

# APPENDIX 1: INTRODUCTION

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## 1. PIONEER/VOLCANO COMMUNITY CCWPP INTRODUCTION

This plan is collaboration between several organizations and government agencies. These include the Amador County Board of Supervisors, the Amador County Office of Emergency Services, Amador Fire Safe Council, CAL FIRE, Amador Fire Protection District, Lockwood Fire Protection District, and numerous homeowners and community associations.

The Amador Fire Safe Council is the lead agency for this plan. The council's board of directors acted as the steering committee for the project. A core-working group comprised of representatives from the council, CAL FIRE, Amador Fire Protection District, and Lockwood Fire Protection District was responsible for preparing the draft plan for review by stakeholders and the preparation of all ancillary products associated with the plan.

Funding for some aspects of the plan was provided by the Amador County office of Emergency Services from a grant fund provided by the United States Department of Homeland Security, Federal Emergency Management Agency (FEMA). Other parts of the plan were funded by a planning grant from the Sierra Nevada Conservancy.

### 1.1 PIONEER/VOLCANO PLANNING UNIT FIRE PLAN PURPOSE

The purpose of this plan is several-fold:

- To identify priority projects to reduce risks and hazards from wildfire while protecting conservation values. Goals are to be achieved principally through prioritization and implementation of fuel hazard reduction, community education, and fire-suppression projects and activities.
- To provide community priorities for conservation-based fuel reduction on public lands
- To provide conservation-based fire safety educational information to residents of the Pioneer/Volcano Planning Unit
- To provide a positive balance among fire prevention, conservation, and wildlife protection
- To provide a guidance document for future actions of the Amador Fire Safe Council, County of Amador, CAL FIRE, United States Forest Service, Bureau of Land Management, Pacific Gas & Electric Company and local emergency service providers.
- To coordinate fire protection strategies across properties and administrative boundaries to achieve landscape scale fire defense systems.
- To integrate private land management goals with community needs and expectations for fire safety.
- To create ecologically sustainable biomass utilization and removal projects within Pioneer/Volcano Planning Unit.

- To provide tools to emergency response agencies that improves response capabilities.
- To reduce the potential of large scale damage from the historic large fire scenario in upper Amador County
- Finally, this document is being written as a Community Wildfire Protection Plan, in order to meet the requirements for future National Fire Plan and other government funding sources, and to provide community direction for federal lands management within the planning area.

## 1.2 ORGANIZATION OF THIS DOCUMENT

This document is based on the design of the *Sierra Nevada Community Conservation and Wildfire Protection Plan (CCWPP) Guidebook*. It contains the following sections:

### **Summary and Action Plan—a summary of all the following appendices and the CCWPP Action Plan**

Appendix 1, Plan Introduction—an introduction to the document, Pioneer/Volcano Planning Unit, and the Amador Fire Safe Council

Appendix 2, Pioneer/Volcano Planning Unit Fire Safe Planning Process—summarizes the public process used to develop this Fire Plan.

Appendix 3, Wildfire: Current Environment and Behavior—introduces wildfire concepts and issues in Pioneer/Volcano Planning Unit.

Appendix 4, Fire Ecology and Management of Sierra Nevada Vegetation Types—summarizes the common Sierra vegetation types found in Pioneer/Volcano Planning Unit, their fire ecology, and conservation and fuel management considerations.

Appendix 5, Pioneer/Volcano Planning Unit Community Features—describes the social, political, and community-planning milieu; includes a discussion of land ownership and management.

Appendix 6, Fire Protection Organizations—summarizes current fire protection resources and issues in Pioneer/Volcano Planning Unit.

Appendix 7, Risk Assessment: Identifying and Evaluating Assets at Risk—summarizes assets at risk and the community risk assessment process and results.

Appendix 8, Meeting Your Objectives: Pioneer/Volcano Planning Unit Fire Safe Action Plan—identifies actions to reduce risks from wildfire in Pioneer/Volcano Planning Unit.

Appendix 9, Facilitating Pioneer/Volcano Planning Unit Fire Safety in the Long Term—outlines a monitoring strategy and long-term steps to maintain and update this plan.

There is a series of reference and background information in separate documents. These contain general information that can be used by residents.

**The Reference documents include:**

Reference A – Glossary defines the terms used in this plan.

Reference B – Internet Links for Further Information provides references for further information on topics discussed throughout this plan.

Reference C – Literature Cited provides references for literature cited in this plan.

**Background documents on conservation and wildfire include:**

Background A – Conservation Principles for Community Wildfire Protection in California’s Sierra Nevada.

Background B – Wildland Fire Safety at Home is a text document explaining conservation-based wildfire safety.

Background C – Wildland Fuel Hazard Reduction is a text document explaining conservation-based methodologies and prescriptions that can be used in Pioneer/Volcano Planning Unit.

Background D – Risk Assessments

Reference E – Informational Internet Links

### 1.3 CONSERVATION PRINCIPLES FOR COMMUNITY WILDFIRE PROTECTION IN THE SIERRA NEVADA

*This document is based on the following conservation principles.*

“Fire always has been and always will be an ecological force in the Sierra Nevada. Decades of fire suppression have changed this role, allowing stands to thicken and fuels to accumulate, especially in the foothills and lower *montane*<sup>1</sup> zone, where developments are increasing. We either manage fire and live with fire on our terms or let fire dictate the terms. The choice is ours.”

— Jan W. van Wagtendonk,  
*Wildfire* (2006)

Most Sierra Nevada residents choose to live here because of the natural beauty. What many of us do not realize is that living within these forests and *wildlands*<sup>2</sup> carries a responsibility. We need to be good stewards of the land, learning to live in balance with the natural world, of which fire is a significant part. This document summarizes what residents can do to

coexist with fire in the Sierra. It will show you how to provide a positive balance among *fire prevention*,<sup>3</sup> conservation, and wildlife protection at your Sierra Nevada home. You have chosen to live here, and with your choice come a stewardship responsibility.

