

# MONTEZUMA COUNTY, COLORADO COMMUNITY WILDFIRE PROTECTION PLAN



## 2011 CWPP Update

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In Collaboration with :



## ADOPTION and APPROVAL

This Montezuma County Wildfire Protection Plan is hereby approved and adopted this \_\_\_ day of December, 2011 as a plan that meets all minimum Colorado State Forest Service Minimum Standards and presents a desired direction for wildfire protection and preparedness of Wildland Urban Interface residents, property, infrastructure, and valued resources.

### Board of County Commissioners

Larrie D Rule  
(Chair, Larrie D Rule)

Date 1-23-2012

Gerald Kopenhaffer  
(Gerald Kopenhaffer)

Date 1/23/12

Steve Chappell  
Chair (Steve Chappell)

Date 1-23/12

### Colorado State Forest Service

Kent Grant  
(District Forester, Kent Grant)

Date 1/25/11

### Fire Protection Districts

#### Mancos (FPD)

[Signature]  
(Fire Chief)

Date 12-7-11

#### Dolores (FPD)

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(Fire Chief)

Date 12-7-11

#### Cortez (FPD)

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(Fire Chief)

Date 12-7-11

#### Lewis/ Arriola (FPD)

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(Fire Chief)

Date 12-7-11

#### Pleasant View (FPD)

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(Fire Chief)

Date 12-7-2011

#### Towaoc (FPD)

[Signature]  
(Fire Chief)

Date 12-7-11

### Montezuma County;

#### Sheriff's Department

Dennis Spruell  
(Sheriff)

Date 1/19/2012

#### Emergency Management

[Signature]  
(Emergency Manager)

Date 12-7-11

**Federal Agencies;**

National Park Service

\_\_\_\_\_

Date \_\_\_\_\_

U.S. Forest Service/ BLM

\_\_\_\_\_

Date \_\_\_\_\_

Bureau of Indian Affairs

\_\_\_\_\_

Date \_\_\_\_\_

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### BACKGROUND AND LEGAL AUTHORIZATION

Throughout the 1990's and into the mid 2000's Southwest Colorado experienced unprecedented growth in the unincorporated areas of its rural counties. In 2000 a record breaking drought gripped the region and settled in for a period of years. This set the stage for a devastating series of bark beetle infestations which decimated vast regions of forested lands increasing the fire danger.

In 2000 two devastating wildfires, the Bircher Fire and the Pony Fire raged across the southern portion of Montezuma County consuming over 29,027 acres of Mesa Verde National Park, the Ute Mountain Ute Tribal Park, and private lands. Four structures were lost and five severely damaged, resulting in losses of over 1 million dollars in property damage. Total suppression costs exceeded 8.4 million dollars.

The summer of 2000 wildfire season was severe across the United States with over eight million acres burned in all. That summer of 2000 proved to be an eye opener on a national level as well as for the State of Colorado, and Montezuma County. On the heels of this extreme fire season, southwestern Colorado counties, federal agencies and local Fire Protection Districts began collaborating in earnest to educate their citizens about the dangers of wildland fires, and how mitigation efforts can help to make their homes and communities more resistant to fire danger.

On the national level, the 2000 fire season prompted the United States Forest Service and Bureau of Land Management to issue a joint report to the President entitled; *"Managing the Impacts of Wildfire on Communities and the Environment: A Report to the President in Response to the Wildfires of 2000."* This report became known as the National Fire Plan (NFP) which provided the basic framework for Montezuma County to begin its wildfire planning effort.

In May of 2002, Montezuma County, along with the four surrounding counties in southwest Colorado unveiled Community Fire Plans (CFPs) as part of the National Fire Plan. Collectively, these five Community Fire Plans were considered at the time to be national models for collaboration, and inter-governmental planning and action around wildfire education in rural and rural/resort communities. These (CFPs) provided the strategic framework that has driven a myriad of action items pertaining to mitigation, education, and emergency response.

The summer of 2002 was another severe fire season nation-wide, with over seven million acres burned. For Colorado, the summer of 2002 saw two of the largest fires in the State's history, the Hayman Fire near Denver, and the Missionary Ridge Fire in southwest Colorado. The severity of the fires season coupled with expanding growth in wild-land areas resulted in increasing public pressure to address wildland fire preparedness and suppression efforts.

## Montezuma County Community Wildfire Protection Plan (CWPP)

Fire planning has been an iterative process across the nation. In 2003 the Healthy Forest Restoration Act (HFRA) was signed into law. This act focused on restoring forests and rangeland into healthy fire-adapted ecosystems while reducing the threat of wildfire to communities. HFRA established four key planning concepts including;

- Collaborative planning amongst stakeholders
- Identifying and prioritizing hazardous fuels reduction projects
- Assessment of community firefighting capacity
- Reducing structural ignitability.

In 2005, The Montezuma County CFP was modified to become a Community Wildfire Protection Plan to conform with the requirements set forth by HFRA.

### LEGAL AUTHORITY

Colorado revised Statutes **30-11-124. Fire planning authority**, provides Colorado Counties with the legal authority to prepare, adopt, and implement a county fire management plan that details individual county policies on fire management for prescribed burns, fuels management, or natural ignition burns on lands owned by the state or county.

In 2009 Colorado Legislature passed into Law **Senate Bill 09-001 "CONCERNING THE ESTABLISHMENT OF COMMUNITY WILDFIRE PROTECTION PLANS BY COUNTY GOVERNMENTS."** This act required counties within the State of Colorado to determine whether there are fire hazard areas within the unincorporated portion of the county, and to prepare Community Wildfire Protection Plans (CWPPs) that covered these areas. The act also provided counties in the State,

*"the opportunity to establish a locally appropriate definition and boundary for the wildland urban-interface area."*

The Healthy Forest Restoration Act of 2003 required the Colorado State Forest Service to establish minimum standards for the development of CWPPs in Colorado. Per Colorado Senate Bill 09-001, this plan conforms to the 2009 revised minimum standards and guidelines that counties should consider when developing Community Wildfire Protection Plans (CWPPs).

## Montezuma County Community Wildfire Protection Plan (CWPP)

### PURPOSE

This document has been prepared to assist Montezuma County residents, local governments and land management agencies for the following primary purposes;

- 1.) To support the overarching goals of this plan to:
  - 1.) **PROTECT THE LIVES OF RESIDENTS AND EMERGENCY PERSONNEL.**
  - 2.) **PROTECT PROPERTY AND CRITICAL INFRASTRUCTURE IN THE WILD LAND-URBAN INTERFACE.**
  - 3.) **PROTECT KEY ENVIRONMENTAL VALUES AND QUALITY OF LIFE.**
- 2.) To update the existing Montezuma County CWPP to conform to Colorado Senate Bill 09-001, the Healthy Forest Restoration Act (HFRA) of 2003, and to the 2009 Colorado State Forest Service Minimum Standards for Community Wildfire Protection Plans (CWPP).
- 3.) To provide a sound comprehensive review and update of the existing community risk analysis using the best available data, and an approved methodology (FLAMMAP) to validate and or correct identified risk areas.
- 4.) To recognize the action items that have been accomplished through the 2005 CWPP and to clarify and refine the goals, strategies, and objectives of the 2005 plan.
- 5.) To achieve collaboration by bringing together diverse federal, state and local interests to: identify essential community values, discuss their mutual concerns for public safety, community sustainability, and natural resources.
- 6.) To share information from the updated community risk analysis with private and public land managers, the Sheriff and Fire Protection Districts to and reduce damage to values identified through the collaborative planning process.
- 7.) To foster coordination amongst all stakeholders by creating an "umbrella plan" for managing wildfire risks within Montezuma County.
- 8.) To ensure County eligibility for National Fire Plan (NFP) or other funding assistance, provide information to assist communities in recommending fuel reduction projects on private / federal lands.

## INTRODUCTION

As of July 2009, Montezuma County, Colorado is home to 25,676 residents, of which 14,222 live in incorporated areas outside of the County's three towns. The County has 10,673 housing units, of which 6,041 are located outside of the Towns. Montezuma County sits in the southwestern corner of Colorado at the Four Corners where New Mexico, Arizona, Utah and Colorado intersect. The county encompasses 2,084 square miles or 1.3 million acres, and is a region with stunning landscapes ranging from high alpine peaks and meadows in the north and east, red arid plateaus, sage plains and mesas in the south.

Land Ownership in Acres	Number of Acres	
Private	397,404	30%
San Juan National Forest	256,801	19%
Bureau of Land Management	179,641	13%
State of Colorado	11,357	1%
National Park Service	48,689	4%
Ute Mountain Ute Indian Tribe	439,996	33%
<b>Total</b>	<b>1,333,888</b>	<b>100%</b>

### GROWTH IN MONTEZUMA COUNTY:

Like much of Colorado over the last two decades, Montezuma County has experienced rapid growth, especially in the unincorporated areas of the County. Over 2,000 new lots were created by major and minor subdivisions from 1990 to 2005. From 1990 to 2004, the population of Montezuma County grew by 6,000 people (33%) averaging a growth rate of a little over 2% per year.

Between 2005 and 2009 Montezuma County's growth rate slowed, largely due to the housing market collapse, and the ensuing national recession, yet the area is still experiencing growth. From 2005 to 2009 the county population expanded by 1,208 people (4.7%), averaging a growth rate of .94% per year.

Despite the slowing economy, newcomers from all over the world find the environs of southwest Colorado extremely desirable for home building. The amenity based migration patterns seen through the late 90's and early 2000's are expected to continue. Colorado Department of Local Affairs population projections indicate that the population of the county will increase by approximately 6,000 people over the next 10 years.

Much of the homebuilding activity over the past ten years has occurred in naturally vegetated regions which newcomers hold in high regard. The vegetation which newcomers find so attractive is, in many parts of this county, at high risk for catastrophic wildfire.



## Montezuma County Community Wildfire Protection Plan (CWPP)

### FIRE IN MONTEZUMA COUNTY

Fire is nothing new to Montezuma County or to the Southwest in general. For centuries it has been a natural, healthy part of the ecosystem. An important distinction of wildland fires is that all forests do not burn the same way. Tree species vary and each forest type has a historical fire regime, or interval and intensity at which fires occurred. This cycle has been altered over the last 100 years by human uses such as logging, livestock grazing and fire suppression.

Before Euro-Americans moved west and homesteaded, fire played a positive and natural role in the health of western forests. Research shows that fires recurred periodically for thousands of years. Each different forest type, whether ponderosa pine, pinion/ juniper, or mixed-conifer had fire as a recurring disturbance to the ecosystem. Some fire regimes were typified by the frequent fires at low intensity (fire stayed on the ground), while other fire regimes had less fires but burned hotter and more intensely, often as crown fires traveling in tree tops.

### MONTEZUMA COUNTY COVER TYPES AND FIRE REGIMES

Fire ecologists know that the fire regimes in Southwest Colorado have changed and are different today than they were 100 years ago due to various human impacts. Not all forest types were affected the same; the forests with historically frequent low intensity fires were impacted most severely.

**Pinion– Juniper Forests:** Historically fires would burn every 25 to 100 years on average. Some pinion/ juniper forests would burn less frequently because they did not have the grassy understory to help carry the fire. Fires created openings with patches of grass, shrubs and small bunches of pinion and juniper trees. Today, because of human impacts, dense stands of pinion and junipers are encroaching on meadows and burn much more intensely.

**Ponderosa Pine Forests:** Research indicates that low-intensity fires once a decade. These fires usually burned on the ground and did not kill the ponderosa pines. This high frequency, low intensity fire regime has been documented for ponderosa pines throughout the southwestern United States. Crown fires (up in the treetops) were extremely rare since ground fuels were light and the crowns of the trees were generally spaced widely apart. Today these ponderosa pine forests are more crowded and tree crowns are much closer together or even touching, increasing the probability of more lethal crown fires. Grasses and shrubs are prevalent and create ladder fuels for fire to climb up and from one type of vegetation to another, and then into the crown of Ponderosa Pine trees.

**Mixed-Conifer:** This is a complex forest with a complex fire regime. It has dry and wet extremes. The cool moist mixed-conifer forest historically burned every 35 to 100+ years. Research suggests that suppression of fire has resulted in an increase of white fir in the understory, increasing the ability of fires to spread and intensify.

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**Spruce-Fir:** This forest zone is located at higher elevations. Because of the cool, moist conditions, large fires do not occur frequently (every 200+ years). Fires that start generally remain small due to cooler temperatures, moist soil and greener vegetation. However, intense fires in the tree crowns may result. This fire regime has been impacted the least by human influences, but it is not completely unaffected.

**Sagebrush and Grasslands:** Sagebrush and grasslands are located primarily in the lower elevations of the County and often grow in association with pinion/ juniper stands. These plant communities often include saltbush and creosote bush in addition to a wide range of native grasses. In most of these sage communities fire occurrence has been altered by fire suppression and livestock grazing. Historically fires within these communities may have been infrequent due to the limited fuels. However the introduction of cheat grass has effectively increased fuel loads and the susceptibility of these communities. Furthermore fires in sage communities allow cheat grass to invade more readily.

**Agricultural:** Agricultural cover can vary greatly year to year depending on the farming practices being used. The northern and western regions of Montezuma County rely heavily on "dry-land" farming practices. The risk of wildland fire on these crop lands is more pronounced. Winter wheat, beans and sunflowers make up the majority of the dry land crops. Wheat in particular will readily carry fire when it is dry and ready for harvest. Wheat harvest typically occurs in July during the height of the summer fire season. Most other dry-land crops also dry in the field before harvest which elevates the wildfire risk.

### FIRE BEHAVIOR BASICS

Because fire is a natural part of the forest ecosystem in southwest Colorado, it will always be a threat to homes built in the wild land urban interface where homes meet the forest. Understanding fire behavior will help owners determine the best course of action when creating defensible space. Defensible space provides room for firefighters to do their job should wildfire threaten your home. It also improves the chances of your home surviving.

#### Heat, Oxygen, Fuel

Fire needs heat, oxygen and fuel to burn. Take one of those elements away and the fire can't burn. Firefighters concentrate on removing fuels by creating fire lines and fuel breaks, and removing oxygen and heat with water and fire retardant. Homeowners can help by removing fuel around their home and creating defensible space long before a wildfire threatens.

Fire behavior is determined by three main factors;

- 1.) Weather
- 2.) Topography
- 3.) Fuels

## Montezuma County Community Wildfire Protection Plan (CWPP)

The weather is out of our control and cannot be modified. Topography can only be modified on a very limited basis, but we can be aware of the opportunities and risks presented by the topography and take advantage of our knowledge and awareness by building in sensible locations and by designing developments with wildfire in mind. Fuels are the one factor that can be modified to manage our wildfire risks.

**Fuels:** Fuels, or burnable vegetation are arranged horizontally and vertically and come in several forms; trees, shrubs, and grasses.

Vegetation that grows in horizontal and vertical arrangements (for example, trees and brush next to each other) are the most hazardous, particularly when they occur on slopes. Heavy fuels, such as brush and trees, produce a more intense and longer lasting fire than light fuels, such as grass. Breaking the chain of continuous fuels or vegetation, up to and around a home can serve as a fuel break, slowing a fire and bringing it to the ground where firefighters can stop it. In some cases defensible space alone can deter fire even if firefighters are not present.

**Topography:** Topography, or the lay of the land, plays an important role in fire behavior. Homes situated on hillsides, in canyons, and on ridge tops are particularly vulnerable. Fire travels faster uphill and afternoon winds travel upslope as hot air rises, pushing fire even faster. Homes built in steep terrain need larger areas of defensible space, particularly on the down-hill side. Aspect, or the direction the slope faces is also a factor. South-facing slopes tend to be hotter and drier, north-facing slopes cooler and wetter.

**Weather:** Weather elements that determine fire behavior are relative humidity (RH), temperature, and wind. Low (RH) and high temperatures decrease the amount of moisture in the vegetation and increase the chances of a fire starting. Once a fire is started, wind can push it making it grow quickly out of control before firefighters can arrive on the scene. When developing defensible space, determine the predominate wind direction in the area and factor it into your plans.

### FOREST CHANGE

In addition to over 100 years of human impacts, our forests are now facing changing climatic conditions. While the cause of the apparent climatic change may be debated it is a fact that summers and winters both have been, on average, warmer and drier recently.

These climatic changes have included a prolonged drought which have also spawned a series of pine beetle infestations, and Sudden Aspen Declines (SAD). These two events have lead to landscape scale tree die-offs in Colorado forests. And experts believe that they are clearly tied to the changing climate and the prolonged drought of the 2000's in particular.

## Montezuma County Community Wildfire Protection Plan (CWPP)

Pine beetles and other maladies have always been a part of the forest ecosystem; however, the effects of the prolonged drought have weakened trees and increased beetle populations. Trees that are stressed from lack of water and nutrients have a much more difficult time fighting off insects or diseases. In addition the moisture content in the vegetation decreases under such conditions and creates a situation where wildfire risk is elevated. Dead beetle-killed pinion trees still can be seen across thousands of acres of land in Montezuma County and across all of southwest Colorado. In many cases pinion mortality was nearly 90% across the County, and many of those dead stands of trees were over-populated due to fire past suppression creating increased fire danger.

Various species of trees have been colonized by beetles in southwest Colorado. The effects on pinion, and ponderosa pine are visually very evident when traveling through the region. More recently beetles have been attacking spruce trees in the higher elevations.

Though the *Ips* beetle epidemic in the pinion forest has now subsided it is important to remember that beetles are always present and managing our forest resources for overall health is one of the best protections against wildfire that can be advocated.

Foot Notes: San Juan Public Lands, the San Juan Mountains Association & Firewise SW Colorado 2006

## Montezuma County Community Wildfire Protection Plan (CWPP)

### COLLABORATIVE PROCESS

This CWPP is being revised in accordance with Colorado Senate Bill 09-001 as an update to the 2005 Community Wildfire Protection Plan (CWPP), and an effort has been made to involve a wide array of professionals, public, and firefighting personnel,

This plan builds upon what was started as a broad collaborative community effort with the initial Community Fire Plan in 2002. The specific steps taken include:

Collaborative work prior to 2011:

- Held numerous meetings among state and federal fire fighting entities, Montezuma County Government and local fire protection districts.
- Conducted an evaluation of wildfire risk resulting in the newly created *Montezuma County Fire Risk – Communities of Concern Map* (attached).
- Conducted a series of community wide and fire district level meetings to inform residents of risks/risk reduction strategies and supporting public and private sector resources, including topics such as: pinion beetle epidemic and drought, the role of fire in the ecosystem, defensible space, evacuations, care of pets and livestock during evacuations.
- Aired the video "First Line of Defense" on the local TV channel.
- Published a news article series on wildfire hazard mitigation. Sent the CWPP draft to key stakeholders for review.
- Developed prototype subdivision-level Fuels Mitigation Plan.
- Continued to improve mapping and technological resources.
- Published a Xeriscape Landscaping Guide which included defensible space strategies and fire-resistant landscaping information and suggestions.

Broad collaborative input is critical for the success of this CWPP. This CWPP update will analyze and include new direction from federal land management agencies and the Colorado State Forest Service as well as the implementation of mitigation measures, public education improvements, and efforts to secure identified equipment needs.

Collaboration during the 2011 CWPP update:

- Met with the Board of County Commissioners to secure authorization and support for the current (CWPP) update.
- Posted notification in the Local Newspaper regarding the proposed CWPP update and allowed a 45 day public comment period.

## Montezuma County Community Wildfire Protection Plan (CWPP)

- Met with the Local Fire Warden (Montezuma County Sheriff), Local Fire Protection Districts, the Montezuma County Emergency Management Officer and representatives from the US Forest Service (USFS), Bureau of Land Management (BLM), Mesa Verde National Park (USNPS), the Bureau of Indian Affairs (BIA), FireWise of Southwest Colorado and the Colorado State Forest Service to garner support and seek input for the CWPP update.
- Hosted a series of five community meetings to review and update goals, request input on values at risk, and document ideas and strategies to protect health property and welfare of Montezuma County's citizens and guests.
- Conducted a new community risk analysis using approved analysis methodology (FLAM MAP) and the best new data available including information garnered through public and professional input.
- Reviewed Draft Plan with fire professionals including; the Local Fire Warden (Montezuma County Sheriff), Local Fire Protection Districts, the Montezuma County Emergency Management Officer and representatives from the US Forest Service (USFS), Bureau of Land Management (BLM), Mesa Verde National Park (USNPS), the Bureau of Indian Affairs (BIA), and the Colorado State Forest Service for input and guidance.

### COMMUNITY OUTREACH

A transparent public process is a key component of this CWPP. In an effort to engage the public, each Fire Protection District in Montezuma County hosted a community meeting designed to provide outreach to the citizens living in their district. These meetings were intended to provide an opportunity for citizens and firefighters to meet each other, ask questions, circulate information and garner input from the citizen perspective. The meetings were also an opportunity for the Montezuma County Chapter of FireWise to participate and continue community outreach.

Five meetings were held in all, and representatives from federal and State land management agencies also participated in some of the meetings. However, some of the State and federal representatives were detailed out on fire assignments during the scheduled meetings, so a special effort was made to visit with those representatives who could not attend to make sure their input would also be included.

The community meeting format provided citizens with a brief update on the current wildfire situation nationally to broaden perspectives and pique interest in wildland fires on a regional scale. The Montezuma County Chapter of FireWise made contacts with local citizens and provided information on their mission, and the services available to county residents. The Montezuma County Planning Department provided a brief history of past CWPP planning in the County.

## Montezuma County Community Wildfire Protection Plan (CWPP)

Community meetings were facilitated for the following purposes:

- Identify the community values to be protected from wildfire
- Review of the 2005 CWPP Goals and Objectives
- Review of the 2005 Community Risk Map
- Identify specific wildfire preparedness recommendations
- Identify potential implementation strategies

### VALUES AT RISK

Catastrophic wildfire was generally recognized as a real and likely threat to many values within the wildland-urban interface in Montezuma County. Citizens and professionals were asked to help discuss their concerns for public safety and to help generate a list of values that they felt were potentially at risk within the Wildland-urban interface.

Discussions were also designed to be very broad so that less obvious values could be identified such as values relating to impacts on natural resources, impacts to the local economy, and the burden on the local tax base and basic services.

While stakeholders expressed many concerns regarding the risk of wild-land fire, participants also recognized beneficial role fire plays in the ecosystem including benefits to wildlife, forest and range land health. Participants were also notably knowledgeable and concerned about the threats to local watersheds.

The following values were identified as being at risk in Montezuma County;

**Lives:** firefighters and the public but also livestock and pets

**Private & Public Property:** homes, businesses, public buildings

**Public Health:** air quality, water quality

**Critical Infrastructure:** emergency services, hospitals, electric transmission, pipelines, irrigation ditches, compressor stations, well pads, roads etc.

**Ecosystem:** watershed protection, wildlife, stable plant communities

**Local and Regional Economies:** tourism, timber, grazing, mineral production, hunting & fishing

**Natural and Cultural Amenities:** views, historic structures, pre-historic structures and artifacts

**Local tax base & basic services:** risk to property values, prohibitive costs associated with fighting wildfires, drain on community resources

## Montezuma County Community Wildfire Protection Plan (CWPP)

Because all data required to produce a comprehensive inventory of all values at risk is incomplete. The best available data sources have been used to provide an analysis of the values at risk.

The recommendations embedded within this plan were developed with collaborative input and specifically to protect the values identified. New ideas and recommendations may surface at any time and will be incorporated into future plan updates.

### **PUBLIC AND PROFESSIONAL REVIEW OF 2005 CWPP GOALS AND STRATEGIES**

Public and professional collaboration in 2005 yielded five overarching goals that were included in the 2005 CWPP. As a part of the current collaborative process, these goals were publicly reviewed to validate their significance, and to seek direction in clarification and refinement.

Participants in the collaborative process generally verified that the goals stated in the 2005 CWPP were adequate and appropriate to protect the values that were identified to be at risk. Participants were given opportunity to provide input on ways to clarify the 2005 goals.

While no new goals were surfaced through the collaborative process, the 2005 goals were reviewed and analyzed to avoid overlap and to make them as concise as possible.

The goals for this CWPP include;

- 1.) PROTECTION OF THE LIVES OF RESIDENTS AND EMERGENCY PERSONNEL.**
- 2.) PROTECTION OF PROPERTY, AND CRITICAL INFRASTRUCTURE IN THE WILD LAND-URBAN INTERFACE.**
- 3.) PROTECT KEY ENVIRONMENTAL VALUES AND QUALITY OF LIFE.**



### PAST CWPP ACCOMPLISHMENTS

Over the past nine years, Montezuma County stakeholders have all continued to be very proactive in working towards the goals identified in the collaborative process. Each respective stakeholder has had to overcome many challenges and obstacles blocking the path toward each goal. Yet steady, and often remarkable, progress has been made.

The 2005 CWPP identified five goals and each goal was accompanied by several strategies. Many of the strategies listed have been in play since the plan was written. For unincorporated private lands some of the significant accomplishments include:

- **Accomplishment:** Montezuma County began recruitment of neighborhood FireWise ambassadors in 2005. Since that time several ambassadors have been recruited and have actively promoted FireWise principals in their communities. In 2009, FireWise established a Chapter in Montezuma County and hired a part-time coordinator to help organize educational efforts within the community.
- **Accomplishment:** Subdivision-level CWPPs have been created for two Montezuma County subdivisions, Elk Stream Ranch and Cedar Mesa Ranches.
- **Accomplishments:** The Montezuma County Planning Department keeps a list of contractors and consultants who assist developers and private landowners in developing CWPPS, Fuels Mitigation Plans, and implementing fuels reduction projects on new and existing subdivisions. Many of these contractors and consultants have completed project work in Montezuma County.
- **Accomplishment:** Fire Protection Districts created a Wildfire Prevention and Education Specialist position to provide community out reach and mitigation consulting. This position has been filled annually since 2002 and has provided extensive educational outreach to the community.
- **Accomplishments:** The Southwest Colorado Fires website [www.southwestcoloradofires.org](http://www.southwestcoloradofires.org) is maintained by the Office of Community Services at Fort Lewis College to provide information on County CWPPS, wildfire preparedness, contractor and consulting resources, ways to reduce structural ignitability, WUI and Communities at Risk.

## Montezuma County Community Wildfire Protection Plan (CWPP)

- **Accomplishments:** In 2007 Montezuma County revised its land use code to require Fuel Mitigation Plans and implementation for all new subdivisions.

### COMMUNITY RISK ANALYSIS

A Community Risk Analysis was completed to assist with the definition of Wildland –urban Interface (WUI) boundaries and to interpret and analyze the initial findings from the 2005 Community Risk Analysis. (The complete risk analysis can be found in Appendix XXX)

The current Community Risk Analysis utilizes the most up-to-date data and methodology available, in an effort to make the analysis as scientifically structured as possible. The primary tools used for the analysis were ArcGIS 10, the Landfire Data Access Tool (LFDAT) extension, Fire Family Plus and FlamMap 3. ArcGIS 10 is the de facto standard for GIS professionals universally. Fire Family Plus is a tool for analyzing multiple factors influencing fire behavior including historical climatology data. FlamMap uses a standardized set of spatial inputs and provides fire behavior predictions based on a given set of weather inputs, usually a scenario that utilizes the kind of weather where fire warnings would be issued, i.e., dry conditions and windy. The LFDAT is an extension to ArcGIS that aids in downloading, unzipping and assembling the Landfire datasets for use in FlamMap.

#### DATA

The data for the analysis was obtained from the Landfire website ([www.landfire.gov](http://www.landfire.gov)). Landfire data products are designed to facilitate national- and regional-level strategic planning and reporting of management activities. Data products are created at a 30-meter grid spatial resolution raster data set.

The principal purposes of the data products are:

- Provide national-level, landscape-scale, geospatial products to support fire and fuels management planning
- Provide consistent fuels data to support fire planning, analysis, and budgeting to evaluate fire management alternatives
- Provide landscape-scale, cross-boundary strategic products for fire and land management activities
- Supplement planning and management activities, including monitoring, that require consistent vegetation data
- Supplement strategic and tactical planning for fire operations utilizing the LFDAT. The data was obtained from Landfire and then unzipped and assembled by the LFDAT. Specific Landfire datasets utilized were:
  1. Elevation
  2. Slope
  3. Aspect
  4. Canopy Cover
  5. Stand Height
  6. Canopy Base Height
  7. Canopy Bulk Density

## Montezuma County Community Wildfire Protection Plan (CWPP)

### FINDINGS

The Community Risk Analysis verified that the analysis completed in 2005 was valid and accurate for the methodology used at the time. Both analyses are risk-based analysis with the 2005 analysis being a more intuitive based analysis relying on ground knowledge, input from fire professionals and visual examination of aerial imagery and topographic maps. The 2005 analysis was used to define communities and rank those communities as areas of high, medium or low risk.

The newly completed analysis did not surface glaring omissions nor did it identify any discrepancies from the 2005 analysis. This verifies that the 2005 the analysis correctly identified the key communities at risk within the County.

Key stakeholders reviewing the new analysis felt that the community boundaries identified in the 2005 analysis were correct will remain unchanged but the new analysis provides a more detailed view of the range of risks within each community. The new analysis also adds an additional risk level. The current risk map categories are Extreme, High, Moderate and Low and reflect the ground conditions more truly than the previous map that portrayed blanketed risk levels.

The new analysis provides a scientifically based classification system that illustrates the overall risk that Montezuma County faces and validates the input from fire professionals. These findings are essential in defining the Wildland-urban Interface which is discussed in the next chapter.

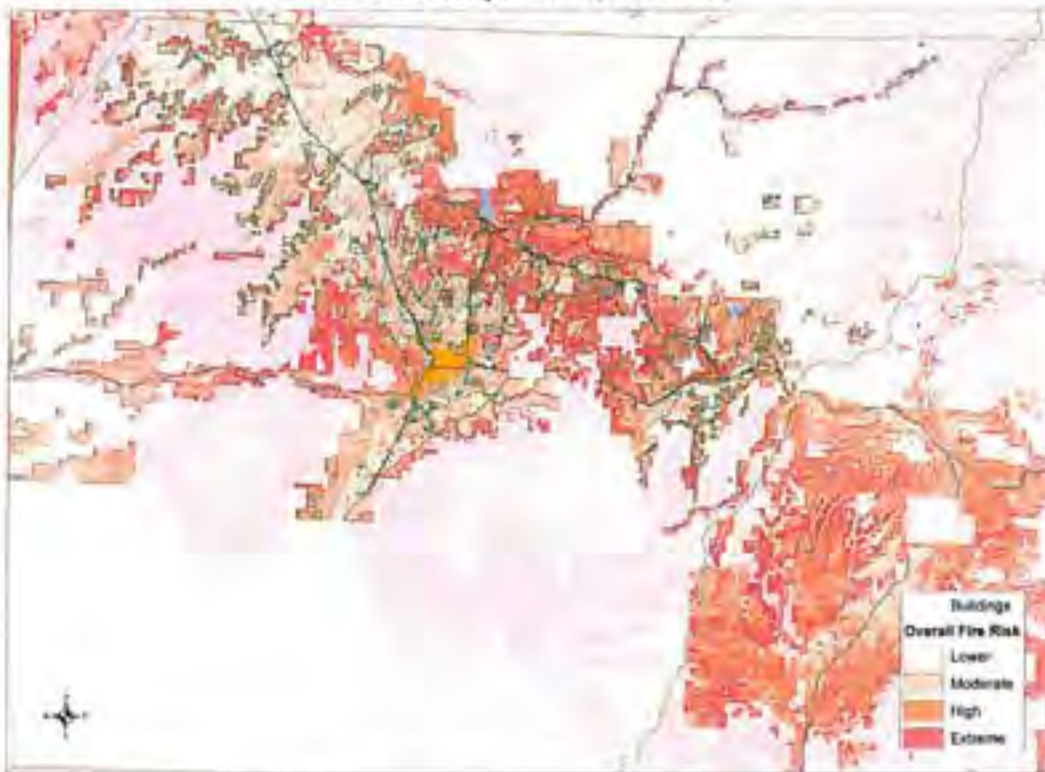
## Montezuma County Community Wildfire Protection Plan (CWPP)

### MONTEZUMA COUNTY WILDLAND-URBAN INTERFACE (WUI)

Montezuma County is peppered with developed parcels in heavily vegetated fire-prone areas (Intermix Communities), and along the boundaries of federal or State lands (Interface Communities). Many other developed parcels are scattered across dry-land farms, or mixed crop lands which may carry a lower level of risk but may be adjacent to heavily vegetated federal lands or include heavily vegetated ravines, or isolated stands of forest.

All areas of rural Montezuma County are at some level of risk from wildfire. Therefore Montezuma County defines its WUI as; *"all unincorporated lands within the County."* The Montezuma County WUI identifies four levels of risk within the WUI.

Montezuma County Fire Risk (Private Land)



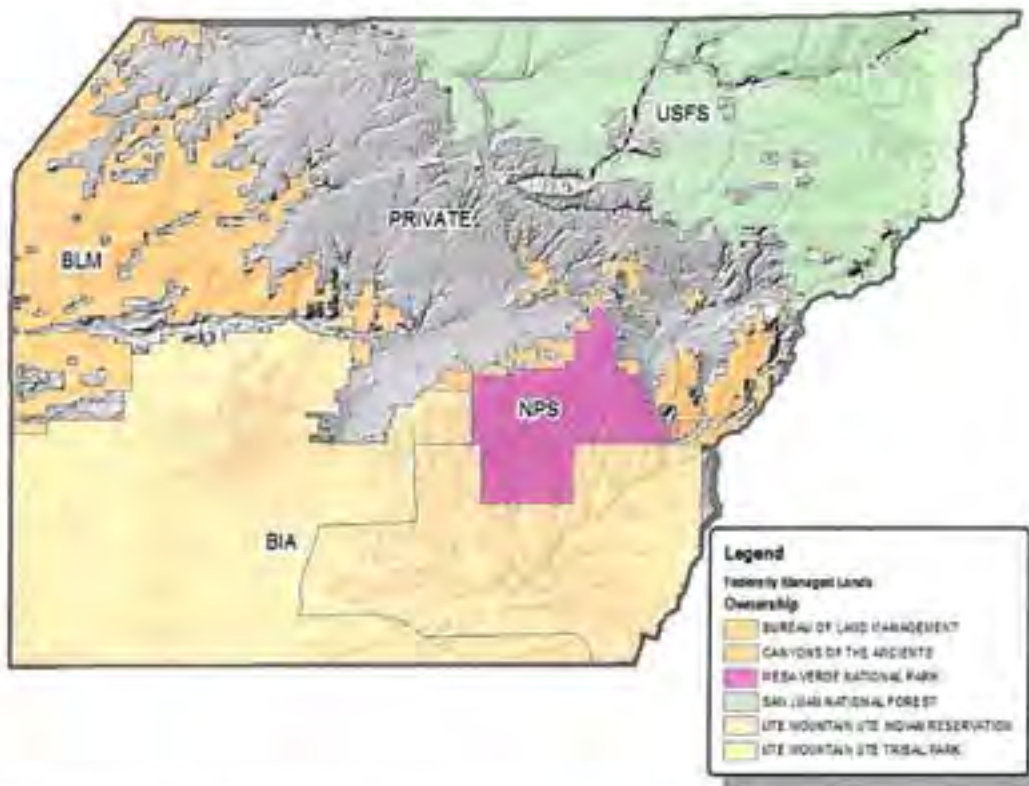
The 2005 Montezuma County CWPP also identified the WUI as *"all un-incorporated lands within the county."* This definition was based in part on the default definition in HFRA, in part from the input from stakeholders, and in part due to the geographic positioning of unincorporated lands in the County.

Stakeholder input during the collaborative process of this update (2011) has validated the position that *"all un-incorporated lands within the County are WUI"*.

## Montezuma County Community Wildfire Protection Plan (CWPP)

Federal and State lands make up over 70% of Montezuma County's land base. Private lands in Montezuma County make up only 30% of the total County land base. Private lands are geographically situated in between large expanses of federally managed wildlands that would pose a real and significant risk to developments located adjacent to their boundaries.

### Federally Managed Lands in Montezuma County



Most of the growth in Montezuma County and many other rural southwest Colorado counties occurs in the unincorporated areas, often adjacent to federal lands where the rural character, natural vegetation and topography provides an alluring setting for transplants seeking refuge from urban environments. Many of these developments are remote, hard to access, and lack adequate water for fire suppression. The picture at the right is a good example of the type of development happening in these areas.



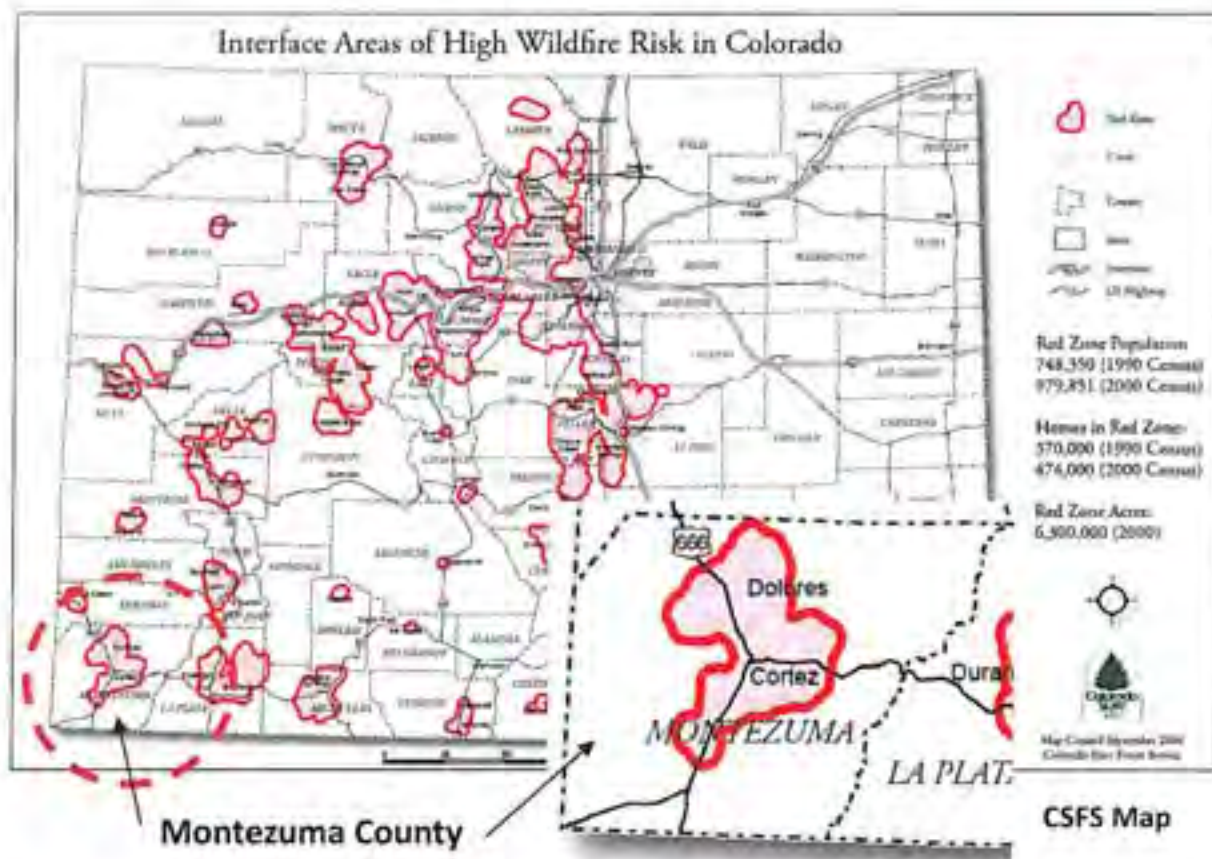
## Montezuma County Community Wildfire Protection Plan (CWPP)

The adjacency to federally managed lands is an important factor in the identification of Montezuma County's WUI. While the definition of WUI varies somewhat agency by agency, Colorado *Senate Bill 09-001* allows local County governments to define and identify their own WUI so that it fits each county's unique situation.

In 2004, the Colorado State Forest Service prepared an analysis of "Interface areas of High Wildfire Risk" (*below*) to assist communities in identifying wildland-urban interface (WUI) areas. This coarse-scale analysis identifies much of Montezuma County as "High Risk" wildland-urban interface and sets the baseline for Montezuma County's hazard analysis as it very closely approximated the WUI as defined by this plan.

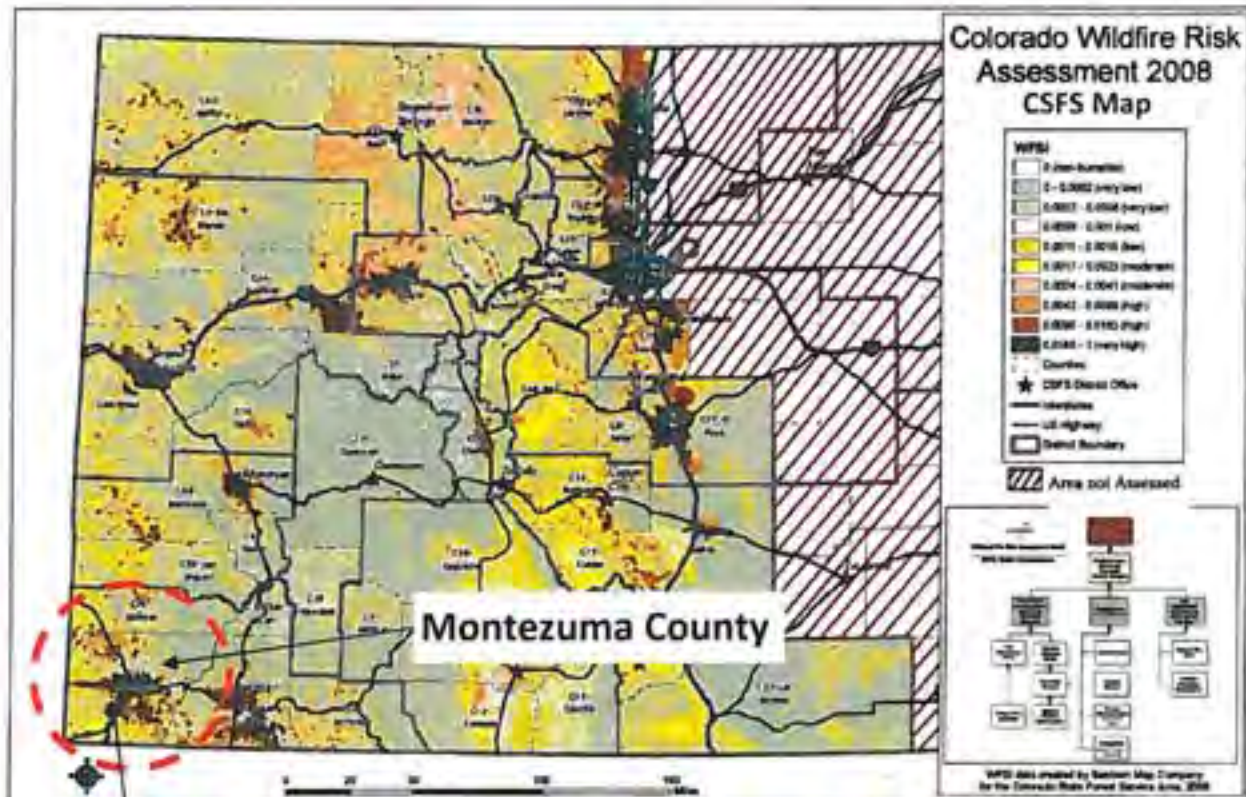
The Colorado State Forest Service describes the (WUI) as:

"any area where man-made improvements are built close to, or within, natural terrain and flammable vegetation, and where high potential for wildland fire exists."

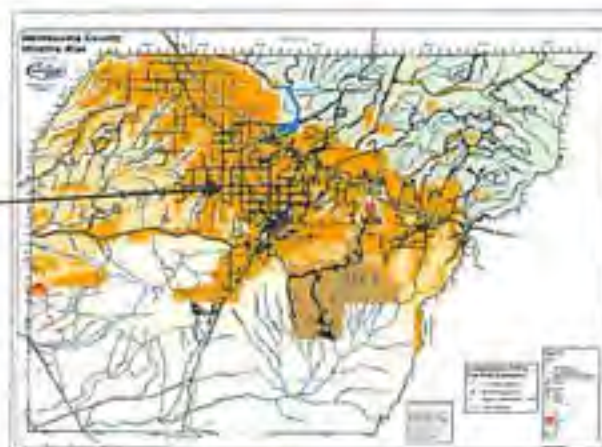


## Montezuma County Community Wildfire Protection Plan (CWPP)

In 2008, The Colorado State Forest Service prepared yet another updated version of the Wildfire Risk Assessment. The 2008 map (*below*) validates the 2004 map. Clearly, the CSFS considers Montezuma County to be a community at risk. Again the independent Colorado State Forest Service analysis seems to correlate the high risk areas very well with the Montezuma County definition of WUI, offering a further validation.



The areas identified as high risk on the 2008 CSU map clearly conform very well with the private lands within the county as seen in this illustration.





# COMMUNITY PREPAREDNESS TO RESPOND TO WILD LAND FIRE

**T**here are a number of resources and entities involved in fire management in Montezuma County including:

- Bureau of Indian Affairs (BIA) – Ute Mountain Ute Agency
- Bureau of Land Management (BLM) Tres Rios Field Office
- National Park Service (NPS) - Mesa Verde National Park
- Colorado State Forest Service (CSFS)
- Montezuma County and Montezuma County Sheriff
- Local Fire Protection Districts (Lewis Arriola, Pleasant View, Cortez, Dolores, Mancos, Towaoc)
- United State Forest Service (USFS) – San Juan National Forest
- FireWise Council of Southwest Colorado

All of these organizations work with each other and community partners to share resources and information. Over the years, strong partnerships have developed related to fire prevention and demonstration projects, fire suppression, public education and accessing resources such as equipment, grants, and training.

### THE COLORADO STATE FOREST SERVICE (CSFS)

The CSFS mainly supports educational and training programs that promote forest health, effective readiness, response and suppression of wildfires. This organization's greatest emphasis is on forest health, prevention and mitigation to lessen the chances of catastrophic wildfires on state and private lands in Colorado. The CSFS also administers several grant programs that are designed to assist private landowners or local governments with fuels reduction projects.

The CSFS activities include:

- promoting fire mitigation projects; and
- assisting county governments in assessing wildfire hazards; and
- sharing information with diverse audiences on the importance of mitigating hazards on their forested lands to help protect lives and property; and
- Administration of grant assistance

## Montezuma County Community Wildfire Protection Plan (CWPP)

### FIRE SUPPRESSION ON UTE MOUNTAIN UTE TRIBAL LANDS

The Bureau of Indian Affairs (BIA) provides wildland fire protection on Ute Mountain Ute Nation lands as well as coordinated fire suppression in interface areas between Ute Mountain Ute lands and other jurisdictions.

The community of Towaoc also has a paid Fire Protection District (FPD). The Towaoc FPD provides suppression services to the community of Towaoc mainly with structural fires, it but also assists BIA with wildland fire suppression wherever needed on Tribal lands. The Towaoc FPD also provides coordinated fire suppression and emergency response in interface areas between Ute Mountain Ute lands and other jurisdictions.

The BIA conducts prescribed fire and other fuel treatments on land within its jurisdiction.

### FIRE SUPPRESSION ON NATIONAL FOREST/ BLM LANDS

The Dolores District of the San Juan Forest /Bureau of Land Management provides wildfire management on US Forest Service and BLM lands, including Canyons of the Ancients National Monument. (The National Park Service provides wildfire management at Mesa Verde National Park. The Bureau of Indian Affairs (BIA) provides wildfire management on the Ute Mountain Ute Indian Reservation.)

Although there is some annual fluctuation in available resources within the federal agencies they always have resources on hand to manage, monitor or suppress wildfire starts within their locality. If local resources are not sufficient to manage wildfire starts, then additional resources may be requested through the Durango Interagency Dispatch Center.

During the summer "severity resources" are often brought in to supplement locally stationed resources. The San Juan Interagency Hotshot Crew is stationed in Durango but often works elsewhere across the nation. The crew is considered a national resource and in addition to fires in the local area, may be assigned to fires across the country. This is the same for the two type III initial attack helicopters located at Ute Mountain and at Mesa Verde, as well as the type II helicopter pre-positioned at Ft. Lewis.

There is good coordination between federal agencies and local resources. Mutual aid response is adequate and detailed out when conditions or available resources dictate.

The Dolores District conducts prescribed fire and other fuel treatments on approximately 2,500 to 3,000 acres of National Forest land and 500 acres of BLM land per year.

## Montezuma County Community Wildfire Protection Plan (CWPP)

### FIRE SUPPRESSION ON NATIONAL PARK SERVICE LANDS

The National Park Service provides wildfire management at Mesa Verde National Park. The National Park Service conducts prescribe fire and other fuel treatments on land within its jurisdiction.

### FIRE SUPPRESSION ON STATE AND PRIVATE LANDS

Fire protection is provided by the five Montezuma County fire districts including: Lewis Arriola, Pleasant View, Cortez, Dolores, and Mancos.

The Pleasant View Fire Protection District extends northward into a relatively small rural area of neighboring Dolores County. Likewise the Dolores Fire Protection District provides service to the "Ground Hog" area of Dolores County which is not covered by a Fire Protection District. Each Montezuma County Fire Protection District is equipped with at least one brush truck and a variety of other equipment which enable them to provide suppression for wild-land fires within their district.

Mutual-aid between Fire Protections Districts as well as for federally managed lands is well coordinated and used effectively when the situation dictates.

### THE DURANGO INTERAGENCY FIRE DISPATCH CENTER

The Center helps to make fire response quick and effective. The USFS, BLM, Bureau of Indian Affairs, Mesa Verde National Park and CSFS each contribute staff and resources to operate the full-time facility – located in the San Juan Public Lands Center, 15 Burnett Court, Durango. This is a sub-geographical coordination center with direct links to the Rocky Mountain Geographic Coordination Center (Denver) and the National Inter-agency Coordination Center (Boise, Idaho)

### AIR SUPPORT

An air tanker base is located in La Plata County at the airport, and the Mesa Verde Heli-tack base has been located at the Old Fort Lewis in Hesperus. Both have greatly improved local firefighting capabilities. Additional air support can be tapped into from other areas if it is available.

### OTHER ORGANIZATIONS

The FireWise Council of Southwest Colorado interfaces between fire management entities and private landowners to increase community readiness for wildfire. The FireWise Council is a grass-roots organization with a part-time chapter coordinator working part time in Montezuma County to coordinate education outreach, wildfire planning, and mitigation support throughout the county.

## Montezuma County Community Wildfire Protection Plan (CWPP)

### EDUCATION MATERIALS

A wide variety of educational materials designed to educate private landowners on how to prepare for wildfire have been prepared and are disseminated by the Montezuma County Planning Department, the Montezuma County FireWise Chapter, the USFS & BLM, the Colorado State Forest Service, and local Fire Protection Districts.

### FIRE PROTECTION DISTRICT CAPACITY

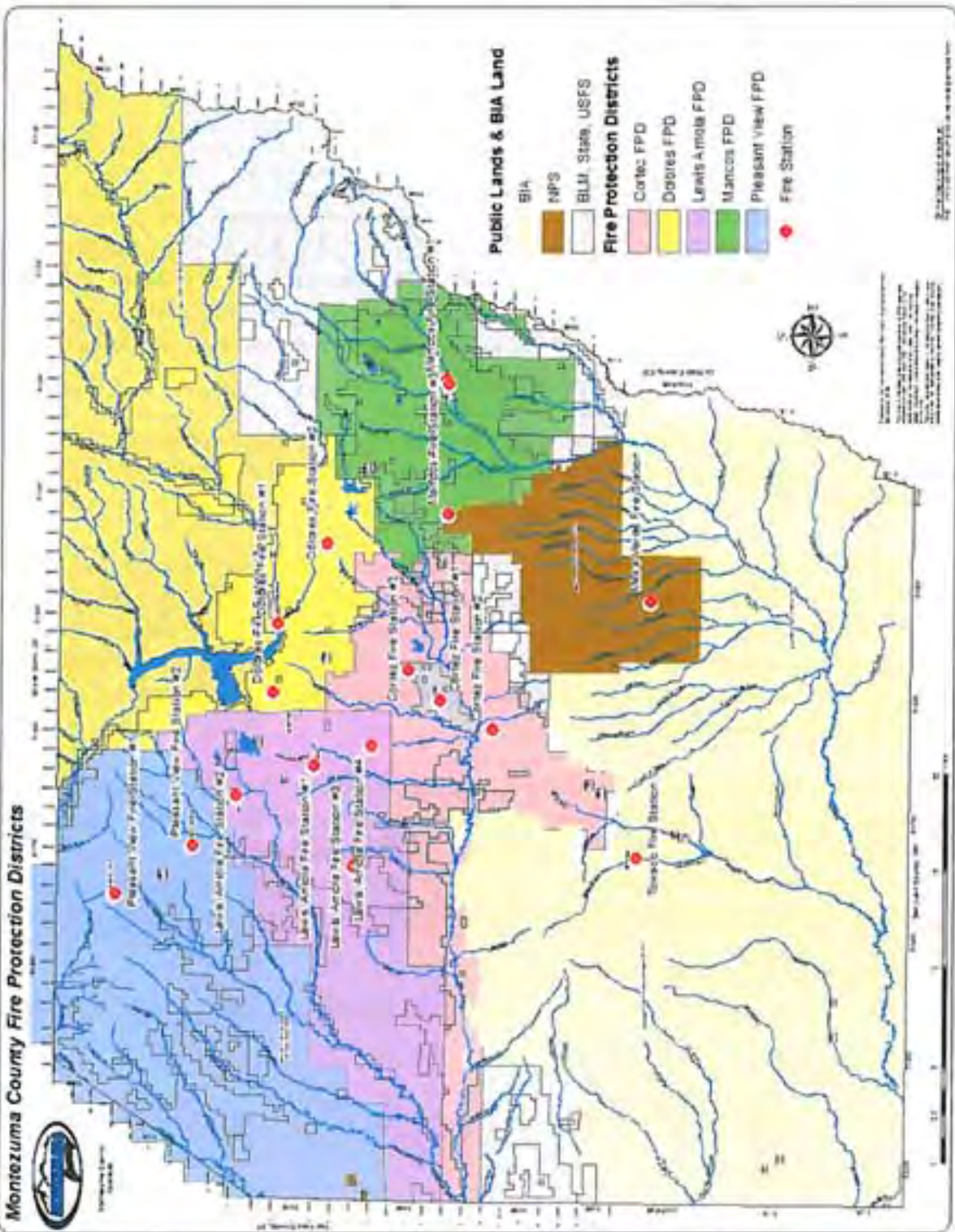
Montezuma County Fire Protection Districts are generally well equipped to respond to wildland fires. Each district has at least one brush truck available for initial attack. Other assorted equipment such as protective clothing, hand tools, ATV's and water bladders are also available. In short, the equipment needs for all of Montezuma County's Fire Protection Districts are reasonably well met for the time being. One notable exception is the need for an additional water tender for the Dolores Fire Protection District.

With the exception of the Towaoc Fire Protection District, and three paid members of the Cortez Fire Protection District, all of Montezuma County's Fire Protection Districts are volunteer departments.

Montezuma County firefighters are well trained and are constantly involved with new training programs. The collaboration process revealed that volunteers are committing a great deal of time to training as well as for calls. Volunteers have full-time employment to balance with their commitment to the Fire Protection Districts. This creates a difficult situation for fitting in additional training, especially if it is out of District, or multi-day training. Budgetary limitations also impede additional training.

All fire protection personnel are functional for wildland fire initial attack but are not uniformly red carded. Fire Protection District personnel are primarily trained for structural fires. Additional wild-land fire training would be beneficial and would expand the preparedness capacity of all Fire Protection Districts. Volunteers are always willing to participate in additional training when it is available. At a minimum, NWCG basic wildland fire training would be recommended.

# Montezuma County Community Wildfire Protection Plan (CWPP)



## Montezuma County Community Wildfire Protection Plan (CWPP)

### WATER SUPPLIES

Water supplies for fire flow in unincorporated areas of Montezuma County cannot be guaranteed. Many subdivisions throughout the county have municipal fire hydrants that are either not functional or do not provide enough flow to support fire suppression. In the past there have been instances where water lines have collapsed when fire flow is drafted out of them. In other instances drafting has caused serious interruptions to downstream water supply to water supply creating difficult situations for Montezuma Water Company to handle. Drafting can also potentially create a backflow contamination situation for the entire water system which could potentially create a health threat for hundreds or even thousands of residents. To avoid these potential problems water supplies are often augmented from the Dolores River, areas lakes, pond or irrigation ditches. All Fire Protection Districts need water tenders to provide additional initial attack capacity. Needs for this apparatus should be monitored and replacements or additions should be sought when need arises.

To further compound the water supply problem is the fact that many county residents must haul water into cisterns for their domestic use. County subdivisions can still be approved without access to municipal water systems or to wells. This lack of dependable water supply sources is a significant factor in determining the level of risk for communities as well as for identifying the WUI. Any opportunity to upgrade existing supply infrastructure to accommodate fire flows should be examined and capitalized on if possible.

Montezuma County is fortunate in the sense that it is still primarily a rural agricultural county with an extensive irrigation water delivery system in place even on federal lands. Irrigation canals & stock ponds can often be used to supplement water supply and many such features are found throughout the county.

The County also has four main river systems and many minor tributaries that retain perennial water flow. Water flow in some of these streams is supplemented by return flows from irrigation. There are also several lakes within the county that can be used to draft water from.

## WILDFIRE PREPAREDNESS RECOMMENDATIONS

### SECTION 1

#### RECOMMENDATIONS FOR REDUCING STRUCTURAL IGNITABILITY

**W**ildland fires typically ignite homes in two ways;

- 1.) Direct flame heating
- 2.) Firebrand ignition

Keeping these two factors in mind will help homeowners plan to lessen the ignitability of their home and increase the chances of their home, and themselves, surviving if a fire does occur. There are four principal considerations that can be addressed to help prepare homeowners for wildfire events.

##### 1.) MASTER PLANNING

Pre-construction planning and design can often play a significant role in increasing a home or subdivision's resistance to wildfire. Understanding and accepting that fire is a natural occurrence in the landscape can help from the beginning design stages through the final build-out. Careful design will result in communities that are attractive, livable and ultimately more valuable because they are more compatible with their natural environment which includes wildfire.

Appropriate planning includes community infrastructure considerations, site preparation, home design and layout, fire resistant building materials, landscaping layout and materials, and long-range maintenance activities. All of these planning elements are applied with the risk of wildfire in mind.

For more comprehensive information visit the Firewise website at [www.firewise.org](http://www.firewise.org) for a free download of the publication entitled *Safer from the Start*. This publication is also accompanied by a free video.

Chapter 5 Section 5103.1 (G.) of the Montezuma County Land Use Code also provides developers with the minimum standards required by the County for Subdivisions or High Impact Permits. A copy of the Montezuma County Land Use Code can be obtained from the Montezuma County website at [www.co.montezuma.co.us](http://www.co.montezuma.co.us)

## Montezuma County Community Wildfire Protection Plan (CWPP)

### 2.) FIRE SAFE CONSTRUCTION MATERIALS AND TECHNIQUES

After carefully designing a development, it is important to follow through with the appropriate building materials and techniques. Proper selection of materials for roofing, siding, and windows can significantly improve a structures resistance to fire. In addition attention must be paid to areas that can catch firebrands such as eaves, vents, and wooden decks.

