FireWise Plant Materials*
- 6.306, *Grass Seed Mixes to Reduce Wildfire Hazard*
- 7.205, *Pruning Evergreens*
- 7.206, *Pruning Shrubs*
- 7.207, *Pruning Deciduous Trees*



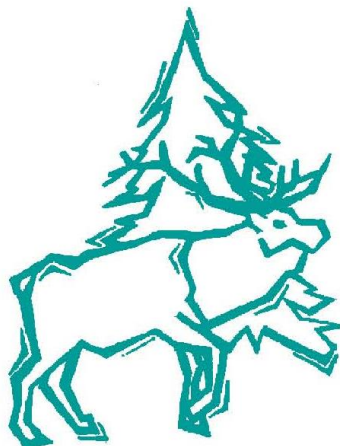
This fact sheet was produced in cooperation with the Colorado State Forest Service.

*Wildfire Hazard Mitigation Coordinator,
Colorado State Forest Service.*

Colorado State University, U.S. Department of Agriculture, and Colorado counties cooperating. Cooperative Extension programs are available to all without discrimination. No endorsement of products mentioned is intended nor is criticism implied of products not mentioned.

Appendix Two

N A T U R A L R E S O U R C E S  S E R I E S



FORESTRY

Forest Home Fire Safety

no. 6.304

by F.C. Dennis¹

Quick Facts...

Take steps now to protect your home from a future wildfire. This can spell the difference between your property's destruction or survival.

During a wildfire, law enforcement officials may ask you to evacuate with little warning. Take precautions now to prepare for that possibility.

Even if you are forced to evacuate your home, there are some things you can do to help firefighters defend it.

Fire Protection in Rural Areas

Colorado's rural areas are undergoing increasingly greater development. More people are building homes in forests or brushlands to take advantage of these natural environments.

Often, these sites are quite remote. However, people moving from urban settings expect traditional fire and emergency services. They do not understand the fire protection limitations that exist in rural areas:

- Most rural fire departments are volunteer. Firefighters are not generally present at the fire stations. In addition, the number of firefighters able to respond may be limited, especially during daytime hours during the traditional work week.
- Response time may be quite long. Volunteers must reach the fire station from home or work, start the fire vehicles and drive to the fire scene. The fire scene may be quite far from the station.
- Water supplies and firefighting equipment are limited. Often, the only significant water supply is that which the fire trucks themselves carry. Water shuttles or refill locations must be established and coordinated.
- Approaching the fire scene may be difficult. Narrow, steep roads and driveways may limit or even prevent access by emergency equipment. Bridges may have weight limitations that prevent large trucks and tankers from reaching the fire.

When wildfire does strike, it can occur with little warning and spread quickly. Fire crews and equipment often are overwhelmed by the task of fighting a rapidly advancing wildfire. There may simply not be enough personnel and equipment to defend every home.

Homeowner Preparations

Homeowners can do a great deal to prepare their property for wildfire.

Some of these things are detailed in these fact sheets:

- 6.302, *Creating Wildfire-Defensible Zones*;
- 6.303, *Fire-Resistant Landscaping*;
- 6.305, *FireWise Plant Materials*; and
- 6.306, *Grass Seed Mixes to Reduce Wildfire Hazard*.

The following checklist and guidelines will help you prepare for fire safety, evacuation and home defense. Use it as a guide to enhance homesite safety.

This is an annual checklist. Don't wait until a fire is approaching to perform these tasks.