*For more information on fire safety in general, please contact the Amador Fire Safe Council, or go to*

[www.amadorfiresafe.org](http://www.amadorfiresafe.org)  
[www.fire.ca.gov/education\\_homeowner.php](http://www.fire.ca.gov/education_homeowner.php)  
[www.firesafecouncil.org/homeowner/index.cfm](http://www.firesafecouncil.org/homeowner/index.cfm)  
[firewise.org/resources/homeowner.htm](http://firewise.org/resources/homeowner.htm)

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### 1.3.1 BASIC CONCEPTS TO REMEMBER FOR LIVING WITH FIRE IN THE SIERRA NEVADA

- ↳ **Fire is a dynamic element of the Sierra.** Property in the planning unit has likely burned before and will burn again. The landscape of today may seem “natural.” In fact, it has changed drastically over the last 150 years as government and private citizens attempted to manage fire and forest growth. In preparing property for fire, residents can help restore it to a more ecologically appropriate state. In doing so, they will learn how to be prepared for wildfire—it is not only possible, it is smart. While it is rarely practical to completely “fire proof” a property, there are many steps property owners can take to survive inevitable wildfire. *For more information see [www.fire.ca.gov/education\\_content/downloads/live\\_w\\_fire.pdf](http://www.fire.ca.gov/education_content/downloads/live_w_fire.pdf)*
- ↳ **One size does not fit all in terms of homeowner fire safety.** Every place is unique. Residents should work with the Amador Fire Safe Council,<sup>4</sup> their local fire department, Cooperative Extension Agent,<sup>5</sup> a Registered Professional Forester,<sup>6</sup> and/or contractors to design the appropriate fire-safe practices<sup>7</sup> and defensible space<sup>8</sup> for their property. See [www.fire.ca.gov/education\\_100foot.php](http://www.fire.ca.gov/education_100foot.php) and [www.firesafecouncil.org/homeowner/index.cfm](http://www.firesafecouncil.org/homeowner/index.cfm) *for more information.*
- ↳ **Homes and other infrastructure exist within a larger watershed.**<sup>9</sup> They are located in the midst of a much larger landscape. Home and business owners should think about where their property is on the slope.<sup>10</sup> Is it on top of a ridge, where fire will easily burn toward homes and other structures? Is the slope steep or gentle? Fire moves quickly up steeper slopes, which means that residents may need to treat a larger area to create effective defensible space. What is below and above? What direction, or “aspect,”<sup>11</sup> does the property face? Generally, south-facing properties are hotter and drier; they can therefore be more susceptible to fire. Are there any natural firebreaks<sup>12</sup> such as streams, rivers, or rocky outcrops where a fire might naturally go out? Do wildlife use or move through the property to get to food, shelter, or water? In

what watershed is the property located? Do the roads in and out of the property follow ridges or rivers? Look beyond property lines to understand the ecological perspective of the property. See [www.audubon.org/bird/at\\_home/Explore.html](http://www.audubon.org/bird/at_home/Explore.html) for more information.

- ↳ **Fire can behave both predictably and unpredictably.** Fire managers can generally predict fire direction and behavior; it will go the way the wind is blowing and burn as much *fuel*<sup>13</sup> as is available. Predicting the exact time and place where fire will burn is less obvious. As fire moves across the landscape, it can climb up into trees. A key fire safety objective is to prevent that spread. Dead leaves and branches on the ground (*surface fuels*<sup>14</sup>) act as a *wick*<sup>15</sup> to move fire horizontally across the land. Shrubs, small trees, and live branches (*ladder fuels*<sup>16</sup>) can carry fire vertically into the larger trees. Too much of these surface and ladder fuels can cause the *overstory*<sup>17</sup> trees to burn up in what is called a “crown fire”—when fire spreads from tree to tree in the forest canopy (or tree tops). One of the main principles in creating defensible space and reducing hazardous fuel conditions is to create physical space between vegetation layers (both vertically and horizontally) so a fire cannot climb easily from the ground into the trees or to homes and other structures. See [www.for.gov.bc.ca/protect/suppression/behaviour.htm#Behaviour](http://www.for.gov.bc.ca/protect/suppression/behaviour.htm#Behaviour) for more information.
- ↳ **Timing is everything.** There are appropriate times for different actions, much as there are different seasons of work in the garden. Defensible space and fuel reduction work need to occur well before fire season, to avoid having sparks from equipment start fires in dry vegetation. Avoid *ground-disturbing*<sup>18</sup> activities in forest or wildland when the ground is too wet or when birds and animals are nesting. Do not try to do everything at once. Think about fire safety seasonally. Plan activities in the winter and spring; start clearing when the ground begins to dry (when it's not *saturated*<sup>19</sup>) or when there is snow on the ground; finish treatments by early summer before the vegetation is dry; do defensible space maintenance around and inside structures in the fall; and burn piles after the rains begin in the winter. See [celosangeles.ucdavis.edu/Natural\\_Resources/Wildland\\_Fire.htm](http://celosangeles.ucdavis.edu/Natural_Resources/Wildland_Fire.htm) for more information.
- ↳ **Homes are likely a fuel source.** Many Sierra homes are located in places where a fire can start and spread into surrounding vegetation. The more residents prepare their homes and other structures, the less they will have to treat the surrounding vegetation. The biggest improvement residents can make to reduce fire risk is to build or remodel homes and businesses to resist the millions of tiny *embers*<sup>20</sup> created by *ember-attack*<sup>21</sup> from wildfires. When wildfires burn in extreme conditions they send burning firebrands (embers) ahead of them; these firebrands ignite new fires. Using *fire-resistant building materials*<sup>22</sup> and appropriately designed structures will give you the best chance to survive wildfire. Replace wood shake roofs with fire-resistant materials. An interactive source of information to reduce homeowner risk in the wildland-