For more comprehensive information visit the Firewise website at [www.firewise.org](http://www.firewise.org) for a free download of the publication entitled **Be Firewise Around Your Home.**

### 3.) FIRESAFE LANDSCAPING

Proper landscaping helps to improve the enjoyment and value of a home. Landscaping offers the opportunity to manipulate micro-climates to manage storm water, take advantage of cooling shade or manage solar heat. Landscaping make homes more livable and connects people with the outdoors.

Landscaping is an essential element of home ownership and special attention to proper planning will ensure a successful landscape while managing risks associated with wildfires. Homeowners typically landscape their properties with a variety of plants to provide variation in color, texture and foliage. Homeowners in fire-prone areas should make sure that the plants and landscaping materials they use are fire resistant. A fire-safe landscape shows off plants and other garden elements by leaving space between plants and groups of plants.

For more comprehensive information visit the Firewise website at [www.firewise.org](http://www.firewise.org) for a freed down-load of the publication entitled **Firewise Guide to Landscape and Construction**

### 4.) DEFENSIBLE SPACE

This is often the last step in the construction process but next to fire-resistant roofing materials, it is probably the best preventive measure a homeowner can take. Thinning out vegetation and removing combustible materials around homes is the most important step in creating defensible space Not only does this improve the chances of your home surviving a wildfire, but it is also the best thing that can be done to help keep firefighters safe and give them a chance to protect your property.

The Colorado State Forest Service offers the following advice on creating defensible space;

*"Defensible space is an area around a structure where fuels and vegetation are treated, cleared or reduced to slow the spread of wildfire toward the structure. It also reduces the chance of a structure fire moving from the building to the surrounding forest. Defensible space also 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." CSFS*



## Montezuma County Community Wildfire Protection Plan (CWPP)

For more comprehensive information visit the Colorado State Forest Service website at [csfs.colostate.edu](http://csfs.colostate.edu) for a free download of the publication entitled;

**Creating Wildfire-Defensible Zones no. 6.302**

The Fire Safe Council at [www.firesafecouncil.org](http://www.firesafecouncil.org) also has a free download of the very popular and informative publication entitled Living with Fire.

### **ADDITIONAL INFORMATIONAL RESOURCES**

- All of the publications previously mentioned can be downloaded from the Montezuma County website at [www.co.montezuma.co.us](http://www.co.montezuma.co.us)
- The Office of Community Services at Fort Lewis College also maintains a website entitled Southwest Colorado Fire Information Clearinghouse at: [www.southwestcoloradofires.org](http://www.southwestcoloradofires.org)
- The Colorado State Forest Service

Kent Grant - District Forester  
Durango District Office  
FLC 7233  
1000 Rim Drive  
Fort Lewis College Campus  
Durango, CO 81301-3908  
(970) 247-5250  
FAX (970) 247-5252  
[csfsdugo@lamar.colostate.edu](mailto:csfsdugo@lamar.colostate.edu)

## Montezuma County Community Wildfire Protection Plan (CWPP)

### GETTING THE WORK DONE !

None of the four recommendations to reduce home ignitions will do any good if they are not practiced. Master Planning and community design, fire-safe construction, fire-safe landscaping, and defensible space all can involve a lot of work. Many homeowners may have the knowledge, time, energy and tools to do the job themselves. Others may need to enlist the help of professionals to help get the job done.

The Montezuma County Planning Department keeps a list of contractors and consultants who can do everything from pre-construction design and consulting, to hazardous fuel reduction projects.

For a list of contractors please contact;

Montezuma County Planning Department  
Montezuma County Courthouse  
109 W. Main Cortez, Colorado.  
Rm. 305  
Ph: 1-970-565-2801

Or

Montezuma County Federal Lands Program  
Montezuma County Courthouse  
109 W. Main Cortez, Colorado.  
Rm. 304  
Ph. 1-970-565-7402

### 2011 CWPP GOALS AND STRATEGIES

From the five goals identified in the 2005 version of this plan, and input from the community and fire entities, the following three goals summarize the intent of the recommendations of this plan.

The goals for this CWPP include:

- 1.) PROTECTION OF THE LIVES OF RESIDENTS AND EMERGENCY PERSONEL.
- 2.) PROTECTION OF PROPERTY, AND CRITICAL INFRASTRUCTURE IN THE WILDLAND-URBAN INTERFACE.
- 3.) PROTECT KEY ENVIRONMENTAL VALUES AND QUALITY OF LIFE.

### GENERAL RECOMMENDATIONS FOR FOCUSED STRATEGIES

To reach our stated goals, the collaborative process yielded six focused strategy areas and many specific objectives and actions that support each strategy. Realizing the goals of this CWPP will require a very broad effort that will continue to evolve as new ideas emerge and existing ideas hit obstacles or delays, it is the intent of this plan to support, and pursue as many actions as possible in an ongoing effort to achieve the plan's three overall goals. This plan is not intended to be a "final plan" to sit on a shelf. Rather this document is a living plan that will be revisited and modified many times in the future to keep the plan as viable and energized as possible.

Strategies and actions were gathered from the five community input meetings, fire management entities, the FireWise Council of Southwest Colorado, and the previous version of the Montezuma County CWPP and have been compiled herein by the CWPP Planning Team. Many of the actions will require an ongoing effort to implement. The Planning Team did not intend that all of these actions will take place, but rather intend the following tables to be used like a menu of opportunities for creating a more prepared WUI community. Actions should be pursued as opportunities arise and the action language indicates existing efforts that should be continued and strengthened. The following tables begin with a heading, and general explanation of the intent of the actions, followed by a sequence of objectives (**in red bold**), and specific actions to help meet each objective. High priority actions have been listed first under each objective (**in bold italics**). The tables are divided into six general strategy categories as follow:

➤ Education

➤ Prevention

➤ Mitigation

➤ Cooperation

➤ Suppression

➤ Appropriation

## Montezuma County Community Wildfire Protection Plan (CWPP)

### **PREVENTION**

Montezuma County takes a very proactive approach to preventing human-caused ignitions, which pose a significant risk in Montezuma County. These ignitions can be caused by many different activities including controlled burns of all types, operation of welders or other power equipment, fireworks, smoking and even arson. The Montezuma County Fire Protection Districts, Sheriff's Department (Fire Warden), Federal Land Agencies and the Board of County Commissioners coordinate very effectively to implement fire bans when conditions merit the extra precaution. Burn bans restrict or modify a number of activities that could pose a fire risk. Another piece of preventing wildfire destruction in the WUI is paying special attention to reducing the potential for home ignitions.

#### **Reduce the number and scope of wildfires ignited as controlled burns by residents.**

1. *Develop and implement a burn permitting system for the purpose of safely disposing of slash in accordance with Colorado Senote Bill 11-110, beginning in January 2012.*
2. *Consider providing assistance from Fire Protection Districts or qualified professionals to provide oversight and stand-by on controlled burns (when requested).*
3. Widely advertise proper prescribed burning techniques.
4. Develop refrigerator magnets and other advertising with telephone numbers and policy on reporting controlled burns.

#### **Strengthen County Burn Bans.**

5. Collaboratively develop protocol for instituting uniform countywide fire restrictions between all fire management entities.
6. Utilize a range of media to advertise fire restrictions and discourage cigarette ignitions.
7. Enforce littering laws for cigarettes butts. Consider a (cigarette) butt busters campaign at the beginning of the wildfire season.

#### **Reduce the number of arson incidents.**

8. Work with law enforcement to catch "firebugs."
9. Develop culturally appropriate messages about the use of fire, and a specific education program to implement in coordination with the Ute Mountain Ute Tribe.
10. Promote alternative activities for youth when opportunities arise.

#### **Reduce Structural Ignitability.**

11. Encourage appropriate building techniques through incentives and working w/ builders, hardware stores, and plant nurseries to utilize and sell appropriate materials and distribute educational materials.
12. Include detailed analysis of the Home Ignition Zone and structural ignitability in all site assessments.
13. Consider requirements for the use of fire-resistant building materials and landscaping in new construction and landscaping projects.

## Montezuma County Community Wildfire Protection Plan (CWPP)

### EDUCATION

The coordinated wildfire education program that has been developed in Montezuma County between the Land Managers, Fire Districts, and the FireWise Council of Southwest Colorado needs to be continued and strengthened. Emphasis needs to be shifted to the education component by all parties involved. Studies indicate that effective education and outreach provides the foundation for accomplishing all other aspects of wildfire preparedness. Education on wildland fire prevention, mitigation, and suppression should have a broad reach in the community, not only providing consistent and appropriate messages for WUI residents and firefighters, but also youth, businesses (mitigation, insurance, real estate, chainsaw, rental), governmental and non-government non-profits (Planning and Zoning, Land Conservancy, Water Conservation Districts). The public outreach at various venues and an active media campaign in 2011 has been a step in the right direction, but future outreach should strive to target high risk areas and the specific extreme risk communities identified by the Fire Protection Districts with community specific messages.

**Increase public awareness of the size and scope of wildfire hazards in the Wildland Urban Interface.**

1. Inundate the community with educational programs and materials on the fire ecology of the County.
2. Utilize all media outlets to disseminate the Wildfire Risk - Communities of Concern Map.
3. Develop a message that appeals to the sense of community responsibility and independent actions. Include the null alternative.
4. Reach out to existing community groups to provide information and brief wildfire awareness programs.
5. Include wildfire information in County welcome packets.
6. Provide wildfire information, including the benefits of mitigation, and refer residents to FireWise in the County Planning Department.
7. Maintain and widely advertise the FireWise Council and the southwestcoloradofires.org website as a one-stop source for wildfire information.
8. Develop social media outlets to share wildfire messages.

**Involve youth in wildfire awareness activities to develop the next generation of wildfire conscious adults.**

9. Provide wildfire education opportunities in the primary and secondary schools, (C.E.R.T., Service Learning, clubs)
10. Encourage the school districts and teachers to include fire ecology in the science curriculum.
11. Engage existing youth organizations in fuels mitigation training and projects. (ie. Boy Scouts, SW CO Conservation Corps, Career Pathways)

## Montezuma County Community Wildfire Protection Plan (CWPP)

9. Encourage High School aged students to become FireWise Neighborhood Ambassadors as part of their service learning curriculum.

**Improve community readiness for wildfires through education on what to do when a fire is here.**

13. Get youth to develop their own emergency checklists, plans, and meeting spots for their families.

14. Utilize all available media outlets to promote evacuation kits and disseminate a checklist of what to do before you leave if time allows.

**Raise awareness of high and extreme risk areas of the WUI.**

15. Display the Wildfire Risk – Communities of Concern Map and WUI wildfire images in public places, on local tv stations, at fairs and expos, in Fire Protection District Stations, and as a layer of the Montezuma County GIS viewer.

16. Consider door-to-door education campaigns in the most extreme risk communities.

**Enhance opportunities for adult wildfire education.**

17. Work with the Colorado Community College and public land agencies to offer courses to train firefighters and mitigation contractors.

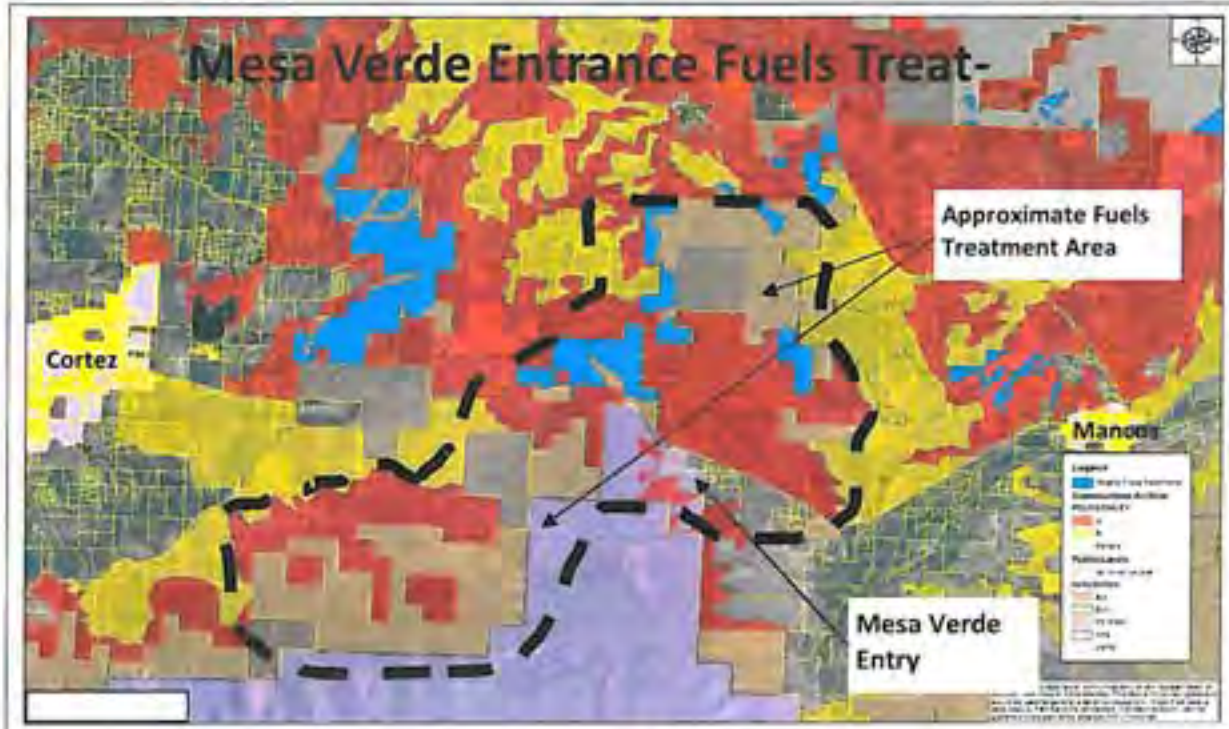
### MITIGATION

"Homes ignite and burn during wildfires when the requirements for combustion, a sufficiency of fuel, heat, and oxygen are sustained at one or more places on a home. If homes do not ignite, homes do not burn and if homes do not burn during a wildfire then the WUI fire disaster does not occur. (p. 73, Fourmile Canyon Fire Preliminary Findings, 2011)" Fuel sources can be modified to maintain a healthy forest which is more resistant to fire, insects and diseases. The WUI is predominantly privately owned, and therefore engaging private property and homeowners in mitigation activities, including defensible space development and reducing structural ignitability, are paramount to reducing the risk of catastrophic wildfire losses in the WUI. Professional experience in wildfire behavior and mitigation actions is required to capitalize on fuel reduction efforts.

**Implement Landscape Level Fuels Treatment Projects on Public Land Adjacent to Private Land.**

**1. Perform fuels treatment in Mesa Verde Entrance Area (see map next page)**

## Montezuma County Community Wildfire Protection Plan (CWPP)



### Implement Landscape Level Fuels Treatment Projects on Public Land Adjacent to Private Land. (cont'd)

2. *Identify and create treatment plans for landscape level mitigation projects on public and private lands so that there is a menu of shovel ready projects when funding or crews become available to do work.*
3. *Encourage implementation of subdivision Level Fuels Treatment Plans that have not been acted on as already prescribed projects on private lands. (See appendix)*
4. *Fuels Treatment to develop anchor point and defensible space at the head of Alkali Canyon.*

## Montezuma County Community Wildfire Protection Plan (CWPP)

5. <i>Develop and Maintain Defensible Space 200 ft. to hydro-axe project on SW edge of Towaoc.</i>
6. <i>Restart Brush Hog Maintenance Crew in Towaoc to do fuels maintenance around homes and structures as identified by Towaoc Fire and Rescue and the Elders Council.</i>
<b>Provide more property owners with the tools they need to create and maintain appropriate fuels mitigation and structure protection.</b>
7. Make site assessments easily accessible to all community residents and widely advertise and promote this service.
8. Promote programs that help people take preparedness one step at a time.
9. Utilize the Neighborhood Ambassador Program, incentive programs, and public fire-fighting agency resources to connect do-it-yourself homeowners with the tools they need for fuels treatment and home ignition zone improvements. (ie. Neighbor may have appropriate tool; rebates may offset rental or purchase price; hydromower on neighboring federal lands may complete projects on adjacent private lands at greatly reduced rates by eliminating transportation costs; sales on 1/8" screen and other fire resistant materials may be organized.)
10. Provide Home Ignition Zone workshops to the public.
11. Develop and advertise demonstration sites for appropriate, access, defensible space development, and home ignition zone improvements.
12. Work with the Landfill and develop additional free or low cost slash disposal sites and services.
<b>Engage residents on Summit Ridge in an active mitigation and preparedness program.</b>
13. Conduct WUI checkpoints to raise awareness of the extreme risk in that area.
14. Place high priority on recruiting FireWise Neighborhood Ambassadors throughout the Summit Ridge area.
15. Utilize Summit Lake State Park as a demonstration site for quality fuels treatment in the Ponderosa Pine ecosystem.
16. Designate a slash site in the area and arrange slash removal days.
17. Seek timber harvest opportunities for landscape scale thinning throughout private property on Summit Ridge.
<b>Engage residents on Summit Ridge in an active mitigation and preparedness program (cont'd)</b>
18. Develop rapid notification system for emergency evacuation of Summit Ridge region.
19. Assist with development of a Summit Ridge CWPP.



## Montezuma County Community Wildfire Protection Plan (CWPP)

20. Encourage public and private treatment to create fuel breaks, safe areas, & emergency access.

### Enhance the use of mitigation contractors.

21. Encourage fast expansion of Wildfire Professionals Mitigation Association into Montezuma County and advertise these reputable businesses.

22. Have regular training opportunities for contractors, property owners, and firefighters to improve their knowledge and skills for fuels treatment.

23. Keep an updated list of mitigation contractors and the services that they offer.

24. Develop programs and secure grants for treatment of properties where the homeowners does not have the personal ability to do the work or resources to hire professional assistance.

25. Provide incentives for chipping and slash removal to reduce accumulation of slash piles throughout County.

26. Develop a program to connect those in need of firewood with excess wood where treatment has been done, or with properties where thinning is needed.

27. Utilize inmate work crew to haul slash and for other public fuels treatment projects.

28. Consider burn permit fees as funding source for education and mitigation projects, when burn permitting system is developed in accordance with Colorado Senate Bill 11-110.

### Increase mitigation by rental and absentee home and property owners.

29. Disseminate message of null alternative, increased property value from mitigation, and other benefits, to targeted property owners on authority figure letterhead.

30. Continually seek programs that provide low cost fuels mitigation opportunities.

### 31. Support County subdivision fire mitigation regulations.

32. Provide resources for developers to perform appropriate mitigation, focusing financial resources on assistance for minor developments.

33. Explore additional regulatory options to address existing development that can be supported by existing or new programs to assist homeowners in completing required preparedness activities.

34. Enhance enforcement of subdivision mitigation. Consider tools such as bonding mitigation work or creating special improvements districts for wildfire mitigation.

### Reduce Structural Ignitability.

35. Encourage appropriate building techniques through incentives and working w/ builders, hardware stores, and plant nurseries to utilize and sell appropriate materials and distribute educational materials.

36. Include detailed analysis of the Home Ignition Zone and structural ignitability in all site assessments.

37. Consider requirements for the use of fire resistant building materials and landscaping in new construction and landscaping projects.

## Montezuma County Community Wildfire Protection Plan (CWPP)

### COORDINATION

Close coordination of activities between the Fire Protection Districts and FireWise Council of Southwest Colorado needs to be continued. This will reduce the duplication of efforts as well as provide more wildfire professional expertise to the mitigation efforts. The Montezuma County Fire Chief's Association Wildfire Education and Prevention Specialist position or a Fireman assigned by the Fire Protection Districts could help provide this coordination effort as well as site specific mitigation prescription recommendations. Closer coordination between the Fire Protection Districts, the Colorado State Forest Service, and the Public Lands Wildland Fire Managers is desired to improve training opportunities, consistent messaging, well coordinated response and comradere for fires in the WUI. Outreach between these fire management entities, the FireWise Council, and the community, should result in the development of more community level CWPPs. Recognizing that it takes a community to prepare for wildfires, FireWise and the Fire Chief's educator should continue to serve as community liasons between all fire managemetn entities and homeowners, regulators, building trades, landscaping trades, mitigation contractors, equipment dealers and renters, schools, insurance companies, Real Estate agents, property managers, media outlets, and more.

#### Enhance Coordination throughout the community for shared responsibility for wildfire preparedness.

1. Work with real estate, property management, and insurance companies to develop a shared understanding of effective risk management and the market benefits of appropriate wildfire mitigation.
2. Look to service organizations, Sherrif's office, etc. to find volunteers who can assist with message dissemination and mitigation work.
3. Continue coordinated mitigation on public and tribal lands adjacent to high risk areas of the WUI.

#### Strengthen Relationships between Fire Protection Districts, Fire Management entities, and the Public.

4. Develop an interagency prescribed fire and hazardous fuels council.
5. Coordinate Fire Information Officer, FPD Education Specialist, and the FireWise Council messages to the community.
6. Put on a Fire Fair in which all Fire Management entities, appropriate businesses and non-profits, FireWise, and the community participate.

#### Improve emergency response through information accuracy.

7. Update wildfire risk – communities of concern maps regularly to reflect mitigation work, development patterns and access to new data.
8. Participate in land database system tracking various levels of mitigation work.
9. Support County addressing program.
10. Fire Protection Districts should utilize wildfire risk map analysis components and community polygons to better understand conditions in specific areas of the WUI.

## Montezuma County Community Wildfire Protection Plan (CWPP)

### Increase the number of community scale CWPPs.

11. Provide support in the CWPP process.
12. Promote the benefits of prior planning on funding and response.
13. Ensure FPDs are familiar with CWPPs and their role in general and for the specific adopted plans as mutual aid agreements may have firefighters in a jurisdiction where they did not participate in a CWPP process.

### Suppression

The wildfire suppression efforts in Montezuma County are excellent. The interagency initial attack and mutual aid provided is well coordinated and supported by all agencies. The land management agencies and fire district are well equipped with just a few additional equipment needs. The Fire Protection Districts rely dominately on an aging base of volunteers, which creates some challenges for additional training and engagement wildland fire planning and preparedness activities. There are wildland fire training and assignment needs for the Fire Protection Districts to maintain and enhance the National Wildfire Coordination Group (NWCG) standards. The requirements of the annual wildland fire refresher review should be a high priority for every firefighter. Additional high level training and assignment opportunities should be explored. The NWCG level of Strike Team Leader, Task Force Leader and Type III IC should be a long term goal for every department.

### Improve wildfire training for all firefighters.

1. *Provide advanced Wildfire training in Wildland Interface s-205, Intermediate Wildland Fire behavior s-290 and Strike Team Leaders-336.*
2. Consider requirements for basic wildfire training of all paid and volunteer firefighters. Coordinate with public lands agencies for joint training opportunities.
3. Open up training opportunities between all fire management entities as often as possible.
4. Explore additional incentives for additional training for volunteer firefighters.
5. Include ICS training for all fire personnel and the designated fire warden.

### Ensure adequate water availability for structure protection.

6. *Invest in a 3,000 gallon water tender for the Dolores Fire Protection District.* Continually evaluate equipment needs for all Fire Protection Districts.
7. *Develop tender draft sites identified by Dolores Fire Protection District; a pond on Summit Ridge and a gravel pit pond on the Dolores River.*
8. If the water district cannot supply adequate flow, cisterns, tanks, or pump points should be developed before final subdivision approval.
9. Inventory water pump points and incorporate in County GIS for use by all fire management entities.

## Montezuma County Community Wildfire Protection Plan (CWPP)

### Appropriation

An ounce of prevention is worth its weight in gold for managing the output costs of suppressing fires in the WUI. It is desirable that new emphasis be placed, on prevention, education and outreach within the community and among the fire management entities. The cheapest fire is the one you do not have to fight. It is also recognized that our education and legislative efforts to improve defensible space and reduce structural ignitability in the WUI need to be financially viable in order for residents to take action. Specific attention needs to be given to supporting and strengthening Montezuma County's requirements for defensible space development in new subdivisions in the WUI. All fire management entities and the FireWise Council should be active in identifying, pursuing, and managing grants that contribute toward the goals of this CWPP. Publicizing existing financial incentives and increased property values and marketability of mitigated property and exploring creative means of further incentivizing mitigation should be included in all education and outreach efforts.

#### Increase grants obtained for wildfire preparedness activities.

1. Utilize the FireWise Council of Southwest Colorado, All Fire Management Entities, and volunteers to help write and manage grants.
2. Seek continued funding for the Montezuma County FireWise Chapter and the Fire Chief's Association Wildfire Education and Prevention Specialist.
3. Explore foundation grants as a means of funding identified activities.
4. Leverage the cost savings of preventing wildfire threats to homes to obtain mitigation funds.
5. Leverage location within Region 9 economic development district and an enterprise zone to find new funding sources.
6. Utilize special improvements districts as a means of funding mitigation in some higher scale communities to stretch other dollars further in lower income
7. Encourage the development of small diameter commercial wood processing businesses or use of central heating systems that utilizing local small diameter fuels from mitigation projects as a heat source.

### OTHER RELATED PLANS

Because Montezuma County is a multi-jurisdictional County, the Montezuma County CWPP recognizes all valid Fire Management Plans that are in place throughout Montezuma County.

This document is intended to be an umbrella document for all agencies charged with Fire Management under their jurisdiction including the U.S. Forest Service, Bureau of Land Management (BLM), Bureau of Indian Affairs (BIA), the National Park Service and the Ute Mountain Nation. Existing Fire Management Plans, CWPPs etc. are on file with each respective agency.

This document is also intended to be an umbrella document for all sub-division level CWPPs that are prepared in accordance to minimum standards set forth by the Colorado State Forest Service, including the Elk Springs CWPP and the Cedar Mesa Ranches CWPP. Subdivision level CWPPs are on file with the Montezuma County Office of Emergency Management.

Subdivision level fuel mitigation plans are also recognized by this document and those plans are on file with the Montezuma County Planning Department.

### IMPLEMENTATION PLAN

Continuing the notable achievements attained since the first iteration of this plan will take persistent cooperation and effort to select attainable actions from the table and carry them out. The emboldened action items represent high priority items as identified by the Fire Chiefs that should be initiated in 2012. Key participants include the Fire Protection Districts and their Chief's Association, Wildfire Education and Mitigation Specialists, the Colorado State Forest Service, federal and Tribal fire management entities, the Montezuma County Sheriff's Department, Office of Emergency Management, Montezuma County Planning Department, Montezuma County Federal Lands Program, and the FireWise Council of Southwest Colorado. Fire Protection Districts should lead the implementation effort, reviewing the opportunities for action on an annual basis (each December), reviewing annual progress, and determining an annual work plan.

The projects identified in this plan are recommended, but not mandated, with the exception of the implementation of a permit system for controlled burns, mandated by Colorado State Senate Bill 11-110. The Planning Team did not intend that all of the identified action will take place, but rather intend the tables to be used like a menu of opportunities for creating a more prepared WUI community. Actions should be pursued as opportunities arise and the action language indicates existing efforts that should be continued and strengthened.

In addition to the actions and specific projects identified in the six category areas of the recommendations table, important planning was done beginning with the Community Fire Plan adopted in 2002, which is included as the "fire management polygon" appendix C. These polygons identify and prioritize high risk communities and the basic wildfire risk attributes and community values for each polygon or polygon group. As this plan is intended to be a living, growing document, so is the "fire management polygon" supplement. As the key participants review this planning document, the polygons should also be revisited and specific landscape scale mitigation opportunities in each community should be planned and implemented as the opportunities arise. Fuel Mitigation Plans already exist for some subdivisions throughout the County, and these treatments can be carried out as funding opportunities arise, as ready to go projects. Landscape scale approaches identified in the coordination, education, and mitigation focused strategies should be directed at the highest risk areas as highlighted in the prioritized Communities at Risk Polygons based on their level of risk and year round population density and other infrastructure considerations identified as values at risk.

Participating in mapping efforts to track mitigation and maintenance will assist in the planning process to know where progress is taking place and where greater effort should be focused. The communities at risk should be re-prioritized as part of the annual work plan taking into consideration momentum in communities and also giving high priority to high risk communities where the message is clearly not reaching residents.



# Appendix A

## COMMUNITY RISK ANALYSIS

## COMMUNITY RISK ANALYSIS

### DATA DEVELOPMENT, TOOLS & WORKFLOW

The primary tools used for the analysis were ArcGIS 10, the Landfire Data Access Tool (LFDAT) extension, Fire Family Plus and Flammap 3. ArcGIS 10 is the de facto standard for GIS professionals universally. Fire Family Plus is a tool for analyzing multiple factors influencing fire behavior including historical climatology data. FlamMap uses a standardized set of spatial inputs and provides fire behavior predictions based on a given set of weather inputs, usually a scenario that utilizes the kind of weather where fire warnings would be issued, i.e., dry conditions and windy. The LFDAT is an extension to ArcGIS that aids in downloading, unzipping and assembling the Landfire datasets for use in FlamMap.

### DATA

The data for the analysis was obtained from the Landfire website ([www.landfire.gov](http://www.landfire.gov)). Landfire data products are designed to facilitate national- and regional-level strategic planning and reporting of management activities. Data products are created at a 30-meter grid spatial resolution raster data set.

The principal purposes of the data products are:

- Provide national-level, landscape scale geospatial products to support fire and fuels management planning
- Provide consistent fuels data to support fire planning, analysis, and budgeting to evaluate fire management alternatives
- Provide landscape-scale, cross-boundary strategic products for fire and land management activities
- Supplement planning and management activities, including monitoring, that require consistent vegetation data

Supplement strategic and tactical planning for fire operations

Utilizing the LFDAT the data was obtained from Landfire and then unzipped and assembled by the LFDAT. Specific Landfire datasets utilized were:

1. Elevation
2. Slope
3. Aspect
4. Canopy Cover
5. Stand Height
6. Canopy Base Height
7. Canopy Bulk Density
8. The 13 Anderson Fire Behavior Fuel Models dataset



# Montezuma County Community Wildfire Protection Plan (CWPP)

## Elevation

Elevation represents land height, in meters, above mean sea level. Elevation data for LANDFIRE were provided by the *Elevation Derivatives for National Applications* (EDNA) dataset. EDNA topographic data were derived from the *National Elevation Dataset* (NED). NED comprises merged 7.5 minute quadrangle topographic data resulting in a high quality, consistent elevation data set that spans the entire United States. The units of measurement for the LANDFIRE Elevation layer are meters above mean sea level. ([www.landfire.gov](http://www.landfire.gov))

## Slope

Slope represents the percent change of elevation over a specific area. Slope data for LANDFIRE were provided by the *Elevation Derivatives for National Applications* (EDNA) dataset. EDNA topographic data were derived from the *National Elevation Dataset* (NED). NED comprises merged 7.5 minute quadrangle topographic data resulting in a high quality, consistent elevation data set that spans the entire United States. The units of measurement for the LANDFIRE Slope layer are degrees. ([www.landfire.gov](http://www.landfire.gov))

## Aspect

Aspect represents the azimuth of the sloped surfaces across a landscape. Aspect data for LANDFIRE were provided by the *Elevation Derivatives for National* (EDNA) dataset. EDNA topographic data were derived from the *National Elevation Dataset* (NED). NED comprises merged 7.5 minute quadrangle topographic data resulting in a high quality, consistent elevation data set that spans the entire United States. The units of measurement for the LANDFIRE Aspect layer are degrees. ([www.landfire.gov](http://www.landfire.gov))

## Canopy Cover

The Forest Canopy Cover (CC) layer describes the percent cover of the tree canopy in a stand. Specifically, canopy cover describes the vertical projection of the tree canopy onto an imaginary horizontal surface representing the ground's surface. A spatially explicit map of canopy cover supplies information to fire behavior models to determine surface fuel shading for calculating dead fuel moisture and for calculating wind reductions. The units of measurement for CC are percent. ([www.landfire.gov](http://www.landfire.gov))

## Canopy Bulk Density

The Forest Canopy Bulk Density (CBD) layer describes the density of available canopy fuel in a stand. It is defined as the mass of available canopy fuel per canopy volume unit. Geospatial data describing canopy bulk density supplies information for fire behavior models, to determine the initiation and spread characteristics of crown fires across landscapes. These data are provided for forested areas only. The units of measurement for the LANDFIRE Canopy Bulk Density layer are  $\text{kg m}^{-3} * 100$ . ([www.landfire.gov](http://www.landfire.gov))

# Montezuma County Community Wildfire Protection Plan (CWPP)

## Forest Canopy Height

The Forest Canopy Height (FCH) or Stand Height layer describes the average height of the top of the vegetated canopy. Geospatial data describing canopy height supplies information to fire behavior models to determine the probability of crown fire ignition, calculate wind reductions, and compute the volume of crown fuel. These data are provided for forested areas only. The units of measurement for the LANDFIRE Canopy Height layer are meters \* 10. ([www.landfire.gov](http://www.landfire.gov))

## Canopy Base Height

The Forest Canopy Base Height (CBH) layer describes the average height from the ground to a forest stand's canopy bottom. Specifically, it is the lowest height in a stand at which there is a sufficient amount of forest canopy fuel to propagate fire vertically into the canopy. Geospatial data describing canopy base height provides information for fire behavior models to determine areas in which a surface fire is likely to transition to a crown fire (Van Wagner 1977, 1993). These data are provided for forested areas only. The units of measurement for the LANDFIRE Canopy Base Height layer are meters \* 10. ([www.landfire.gov](http://www.landfire.gov))

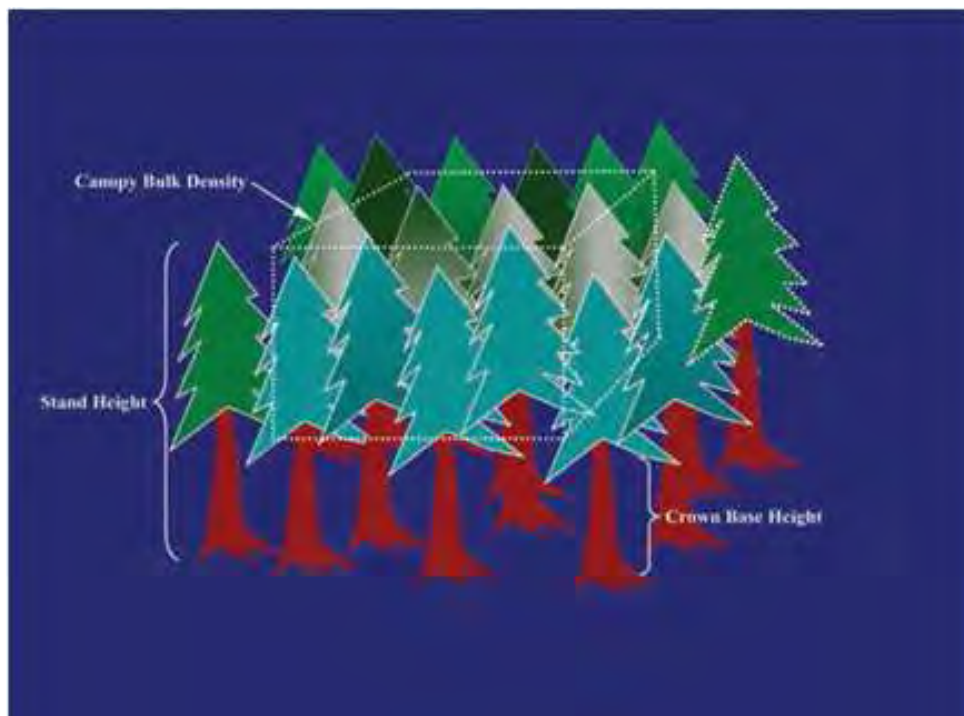
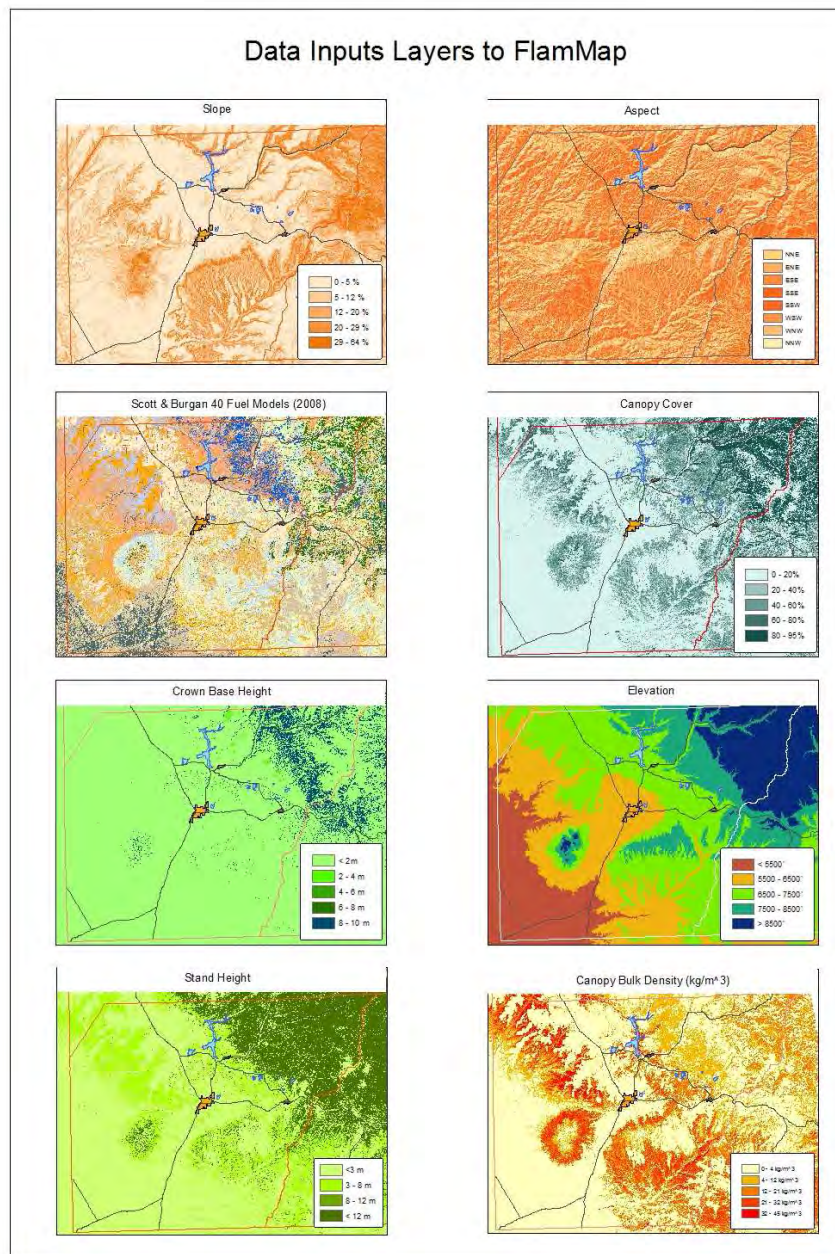


Figure xx. Graphical depiction of Canopy Bulk Density, Stand Height and Crown Base Height (Mark Finney).

# Montezuma County Community Wildfire Protection Plan (CWPP)

## 40 Scott and Burgan Fire Behavior Fuel Model

The 40 Scott and Burgan Fire Behavior Fuel Model (FBFM40) layer represents distinct distributions of fuel loading found among surface fuel components (live and dead), size classes, and fuel types. The number of fuel models for use in areas where fire tends to burn well at relatively high dead fuel moisture content has been increased, and fuel models with an herbaceous component are now dynamic fuel models, meaning that load is dynamically shifted between live and dead. ([www.landfire.com](http://www.landfire.com))



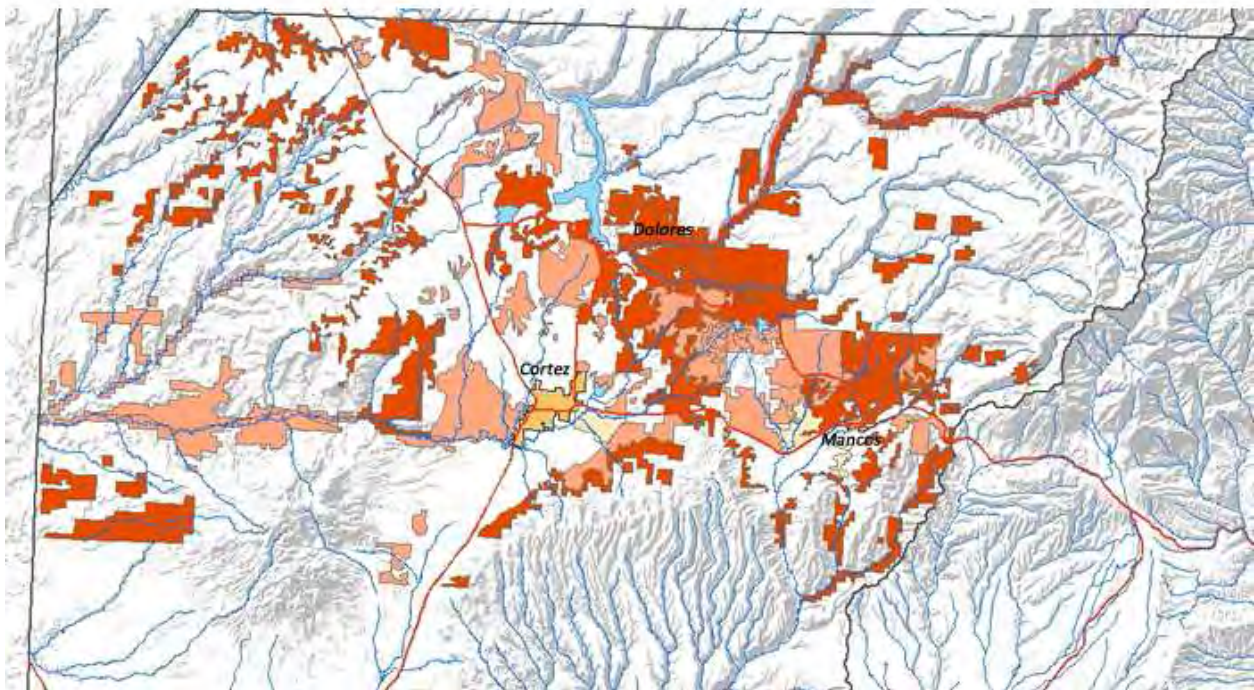
# Montezuma County Community Wildfire Protection Plan (CWPP)

## WORKFLOW

The fire risk analysis for Montezuma County is based on two procedures using GIS tools and methods.

1. The first analysis was generated in 2006 and utilized aerial photography, slope, topography, elevation, population density and other valued assets in the County. Polygons were created using “heads up” digitizing onto the base maps described above. The polygons were rated into two categories of moderate and high risk. Areas with no polygons were not deemed a significant fire risk. The strength of this method was that analyses were based on a good knowledge of the conditions on the ground by people knowledgeable of the area and fire behavior.

Montezuma County 2006 Fire Risk Map



More recently, a full GIS analysis was completed utilizing LANDFIRE data, Fire Family Plus, Flammap and ArcGIS 10. LANDFIRE datasets were downloaded, unzipped and assembled using the LFDAT tool. FlamMap utilizes these datasets to create a landscape (LCP) file that is the basis for the analysis. The analysis in FlamMap is called a “run” and outputs raster datasets which describe various aspects of fire behavior. A

## Montezuma County Community Wildfire Protection Plan (CWPP)

run also requires a Fuel Moisture (FMS) file and historical fuel conditioning weather (WTR) and wind (WND). The FMS file is a file that describes properties of the fuels in a particular region at a certain point in time, e.g., between April and October, which is fire season in southwest Colorado. The FMS file utilized in this analysis was developed utilizing actual fuel moisture values gathered around the Chapin RAWS station and other sampling sites in SW Colorado with similar characteristics as the study area (Durango Interagency Dispatch website). The FMS file estimates moisture content for downed fuel (at 1-hour, 10-hour and 100-hour sizes) as well as the moisture in live herbaceous and live woody fuels. Fuel moisture values vary from month to month and from year to year. The values utilized in this fuel moisture file represent the extreme end of the range and were taken primarily from the period of June 1 – July 15. The WND and WTR files were generated with Fire Family Plus utilizing historical weather data from the Chapin RAWS weather station in Mesa Verde Nation Park. The run scenario utilized in this study assumes 20 mph winds at 20 feet. In the case of this analysis, the FlamMap run outputs were:

- Rate of Spread
- Fire Line Intensity
- Flame Length
- Crown Fire Activity

### **RATE OF SPREAD**

Rate of spread is the horizontal distance that the flame zone moves per unit of time (meters per minute) and usually refers to the head fire segment of the fire perimeter. However, rate of spread can be measured from any point on the fire perimeter in a direction that is perpendicular to the perimeter. Because rate of spread can vary significantly over the area of the fire, it is generally taken to be an average value over some given period of time. The fastest rate of spread is along the forward moving perimeter located at the head of the fire. The map below demonstrates the potential ROS given the stated parameters of this scenario.

### **FIRELINE INTENSITY**

Fire line Intensity (FLI) is the product of spread rate and heat from the fuels burning during combustion. In this study, BTU/ft/sec is used as the unit of measure. An upper limit for large wild land fires is 30,000 BTU/ft/sec, but FLI outputs of 1000 BTU/ft/sec or more can make control efforts at the head of the fire ineffective. The map below demonstrates potential FLI given the stated parameters of this scenario ( i.e., fuel moisture, climate and 20 foot wind).

# Montezuma County Community Wildfire Protection Plan (CWPP)

## FLAME LENGTH

Flame length (FL) is the distance from the midpoint of active flaming to the tip of the flame. In this study the unit of measure used for FL is meters. Note that FL is not a vertical measurement from the ground, rather it tracks the direction of the flame itself whether vertical or more horizontal.

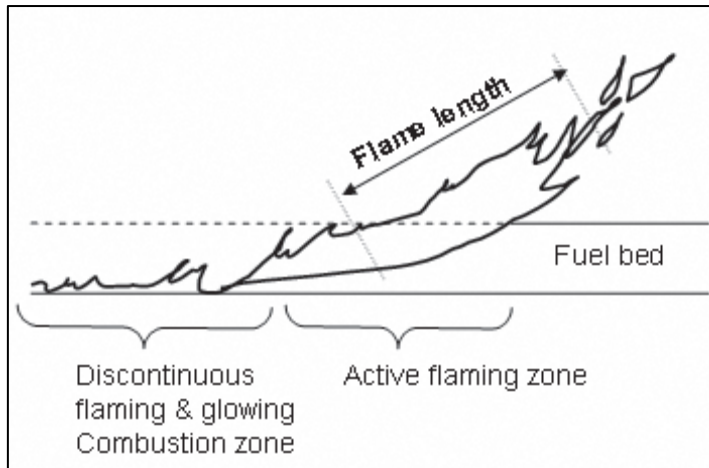


Figure xx. Depiction of flame length as measured from the midpoint of the active flaming zone to the average tip of the flames (from Andrews 1986).

Flame length feet	Fire line Intensity BTU/ft/sec	Fire description and suppression interpretations
~2	19-58	Most prescribed fires burning against the wind. Depth of the flaming zone (front to back) would be less than 1 ft and the flame length about 2 ft. Could easily step over the fire without fear of injury
<4	<100	Fire can generally be attacked at the head or flanks by persons using hand-tools. Hand-line should hold the line.
4-8	100-500	Fires are too intense for direct attack on the head by persons using hand-tools. Hand-line cannot be relied on to hold fire.
8-11	500-1000	Fires may present serious control problems—torching out, crowning, and spotting. Control efforts at the fire head will probably be ineffective.
>11	>1000	Crowning, spotting, and major fire runs are probable. Control efforts at head of fire are ineffective.

# Montezuma County Community Wildfire Protection Plan (CWPP)

## CROWN FIRE ACTIVITY (CFA)

CFA is based on several factors. A low CBH will make it easier for ground fuels and ladder fuels to reach the canopy and facilitate an active crown fire. A general rule of thumb is flame length needs to be greater than ½ the CBH for crown fire. E.g., if the fuel moisture content is 100% and the CBH is 2.5 m, the flame length needed to transition to a crown fire is 1.25 m. CBD affects transition to an active crown fire and is used to determine the threshold for transition to an active crown fire. Foliar moisture content is also a critical factor the ignition of crown fire activity. The map below demonstrates potential CFA given the stated parameters of this scenario ( i.e., fuel moisture, climate and 20 foot wind).

## CLASSIFICATION OF DATA SETS

The FlamMap output layers are saved to an ascii format which can then be processed in ArcMap. Once available to ArcMap, the layers can be used independently or as an overlay to see how the various fire behaviors look when combined. In order to combine layers the continuous values from FlamMap that measure the various fire behaviors must be classified into 4 classes deemed to represent increasing fire risk. The table below details how these reclassifications were made:

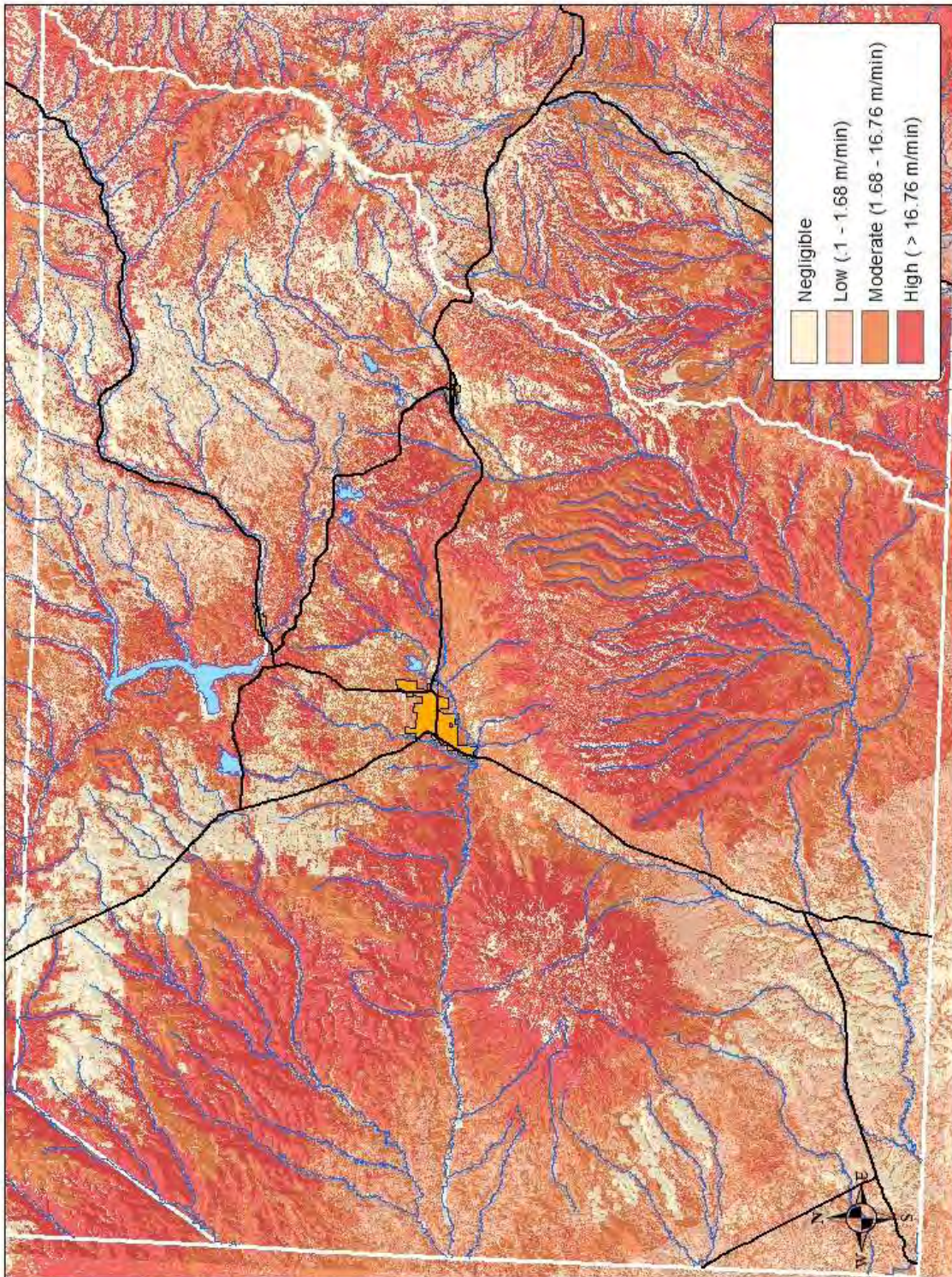
Dataset	Weight	Classes
Rate of Spread	25%	0 = negligible 1 = low (.1 - 1.68 m/min) 2 = moderate (1.68 – 16.76 m/min) 3 = high (>16.76 m/min)
Flame Length	30%	0 = negligible 1 = low (.1 – 1.22 m) 2 = moderate (1.22 – 3.66 m) 3 = high (> 3.66 m)
Crown Fire Activity	30%	0 = non-burnable 1 = surface fire 2 = passive crown fire 3 = active crown fire
Fire Line Intensity	15%	0 = negligible 1 = lower (< 100 BTU/ft/sec) 2 = moderate (100-600 BTU/ft/sec) 3 = high (>600 BTU/ft/sec)

## WEIGHTED OVERLAY ANALYSIS

Once the FlamMap output layers have been generated and reclassified, they can be combined in a Weighted Overlay Analysis, which will demonstrate overall fire risk based on all of the layers. Weighted Overlay analysis allows for giving certain layers more weight than others in the output dataset. The weights utilized in this study are as list in table xx above.