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Appendix Two

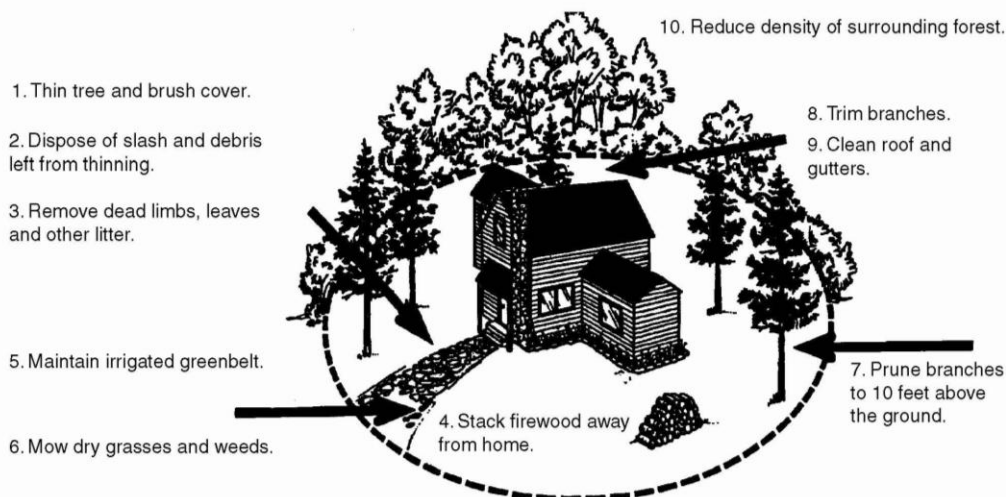
Annual Fire Safety Checklist

- Thin trees and brush properly within the defensible space.
- Remove trash and debris from the defensible space.
- Remove any trees growing through the porch.
- Clear roof and gutters of leaves and debris.
- Remove branches overhanging chimney and roof.
- Stack firewood uphill or on a contour away from the home.
- Use noncombustible roof materials.
- Place shutters, fire curtains or heavy drapes on windows.
- Place screens on foundation and eave vents.
- Enclose sides of stilt foundations and decks.
- Use a chimney screen or spark arrester.
- Clear vegetation around fire hydrants, cisterns, propane tanks, etc.
- Make sure an outdoor water supply is available, with hose, nozzle and pump.
- Make sure fire tools, ladder and fire extinguishers are available.
- Post address signs that are clearly visible from the street or road.
- Make sure the driveway is wide enough for fire trucks and equipment.
- Post load limits on bridges.
- Install and test smoke detectors.
- Practice a family fire drill and evacuation plan.

This is an annual checklist. Don't wait until a fire is approaching to perform these tasks.

Evacuation Tips

- If a wildfire is threatening your area, listen to your radio for updated reports and evacuation information.
- Confine pets to one room and make plans to take care of them in the event of evacuation.
- Arrange for temporary housing with a friend or relative whose home is outside the threatened area. Leave a note in a prominent place in your home that says where and how you can be contacted.
- If your home is threatened by wildfire, you will be contacted and advised by law enforcement officers to evacuate. If you are not contacted, or you decide to stay and help defend your home, evacuate pets and any family members not needed to protect your home.
- Remove important documents, mementoes, etc., from the possible fire area.



Appendix Two



FIREWISE is a multi-agency program that encourages the development of defensible space and the prevention of catastrophic wildfire.



This fact sheet was produced in cooperation with the Colorado State Forest Service.

¹ Staff Forester, Colorado State Forest Service, Front Range Fuels Treatment Partnership.

- When evacuating, wear protective clothing: sturdy shoes, cotton or woolen clothing, long pants, a long-sleeved shirt, gloves, and a handkerchief to protect your face.
- Choose a route away from the fire if possible. Watch for changes in the speed and direction of the fire and smoke.
- Take a disaster supply kit containing:
 - a supply of drinking water;
 - one change of clothing and footwear for each member of the family;
 - a blanket or sleeping bag for each person;
 - a first aid kit that also includes any prescription medications;
 - emergency tools including a battery-powered radio, flashlight and extra batteries;
 - an extra set of car keys and credit cards, cash or traveler's checks; and
 - extra pairs of eyeglasses and other special items for infant, elderly or disabled family members.

Defending Your Home

Whether you choose to stay to defend your home or to evacuate, complete as many of the following preparations as possible.

- Do not jeopardize your life. No material item is worth a life.
- Wear fire-resistant clothing and protective gear.
- Remove combustible materials from around structures.
- Close or cover outside vents and shutters.
- Position garden hoses so they reach the entire house. Have the hoses charged, with an adjustable nozzle, but turned off.
- Place large, full water containers around the house. Soak burlap sacks, small rugs or large rags in the containers.
- Place a ladder against the roof of the house on the opposite side of the approaching wildfire. Place a garden hose near the ladder, prepared as described previously.
- Place portable pumps near available water supplies, such as pools, hot tubs, creeks, etc.
- Close all windows and doors. Do not lock them.
- Close all inside doors.
- Turn on a light in each room and all outside lights.
- Leave them on even during daylight hours.
- Fill tubs, sinks and any other containers with water.
- Shut off the gas at the outside meter of the propane tank.
- Remove lace, nylon or any other drapes and curtains made from light material. Close Venetian blinds, heavy drapes or fire-resistant window coverings.
- Move overstuffed furniture into the center of the house, away from windows and sliding glass doors.
- Park your car in the garage, facing out. Close the windows but do not lock the doors. Leave the keys in the ignition.
- Close the garage door but leave it unlocked.
- Disconnect the automatic garage door opener.