urban interface is provided by the University of California Center for Fire Research and Outreach; it is called the Fire Information Engine Toolkit. See [firecenter.berkeley.edu/toolkit/homeowners.html](http://firecenter.berkeley.edu/toolkit/homeowners.html) for details on how this web-based program can help residents make better decisions to reduce the fire risk, and the related [UC Extension's Homeowner's Wildfire Mitigation Guide](http://ucextension.org/HWMSG/index.cfm) [groups.ucanr.org/HWMSG/index.cfm](http://groups.ucanr.org/HWMSG/index.cfm). Consult local fire agencies or see [firewise.org/resources/files/wildfr2.pdf](http://firewise.org/resources/files/wildfr2.pdf) for more information. When building a new home, homebuilders and property owners should consider slope, aspect, surrounding fuels, and potential environmental impacts before deciding where to site the home. This may be more important than the view in the long term. Talk to the local planning department to learn about local fire-safe building regulations, or see [osfm.fire.ca.gov/WUIBS.html](http://osfm.fire.ca.gov/WUIBS.html), or [cdfdata.fire.ca.gov/pub/fireplan/fpupload/fppguidepdf99.pdf](http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fppguidepdf99.pdf) for more information about state regulations.

- ↪ **Landowners need to know their legal obligations.** Learn the legal requirements regarding defensible space and fire-safe building and construction. Discover how to balance these with the ecological needs of the property. See *Background B Home Safety* page 220.
- ↪ **Firefighters need the public's help to protect homes and businesses.** Make it safe for them and their equipment to get to and from homes and businesses. Be sure they can find homes and businesses by providing visible road and address signs. Remember that fire-safe landscaping and construction greatly improves firefighters' ability to protect homes. For more information, see principle 4C below, and [www.livingwithfire.info/beforethefire/accesszone/index.php](http://www.livingwithfire.info/beforethefire/accesszone/index.php).

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### 1.3.2 CONSERVATION PRINCIPLES

*Landowners should consider the Conservation Principles below as how to approach fire safety and defensible space. It is all about balance. It is possible to have an aesthetically pleasing landscape that is fire-safe, supports local plant and animal species, and still provides landowners with privacy and plantings.*

#### 1. REMEMBER THE VEGETATION (NATIVE TREES AND OTHER PLANTS)

##### a. Discover and monitor forest and vegetation's dynamic changes.

It is important to plan for the future of the forest. Because citizens are the conservation stewards of their land, their work in the forest will be ongoing. Homeowners should watch the wild areas on their property and learn from them as they grow and change with the resident's stewardship. It is important to think both in the short term (what will happen this year) and in the long term (what will

happen over time). It is helpful to document those changes as the years go by by keeping notes and records. Learning how to *monitor*<sup>23</sup> the ecological changes and using that information for *adaptive management*<sup>24</sup> of wildlands provides landowners with the tools to manage effectively the fire threat. To live safely with wildfire residents need to take the responsibility to manage, adapt, and guide the vegetation around their homes. *For more information, see [www.dnr.state.mi.us/publications/pdfs/huntingwildlifehabitat/Landowners\\_Guide/Habitat\\_Mgmt/Planning/Evaluating\\_Land.htm](http://www.dnr.state.mi.us/publications/pdfs/huntingwildlifehabitat/Landowners_Guide/Habitat_Mgmt/Planning/Evaluating_Land.htm).*

**b. Act conservatively.**

When manually recreating a more *fire-resilient landscape*<sup>25</sup> by implementing *fuel treatments*<sup>26</sup> it is important to apply the general concepts of the *precautionary principle*<sup>27</sup> while implementing *fuel treatments*<sup>28</sup>: one can always remove more trees and vegetation at a later time, but one cannot immediately replace what has been cut. The vegetation left is ultimately most important. Careful planning will insure the remaining forest stand is healthy and *resilient*.<sup>29</sup> See [www.mindfully.org/Precaution/Precautionary-Principle-Common-Sense.htm](http://www.mindfully.org/Precaution/Precautionary-Principle-Common-Sense.htm) for more information. An exception to this principle occurs when structures are present. Vegetation must be removed to provide defensible space. See *Background B Section B.1.1.4*.

**c. Protect native species that share the property.**

Resident can look at the native vegetation around their property—or ask local plant or forestry specialists for help—to see what different plants share their home. There may be rare plants. Often rare plants can be protected by providing defensible space (while keeping in mind their needs, such as shade). A good source of information is how these rare plants are being managed by others within the watershed.

Residents should watch for *invasive weeds*.<sup>30</sup> It is often necessary to follow vegetation treatments with invasive weed removal. Exotic plant species near homes can become invasive and should be avoided, especially those that can spread into adjacent wildland areas. Invasive species can change the fire hazard very quickly and be difficult to manage.

Avoid unnecessarily introducing water into the landscape, as water will generally help non-native plants out-compete native plants. See [www.cnps.org/activities/natives.htm](http://www.cnps.org/activities/natives.htm), [www.cal-ipc.org](http://www.cal-ipc.org), and [www.ipm.ucdavis.edu/PMG/weeds\\_common.html](http://www.ipm.ucdavis.edu/PMG/weeds_common.html) for more information.

**d. Keep the oldest and biggest trees.**

Generally, most of the oldest trees in the forest are no longer present. Landowners with old or very large trees should create defensible space around them to help them survive wildfire. This may include raking away thick *duff*<sup>31</sup> at the base of the trees. These trees often have thick bark so they are generally fire-resistant (they have evolved with fire). Remove ladder fuels to prevent crowning. At the same time, do not remove all of the small trees in the forest. Small trees are the next generation of large trees. Keep enough *regeneration*,<sup>32</sup> possibly in small patches, to provide for the future forest, while still providing adequate space between all the trees. An additional benefit of keeping the biggest trees is that they can break up the wind as it's moving through, which can slow down fire spread. See [www.eri.nau.edu/cms/content/view/544/740/](http://www.eri.nau.edu/cms/content/view/544/740/) for more information.