# Montezuma County Community Wildfire Protection Plan (CWPP)

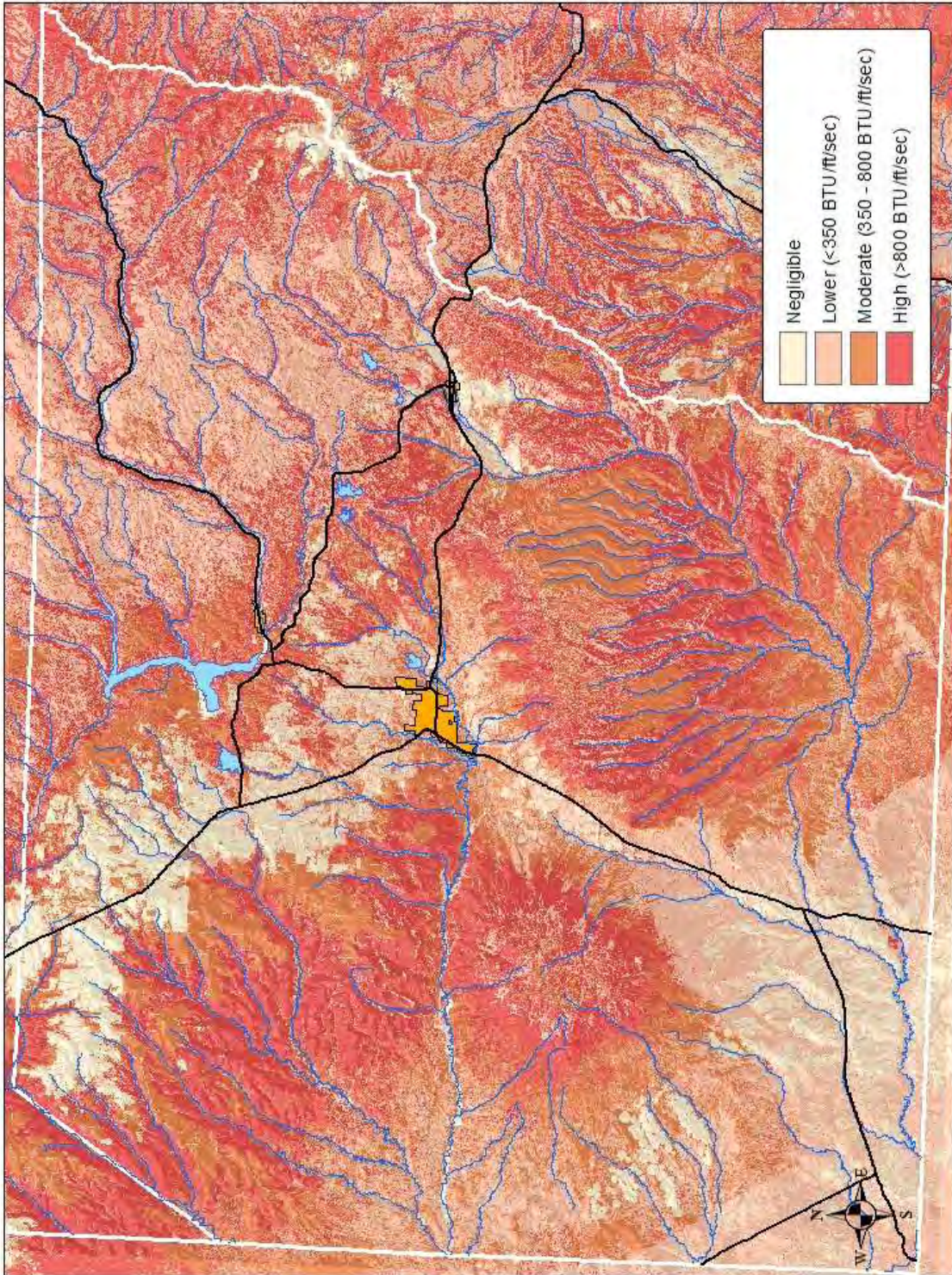
FlamMap Output - Rate of Spread





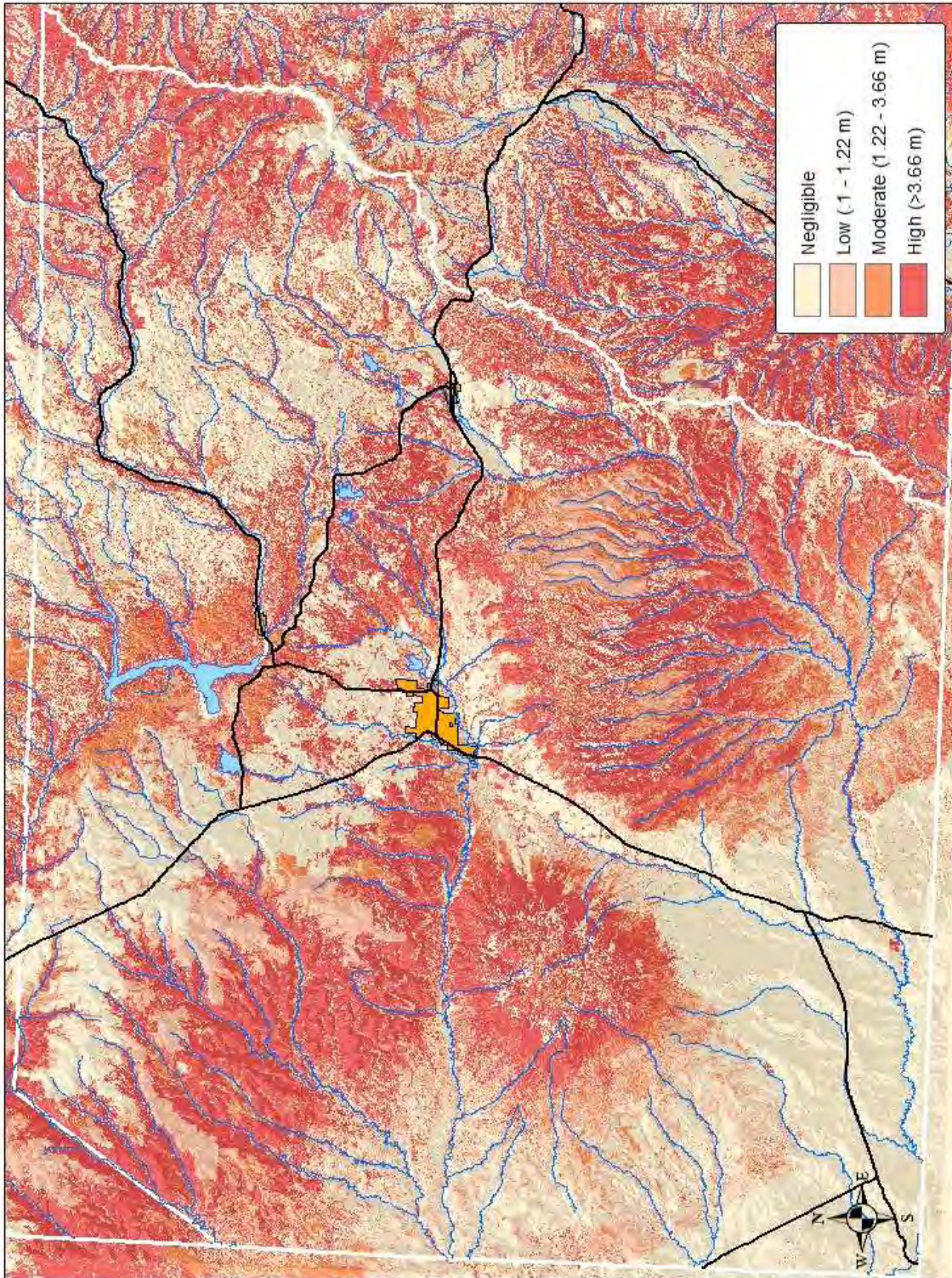
# Montezuma County Community Wildfire Protection Plan (CWPP)

FlamMap Output - Fireline Intensity



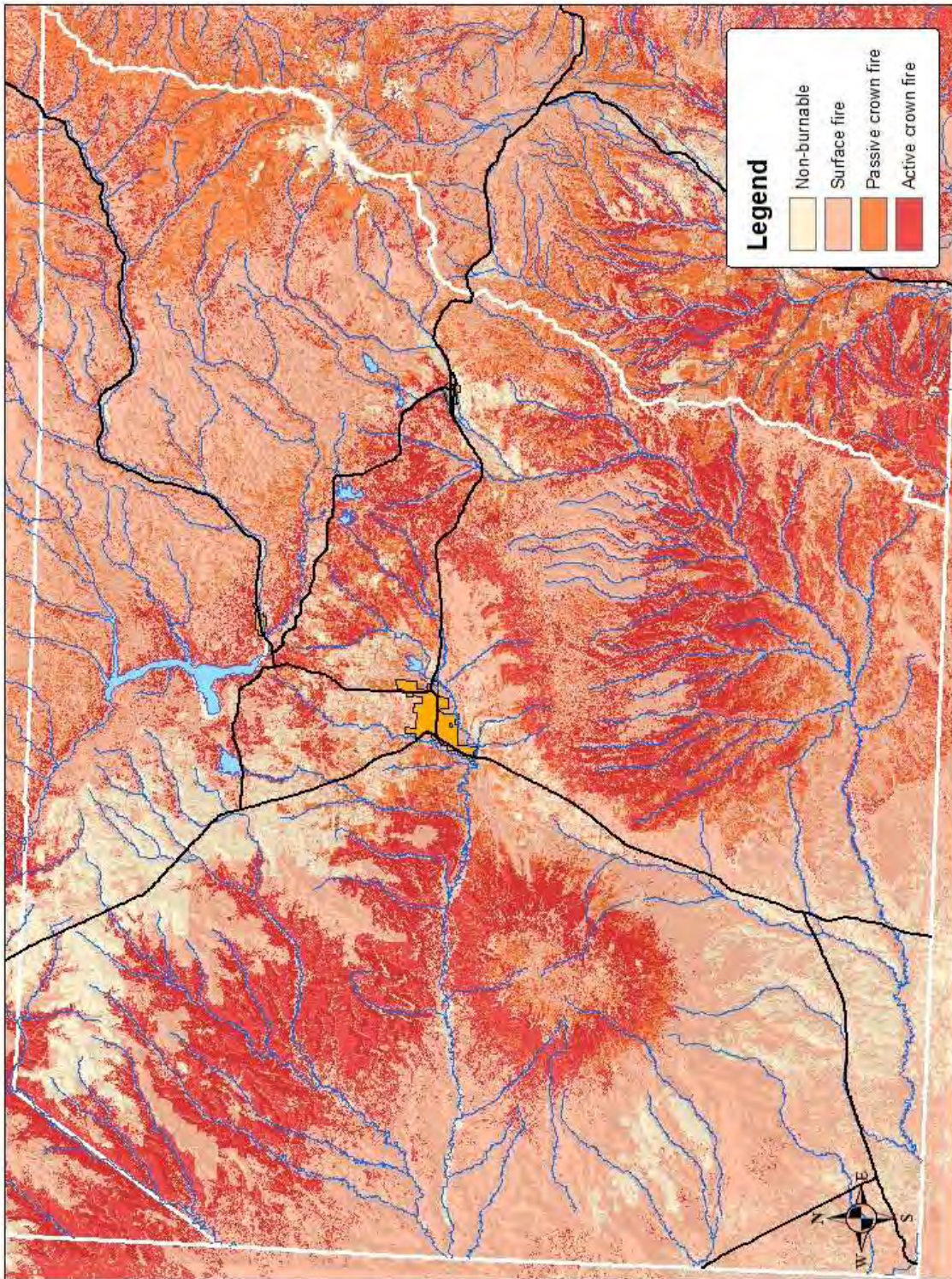
# Montezuma County Community Wildfire Protection Plan (CWPP)

FlamMap Output - Flame Length



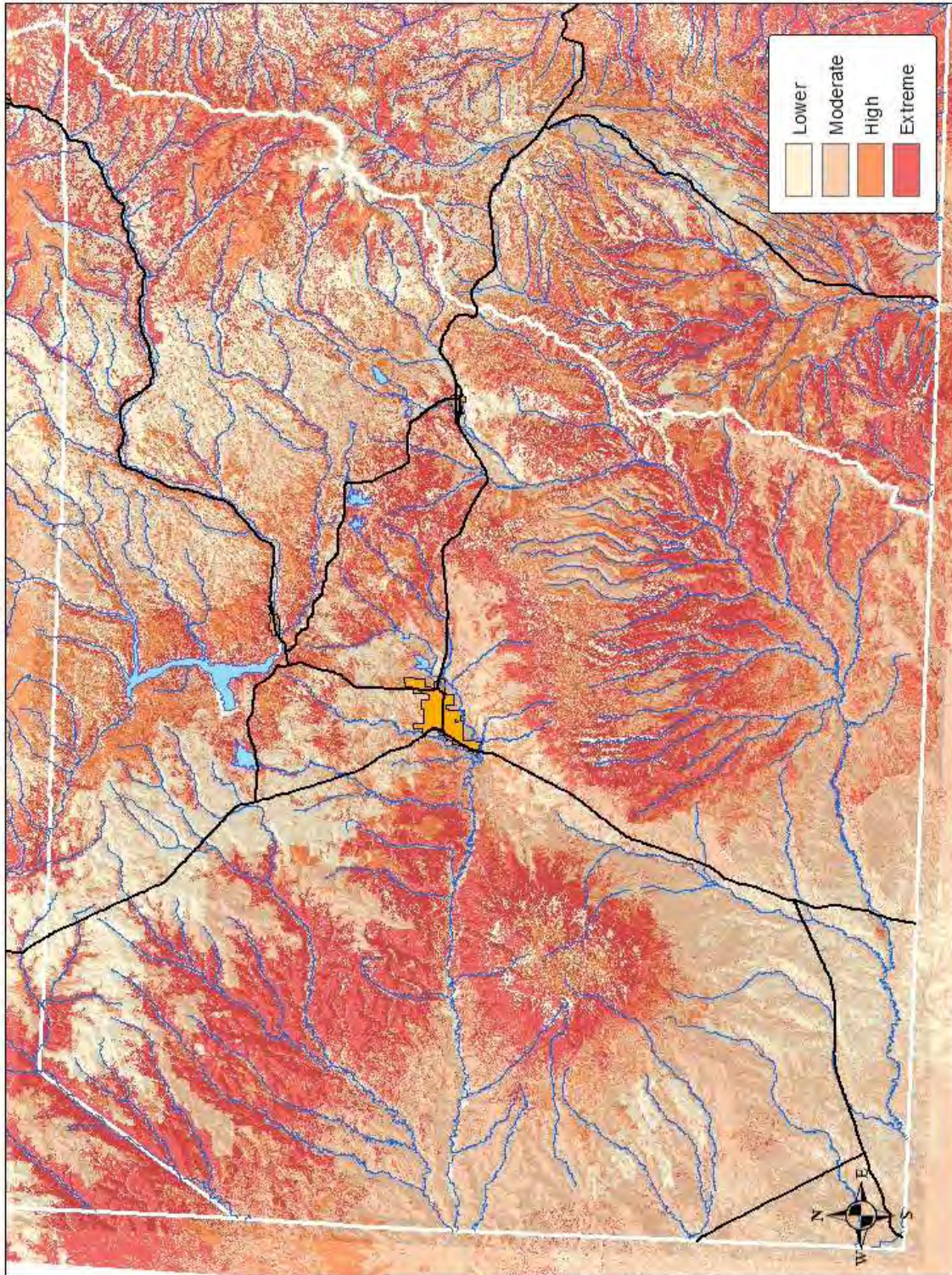
# Montezuma County Community Wildfire Protection Plan (CWPP)

FlamMap Output - Crown Fire Activity

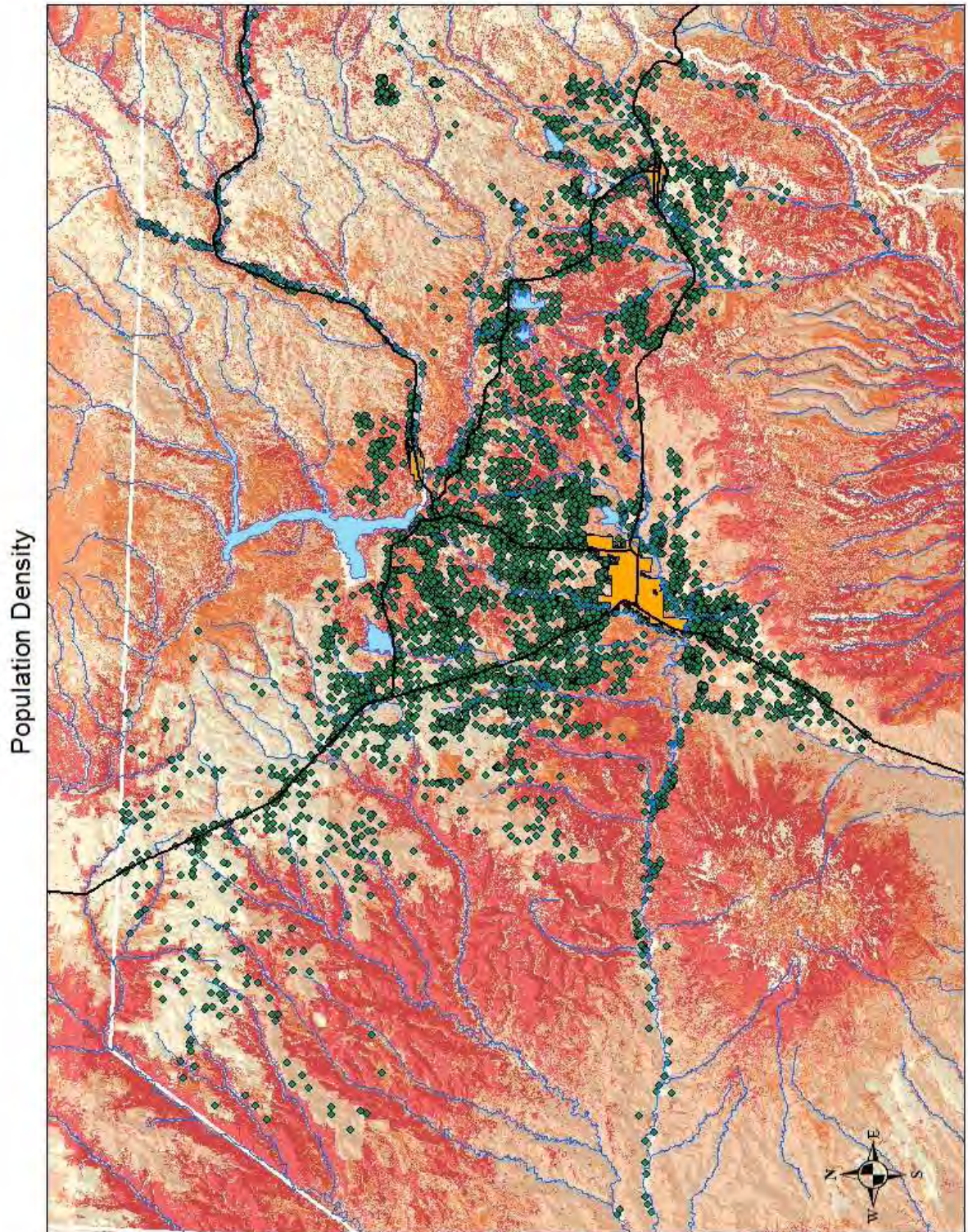


# Montezuma County Community Wildfire Protection Plan (CWPP)

Weighted Overlay Analysis  
Overall Fire Risk



# Montezuma County Community Wildfire Protection Plan (CWPP)



# Montezuma County Community Wildfire Protection Plan (CWPP)

## Footnotes

Andrews, Patricia L. 1986. BEHAVE: fire behavior prediction and fuel modeling system-BURN Subsystem, part 1. Gen. Tech. Rep. INT-194. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 130 p.

Andrews, P.L.; Rothermel, R.C. 1982. Charts for interpreting wildland fire behavior characteristics.



# Appendix B

## IMPLEMENTATION PROJECTS

# Montezuma County Community Wildfire Protection Plan (CWPP)

## BURN BANS AND PERMITTING

**Priority Level**                **1**

**Nominating Agency:**    The Sate of Colorado

**Primary Contact :**        The Colorado State Forest Service

**Date:**                        January 1, 2012

**Activity:**                    Bill 11-110 requires boards of county commissioners in counties that have 44% forested cover to develop an open burning permit system for the purpose of safely disposing of slash. Counties that already have a permit system need not meet the bill's standards unless they amend the system. The bill exempts agricultural burns, broadcast and burns conducted within federal and state guidelines that have a written prescribed fire plan from the requirement to obtain a county permit.

**Background:**                This Bill was passed into law by the Colorado General Assembly, **Senate Bill 11-110**

**Agencies Involved:**        Montezuma County/ Montezuma County Sheriff's Department

**Estimated Costs:**         \$10,000

**Funding Sources:**        Montezuma County / Montezuma County Sheriff's Department/  
Grants

**Schedule:**                    Beginning 2012



# Montezuma County Community Wildfire Protection Plan (CWPP)

## LANDSCAPE LEVEL FUELS TREATMENT

**Priority Level**                    **1 Mesa Verde Entrance**

**Nominating Agency:**    The Sate of Colorado

**Primary Contact :**        Mesa Verde National Park, BLM, Cedar Mesa Ranches Homeowners, Montezuma County

**Date:**                        December 30, 2012

**Activity:**                    Planning & conducting Mechanical Fuels Mitigation, Hand Thinning and limited prescribed burns

**Background:**              The area around the entrance to Mesa Verde National Park is heavily forested with pinion-juniper Forest and upland shrubs. This area is multi-jurisdictional with a mix of NPS, BLM, SOC and private lands. The area is interspersed with rural residences and commercial business associated with Mesa Verde National Park. Mesa Verde National Park is currently constructing a new Museum and Visitors Center at the entrance and the entrance is adjacent to the largest subdivision in Montezuma County, Cedar Mesa Ranches Subdivision. The terrain is rugged with steep, heavily vegetated slopes prone to lightning strikes or ignitions along starting along Highway 160. Prevailing winds have the potential to push fire starts northeast towards residential and commercial areas including Mesa Verde’s Museum. To make this project feasible and successful, a collaborative planning and implementation plan will need to be created with input and agreement from all stakeholders. Due to the complexity of this project it is assumed this will be a long term endeavor estimated to be completed over a ten year period.

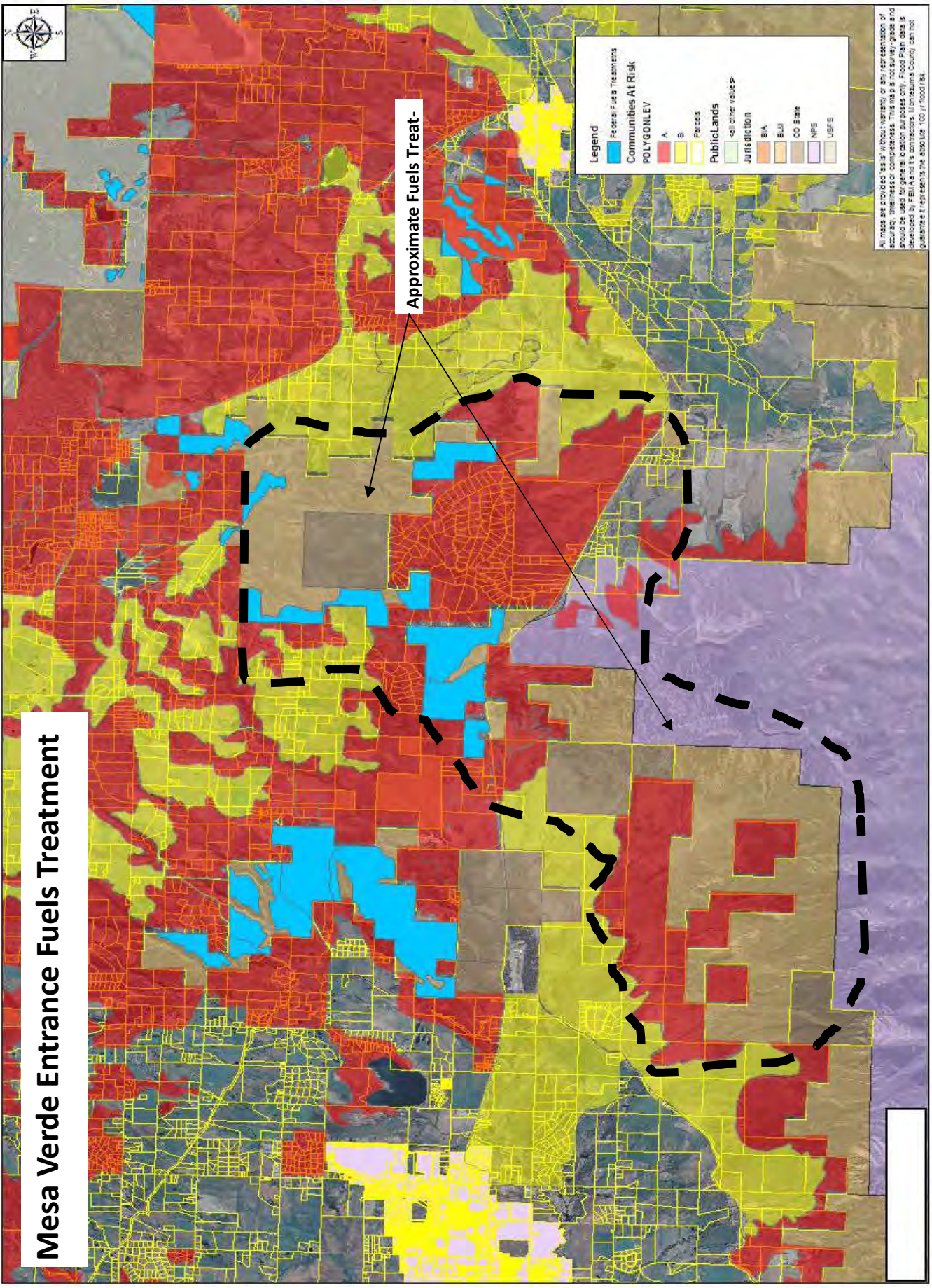
**Agencies Involved:**      Montezuma County, National Park Service, BLM, State of Colorado

**Estimated Costs:**        \$500,000-\$1,000,000

**Funding Sources:**        Grants/ NPS/ BLM budgets

**Schedule:**                    Beginning 2011 thru 2021 (10 Year Plan)

# Mesa Verde Entrance Fuels Treatment



All maps are provided "as is" without warranty, or any representation of accuracy, timeliness or completeness. This map is not a survey or globe and should be used for general location purposes only. Flood plain data is developed by FEMA and its contractors. If Larimer County can not guarantee a representative scale of 100' / 1" flood risk.

# Montezuma County Community Wildfire Protection Plan (CWPP)

## WILDLAND FIRE TRAINING

**Priority Level** 1

**Nominating Agency:** Dolores Fire District, Cortez Fire District, Mancos Fire District, Pleasant View Fire District, Lewis Arriola Fire District.

**Primary Contact :** Fire Chiefs

**Date:** Spring 2012—(ongoing as needed)

**Activity:** Provide advanced wildfire training in wildland Interface S-205, Intermediate wildland Fire Behavior S-290 and Strike Team Leaders S-336.

**Background:** The critical need to provide advanced wildland fire training is an ongoing need of the fire departments in Montezuma County. This will provide the necessary background training to elevate the skills and abilities of the county firefighters. The courses identified are the key elements in providing structural protection and safety awareness for the county residents and county firefighters.

**Agencies Involved:** County Fire Departments

**Estimated Costs:** \$10,000 per course

**Funding Sources:** Grants

**Schedule:** Beginning 2012

# Montezuma County Community Wildfire Protection Plan (CWPP)

## WILDLAND FIRE MITIGATION PLANNING

**Priority Level** 1

**Nominating Agency:** Montezuma County

**Primary Contact:** Montezuma County Sheriff/ Montezuma County Planning

**Date:** Spring 2012

**Activity:** There is a need for mitigation planning in the county.

**Background:** There currently are few shovel-ready projects for wildfire mitigation in the county, especially within existing subdivisions. This has led to the loss of funding that could have been made available in 2011 from Firewise and CFSF. The use of consultants who reside in the county could be easily coordinated by the County Wildfire Education and Prevention Specialist. The Montezuma County Planning Department will need to establish a policy on standard qualifications for consultants. To make this program successful it will also require strong coordination with federal land management agencies.

**Agencies Involved:** Fire Districts/ County Planning

**Estimated Costs:** \$35,000 /year for coordination

**Funding Sources:** Grants/ NPS/ BLM/ FS assistance

**Schedule:** 2012—(ongoing)

# Montezuma County Community Wildfire Protection Plan (CWPP)

## APPARATUS NEED

**Priority Level** 2

**Nominating Agency:** Dolores Fire District

**Primary Contact:** Fire Chief

**Date:** Fall 2011

**Activity:** Purchase a 3,000 gallon water tender.

**Background:** An additional water tender to supplement the Dolores Fire Department is a serious need. This would allow the fire department to be more effective and provide a safety net for initial attack on county wildfires.

Because of the undependable nature of water supplies in the county all Fire Protection Districts need additional water tenders. This apparatus item will also be monitored for ongoing needs within other districts.

**Agencies Involved:** Dolores Fire Department

**Estimated Costs:** \$125,000

**Funding Sources:** Grants

**Schedule:** 2012

# Montezuma County Community Wildfire Protection Plan (CWPP)

## BURN CREW

**Priority Level** 2

**Nominating agency:** Montezuma County

**Primary Contact:** Montezuma County Sheriff/ Fire Protection Districts/  
Montezuma County

**Date:** Spring 2012

**Activity:** There is a need for a ignition specialist to do prescribed burning

**Background :** The issue of disposing of slash piles is a growing need in the county. Having a county employee/crew with the expertise to burn slash piles in the winter would be of great help. This would require identifying a current employee who has the wildfire background or hiring a part-time employee/crew for the months of January/February. This project may also include the identification of designated burn sites for collective slash burns or identifying and administering alternative methods of slash disposal.

**Agencies Involved:** Fire Districts/ Montezuma County

**Estimated Costs:** \$10,000 /year

**Funding Sources:** Grants, Fire District budget or Montezuma County budget if an existing employee can be assigned.

**Schedule:** 2012- (ongoing)

# Montezuma County Community Wildfire Protection Plan (CWPP)

## ACCESS EGRESS FROM SUBDIVISIONS

**Priority Level**            **2**

**Nominating agency:** Montezuma County

**Primary Contact:**        Montezuma County Planning

**Date:**                        Spring 2012

**Activity:**                    Revise Land Use Code to ensure that where feasible, and appropriate, proposed new subdivision developments will be designed with more than one egress in and out of the subdivision, and that access roads/ driveways are dimensionally adequate for emergency response.

**Background:**                This basic safety requirement will help ensure that the public and the responding firefighters have an escape route in the event of a wildfire.

**Agencies Involved:**        Montezuma County Planning

**Estimated Costs:**         \$15,000

**Funding Sources:**         Grants / County Budget

**Schedule:**                    2012

# Montezuma County Community Wildfire Protection Plan (CWPP)

## DRY HYDRANTS

**Priority Level**            **2**

**Nominating Agency:** Dolores Fire District

**Primary Contact:**        Fire Chief

**Date:**                        Spring 2011

**Activity:**                    There is a need for additional water sources for the fire departments to draft from in the case of a wildfire.

**Background:**                Two sites have been identified that would provide easy and time-saving access for wildland fire engines to replenish their water tanks. One is a pond on Summit Ridge and the other is the gravel pit pond on the Dolores River.

**Agencies Involved:**        Dolores Fire District

**Estimated Costs:**         \$2500 per dry hydrant

**Funding Sources:**         Grants

**Schedule:**                    2012



# Montezuma County Community Wildfire Protection Plan (CWPP)

## SOUTHWEST YOUTH CONSERVATION CORPS CREW

**Priority Level**            2

**Nominating Agency:** Montezuma County

**Primary Contact:**        County Sheriff

**Date:**                        fall/2011

**Activity:**                    There is a need for a work force that could provide wildfire mitigation for the county.

**Background:**                The use of a labor force to mitigate the hazards from wildfires would be a wonderful use of county youth. This could provide the youth with meaningful summer work as well and help meet a need in the county for wildfire mitigation. The county could hire a 5 person mitigation crew with a crew leader or contract the work out to the Southwest Colorado Youth Conservation Core. This crew could interface with subdivisions that have prepared fuels mitigation plans in the past but have not completed the work.

**Agencies Involved:**        Sheriff Department

**Estimated Costs:**         \$40,000 salary/equipment

**Funding Sources:**         Grants

**Schedule:**                    2012

# Montezuma County Community Wildfire Protection Plan (CWPP)

## MONTEZUMA COUNTY DETENTION CENTER WORK CREW

**Priority Level**            **3**

**Nominating Agency:** Montezuma County

**Primary Contact:**        County Sheriff

**Date:**                        fall/2011

**Activity:**                    There is a need for a work force that could provide wildfire mitigation for county residents that cannot afford the cost of mitigating their wild fire hazard.

**Background:**                The use of the court ordered UPS (useful public service) workers to provide the labor force to mitigate the hazards from wildfires would be a character building exercise for those ordered to do useful public service. The need to provide a county or other qualified employee who would supervise the work force would be necessary.

**Complication:**                **The use of UPS workers carries potential liability issues and more research will need to be done to implement a program like this. Implementation would be contingent upon resolving liability issues and procurement of grant resources.**

**Agencies Involved:**        Sheriff Department/ State of Colorado

**Estimated Costs:**         \$25,000 for the county supervisor salary

**Funding Sources:**         Grants

**Schedule:**                    2012

# Montezuma County Community Wildfire Protection Plan (CWPP)

## MONTEZUMA COUNTY FUELS MITIGATION PROJECT

**Priority Level**            **1**

**Nominating agency:** Cortez Fire Department

**Primary Contact:** Cortez Fire Department

**Date :** Spring /2012

**Activity:** Head of Alkali Canyon Fuels Project Planning

**Background:** Considerable defensible space work has been completed at several private residences and at a large subdivision (Indian Camp) at the head of Alkali Canyon. Additional work needs to be completed at several private land parcels to effectively complete an anchor point and provide a firing line for approaching wildfires from the lower Alkali Canyon. Contacts have been made with Crow Canyon Archaeological compound (Philip Nelson), Larry Berger ( 11333 County Road ZZ) and Gayland Larson (neighbor of Larry) whom are all enthusiastic for the project. The work that needs to be completed is a hazard fuels project with the prescription criteria for the fuels reduction, map location, and a timber cruise to mark the fuels to be reduced. This work could be completed by a fire department RX specialist or private consultant. The planning work would lead to additional fuels reduction work to help complete the defensible space for the residences of the head waters of Alkali Canyon.

**Agencies Involved :** Cortez Fire Department

**Estimated Costs:** \$1,000

**Funding Sources:** Grants

**Schedule:** 2012

# Montezuma County Community Wildfire Protection Plan (CWPP)

## MONTEZUMA COUNTY FUELS MITIGATION PROJECT

**Priority Level**            2

**Nominating Agency:** Towaoc Fire Protection District

**Primary Contact:**      Fire Chief

**Date:**                      Spring 2012

**Activity:**                   Rescue/ Brush Truck

**Background:**            The bush hog crew at Towac needs to be restarted. The crew could be comprised of young adults who need meaningful work for the spring and summer season. The crew could be supervised by a crew leader from the maintenance department. The prescription for the amount of fuels that would be reduced could be provided by a professional fireman from the fire department. The homes that would receive the fuels treatment could be identified by the Elders Council in Towac. Weed trimmers could be purchased and maintained by the fire department. If additional equipment such as a tractor and bush hog were needed these could be provided by the maintenance department.

**Agencies Involved:**    Towaoc Fire Department

**Estimated Costs:**      \$5,000/ year

**Funding Sources:**      Grants

**Schedule:**                 2012

# Montezuma County Community Wildfire Protection Plan (CWPP)

## MONTEZUMA COUNTY FUELS MITIGATION PROJECT

**Priority Level**            **2**

**Nominating Agency:** Bureau of Indian Affairs/ Towac Fire

**Primary Contact:**      Fire Management Officer/ Fire Chief

**Date:**                      Spring 2012

**Activity:**                  Defensible Space

**Background:**            A defensible space fuels projects needs to be completed in conjunction with a large hydro ax project located in southwest Towac. This project will complement the hydro ax project by reducing the hazardous fuels located in close proximity to structures. This is the 200 foot distance between the structure and the hydro ax project. The project will be coordinated with the BIA fuels specialist at Towac. The crew could be provided by day labor at the community center.

**Agencies Involved:**    BIA Towaoc

**Estimated Costs:**      \$25,000/ year

**Funding Sources:**      Grants

**Schedule:**                2012

# A Community Fire Plan

A Part  
of the  
National  
Fire Plan

# Montezuma County

## Supplement I Fire Management Polygons



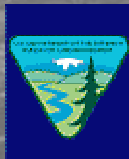
## Preface

The Polygon mapping effort has been made possible through a generous contribution from the Bureau of Land Management as an extension of their role in the National Fire Plan. Through the BLM partnership, the local community has been able to identify regions of urban wild-land/ urban interface thought to be at risk from wild-land fire. Working together to find common management goals for urban interface areas has resulted in the expansion of partnerships beyond the BLM to include the National Forest Service, the National Park Service, The State of Colorado and the Ute Mountain Ute Tribe.

The polygon map has provided a mechanism to identify specific urban interface areas within the county thought to be at risk based on significant cultural or resource values. These areas have been targeted and prioritized for on-going public education and private fuels reduction projects. Corresponding fuels reduction efforts including mechanical thinning treatments and prescribed burns on key parcels of BLM and National Forest Lands are already underway. The National Park Service is currently developing a polygon map for lands which they administer which will coincide with the county polygon map. The newly designated Canyons of the Ancients National Monument will soon follow suit.

Special thanks goes out to the Montezuma County GIS/ Planning Department for their dedicated technical support and consultation.

Additional thanks goes to the Montezuma County Sheriff's Department, and local Fire Protection District members for sharing their expertise, and countless hours of public outreach spreading the message of defensible space.

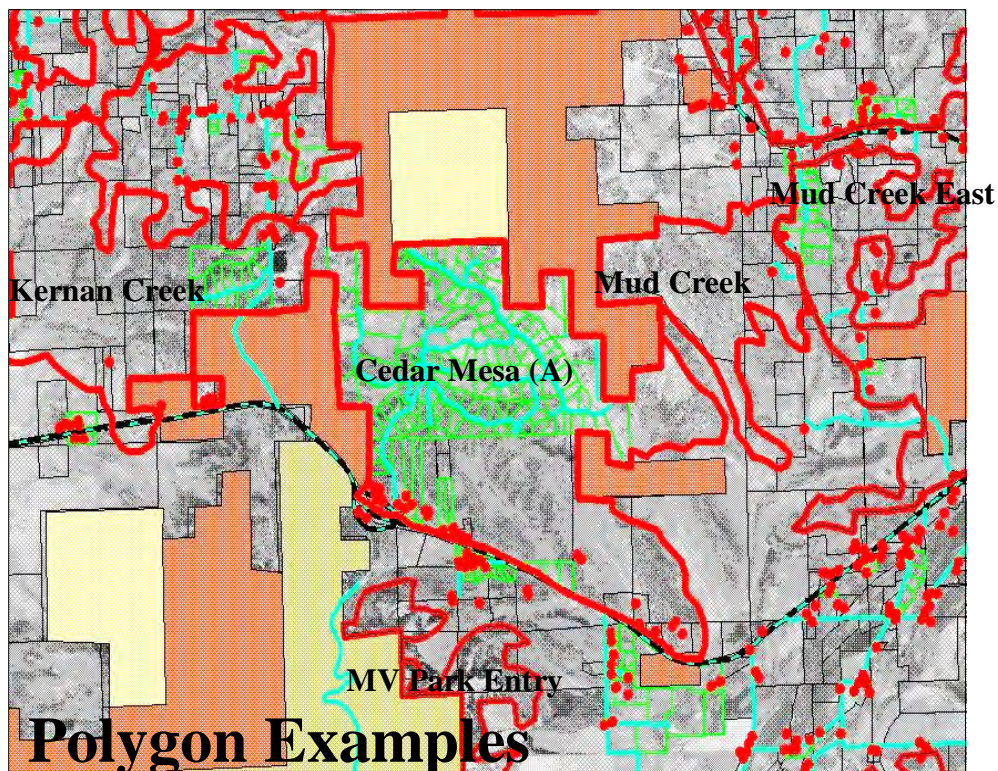


# Montezuma County Community Fire Plan Supplement I Fire Management Mapping Project

In 2000, the Colorado Legislature passed legislation which redirects the responsibilities for wildfire management within in the State. Popularly known as House Bill 1283, the bill shifts the focus of the Sheriff's Department, State Board of Agriculture, and the State Forester from the prevention and control of wildfires, to the management of wildfires.

This legislation provides the authorization for counties to develop fire management plans, and corresponding county policies, for the regulation of natural and prescribed burns on State or private lands within their jurisdiction.

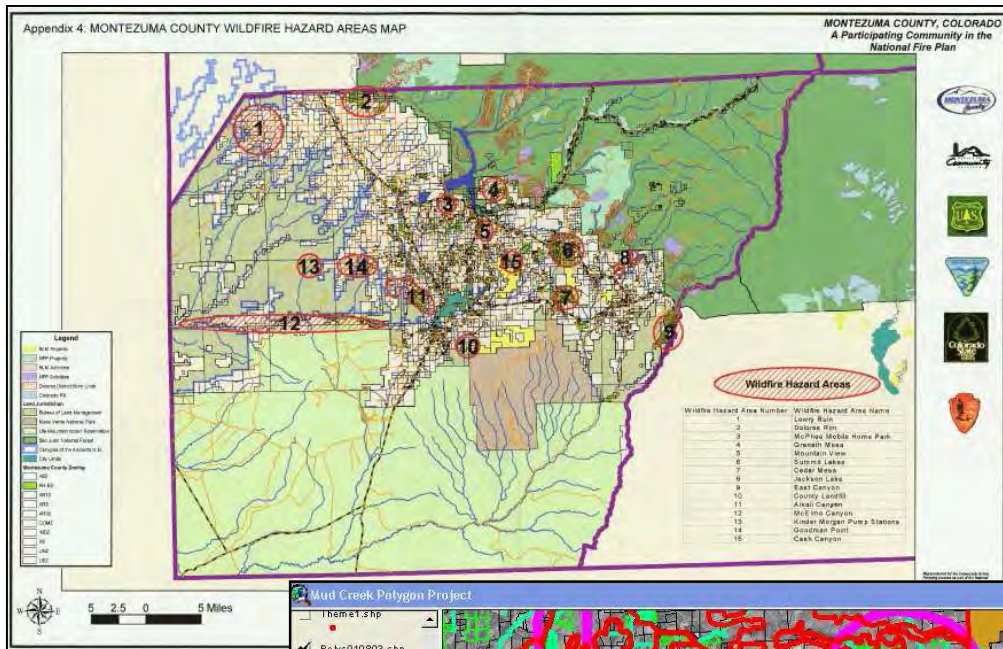
With the shift in focus from prevention and suppression, to management, more detailed plans for State and private lands are needed. Plans will start by dividing the county up into logical management units (polygons) based on access, topography, residential development and changes in fuel loads. Additional cultural and resource values that might be damaged or destroyed by wildfire are identified and added to the map to aid in the process of polygon classification. Two classifications of polygons, A & B will then be defined based on management objectives.





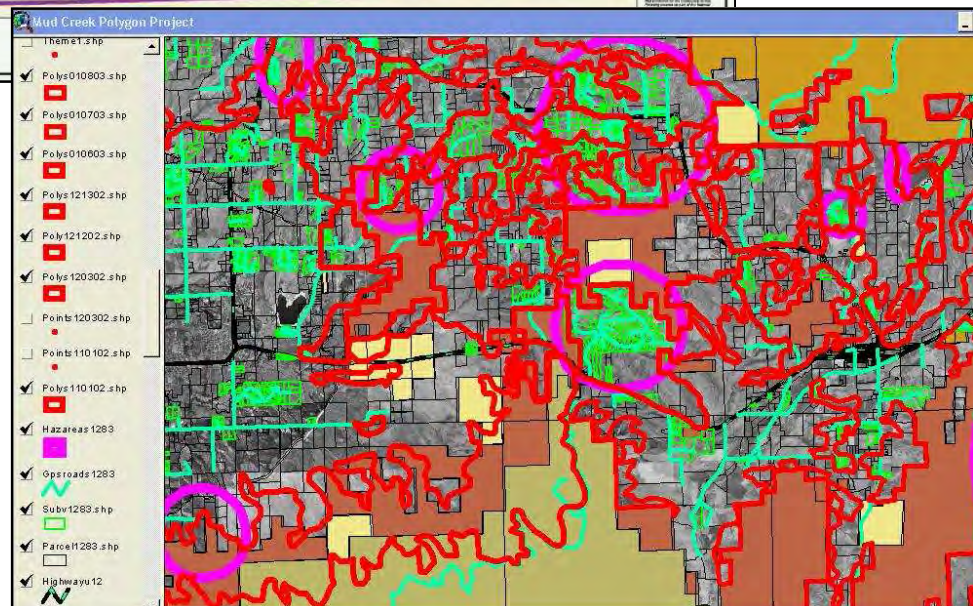
# Montezuma County Community Fire Plan Supplement I Fire Management Mapping Project

The polygon project was initially started with a casual meeting between local fire officials, The Sheriff's Department and County Planning Department. During this meeting area Fire Chiefs and the Sheriff helped to generate a "Fire Risk" map of areas that they had concerns about. The initial mapping yielded 15 areas of concern. These areas became focus points during the polygon mapping effort. As the polygon mapping has become more refined the initial 15 areas of concern have been divided into smaller management units based on their individual characteristics.



Left; The original Wildfire Hazard Area map with 15 "Bubbles" which broadly identify the areas of concern.

The polygon map at right illustrates how polygons were drawn in relation to the original hazard area "Bubbles".



# Montezuma County Community Fire Plan Supplement I Fire Management Mapping Project

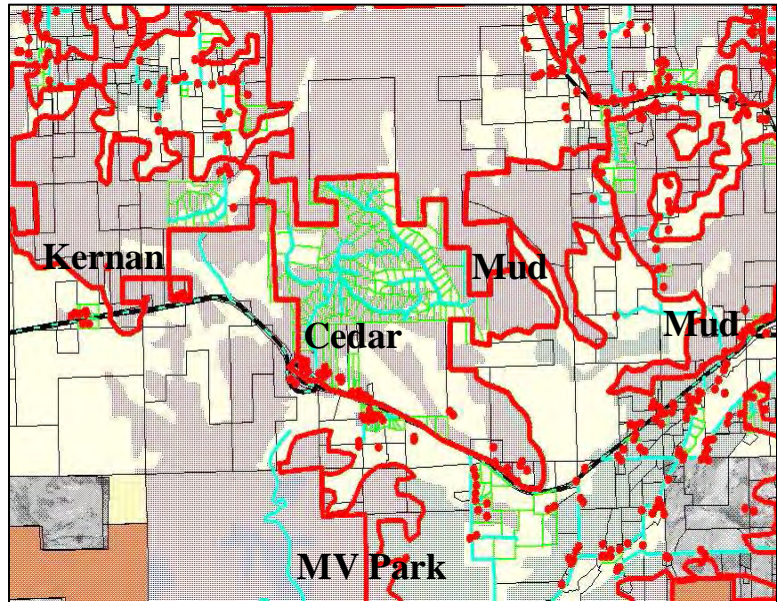
## Fuel Hazard Mapping:

Polygon Mapping was accomplished using three data sets.

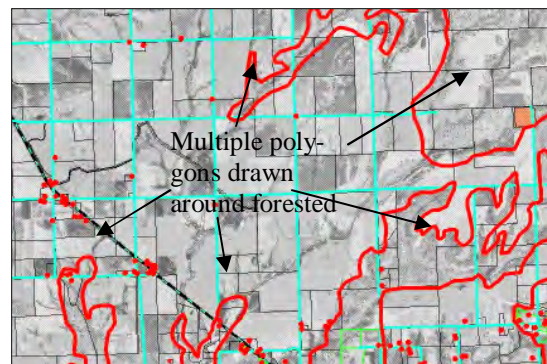
- 1.USGS, L.U.L.C. Data. For cover type.
- 2.USGS. 30m D.E.M.s for slope and aspect.
3. USGS Digital Photo Orthoquads.

The Red, Yellow, Green and Blue areas shown on the map at upper right indicate levels of fuel hazard from high to low respectively. This data was compiled by Rob Peterka, from the Montezuma County Planning Department.

Using this data; Red areas would typically indicate mixed forest cover types having a fairly large quantity of fuel. Yellow areas typically indicate thick shrubs or tall grasses which produce less overall fuel. Green areas indicate short grasses & sparse shrubs or agricultural lands that do not produce large volumes of long burning fuels. blue areas indicate water bodies, barren ground or other areas which have very few fuels.



**P**olygons are created by using the fuel hazard map shown above and aerial photography such as that shown below. Polygons can then be drawn around areas of heavy fuel loads. Polygons are used to create separate management areas based on access from county roads, proximity to developments such as subdivisions, cultural values such as water sheds or highly sensitive visual corridors like the Dolores River Valley. Polygons are then assigned names, and an assessment is made of the potential hazard, and possible mitigation measures, suppression strategies can also be reviewed.



# Montezuma County Community Fire Plan Supplement I Fire Management Mapping Project

## The Two Classifications

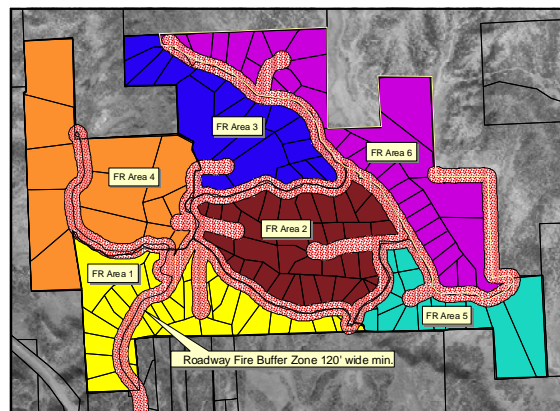
### “A” polygons

These are areas where conditions where wildfires are highly undesirable. Fires in these areas would pose a great threat to life, property, or other resources. Management objectives for “A” polygons will focus on aggressive suppression, prevention and educational efforts. Defensible space, and fuels reduction efforts will be concentrated in these polygons.

### “B” polygons

These are areas where wildfires are undesirable under the current conditions. Fires in these areas can pose threats to public safety or may be difficult to contain. Management objectives for “B” polygons will include aggressive suppression and prevention efforts. Prescribed fires and large scale mechanical fuels reduction efforts will be concentrated in these areas in effort to achieve more desirable conditions.

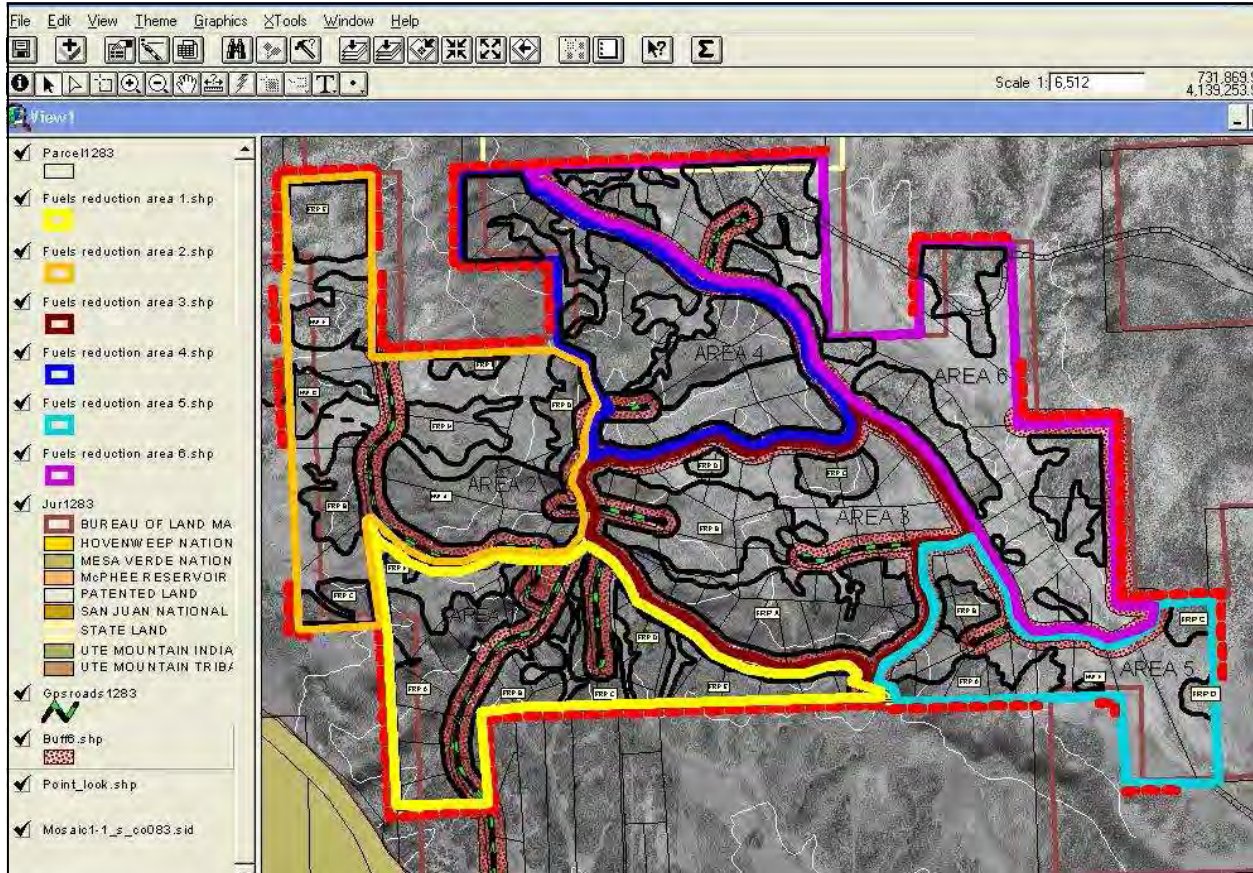
Once polygons are defined, they are named, and the coordinates nearest the center of the polygon are recorded. A quick analysis providing a description of the terrain, fuel hazard, access roads, bridges, potential water sources, and other risks is compiled. This analysis will provide an additional resource for fire managers to help them target key areas for education.



Further analysis is planned for all A & B polygons to develop strategic action plans as seen in upper left. This analysis will look at specific stands of trees, the acreage of each stand, slopes over 30 percent, aspect, and improved properties. Cost estimates can be produced and areas can be identified for specific mitigation methods.

The polygon planning effort is a means by which more logical connections can be made between the County Fire Plans, and plans developed for public lands. As polygon plans are completed they will be adopted into the County Fire Plan.

# Montezuma County Community Fire Plan Supplement I Fire Management Mapping Project



## So where do we go from here? The next steps....

Work is already under way to further refine the existing polygons and to focus on concerns within each polygon. In the photo above, the Cedar Mesa Ranches subdivision makes up a large portion of the Cedar Mesa Polygon. With 139 lots, heavily timbered steep slopes, and only one access road, the Cedar Mesa Ranches subdivision is one of the top concerns for the County. Numerous meetings with the Cedar Mesa Ranches Home Owners Association were held in effort to further fuels reduction and defensible space work on the ground.

The map above illustrates how the subdivision has been divided into neighborhood management areas (colored lines). Each management area will choose a resident to coordinate defensible space, fuels reductions, and evacuation plans for that area. Black lines on the above map show where heavy fuels exist within each neighborhood area. The acreages of these areas can be determined and used to strategically plan expenditures. Future analysis will include mapping slopes of 30% and greater, improved properties, possible new emergency exit routes, additional areas where defense lines can be established, and areas where treatments have been completed. These maps will be used by the County Fire Warden in door to door communications efforts with residents.



# (A) Polygons

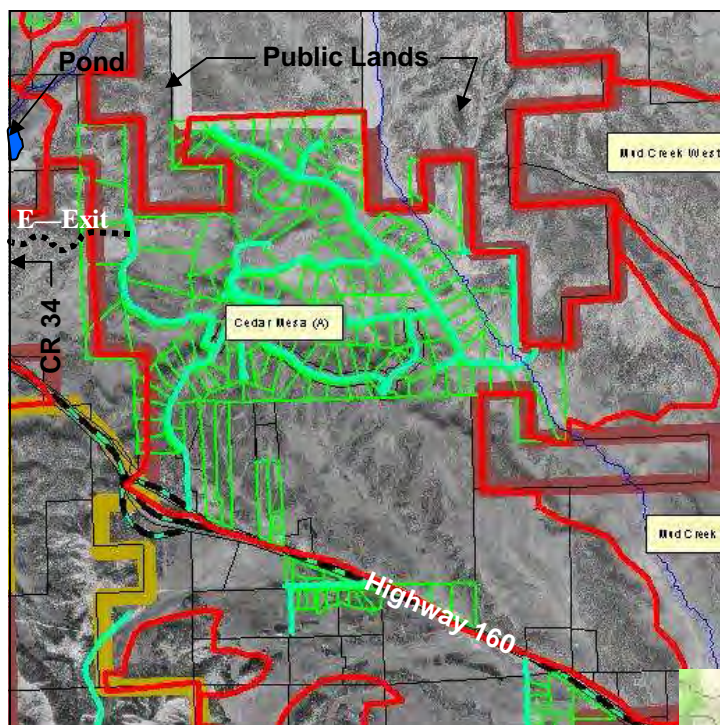
Level 1 Hazard Areas

# Montezuma County Community Fire Plan

## Cedar Mesa

Fire Management Classification (A)  
Elevation: 7,143'

Latitude: N37 21.602'  
Longitude: W108 24.176'

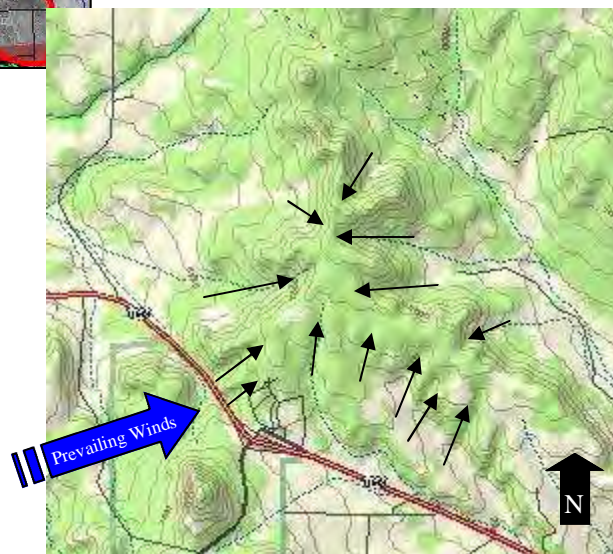


*Left:* The aerial map indicates that the Cedar Mesa Polygon is a patchwork of forested areas, shrub cover, and open meadows. Vegetation is dominated by Pinion and Juniper stands, Sagebrush, and grasses. Pinion trees have been experiencing a high mortality rate in the area due to Ips Beetle infestations.

*Below:* The topographic map shows the central portion of the polygon to be an area of high ground with numerous "chimney" canyons (indicated by black arrows) converging near the middle. The Cedar Mesa Subdivision lies directly across the area where these chimneys converge. Fuels treatments on public land to the west have been done using a Hydro-ax. Additional mechanical treatments are planned on the east side.

The Cedar Mesa Polygon is bounded on the south by Highway 160, public lands to the north and east and west, and including CR 34 to the west. The polygon contains Montezuma County's largest subdivision. The Cedar Mesa Subdivision consists of 139 lots with one main access road. There is an approved emergency exit on the west side of the subdivision which crosses BLM lands and links with CR 34. Access into the subdivision is from Highway 160 via the Mesa Verde exit. Subdivision Roads are adequate for emergency vehicles. Some private drives may need additional work to ensure emergency access. The Cedar Mesa Subdivision has fire hydrants and there are hydrants across Highway 160 at the Mesa Verde entry. Other possible alternative water sources include Mud Creek to the east and a small pond to the north west of the polygon.

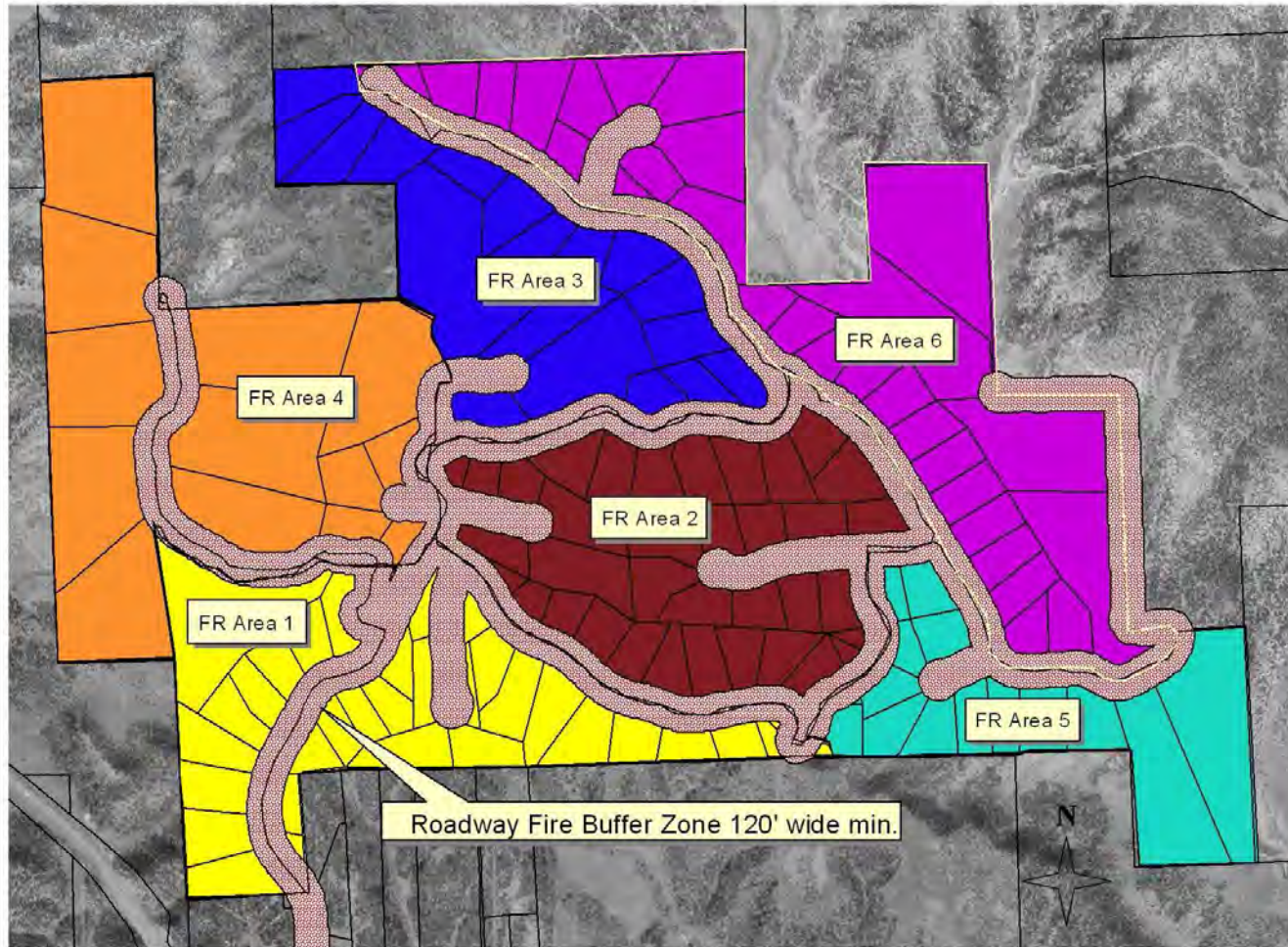
**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, and the development of an evacuation plan. (Work is already underway by the Homeowners association)



**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, and the development of an evacuation plan.

**Additional Mitigation Measures** could include continued agency thinning on public lands in the central area of the polygon.

# Cedar Mesa Fire Plan (Fuels Reduction Priority Areas Phases 1 & 2)



## Phase 1

### Roadway Fire Buffer Zone

Consists of approximately 45 acres.

## Phase 2

### Fuels Reduction Priority Area 1

Consists of 31 lots covering approximately 277 acres.

### Fuels Reduction Priority Area 2

Consists of 36 lots, covering approximately 319 acres.