For additional information on mitigating wildfire hazards on your property, go to <http://csfs.colostate.edu/wildfire.htm>.

Colorado State University, U.S. Department of Agriculture, and Colorado counties cooperating. Cooperative Extension programs are available to all without discrimination. No endorsement of products mentioned is intended nor is criticism implied of products not mentioned.

Appendix Three

N A T U R A L R E S O U R C E S  S E R I E S

FORESTRY



Quick Facts...

More people are moving into Colorado's rural areas, increasing the chances of wildfire.

"Defensible space" is the primary determinant of a structure's ability to survive wildfire.

Native species are generally the best plant materials for landscaping in defensible space, but others can be grown successfully in Colorado.

To be a FireWise homeowner, plan well, plant well and maintain well.



Putting Knowledge to Work

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Reviewed 10/04.
www.ext.colostate.edu

Fire-Resistant Landscaping

no. 6.303

by F.C. Dennis¹

Colorado's population is growing, its urban areas are rapidly expanding, and people are building more homes in what was once natural forest and brushlands. Newcomers to rural areas need to know how to correctly landscape their property to reduce wildfire hazards.

Improper landscaping worries land managers and fire officials because it can greatly increase the risk of structure and property damage from wildfire. It is a question of *when*, not *if*, a wildfire will strike any particular area.

Vegetative clearance around the house (defensible space) is a primary determinant of a home's ability to survive wildfire. Defensible space is, simply, room for firefighters to do their job. If grasses, brush, trees and other common forest fuels are removed, reduced, or modified to lessen a fire's intensity and keep it away from the home, chances increase that the structure will survive. It is a little-known fact that in the absence of a defensible space, firefighters will often bypass a house, choosing to make their stand at a home where their safety is more assured and the chance to successfully protect the structure is greater.

Landscaping Defensible Space

People often resist creating defensible space because they believe that it will be unattractive, unnatural and sterile-looking. It doesn't have to be! Wise landowners carefully plan landscaping within the defensible space. This effort yields a many-fold return of beauty, enjoyment and added property value. Development of defensible space is outlined in fact sheet 6.302, *Creating Wildfire-Defensible Zones*.

Colorado has great diversity in climate, geology and vegetation. Home and cabin sites can be found from the foothills through 10,000-foot elevations. Such extremes present a challenge in recommending plants. While native plant materials generally are best, a wide range of species can be grown successfully in Colorado.

Many plant species are suitable for landscaping in defensible space. Use restraint and common sense, and pay attention to plant arrangement and maintenance. It has often been said that *how* and *where* you plant are more important than *what* you plant. While this is indeed true, given a choice among plants, choose those that are more resistant to wildfire.

Consider the following factors when planning, designing and planting the FireWise landscape within your home's defensible space:

- Landscape according to the recommended defensible-space zones. That is, the plants near your home should be more widely spaced and lower growing than those farther away.
- Do not plant in large masses. Instead, plant in small, irregular clusters or islands.

Appendix Three



Figure 2: Ladder fuels enable fire to travel from the ground surface into shrubs and then into the tree canopy.

Structural Elements of a FireWise Landscape

When building a deck or patio, use concrete, flagstone or rock instead of wood. These materials do not burn and do not collect flammable debris like the space between planks in wooden decking.

Where appropriate on steeper ground, use retaining walls to reduce the steepness of the slope. This, in turn, reduces the rate of fire spread. Retaining walls also act as physical barriers to fire spread and help deflect heat from the fire upwards and away from structures.

Rock or masonry walls are best, but even wooden tie walls constructed of heavy timbers will work. Put out any fires burning on tie walls after the main fire front passes.