**2. REMEMBER THE WILDLIFE**

**a. Provide local wildlife a place to live.**

Become familiar with the animals sharing the property. Talk to local wildlife experts and/or bird watchers. Learn what wildlife need in terms of shelter, food, water, and reproduction. Remember that the property is their home too. Find ways to balance land management activities with their needs, and leave some areas *untreated*<sup>33</sup> for the birds and wildlife using them. Protect them creating defensible space while still considering their needs for *cover*.<sup>34</sup> For more information, see [www.fs.fed.us/psw/rsl/projects/wild/verner/psw\\_37.html](http://www.fs.fed.us/psw/rsl/projects/wild/verner/psw_37.html), and [cetuo-lumne.ucdavis.edu/newsletterfiles/Master Gardener Articles 20044858.doc](http://cetuo-lumne.ucdavis.edu/newsletterfiles/Master_Gardener_Articles_20044858.doc).

**b. Provide access to food and water.**

Protect and retain trees with nests and cavities, or where obvious wildlife feeding or nesting activities are occurring. Leave some plants that have berries or other fruit or *mast*<sup>35</sup> used by wildlife. Be especially careful to leave cover around streams, *seeps*,<sup>36</sup> or other wet areas to keep those areas cool and wet; this will provide wildlife the protective cover they need when they are using those places or moving to and from them. Make sure all natural water supplies are clean by keeping any poisons and *sediment*<sup>37</sup> away from any water that could drain into them. For more information, see [www.dnr.state.mi.us/publications/pdfs/huntingwildlifehabitat/Landowners\\_Guide/Habitat\\_Mgmt/Backyard/Backyard\\_Intro.htm](http://www.dnr.state.mi.us/publications/pdfs/huntingwildlifehabitat/Landowners_Guide/Habitat_Mgmt/Backyard/Backyard_Intro.htm).

**c. Protect future generations of wildlife.**

Find out when local species are nesting and/or breeding and avoid working in and around the wildlands during those times. Learn what kind of habitat local

species might use for nesting and breeding, and be sure to protect those areas during management activities. See [www.paws.org/about/emailnetwork/archive/wildagain/wild\\_2004\\_06\\_02.html](http://www.paws.org/about/emailnetwork/archive/wildagain/wild_2004_06_02.html) and [www.audubon.org/bird/at\\_home/SafeMisc.html](http://www.audubon.org/bird/at_home/SafeMisc.html) for more information.

**d. Value the standing dead trees.**

Standing dead trees—or *snags*<sup>38</sup>—are especially important for wildlife. They provide both shelter and food to many birds and other animals. However, they can also be a wildfire hazard if they are near enough to fall on a home or fall and block an evacuation road during a fire. Balance the needs of wildlife with the need for fire safety. See [www.nwf.org/backyard/snags.cfm](http://www.nwf.org/backyard/snags.cfm) for more information.

**e. Conserve rare and endangered species.**

One of the bonuses—and responsibilities—of living in the Sierra is living with the many rare and endangered species with which share the habitat. Residents can find out if there are rare or endangered species in their area by talking to your local Cooperative Extension Agent or Forest Service wildlife biologist. Fuel reduction actions should be planned around the needs of these species. Often by a minor refinement of management activities, such as timing, technique, or extent, can protect species while realizing the desired fuel reduction goals. *For more information, see [www.dfg.ca.gov/hcpb/species/t\\_e\\_spp/tespp.shtm](http://www.dfg.ca.gov/hcpb/species/t_e_spp/tespp.shtm), [www.dfg.ca.gov/habitats/wdp/region-sierra\\_nevada-cascades/overview.html](http://www.dfg.ca.gov/habitats/wdp/region-sierra_nevada-cascades/overview.html).*

### **3. REMEMBER THE SOIL**

**a. Maintain the life in the soil.**

There is as much or more activity below the ground on a property as there is above the ground. Keep this in mind in terms of what is done above ground. Talk to a Cooperative Extension Agent or local gardeners to find out what *soil types*<sup>39</sup> are on a property. Some soil types can tolerate much more *disturbance*<sup>40</sup> than others can. Minimize activities that could *compact*,<sup>41</sup> flood, or poison the soil. The health of the land is directly dependent on the health of the soil. As such, the soil is one of the most valuable assets of any property. See [managingwholes.com/new-topsoil.htm](http://managingwholes.com/new-topsoil.htm) for more information.

**b. Ensure that the soil cover is fire safe.**

Replace cover that burns easily (such as dry or dead vegetation) with cover that is less *flammable*<sup>42</sup> (e.g. gravel, fleshy green plants, etc.). The objective is to ensure that when a fire comes through, it is not so hot that it kills the life in the soil. Rather, it should move through without a lot of fuel to consume in its path. For

example, a very light layer of pine needles can help with soil erosion (*see below*), but too much can be a fuel problem. See [www.laspilitas.com/classes/fire\\_burn\\_times.html](http://www.laspilitas.com/classes/fire_burn_times.html) for more information.

**c. Minimize erosion.**

Protect the soil by keeping it covered. Cover helps to prevent *erosion*,<sup>43</sup> especially on ground that is not flat; it keeps the soil in place. Do not let soil move across the property, most importantly not into streams or other natural water sources. Keep ground-disturbing activities away from *unstable*<sup>44</sup> areas and *riparian*<sup>45</sup> areas. Pay special attention on steep slopes. The steeper the slope, the faster the soil can move downhill if it's disturbed, and the faster a fire can climb uphill under the right (or wrong!) conditions. See [www.uri.edu/ce/healthylandscapes/tips/6.html](http://www.uri.edu/ce/healthylandscapes/tips/6.html) and [www.pfmt.org/fire/topos\\_effect.htm](http://www.pfmt.org/fire/topos_effect.htm) for more information.