### Fuels Reduction Priority Area 3

Consists of 18 lots, covering approximately 258 acres.

### Fuels Reduction Priority Area 4

Consists of 13 lots, covering approximately 397 acres.

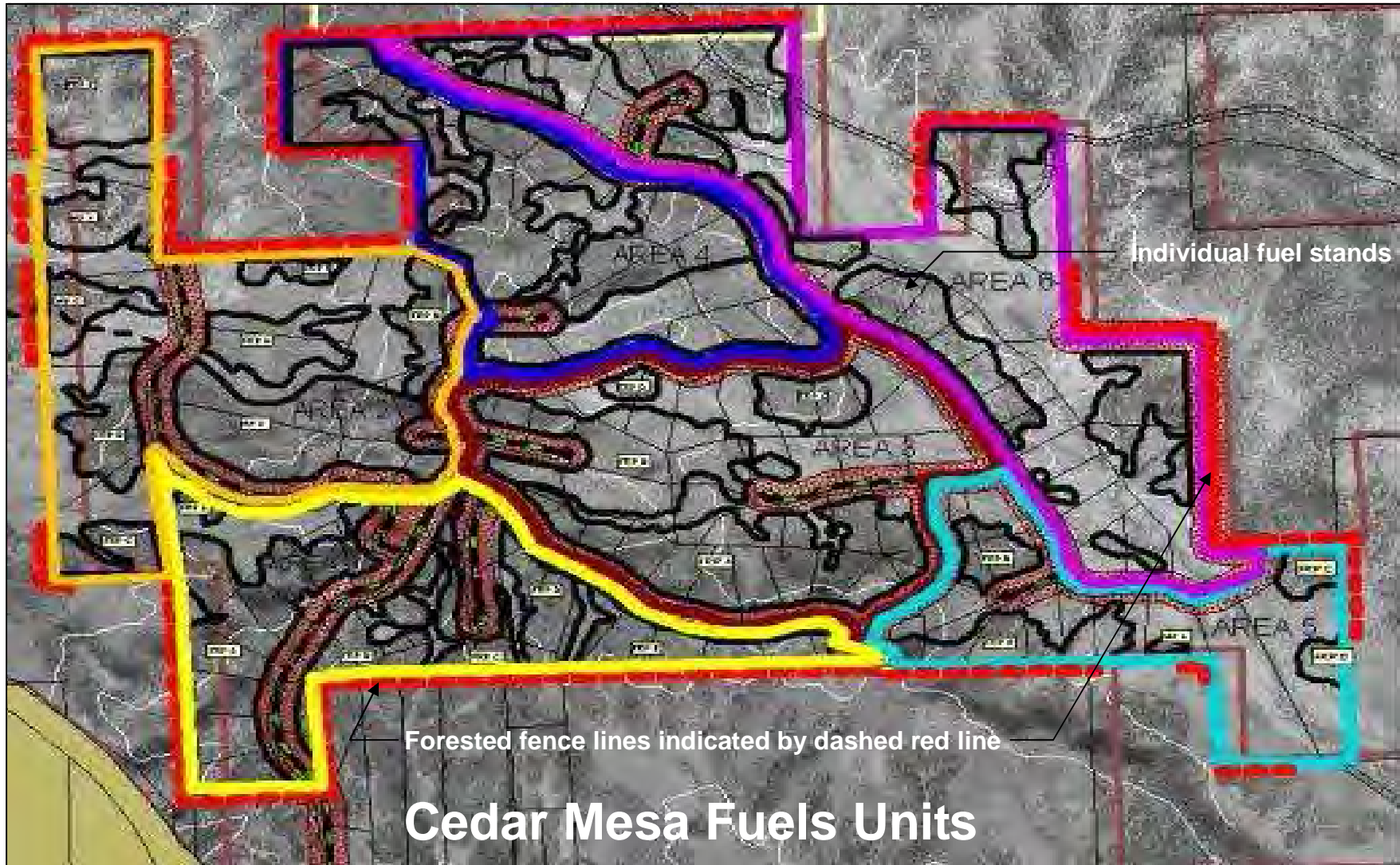
### Fuels Reduction Priority Area 5

Consists of 14 lots, covering approximately 185 acres.

### Fuels Reduction Priority Area 6

Consists of 29 lots, covering approximately 436 acres.

The concept for the Cedar Mesa Fire Plan is built around creating 6 neighborhood areas using access roads as boundaries. A six member "Fire Committee" would be created with a representative from each neighborhood. The Fire Committee would function as a sub-group of the homeowners association. Each representative would serve as a coordinator for their own neighborhood. The coordinators role would include promoting the creation and maintenance of defensible space, promoting and monitoring broader fuels reduction efforts, reviewing driveway access and addresses, and working with absentee landowners to meet fuels reduction objectives. Coordinators would also develop neighborhood evacuation plans as a part of a large evacuation plan. The evacuation plan would which identifies individuals in need of special consideration, and those who may need assistance with livestock. Additionally a phone tree would be developed to facilitate emergency communication. Because roadways serve as existing fire breaks individual homeowners would be encouraged conduct selective thinning on their own property within 60' of the centerline of the road as an enhancement.



The Cedar Mesa Fuels Units map uses parcel information superimposed over aerial photography. This allows individual stands of fuel to be mapped in relation to the parcel ownership. With this information parcel owners can better determine the area that they are responsible for. Square footages or acreages can be determined for each parcel enabling landowners to develop more precise cost estimates and better strategies for more comprehensive treatments. In addition forested fence lines along subdivision boundaries have been mapped and landowners with property along these boundaries are encouraged to conduct selective thinning in effort to create additional fuel breaks. The fuels break map also identifies the official emergency exit route. Other access/ egress routes are also identified and should be investigated by the homeowners association for their potential as alternative routes. Additional parcel information is available through the Montezuma County Planning office to assist the Homeowners Association in negotiating access across adjacent properties.



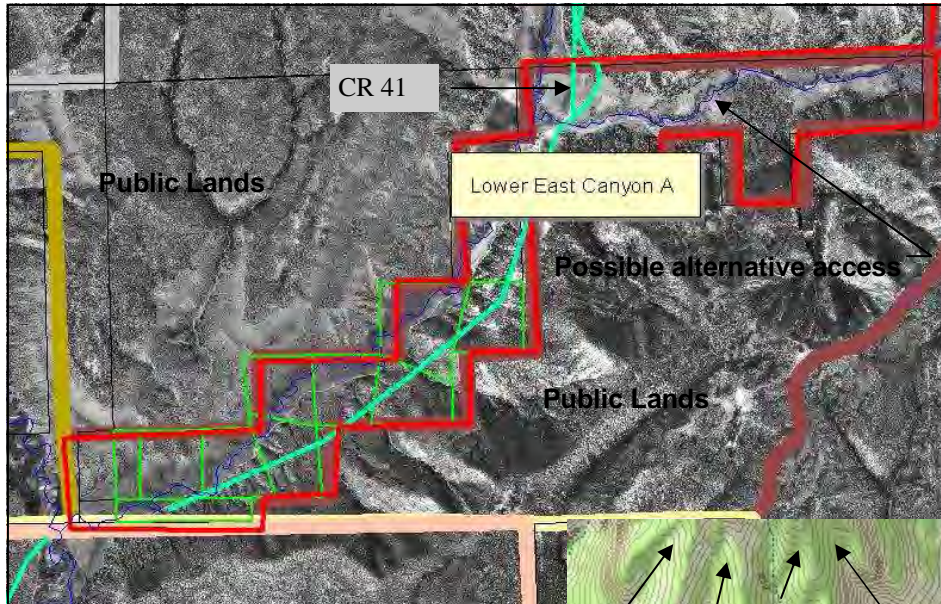


# Montezuma County Community Fire Plan

## Lower East Canyon

Fire Management Classification (A)  
Elevation: 6,312

Latitude: N37 13.491  
Longitude: W108 19.156



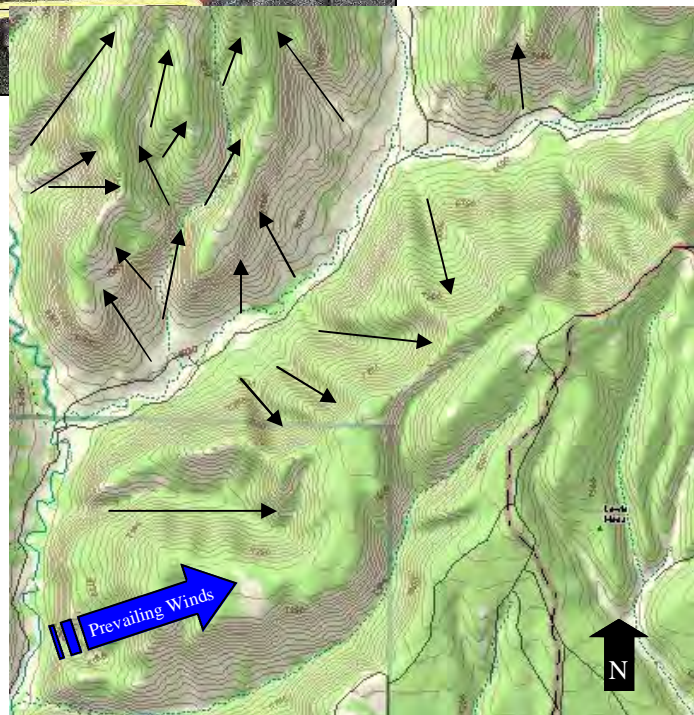
**Left:** The aerial map of the Lower East Canyon Polygon shows dense vegetation consisting primarily of Oak brush mixed with Pinion and Juniper. Residential Access is via one road.

**Below:** The topographic map illustrates the ruggedness of the terrain and steepness of the slopes.

The Lower East Canyon Polygon has a residential subdivision consisting of 10 lots. This subdivision is access by CR 41 otherwise known as Weber Canyon Road. CR 41 is adequate for emergency vehicles, and the polygon is approximately 7.5 miles south of the Mancos Fire Station. Alternative access through the Elk Springs Subdivision may be possible following CR 44.5. The Mancos River at the far west end of the polygon, could be an alternative source of water. There are no Fire Hydrants. The Subdivision represents a moderate density development in steep, heavily forested terrain surrounded by Public Lands, it is classic urban interface. Therefore the subdivision has received an A rating.

Mitigation Measures may include a strong campaign to educate residents and property owners about defensible space, thinning, and the development of an evacuation plan.

**Additional Mitigation Measures,** could include a fuels analysis and possible agency thinning on public lands surrounding the polygon.



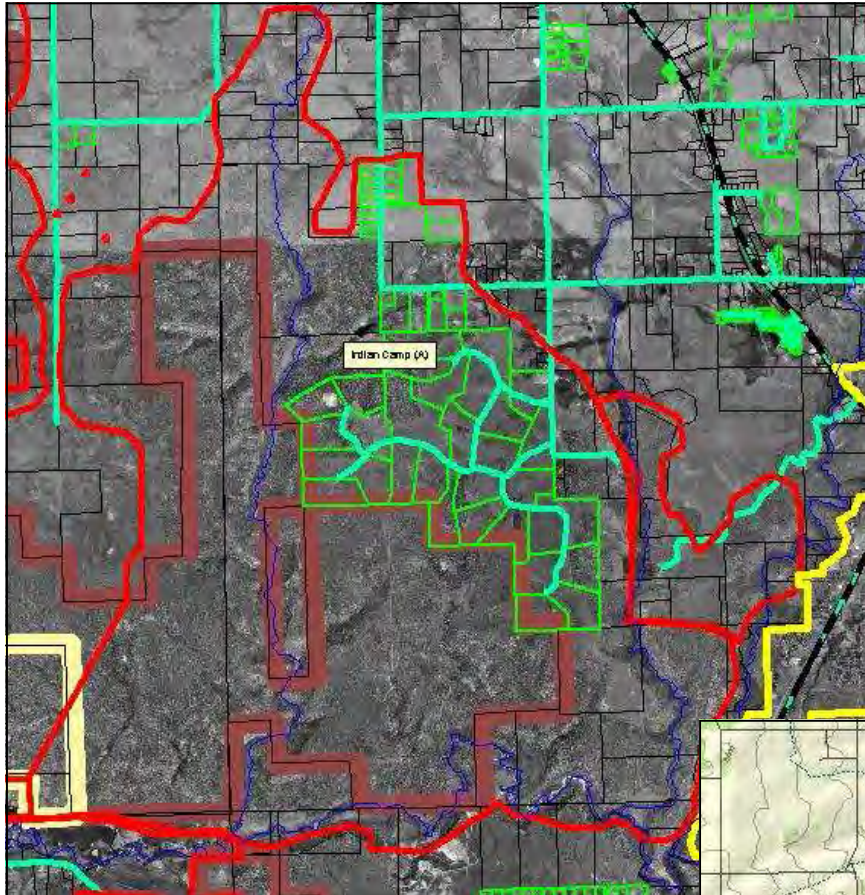
**Above:** Multiple drainages which would act as chimneys could drastically affect the rate of spread from the main canyon to public lands flanking it. Once out of the canyon a fire would have a vast expanse of unbroken fuels to the south, east and west. Fire running up the canyon to the north would run into a large & heavily forested subdivision (Elk Springs). Limited access to the polygon is a major concern.

# Montezuma County Community Fire Plan

## Indian Camp Ranch

Fire Management Classification (A)  
Elevation: 6,326'

Latitude: N37 22.704'  
Longitude: W108 39.089'

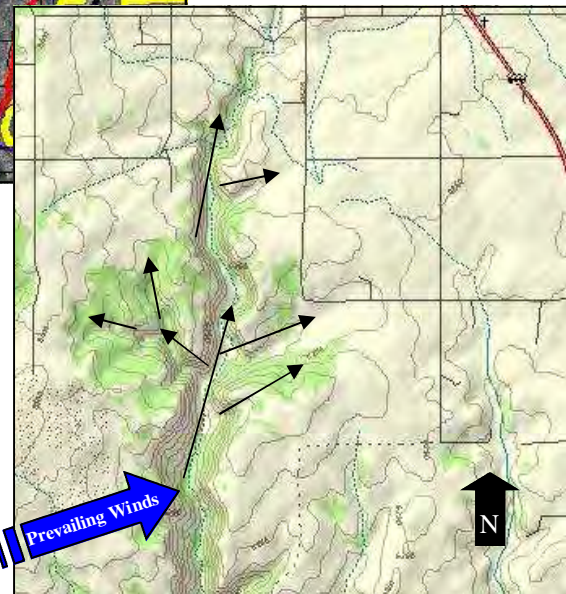


**Left;** The aerial map shows the Indian Camp Ranch Subdivision to be heavily forested with Pinion and Juniper. The Ips Beetle infestation has left a very high mortality rate for Pinion Pine within this Polygon.

**Below;** The topographic map indicates that the terrain is gently rolling with a large canyon that runs down the center of the polygon on public lands. The canyon is heavily forested and has numerous draws which could act as chimneys steering fires towards populated areas. Fires moving eastward from public lands are the main concern.

**T**he Indian Camp Ranch Subdivision is bounded on the north by CR N, on the west by CR 20, on the east by CR 23, and on the south by McElmo Canyon. The polygon contains three subdivisions with over 52 lots total. The polygon lies on heavily forested terrain surrounding a heavily forested canyon parcel of public land. Access into the public lands near the center of the polygon is limited. Access to the south end of the polygon is also limited. Much defensible space work and thinning has already been done within the subdivision. The subdivision is serviced by Fire hydrants and the subdivision also maintains an active pumper truck with a 1,200 gal. capacity to provide backup water and to be used as first response if needed.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.



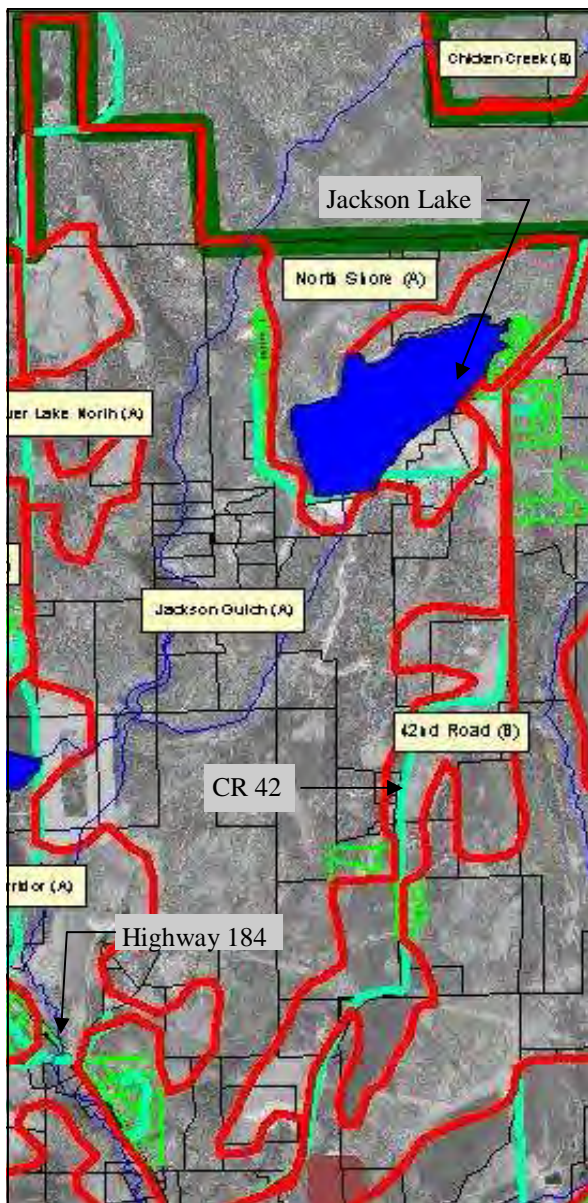
**Additional Mitigation Measures** could include continued private and public agency thinning, and controlled burns on private and public lands to the north of the polygon.

# Montezuma County Community Fire Plan

## Jackson Gulch

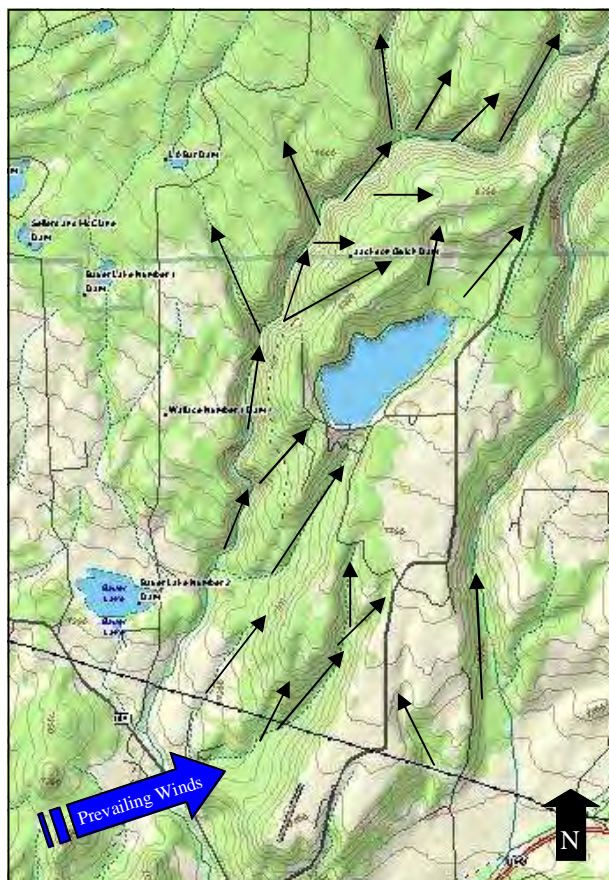
Fire Management Classification (A)  
Elevation: 7,441'

Latitude: N37 23.127'  
Longitude: w108 17.151'



**Left:** The aerial map of the Jackson Gulch Polygon shows heavily forested terrain. Vegetation is dominated by Oak Brush and Ponderosa Pine, with some Pinion & Juniper mixed in.

**Below:** The topographic map illustrates how the terrain generally slopes northward toward public lands at higher elevations. The Chicken Creek canyon runs to the west side of Jackson Lake into public lands.



The Jackson Gulch Polygon is a large area extending from Highway 184 north to the San Juan National Forest boundary. The area is generally sparsely populated but there are a number of small subdivisions accessed by CR 42. Future development is highly likely. The large quantity of fuel in the polygon poses a threat to surrounding areas.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, and the development of an evacuation plan

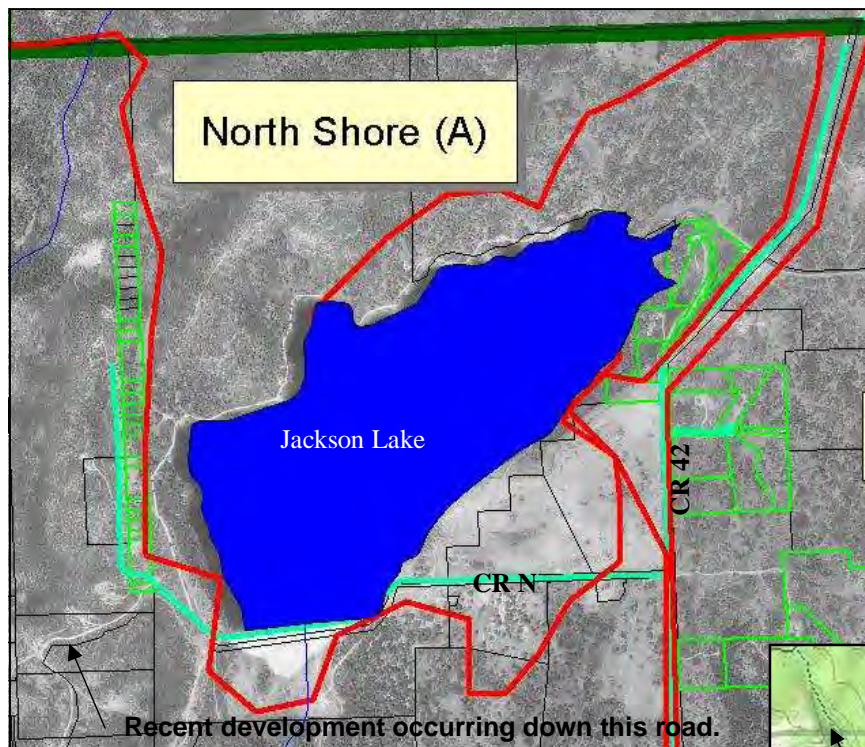
**Additional Mitigation Measures** could include agency thinning on public lands surrounding the polygon.

# Montezuma County Community Fire Plan

## North Shore

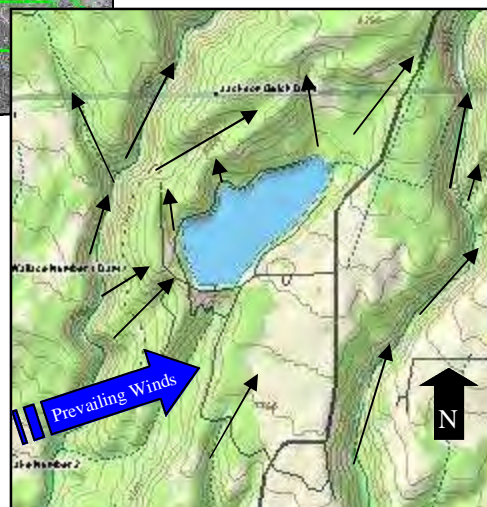
Fire Management Classification (A)  
Elevation: 7,893'

Latitude: N37 24.507'  
Longitude: W108 16.334'



**Left:** The aerial map of the North Shore Polygon shows heavily forested terrain. Vegetation is dominated by Oak Brush and Ponderosa Pine, with some Pinion & Juniper mixed in.

**Below:** The topographic map illustrates how the terrain generally slopes northward toward public lands at higher elevations. The Chicken Creek Canyon runs to the west side of Jackson Lake north into public lands. Public access to the north shore of the lake increases the risk of human caused ignitions.



The North Shore Polygon is Bounded by several small subdivisions. The north shore of the lake is sparsely populated but it is heavily used by recreational fishermen and picnickers. Access to the north area of the lake is via CR 42. The lake itself provides an alternative water source. The closest fire station is in Mancos approximately 6.5 miles to the south. Access roads are adequate for emergency vehicles. However there is really only one way in or out of the area. Future development of the area is high due to scenic quality proximity to the lake and access to public lands.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, and the development of an evacuation plan. Care should be taken to make sure addresses are clearly visible from the road.

**Additional Mitigation Measures** could include agency thinning on public lands to the north of the polygon. (Some of which is planned)

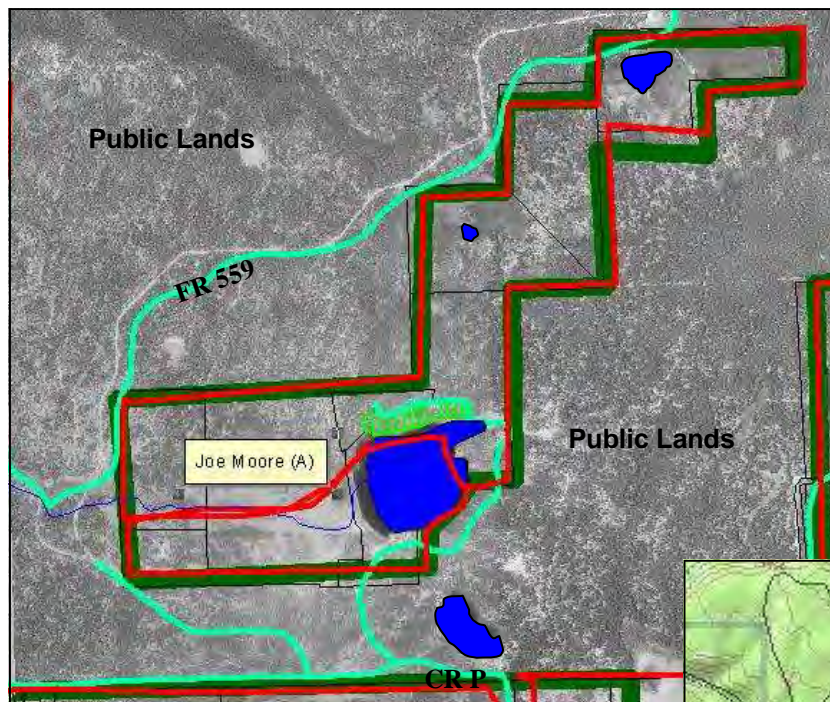
**Above;** Deep canyons and numerous side drainages to both the east and west could potentially draw fires into the polygon. Unbroken stands of fuel and heavier populations to the south are a concern for human caused ignitions.

# Montezuma County Community Fire Plan

## Joe Moore

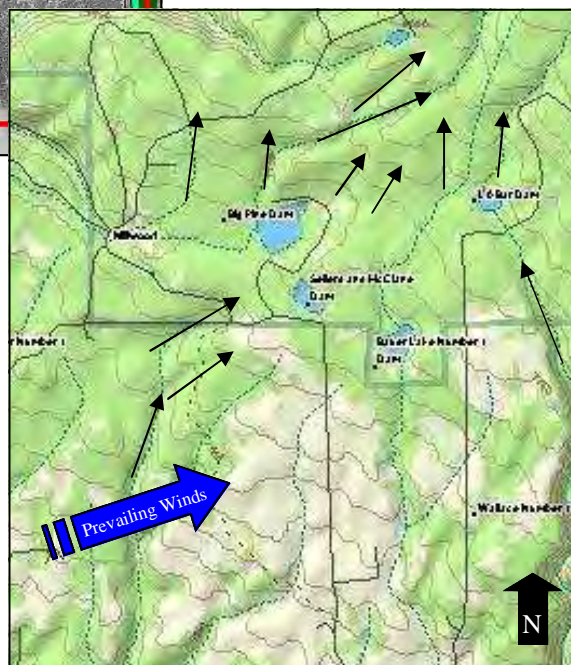
Fire Management Classification (A)  
Elevation: 7,702'

Latitude: N37 25.506'  
Longitude: W108 19.05'



**Left:** The aerial map of the North Shore Polygon shows heavily forested terrain surrounded by public lands. Vegetation is dominated by Oak Brush and Ponderosa Pine, with some Pinion & Juniper and Aspen mixed in.

**Below :** The topographic map of the Joe Moore Polygon area illustrates the general upward slope to the heavily forested public lands to the north.



**T**he Joe Moore Polygon is accessed off of CR 40. The roads are adequate for emergency vehicles. There is one subdivision located along the north shore of Joe Moore Reservoir. The subdivision is well protected on the south side by the reservoir, but it is adjacent to a large area of unbroken fuel on the north, east & west. Fire starts from within the subdivision would threaten vast acres of public lands to the north. There is only one access road into the subdivision traverses a large area of unbroken fuels. The subdivision roadway could potentially become blocked.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, and the development of an evacuation plan. Care should be taken to make sure addresses are clearly visible from the road.

**Additional Mitigation Measures** could include agency thinning on public lands to the surrounding the polygon.

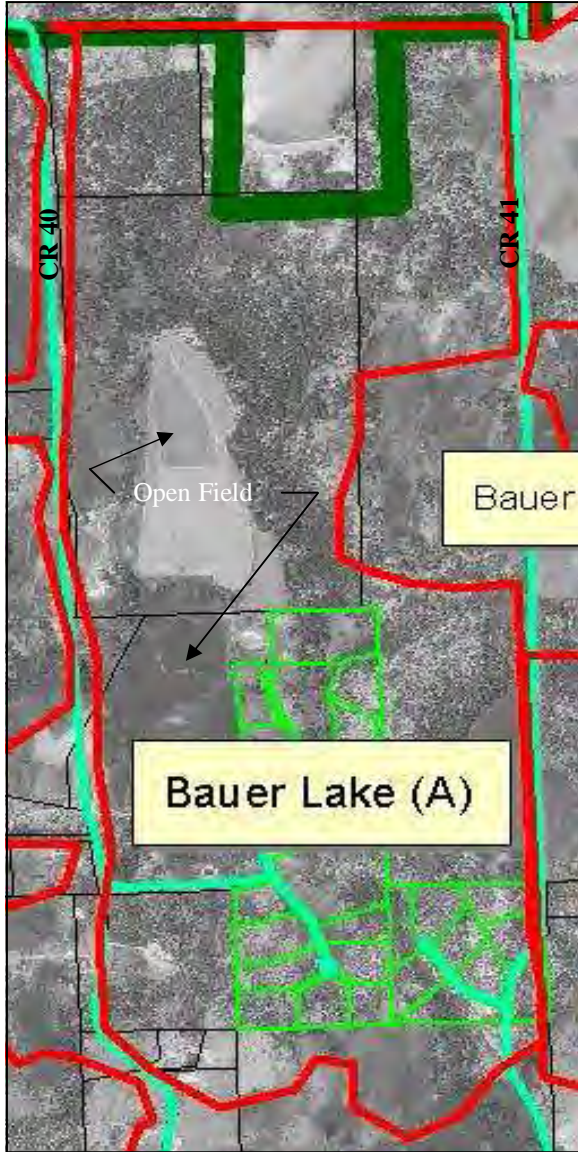
**Above;** Although the polygon is surrounded by vast expanses of unbroken fuels the rolling terrain of this polygon lacks well defined deep drainages that act as chimneys. There are also several alternative water sources that can be accessed.

# Montezuma County Community Fire Plan

## Bauer Lake

Fire Management Classification (A)  
Elevation: 7,514'

Latitude: N37 24.157'  
Longitude: W108 18.305'



**Left:** The aerial map of the Bauer Lake Polygon shows large areas of heavily forested terrain. The dominant species of vegetation include Ponderosa pine and Oak Brush. There is a large, open agricultural field on the west side of the polygon and a smaller agricultural field on the east.

**Below:** the topographic map illustrates the rolling terrain and general upwards slope to the north



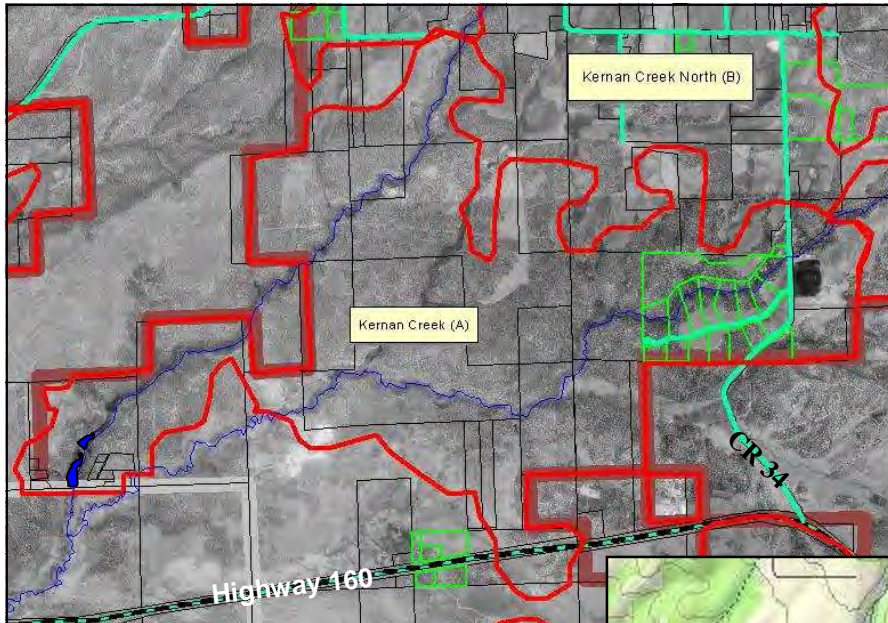
**T**he Bauer Lake Polygon is bounded on the east by CR 41 and west by CR 40. The north edge of the polygon adjoins The San Juan National Forest. There is a 26 lot subdivision at the south central end of the polygon. Access into the east 1/3 of the subdivision is off of CR 41. The west side of the subdivision is accessed of CR 40. Bauer Lake, just south of the polygon would be an alternative water source. The subdivision is heavily forested

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, and the development of an evacuation plan. Care should be taken to make sure addresses are clearly visible from the road.  
**Additional Mitigation Measures** could include agency thinning on public lands to the north.

# Montezuma County Community Fire Plan

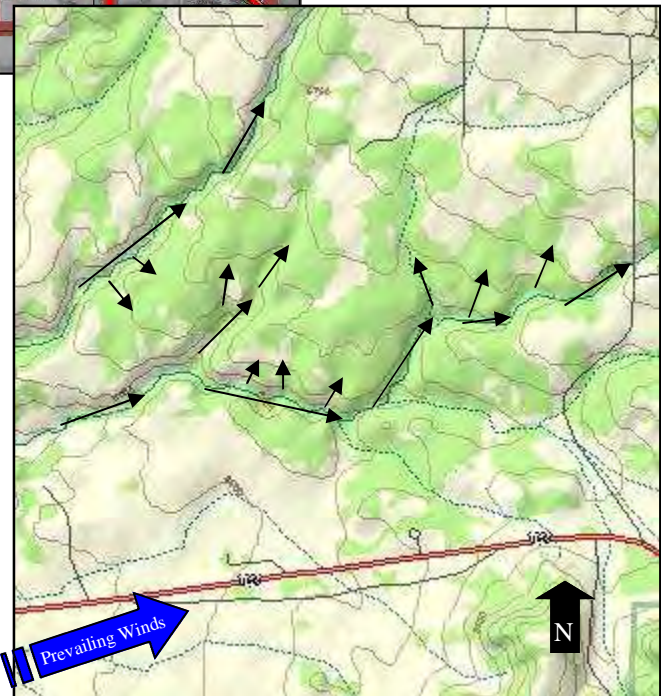
## Kernan Creek

**Fire Management Classification (A)**      **Latitude: N37 22.290'**  
**Elevation: 6,712'**                              **Longitude: W108 26.868'**



**Left;** The aerial map shows the Kernan Creek Polygon to be heavily forested. Vegetation is dominated by Pinion/ Juniper stands. There are also several open grassy areas.

**Below:** The topographic map shows the polygon consisting of rolling terrain punctuated by two main drainage canyons. These heavily forested canyons could act as “chimneys” (Indicated by black arrows)



**T**he Kernan Creek polygon is bounded on the south by Highway 160, and public lands to the east and west. CR 34 lies on the east side of the polygon and provides the main access. The polygon contains one subdivision on the east side, The “Kernan Creek” subdivision. The 18 lot subdivision has been active in thinning efforts and defensible space. Additional fuels treatments have been completed on public land surrounding the subdivision. The subdivision is accessed via one road in which is adequate for emergency vehicles. The central corridor of the subdivision is an open field. There are some small ponds at the southwest end of the polygon which could provide alternative water.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, and the development of an evacuation plan.

**Additional Mitigation Measures** could include continued agency thinning on public lands surrounding the polygon.

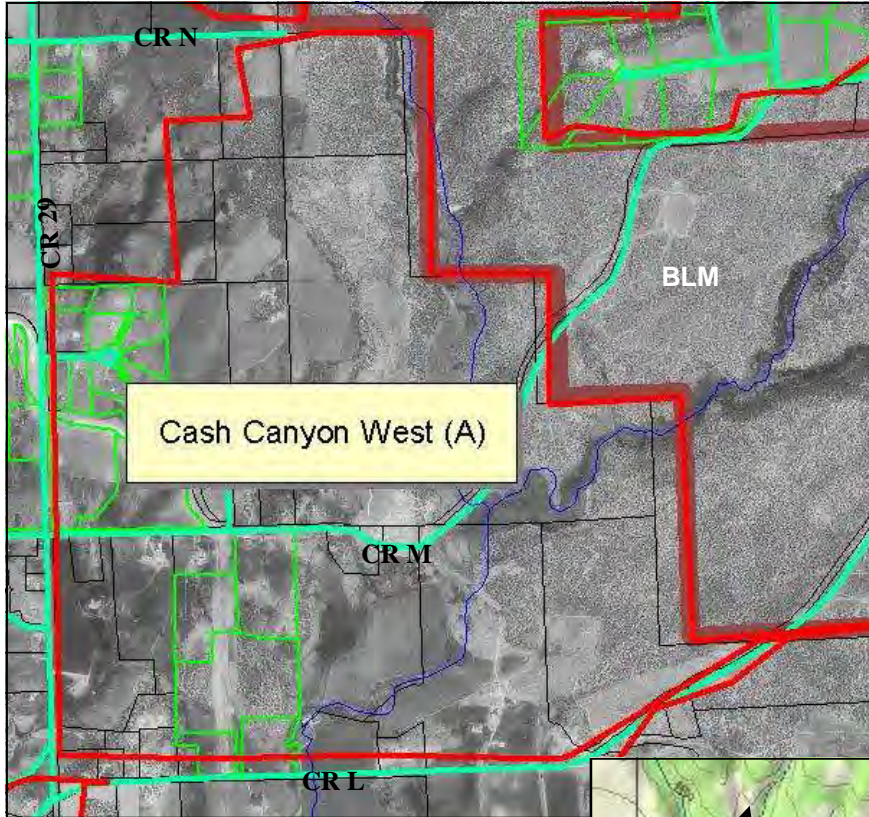


# Montezuma County Community Fire Plan

## Cash Canyon

Fire Management Classification (A)  
Elevation: 6,526'

Latitude: N37 24.484'  
Longitude: W108 31.182'

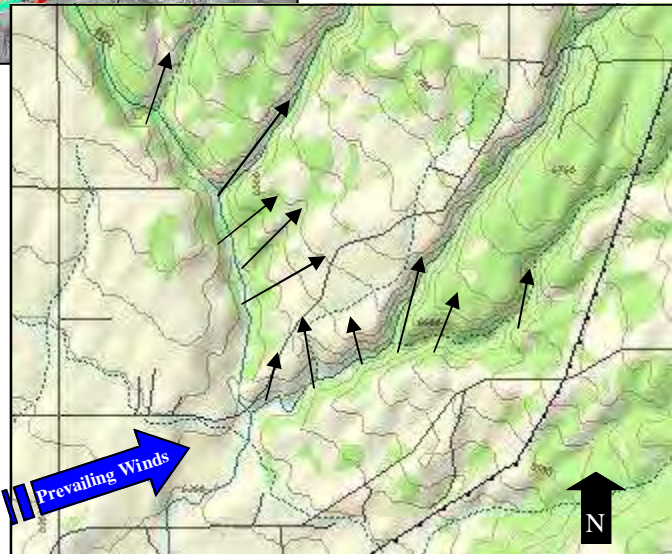


**Left;** The Aerial map indicates a mixed cover with heavily forested land dominating the eastern boundary. Primary vegetation type is Pinion and Juniper with some Sage Brush. Agricultural Fields interspersed with stands of trees dominate the west half of the polygon.

**Below;** The topographic map illustrates the difference between the flatter agricultural lands to the west and the steeper forested land to the east. The east side of the drainage climbs sharply to the north east which overlaps heavily forested lands. There are numerous small drainages that could act as chimneys shown by the Black Arrow.

**T**he Cash Canyon Polygon is bounded on the south by CR L, the west by CR 29, Public lands to the east, and split by CR M. The polygon has two subdivisions totaling approximately 20 lots which are accessed off of CR L, 29 & M. CR M provides access to public lands to the east of the polygon and other subdivisions beyond. Totten Reservoir would be the most predictable source of water. This polygon is relatively sparsely populated, however agricultural operations and people accessing public lands pose an additional risk factor. Fire starts on the east drainage could potentially affect a large acreage of public and private lands beyond.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, and the development of an evacuation plan.



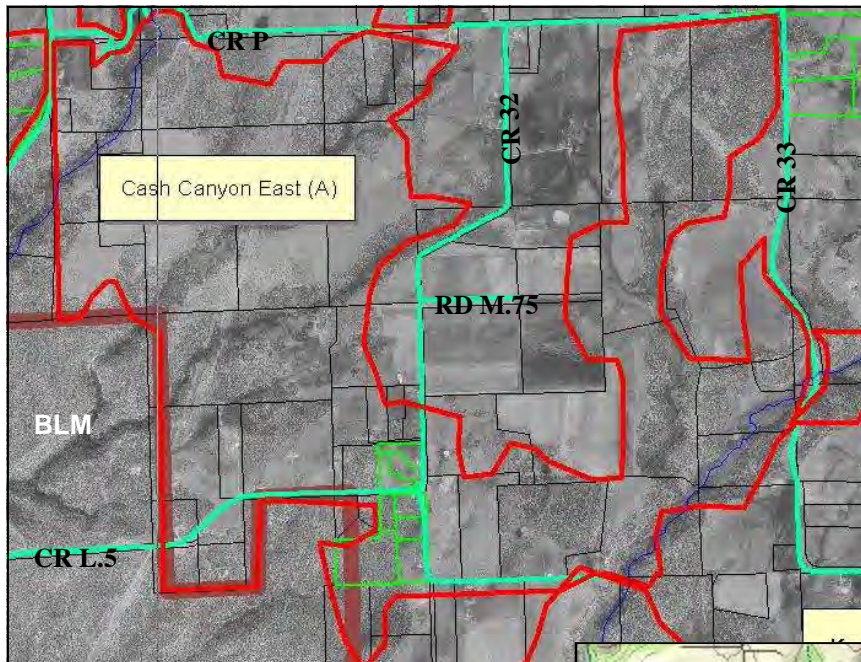
**Additional Mitigation Measures** could include continued agency thinning on public lands east of the polygon.

# Montezuma County Community Fire Plan

## Cash Canyon East

Fire Management Classification (A)  
Elevation: 6,831'

Latitude: N37 23.850'  
Longitude: W108 27.740'

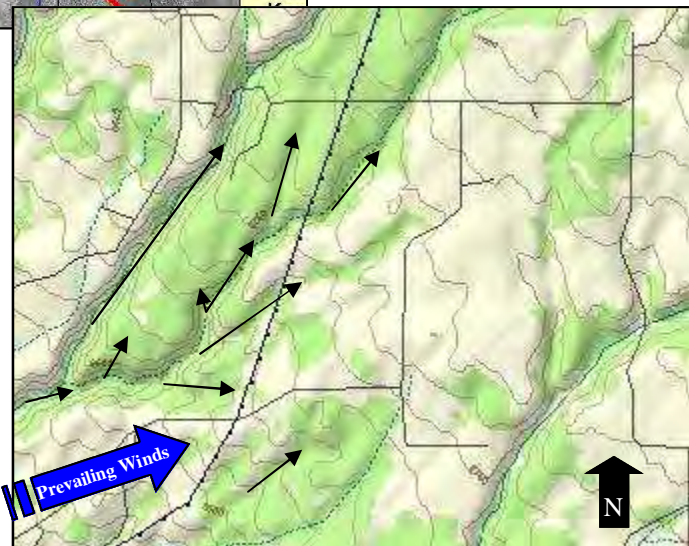


**Left;** The aerial map shows the Cash Canyon east Polygon to contain a mix of cover types from heavy forest to open agricultural lands. Much of the forested areas correspond to steep drainages running up out of public lands. Dominate vegetation is Pinion Juniper forest. Ips Beetle infestations have cause a high mortality rate amongst pinion pines in this area. Surrounding lands are a mix of irrigated crop land and pasturage. Future growth is likely to happen along the forested edges of the canyons. Access into the canyons is difficult.

**T**he Cash Canyon East Polygon is bounded on the north by CR P, on the east by CR 33, by CR L.5 on the south, and public lands to the west. The polygon has one 8 lot subdivision in the south central area, which is accessed of f of CR I.5 and CR 32. CR 32 Bisects the polygon running north to CR P. This polygon has a high potential for future development because of its scenic qualities, adjacency to public lands and proximity to Cortez. One of the main concerns with this polygon is fire moving up the canyons from public lands to the south west.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible.

**Additional Mitigation Measures** could include continued agency thinning on public lands west of the polygon.



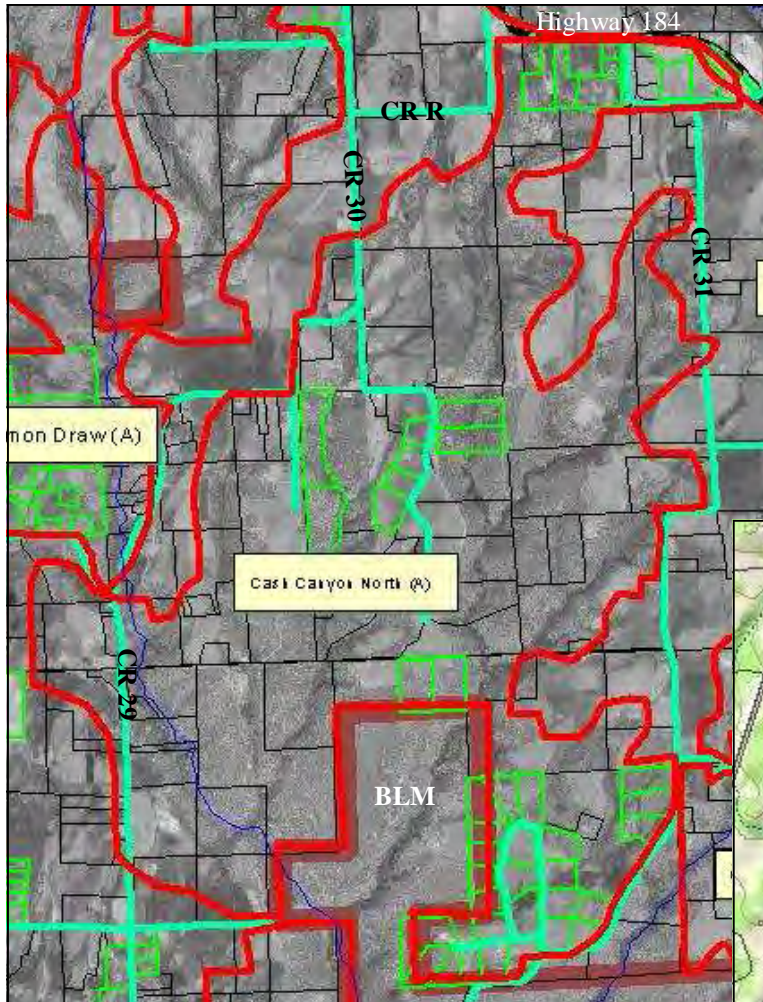
**Above;** The topographic map illustrates the overall rolling nature of the terrain. Deep forested canyons and side drainages act as chimney's which allow avenues for fire to run. Access into most of these areas is good because of the interconnected road systems. Alternative water sources appear to be minimal but most of the area is serviced by rural water with fire hydrants.

# Montezuma County Community Fire Plan

## Cash Canyon North

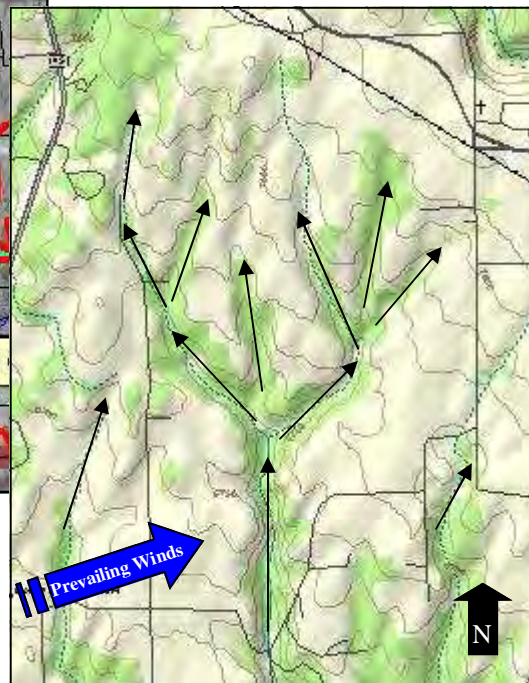
Fire Management Classification (A)  
Elevation: 6,797'

Latitude: N37 26.075'  
Longitude: W108 31.007'



**Left;** The aerial map shows a mix of forested lands, agricultural grounds, and range land. Primary vegetation consists of Pinon and Juniper stands, sagebrush, and grasslands. Forested land generally is found along the steeper drainage lands.

**Below;** The topographic map illustrates the drainage pattern that runs through the center of the polygon. These drainages and other side drainages could act as chimneys (indicated by Black Arrows). The terrain is mostly rolling hills punctuated by deep drainages.



**T**he Cash Canyon North Polygon is bounded on the north by Highway 184, CR 29 & 30 on the west side, CR 31 on the east, and public lands to the south. The polygon has several subdivisions which total 45 lots . The largest at the south end of the polygon along CR 31. One of the main concerns for this polygon is fire starts that follow the canyons to the north. This polygon is likely to see future growth due to it's scenic qualities and proximity to Cortez and public lands.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible.

There are few alternative water sources within this polygon, but the area is serviced by rural water and fire hydrants.

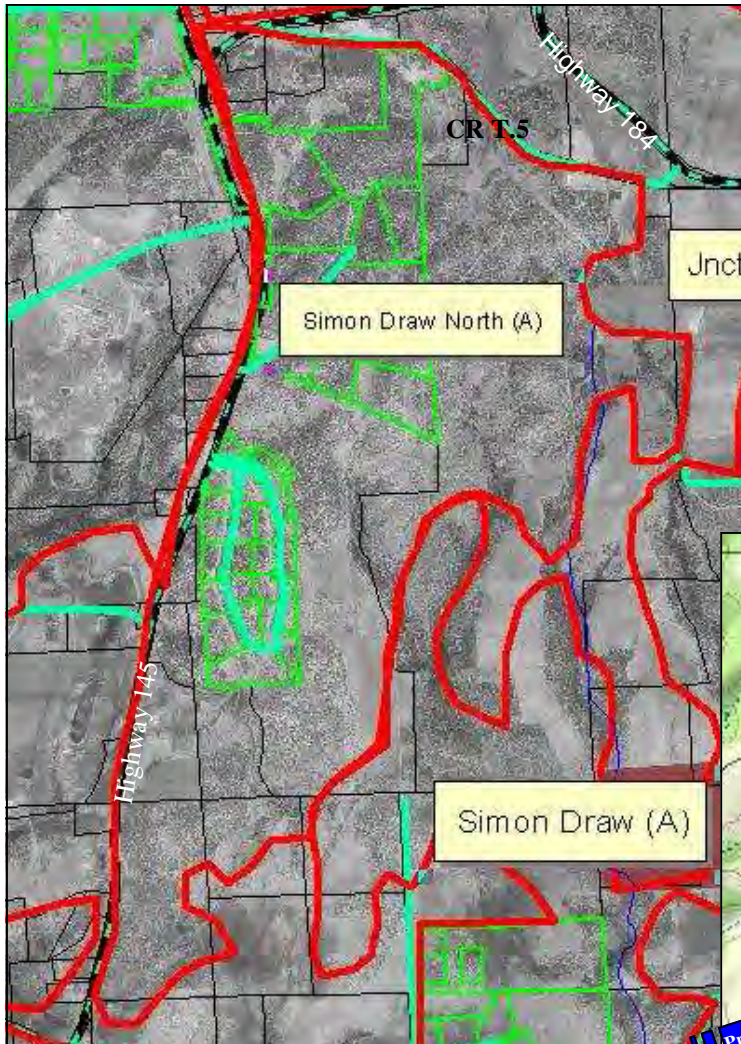
**Additional Mitigation Measures** could include continued agency thinning on public lands south of the polygon.

# Montezuma County Community Fire Plan

## Simon Draw North

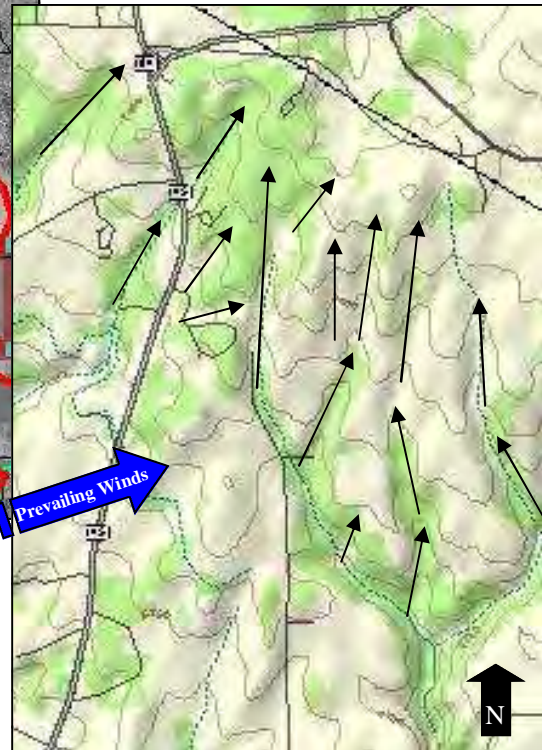
Fire Management Classification (A)  
Elevation: 7,073'

Latitude: N37 27.388'  
Longitude: W108 31.731'



**Left;** The aerial map shows the Simon Draw North Polygon to be comprised of primarily a forested hillside. Dominant vegetation is Pinion & Juniper stands. The recent Ips Beetle infestation has caused a very high mortality rate in Pinion pines within this polygon.

**Below;** The topographic map illustrates that flatter lands are on the west side of the polygon with the eastside more punctuated with canyons and mesas. Black arrows indicate where the heavily forested canyons lie, which could act as chimneys in a fire.



The Simon Draw North Polygon is bounded on the north and west by Highway 145, and on the east by CR 30 and south by CR P. The polygon has two subdivisions with a grand total of 33 lots. The polygon is the head of several forested canyons leading into it. Access to the subdivisions is off of Highway 145

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning on the down slope below the subdivision would be good prevention.

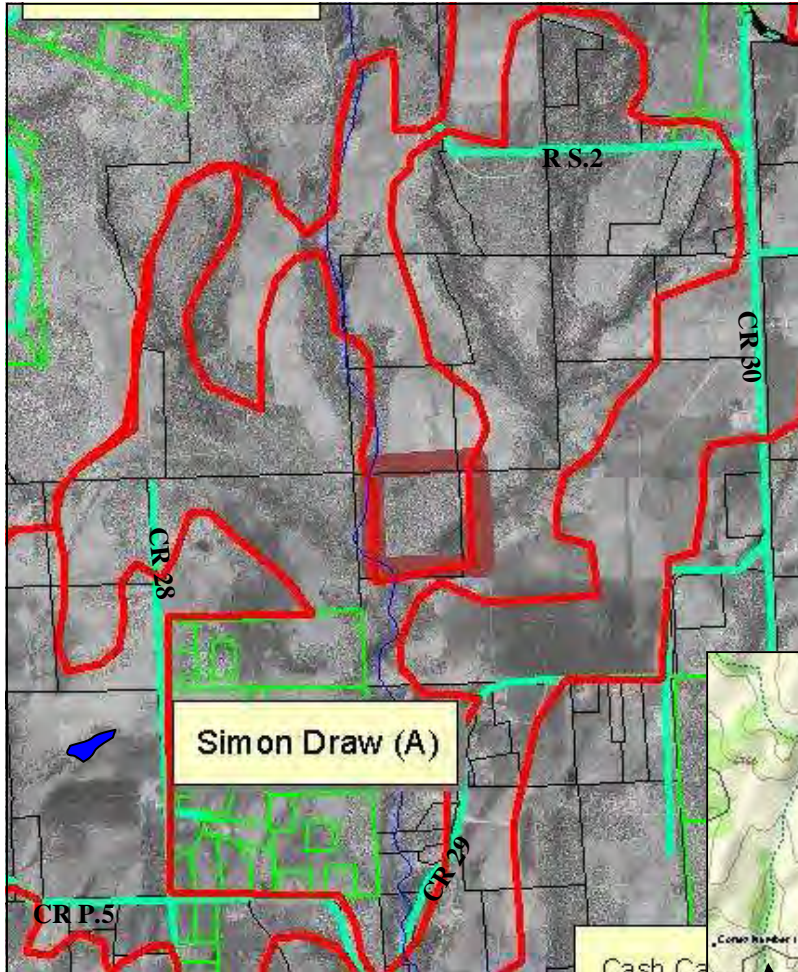
This Polygon is highly likely to see additional growth in the future due to the scenic quality, easy access, and proximity to developed areas. Alternative water sources are few, but the area is serviced by rural water.

# Montezuma County Community Fire Plan

## Simon Draw

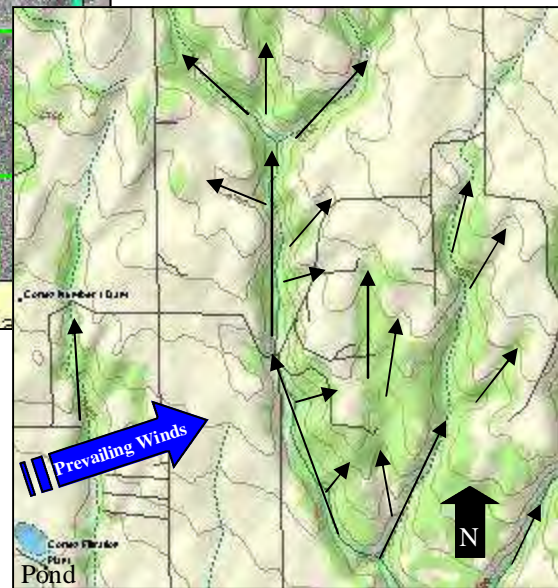
Fire Management Classification (A)  
Elevation: 6,775'

Latitude: N37 25.886'  
Longitude: W108 31.255'



**Left;** The aerial map shows the Simon Draw Polygon to be comprised of forested canyons and agricultural mesa tops. Primary vegetation is Pinion & Juniper stands. The recent Ips Beetle infestation has caused a very high mortality rate in Pinion pines within this polygon.