On steep slopes, consider building steps and walkways around structures. This makes access easier for home maintenance and enjoyment. It also serves as a physical barrier to fire spread and increases firefighters' speed and safety as they work to defend your home.

variety of textures and color and help reduce soil erosion. Consider ground cover plants for areas where access for mowing or other maintenance is difficult, on steep slopes and on hot, dry exposures.

Ground cover plants are usually low growing. They are succulent or have other FireWise characteristics that make them useful, functional and attractive. When planted in beds surrounded by

walkways and paths, in raised beds or as part of a rock garden, they become an effective barrier to fire spread. The ideal groundcover plant is one which will spread, forming a dense mat of roots and foliage that reduces soil erosion and excludes weeds.

Mulch helps control erosion, conserve moisture and reduce weed growth. It can be organic (compost, leaf mold, bark chips, shredded leaves) or it can be inorganic (gravel, rock, decomposing granite).

When using organic mulches, use just enough to reduce weed and grass growth. Avoid thick layers. When exposed to fire, they tend to smolder and are difficult to extinguish. Likewise, while your property might yield an abundance of needles from your native pines or other conifers, don't use them as mulch because they can readily catch and spread wildfire. Rake, gather and dispose of them often within your defensible space.

Wildflowers

Wildflowers bring variety to a landscape and provide color from May until frost. Wildflower beds give a softer, more natural appearance to the otherwise manicured look often resulting from defensible space development.

A concern with wildflowers is the tall, dense areas of available fuel they can form, especially in dormancy. To reduce fire hazard, plant wildflowers in widely separated beds within the defensible space. Do not plant them next to structures unless the beds are frequently watered and weeded and vegetation is promptly removed after the first hard frost. Use gravel walkways, rock retaining walls or irrigated grass areas mowed to a low height to isolate wildflower beds from each other and from other fuels.

Shrubs

Shrubs lend color and variety to the landscape and provide cover and food for wildlife. However, shrubs concern fire professionals because, as the next level in the "fuel continuum," they can add significantly to total fuel loading. Because of the woody material in their stems and branches, they are a potential source of fire brands. When carried in the smoke column ahead of the main fire, fire brands can rapidly spread the fire in a phenomenon known as "spotting."

But the primary concern with shrubs is that they are a "ladder fuel" – they can carry a relatively easy-to-control surface grass fire into tree crowns. Crown fires are difficult, sometimes impossible, to control (see Figure 2).

To reduce the fire-spreading potential of shrubs, plant only widely separated, low-growing, nonresinous varieties close to structures. Do not plant them directly beneath windows or vents or where they might spread under wooden decks. Do not plant shrubs under tree crowns or use them to screen propane tanks, firewood piles or other flammable materials. Plant shrubs individually, as specimens, or in small clumps apart from each other and away from any trees within the defensible space.

Mow grasses low around shrubs. Prune dead stems from shrubs annually. Remove the lower branches and suckers from species such as Gambel oak to raise the canopy away from possible surface fires.

Appendix Three



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Appendix Three



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This fact sheet was produced in cooperation with the Colorado State Forest Service.

¹Wildfire Hazard Mitigation Coordinator, Colorado State Forest Service.

Trees

Trees provide a large amount of available fuel for a fire and can be a significant source of fire brands if they do burn. Radiant heat from burning trees can ignite nearby shrubs, trees and structures.

Colorado's elevation and temperature extremes limit tree selection. The best species to plant generally are those already growing on or near the site. Others may be planted with careful selection and common sense.

If your site receives enough moisture to grow them, plant deciduous trees such as aspen or narrow-leaf cottonwood. These species, even when planted in dense clumps, generally do not burn well, if at all. The greatest problem with these trees is the accumulation of dead leaves in the fall. Remove accumulations close to structures as soon as possible after leaf drop.

When site or available moisture limits recommended species to evergreens, carefully plan their placement. Do not plant trees near structures. Leave plenty of room between trees to allow for their growth. Spacing within the defensible space should be at least 10 feet between the edges of tree crowns. On steep ground, allow even more space between crowns. Plant smaller trees initially on a 20- to 25-foot spacing to allow for tree growth. At some point, you will have to thin your trees to retain proper spacing.