**d. Protect the soil after a fire.**

Soil can be most fragile after a wildfire. This is often exacerbated when winter rains come soon after a fire. The potential for erosion and loss of soil is huge with this combination of conditions. Residents experiencing fire on their property should get cover onto the soil as soon as possible to prevent erosion. Remember, soil is alive, so help it grow. See [www.ext.colostate.edu/PUBS/NATRES/06308.html](http://www.ext.colostate.edu/PUBS/NATRES/06308.html) and [www.cnr.uidaho.edu/extforest/AftertheBurnFINAL.pdf](http://www.cnr.uidaho.edu/extforest/AftertheBurnFINAL.pdf) for more information.

**4. REMEMBER THE PEOPLE**

**a. Plan actions with neighbors**

Talk to neighbors. Find out what they are doing on their land. Find ways to cooperate in land management actions. One person's defensible space will likely impact the neighbor's chances of surviving a wildfire and vice-versa. Talk about what to do in an emergency and how to evacuate safely. Attend an Amador Fire Safe Council Meeting to learn what resources are available. Meeting dates and contact information are posted online at [amadorfiresafe.org](http://amadorfiresafe.org). Help make the community a Firewise community. Coordinated work amongst neighbors will have a greater impact on everyone's individual fire safety. *For more information, see [www.firesafecouncil.org](http://www.firesafecouncil.org), [www.fire.ca.gov/about\\_content/downloads/Evacuation2006.pdf](http://www.fire.ca.gov/about_content/downloads/Evacuation2006.pdf), and [www.firewise.org](http://www.firewise.org).*

**b. Find experienced workers and treat them well.**

Forestry workers with chainsaws in hand are the actual decision-makers as to what stays or goes—what lives or dies—in the forest. If the objective is to reduce fuels while still maintaining ecological integrity and diversity on a site, the workers must have the knowledge and experience to help achieve this. Involve the workforce in the design, planning, and monitoring of projects. Talk to the Amador Fire Safe Council or neighbors and check references to find reputable contractors. See [ewp.uoregon.edu/programs.html](http://ewp.uoregon.edu/programs.html) for more information.

**c. Work with the local fire department.**

Talk to the local firefighters. Find out what they need to safely get to a house and back out. Make sure that *access roads*<sup>46</sup> are safe; maintain fuel treatments along all roads, both for firefighter safety in protecting resident's homes and safety in case of evacuation. Have street and address signs visible so out-of-town firefighters can locate the residents they are assigned to protect. Make sure to have a water supply they can find and use. See [www.projecttahs.org/pdf/firedepartment.doc](http://www.projecttahs.org/pdf/firedepartment.doc) for more information.

## 1.4 INTRODUCTION TO THE PIONEER/VOLCANO PLANNING UNIT

The Pioneer/Volcano Planning Unit is located in the midsection of Amador County (See *Plate 2 – Pioneer/Volcano Base Map*). Its northern boundary is the Amador and Eldorado County line and its southern boundary is the Amador and Calaveras County line. The eastern boundary is Antelope Creek. The western boundary is a line from Highway 26 to Volcano and up Rams Horn Grade.

Several large drainages lie within or adjacent to the planning unit. Most significant of these are Antelope Creek and Ashland Creek. The affect of these drainages on potential wildfire damage is related to their east/west orientation, fuel load, and the historic large fire occurrence.

Much of the planning unit contains an abundance forest fuels capable of supporting intense fire behavior, including crowning. Intermingled with the forest are many homes and businesses. Many of these structures were constructed before the adoption of modern fire safe building and development standards and would not be permitted today.

Most of the land within the planning unit is privately owned. Some of the land is devoted to timber production and other agricultural uses. There are numerous parcels owned by the Forest Service and the Bureau of Land Management scattered throughout. The entire area is unincorporated.

Most of the area is zoned R1, R1A, R2, R2A, R3, and RE.<sup>47</sup> The County of Amador is currently updating its General Plan. All versions of zoning for the new plan increase the residential zoning within the Pioneer/Volcano Planning Unit (See *Plate 1 – Pioneer/Volcano General Plan Zoning*).

See Appendix 5 for more information on the Pioneer/Volcano Planning Unit

**Figure 1. Public Land Managers in Pioneer/Volcano Planning Unit**

Agency	Name	Acres
USDA Forest Service	The Amador District of the Eldorado National Forest	39.5
US Bureau of Land Management	The Mother Lode Office	2050

### 1.5 PIONEER/VOLCANO PLANNING UNIT COMMUNITIES AT RISK

On January 4, 2001, for the purposes of the National Fire Plan, the Department of Interior (DOI) published in the *Federal Register* a “Notice of Urban-Wildland Interface (WUI) Communities Within the Vicinity of Federal Lands That Are at High Risk from Wildfire.” In Pioneer/Volcano Planning Unit, Pioneer and Volcano were the first communities to be designated as a Community at Risk. In 2001, the DOI added these communities to the list.

After the 2000 fire season, the California Department of Forestry and Fire Protection (CAL FIRE), working with the California Fire Alliance, developed a list and associated map of communities at risk from wildfire using 1990 Census and USGS Geographic Names Information System data to identify populated places, and CAL FIRE’s Fire and Resource Assessment Program (FRAP) fuel hazard data.<sup>48</sup> This data describe relative risk to areas of significant population density from wildfire by combining residential housing unit density with the proximate fire threat to give a relative measure of the potential loss of structures and threats to public safety from wildfire. CAL FIRE’s designation of the Pioneer WUI encompasses all of the Pioneer/Volcano Planning Unit and thus, no further proposals for areas within the planning unit to be designated as Communities at Risk are required.

