Upper Mattole Fire Plan

Mattole Restoration Council

ForEverGreen Forestry

November 2004

Executive Summary

The Upper Mattole Fire Plan identifies current fire concerns in the upper Mattole watershed of Humboldt and Mendocino counties, California. A series of neighborhood meetings was held in the Ettersburg, Thorn Junction, Whitethorn, and Whale Gulch communities between December 2003 and March 2004. At these meetings, issues of fire safety were discussed and plans for action identified. Out of this process, projects were prioritized to address fire safety. These projects generally fall in the category of fuel hazard reduction, water storage, and ongoing community fire safety education. Identified projects will be most successfully implemented by local community members through the Southern Humboldt Fire Safe Council and/or Mattole Restoration Council.

Priority projects identified during these meetings were overwhelmingly focused on creating a series of shaded fuel breaks along principal roadways, both for fire suppression and evacuation. Developing water storage sites throughout the area to improve local fire-fighting capacity was a consistent priority as well. Continuing educational efforts throughout the area via the schools, Fire Safe Councils, and local nonprofit conservation organizations was also prioritized. These educational efforts would be focused on resident and visitor fire safety, as well as promoting involvement with the several local volunteer fire organizations, especially among the younger adults in the area. Like other parts of the region, the challenge of fire-safing vast areas of dense second-growth forest was a common theme here. Priorities are focused on creating fire safety and defensible space immediately surrounding homes and other community values at risk, as well as on the public and principal private roadways.

Special thanks to Chris Larson, Jessica DeKelver, Jeremy Wheeler, Vanessa Belz, Amanda Freeman, Libby Earthman, and the rest of the MRC staff.
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Funded by:
US Forest Service Economic Recovery Program
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1. Introduction

The Upper Mattole Fire Plan was developed as part of the National Fire Plan. The National Fire Plan serves to prepare communities for the eventuality of fire. According to the California Fire Safe Council, every dollar spent on fire prevention saves approximately ten dollars in fire suppression costs. The planning process and this document serve to educate residents on issues of community fire safety and to develop a list of prioritized projects to reduce risk from wildland fire.This Plan aims to help the participating communities be better prepared for the eventuality of fire, saving both resources and lives.

The Upper Mattole Fire Plan documents current issues and scenarios surrounding fire in the upper portion of the Mattole River watershed of Humboldt and Mendocino counties, in north coastal California. This document follows the 2002 Lower Mattole Fire Plan. That Plan covered the area from the mouth of the Mattole River near Petrolia upstream to the middle of Wilder Ridge (between Honeydew and Ettersburg). Together the Lower and Upper Mattole Fire Plans cover the entire watershed and adjacent private lands in the King Range (i.e., Prosper and Whale Gulch).

1.1 Planning Area Description

The Mattole watershed spans approximately three hundred square miles along the Lost Coast. The "Upper Mattole" for the sake of this document is approximately one hundred square miles. It begins in Humboldt County, just south of Wilder Ridge, near Dutyville Ridge and the community of Ettersburg. It continues upstream to include the community of Whitethorn, and on to the Mattole headwaters in Mendocino County. Because of the remote nature of this area, the distinct community of Whale Gulch, which lies between the headwaters of the Mattole and the Pacific, was also included.

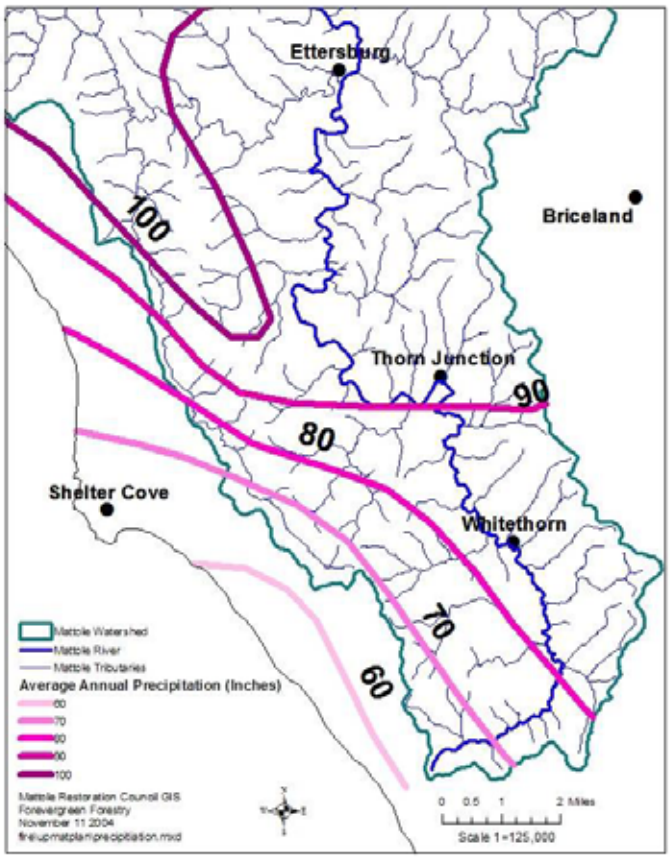
The North Coast Watershed Assessment Program describes the Mattole in the following paragraphs.

> The Mattole basin is mostly steep mountainous topography. The basin's higher-elevation slopes commonly exceed 15 percent gradient while broad, alluvial streamside flats are present in the lower valleys. Headwater elevations range from 1,350 feet at Four Corners at the mainstem headwaters, to 4,087 feet at Kings Peak, which is located less than three miles from the ocean and is the tallest mountain in the coastal range….
>
> The Mattole has a Mediterranean climate characterized by cool wet winters with high runoff, and dry warm summers with greatly reduced flows. Most precipitation falls as rain. Along the coast, average air temperatures range from 46 to 56 degrees F. Further inland, annual air temperatures are much more varied, ranging from below freezing in winter to over 100 degrees in summer. (The) Mattole basin receives one of the highest annual amounts of rainfall in California averaging 81 inches. Average rainfall near the coast in Petrolia is about 60 inches per year and well over 100 inches per year falls near the center of the basin in Honeydew. Extreme rain events do occur, e.g. over 240 inches fell over parts of the basin during 1982-83….