As the trees grow, prune branches to a height of 10 feet above the ground. Do not overprune the crowns. A good rule of thumb is to remove no more than one-third of the live crown of the tree when pruning. Prune existing trees as well as ones you planted.

Some trees (for example, Colorado blue spruce) tend to keep a full crown. Other trees grown in the open may also exhibit a full growth habit. Limit the number of trees of this type within the defensible space. Prune others as described above and mow grasses around such specimen trees.

Maintenance

A landscape is a dynamic system that constantly grows and changes. Plants considered fire resistant and that have low fuel volumes can lose these characteristics over time. Your landscape, and the plants in it, must be maintained to retain their FireWise properties.

- Always keep a watchful eye towards reducing the fuel volumes available to fire. Be aware of the growth habits of the plants within your landscape and of the changes that occur throughout the seasons.
- Remove annuals and perennials after they have gone to seed or when the stems become overly dry.
- Rake up leaves and other litter as it builds up through the season.
- Mow or trim grasses to a low height within your defensible space. This is particularly important as grasses cure.
- Remove plant parts damaged by snow, wind, frost or other agents.
- Timely pruning is critical. Pruning not only reduces fuel volumes but also maintains healthier plants by producing more vigorous, succulent growth.
- Landscape maintenance is a critical part of your home's defense system. Even the best defensible space can be compromised through lack of maintenance. The old adage "An ounce of prevention is worth a pound of cure" applies here.

Colorado State University, U.S. Department of Agriculture, and Colorado counties cooperating. Cooperative Extension programs are available to all without discrimination. No endorsement of products mentioned is intended nor is criticism implied of products not mentioned.

Appendix Four: Useful Web Pages

Colorado State Forest Service
<http://csfs.colostate.edu>

Pikes Peak Ranger District, USFS
www.fs.fed.us/r2/psicc/pp/

National Firewise for Colorado
www.firewise.org/co

Rocky Mountain Area-assorted grant info
www.rockymountainwildlandfires.info

More homeowner assessment information
www.southwestcoloradofires.org

Colorado Dept. of Natural Resources
<http://dnr.state.co.us/>

CSU Cooperative Extension Drought & Fire
www.ext.colostate.edu/menudrought.htm

Natural Resource Conservation Service
www.nrcs.usda.gov

The National Fire Plan
www.fireplan.gov/content/home/

Watershed News
www.uppertsouthplatte.net

Teller Community Wildfire Protection Plant
www.co.teller.co.us

Rocky Mtn. Insurance Info. Assoc.
www.rmila.org/Homeowners/Wildfire.htm

Appendix Five: NRCS Soil Hazard Information



MAP LEGEND

- Area of Interest (AOI)**
 - Area of Interest (AOI)
- Soils**
 - Soil Map Units
- Soil Ratings**
 - High
 - Moderate
 - Low
 - Not rated or not available
- Political Features**
 - Cities
- Water Features**
 - Oceans
 - Streams and Canals
- Transportation**
 - Rails
 - Interstate Highways
 - US Routes
 - Major Roads
 - Local Roads

Potential for Damage by Fire— Summary by Map Unit — El Paso County Area, Colorado						
Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
40	Kettle gravelly loamy sand, 3 to 8 percent slopes	High	Kettle (85%)	Texture/rock fragments (1.00)	665.8	79.4%
92	Tomah-Crowfoot loamy sands, 3 to 8 percent slopes	Moderate	Tomah (50%) Crowfoot (30%)	Texture/rock fragments (0.50) Texture/rock fragments (0.50)		
Totals for Area of Interest					838.2	100.0%

Potential for Damage by Fire— Summary by Rating Value		
Rating	Acres in AOI	Percent of AOI
High	665.8	79.4%
Moderate	172.4	20.6%
Totals for Area of Interest	838.2	100.0%

Appendix Five: NRCS Soil Hazard Information

Description

The ratings in this interpretation indicate the potential for damage to nutrient, physical, and biotic soil characteristics by fire. The ratings involve an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

The ratings are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope.

The ratings are both verbal and numerical. The soils are described as having a "low," "moderate," or "high" potential for this kind of damage. "Low" indicates that fire damage is unlikely. Good performance can be expected, and little or no maintenance is needed. "Moderate" indicates that fire damage can occur because one or more soil properties are less than desirable. Fair performance can be expected, and some maintenance is needed. "High" indicates that fire damage can occur because of one or more soil properties and that overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration.