**Figure 2. Communities at Risk in Pioneer/Volcano Planning Unit**

Community at Risk	Threat Level <sup>49</sup>	Federal Adjacency? <sup>50</sup>	Source of Designation
Pioneer	3-Very High		California Fire Alliance and CAL FIRE (FRAP)
Volcano	3-Very High		California Fire Alliance and CAL FIRE (FRAP)

## 1.6 PIONEER/VOLCANO PLANNING UNIT FIRE PROTECTION AREAS AND AGENCIES

On land known as a Federal Responsibility Area (FRA), federal agencies have primary responsibility for fire protection. FRA is defined based on land ownership. Federal agencies (United States Forest Service, Eldorado NF, and the Bureau of Land Management, Folsom District) have responsibility to provide wildland fire protection on all FRA lands in Pioneer/Volcano Planning Unit. This includes the financial responsibility of preventing and suppressing fires. To provide efficient protection over a more contiguous land base, the Federal agencies trade protection areas with the California Department of Forestry and Fire Protection (CAL FIRE) so that these lands are balanced within the state. The resulting lands are called State Direct Protection Areas or Federal Direct Protection Areas. The lands that are swapped for the purpose of efficient wildland fire protection in the State of California are reviewed every five years among the signatory parties (USFS, NPS, BLM, and CAL FIRE) to what is known as the Cooperative Fire Protection Agreement or the “4-Party Agreement.”

State Responsibility Area (SRA) is defined based on land ownership, population density, and land use. CAL FIRE determines SRA lands using guidelines established by the State Board of Forestry and Fire Protection. CAL FIRE has a legal responsibility to provide wildland fire protection on all SRA lands, including the financial responsibility of preventing and suppressing fires. Lands in incorporated cities or surrounded by federal land are excluded from SRA lands. For example, CAL FIRE does not have responsibility for densely populated areas or agricultural lands. To more efficiently provide protection over a more contiguous land base, CAL FIRE swaps protection areas with other agencies, with the resulting lands being called CAL FIRE Direct Protection Areas.

Local fire districts and urban fire departments are responsible for providing structure protection on SRA lands. They are also responsible for providing all fire protection on Local Responsibility Area (LRA) lands. LRA lands are not the responsibility of federal or state agencies.

For a map of current FRA, SRA, and LRA areas as identified by cooperating state and federal agencies, see Plate 15 in Appendix 6.

The following fire protection agencies provide fire protection services to residents in the planning area. For more information on these agencies and their services, see Appendix 6.

1. CAL FIRE, Amador Eldorado Unit
2. United States Forest Service, Eldorado National Forest
3. Amador Fire Protection District
4. Lockwood Fire Protection District

## 1.7 INTRODUCTION TO THE AMADOR FIRE SAFE COUNCIL

### 1.7.1 AMADOR FIRE SAFE COUNCIL BACKGROUND, HISTORY, MISSION

The Amador County Fire Safe Council is a non-profit organization that partners with local businesses, community organizations, and property owners of Amador County.

The council's advisors include the USFS, CDF, BLM, Amador Resource Conservation District, Amador County Board of Supervisors, Sierra Nevada Conservancy, Sierra Business Council, and the Central Sierra RC&D. The council is also assisted by numerous volunteers who help to make this vital organization work for Amador County residents. The Amador Fire Safe Council is chartered to educate and assist Amador County residents in keeping their properties and Amador County a Fire Safe Community. Look to the Amador Fire Safe Council to:

- Provide educational workshops to teach citizens living in the wildlands how to become a fire safe community
- Distribute fire safety materials on fire preparedness and ways to maintain a fire safe home and property such as fire resistant plants and personal home evacuation plans
- Help citizens develop community fire plans
- Help citizens to get involved in short term action projects to benefit their community through volunteering and/or participation in meetings and special interest groups
- Conduct landscape scale fuel reduction project (fuelbreaks) designed to reduce the potential of damage from wildfire. These projects are conducted in cooperation with the fire agencies and land management agencies within the county. These projects are based on priorities established in existing Community Wildfire Protection Plans.
- Assists communities become designated Fire Wise Communities

### 1.7.2 AMADOR FIRE SAFE COUNCIL PROJECTS

In the current fiscal year, Amador Fire Safe Council is or has:

- Writing Conservation and Community Wildfire Protection Plans for two Planning Units
- Constructing a shaded fuelbreak around the community of River Pines
- Providing free firewood to low income and qualifying senior citizens

- Assisted low-income seniors to comply with defensible space requirements. The Senior Assistance Project pays for contractors who clear vegetation from around qualifying senior citizens homes. The senior citizens are not charged for this service:
- Contracts with various private contractors to chip vegetation removed from private residences. The chipper project provides these services at no cost to the landowner.
- Rehabilitating the Pine Acres Fuelbreak

### 1.7.3 AMADOR FIRE SAFE COUNCIL STRATEGIC AND/OR FUTURE PLANS

The Amador Fire Safe Council is constructing wildfire defenses (fuelbreaks) based on priorities established in the 2005 Amador County Generic Community Wildfire Protection Plan (CWPP). All work is funded by either state or federal grants. The 2005 plan divided the county into nine planning units. These planning units are ranked as to their relative risk from wildfire. The Council is reviewing each of these units based on their risk. The first unit to be reviewed and updated is the Pioneer/Volcano Planning Unit. This unit is the most at risk area of the county. This document is the update to the 2005 CWPP as it pertains to the Pioneer/Volcano Planning Unit.

Amador Fire Safe Council is also funded to rewrite the 2005 CWPP for the second most at risk area of the county, the Pine Grove Planning Unit. The Council is seeking funding to redo the Upcountry Planning Unit, Fiddletown Planning Unit, and Sutter/Amador Planning Unit. These units represent those areas of the county that are most vulnerable to large wind driven wildfires that historically occur east of Highway 49.