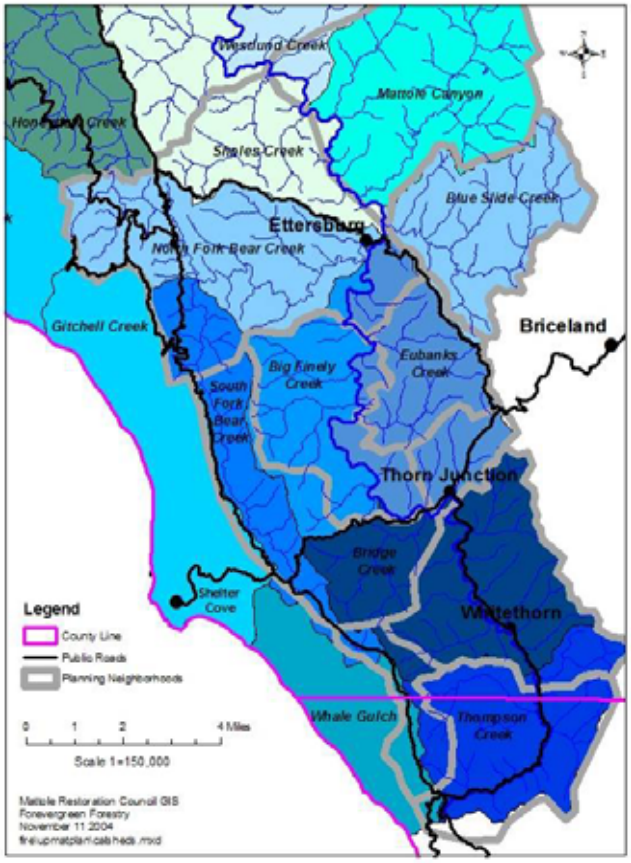
The Mattole basin region is located in a complex tectonic setting near the junction of three crustal plates (North American, Pacific, and Gorda). The region experiences a high level of seismic activity, and major earthquakes have occurred in intraplate areas as well as along well-defined faults. The major mapped fault zones in the Mattole basin include a possible extension of the San Andreas Fault and the Cooskie and Petrolia shear zones.[1]

The following maps show the California watershed units of the upper Mattole area, as well as annual precipitation.

Map 1. Upper Mattole California Watershed Units



Map 2. Upper Mattole Precipitation

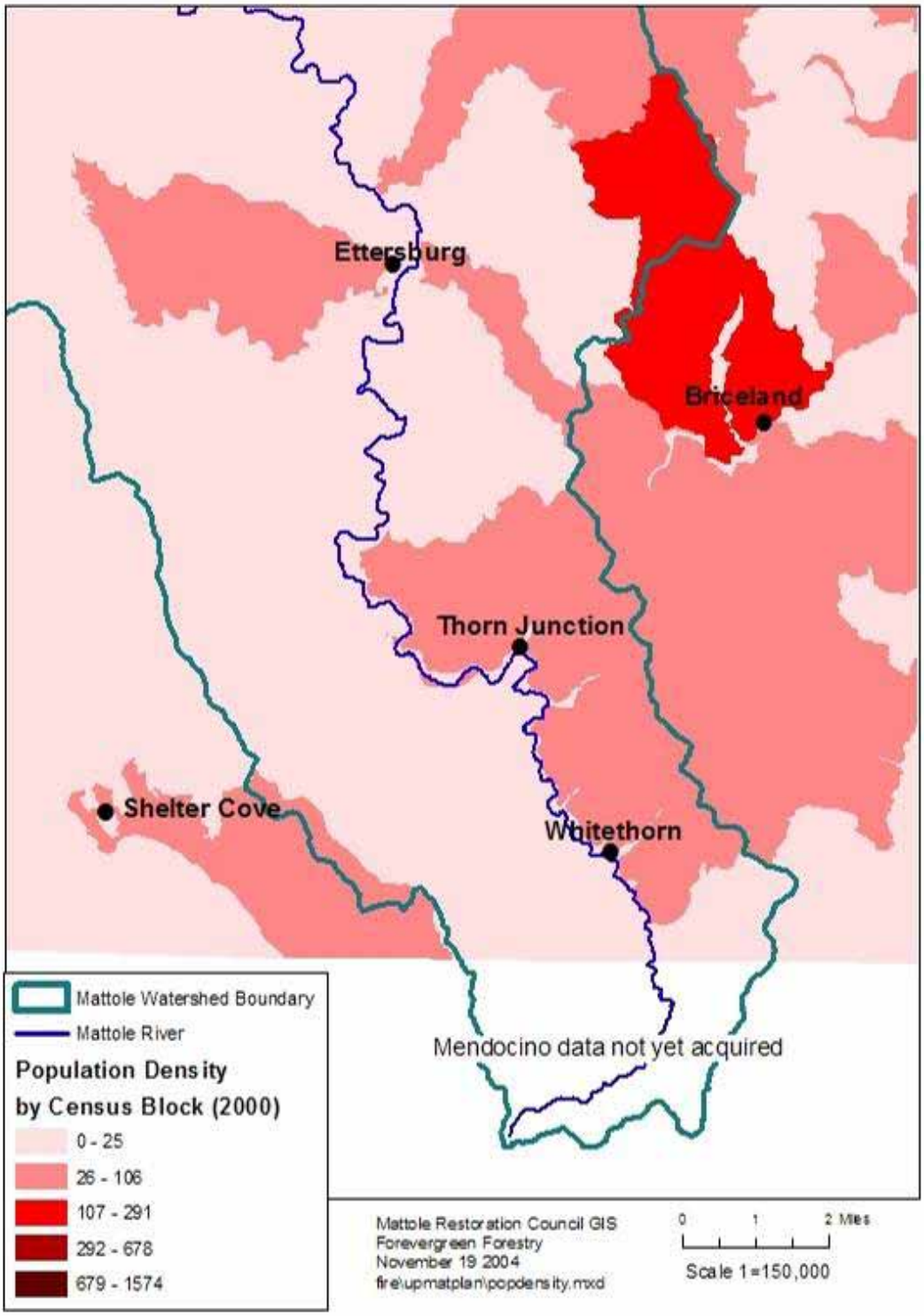


The upper Mattole watershed is a relatively remote place. The principal communities are those of Thorn Junction, Whitethorn, and Whale Gulch. Shelter Cove is about two air miles west of the watershed, and Redway seven air miles to the east. The following map shows population density per square mile based on 2000 U.S. Census data for the portion of the

[1] North Coast Watershed Assessment Program (NCWAP), Mattole River Watershed Overview, Hhttp://www.ncwatershed.ca.gov/mattole/mattole_river.htmlH.