**Below;** The topographic map illustrates that flatter lands are on the west side of the polygon with the eastside more punctuated with canyons and mesas. Black arrows indicate where the heavily forested canyons lie, which could act as chimneys in a fire.



**T**he Simon Draw Polygon is bounded by CR 29/ 30 to the east, and CR 28 to the west. The polygon contains one subdivision of 25 lots in the south west corner of the polygon, at the top of a heavily forested canyon. Access to the subdivision is from CR P.5 and CR 28. There is a pond to the south west of the polygon that could provide alternative water. This polygon is likely to see additional future development due to the scenic quality, good access, and proximity to town. The forested edges of the canyons are the usual suspects for new subdivisions. Fire moving through this polygon would directly threaten other surrounding polygons. Access into the canyon bottoms is difficult.

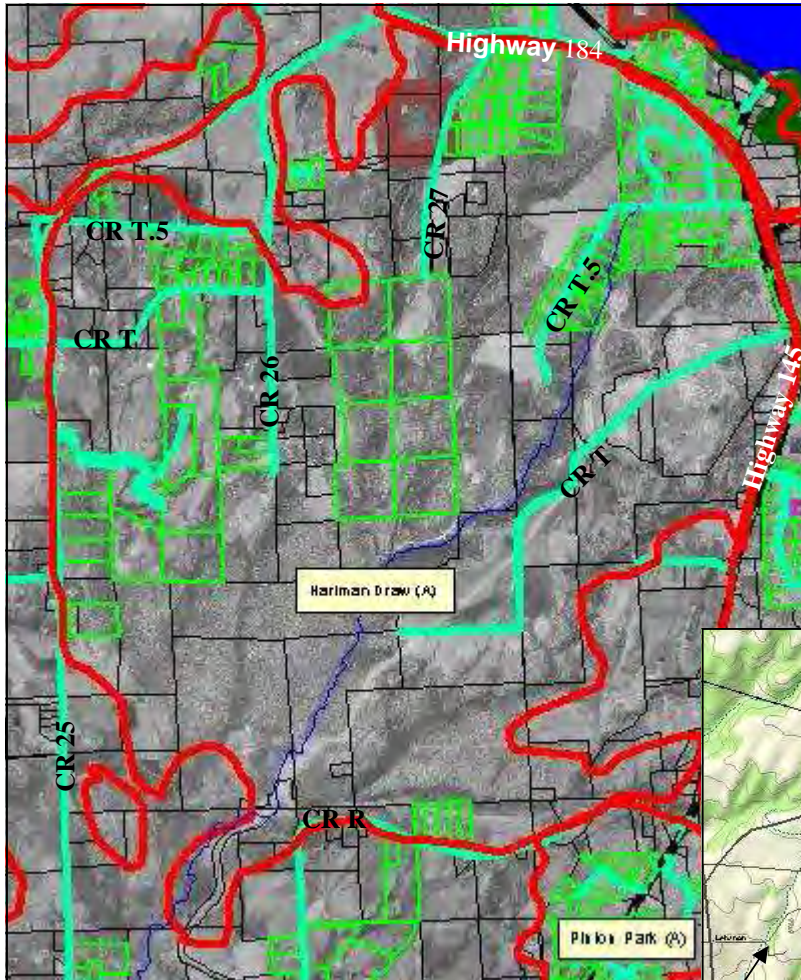
**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning on the down slope below the subdivision would be good prevention.

# Montezuma County Community Fire Plan

## Hartman Draw

Fire Management Classification (A)  
Elevation: 6,629'

Latitude: N37 27.017'  
Longitude: W108 31.804'



**Left;** The aerial map shows the Hartman Draw Polygon to be comprised of primarily heavily forested canyons. Dominant vegetation is Pinion & Juniper stands. The recent Ips Beetle infestation has caused a very high mortality rate in Pinion pines within this polygon.

**Below;** The topographic map illustrates that flatter lands are on the west side and east side of the polygon with the central area more punctuated with canyons and mesas. Black arrows indicate where the heavily forested canyons lie, which could act as chimneys in a fire.



**T**he Hartman Draw Polygon is a large heavily forested polygon. Most of the polygon is canyon land with numerous subdivisions found along the edges. It is bounded on the east by Highway 145, on the north by Highway 184, on the west by CR 25 and on the south by CR R. Access into the central canyon system within the subdivision would be difficult. This polygon is highly likely to see future residential growth because of its proximity to area towns, the easy access to roads and utilities and the scenic quality of the area. Growth is most likely to happen along the mesa tops that border the canyons. Appropriate setbacks from the canyon wall would be some of the best preventative step that can be taken in new construction.

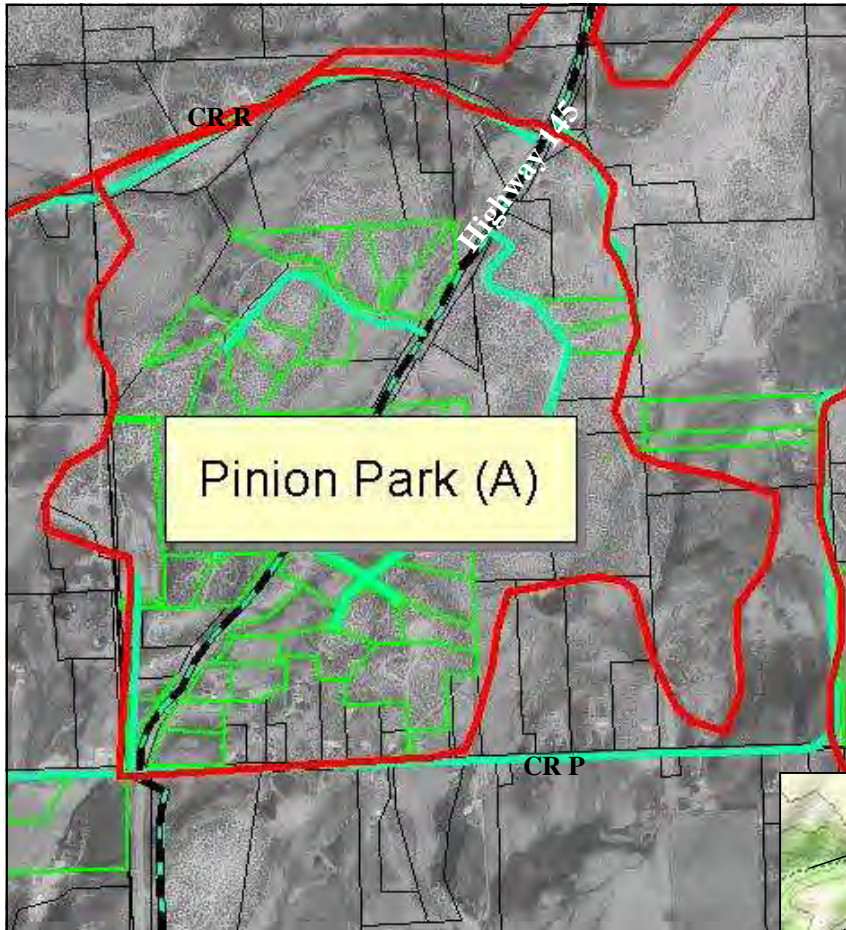
**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning on the down slope below the subdivision would be good prevention.

# Montezuma County Community Fire Plan

## Pinion Park

Fire Management Classification (A)  
Elevation: 6,536'

Latitude: N37 25.187'  
Longitude: W108 32.956'

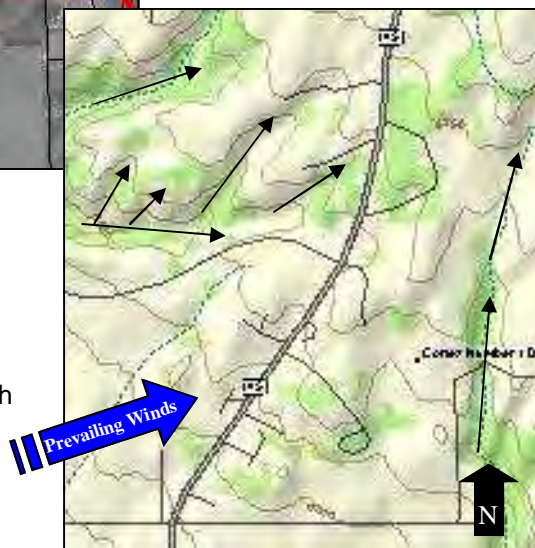


**Left;** The aerial map shows the Pinion Park Polygon to be comprised of primarily heavily forested residential area. Dominant vegetation is Pinion & Juniper stands. The recent Ips Beetle infestation has caused a very high mortality rate in Pinion pines within this polygon.

**Below;** The topographic map illustrates the rolling terrain of this polygon. This polygon is likely to see additional future growth due to the easy access, utilities, and proximity to area towns. The terrain suggests high build-ability and the absence of deep forested drainages and generally easy access across undeveloped land is a plus for denser development.

**T**he Pinion Park polygon a smaller polygon that lies between CR R to the north and CR P to the south. Highway 145 bisects the polygon. The polygon has one 45 lot subdivided area in the center of the polygon that is moderately forested. Access to the east side of the Polygon is from Highway 145 via R P.2 and to the west from R P.7. This polygon is a concern because it has relatively high density which is located within the forested area. Access is very good.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning on the down slope below the subdivision would be good prevention.



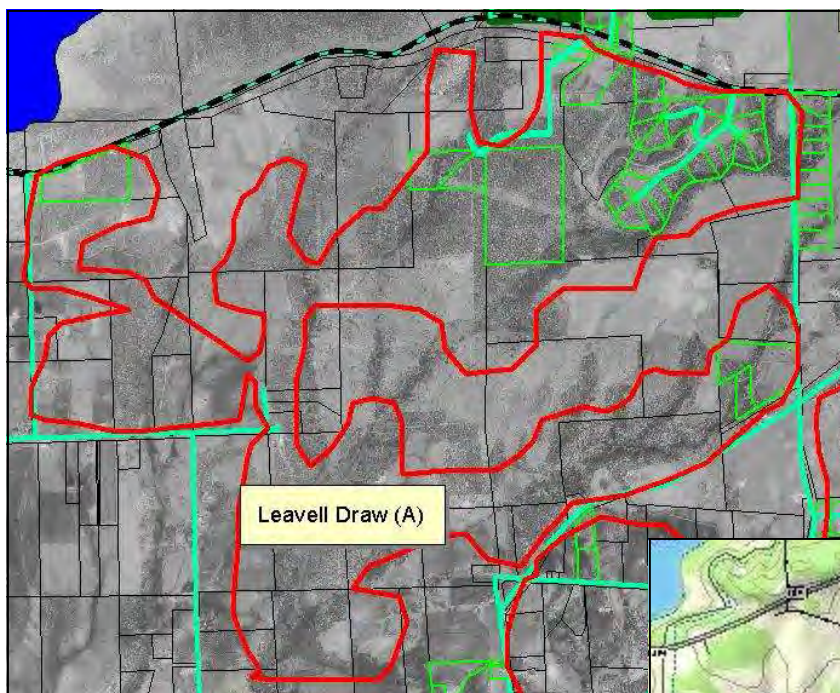
**Mitigation measures** may also include mechanical thinning, and some prescribed fire.

# Montezuma County Community Fire Plan

## Leavell Draw

Fire Management Classification (A)  
Elevation: 6'743'

Latitude: N37 28.586'  
Longitude: W108 35.824'



**Left;** The aerial map shows the Leavell Draw Polygon to be comprised of a forested canyons with four residential subdivisions on the rims. Dominant vegetation is Pinion & Juniper stands with some Sage Brush and grasses. The recent Ips Beetle infestation has caused a very high mortality rate in Pinion pines within this polygon.

**T**he Leavell Draw Polygon is bounded on the north by Highway 184, on the west by CR 24 & 23.5, on the east by CR 25 & 26, and on the south by CR T. Access is good on all county roads. This polygon has a high likelihood of future residential development. The most likely areas to see a buildup of structures would be on the mesa tops between drainages. The main concern with development in these areas is that the forested canyons could lead fire up into residential areas on top of the mesas.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on the downhill side would be good prevention. New homes should have an appropriate setback from canyon rims and defensible space.



**Above;** The topographic map illustrates the canyons that run through the center of this polygon. Several draws indicated by black arrows that could act as chimneys drawing fire to the top of the slope.

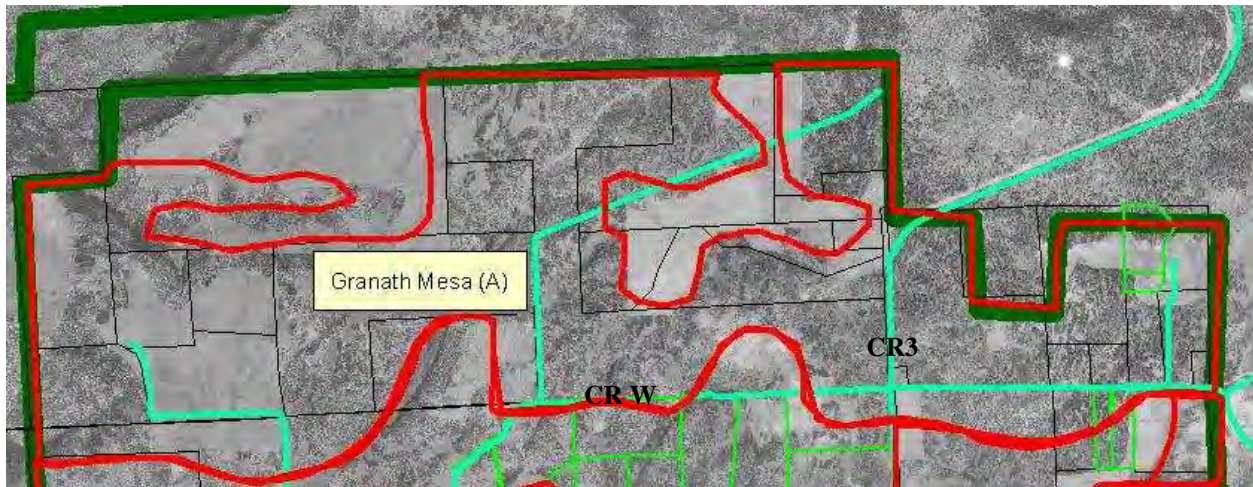


# Montezuma County Community Fire Plan

## Granath Mesa

Fire Management Classification (A)  
Elevation: 7,472'

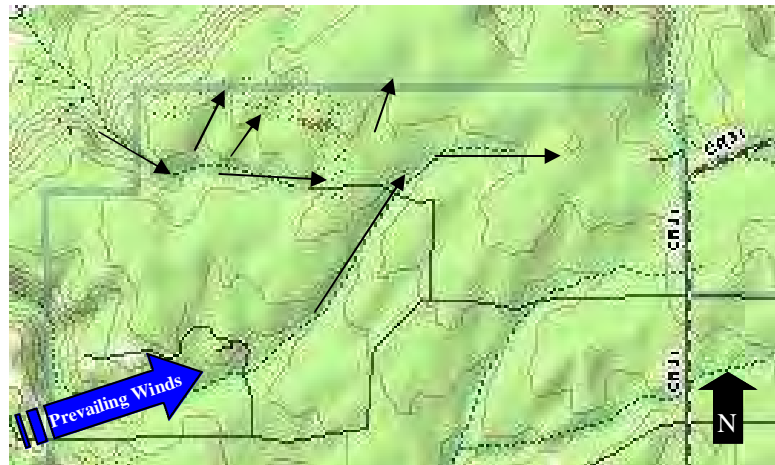
Latitude: N37 30.501'  
Longitude: W108 30.490'



**Above;** The aerial map shows the High View Polygon to be comprised of a forested hill tops overlooking McPhee Reservoir with four residential subdivisions. Dominant vegetation is Ponderosa and Pinion & Juniper stands with some Sage Brush, Oak Brush and grasses. The recent Ips Beetle infestation has caused a very high mortality rate in Pinion pines within this polygon.

**Right;** The topographic map illustrates the rolling mesa top terrain of this polygon, as well as the general rise to the north. Several draws indicated by black arrows that could act as chimneys drawing fire to the top of the slope.

**Additional Mitigation Measures** could include continued agency thinning and controlled burns on public lands to the east and north and west of the polygon.



**T**he Granath Mesa Polygon is bounded on the north east and west by the San Juan National Forest. On the south it is bounded by CR W. There is one small residential subdivision found within the polygon and it is adjacent to several more. Access is good up a steep climb on CR 31. The Polygon is of concern because it is a developing area and it is adjacent to large acreages of public lands.

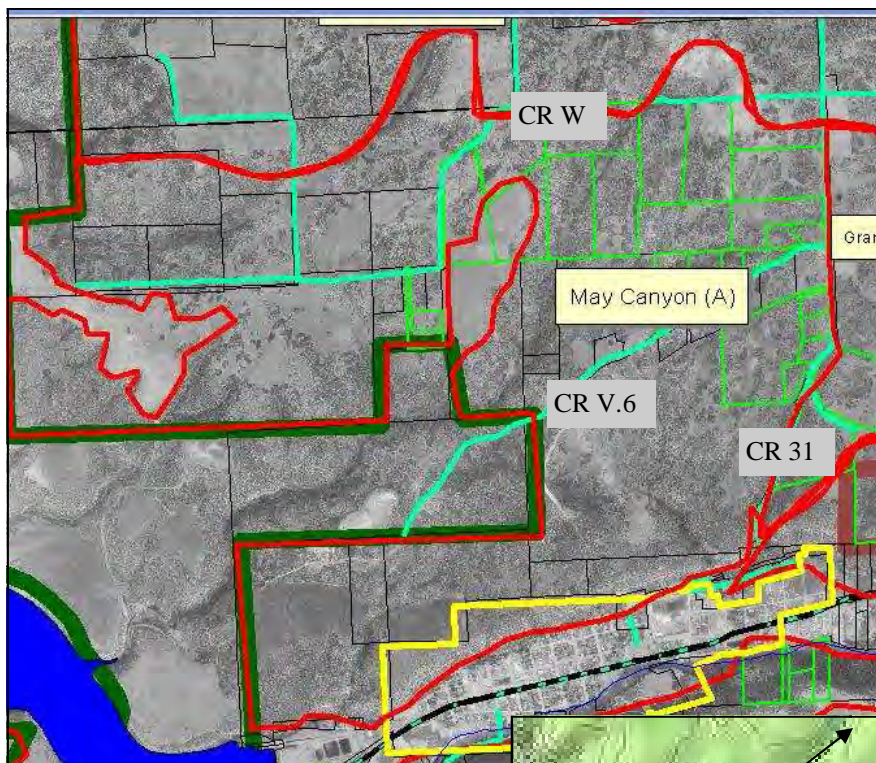
**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

# Montezuma County Community Fire Plan

## May Canyon

Fire Management Classification (A)  
Elevation: 7,269'

Latitude: N37 29.255'  
Longitude: W108 30.360'



**Left;** The aerial map shows the May Canyon Polygon to be comprised of a forested hill tops overlooking McPhee Reservoir with two residential subdivisions. Dominant vegetation is Pinion & Juniper stands with some Ponderosa, Oakbrush Sage Brush and grasses. The recent Ips Beetle infestation has caused a very high mortality rate in Pinion pines within this polygon.

**Below;** The topographic map illustrates the canyon that runs through the center of this polygon. Several draws indicated by black arrows that could act as chimneys drawing fire to the top of the slope.

**T**he May Canyon Polygon is bounded by San Juan National Forest and McPee Reservoir to the west, CR 31 to the east and CR W to the north. It is bisected by CR V.6. This Polygon is of concern because it is a developing area adjacent to the County water source. Steep, heavily forested canyons in the polygon could rapidly carry fire into the San Juan National Forest to the north. Access is good after a steep climb up CR 31. Some fire risk is posed by the town of Dolores to the south.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible.



Thinning within the subdivisions especially on slopes below structures would be good prevention.

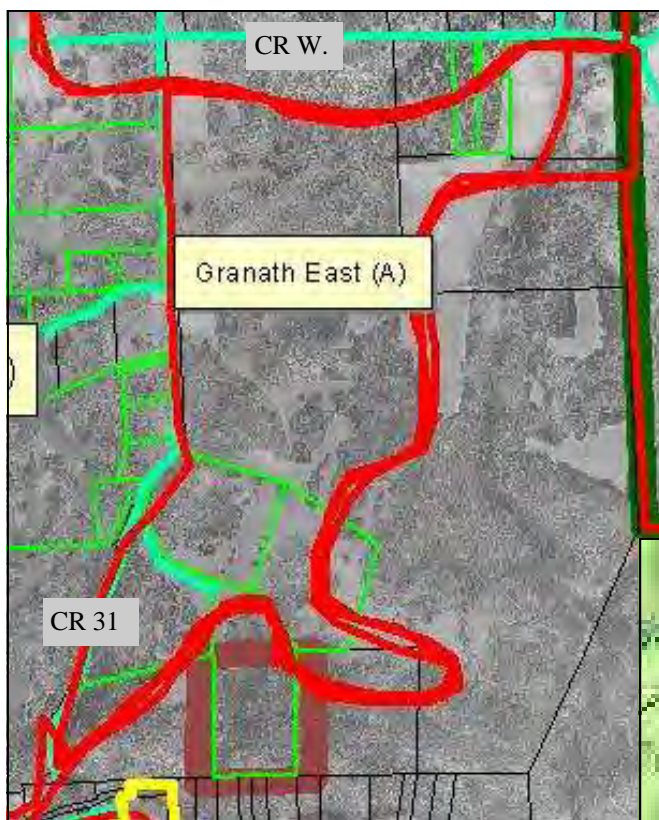
**Additional Mitigation Measures** could include continued agency thinning and controlled burns on public lands to the east and north and west of the polygon.

# Montezuma County Community Fire Plan

## Granath East

Fire Management Classification (A)  
Elevation: 7,450'

Latitude: N37 29.327'  
Longitude: W108 28.491'



**Left;** The aerial map shows the May Canyon Polygon to be comprised of a patchwork of forested hill tops overlooking McPhee Reservoir. The polygon has two residential subdivisions. Dominant vegetation is Pinion & Juniper stands with some Ponderosa, Oak brush Sage Brush and grasses. The recent Ips Beetle infestation has caused a very high mortality rate in Pinion pines within this polygon.

**Below;** The topographic map illustrates the rolling terrain at the edge of the Dolores Canyon to the south. There are several draws indicated by black arrows coming up from the Dolores Canyon floor that could act as chimney drawing a fire up to the top.



**T**he Granath East Polygon is bounded on the west by CR 31 and on the north by CR W. The north subdivision is accessed off of CRW. The south subdivision by CR 31. The primary concern with this polygon are with fire starts in the Dolores Canyon, and fires that could spread onto vast areas of public lands to the north.

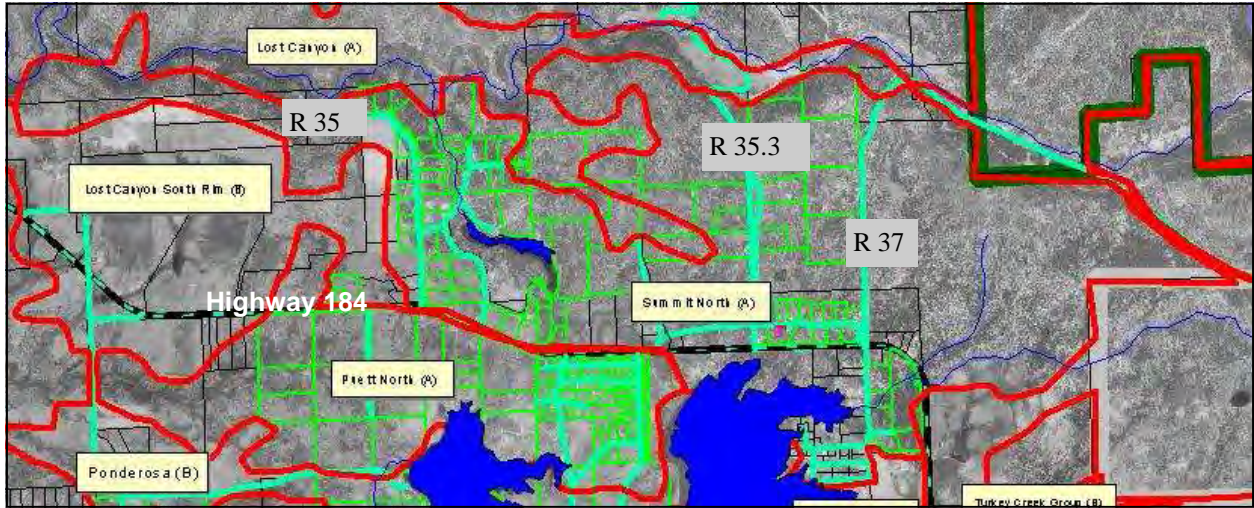
**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

**Additional Mitigation Measures** could include continued agency thinning and controlled burns on public lands to the east, north and west of the polygon.

# Montezuma County Community Fire Plan

## Summit North

**Fire Management Classification (A)**      **Latitude: N37 25.980'**  
**Elevation: 7,478'**                              **Longitude: W108 22.937'**



**Above;** The aerial map shows the Summit North Polygon, heavily forested, and densely populated. Dominate vegetation includes Oak Brush, Ponderosa, and taller grasses occasional Pinions & Junipers.

**Below;** The topographical map illustrates the rolling terrain punctuated by shallow drainages.



**T**he Summit North Polygon generally makes up the forested residential lands just north of Summit Reservoir. The access to the polygon is good via Highway 184. The west end is bounded by private agricultural lands and on the east by a vast acreage of heavily forested public lands. The primary concern in this polygon is the over stock of small diameter ponderosa and Oak Brush, access and egress of residents and emergency vehicles. And residential population.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

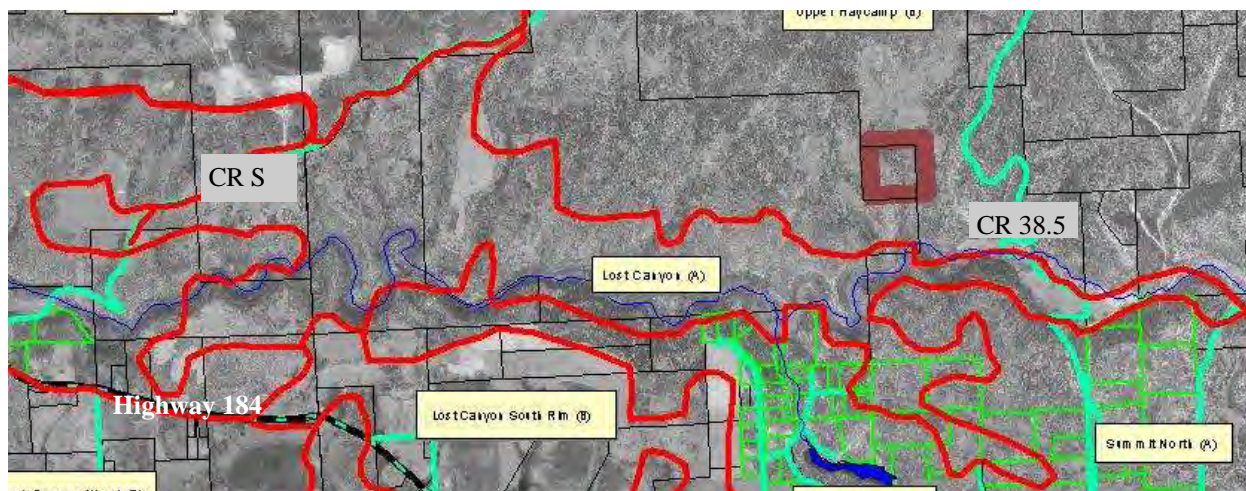
**Additional Mitigation Measures** could include continued private and public agency thinning, and controlled burns on private and public lands to the east and north of the polygon.

# Montezuma County Community Fire Plan

## Lost Canyon

Fire Management Classification (A)  
Elevation: 7,264'

Latitude: N37 26.680'  
Longitude: W108 25.868'



**T**he Lost Canyon Polygon lies next to a large area of forested land and adjacent to several large forested subdivisions. The east side is bounded by CR38.5 which is also the east access. The Westside is bounded by CR S, which is the west access. The central portion of this polygon is hard to get to. Access up the canyon may be possible following the old railroad grade. The primary concerns with this polygon is its remoteness, its steep slopes and its adjacency to both residential areas and public lands to the north.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

**Above;** The aerial map shows lost canyon to be a deep, heavily forested drainage. Dominate vegetation includes Oak Brush, Pinion and Juniper stands, Ponderosa, and grasses.

**Below;** the topographic map shows that the polygon follows the Lost Canyon drainage. Lost canyon is a deep drainage with many side draws that could act as chimneys (indicated by black arrows) drawing fire up to the top.



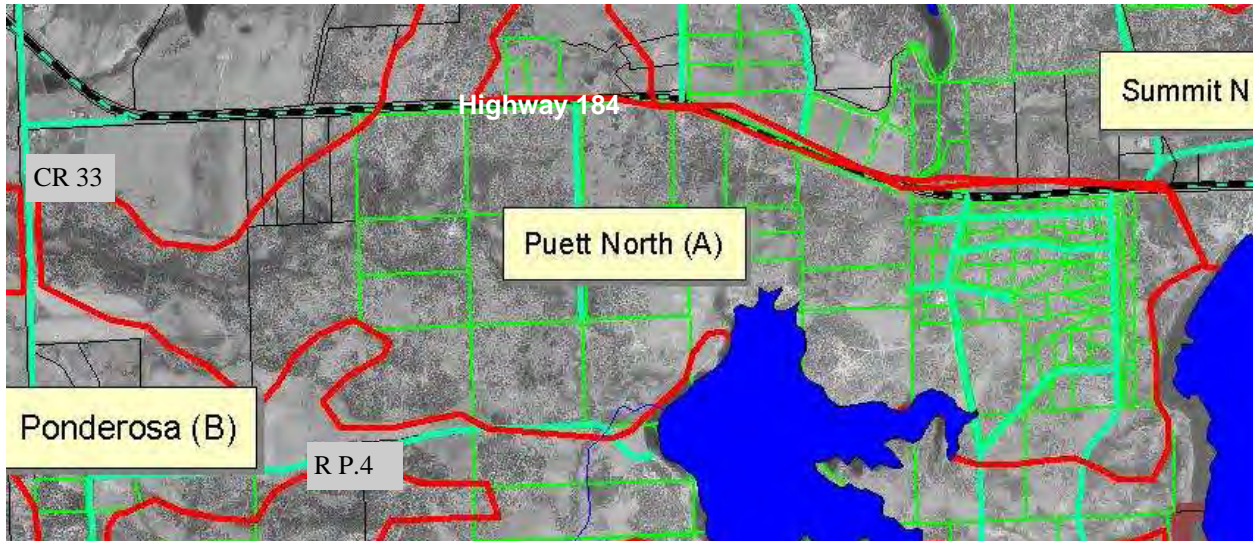
**Additional Mitigation Measures** could include continued private and public agency thinning, and controlled burns on private and public lands to the east, north and west of the polygon.

# Montezuma County Community Fire Plan

## Puett North

Fire Management Classification (A)  
Elevation: 7,293'

Latitude: N37 25.547'  
Longitude: W108 24.597'



**Above;** The aerial map shows the Puett North Polygon, heavily forested, and densely populated at the east end.. Dominate vegetation includes Oak Brush, Ponderosa, and taller grasses occasional Pinions & Junipers.

**Below;** The topographical map illustrates the rolling terrain punctuated by shallow drainages.

**T**he Puett North Polygon is bounded on the North by Highway 184, by Summit Lake to the east, Puett lake and R P. 4. on the south. Access is good off of Highway 184. CR P.4 provides good access to the south side of the polygon. The main concern for this polygon is the heavily vegetated residential area, and the potential of a fire to spread northward into more residential areas. The east side of the polygon is the most heavily populated. The subdivisions within this polygon have fire hydrants.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

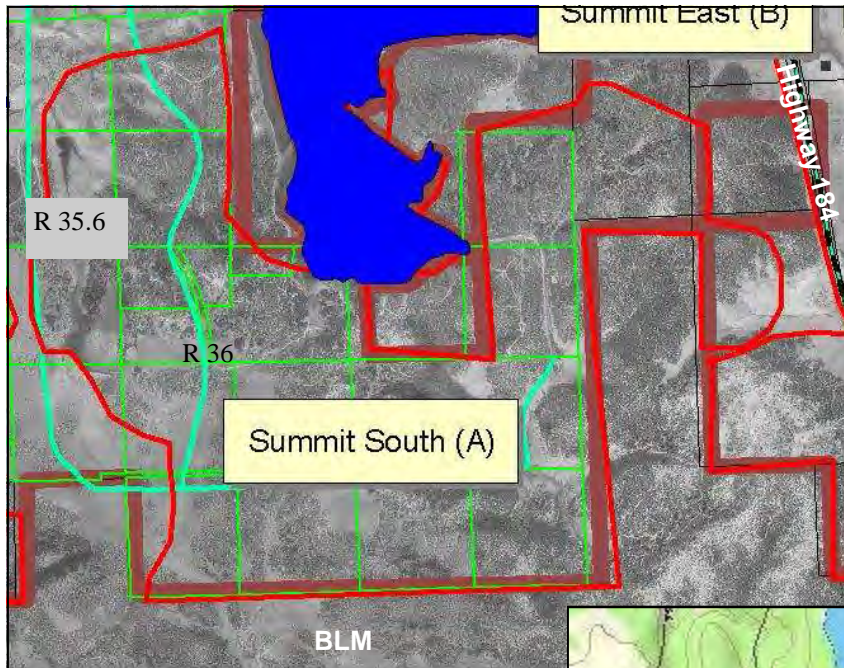
**Additional Mitigation Measures** could include continued private and public agency thinning, and controlled burns on private and public lands to the east and north of the polygon.

# Montezuma County Community Fire Plan

## Summit South

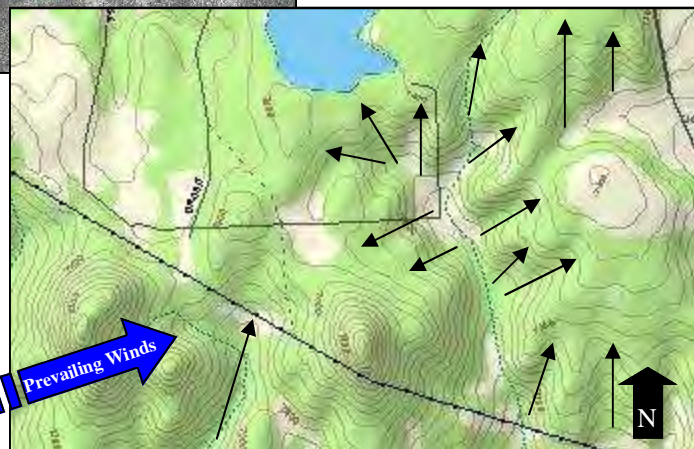
Fire Management Classification (A)  
Elevation: 7,401'

Latitude: N37 24.198'  
Longitude: W108 23.203'



**Left;** The aerial map shows the Summit South Polygon to be comprised of a patchwork of rolling forested terrain to the north and Dominant vegetation is Pinion & Juniper stands with some Ponderosa, Oak brush Sage Brush and grasses . The recent Ips Beetle infestation has caused a very high mortality rate in Pinion pines within this polygon.

**Below;** The topographical map illustrates the rolling terrain punctuated by drainages which could act as chimneys drawing fire upwards.



**T**he Summit South Polygon is bounded by public lands to the south, Highway 184 to the east, Summit Lake on the north, and R 35.6 to the west. The Polygon consists of a subdivision with large parcels which adjoins a large acreage of heavily forested public lands.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

**Additional Mitigation Measures** could include continued private and public agency thinning, and controlled burns on private and public lands to the east and south of the polygon.

# Montezuma County Community Fire Plan

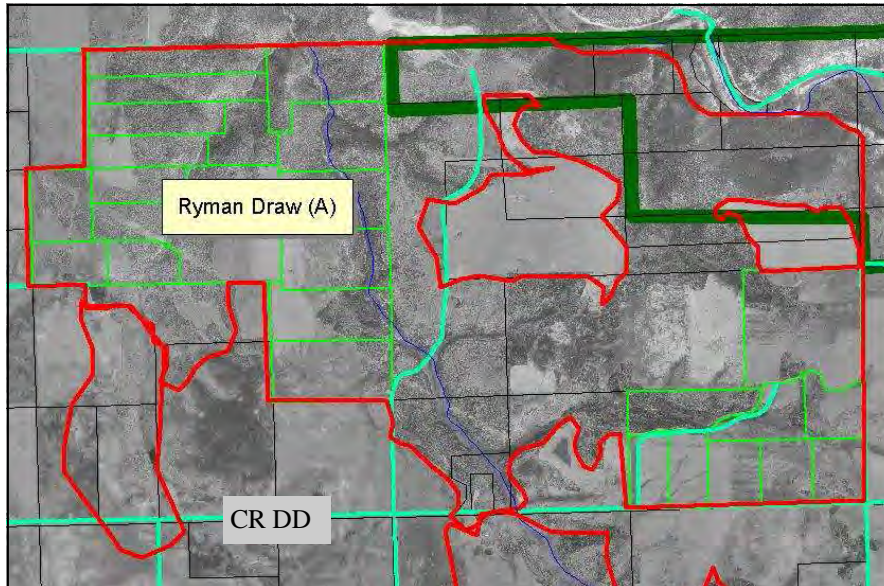
## Ryman Draw

Fire Management Classification (A)

Latitude: N37 37.114'

Elevation: 7,031'

Longitude: W108 43.724'



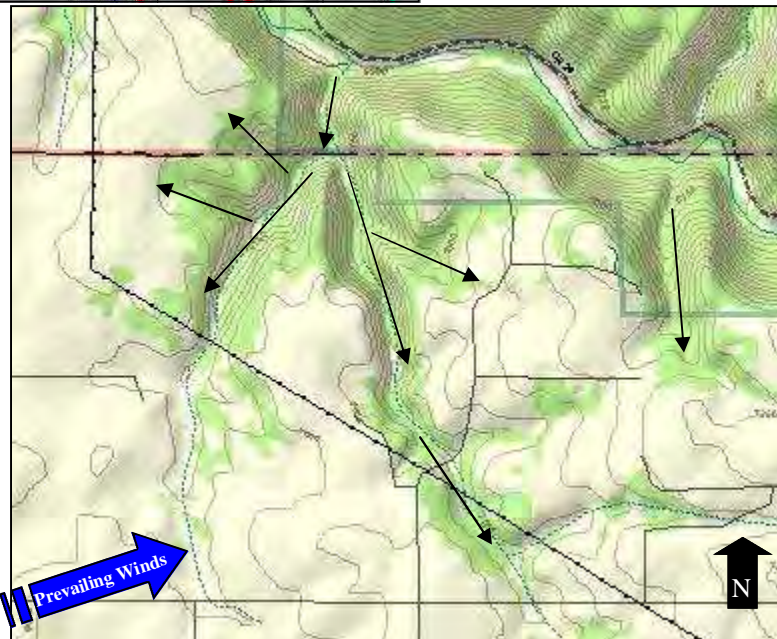
**Left;** The aerial map indicates that the Ryman Draw Polygon is comprised of mainly steep heavily forested canyons. Dominant vegetation is Oak Brush, Pinion and Juniper, and a few Ponderosa.

**Below;** The topographic map illustrates how deep the canyons are within this polygon. The map also indicated that these drainages could act as chimneys drawing fire up to the mesa tops.

**T**he Ryman Draw Polygon is bounded by the county line and Dolores River Canyon to the north. It is bounded on the south by CR DD, and CR 16 to the west. Access is good off of CR DD and CR 16. The polygon contains two subdivisions with 23 lots total. Both subdivisions have lots which are situated at the edge of deep, heavily forested drainages.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

**Additional Mitigation Measures** could include continued private and public agency thinning, and controlled burns on private and public lands to the north of the polygon.





# Montezuma County Community Fire Plan

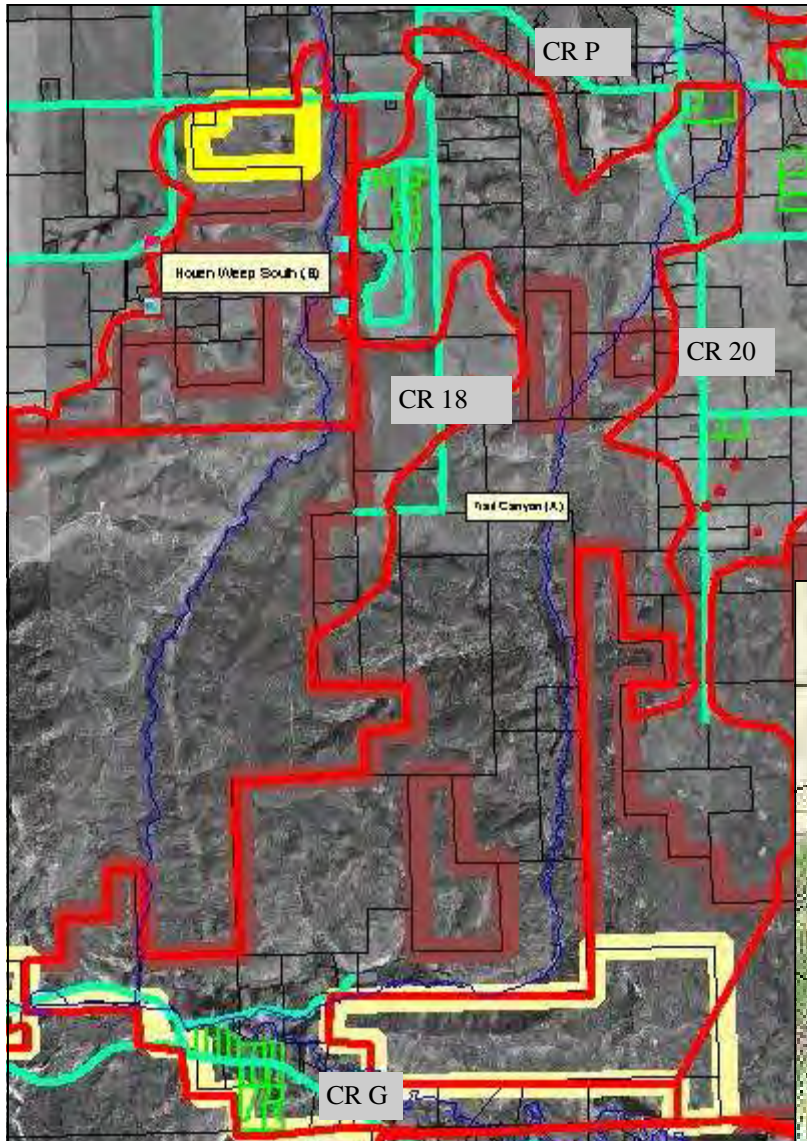
## Trail Canyon

Fire Management Classification (A)

Latitude: N37 23.11'

Elevation: 6,228'

Longitude: W108 41.80'



**Left;** The aerial map indicates that the Trail Canyon Polygon is comprised of mainly steep, heavily forested canyon. Dominant vegetation is Pinion and Juniper, and Sage Brush.

**Below;** The topographic map illustrates how deep the canyons are within this polygon. The map also indicated that these drainages could act as chimneys drawing fire up to the mesa tops.



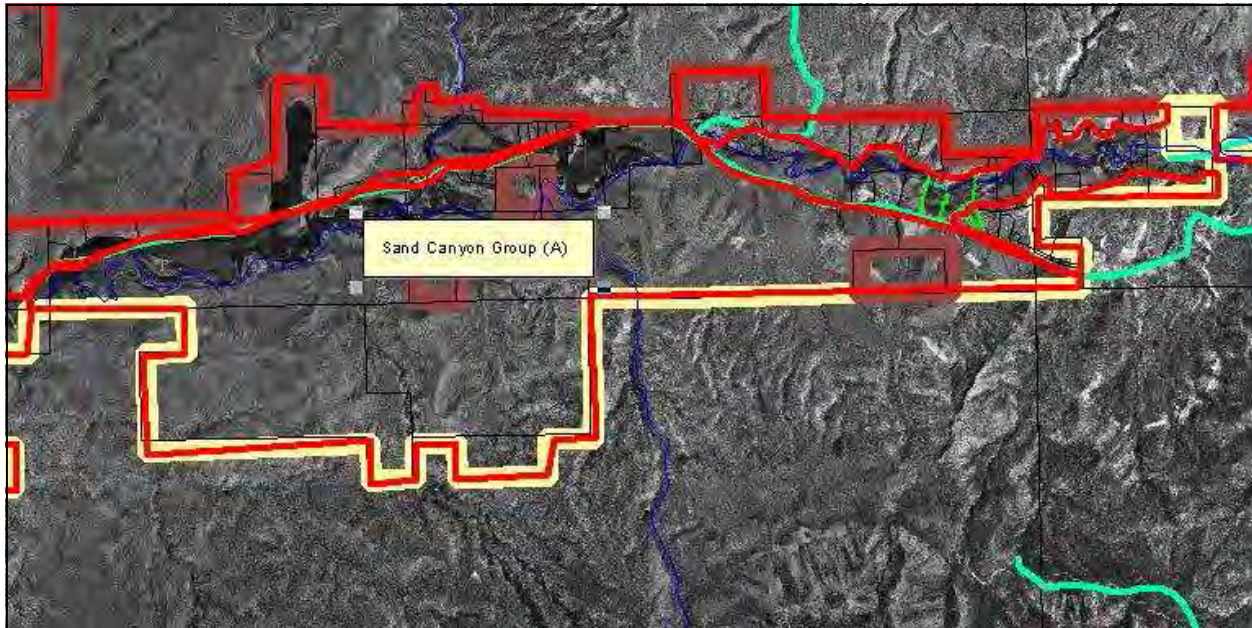
**T**he Trail Canyon Polygon is bounded on the south by CR G and on the north by CR P. It is thought to be of concern because fire starts in the canyon could be drawn up to the mesa tops. There is access into The Trail Canyon Polygon along the floor of the drainage from CR G. McElmo Creek provides an additional water source. This polygon is adjacent to other developed areas and large acreages of heavily forested public lands.

# Montezuma County Community Fire Plan

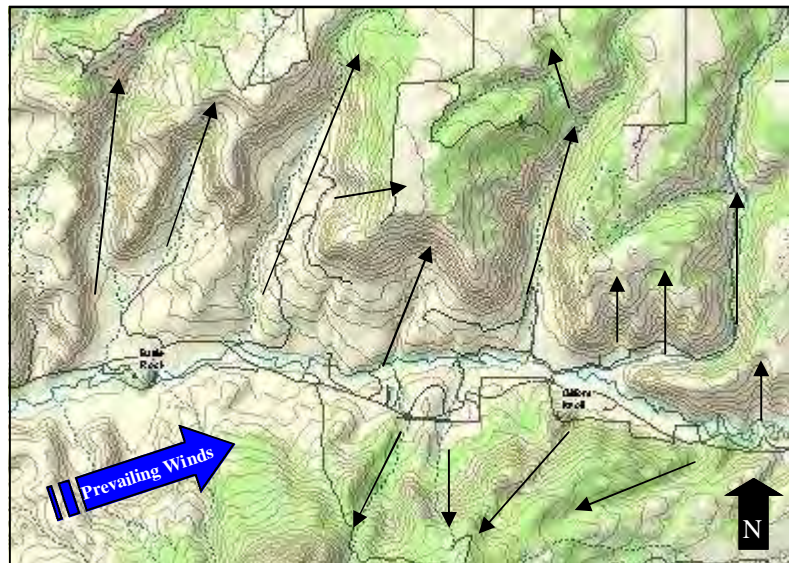
## Sand Canyon Group

Fire Management Classification (A)  
Elevation: 5,501'

Latitude: N37 20.37'  
Longitude: W108 47.75'



**T**he Sand Canyon Group consists of a long narrow strip of private land bounded on the south by Ute Mountain Ute Reservation, and Canyon of the Ancients National Monument to the north. McElmo Creek and County Road G runs lengthwise through the middle of the polygon. The polygon has one small subdivision at the east end. The polygon is dominated by Pinion/ Juniper vegetation and is adjacent to steep land to the north and south interspersed with pockets of heavy vegetation. Access into and from the polygon is limited to County Road G. Concerns for this polygon include fire starts by agricultural activities, oil and gas operations, recreational users and traffic along county road G.



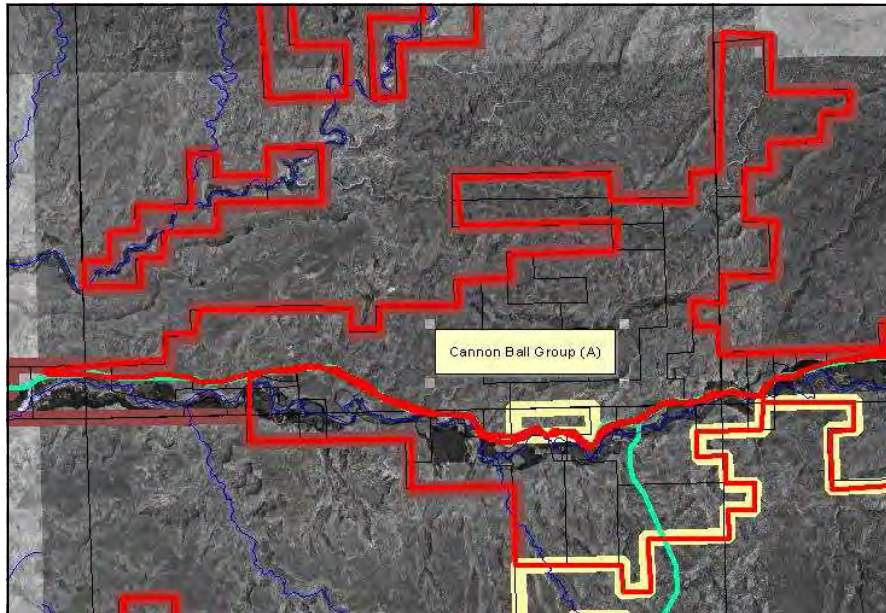
Above; The topographic map illustrates that the Sand Canyon Polygon generally follows the McElmo Creek Canyon east/west.

# Montezuma County Community Fire Plan

## Cannonball Group

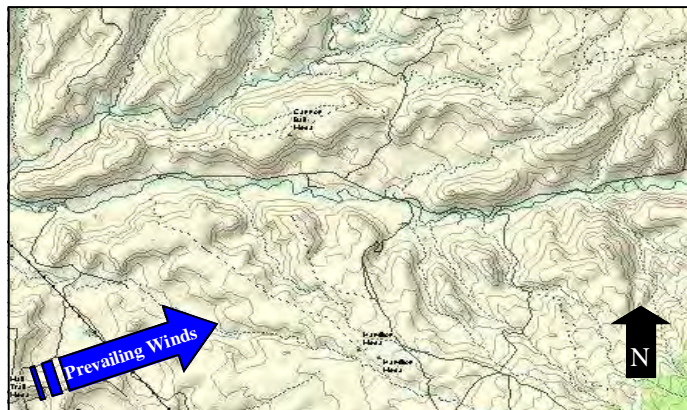
Fire Management Classification (A)  
Elevation: 5,064'

Latitude: N37 19.93'  
Longitude: W108 58.29'



The aerial photo at left illustrates that the Cannonball polygon is primarily runs east west along county road G. The polygon also extends northward to the public lands boundary covering rugged terrain punctuated by deep canyons between mesa tops. The polygon is sparsely populated, and contains only a few small agricultural operations. Human caused fire starts may occur through agricultural operations, oil and gas operations, recreational use and traffic along county road G.

**Below:** The satellite imagery indicates that the majority of the Cannonball polygon is sparsely vegetated. Existing vegetation is dominated by shrubs and grasses with widely spaced Pinyon/ Juniper trees. Vegetation along the bottom of drainages tends to be heavier than hill sides and mesa tops.



**Above:** The topographic map indicates the rugged terrain typical of this area. Many deep canyons run through the polygon and in general have an east west orientation. Concern for this polygon is primarily associated with fire starts that could possibly run up drainages to the east where there is heavier fuel loads. The green line on the imagery to the left indicates approximately where the vegetation becomes heavier. Overall this polygon is extremely arid and does not seem to present as much of a fire hazard as adjacent polygons to the east. This polygon is ranked as an A because of the remoteness, and adjacency to public lands. The status of this polygon could be changed depending on further analysis.



# (A) Polygons

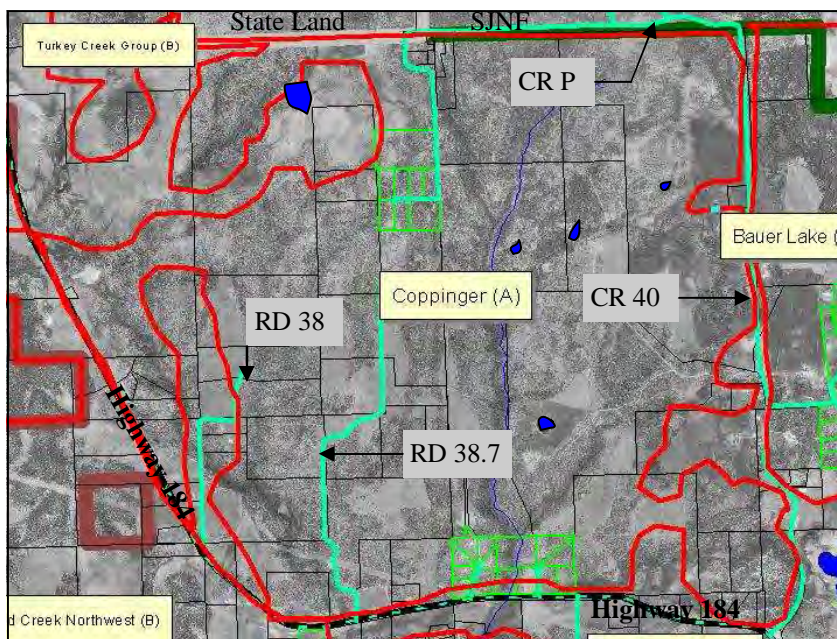
Level 2 Hazard Areas

# Montezuma County Community Fire Plan

## Coppinger

Fire Management Classification (A)  
Elevation: 7,336'

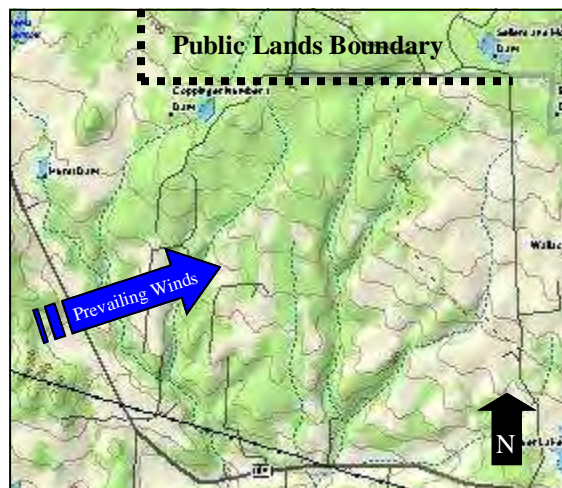
Latitude: N37 23.940'  
Longitude: W108 20.211'



**Left;** The aerial map shows the Coppinger Polygon to be a large patchwork of forested land and agricultural lands. Vegetation is dominated by Ponderosa Pine and Oak Brush with a few stands of Pinion and Juniper as well. The Coppinger Polygon is roughly 3/4 of a mile long by 3/4 of a mile wide.

**Below:** the topographic map illustrates the rolling terrain and general upwards slope north east into the San Juan National Forest.

The Coppinger Polygon is bounded on the south and west by Highway 184. To the east the polygon is bounded by CR 40. On the north the polygon is bounded by CR P and the public lands beyond. Overall the polygon is sparsely populated with two small subdivisions one 8 lot in the north central region and the other a 14 lot in the far south central area. Access into these subdivisions would be CR P to the north subdivision and Highway 184 to the south subdivision. There are several small ponds within the polygon that could provide additional water, additionally there are several other open water resources adjacent to the polygon. The Coppinger Polygon although sparsely populated, represents a large area of moderately heavy fuels which adjoins public lands. Human activities increase the chances of fire starts. A Hydro-ax may be a viable thinning alternative in this Polygon. This Polygon could potentially be converted to a B polygon.



**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, and the development of an evacuation plan. Care should be taken to make sure addresses are clearly visible from the road.

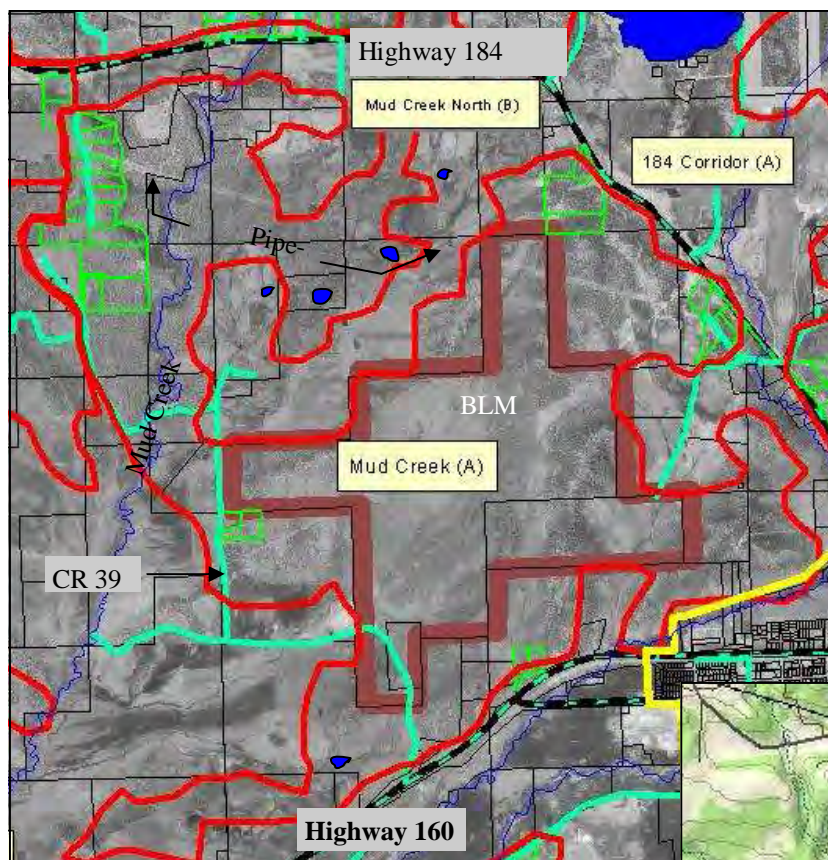
**Additional Mitigation Measures** could include agency thinning on public lands to the north

# Montezuma County Community Fire Plan

## Mud Creek

Fire Management Classification (A)  
Elevation: 7,090'

Latitude: N37 21.747'  
Longitude: W108 18.889'



**Left;** The aerial map shows the Mud Creek Polygon to be a patchwork of forested areas interspersed with open grass lands and shrubs. The dominant vegetation is Pinion and Juniper with Sage Brush and Oak Brush mixed in. The polygon is roughly 3/4 of a mile wide by 3/4 of a mile long. The central area of the polygon is comprised of moderately forested Public Lands.