## 1.8 FIRE SAFETY OBJECTIVES

The objectives for fire safety will drive the development of the assessment and eventual solutions. These objectives reflect the particular characteristics facing Amador County.

1. Prevent damage to the environment and infrastructure caused by the historic large wildfire scenario<sup>51</sup> in Amador County.
2. Provide for safe evacuation of citizens during wildfires
3. Assist fire and other emergency agencies to respond to emergencies
4. Obtain 100% compliance with the defensible space requirements<sup>52</sup>
5. Educate the citizens of Amador County about the importance of re-establishing a pre-European forest landscape and its importance on fire safety and forest health.

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### 1.8.1 MINIMIZE IGNITIONS

It may seem obvious that unplanned ignitions should be minimized. Numerous ignitions place a strain on firefighting resources, which can lead to high levels of damage because of greater fire area burned.

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### 1.8.2 DECREASE INTENSITY

One factor that disposes structures to fire damage is fire intensity, or the amount of heat transferred to the structure. High-intensity fires also are most likely to produce *crown fires*<sup>53</sup> and *torching*.<sup>54</sup> Embers created from these crown fires are lofted well ahead of the fire front, creating numerous *spot fires*,<sup>55</sup> and they are often the cause of structures burning. The level of fire intensity greatly influences the damage to natural resources. Every ecosystem is adapted to a range of fire intensities; however, most of the Sierra Nevada is characterized by low-intensity fire. Higher-intensity fire causes a greater level of damage, such as erosion, degraded water quality, tree mortality, visual blights, and a decline in certain wildlife habitats.

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### 1.8.3 DECREASE DAMAGE

Fire is part of the historic and natural ecology of the Sierra Nevada. In contrast, wildfire damage to structures and human improvements needs to be minimized.

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### 1.8.4 INCREASE RESILIENCY

An important objective is to rebound quickly after a wildfire burns through a community. Fires of small size or limited damage support a more rapid recovery. Communities with greater preparation for wildfires (rehearsed evacuations, established communication protocols, etc.) also have greater resiliency.

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<sup>1</sup> Montane: A mountainous region of moist cool upland slopes that occurs below the tree line and is predominantly composed of evergreen trees. It is also described as the lower vegetation belt on mountains that is composed of montane plants and animals.

<sup>2</sup> Wildlands: An area of land that is uncultivated and relatively free of human interference. Plants and animals exist in a natural state, thus wildlands help to maintain biodiversity and to preserve other natural values.

<sup>3</sup> Fire Prevention: Actions taken by homeowners and community members to lessen wildfires and damage caused by wildfires. Includes education, enforcement, and land management practices.

<sup>4</sup> Fire Safe Council: Public and private organizations that comprise a council intended to minimize the potential for wildfire damage to communities and homeowners, while also protecting the health of natural resources. Goals are achieved by distributing fire prevention materials, organizing fire safety programs, implementing fuel reduction projects, and more.

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- <sup>5</sup> Extension Agent: An employee from the government or a university who provides information to rural communities about agriculture, land management, and/or resource management. In California, the University of California Cooperative Extension (UCCE) provides this service. For more information on UCCE, see: [ucanr.org/](http://ucanr.org/).
- <sup>6</sup> Registered Professional Forester (RPF): A person licensed in California to manage state or private forestlands and advise landowners on management of their forests. For more information, see: [www.bof.fire.ca.gov/licensing/licensing\\_current\\_docs.aspx](http://www.bof.fire.ca.gov/licensing/licensing_current_docs.aspx).
- <sup>7</sup> Fire Safe Practices: Activities such as creating defensible space, firebreaks, access to your home, fire-resistant landscapes, changes to your home in terms of material and design, etc., that make your home/property safer in wildfire situations.
- <sup>8</sup> Defensible Space: An area around a home/structure that has been cleared of flammable materials to act as a barrier between wildfires and property, thereby decreasing the risk of damage or loss. This space is now defined as 100 feet around a structure in California.
- <sup>9</sup> Watershed: All of the land that drains water runoff into a specific body of water. Watersheds may be referred to as drainage areas or drainage basins. Ridges of higher elevation usually form the boundaries between watersheds by directing the water to one side of the ridge or the other. The water then flows to the low point of the watershed.
- <sup>10</sup> Slope: A percentage or degree change in elevation over a defined distance that measures the steepness of a landscape.
- <sup>11</sup> Aspect: The direction that a slope faces—north, south, east, west, etc.
- <sup>12</sup> Firebreak: A strip of land that has been cleared of vegetation to help slow or stop the spread of wildfire. It may be a road, trail, or path cleared of vegetation or other burnable materials. A firebreak could also be a stream.
- <sup>13</sup> Fuel: All burnable materials including but not limited to living or dead vegetation, structures, and chemicals that feed a fire.
- <sup>14</sup> Surface Fuels: Materials on the ground like needles or low-growing shrubs that provide the fuel for fires to spread on the ground. Surface fuels are generally considered all fuels within six feet of the ground.
- <sup>15</sup> Wick: A combustible material that allows fire to travel along a confined path to larger fuel sources. An example would be a wooden fence connected to your home.
- <sup>16</sup> Ladder Fuels: Materials such as shrubs or small trees connecting the ground to the tree canopy or uppermost vegetation layer. In forests, this allows fire to climb upward into trees.
- <sup>17</sup> Overstory: The topmost trees in a forest which compose the upper canopy layer; compared to the understory, which is the lower woody or herbaceous layer underneath treetops.
- <sup>18</sup> Ground-Disturbing Activities: Actions that interrupt the natural condition of the ground, such as digging and compaction from heavy equipment.
- <sup>19</sup> Saturated: The broad meaning is “full.” Saturated soil refers to the point at which the soil is so full of water that no more water can get into (be absorbed by) the soil, and therefore must run off.
- <sup>20</sup> Embers: Small glowing or smoldering pieces of wood or other organic debris, often dispersed ahead of a fire, also known as firebrands.
- <sup>21</sup> Ember Attack: Embers blown by the wind during a firestorm that accumulate at intersections between horizontal and vertical members on the outside of your house, igniting debris and combustible materials. Embers can also enter into openings (e.g., attic vents and other wall openings), igniting debris on the inside of your home.
- <sup>22</sup> Fire-Resistant Building Materials: Materials used in the construction of a house that are resistant to ignition when exposed to radiant heat or flames. Examples include clay tile roofs, metal roofs, and stucco siding.
- <sup>23</sup> Monitor: To watch, keep track of, or check regularly for changes—in this case, to the environment.
- <sup>24</sup> Adaptive Management: An approach to managing the environment/property that is based on a “learn by doing” technique that adjusts to changing conditions. Adjustments in management change over time as new information is learned.
- <sup>25</sup> Fire-Resilient Landscape: A natural landscape featuring plants that have adapted to local wildlife conditions, or a domestic outdoor space where appropriate actions have been taken to make it less vulnerable to wildfire and certainly less prone to causing one.