Mattole watershed in Humboldt County. Maps for each community planning area show approximate density of residences. However, it is assumed those approximations are very underestimated, as there are likely twice or more homes in some areas. These homes were not clearly identifiable.

Map 3. Upper Mattole Population Density per Square Mile, 2000 Census



1.2 Document Organization

This Plan is organized into nine sections, plus appendices.

Chapter 1 introduces the document and the area.

Chapter 2 discusses the history of fire and fire management in the upper Mattole watershed, including indigenous and early settlement burning practices and current fire suppression policies.

Chapter 3 introduces the concepts of fire safety and what landowners can do to fire-safe their properties.

Chapter 4 describes agency fire management in the upper Mattole and local fire-fighting organizations.

Chapter 5 describes the community input process, including the community and neighborhood meetings, and creation of this Plan.

Chapter 6 discusses the prioritization process for identifying projects: biological, safety, and economic priorities.

Chapter 7 provides a summary of nine neighborhood meetings held to gather community input, with associated maps of high-risk and hazard areas and priority projects.

Chapter 8 discusses priority projects identified in this process: fuels reduction, water storage, education, agency cooperation, and policy direction.

Chapter 9 discusses possible sources of funding for implementing prioritized projects, including cost-share programs, government, and private funding.

A series of **Appendices** follows with supporting literature and resources. Copies of most of the referenced information are available from the Mattole Restoration Council. In addition, this document can be found online at www.mattole.org.

This Plan was written and produced for the Mattole Restoration Council by Tracy Katelman, Registered Professional Forester, of ForEverGreen Forestry, with assistance from Praline McCormack, and Jessica DeKelver and Chris Larson at the MRC. Jeremy Wheeler and Vanessa Belz of the MRC, Peter Tittmann of Azucena Geographic Information Systems Solutions, and Chinmaya Lewis of Humboldt County Community Development Services provided GIS data support. Dave Kahan of Full Circle Forestry and Tim Jones, BLM Fire Management Officer, provided excellent comments for this draft.

2. Background—History and Management of Wildfire in the Upper Mattole

Most residents of the Mattole watershed understand that it is not a question of *if* a wildfire will occur here, but rather a question of *when.* This landscape evolved with fire, and many local species—such as redwood and knobcone pine—like fire to open their cones. According to fire history and fire modeling, it is assumed that the frequency of fire return (or fire regime interval)[2] is approximately 25 years for most of this area. However, there is a fairly wide range of variation in fire history and frequency in the upper portions of the Mattole. For areas of higher fire risk, fires likely historically occurred more frequently than every 25 years.[3] The headwaters, rich in redwood forests, have a far less frequent history of fire than the middle part of the watershed. The recent Honeydew fire burned 13,778 acres in the fall of 2003, including 2,700 acres in the middle Mattole watershed.[4]

Indigenous and Early Settlement Burning

Little is known about the early indigenous uses of the Mattole area. However, Mattole, Sinkyone, and Wailaki land management practices were probably similar to those of neighboring tribes. It is generally accepted that the original inhabitants of north coastal California extensively managed their lands, with practices that included setting fires. These frequent, low-intensity burns helped to keep pest populations down, improved the health of the acorn crop and other desirable forest products, and improved hunting grounds. It is assumed that Native American burning occurred on this land for many thousand years prior to European settlement. The first documented non-Native American confirmation of this historical burning came from French explorer Jean Francois Galoup de la Perouse in 1786. From his ship sailing south along the Humboldt coast just north of the Mattole he reported:

> ... At half-past seven we suddenly discovered, to the south-south-east, a considerable fire on Cape Mendocino; this fire covered the greater part of the hill, from the sea-shore to the summit, and it appeared to extend to the other side....[5]

Perouse attributed the fire to a volcano. This was later refuted by another Frenchman, Camille de Roquefeuil, under similar circumstances in 1818:

> Accurate inquiries at Saint Francisco convinced me that this fire, which at a distance might have been taken for a volcano, must be ascribed to the Indians, as well as other less considerable, and more distant ones, which we saw that and the preceding nights. The natives at this season (September) set fire to the grass....[6]

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[2]On average, how often a fire returns to the same place.

[3]Dave Sapsis, Fire Scientist, CDF Fire and Resource Assessment Program (FRAP), personal communication, 6/6/02.

[4]Tim Jones, Fire Management Officer, BLM, personal communication, 6/17/04.

[5]James Roscoe. 1985. *An Ethnohistory of the Mattole.* Humboldt State University, p. 15.

[6] Roscoe, p. 16.

The subsequent arrival of European-descent settlers brought radical changes to the Mattole watershed. Because of the conflicts between white settlement and traditional subsistence use of the valley, violence erupted. In order to resolve the resulting crisis in the valley, the settlers decreed a resolution that was published in the Sept. 18, 1858, *Humboldt Times.* The resolution included "(t)hat the Indians must not set fire to the grass on the hills...."[7] Therefore, burning in the Mattole was virtually stopped for a short time, until the late 1800s/early 1900s, when ranchers then reinstated it locally on grasslands to promote better range conditions. The following quote summarizes fire management practices throughout Humboldt County at that time. Although this is not entirely applicable to the Mattole, it gives a good sense of early settlement management practices in the region.

> During the settlement period (1875-1897) European settlers used fire for maintenance and enlarging the pasturelands and as a land clearing method. These fires frequently escaped due to the lack of fire-fighting equipment or knowledge. Major land activities during the post-settlement period (1898-1940) were livestock grazing, farming, debarking of the tan oak for tannin production, and logging of Douglas Fir…. Logging was clearly a dominant activity during this time period. Hundreds of small mills existed up and down the coastline…. The same can be said for the area ranchers who commonly set fire to their land in order to maintain the grazing. This resulted in many large fires that are documented in area newspapers from 1880 to 1952.[8]

The pattern of historic Native and early settlement burning as well as random high-intensity wildfires helps to explain the presence of dense old-growth forests in the drainages and open meadows along the ridges, shown in the earliest available aerial photographs of the area from 1941.