**Below;** The topographic map shows several steep hills on the east side of the polygon which are punctuated by canyons running northeast. The central area of the polygon is comprised of Public Lands.



Care should be taken to make sure residential addresses are clearly visible from the road.

**Additional Mitigation Measures** could include agency thinning on public lands in the central area of the polygon.

**T**he Mud Creek Polygon is bounded on the north and east by Highway 184. On the south the polygon is bounded by Highway 160, and on the west the polygon is bounded by CR 39. Overall, the Polygon is sparsely populated with five small subdivisions around the perimeter. Access to the subdivisions on the east side would be from Highway 184. Access to the subdivisions to the west would be on RD K.4 from CR 39. Access from Highway 184 is also possible on RD 38.5. There are several small ponds within the Polygon that may provide an alternative water source. With mitigation work this polygon could become a "B" polygon. A Hydro-ax maybe feasible for some of this polygon.

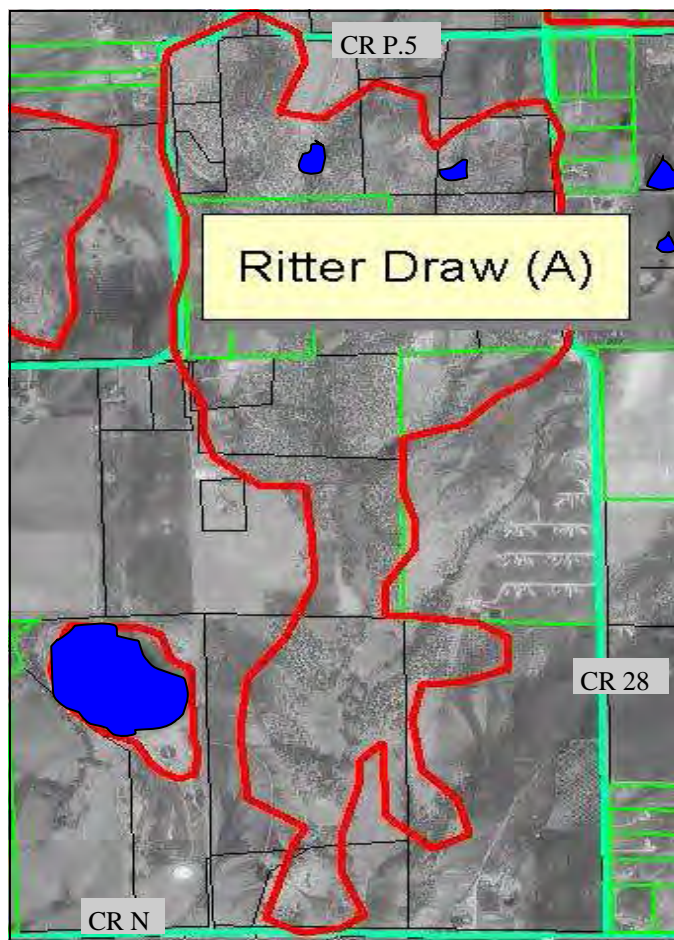
**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, and the development of an evacuation plan.

# Montezuma County Community Fire Plan

## Ritter Draw

Fire Management Classification (A)  
Elevation: 6584'

Latitude: N37 25.071'  
Longitude: W108 32.032'



**Left;** The aerial map shows the Ritter Draw Polygon to be comprised of primarily heavily forested canyon adjacent to several residential area. Dominant vegetation is Pinion & Juniper stands. The recent Ips Beetle infestation has caused a very high mortality rate in Pinion pines within this polygon.

**Below;** The topographic map illustrates the canyon that runs through the center of this polygon. Several draws indicated by black arrows that could act as chimneys drawing fire to the top of the slope.



**T**he Ritter Draw Polygon is bounded on the north by CR P.5, to the east by CR 28, and the south by CR N. The polygon has several residential subdivision around the boundaries. Overall the polygon is sparsely populated. Access is good from the county roads. There are several small ponds at the north end of the polygon that could provide alternative water sources.

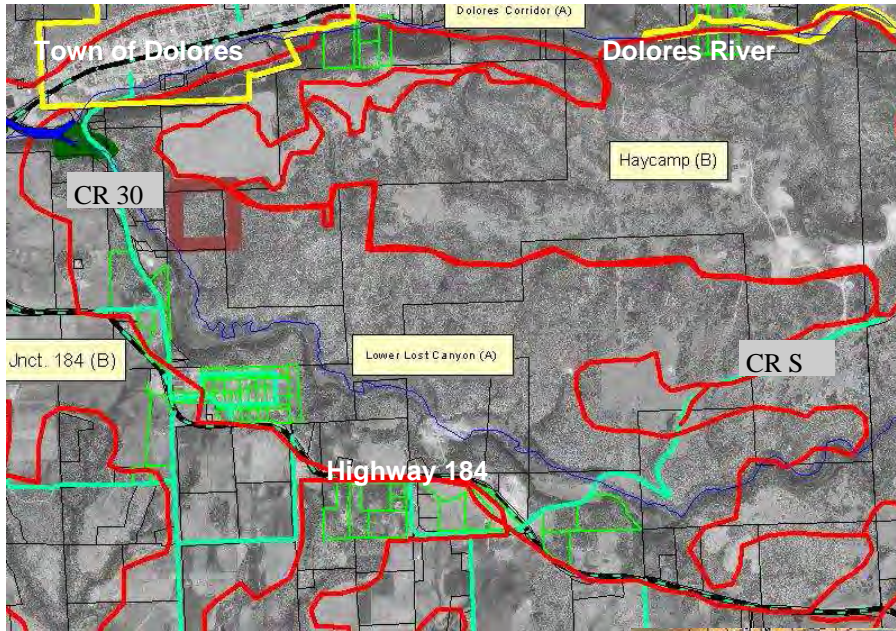
**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning on the down slope below the subdivisions would be good prevention.

# Montezuma County Community Fire Plan

## Lower Lost Canyon

Fire Management Classification (A)  
Elevation: 7,297'

Latitude: N37 27.339'  
Longitude: W108 28.648'



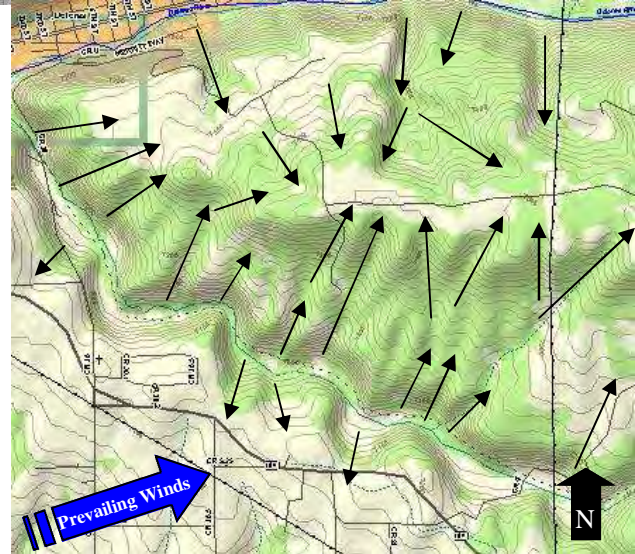
**Left;** The aerial map shows the Lost Canyon Polygon as a heavily forested area along of canyon wall and bench area down to the confluence of lost canyon and the Dolores Canyon. Dominant vegetation includes Oak Brush, Pinion & Juniper stands, Ponderosa, and taller grasses.

**Below;** the topographic map illustrates how deep Lost Canyon is. Furthermore it indicates numerous side draws that could act as a chimney drawing fire up to higher grounds.

The Lower Lost Canyon Polygon is bounded on the south by Highway 184, and on the north by the Dolores River. The Polygon generally follows the heavily forested bench on the side of the mesa. The polygon is sparsely populated except for several subdivisions along highway 184. The primary concern for this polygon is fire starts from along the highway that move into lost canyon. Access to the central area of the polygon may be possible via the old railroad grade along Lost Canyon Creek fro CR 30 or S.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

**Additional Mitigation Measures** could include continued private and public agency thinning, and controlled burns on private and public lands to the east and south of the polygon.





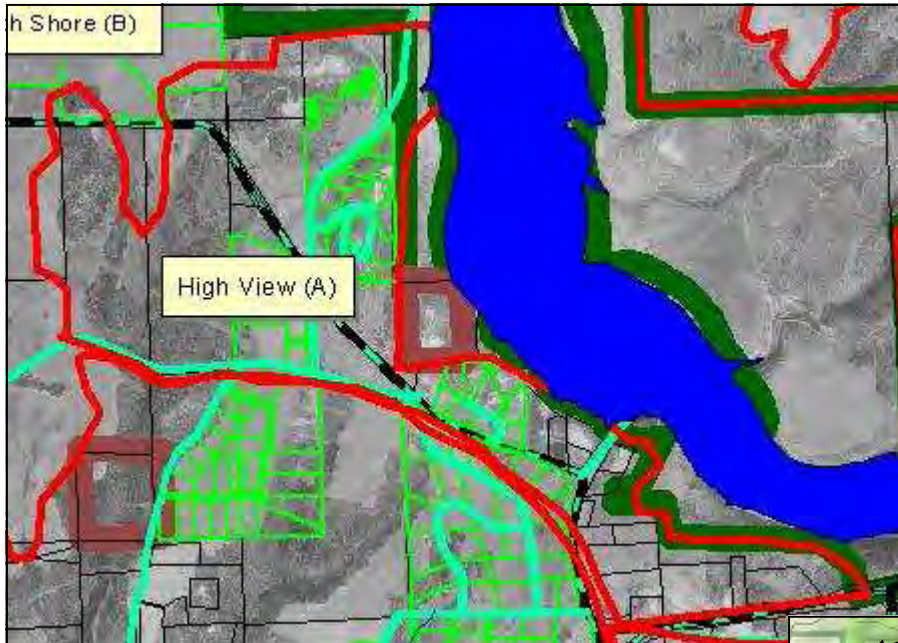


# Montezuma County Community Fire Plan

## High View

Fire Management Classification (A)  
Elevation: 6,743'

Latitude: N37 28.586'  
Longitude: W108 32.777'

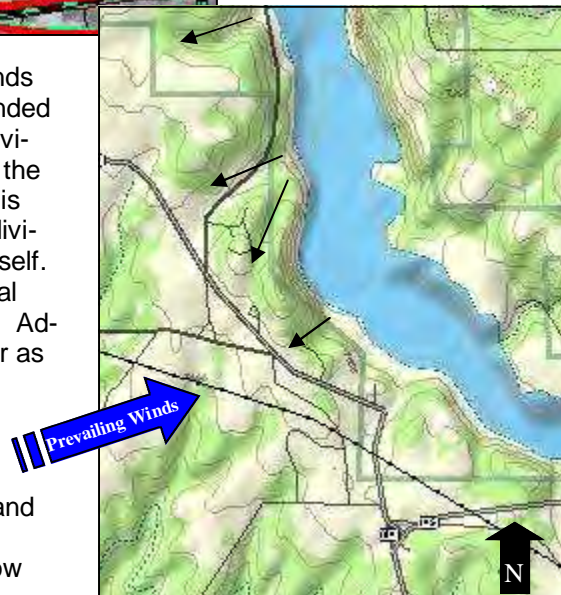


**Left;** The aerial map shows the High View Polygon to be comprised of a forested hill tops overlooking McPhee Reservoir with four residential subdivisions. Dominant vegetation is Pinion & Juniper stands with some Sage Brush and grasses. The recent Ips Beetle infestation has caused a very high mortality rate in Pinion pines within this polygon

**T**he High View Subdivision is bounded by Public Lands and Lake McPhee on the north and east. It is Bounded by Highway 184 on the west and south. The Subdivision is a developing area with several subdivisions within the polygon and several more around the perimeter. Access is good off of Highway 184. CR 27 provides access to subdivisions within the core of the polygon and to the reservoir itself. This polygon is of concern because many of the residential homes are located within forested areas often on a slope. Additionally there are water quality concerns for the reservoir as well as aesthetic concerns.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

**Additional Mitigation Measures** could include continued agency thinning on public lands to the east and north of the polygon



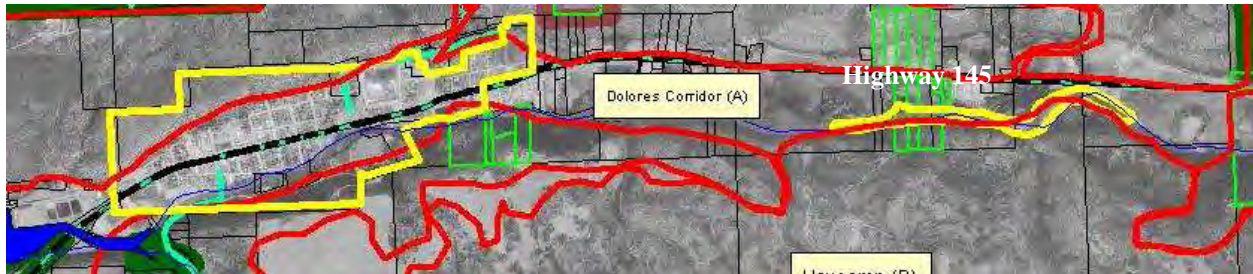
**Above;** The topographic map illustrates the rolling mesa top terrain of this polygon, as well as the steep drop off on the east to the reservoir. Several draws indicated by black arrows that could act as chimneys drawing fire to the top of the slope.

# Montezuma County Community Fire Plan

## Dolores Corridor

Fire Management Classification (A)  
Elevation: 6,975'

Latitude: N37 28.57'  
Longitude: W108 29.117'



**Above;** the aerial map shows heavily forested canyon sides, and tall grass meadows along the bottom. Primary vegetation is Pinion & Juniper on the south facing side of the canyon and Ponderosa & Fir on the north facing side of the canyon.



**T**he Dolores Corridor Polygon makes up the town of Dolores, including river bottom, and canyon sides. It is bounded by the rim of the canyon on the north and south. Access to most of the polygon is limited to what can be reached from Highway 145. The river bottom is relatively flat, but the sides of the canyon rise sharply. This polygon is thought to be at greater risk due to human caused ignitions that run up the canyon walls. Highway 145 bisects the polygon lengthwise and provides the only access into the polygon.

**Above;** the topographic map illustrates how deep the Dolores River Canyon is. Furthermore it indicates numerous side draws that could act as a chimney drawing fire up to higher grounds.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

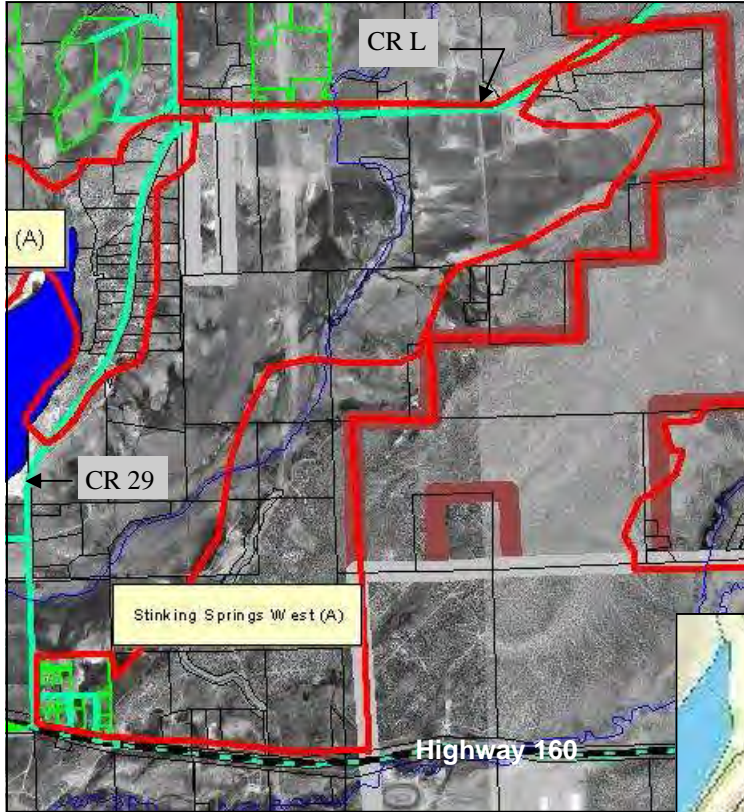
**Additional Mitigation Measures** could include continued private and public agency thinning, and controlled burns on private and public lands to the north of the polygon.

# Montezuma County Community Fire Plan

## Stinking Springs West

Fire Management Classification (A)  
Elevation: 6,311'

Latitude: N37 21.602'  
Longitude: W108 30.697'



**Left:** The aerial map shows the Stinking Springs Polygon to be mostly heavily forested. Dominant vegetation types include Pinion and Juniper Stands, Sage brush, and some grasses. The Ips Beetle infestation has caused a high mortality rate in Pinions in this area.

**Below:** The topographic map illustrates how the polygon runs along the base of a ridge that runs generally to the north east. There are a number of chimneys evident (indicated by black lines) that could lead a fire up the slope.



The Stinking Springs West Polygon is bounded on the south by Highway 160, by Public lands to the east, CR 29 to the west and CR L to the north. The only subdivision within the polygon is at the southwest end. Access to the subdivision is from highway 160 and CR 29. The subdivision is not considered to be a high risk. Fire starts within the polygon could move onto public land at the top of the ridge and continue to spread from there. Totten Reservoir, and Bureau of Reclamation wetland pond at the west side of the polygon could provide alternative water.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, and the development of an evacuation plan.

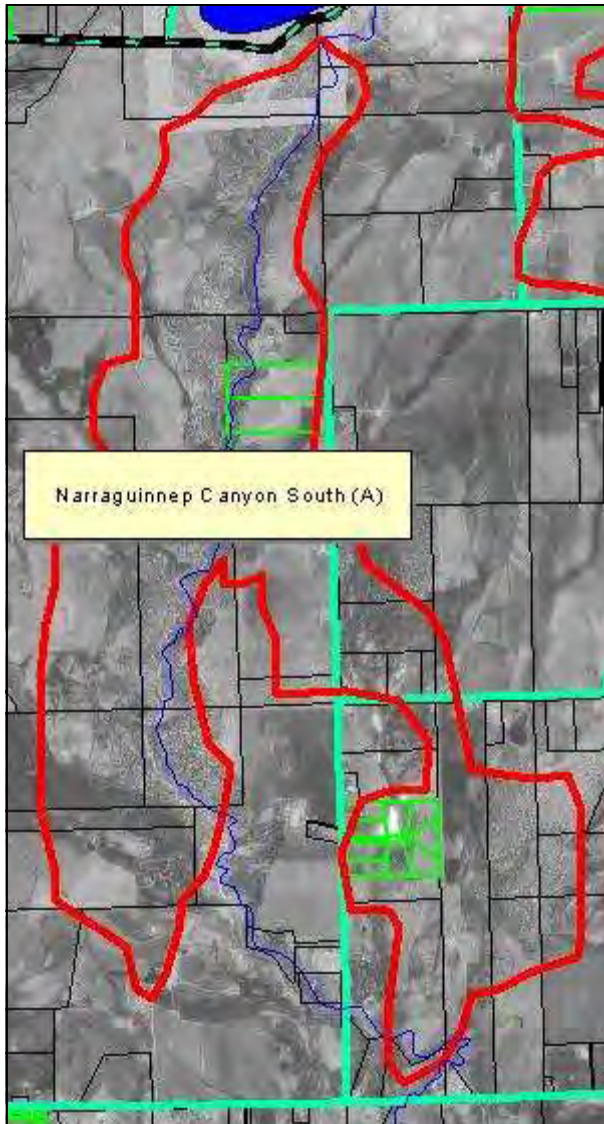
**Additional Mitigation Measures** could include continued agency thinning on public lands in the central area of the polygon.

# Montezuma County Community Fire Plan

## Narraguinnepp Canyon South

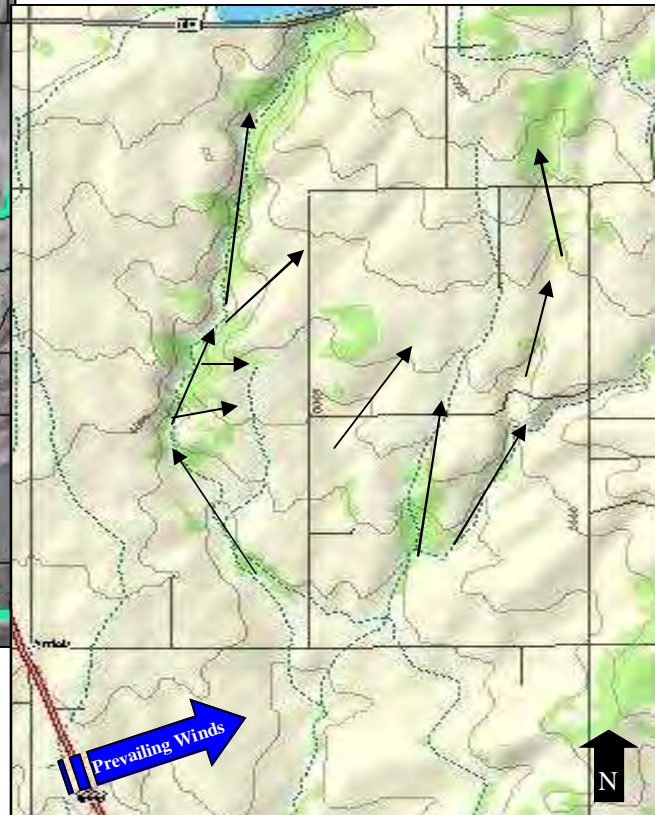
Fire Management Classification (A)  
Elevation: 6,501'

Latitude: N37 27.813'  
Longitude: W108 37.975'



**Left;** The aerial map shows the Narraguinnepp Canyon South Polygon to be comprised of a forested canyon with two small residential subdivisions on the rim. Dominant vegetation is Pinion & Juniper stands with some Sage Brush and grasses. The recent Ips Beetle infestation has caused a very high mortality rate in Pinion pines within this polygon.

**Below;** The topographic map illustrates the canyon that runs through the center of this polygon. Several draws indicated by black arrows that could act as chimneys drawing fire to the top of the slope.



The Narraguinnepp Canyon South Polygon is bounded on the north by Highway 184, on the south by CR S and Is bisected by CR 23 which provides access to the two subdivisions found within this polygon.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning,

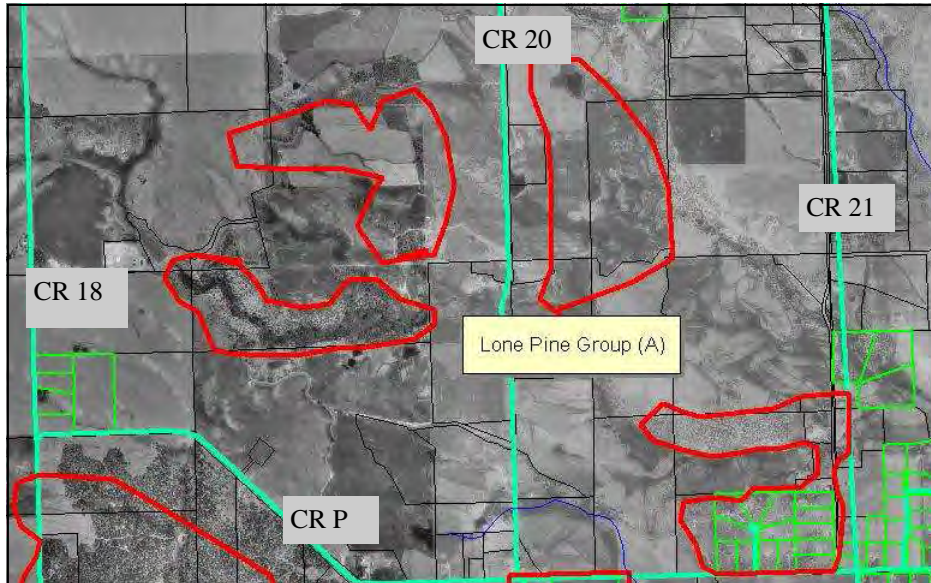
the development of an evacuation plan and keeping the residential address clearly visible. Thinning forested areas downhill from the subdivisions would be good prevention.

# Montezuma County Community Fire Plan

## Lone Pine Group

Fire Management Classification (A)  
Elevation: 6,536'

Latitude: N37 25.758'  
Longitude: W108 41.189'



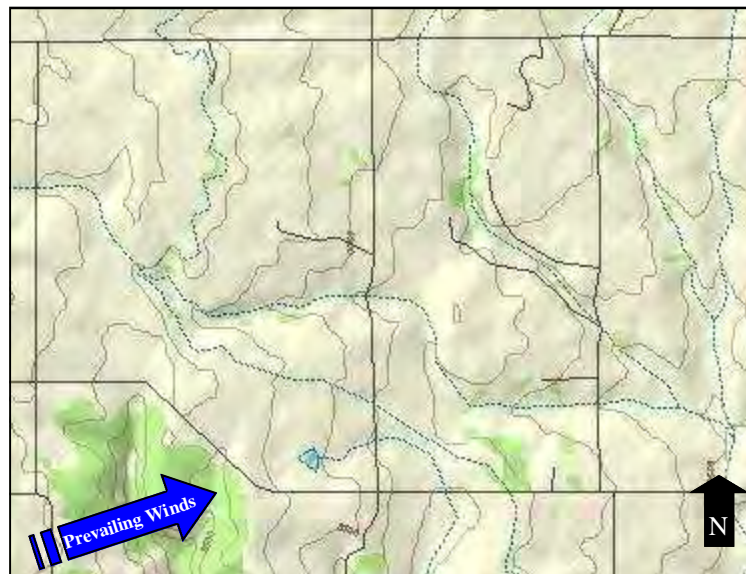
**Left;** The aerial maps show that the Lone Pine Group polygon is made up of several relatively isolated stands of Pinion & Juniper forest. Surrounded by agricultural lands.

**Below;** The topographic map indicates a generally rolling terrain.

**T**he Lone Pine Polygon Group is comprised of several small areas. The polygon group is bounded by CR S at the north, CR 21 to the east, CR P to the south, and CR 18 to the west. The polygon is mostly surrounded by agricultural grounds. The main concern with this polygon is the subdivision to the south east corner.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

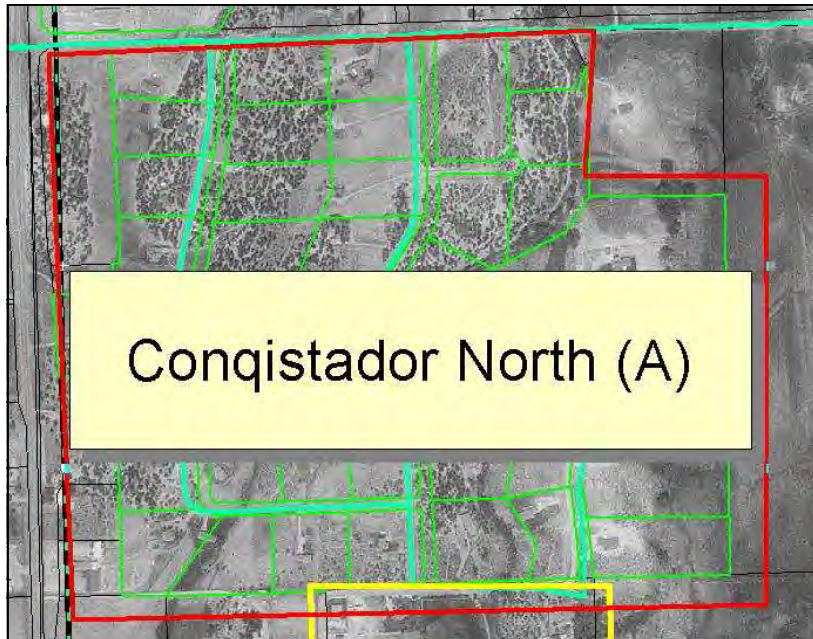
**Additional Mitigation Measures** could include continued private and public agency thinning, and controlled burns on private and public lands to the north of the polygon.



# Montezuma County Community Fire Plan

## Conquistador North

Fire Management Classification (A)      Latitude: N37 22.993'  
Elevation: 6,260'                                      Longitude: W108 32.840'

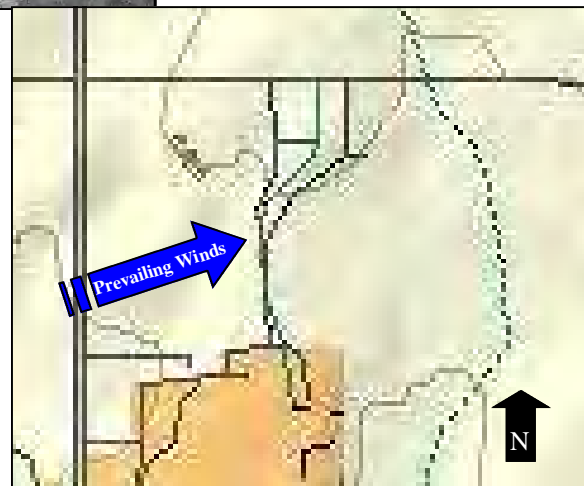


**Left;** The aerial map shows the Conquistador North Polygon to be comprised of primarily several stands of forested lots within a residential subdivision. Dominant vegetation is Pinion & Juniper stands. The recent Ips Beetle infestation has caused a very high mortality rate in Pinion pines within this polygon.

**Below;** The topographic map illustrates the gently rolling nature of the polygon.

**T**he Conquistador North Polygon is bounded on the north by CR L, by Highway 145 to the west and the City of Cortez to the south. This polygon is comprised of a residential subdivision with forested lots. Access is from Highway 145 and CR L. Roads are adequate for emergency vehicles. This polygon is relatively isolated from other polygons and is a concern only because of the forested conditions within its boundaries.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivision would be good prevention.

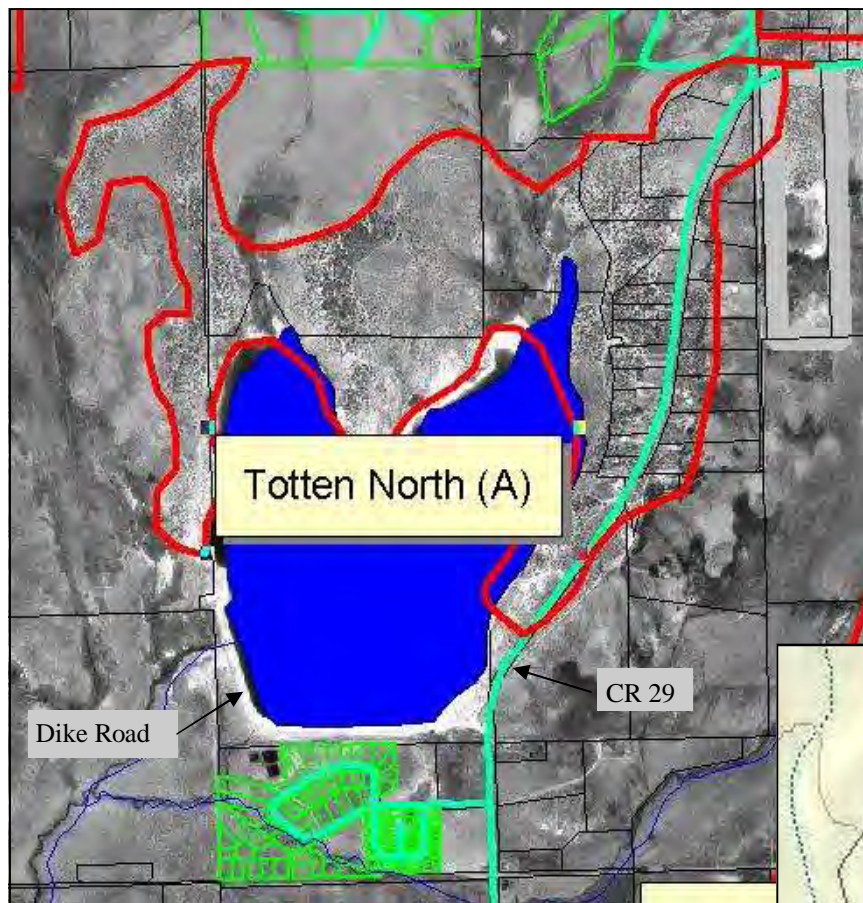


# Montezuma County Community Fire Plan

## Totten North

Fire Management Classification (A)  
Elevation: 6,189'

Latitude: N37 22.282'  
Longitude: W108 30.825'



**Left;** The aerial map indicates that The Totten North Polygon consists of moderately heavy forest interspersed with grassy areas and shrubs. The Dominant vegetation consists of Pinion/ Juniper Stands. Ips Beetle mortality in Pinions is high in this area.

**Below;** The topographic map illustrates the rolling terrain of the area bounded by a ridge along the east side. The central area consists of two gentle drainages running northward.



The Totten North Polygon is bounded on the east by CR 29. The north and west sides are bounded by a broad area of sage brush and grass vegetation. The south side consists of lake shore. The Polygon is sparsely populated with the main residential concern concentrated along the top of the ridge to the east overlooking the reservoir (approximately 20 residences). Access to this polygon would be from CR 29 to the east, CR M to the North. Access to the west side of the polygon may be possible on the dike road. Totten Reservoir is the best alternative water source for the area.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, and the development of an evacuation plan.

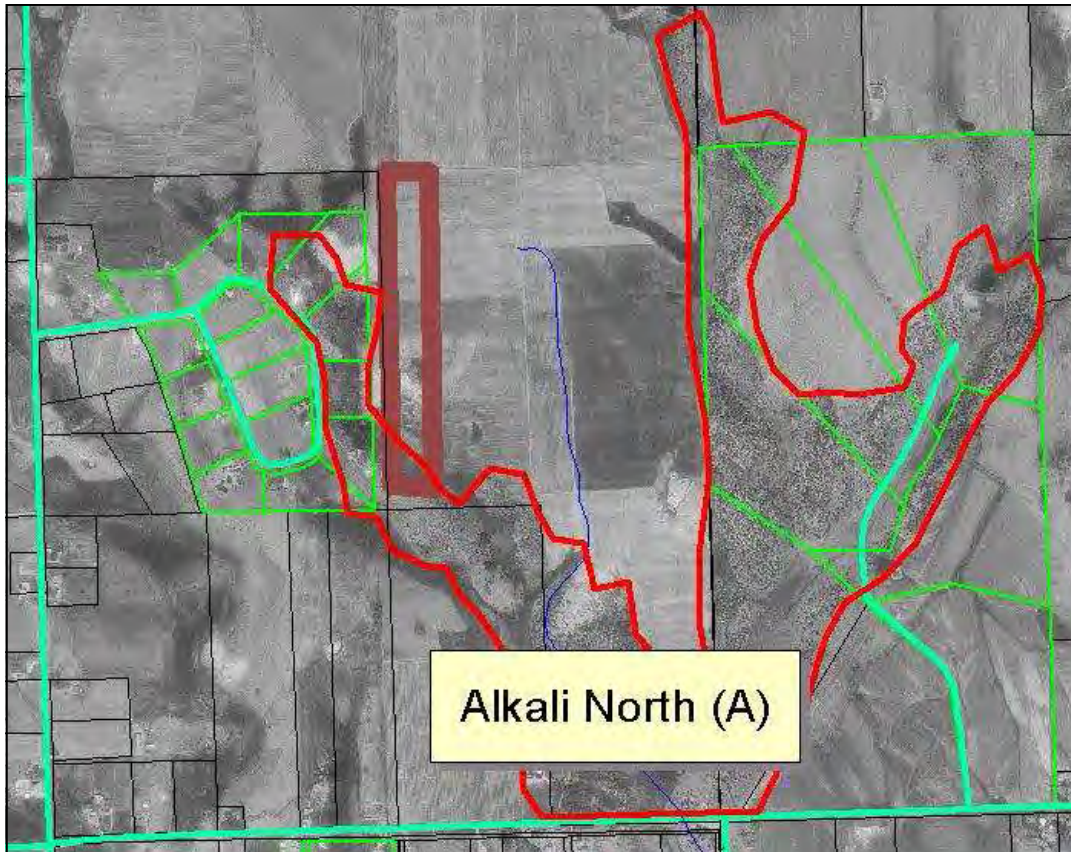


# Montezuma County Community Fire Plan

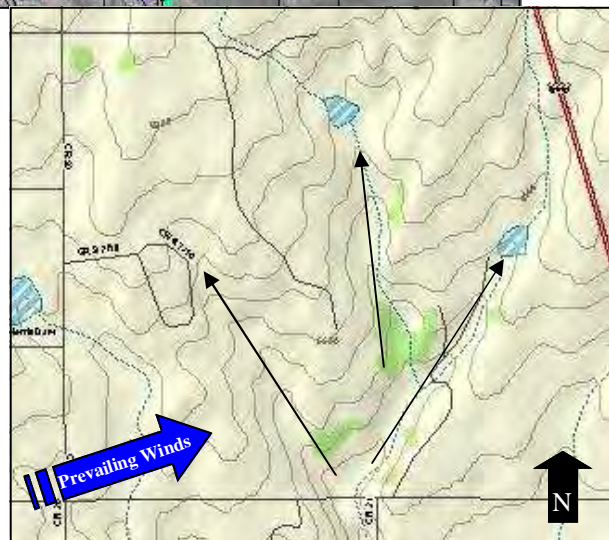
## Alkali North

Fire Management Classification (A)  
Elevation: 6,493'

Latitude: N37 26.976'  
Longitude: W108 40.122'



The Alkali North Polygon consists of a broken stand of Pinyon / Juniper trees following three shallow drainages. It has been identified as an A polygon because of its adjacency to two residential subdivisions. **Above;** As the aerial photograph illustrates, the Alkali North polygon is roughly "V" shaped, with the "V" opening to the north. Concerns for this polygon include fire starts from agricultural operations, and residential uses. Although the polygon is relatively isolated by agricultural lands surrounding it, the fuel loads within the polygon could pose a risk to residences within the subdivisions. Proper defensible space treatments around homes within the subdivisions would mitigate the risk effectively. **Left;** As the topographic map to the left indicates, the polygon tends to follow forested drainages that run generally northward.



# Montezuma County Community Fire Plan

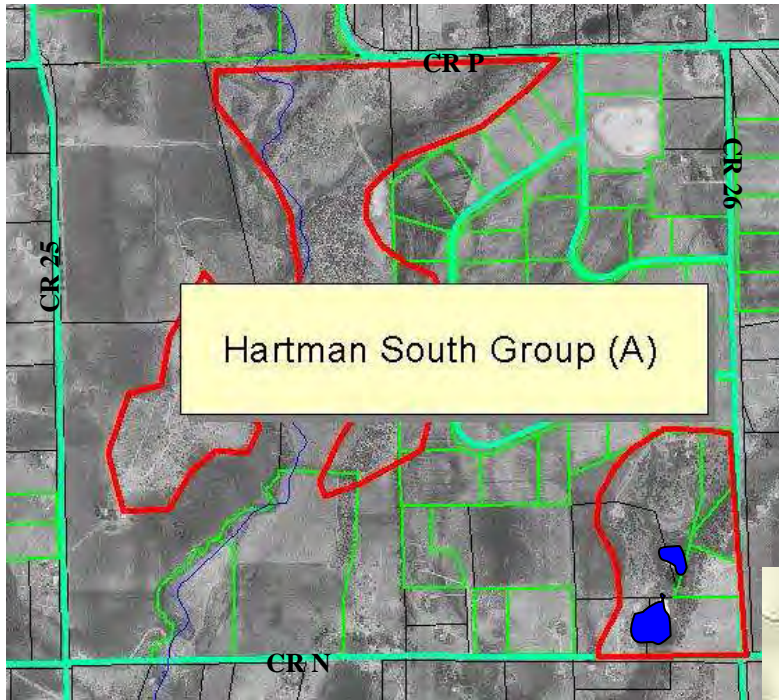
## Hartman South

Fire Management Classification (A)

Latitude: N37 24.437'

Elevation: 6,256'

Longitude: W108 34.920'



**Left;** The aerial map shows the Hartman South Group Polygon to be comprised of primarily three stands of forested areas adjacent to several residential subdivisions. Dominant vegetation is Pinion & Juniper stands. The recent Ips Beetle infestation has caused a very high mortality rate in Pinion pines within this polygon.

**Below;** The topographic map shows two small canyons that could act a chimneys drawing fire upwards. And the otherwise rolling terrain.

**T**he Hartman South Group Polygons are bounded on the north by CR P, on the east by CR 26, on the west by CR 25, and the south by CR N. The polygons are adjacent to several residential subdivisions. Access is good on all for sides via county roads. There are two small ponds at the south east corner that could provide alternative water. The Polygon group is surrounded by irrigated farmland and is not directly adjacent to other large fuel loads. The polygon is likely to see future residential development because of its proximity to town and scenic qualities. Much of the most desirable ground for development is within stands of Pinyon/ Juniper. Most of the fuel load within this polygon follows the drainages, which is a typical pattern for the region. The surrounding landscape provides a good buffer from other polygons. The main concern is that fire starts could move up the drainages and potentially threaten a large subdivision on the east side of the polygon.



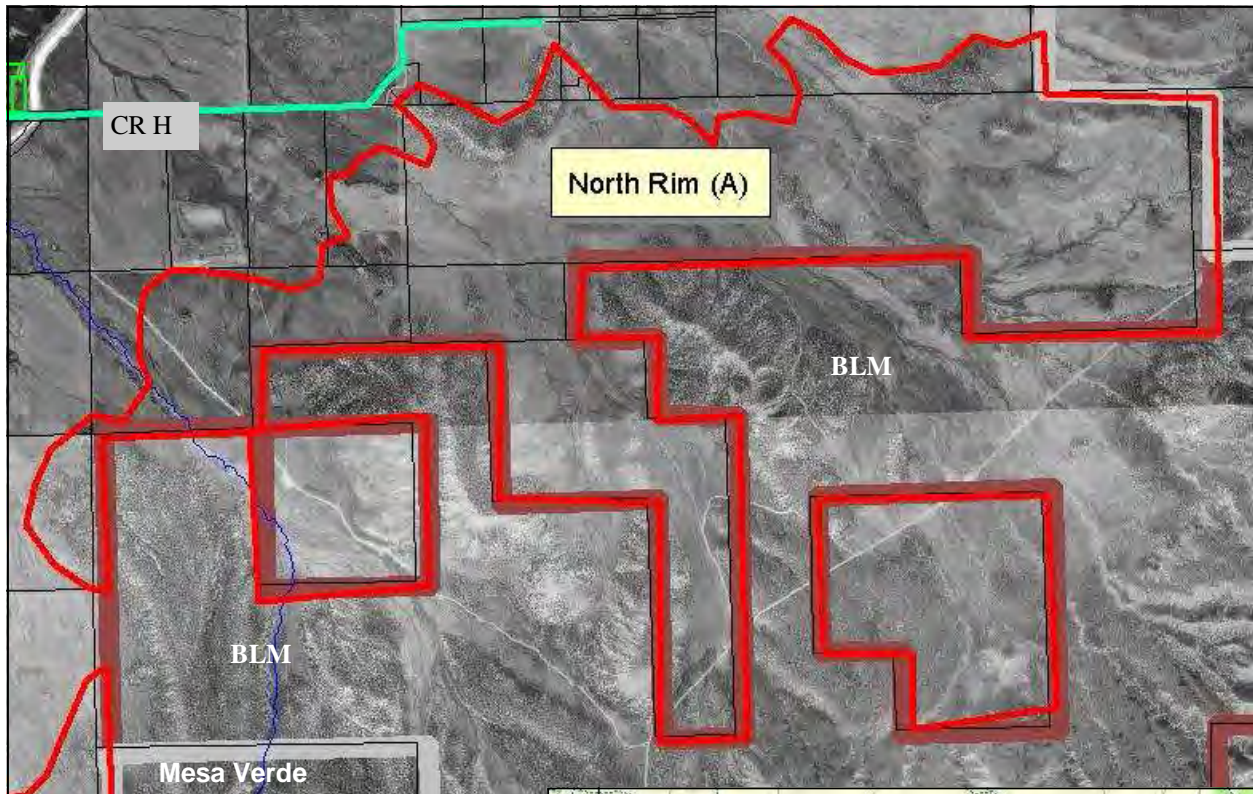
**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning on the down slope below the subdivisions would be good prevention.

# Montezuma County Community Fire Plan

## North Rim

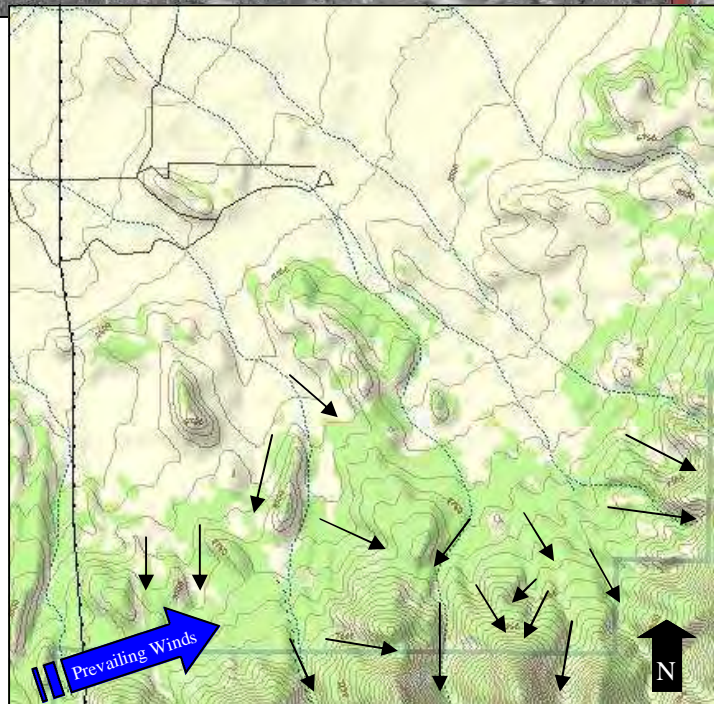
Fire Management Classification (A)  
Elevation: 6,647'

Latitude: N37 17.068'  
Longitude: W108 32.863'



**F**rom the aerial map above, the North Rim Polygon is comprised mainly of large patches of sagebrush and grasslands. The polygon generally parallels the foot of the mesa where the landscape becomes more forested. Grass and brush fires that occur in this polygon could quickly move uphill and into the steep, heavily forested BLM & National Park lands. The topographic map at right illustrates how the slope increases dramatically to the south towards Mesa Verde. Numerous very steep drainages (indicated by black arrows) can be seen that could act as chimneys right up into the National Park. Access into the polygon is across private lands off of CR H.

**Mitigation Measures;** May include mechanical thinning on both public and private lands. Community outreach.

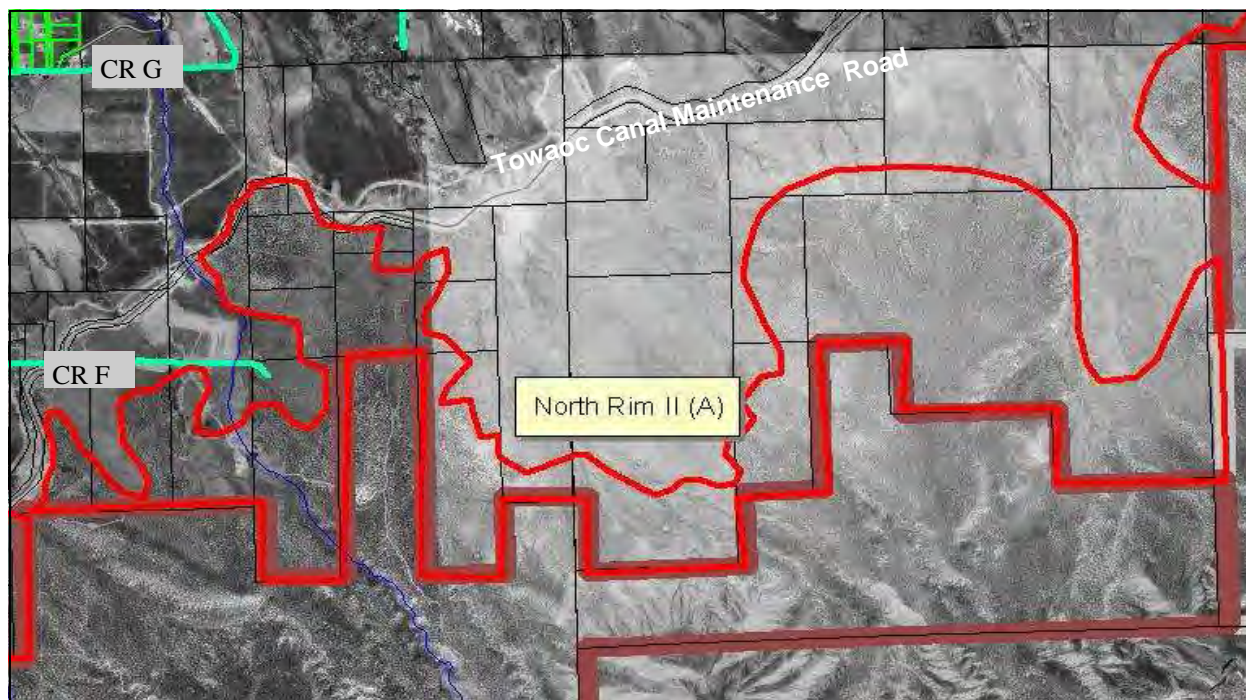


# Montezuma County Community Fire Plan

## North Rim II

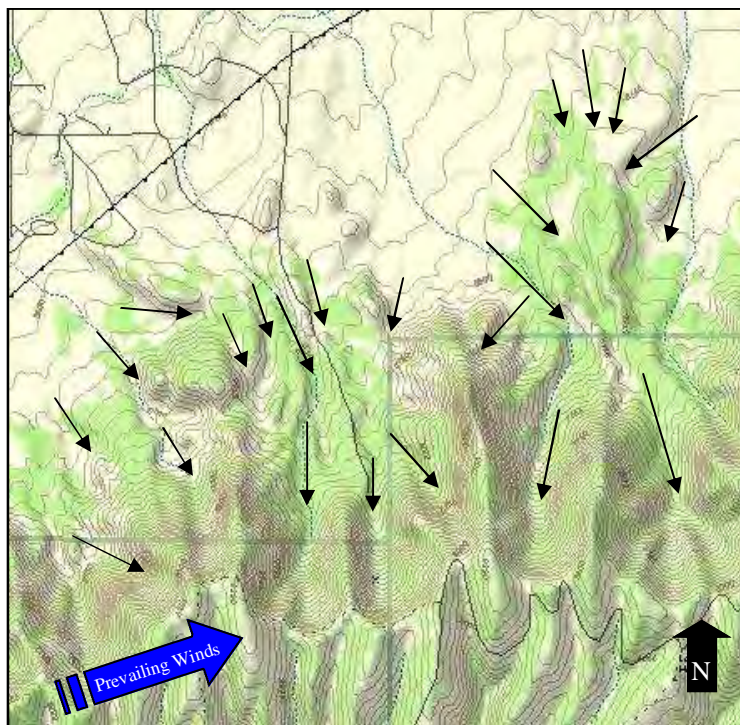
Fire Management Classification (A)  
Elevation: 6,791'

Latitude: N37 16.844'  
Longitude: W108 34.310'



**F**rom the aerial map above the North Rim II Polygon is comprised mainly of large patches of sagebrush and grasslands. The polygon generally parallels the foot of the mesa where the landscape becomes more forested. Grass and brush fires that occur in this polygon could quickly move uphill and into the steep, heavily forested BLM & National Park lands. The topographic map at right illustrates how the slope increases dramatically to the south towards Mesa Verde. Numerous very steep drainages (indicated by black arrows) can be seen that could act as chimneys right up into the National Park. Access into the polygon is across private lands off of CR F, CR G, & the Towaoc Canal maintenance road.

**Mitigation Measures;** May include mechanical thinning on both public and private lands. Community outreach

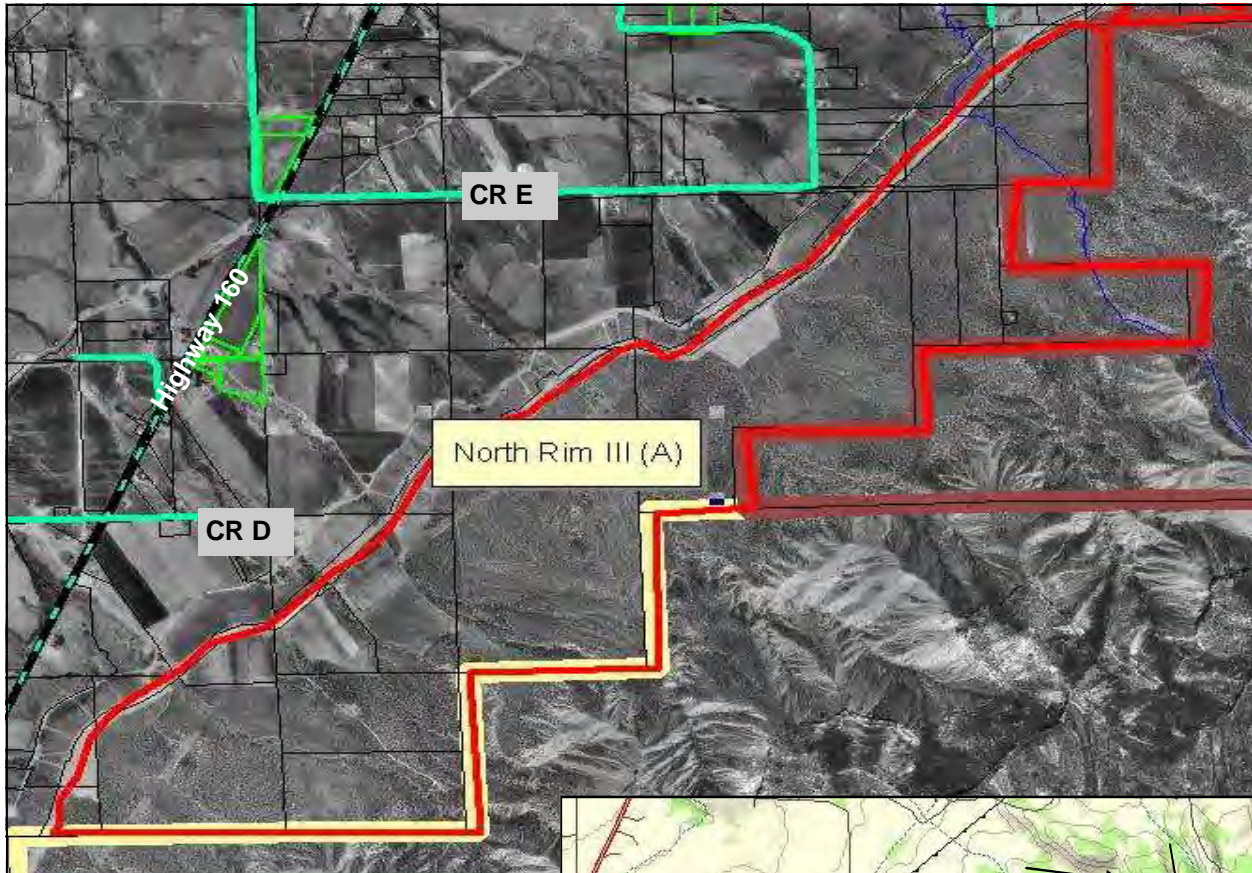


# Montezuma County Community Fire Plan

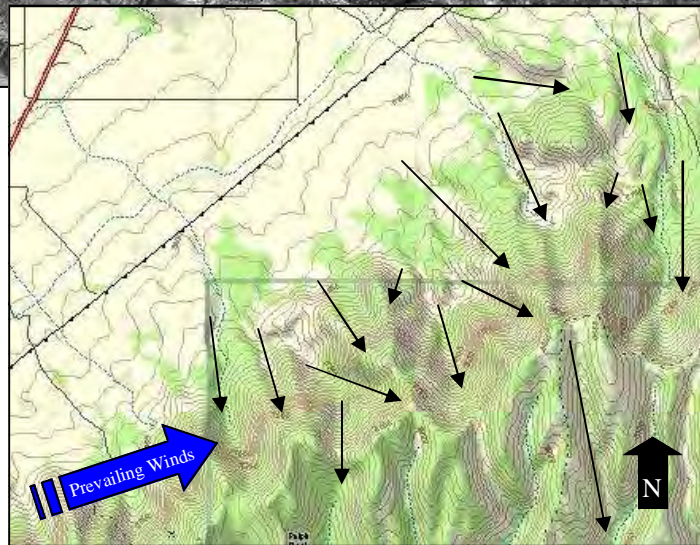
## North Rim III

Fire Management Classification (A)  
Elevation: 6,236'

Latitude: N37 16.411'  
Longitude: W108 36.567'



From the aerial map above the North Rim III Polygon is comprised mainly of large patches of sagebrush and grasslands. The polygon generally parallels the foot of the mesa where the landscape becomes more forested. Grass and brush fires that occur in this polygon could quickly move uphill and into the steep, heavily forested BLM & National Park lands. The topographic map at right illustrates how the slope increases dramatically to the south towards Mesa Verde. Numerous very steep drainages (indicated by black arrows) can be seen that could act as chimneys right up into the National Park. Access into the polygon is across private lands off of CR E, CR D, & the Towaoc Canal maintenance road.



**Mitigation Measures;** May include mechanical thinning on both public and private lands. Community outreach



# (B) Polygons

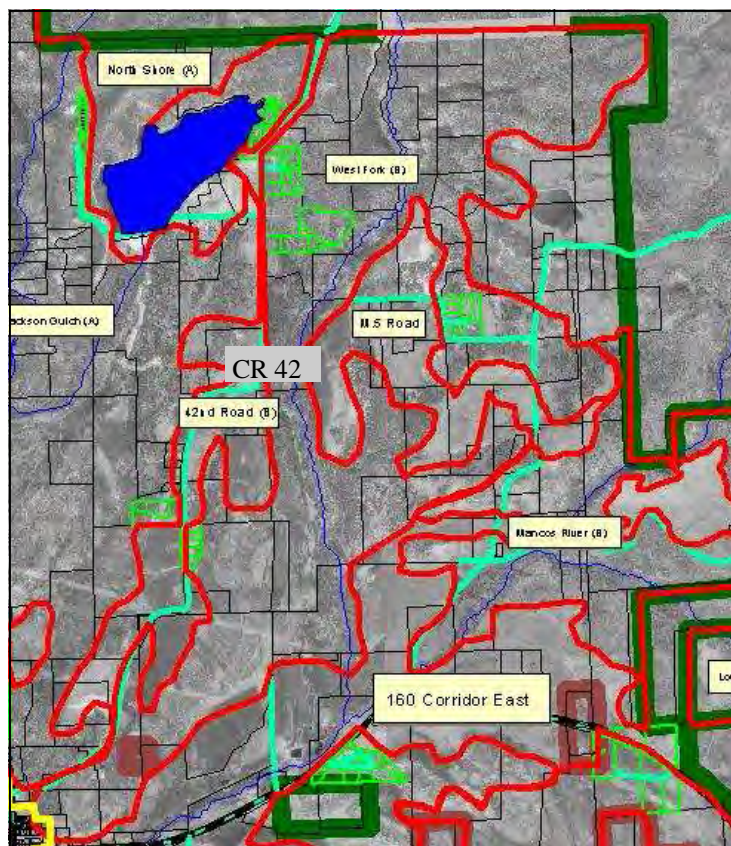
Level 1 Hazard Areas

# Montezuma County Community Fire Plan

## West Fork

Fire Management Classification (B)  
Elevation: 7,649'

Latitude: N37 23.155'  
Longitude: W108 15.396'



**Left;** The aerial map shows the drainages of the polygon to be the most heavily forested. Dominant vegetation types include Ponderosa, Willow, Oak Brush, Choke Cherry, and other shrubs, and some Pinion & Juniper stands.