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<sup>26</sup> Precautionary Principle: A concept that promotes a cautious approach to development and managing the environment when information is uncertain or unreliable. Erring on the side of caution and conservation is encouraged, along with a “Better safe than sorry” attitude.

<sup>27</sup> Precautionary Principle: A concept that promotes a cautious approach to development and managing the environment when information is uncertain or unreliable. Erring on the side of caution and conservation is encouraged, along with a “Better safe than sorry” attitude.

<sup>28</sup> Fuel Treatment: The act of removing burnable materials to lower the risk of fires igniting and to lessen the likelihood of damage to property and communities. Treatments may include creating a defensible space, developing fuelbreaks, initiating prescribed burns, and thinning vegetation.

<sup>29</sup> Resilient, Resiliency: The ability of an ecosystem to return to its balanced state after a disturbance.

<sup>30</sup> Invasive Weeds: Undesirable plants that are not native and have been introduced to an area by humans. These plants generally have no natural enemies and are able to spread rapidly throughout the new location. Some examples include Himalayan Blackberries, English Ivy, and Scotch Broom.

<sup>31</sup> Duff: A layer on the forest floor that is made up of decomposing organic matter such as leaves, needles, and small branches.

<sup>32</sup> Regeneration: The renewal of trees or forests by planting seedlings or the direct seeding by humans, wind, birds, or animals after large disturbances like fire. “Regeneration” also refers to the young trees that were naturally seeded or planted.

<sup>33</sup> Untreated: Not altered from a natural or original state; unprocessed, e.g. no fuel reduction or defensible space activities.

<sup>34</sup> Cover: Any plants or organic matter that holds soil in place or grows over and creates shade that provides wildlife with an area to reproduce and find protection from predators and weather.

<sup>35</sup> Mast: Nuts or fruits of trees and shrubs such as acorns, walnuts, or berries that collect on the forest floor and are a food source for animals.

<sup>36</sup> Seep: An area where water rises from an underground source to the surface and creates a wet area.

<sup>37</sup> Sediment: Particles of topsoil, sand, and minerals that come from soil erosion or decomposing plants and animals. Wind, water, and ice carry these particles; when the sediment collects in waterways it can destroy fish and wildlife habitat.

<sup>38</sup> Snag: A standing dead tree that has usually lost most of its branches. Snags offer essential food and cover for a host of wildlife species.

<sup>39</sup> Soil Type: Refers to the different combinations of soil particles and soil composition. Soil can vary greatly within short distances.

<sup>40</sup> Disturbance: Various activities that disrupt the normal state of the soil such as digging, erosion, compaction by heavy equipment, etc.

<sup>41</sup> Compact: To pack closely or tightly together, as in the fragments of soil being compacted from heavy equipment, thereby limiting the ability of oxygen or water to pass freely.

<sup>42</sup> Flammable: A quality of a substance that makes it likely to catch fire, be easily ignited, burn quickly and/or have a fast rate of spreading flames.

<sup>43</sup> Erosion: The removal of soil over time by weather, wind and/or water such as rain or water runoff from roads.

<sup>44</sup> Unstable: Land that is lacking stability, or liable to change with activity, such as in the case of steep slopes or crumbly soils.

<sup>45</sup> Riparian: A strip of land along the bank of a natural freshwater stream, river, creek, or lake that provides vast diversity and productivity of plants and animals.

<sup>46</sup> Access Roads: Roads that allow entrance into and out of a property.

<sup>47</sup> R1 Single family residential district; R1A Single family residential and agricultural district; R2 Low density multiple family residential district; R2A Single family (2 acre minimum) residential district; R3 High density multiple family residential district; RE residential estates district

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<sup>48</sup> California Fire Alliance. "Communities At Risk History." [cafirealliance.org/communities\\_at\\_risk/communities\\_at\\_risk\\_history](https://cafirealliance.org/communities_at_risk/communities_at_risk_history).

<sup>49</sup> The Threat Level Code designates a community's fire threat level, with 1 indicating the least threat, 3 indicating the highest threat.

<sup>50</sup> Lands adjacent to federal lands are indicated as such with a mark in this column.

<sup>51</sup> Foehn wind driven wildfires

<sup>52</sup> Public resources Code 4291

<sup>53</sup> Crown Fire: A fire that spreads from treetop to treetop, and is characteristic of hot fires and dry conditions. Crown fires are generally more complex to control than fires on the surface.

<sup>54</sup> Torching: A rapid and intense burning of a single or small group of trees/shrubs, causing the upward movement of fire; a.k.a. flare-up.

<sup>55</sup> Spot Fire: A smaller fire outside the boundary of the main fire, started by airborne sparks or embers.