> Although no ethnographic sources for the Mattole specifically mention spot burning of forest openings as a pattern of environmental manipulation, we can deduce that such a pattern existed from accounts of early Whites into the area in 1860. The first government surveyor in the Mattole area recorded the existence of numerous grassy prairies and clearings within forested areas. An examination of these same forested areas today reveals that many of these clearings have become overgrown with brush and timber since aboriginal burning practices were curtailed by the Whites.[9]

A simple comparison of recent aerial photographs to those of 1941 shows a significant increase in brush cover due to fire suppression. Close examination reveals a change in forest structure from older forests—those that probably evolved with fire—to the current structure of young, dense forests, with increased numbers of hardwood trees and brush. The photographs in Figure 1 demonstrate this change in vegetation cover between 1941 and 2000 for the area around Thorn Junction. The light areas in the photos are grasslands. It can be seen in these photos that the open grasslands have diminished, likely due to encroachment from lack of

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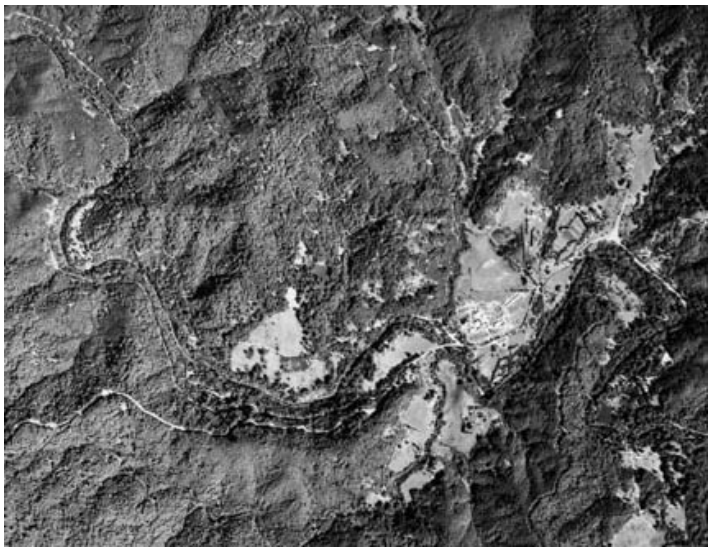
[7] Roscoe, p. 33.

[8] CDF Humboldt–Del Norte Unit, Fire Management Plan 2004, p. 12.

[9] Roscoe, p. 17.

fires. Note the difference in forest cover on the left side of the photos. The 1941 photo shows old-growth forests—where individual tree canopies are apparent—with likely a denser upper canopy and more open understory. In contrast, the 2000 photo shows a much younger forest—from logging and other management practices—with likely a very thick understory due to lack of frequent fires. The 2000 photo illustrates the road network around the Whitethorn Construction complex.

Figure 1. Comparative Aerial Photographs, Thorn Junction 1941–2000



Fire Suppression

> After 1945 the severity and number of fires began to decline significantly. This was due, in part, to two separate happenings. The State Forest Practice Act changed the manner in which lands were managed, which led to the curtailing and changing of logging activities. Secondly, World War II had taken the work force overseas; with the return of the soldiers came an active fire suppression program.[10]

The California Department of Forestry and Fire Protection (CDF) was established in the 1920s. However, it took several decades for CDF to become a major force in fighting wildfires in California. As stated above in the CDF Humboldt–Del Norte Ranger Unit, *Fire Management Plan 2004*, it was outside factors that led to the increase of fire suppression efforts in the state. With the ending of WWII, the influx of a young, active, able-bodied workforce, and the new industrial-type equipment available such as airplanes, CDF began to actively fight fires throughout California's diverse landscape. This heavy suppression policy has led to a dramatic increase of fuels in our local forests.

[10] CDF, p. 12.

Current Fire Management

Current fire management continues to mandate suppression of all wildfires. CDF attempts to suppress 90% of all fires under ten acres, or attempts to confine fires to their initial attack size.[11] Locally, the CDF Humboldt–Del Norte Ranger Unit identified one project in the upper portion of the Mattole watershed. That project is identified in this Plan as Telegraph Ridge, and by CDF as the Wilder Ridge Shaded Fuel Break. CDF has been actively participating in the Upper Mattole Fire Plan project. It is highly likely that prioritized projects here will become part of a future Humboldt–Del Norte Fire Management Plan.

There were two very significant, recent large fires in the area surrounding the middle Mattole watershed. In September 2003, more than sixty lightning strikes hit the greater Humboldt County area. Two of those strikes turned into large fires, Honeydew and Canoe. The Honeydew fire burned 13,778 acres, primarily in the King Range National Conservation Area. The Canoe fire burned 10,253 acres, primarily in Humboldt Redwoods State Park. Together, these fires cost over $29.5 million to control. One local benefit of these fires was the increased public awareness in the region in terms of fire safety and defensible space. Local public radio station KMUD in Garberville continually broadcast information to residents throughout the region regarding how to be prepared for fire, and created a supporting website, www.kmud.org/fire for the Canoe and Honeydew fires.

In addition to obvious fire starts from lightning, fires tend to occur where people are. According to the CDF fire history data that is used to produce the map on the following page, most of the fires in this area are classified as "unknown" ignition source. However, the 1998 Saddle fire which burned 5,900 acres was started from smoking. Fires in this area tend to start from vehicles and around homes and businesses. An increasing number of fires are starting from indoor marijuana growing operations.

> There were at least three fires in southern Humboldt that were attributed to generators associated with growing activities during the time that agencies struggled with the Canoe and Honeydew fires in 2003. While many may not wish to acknowledge that this activity takes place, and as a result, fires may not be officially reported, it in fact is widespread within the area and has been the cause of many fires. Of particular note are those that occurred in the Ettersburg area late last summer.[12]

The following map depicts the recent history of fires here in the Upper Mattole Valley The text below describes the methodology used by CDF to produce this map.