**Below;** The topographic map illustrates how the polygon is dominated by the deep central drainage that begins to rise sharply towards the heavily forested area of public lands to the north.



**T**he West Fork Polygon lies just to the north of Highway 160. Access into the polygon is off of Highway 184 from CR 42. The polygon generally follows the drainage patterns. The polygon is adjacent to several smaller residential developments but land in the area may be under development pressures in the near future which could elevate the polygon to the "A" level. The San Juan National Forest lies to the east of the polygon. The polygon is sparsely populated with exception of adjacent subdivisions. CR 42 is the only access road into the area and provide access to other polygons.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

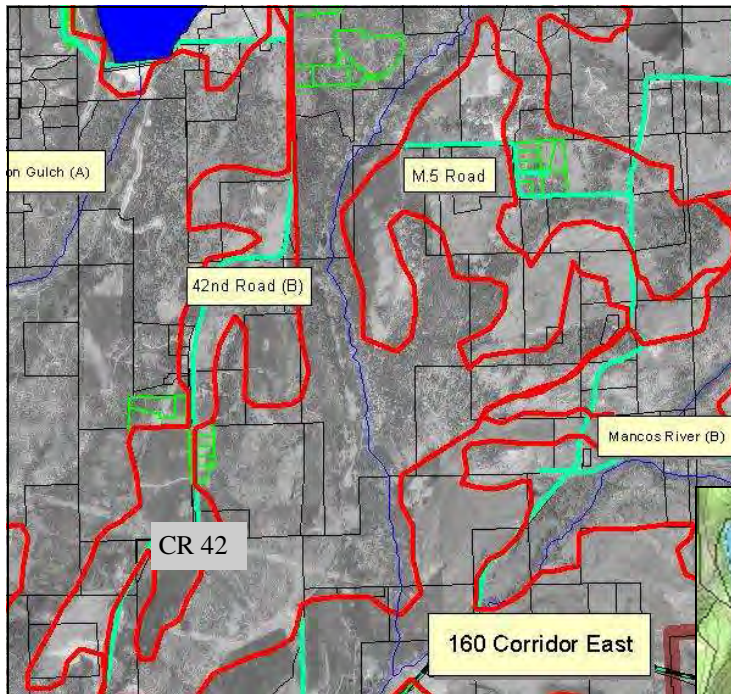
**Additional Mitigation Measures** could include agency thinning on public lands to the east of the polygon

# Montezuma County Community Fire Plan

## 42nd Road & M.5 Road

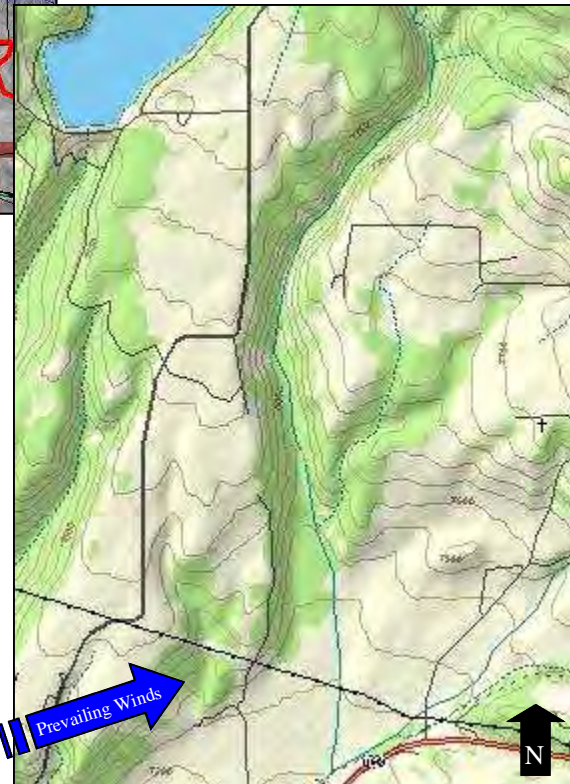
Fire Management Classification (B)  
Elevation: 7,760'

Latitude: N37 16.929'  
Longitude: W108 19.836'



**Left;** The aerial map shows the drainages of the polygon to be the most heavily forested. Dominant vegetation types include Ponderosa, Willow, Oak Brush, Choke Cherry, and other shrubs, and some Pinion & Juniper stands.

**Below;** The topographic map illustrates how the polygon follows the mesa top to the west of the main drainage. The mesa top has generally rolling terrain.



The 42nd Road Polygon lies just to the north of Highway 160. Access into the polygon is off of CR 42 from Highway 184. The polygon generally follows CR 42. The polygon is adjacent to several smaller residential developments but land in the area may be under development pressures in the near future which could elevate the polygon to the "A" level. The San Juan National Forest lies to the east and north of the polygon. The polygon is sparsely populated with exception of adjacent subdivisions. CR 42 is the only access road into the area and provide access to other polygons.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

**Additional Mitigation Measures** could include agency thinning on public lands to the east and north of the polygon

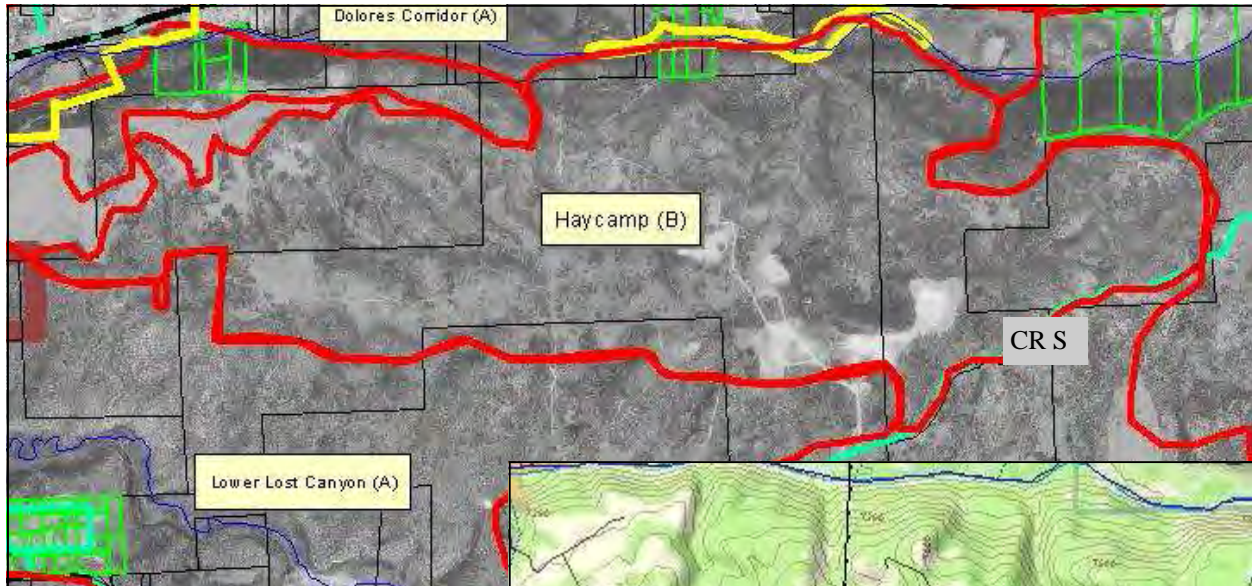


# Montezuma County Community Fire Plan

## Haycamp

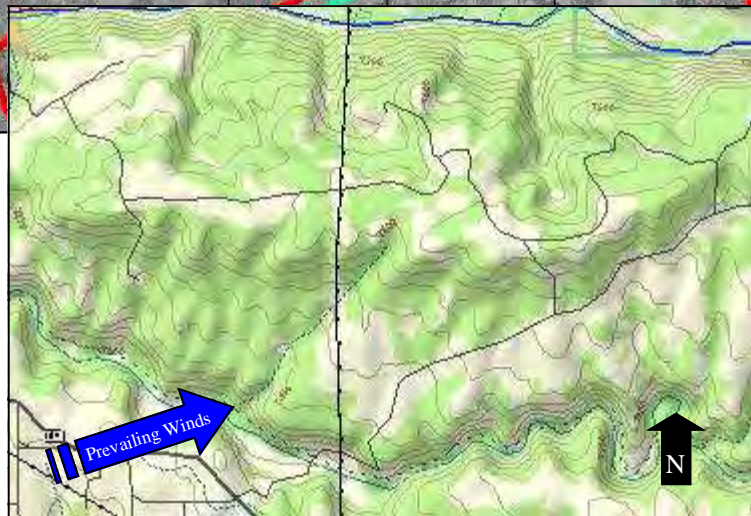
Fire Management Classification (B)  
Elevation: 7,496'

Latitude: N37 27.744'  
Longitude: W108 28.290'



The Haycamp Polygon is bounded on the south by Highway 184, and on the north by the Dolores River. The Polygon generally follows the heavily forested mesa top and canyon to the north. The polygon is sparsely populated except for several subdivisions along north side along Highway 145. The primary concern for this polygon is fire starts from along the highway that move into upper areas. Access to the central area of the polygon may be possible via the old railroad grade along Lost Canyon Creek from or from CR S.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.



**Above;** The aerial map shows Haycamp Polygon as a heavily forested area of mesa top and canyon wall to the north down to the confluence of lost canyon and the Dolores Canyon. Dominant vegetation includes Oak Brush, Pinion & Juniper stands, Ponderosa, and taller grasses.

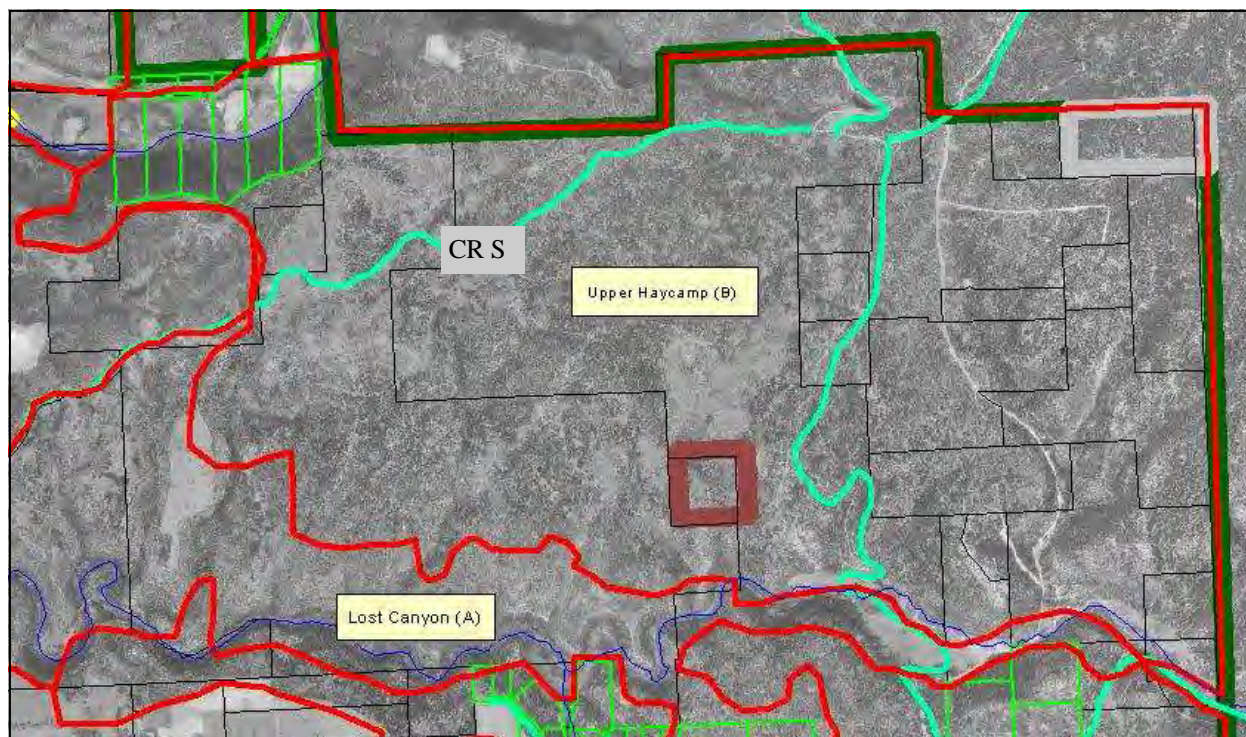
**Below;** the topographic map illustrates how prominently set on high ground the Haycamp Polygon is. Furthermore it indicates numerous side draws that could act as a chimney drawing fire up to higher grounds.

# Montezuma County Community Fire Plan

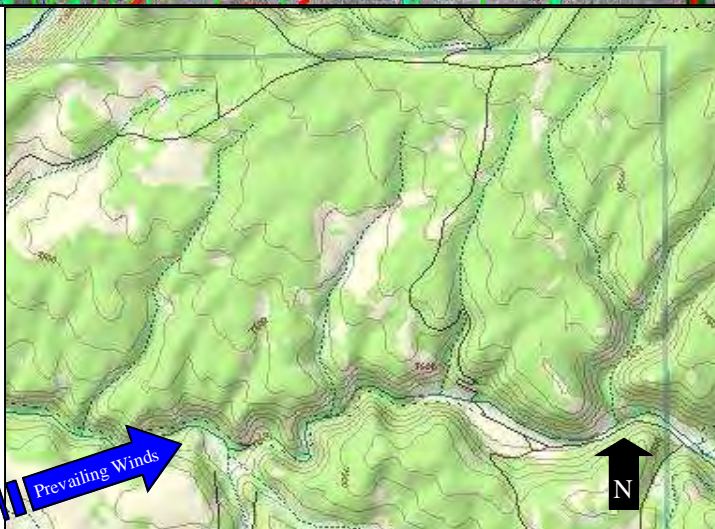
## Upper Haycamp

Fire Management Classification (B)  
Elevation: 7,632'

Latitude: N37 27.744'  
Longitude: W108 24.135'



The Upper Haycamp Polygon is bounded on the south by Highway 184, and on the north by the San Juan National Forest. The Polygon generally follows the heavily forested mesa top and canyons to the north. The polygon is sparsely populated except for several subdivisions along the north side of Highway 184. The primary concern for this polygon is fire starts from along the highway that move into upper areas and public lands beyond. Access to the central area of the polygon may be possible via the old railroad grade along Lost Canyon Creek from or from CR S.



**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, and thinning.

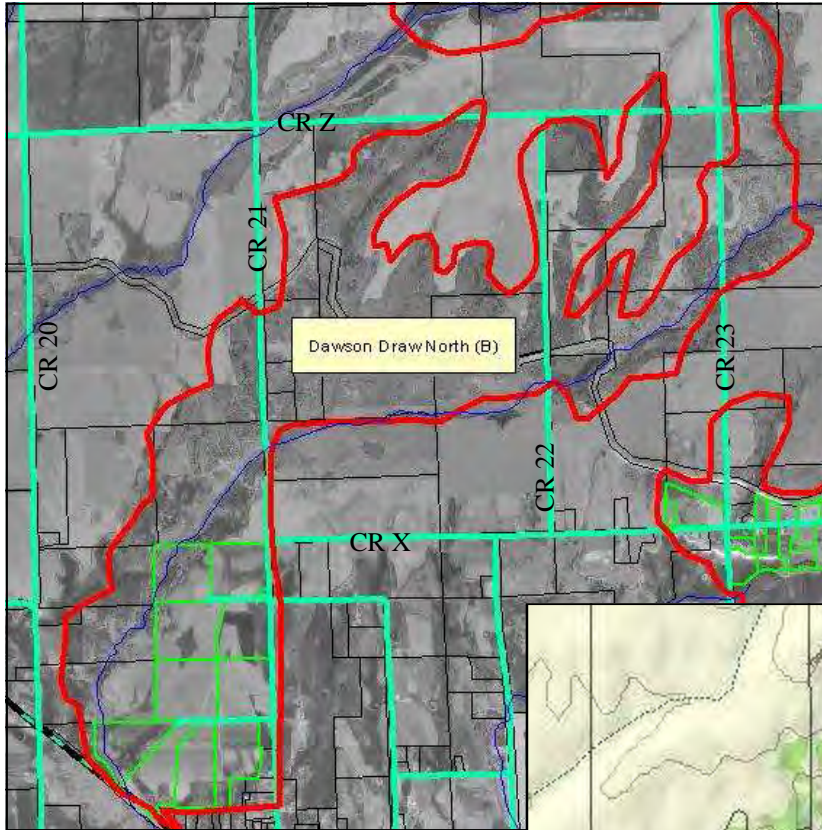
**Above;** The aerial map shows Upper Haycamp Polygon as a heavily forested area of mesa top and canyon wall to the north down to the confluence of lost canyon and the Dolores Canyon. Dominant vegetation includes Oak Brush, Pinion & Juniper stands, Ponderosa, and taller grasses.

# Montezuma County Community Fire Plan

## Dawson Draw North

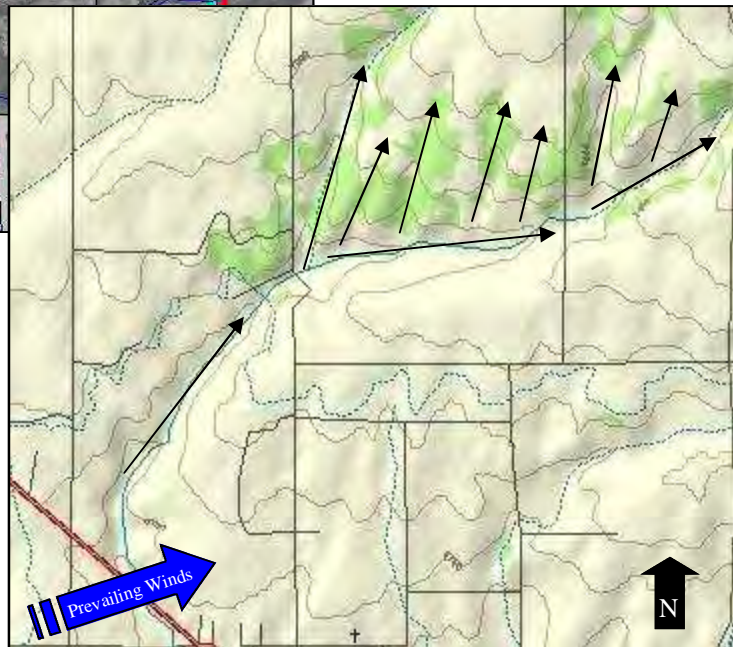
Fire Management Classification (B)  
Elevation: 6,875'

Latitude: N37 31.668'  
Longitude: W108 39.777'



Access to the Dawson Draw Polygon can be had from several county roads and Highway 160.

The Dawson Draw North polygon is a large, roughly a “L” shaped polygon. It is bounded on the north by county road Z, on the west by agricultural lands along the east side of county road 20, and on the east by agricultural lands along county road 22. As the aerial photograph above indicates, the polygon is dominated by Pinyon / Juniper forest. There is one residential subdivision located at the south end of the polygon which consists mostly of open agricultural land. The Dawson Draw North Subdivision ranks as a “B” polygon even though it is heavily forested, it is relatively isolated by surrounding agricultural lands and the surrounding lands are very sparsely populated. Future development could necessitate changing the current designation.



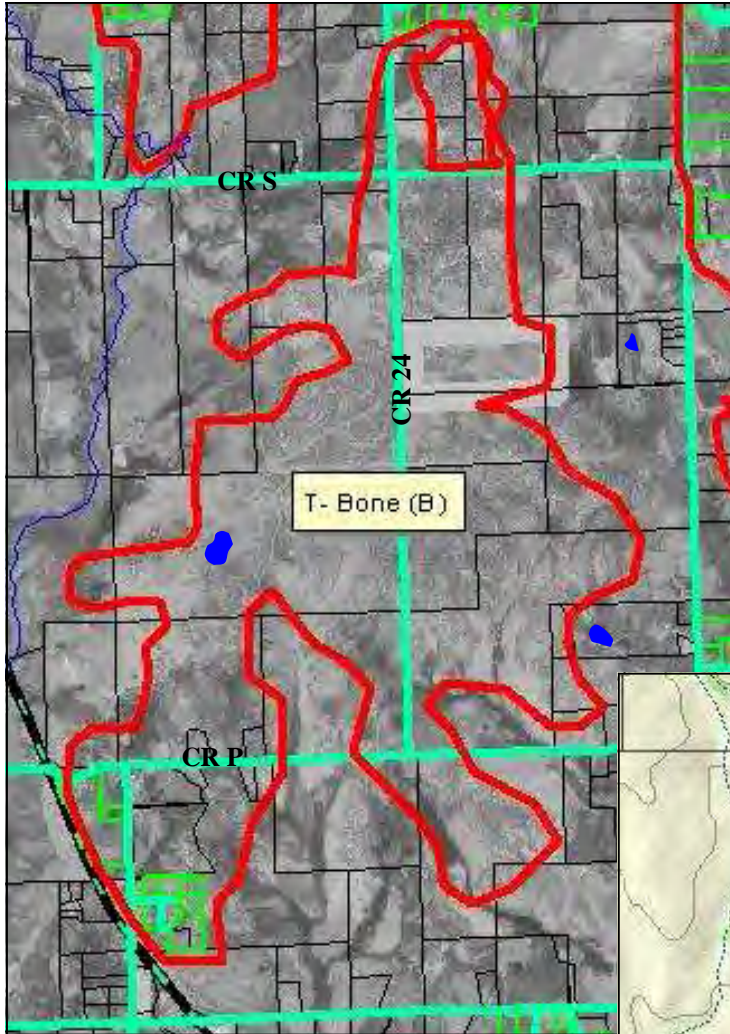
The topographic map above illustrates how the Dawson Draw North polygon generally follows the drainage line that runs north east. The terrain is generally gently rolling along the south side of the polygon and is more broken and steep on the north side. Generally the vegetation pattern is associated with the more rugged land on the north side of the polygon.

# Montezuma County Community Fire Plan

## T-Bone

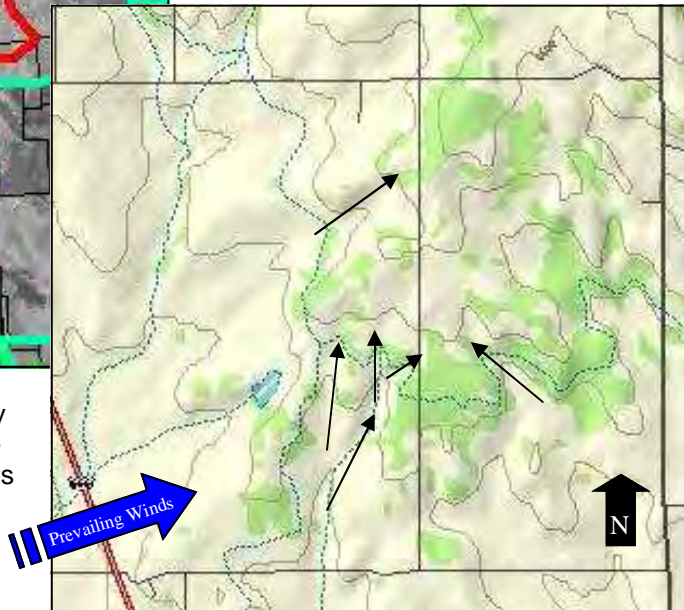
Fire Management Classification (B)  
Elevation: 6,407'

Latitude: N37 25.859'  
Longitude: W108 36.974'



The T-bone polygon is accessed from Highway 666 via road P, and road S. County road 24 bisects the polygon north/south. Although the polygon is well buffered from adjacent polygons by open ag lands there remains some degree of threat due to fuel loading. Fire starts in this polygon could come from agricultural operations and residential developments. Mitigation measures could include defensible space around residences and mechanical fuels reduction on larger parcels. Several possible alternative watersources are located within this polygon and are highlighted in blue on the aerial photography left.

The T- Bone polygon is a large area roughly shaped like a T-bone steak. The aerial imagery above illustrates that the polygon consists of moderately heavy vegetative cover dominated by shrubs and Pinyon/ Juniper stands. The polygon has two small residential subdivisions on the south end and is adjacent to a small residential subdivision to the north. This polygon is a "B" polygon because it has moderately heavy cover it is sparsely populated and it is buffered by agricultural grounds surrounding it.



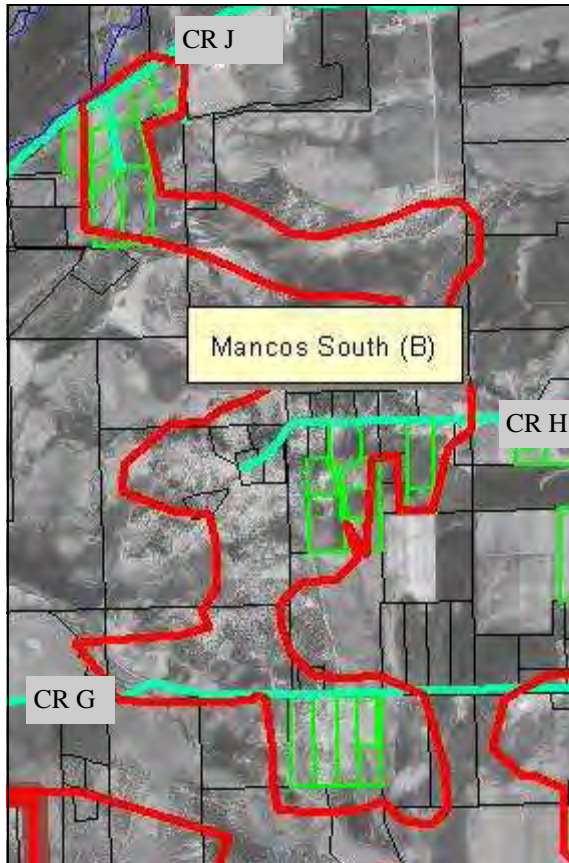
**Above:** The topographic map shows the T- Bone Polygon to be comprised of rolling topography , dissected by shallow drainages flowing roughly south-west.

# Montezuma County Community Fire Plan

## Mancos South

Fire Management Classification (B)  
Elevation: 6,876'

Latitude: N37 19.578'  
Longitude: W108 18.601'



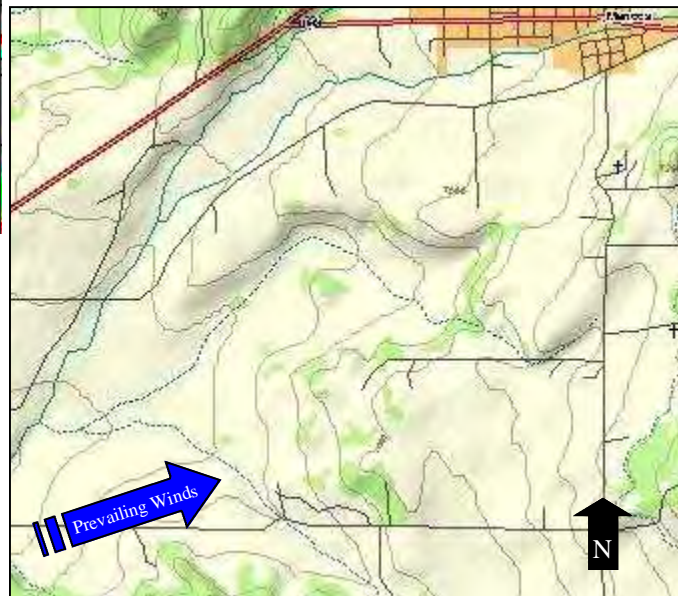
**Left;** The aerial map shows the Mancos South Polygon to have heavily forested patches of land interspersed by agricultural lands. Pinion and Juniper are the dominant tree species. The Ips Beetle infestation has left a very high mortality rate for Pinion Pine within this Polygon. The polygon is surrounded by agricultural lands. Forest areas are adjacent to three medium sized subdivisions which gives this polygon a B rating.

**Below;** The topographic map indicates that the terrain is gently rolling gaining elevation slowly to the east.

**T**he Mancos South Polygon is located between CR J & CR G. The Polygon has three small subdivisions which are adjacent to small forested parcels. The surrounding landscape is agricultural. Access into each subdivision is good from the county road system.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

This polygon could easily become a "C" polygon.



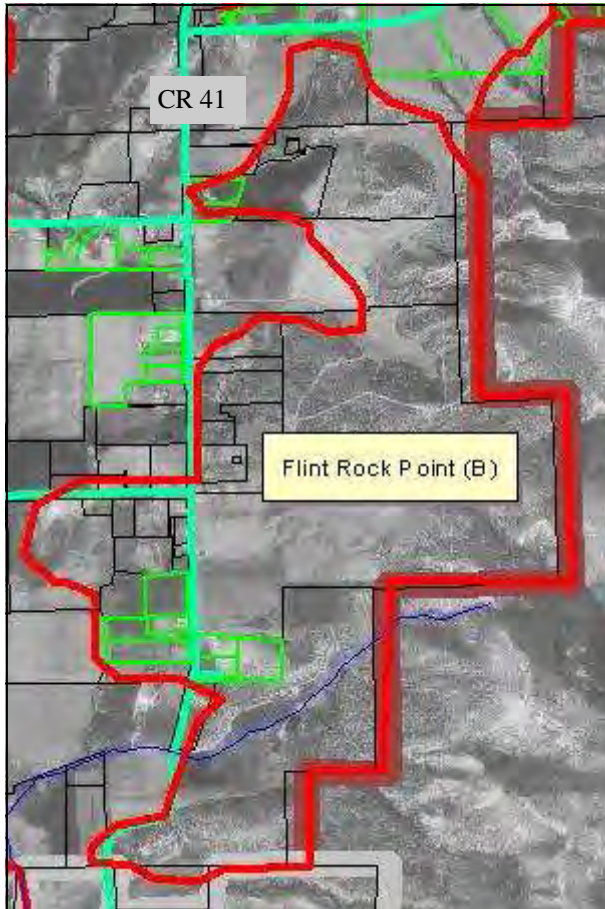
**Additional Mitigation Measures** could include continued private thinning and defensible space.

# Montezuma County Community Fire Plan

## Flint Rock Point

Fire Management Classification (B)  
Elevation: 7,436'

Latitude: N37 19.463'  
Longitude: W108 16.376'

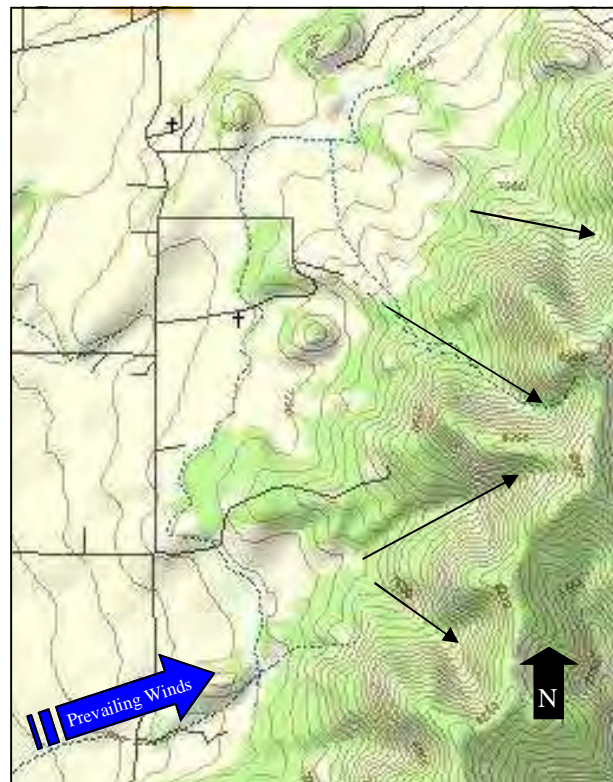


**Left;** The aerial map shows the east side of the polygon to be the most heavily forested. Dominant vegetation types include Oak Brush, Pinion & Juniper stands and some Ponderosa. Access into the subdivisions would be from CR 41.

**Below;** The topographic map illustrates how the polygon begins to rise sharply in the heavily forested area to the east. The mountain to the east is public land. This polygon is a "B" polygon because very few structures are at risk. The public land to the east is seldom used. There are TV/Radio towers at the top of Menefee Mountain. This polygon could become an "A" polygon if more private land is developed.

**T**he Flint Rock Point Polygon lies on the west side of Menefee Mountain. The polygon lies adjacent to a large acreage of public lands to the east. To the west lies the Town of Mancos. The surrounding landscape is mostly agricultural. There are three small subdivisions on the west side of the polygon surrounded by agricultural land.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.



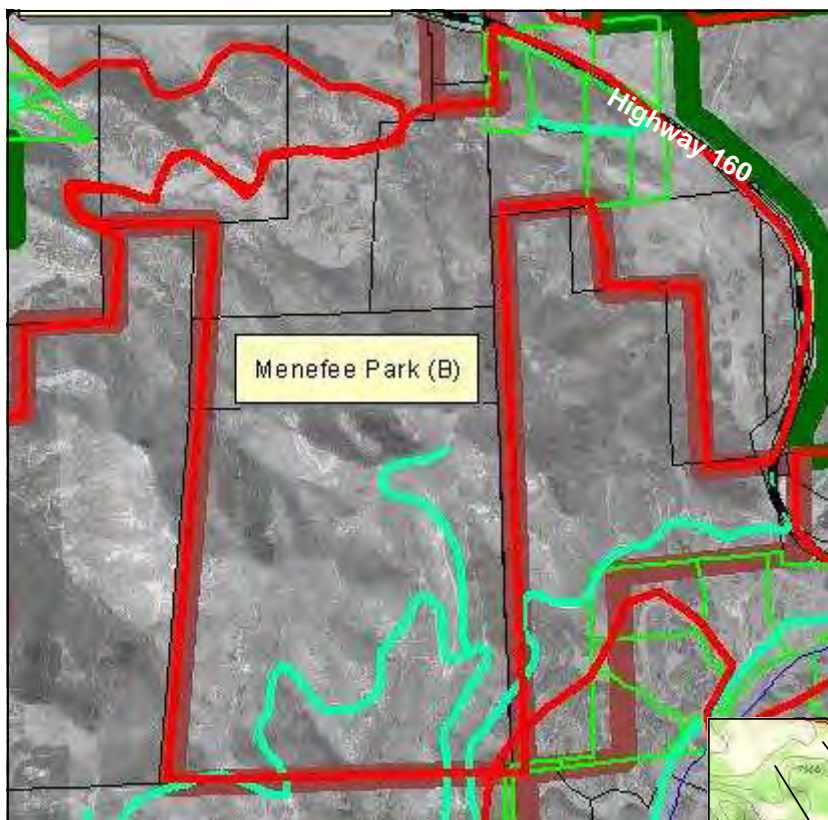
**Additional Mitigation Measures** could include agency thinning on public lands to the east of the polygon.

# Montezuma County Community Fire Plan

## Menefee Park

Fire Management Classification (B)  
Elevation: 7,843'

Latitude: N37 20.768'  
Longitude: W108 13.577



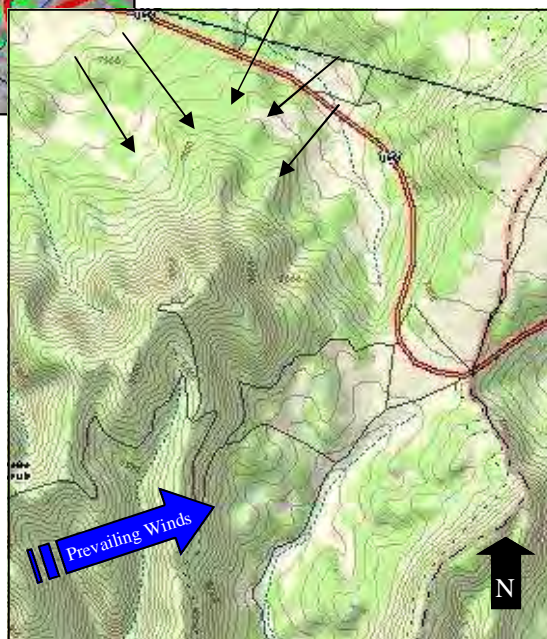
**Left;** The aerial map shows the south side of the polygon to be the most heavily forested. Dominant vegetation types include Oak Brush, Pinion & Juniper stands and some Ponderosa.

**Below;** The topographic map illustrates how the polygon begins to rise sharply in the heavily forested area to the east. The mountain to the east is public land. This polygon is a "B" polygon because very few structures are at risk. The public land to the east is seldom used. There are TV/ Radio towers at the top of Menefee Mountain. This polygon could become an "A" polygon if more private land is developed.

**T**he Menefee Park Polygon lies on the north side of Menefee Mountain. The polygon lies adjacent to a large acreage of public lands to the North and south. To the west lies the Town of Mancos. The surrounding landscape is mostly shrub lands with stands of Pinion & Juniper. There are three subdivisions adjacent to the polygon. Access is off of Highway 160 to the north.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

**Additional Mitigation Measures** could include agency thinning on public lands to the east of the polygon.

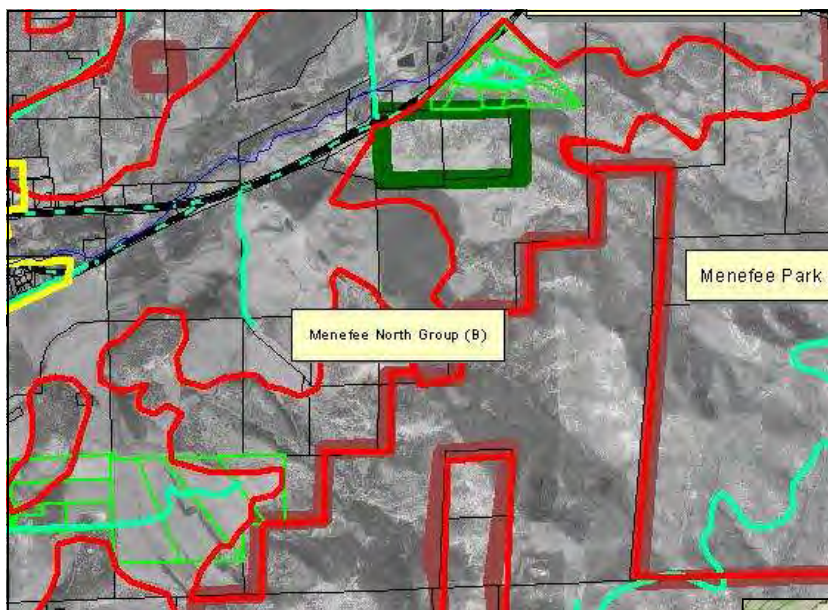


# Montezuma County Community Fire Plan

## Menefee North Group

Fire Management Classification (B)  
Elevation: 7,459'

Latitude: N37 20.521'  
Longitude: W108 15.326'



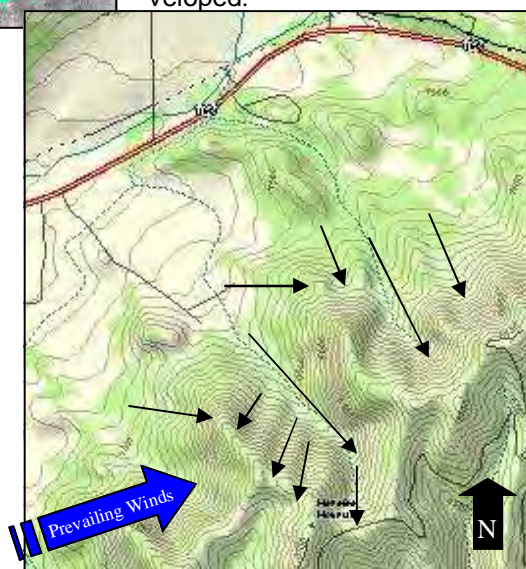
**Left;** The aerial map shows the south side of the polygon to be the most heavily forested. Dominant vegetation types include Oak Brush, Pinion & Juniper stands and some Ponderosa.

**Below;** The topographic map illustrates how the polygon begins to rise sharply in the heavily forested area to the south. The mountain to the south is public land. This polygon is a "B" polygon because very few structures are at risk. This polygon could become an "A" polygon if more private land is developed.

**T**he Menefee North Group Polygon lies along the north slope of Menefee Mountain. The Town of Mancos Lies to the west and Mancos Hill to the east. The polygon has one forested subdivision on the north side accessed by Highway 160. The landscape is mixed forest and agriculture but the most heavily forested area is along the south side where the slopes begin to rise. Menefee Mountain has several TV & Radio towers but it is overall seldom otherwise.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

**Additional Mitigation Measures** could include agency thinning on public lands to the east of the polygon.



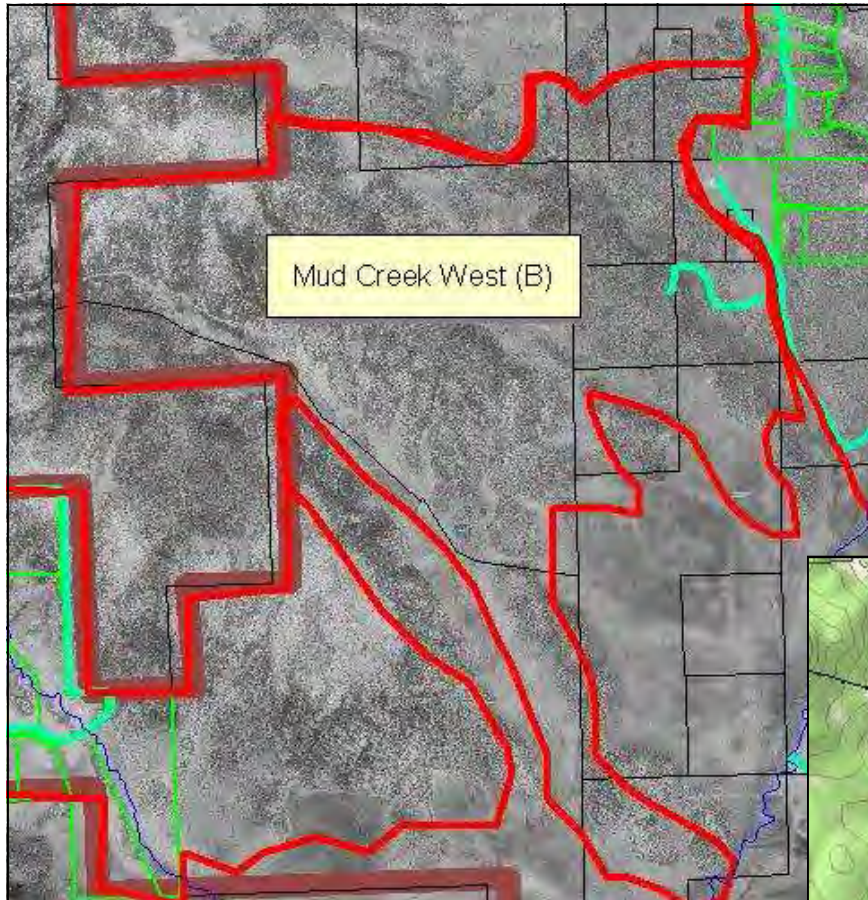


# Montezuma County Community Fire Plan

## Mud Creek West

Fire Management Classification (B)  
Elevation: 7,114'

Latitude: N37 23.194'  
Longitude: W108 22.014'



**Left;** The aerial map shows the polygon to be heavily forested. Dominant vegetation types include Pinion & Juniper stands mixed with Sage Brush.

**Below;** The topographic map illustrates how the polygon has a generally rolling terrain which begins to rise towards the west.



**T**he Mud Creek West Polygon lies just to the north of Highway 160. Access into the polygon is off of CR 39 from Highway 160. The polygon is adjacent to a large residential developments and other lands in the area may be under development pressures in the near future which could elevate the polygon to the “A” level. BLM lands lie to the west of the polygon. The polygon is sparsely populated with exception of adjacent subdivisions. CR 39 is the only access road into the area and provides access to other polygons.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

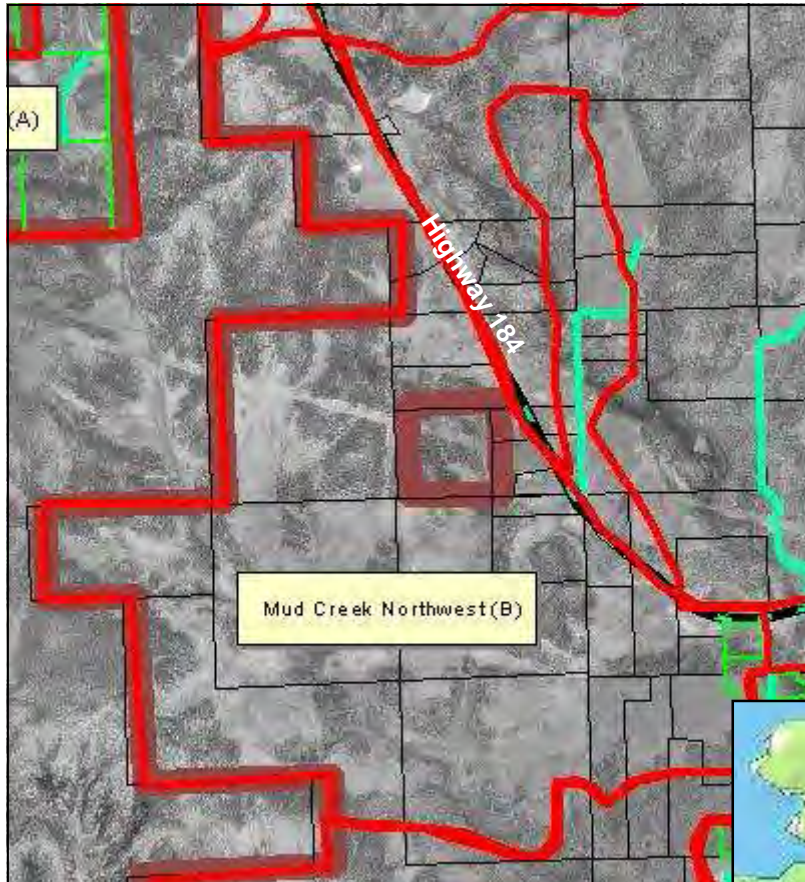
**Additional Mitigation Measures** could include agency thinning on public lands to the west of the polygon

# Montezuma County Community Fire Plan

## Mud Creek Northwest

Fire Management Classification (B)  
Elevation: 7,322'

Latitude: N37 23.788'  
Longitude: W108 22.053'



**Left;** The aerial map shows the polygon to be a patchwork of heavily forested areas interspersed with Sage Brush and tall grasses. Dominant vegetation types include Pinion & Juniper stands mixed with Sage Brush.

**Below;** The topographic map illustrates how the polygon has a generally rolling terrain which begins to rise towards the north.



**T**he Mud Creek North West Polygon lies just to the west of Highway 184. Access into the polygon is from Highway 184. The polygon is adjacent to several polygons with large residential developments. Other lands in the area may be under development pressures in the near future which could elevate the polygon to the “A” level. BLM lands lie to the west of the polygon. The polygon is sparsely populated with exception of adjacent subdivisions. Highway 184 is the only access road into the area and provides access to other polygons.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.

**Additional Mitigation Measures** could include agency thinning on public lands to the west of the polygon.



# (B) Polygons

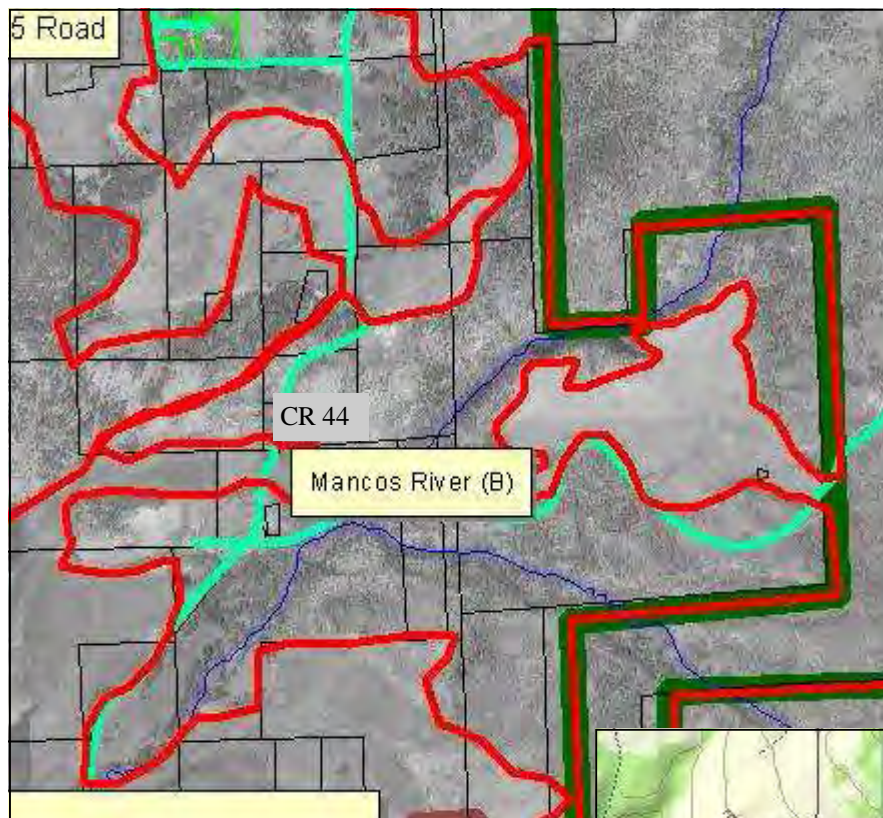
Level 2 Hazard Areas

# Montezuma County Community Fire Plan

## Mancos River

Fire Management Classification (B)  
Elevation: 7,578'

Latitude: N37 22.159'  
Longitude: W108 13.757'

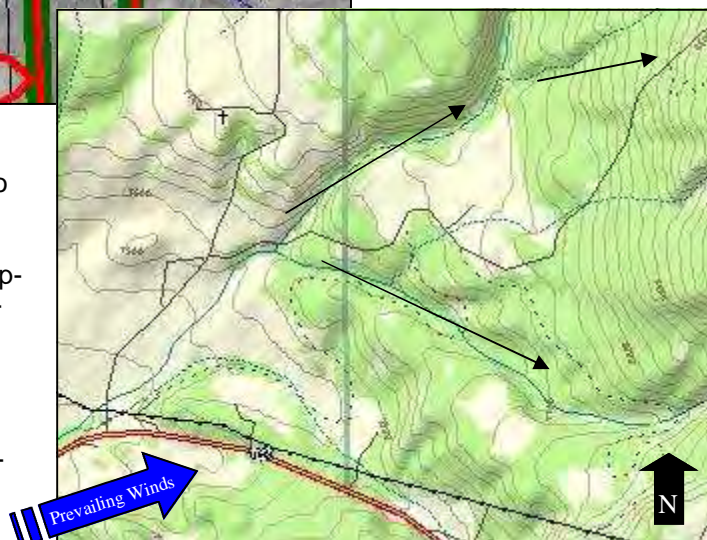


**Left;** The aerial map shows the drainages of the polygon to be the most heavily forested. Dominant vegetation types include Willow, Oak Brush, Choke Cherry, and other shrubs, Pinion & Juniper stands and some Ponderosa. There are also some large open pasture lands to the west and center.

**Below;** The topographic map illustrates how the polygon begins to rise sharply towards the heavily forested area of public lands to the east.

**T**he Mancos River Polygon lies just to the north of Highway 160. Access into the polygon is from CR 44. The polygon generally follows the drainage pattern. The polygon is not near any sizeable developments but land in the area may be under development pressures in the near future. The San Juan National Forest lies to the east of the polygon. The polygon is sparsely populated with exception of one Guest Ranch on an adjacent polygon to the north who's visiting population fluctuates.

**Mitigation Measures** may include a strong campaign to educate residents and property owners about defensible space, thinning, the development of an evacuation plan and keeping the residential address clearly visible. Thinning within the subdivisions especially on slopes below structures would be good prevention.



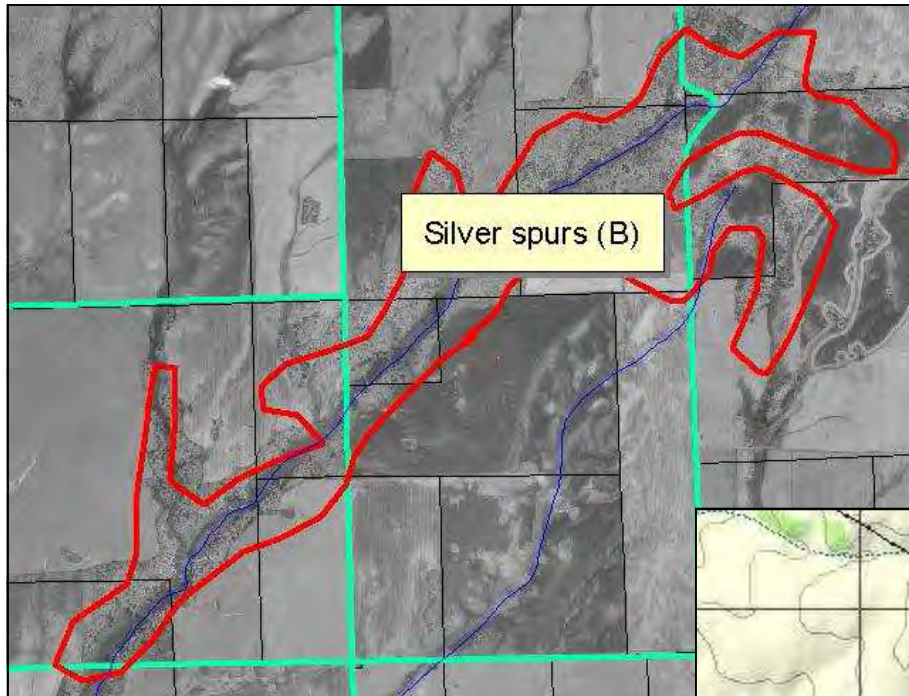
**Additional Mitigation Measures** could include agency thinning on public lands to the east of the polygon

# Montezuma County Community Fire Plan

## Silver Spurs

Fire Management Classification (B)  
Elevation: 7,169'

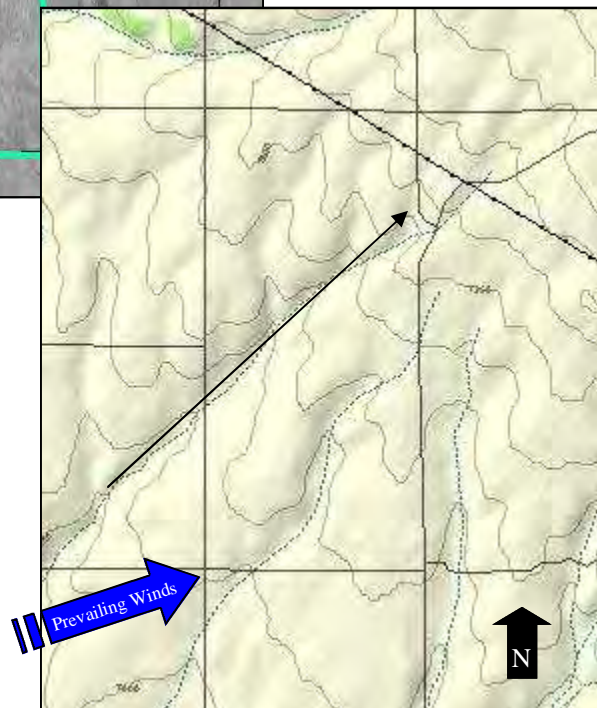
Latitude: N37 34.472'  
Longitude: W108 40.432'



Left: Aerial map shows the polygon to be a vegetated drainage. Dominate vegetation includes Oak brush, and sparse Pinion/ Juniper. Lands surrounding the polygon are mostly in dry land agriculture.

The Silver Spurs polygon lies north east of the Yellow Jacket community. It is a long narrow strip of forested land that lies in the bottom of a drainage running south west. There is currently no residential development within the polygon, however there is a power line that lies along the north east border. This polygon is thought to fit the B category because of its undeveloped character, surrounding agricultural land use, and adjacency to larger urban interface parcels along the Dolores Canyon rim to the east. Fire starts within this polygon would likely move up or down the drainage bottom and expand up slope to the top of the drainage. Threats to adjacent lands may be variable, depending on season and crops found on surrounding lands.

Mitigation Measures: Could include mechanical or hand thinning. Limited controlled burns may also be an alternative for this particular polygon.



# Montezuma County Community Fire Plan

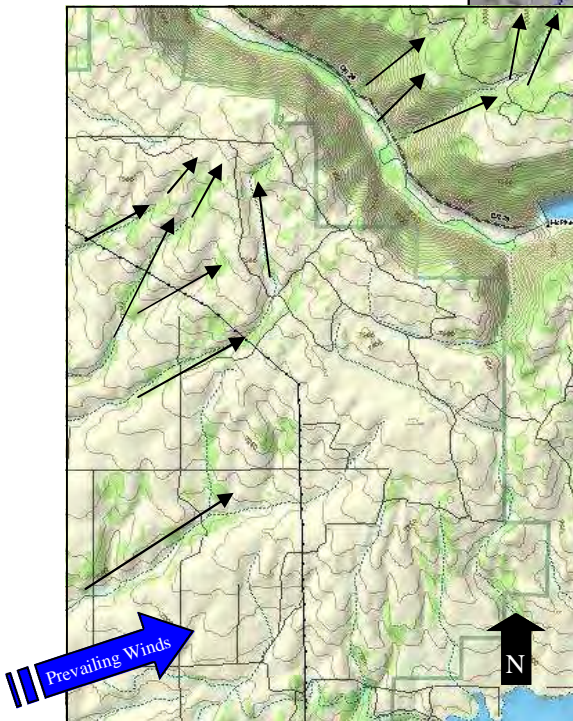
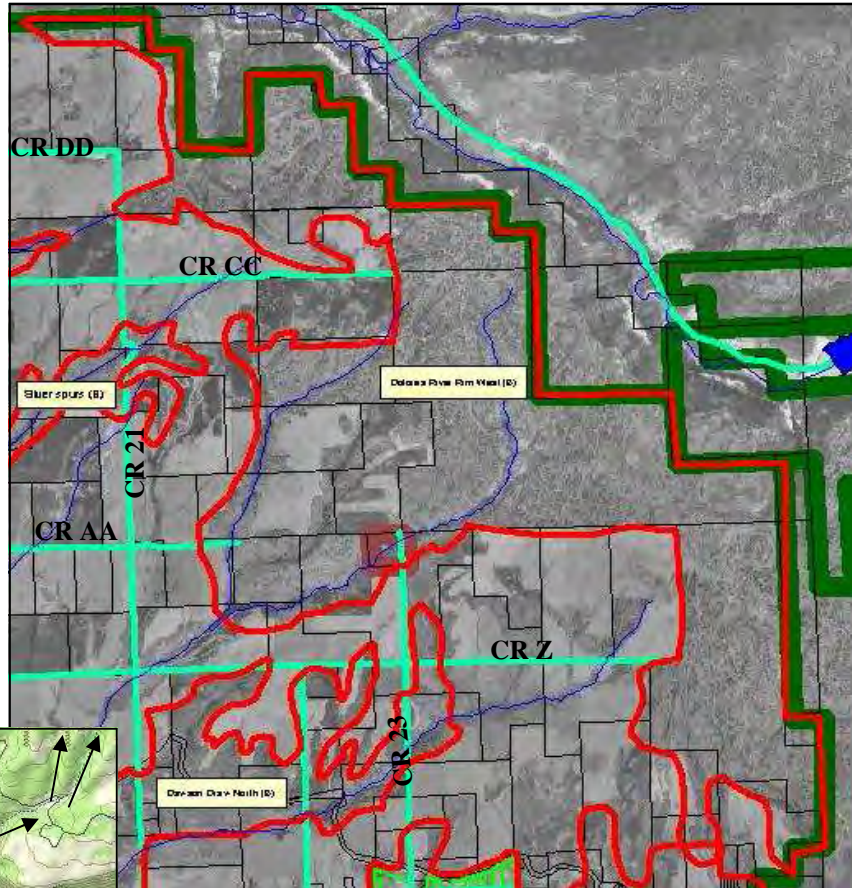
## Dolores River Rim West

Fire Management Classification (B)  
Elevation: 7,588'

Latitude: N37 34.910'  
Longitude: W108 37.400'

**Right;** the aerial map clearly illustrates the heavily forested nature of the polygon. Dominate vegetation is Pinyon / Juniper, with a great deal of oak brush and other shrubs. Grasses within this polygon tend to be taller unless regularly grazed due to increased moisture levels found at this elevation. **All access roads into the Polygon are ungraveled.**

**Below;** The topographic map clearly shows the general elevation gain to the north east up to the edge of the Dolores Canyon. There the elevation drops sharply to the canyon floor and the rises sharply again to the north east and continues to climb up into the San Juan National Forest.