Numerical ratings indicate gradations between the point at which the potential for fire damage is highest (1.00) and the point at which the potential is lowest (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

Aggregation Method: Dominant Condition

Appendix Five NRCS Soil Information

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie.

The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.



Appendix Six: Tax Information

TAXPAYER SERVICE DIVISION

FYI – For Your Information

Wildfire Mitigation Measures Subtraction

GENERAL INFORMATION

As authorized by §39-22-104(4)(n), C.R.S., for income tax years 2009 through 2013 individuals, estates and trusts may subtract from federal taxable income 50% of the costs incurred in performing wildfire mitigation measures that meet the following qualifications and limitations:

- The taxpayer must own the property upon which the wildfire mitigation measures are performed.
- The property upon which the wildfire mitigation measures are performed must be located in Colorado.
- The property upon which the wildfire mitigation measures are performed must be located in a wild land-urban interface area.
- The wildfire mitigation measures must be authorized by a community wildfire protection plan adopted by a local government within the interface area.
- The total amount of the subtraction may not exceed \$2,500.

MARRIED TAXPAYERS

In the case of two individuals filing a joint return, the amount subtracted from federal taxable income shall not exceed \$2,500 in any taxable year. In the case of two married individuals who file separate returns, only one of the individuals may take a subtraction for wildfire mitigation expenses.

TENANTS IN COMMON

In the case of real property owned by tenants in common, the subtraction may only be taken by one of the individuals in the ownership group.

DEFINITIONS

Community Wildfire Protection Plan

Community wildfire protection plan means a plan that meets the following requirements:

- It must be approved by a local government entity, local fire department and the Colorado State Forest Service in accordance with guidance established by the Wildland Fire Leadership Council.
- It must identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatments.
- It must recommend measures to reduce structural ignitability.

Additional information regarding community wildfire protection plans can be found online at <http://www.csfs.colostate.edu/>



Colorado Department
of Revenue
Taxpayer Service Division
1375 Sherman St.
Denver, Colorado 80201

Forms and other services:
(303) 236-FAST (3271)
Assistance:
(303) 236-SERV (7379)
Paid Tax: (311) 265-5913
www.taxcolorado.com

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Appendix Six: Tax Information

Costs

Costs means any actual out-of-pocket expense incurred and paid by the landowner and documented by receipt for performing wildfire mitigation measures. The following expenses are specifically excluded within statute and do not qualify for this subtraction:

- Inspection or certification fees;
- In-kind contributions;
- Donations;
- Incentives;
- Cost sharing;
- Expenses paid by the landowner from any grants awarded to the landowner for performing wildfire mitigation measures.

Landowner

Landowner means any owner of record of private land located within the state, including any easement, right-of-way or estate in the land and includes the heirs, successors and assignees of such land and shall not include any partnership, S-corporation or other similar entity that owns private land as an entity.

Wildfire Mitigation Measures

Wildfire mitigation measures mean the following activities to the extent that they meet or exceed any Colorado State Forest Service standards or any other applicable state rules:

- Creating and maintaining a defensible space around structures;
- Establishing fuel breaks;
- Thinning of woody vegetation for the primary purpose of reducing risk to structures from wildland fire;
- Secondary treatment of woody fuels by lopping and scattering, piling, chipping, removing from the site or prescribed burning.

Additional information regarding wildfire mitigation measures can be found online at <http://www.csfs.colostate.edu/>

FURTHER INFORMATION

FYIs and commonly used forms are available on the Web at www.taxcolorado.com

For additional income tax information visit the "Tax Information Index" which covers a variety of topics including links to forms, publications, regulations, statutes and general questions and answers. The "Tax Information Index" is located at www.taxcolorado.com

FYIs provide general information concerning a variety of Colorado tax topics in simple and straightforward language. Although the FYIs represent a good faith effort to provide accurate and complete tax information, the information is not binding on the Colorado Department of Revenue, nor does it replace, alter, or supersede Colorado law and regulations. The Executive Director, who by statute is the only person having authority to bind the Department, has not formally reviewed and/or approved these FYIs.