> The Fire Perimeters data consist of CDF fires 300 acres and greater in size and USFS fires 10 acres and greater in size … from 1950 to 2003. Some fires before 1950, and some CDF fires smaller than 300 acres are also included. In 2002 CDF expanded the criteria to include new timber fires 10 acres and greater, brush fires 50 acres and greater, and grass fires 300 acres and greater, wildland fires destroying three or more structures, and

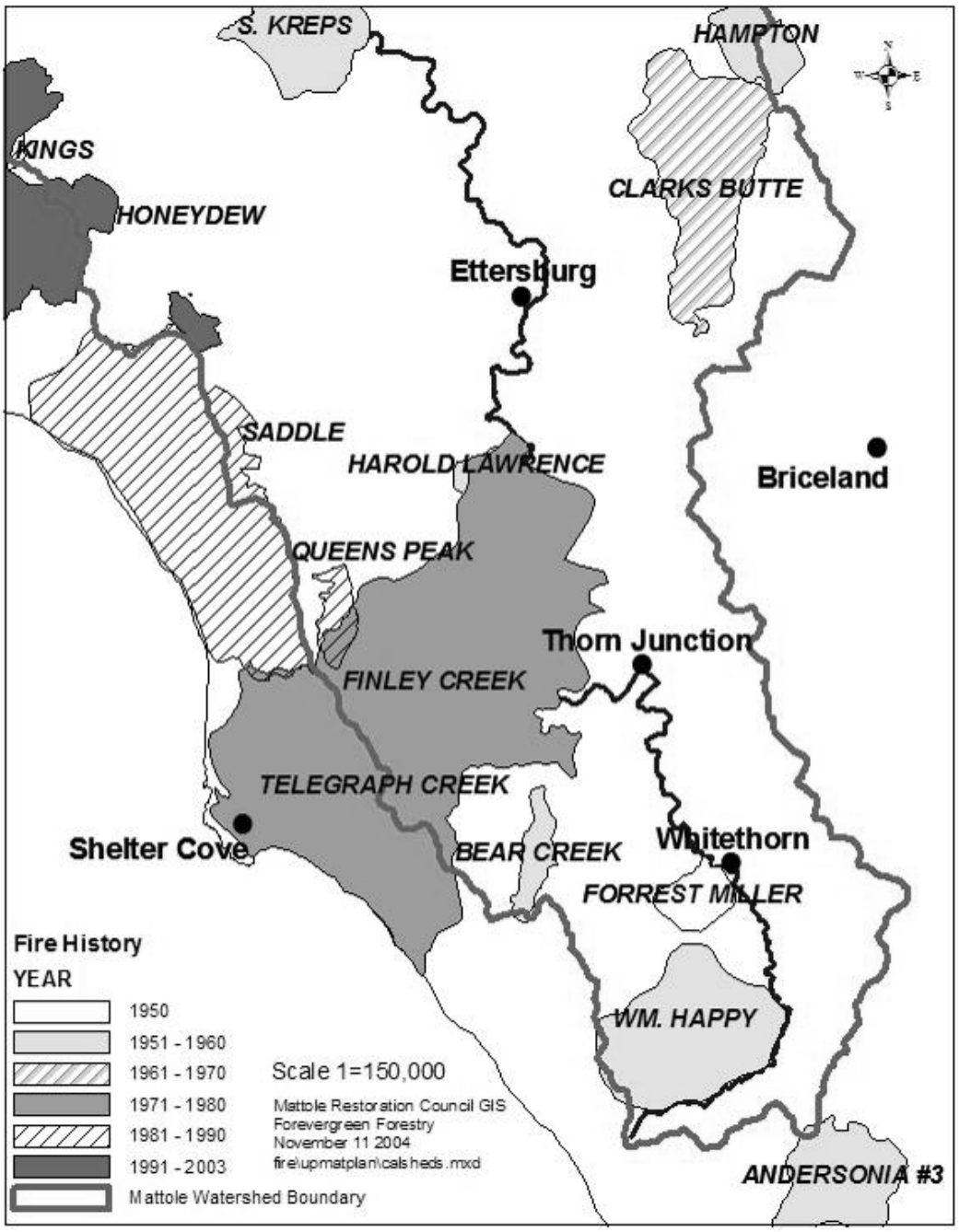
[11] Sapsis, personal communication.

[12] Steve Horvitz, personal communication, 9/13/04.

wildland fires causing $300,000 or more in damage. Fires on Bureau of Land Management and National Park Service lands are not complete and efforts to integrate their historical perimeters is ongoing.[13]

A description of current fire suppression agencies in the upper Mattole is found in Chapter 4.

Map 4. Upper Mattole Fire History, 1950-2003 (most fires 300 acres or greater, with official name of fire)



[13] CDF FRAP http://frap.cdf.ca.gov/data/frapgismaps/select.asp/.

The following map from CDF's Fire and Resource Assessment Program (FRAP) helps to identify general areas of high fire risk locally. Map 5 represents fuel hazards. "CDF has developed a hazard assessment methodology for the California Fire Plan to identify and prioritize pre-fire projects that reduce the potential for large, catastrophic fires."[14] The fuel hazard ranking tells us the expected behavior of a fire in a severe weather condition (when wind speed, humidity, and temperature make conditions favorable for a catastrophic fire). The method[15] for determining the fuel hazard ranking is based on: a) fuel behavior model, b) slope, c) brush density, and d) tree density.

Map 5 identifies areas CDF expects to be at the highest risk for fire, those depicted in red. In the upper Mattole this translates to areas southeast of the Mattole at Ettersburg, the east side of Mattole Canyon Creek and Fire Creek near Dutyville[16], the southeastern edge of the Blue Slide watershed, areas north and south of the Shelter Cove Road near Paradise Ridge and Chemise Mountain Road, especially along the south side of South Fork Bear Creek, and many of the south-facing slopes on the east side of the Mattole near Whitethorn.