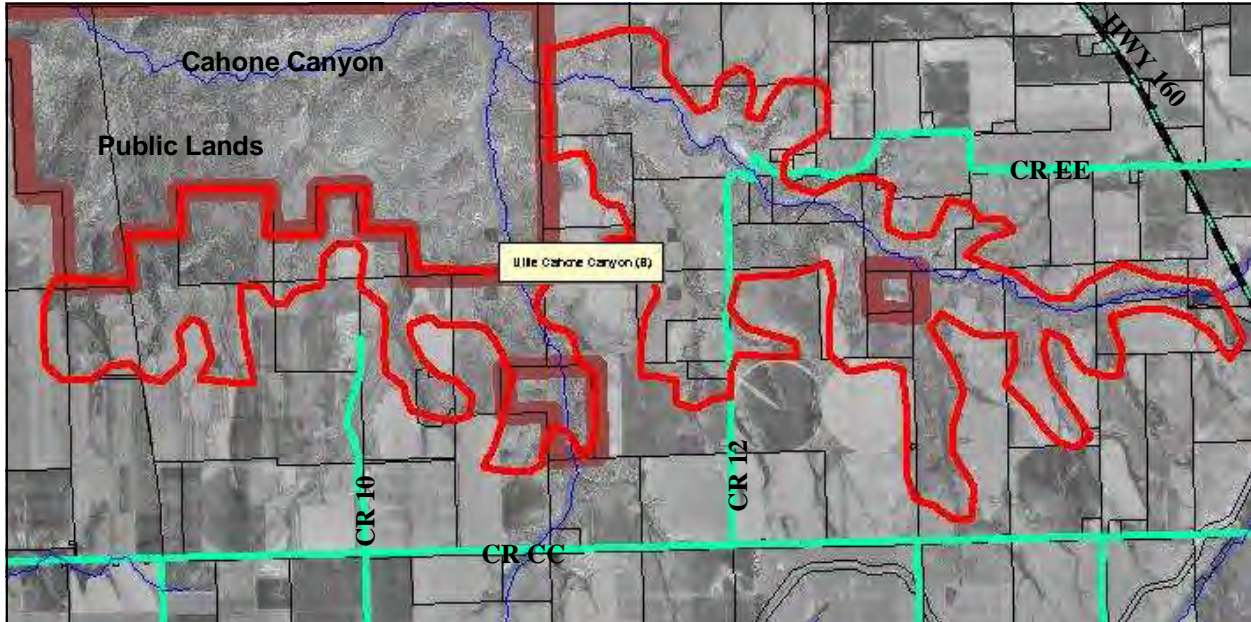
The Dolores River Rim West polygon is a large expanse of unbroken Pinyon / Juniper forest that lies on the mesa top along the western edge of the Dolores River Canyon. To the east of the polygon, in the bottom of the canyon, is State Land. Across the canyon to the east lies the San Juan National Forest. Fires starting on the west side of the canyon could potentially affect both the State and National Forest lands and vice versa. This polygon is a "classic" example of urban interface ready to happen. Although this polygon remains relatively undeveloped for now but each passing year brings more and more upscale homes on 35 acre + parcels. Because of the current undeveloped status of this polygon, mitigation measures could include; large scale mechanical treatments and prescribed burns can still be conducted. This polygon will likely see an increase of development pressure in the future as it is a very scenic area with reasonable property prices. This polygon has a high likelihood of eventually becoming an "A" polygon.

# Montezuma County Community Fire Plan

## Little Cahone Canyon

Fire Management Classification (B)  
Elevation: 6,690'

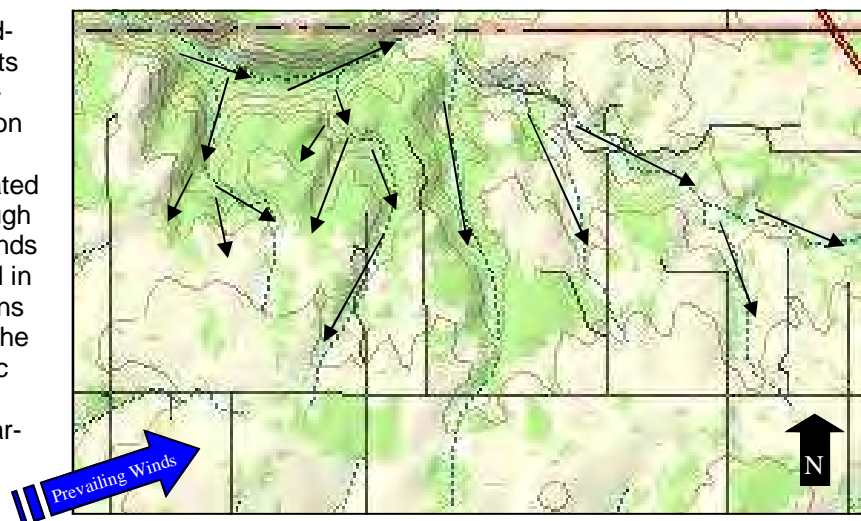
Latitude: N37 36.39'  
Longitude: W108 49.79'



The Little Cahone Canyon Polygon lies to the west of Highway 160, just to the south of the Dolores County line (CR FF). The polygon consists of forested drainages rising out of Cahone Canyon to the west. Farther to the west Cahone Canyon flows into a larger forested drainage known as cross canyon. The Little Cahone Canyon Polygon lies along the south and east boundary of the Canyon of the Ancients National Monument. It is a relatively sparsely developed polygon that is surrounded to the north south and east by a mix of irrigated and dry-land agriculture. Although currently undeveloped, these lands are highly likely to be developed in the future by upscale subdivisions due to the high scenic value of the area and the adjacency to public lands. This polygon has a high likelihood of containing many archaeological sites.

**Above;** The aerial map illustrates how forested drainages rise out of the main drainage that lies within public lands to the west. The polygon is steep and heavily forested with Pinyon and Juniper as the dominate vegetation types. Fire that start on public lands to the west could threaten developments on surrounding private lands.

**Below;** The topographic map illustrates how the ruggedness of the terrain in this polygon. Primary access to this polygon would be along CR. CC which is paved from 160 to CR12.

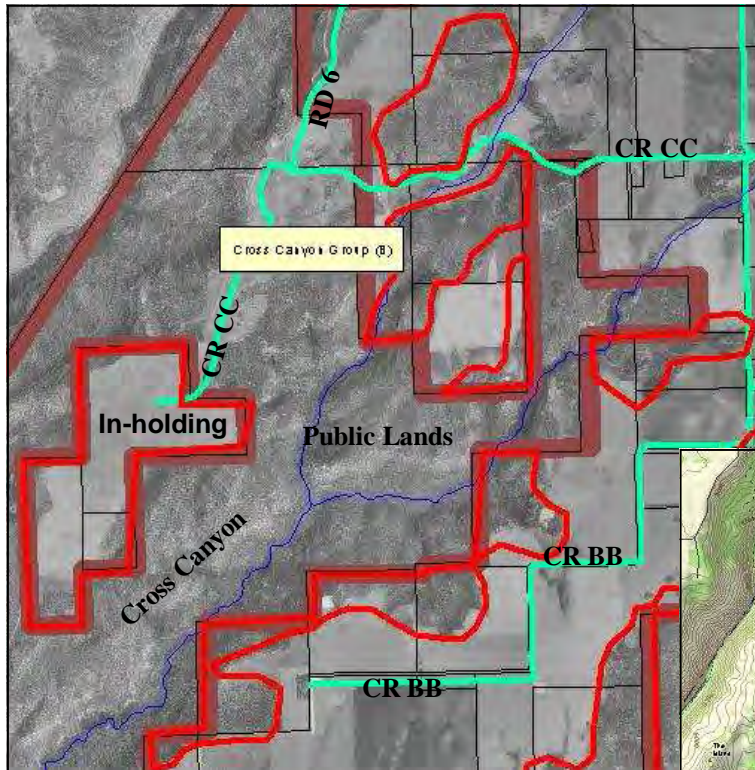


# Montezuma County Community Fire Plan

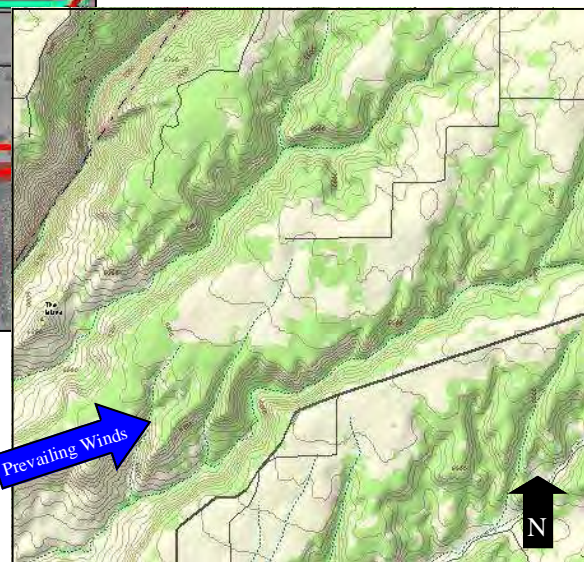
## Cross Canyon Group

Fire Management Classification (B)  
Elevation: 6,575'

Latitude: N37 32.942'  
Longitude: W108 56.857'



**Left;** The aerial map illustrates the unbroken nature of the forest land to the west of the polygon group. Primary vegetation includes Pinyon/ Juniper forest with abundant shrub communities within the drainages. The in-holding polygon is mostly cleared of forest. Cover type for the in-holding may vary from year to year as it is an agricultural parcel.



The Cross Canyon Group consists of several polygons along the edge of Cross Canyon, just south of the Dolores County line. The polygons except for one in-holding are generally found along the edges of the Canyons of the Ancients National Monument which follows the heavily forested Cross Canyon. These polygons are currently sparsely populated and surrounded by a mix of irrigated and dry-land agricultural fields. This polygon may see future development primarily from high end homes lured to the area by the inherent scenery and adjacency to public lands. The polygons within this group are likely to contain many archeological resources. Primary access into this polygon group would be from CR BB along the southeast side and CR CC on the north east side. The terrain in this area is extremely rugged. Fire starts on public lands to the west could potentially threaten any development along the privately held "urban interface" areas along the boundaries of the public lands. Alternative water sources within this polygon are rare. Cross Canyon typically has perennial water during all but the worst drought years.

**Above;** The topographic map illustrates the rugged nature of the polygon group. Four deep forested canyons are visible which run north-east. Canyons are separated by relatively flat, open mesa tops which are in agricultural production. Many side drainages rise from the main canyons that could act as chimneys pulling fire from the canyon floor to the mesa tops. Appropriate building setbacks from the canyon edges would be helpful in establishing defensible structures within these polygons.

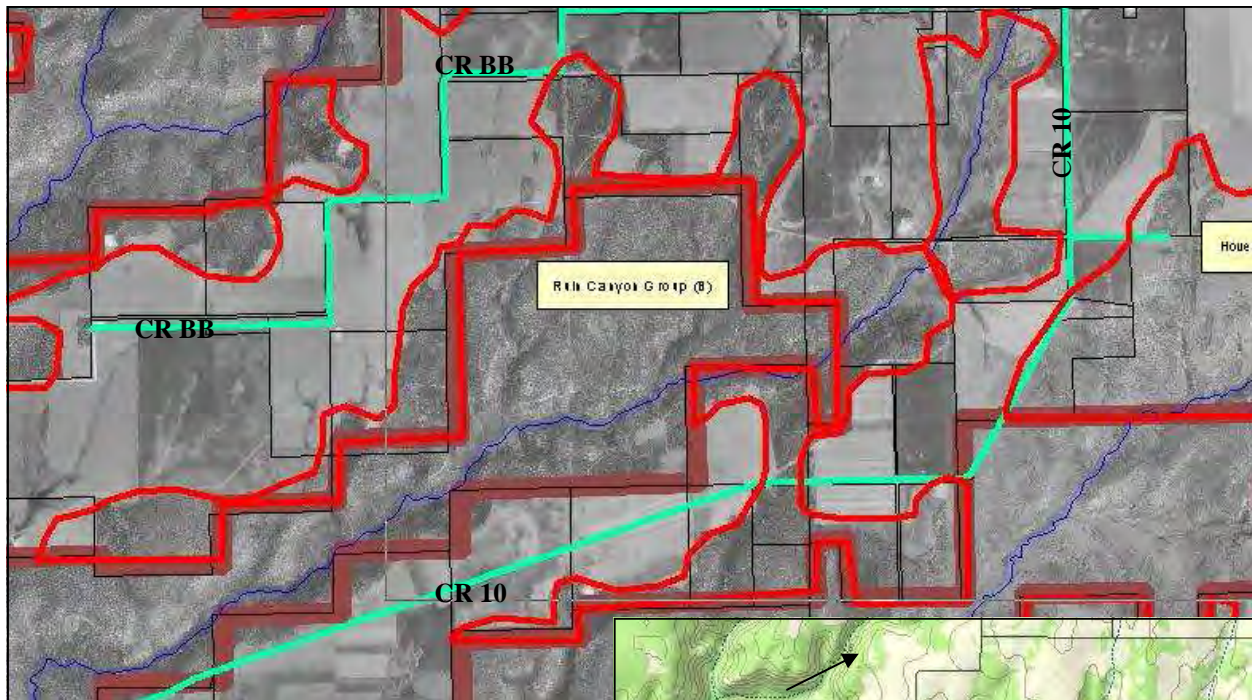


# Montezuma County Community Fire Plan

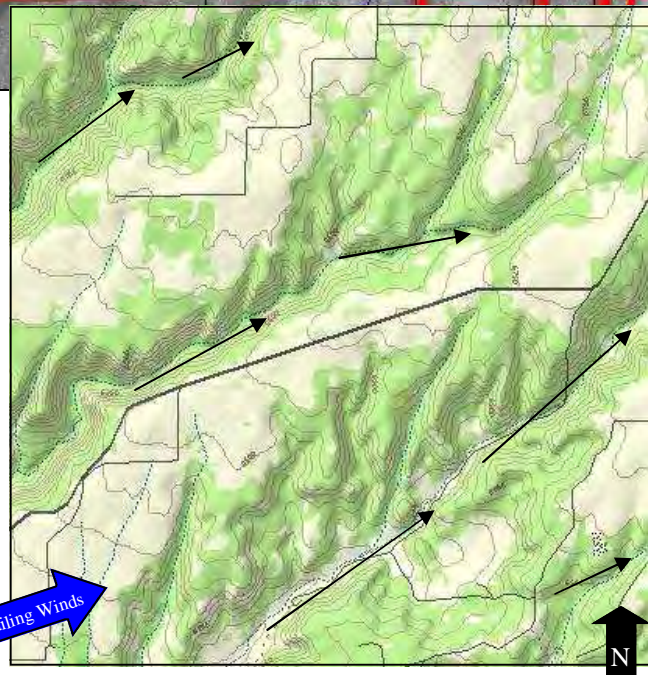
## Ruin Canyon Group

Fire Management Classification (B)  
Elevation: 6,617'

Latitude: N37 33.097'  
Longitude: W108 54.141'



The Ruin Canyon Polygon Group lies along the edges of Ruin Canyon. This complex of polygons make up the upper edge of a vast unbroken Pinyon/ Juniper forest which runs southwest along the length of Ruin Canyon and on westward into public lands beyond. These polygon units border the Canyons of the Ancients National Monument and likely contain many archeological resources. Access to these polygon units may be from CR BB to the north or from CR 10 along the south side. These polygons are currently sparsely developed, however, the inherent scenic qualities and adjacency to public lands make them good candidates for future upscale residential developments. Alternative water sources are rare within these polygons.



**Above;** The aerial map illustrates how the unbroken stands of Pinyon/ Juniper forest spill out of the canyon bottoms and onto the mesa tops. Appropriate building setbacks from the canyon rim would be a good precautionary step for future developers to take.

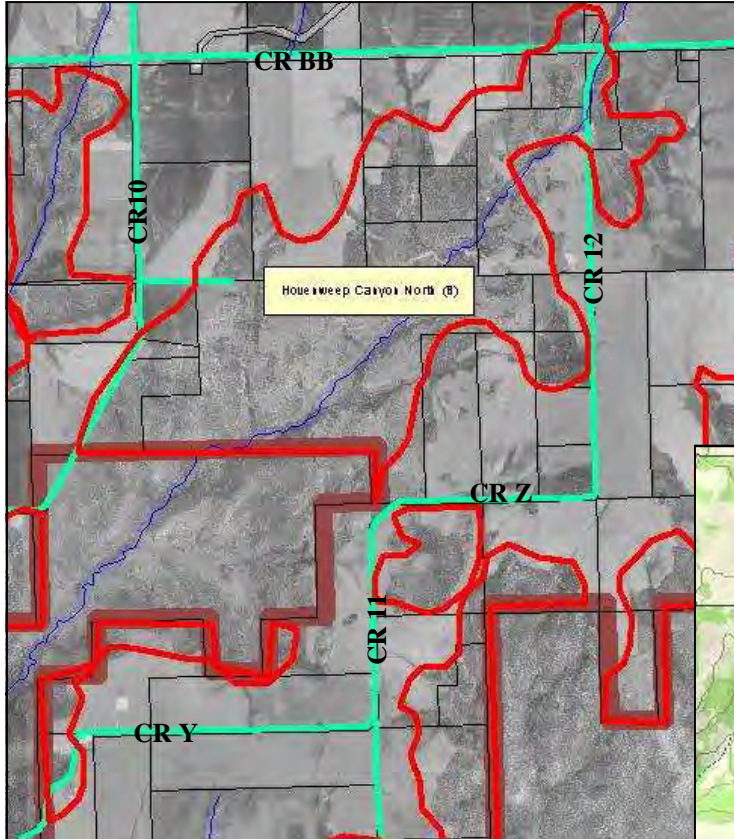
**Above;** The topographic map illustrates the rugged terrain of these polygons. Deep canyons running northwest can be seen with relatively flat mesas in between. Many heavily forested side drainages rising from the main drainage can be seen which could act as chimneys.

# Montezuma County Community Fire Plan

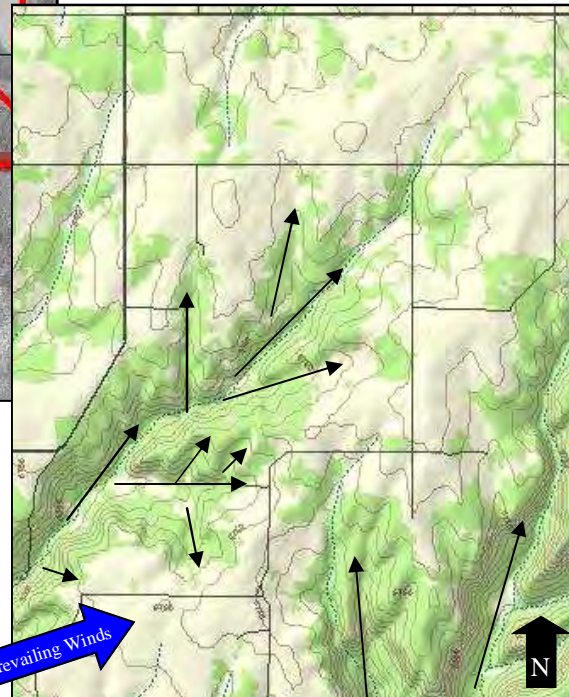
## Hovenweep Canyon North Group

Fire Management Classification (B)  
Elevation: 6,799'

Latitude: N37 32.942'  
Longitude: W108 50.778'



**Left;** The aerial map illustrates the unbroken nature of the Pinion/ Juniper forest extending northeast out of the Hovenweep Canyon. Agricultural fields can be clearly seen on the mesa tops between drainages.



The Hovenweep Canyon North Group is made up of one main polygon found the head of Hovenweep Canyon. Several smaller polygons lie along the south flank of the canyon. The polygons are relatively undeveloped for now but the inherent scenic quality of the area makes them likely to be developed in the future by upscale developments. The polygons are found along the border of the Canyons of the Ancients National Monument which extends into a large area of unbroken Pinion/ Juniper forest to the west. This polygon Group is likely to contain many archeological resources. Access to the polygons can be found from CR 10 to the west, CR BB to the North, CR 12 to the east and CR Y & Z to the South. Alternative sources of water are rare within these polygons. The polygons are surrounded by a mix of irrigated and dry-land agricultural fields. Because many of the most desirable areas for development lie along the edges of the canyons, future development would benefit from appropriate setbacks from the canyon rims.

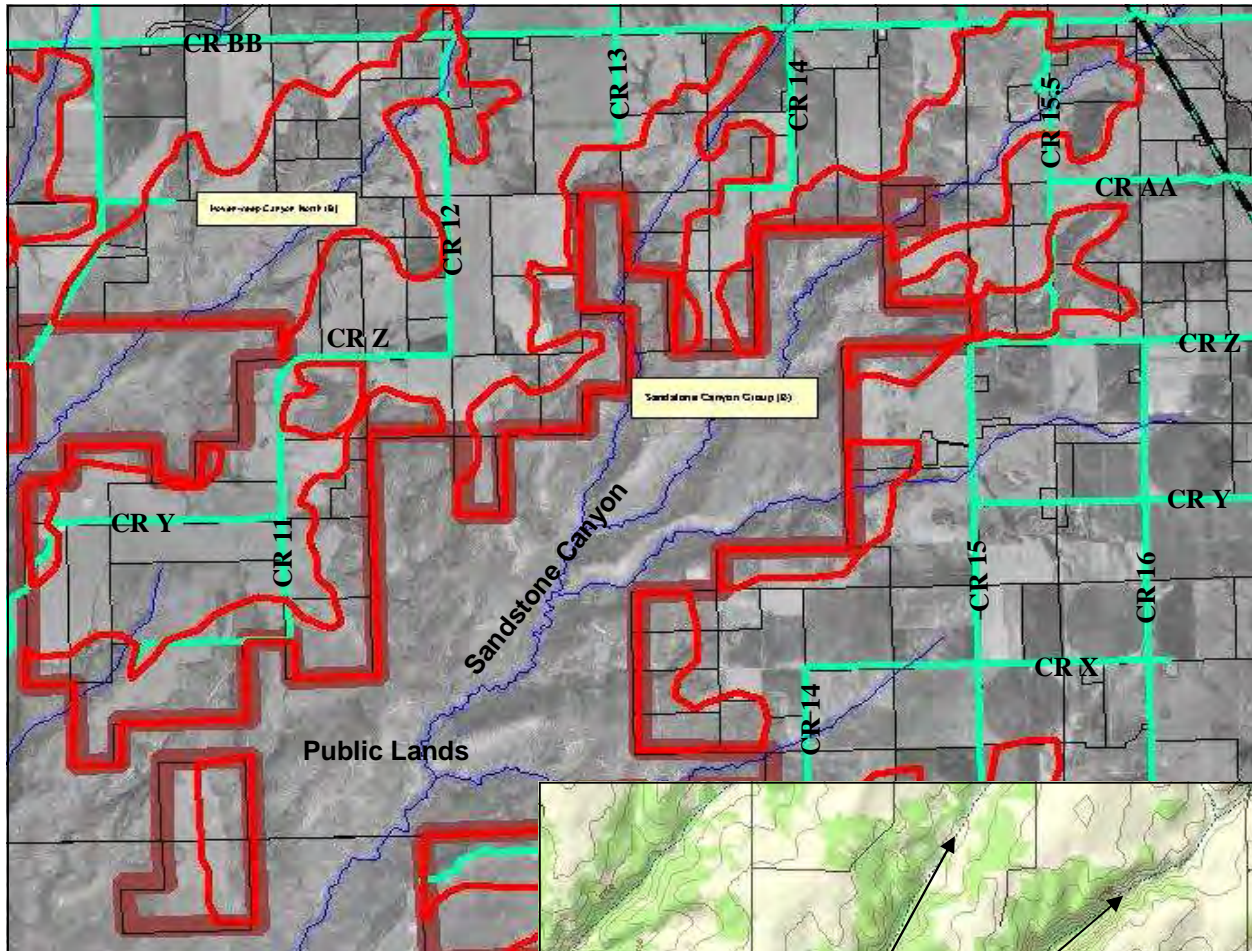
**Above;** The topographic map illustrates the rugged nature of the terrain within these polygons. Many side drainages can be seen rising out of the main drainage which could rapidly carry fire from the bottom of the canyon to the mesa tops which are the prime areas for development.

# Montezuma County Community Fire Plan

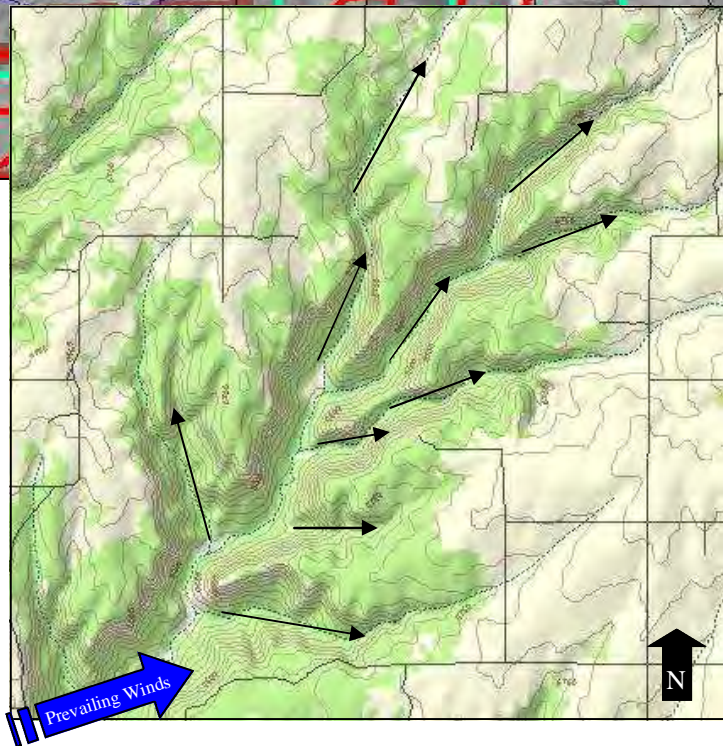
## Sandstone Canyon Group

Fire Management Classification (B)  
Elevation: 6,867'

Latitude: N37 31.552'  
Longitude: W108 48.920'



The Sandstone Canyon Group is a large complex of polygons found across a very broad area along the borders of the heavily forested Sandstone Canyon. The polygon group is lightly populated and surrounded by a mix of irrigated and dry-land agricultural parcels. The area is rich in scenic quality and archeological resources. It is also adjacent to a large expanse of public land to the west making the landscape very desirable for future residential development. An appropriate setback from the canyon rims would be a good precautionary measure for new structures. Fuels reduction treatments may include mechanical treatment on flat ground along the canyon rim.



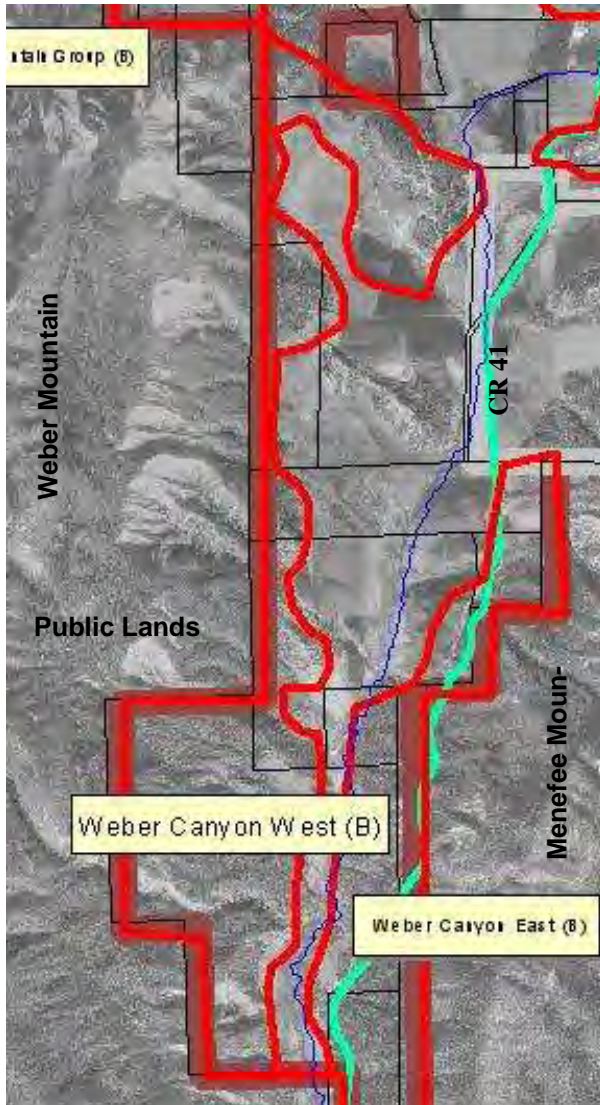


# Montezuma County Community Fire Plan

## Weber Canyon West

Fire Management Classification (B)  
Elevation: 6,701'

Latitude: N37 31.552'  
Longitude: W108 48.920'



**Left;** The aerial map illustrates the proximity of fuel pockets to a large, steep area of unbroken fuel on Weber Mountain. Access to the polygon is difficult from CR 41.

**Below;** The topographic map illustrates the steep terrain of Weber Mountain. Fires within this polygon could threaten other neighboring polygons as well as the Ute lands to the south. Steep terrain make access, and mitigation difficult, and increases the speed in which fire can spread.



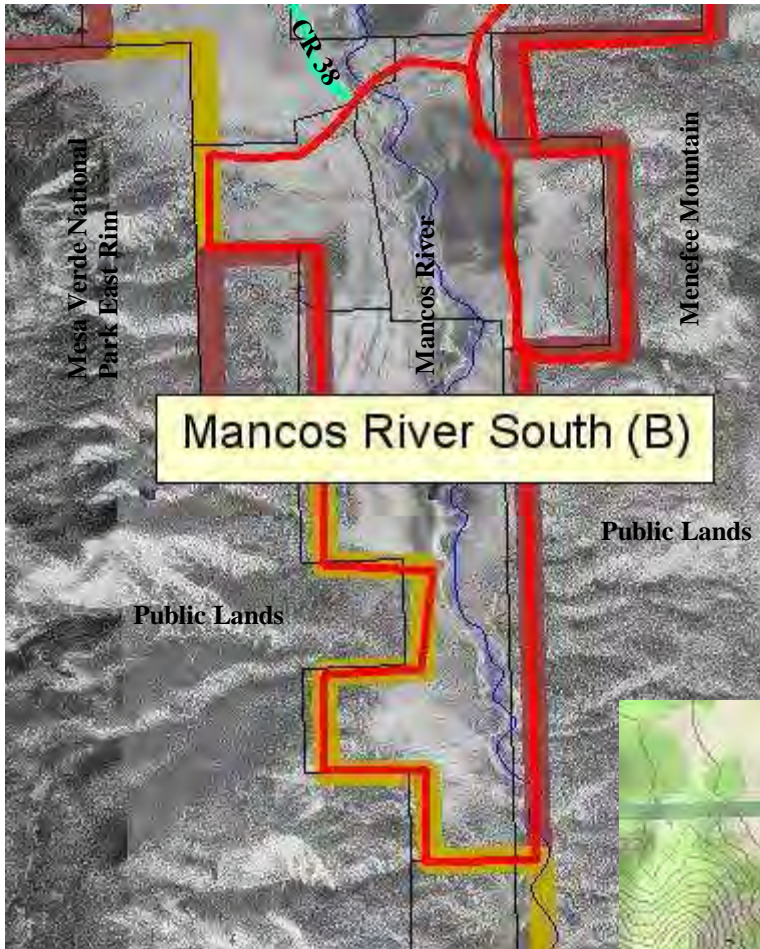
The Weber Canyon West polygon is a long polygon that runs north/ south along the base of Weber Mountain. Weber Mountain is a BLM designated wilderness study area which is heavily forested with very little access. This polygon is lightly populated but has scenic qualities and close proximity to public lands which make it a likely area for future high end residential homes. Fire starts in this area could easily run up either side of the canyon. Alternative water sources are not common in this polygon. Access is from CR 41 on un-graveled surface.

# Montezuma County Community Fire Plan

## Mancos River South

Fire Management Classification (B)  
Elevation: 6,337'

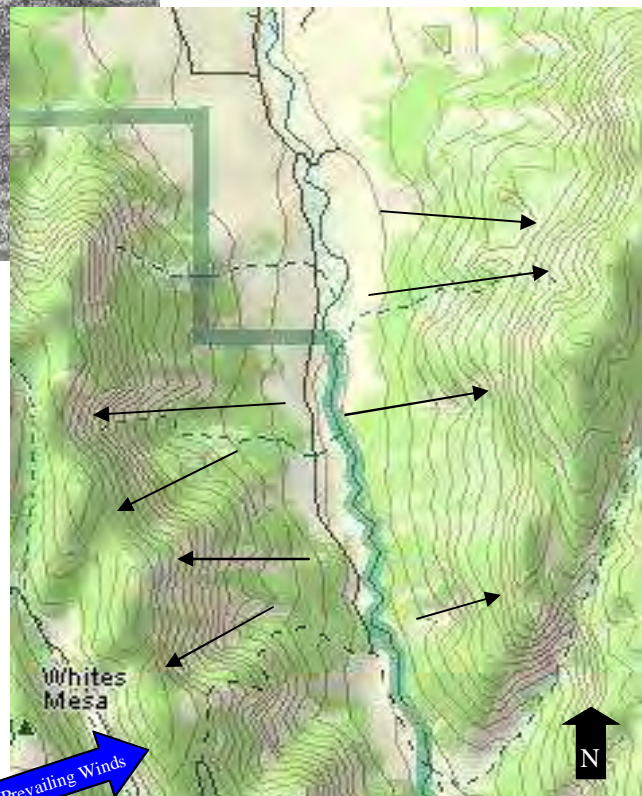
Latitude: N37 31.552'  
Longitude: W108 48.920'



**Left;** The aerial map illustrate the dominant vegetative cover type to be grass & upland shrubs along the valley floor with pinion/ juniper, and some ponderosa as the terrain climbs up the canyon walls. Weber Mountain is heavily forested and unburned portions of the Mesa Verde east rim are also heavily forested.

**Below;** The topographic map illustrates the steepness of the terrain to the east and west of the polygon. Access into the BLM Wilderness study area to the east is difficult as is the access into the Mesa Verde East Rim to the west. Possible alternative access routes are indicated by black dashed lines. Alternative water sources are limited although the Mancos River typically has perennial water.

The Mancos River South polygon is a long polygon running north/south in the in the Mancos River Canyon between public lands to the east known as Weber Mountain, and the west, known as the East Rim of Mesa Verde Nation Park. The polygon is sparsely populated and the public lands to the west have largely been burned off during the Mesa Verde fire of 2000. This polygon may see some high end residential development in the future as it is a scenic area with much access to public lands. Fire starts within this polygon could pose threat to the Weber Mountain BLM Wilderness study area, or to the National Park to the west. Access into this polygon is via CR 38. Access to the surrounding lands is difficult due to steepness of the terrain.

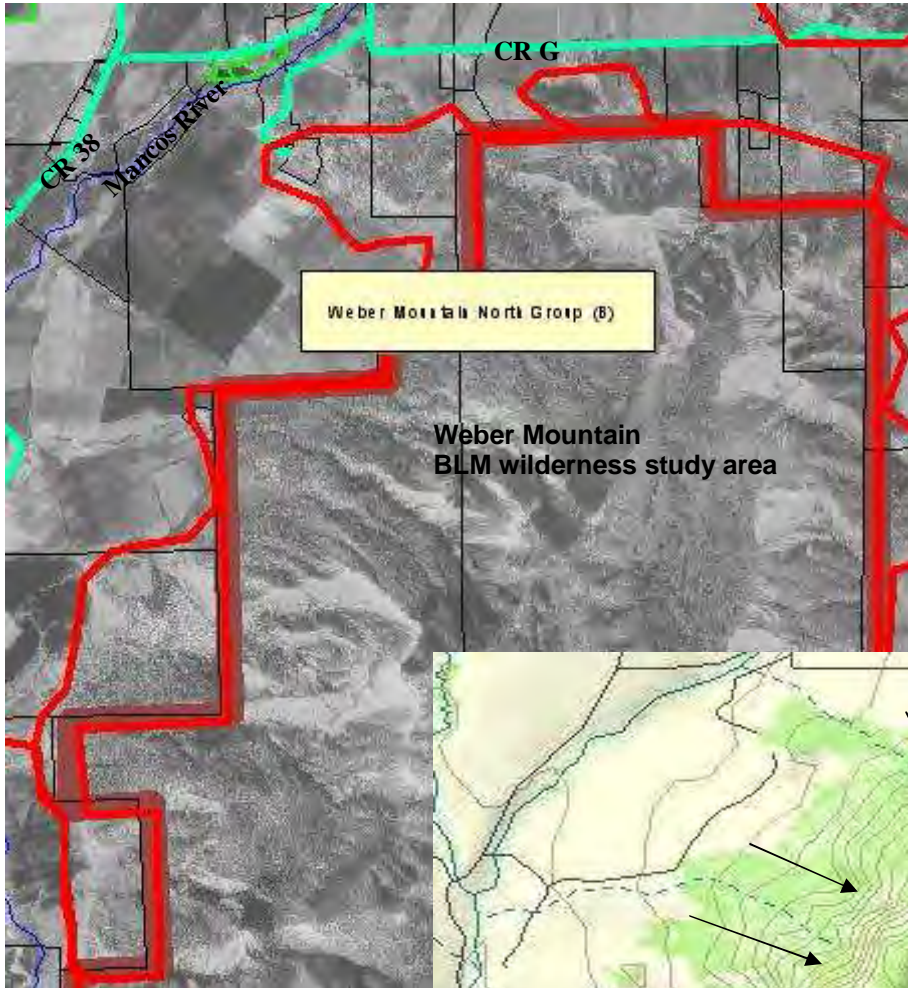


# Montezuma County Community Fire Plan

## Weber Mountain North Group

Fire Management Classification (B)  
Elevation: 6,787'

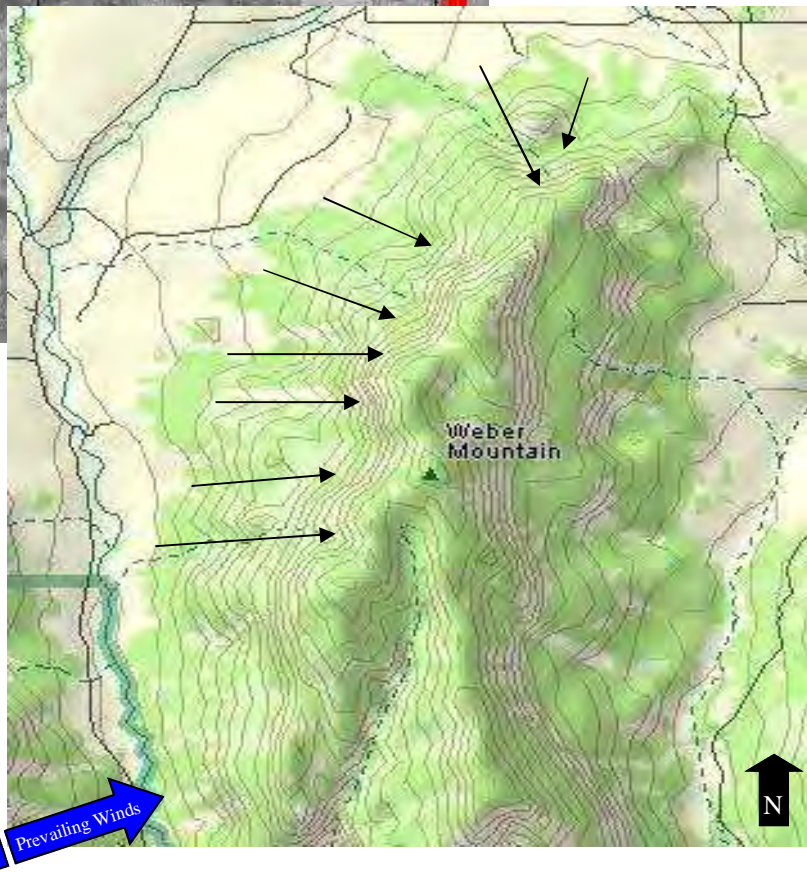
Latitude: N37 31.552'  
Longitude: W108 48.920'



**Left;** The aerial map illustrates the heavily forested character of Weber Mountain and the polygons that ring it. Dominant vegetation is Pinion/Juniper forest with upland shrubs and some Ponderosa.

**Below;** The topographic map illustrates the steepness of the terrain. Access into these polygons would be from CR G & 38. Access to Weber Mountain is difficult due to steep terrain. The Manco's River is the closest alternative water source

The Weber Mountain North Group is a series of smaller polygons that lie around the north western foot of Weber Mountain. Surrounding lands are a mix of irrigated and dry land agricultural parcels. The polygons are not heavily developed but do have some long range development potential. Fire starts within these polygons would pose the greatest threat to the Weber Mountain wilderness study area due to the terrain. Potential ignition risks would include agricultural practices.

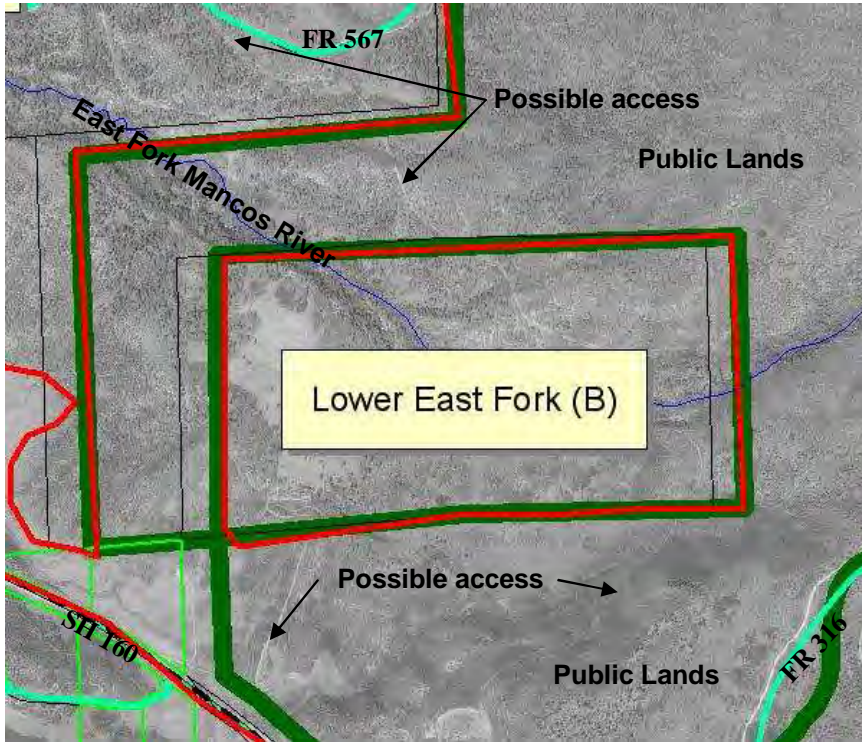


# Montezuma County Community Fire Plan

## Lower East Fork

Fire Management Classification (B)  
Elevation: 7,608'

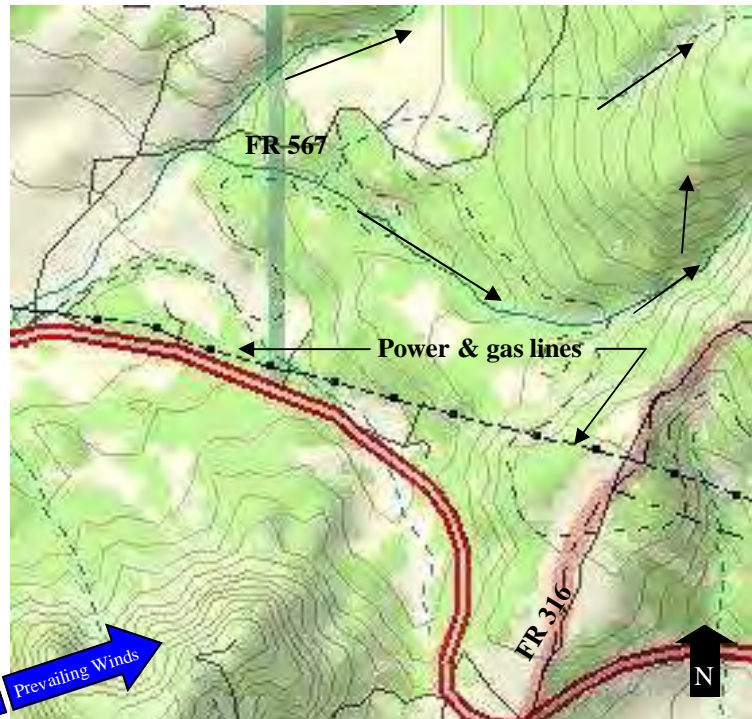
Latitude: N37 31.552'  
Longitude: W108 48.920'



**Left;** The aerial map illustrates the heavy vegetative cover over most of the polygon. There is an open field on the west end of the polygon with heavy grasses. Dominant vegetation is upland shrubs with some Pinion / Juniper and Ponderosa.

**Below;** The topographic map illustrates how the polygon lies in a draw with the East Fork of the Mancos River running through it. The slope begins to climb steeply into public lands to the north east. Vegetative cover is unbroken in this area, but the altitude begins rise sharply bringing more moisture.

The Lower East Fork polygon lies just north of highway 160 near Mancos Hill. The polygon is rectangular shaped and is completely landlocked by San Juan National Forest lands. The polygon is currently undeveloped. Future development potential is high for upscale developments because of its proximity to public lands, it's scenic quality and the presence of a perennial stream, the East Fork of the Mancos River. The polygon can be accessed from Highway 160, and additional alternative access. A significant power transmission line and gas line also cut through this polygon. The East Fork of the Mancos River provides a perennial alternative water source in all but the worst drought years. Concerns for this area include fire moving from this area into unbroken stands of fuel on public lands. Mitigation efforts could include mechanical treatment and prescribed fire.



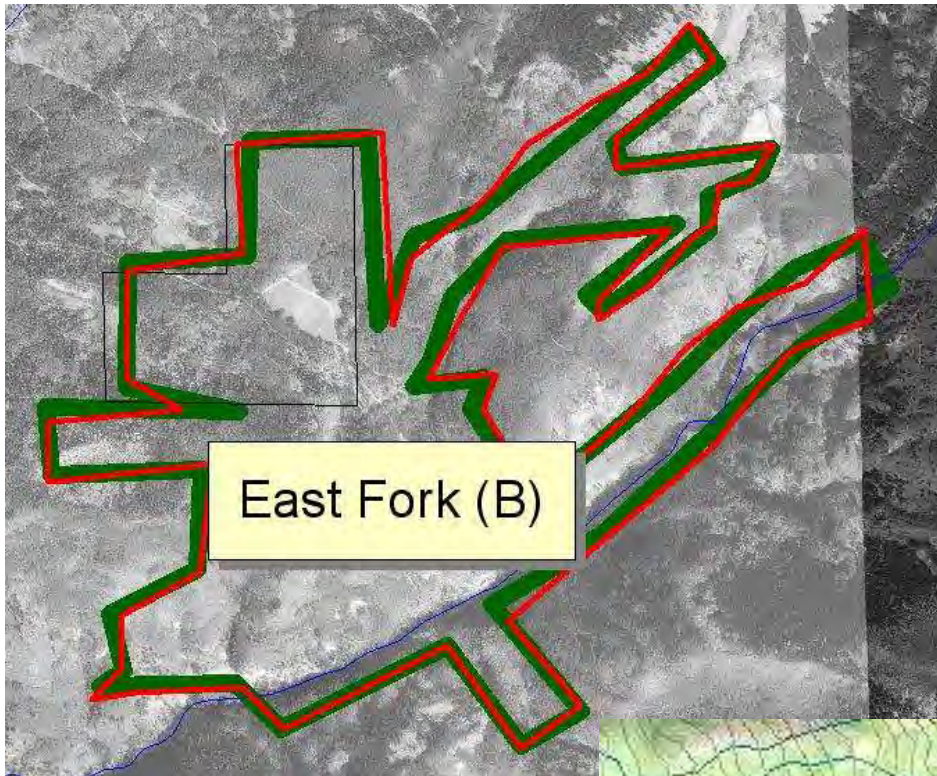


# Montezuma County Community Fire Plan

## East Fork

Fire Management Classification (B)  
Elevation: 9,200'

Latitude: N37 31.552'  
Longitude: W108 48.920'



The East Fork Polygon is a relatively high elevation polygon consisting of patented mining claims running along the East fork of the Mancos river and up the north side of the canyon towards Red Arrow Dome.

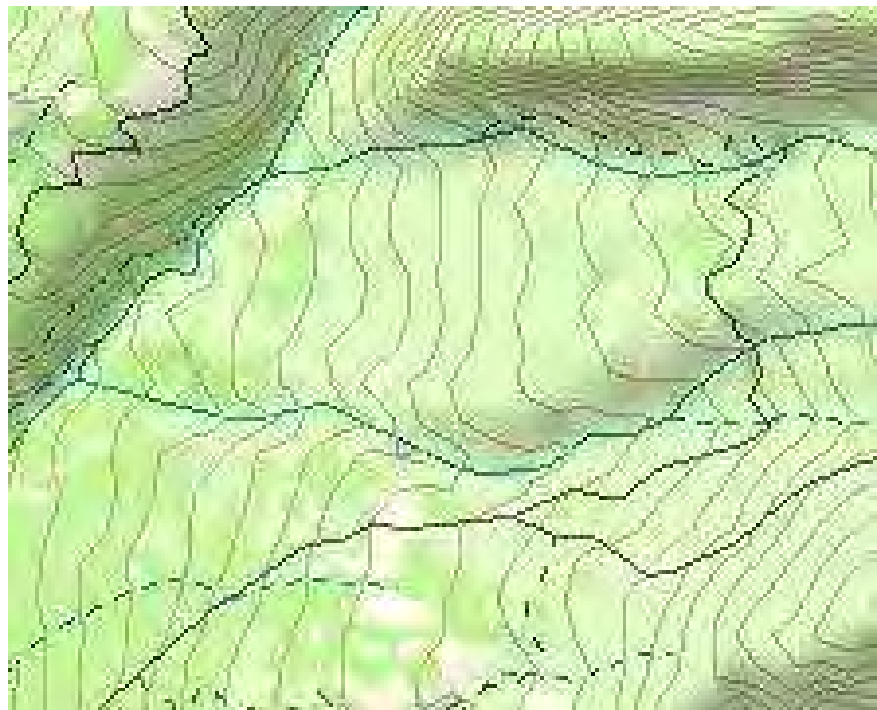
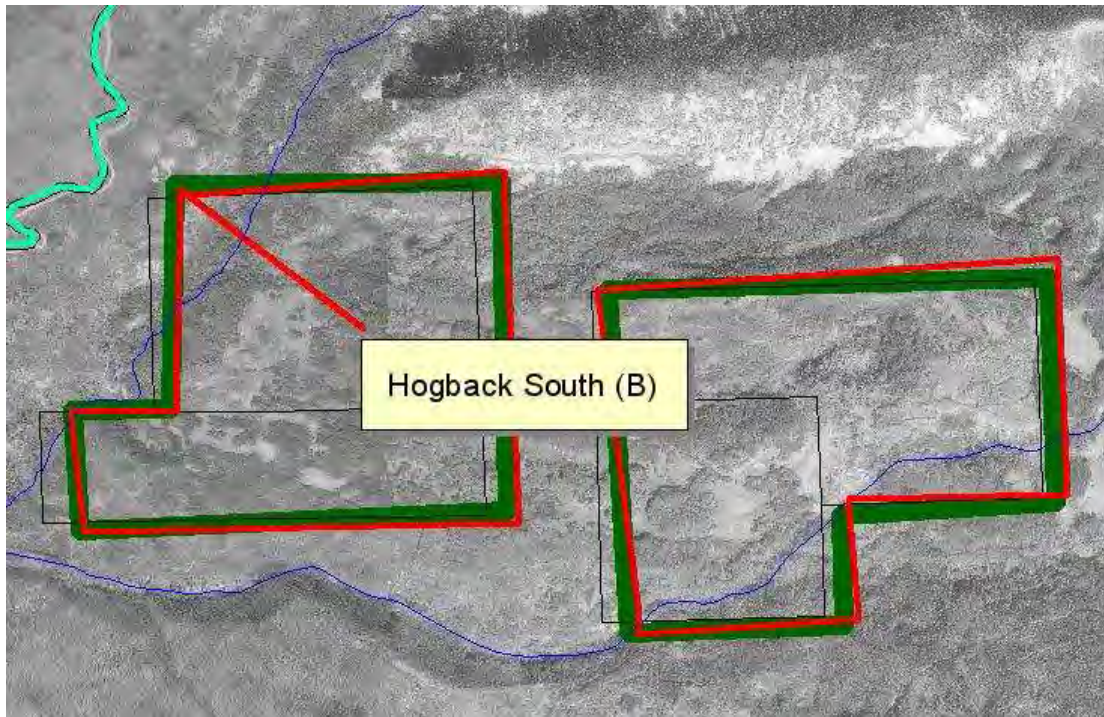


# Montezuma County Community Fire Plan

## Hogback South

Fire Management Classification (B)  
Elevation: 6,437'

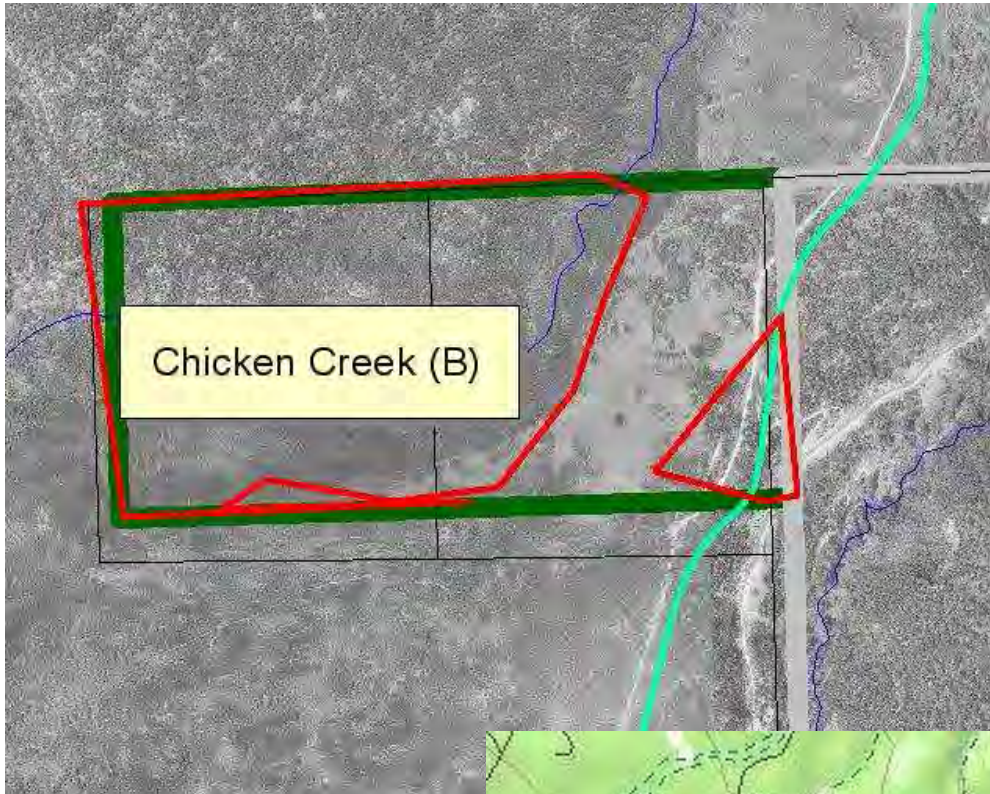
Latitude: N37 31.552'  
Longitude: W108 48.920'



# Montezuma County Community Fire Plan

## Chicken Creek

Fire Management Classification (B)    Latitude: N37 31.552'  
Elevation: 6,437'                            Longitude: W108 48.920'



# Montezuma County Community Fire Plan

## Turkey Creek

Fire Management Classification (B)

Latitude: N37 31.552'

Elevation: 6,437'

Longitude: W108 48.920'

# Montezuma County Community Fire Plan

Fire Management Classification (B)  
Elevation: 6,437'

Latitude: N37 31.552'  
Longitude: W108 48.920'

# Montezuma County Community Fire Plan

Fire Management Classification (B)  
Elevation: 6,437'

Latitude: N37 31.552'  
Longitude: W108 48.920'

# Montezuma County Community Fire Plan

Fire Management Classification (B)  
Elevation: 6,437'

Latitude: N37 31.552'  
Longitude: W108 48.920'

# Montezuma County Community Fire Plan

Fire Management Classification (B)  
Elevation: 6,437'

Latitude: N37 31.552'  
Longitude: W108 48.920'



# Montezuma County Community Fire Plan

Fire Management Classification (B)  
Elevation: 6,437'

Latitude: N37 31.552'  
Longitude: W108 48.920'