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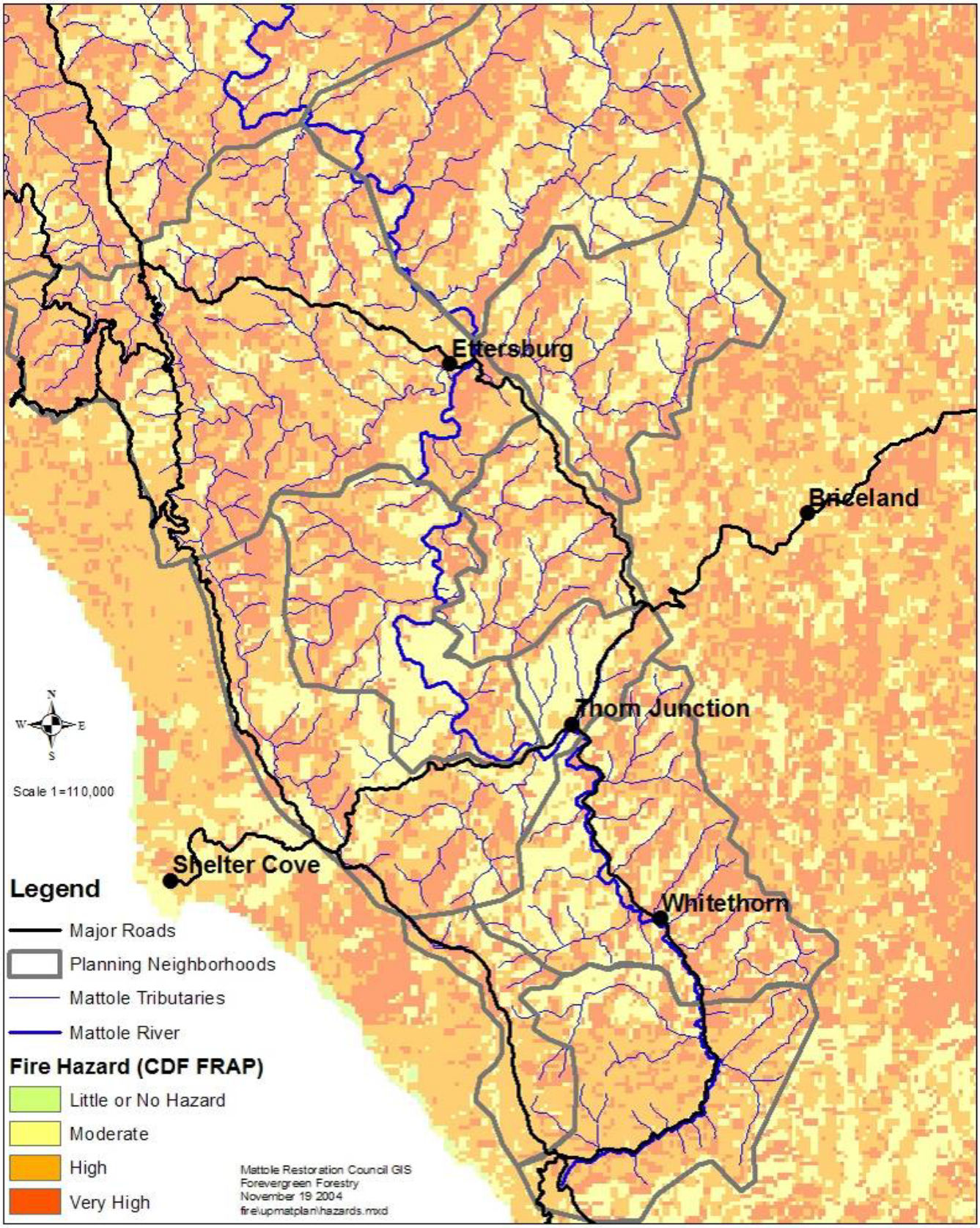
[14] CDF FRAP: Hhttp://frap.cdf.ca.gov/data/fire_data/hazard/mainframes.htmlH

[15]Evaluation of the fuel behavior model and slope will result in a surface rank. Surface rank indicates the rate of fire spread (how fast a potential fire can burn) and heat per unit area (how hot a potential fire can burn) associated with each unique fuel behavior model-slope combination. With further analysis of surface rank, brush density (ladder fuels) and tree density (crown fuels) we can predict the fire behavior for a given area during a severe weather condition. In other words, given how fast and hot a fire could burn in the area, along with the abundance of fuels in the area, we can predict how probable it is for a catastrophic fire to occur there during a severe weather condition–a hazard rank. If an area has a very high surface rank (a very high rate of fire spread and heat per unit area), and has dense crown and ladder fuels, then it is highly probable that a fire could reach catastrophic proportions there during a severe weather condition. The area would receive a very high hazard rating. If an area has a moderate surface rank (a low rate of fire spread and heat per unit area), and has very little crown and ladder fuels, then there is a low probability of a catastrophic fire occurring there and it would receive a moderate hazard rating. This information helps CDF and other agencies determine what kind of fire might be expected in different areas.

[16] See Map 8 for a list and map of Planning Neighborhoods.

Map 5. Upper Mattole Fuel Hazards



3. What is Fire Safety? (How to be Ready When Fire Comes)

3.1 What is Fire Safe?

The general principle behind fire safing an area (making it as safe as possible for when a fire might pass through) is to reduce the amount of fuel, and modify the arrangement of fuel that a fire consumes. Three factors dictate the extent and severity of fire: fuel, oxygen, and heat. If any one of these elements is missing, a fire won't start or, should it start it won't spread. In a wildland situation, these three factors translate to fuels, weather, and topography. Fuel is the one element of the three that we can significantly modify. When there is a lot of fuel, a fire can burn very hot, and move very quickly. When there is little fuel present, fires tend to slow down and burn cooler. Cooler fires are much easier to control. Fires that stay on the forest floor—surface fires—tend to be cooler, and hence easier to put out. Ladder fuels (understory trees and brush) connect the surface fuels to the canopy, and once ignited, can support a crown fire. Crown fires can move very quickly, burn very hot, and are much harder to put out. One of the main objectives of being fire safe and creating defensible space is to minimize the chance of a fire becoming a crown fire. Clearly, it is in your best interest to reduce the amount, type, and arrangement of fuels near your home to reduce the risk of a wildfire consuming it. That's what it means to fire safe your home—reduce the amount of fuels a fire can consume, as well as to reduce other hazards that increase the risk of fire, such as ignition sources.

Figure 2. Fire Triangle

3.2 Before the Fire

Defensible Space and Home Survivability

Defensible space means creating a space around your structure so it can be defended from a wildfire. The US Forest Service defines defensible space as "an area either natural or manmade where material capable of causing a fire to spread has been treated, cleared, reduced, or changed to act as a barrier between an advancing wildland fire and the loss of life, property, or resources. In practice, defensible space is defined as an area a minimum of 30 to 100[17] feet around a structure that is cleared of flammable brush or vegetation."[18] Firefighters sometimes use the terms "winners" and "losers" to distinguish between those houses with defensible space versus those that do not have it. In a larger emergency situation (where several homes are threatened), homes without defensible space may get passed over in favor of protecting one with defensible space, which has a greater chance of survival. If it is too

[17] This figure can be up to two-hundred feet depending on local conditions.

[18] www.fs.fed.us/r2/fio/dict.htm

dangerous for firefighters to get in and out of an area, they are instructed not to risk their lives and equipment to save a homestead that is not defensible.

The Plumas Fire Safe Council has formulated the concept of home "survivability." It's not just about "defending" your space or home, but being fire safe in such a way as to ensure its survivability from fire.

There has been a lot written on fire safety and defensible space issues. Several documents and/or references such as the Homeowners Checklist are contained in Appendix I, Fire Safe Literature.

Home Ignition Zone

The "Home Ignition Zone"[19] is a concept introduced by Jack Cohen, of the US Forest Service Rocky Mountain Research Station. Jack's research of fires from the 1960's to now has revealed over eighty-percent of homes with at least thirty feet of defensible space, and a fire-resistant roof have survived wildfires.[20] His research indicates that:

> The potential for home ignitions during wildfires including those of high intensity principally depends on a home's fuel characteristics and the heat sources within 100-200 feet adjacent to a home…. This relatively limited area that determines home ignition potential can be called the home ignition zone.
>
> During a wildland-urban fire a home ignites from two possible sources: directly from flames (radiation and convection heating) and/or from firebrands[21] accumulating directly on the home. Even the large flames of high intensity crown fires do not directly ignite homes at distances beyond 200 feet. Given that fires adjacent to a home do not ignite it, firebrands can only ignite a home through contact. Thus, the home ignition zone becomes the focus for activities to reduce potential wildland-urban fire destruction. This has implications for reducing home ignition potential before a wildfire as well as implications for emergency wildland-urban fire response strategy and tactics. …
>
> Because of time constraints, most preparation has to come before a wildfire occurs. Major changes to the home ignition zone (the home and its immediate surroundings) such as replacing a flammable roof and removal of vegetation such as forest thinning cannot occur during the approach of a wildfire. Removal of firewood piles, dead leaves, conifer needles, dead grass, etc. from on and next to the home should also occur seasonally before severe fire conditions. The ignition potential of the home ignition zone largely influences the effectiveness of protection during a wildfire. Given low ignition

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[19] Jack Cohen, "Wildland-Urban Fire, A Different Approach," Hhttp://www.nps.gov/fire/download/pub_pub_wildlandurbanfire.pdfH,2000.

[20] Firewise, "Wildfire: Preventing Home Ignitions" video, 2001, 19 minutes, Hhttp://www.firewise.orgH

[21] Firebrands are "flaming or glowing fuel particles that can be carried naturally by wind, convection currents, or by gravity into unburned fuels. Examples include: leaves, pine cones, glowing charcoal, and sparks." From: "Blueprint for Safety: Glossary," Hhttp://www.blueprintforsafety.org/bluepages/glossary.htmlH.

potential and enough time, homeowners and/or wildland-urban suppression resources can make significant reductions in the little things that influence ignition potential before wildfire encroachment. Then, if possible, homeowners and/or wildland-urban firefighting resources can suppress small fires that threaten the structure during and after the wildfire approach. [22]

Landscaping and Defensible Space Basics

There are many simple steps you can take to create your defensible space. The basics include:

- Providing a minimum of thirty to one-hundred feet of clearance of flammable materials around your home. If you live on a hill, you should extend this up to two-hundred feet, depending upon the steepness of the slope and the surrounding fuels.
- Landscape your defensible space zone with fire safe plants. While no plant is immune to fire, certain plants do exhibit traits that can slow or reduce the spread of fire. Most deciduous trees and shrubs are fire resistant, for example. They generally look green (not brown), healthy, and vibrant. In addition, fire resistant plants have:
  - leaves that are moist and supple,
  - little dead wood and tend not to accumulate dry, dead material within the plant
  - Sap that is water-like and does not have a strong odor.

For more information on fire safe landscaping, please see Appendix III. Draft North Coastal California Fire-Smart Landscaping.

- Keep your gutters and roofs clean of any vegetation.
- Move all flammable materials—especially firewood, propane tanks, etc.—at least thirty feet away from your home and any structures.
- Think about your home in terms of flammability. When you start a fire in a woodstove, small pieces of wood and paper are required to ignite the logs. The same is true for your home. Anything around your home that will ignite easily will threaten your home. It can serve as kindling for your house in the event of a fire. Look at your home and surrounding land with a new perspective. Shortly after removing dead vegetation and other flammable materials from your Home Ignition Zone, you will begin to view the area with a different perspective. Objects that you didn't notice before as being a threat to your home will jump out at you.

Spend a few hours reviewing your home and property with the Homeowner's Checklist (Appendix I). Identify where you are safe and what other steps you need to take to protect your home and family. You can get free help with identifying fire safety and defensible space issues around your home. Contact your local **Fire Department** *(for a list of their contact information, see Table 4. Fire Organizations in the Upper Mattole),* the **California Dept. of Forestry and Fire Protection (986-7553 or 923-2645), or the Southern Humboldt Fire Safe Council.** Any of these groups will gladly help you in obtaining a free fire safety inspection for your home.

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[22] Cohen, 2000.

Appendix I contains more detailed information on defensible space and fire safety, including resources for further reading, including PRC 4291, which is explained below.

Legal Requirements and New Legislation Relating to Fire Safety

Public Resources Code 4291

The State recognizes the basic principles behind fire safety, and hence enacted a law—Public Resources Code (PRC) 4291—regarding the amount of fuels you can have around your property. PRC 4291 is a good summary of the basics of fire safing. You can see the entire text of PRC 4291 in Appendix I.

The California Department of Forestry and Fire Protection (CDF) has the responsibility of both fire suppression and enforcement on all state and private lands in California. The following information is from a handout developed by the staff at CDF's Mattole Station:

CDF REMINDS YOU… PRC 4291 REQUIRES

1. Maintain around and adjacent to building or structures a fuelbreak for a distance of not less than 100 feet[23] on each side, or to the property line, whichever is nearer. This does not apply to single trees, ornamental shrubbery, or similar plants that are used as ground cover, if they do not form a means of rapidly transmitting fire from the native growth to any building or structure.
2. Remove that portion of any tree that extends within 10 feet of the outlet of any chimney or stovepipe.
3. Maintain any tree adjacent to or overhanging any building free of dead or dying wood.
4. Maintain the roof of any structure free of leaves, needles, or other dead vegetative growth.
5. Provide and maintain at all times a screen over the outlet of every chimney or stovepipe. The screen shall be constructed of nonflammable material with openings of not more than one-half inch in size."[24]

CDF will come to your property and let you know what you need to do to be fire safe, especially in terms of PRC 4291 requirements. You can contact CDF Thorn Fire Captain Don Scarlett at 986-7553 or at the Garberville Station at 923-2645 for your free PRC 4291 inspection. This is not an enforcement action. A CDF representative can walk your home and curtilage (the area directly surrounding the house or dwelling) and let you know what you can do specifically around your place to help you be better prepared for wildfire.

PRC 4291 was updated in September 2004, by SB 1369, expanding some of the thirty-foot defensible language to one-hundred feet:

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[23] One hundred feet is a minimum clearance area for flat ground; for a slope more clearance is needed-up to two hundred feet.

[24] Jon Hafstrom, CDF Fire Captain, Weott, personal communication, February 2002.

Maintain around and adjacent to the building or structure additional fire protection or firebreak made by removing all brush, flammable vegetation, or combustible growth that is located within 100 feet from the building or structure or to the property line or at a greater distance if required by state law, or local ordinance, rule, or regulation.[25]

Senate Bill 1369

This bill has two principle components. First it extends defensible space requirements in most instances in the Wildland-Urban Interface (WUI) to one-hundred feet. Second, it requires homeowners, especially for construction of new homes to obtain a certificate of compliance with fire safety codes to obtain insurance. More specifically, it:

Requires any person who owns, leases, controls, operates or maintains any occupied building or occupied structure in, or adjoining, any mountainous area, or forest-covered lands, brush covered lands, or any land which is covered with flammable material, within state fire prevention and suppression responsibility areas, and local responsibility areas when the homes are in very high fire hazard severity zones to maintain, around any building or structure, a firebreak made by removing all flammable vegetation or other combustible growth, located within 100 feet from the structure, and to provide proof of building certification to his/her insurance carrier.

Also requires the owner of new construction and owners who are re-building structures damaged in very high fire hazard severity zones to obtain certification from the local building official that the structure complies with all applicable state and local building standards and to provide proof, upon request, to their insurance carriers that the construction complies with all applicable state and local building standards, within state fire prevention and suppression responsibility areas, and local responsibility areas when the homes are in very high fire hazard severity zones.

This bill allows property insurance carriers to require firebreaks greater than 100 feet if a hazardous condition warrants such a firebreak, within state fire prevention and suppression responsibility areas, and local responsibility areas when the homes are in very high fire hazard severity zones.

Allows CDF to: authorize the removal of vegetation in order to comply with the firebreak requirements of this bill; prescribe a procedure for the removal of that vegetation and make the expense a lien upon the offending property.

Scientific research supports this increase in firebreak size. According to Jack D. Cohen, Ph.D., United States Department of Agriculture Forest Research Physical Scientist, "My research results indicate that the big flames of high intensity wildland fires do not directly ignite homes at separation distances beyond 100 feet."[26]

It is important to acknowledge the role of the insurance industry in coping with the risk of wildfires and property. This bill decreases exposure of the industry to fire-related losses

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[25] PRC 4291, (b).

[26] Cohen, Thoughts on the Wildland-Urban Interface Problem , 2003

allowing insurance carriers to make case-by-case determinations as to whether minimum firebreak clearances are inadequate. This bill further decreases the industry's exposure by allowing insurance carriers to enforce the building standards of the recently enacted AB 1216 (Vargas), which apply to homes in very high fire hazard severity zones in both state and local responsibility areas.

For the full text of SB 1369, see http://www.leginfo.ca.gov/pub/bill/sen/sb_1351-1400/sb_1369_bill_20040923_chaptered.html.

Assembly Bill 2420

AB 2420 is designed to significantly reduce timber harvest costs by reducing regulations associated with logging if that logging is designed specifically to reduce fuel levels while maintaining certain environmental standards.

This bill amends Section 4584 of the Public Resource Code. The Z'Berg-Nejedly Forest Practices Act of 1973 prohibits a person from conducting timber operations without an approved Timber Harvest Plan (THP) from CDF. THPs have been very cumbersome to prepare as well as cost prohibitive to landowners wanting to reduce fuel loads on their properties. Under AB 2420, until January 1, 2008 a person is exempt from preparing a THP if "the harvesting of trees eliminates the vertical continuity of vegetative fuels and the horizontal continuity of tree crowns for the purpose of reducing the rate of fire spread, fire duration and intensity, fuel ignitability or ignition of tree crowns…"[27] Also for the purpose of reducing flammable materials and maintaining a fuelbreak for a distance of not more than 150 feet on each side.

The landowner must still hire a Registered Professional Forester to prepare the notice of exemption and the plan for the timber harvest operation. Tree harvesting cannot exceed 300 acres. Only trees less than 18 inches in stump diameter may be removed. Trees up to 24 inches in stump diameter may be removed if they are near a structure or a shaded fuel break identified in a Community Wildfire Protection Plan. Logging slash and debris must be chipped, burned, or removed within 45 days from the commencement of timber operations or else the debris will be subject to abatement and the parcel of land will be charged for the costs of this abatement. CDF must conduct an on-site inspection once timber operations are done in order to ensure there were no violations.

For the full text of AB 2420, see http://www.leginfo.ca.gov/pub/bill/asm/ab_2401-2450/ab_2420_bill_20040923_chaptered.html.

Board of Forestry Fuel Hazard Reduction Emergency Rule

This regulation is intended to give "Communities at Risk" and landowners in the wildland urban interface an economically feasible way to reduce the risk of damage and loss associated with catastrophic fire and direct threats to their homes. It is one of many important tools designed to help landowners in the creation of defensible areas around their homes and communities in the face of a wildland fire. It allows for the removal of vegetation, including

[27] AB 2420, Hhttp://www.leginfo.ca.gov/pub/bill/asm/ab_2401-2450/ab_2420_bill_20040923_chaptered.htmlH

smaller understory trees (those less than about 26 inches in diameter at breast height), surface fuels, and ladder fuels if certain conditions are met:

- Provides that smaller trees must be removed to achieve the desired results and will be the primary focus of removal efforts.
- The post treatment stand must meet stocking requirements for thinning as defined in the California Forest Practice Rules. This ensures that post treatment a "well-stocked" stand will exist.
- Post treatment canopy closure must exceed 50%. This means that at least 50% coverage canopy over the forest floor will exist after operations.
- No operations are permissible on steep slopes, near watercourses, or during winter months.
- This regulation is designated for use within ¼ mile of structures in "Communities at Risk" as defined by the California Fire Alliance, or within 500 feet of structures and evacuation routes, such as public roads, fuelbreak ridges, and associated infrastructure facilities.
- Emergency conditions for these types of operations must be verified by a Registered Professional Forester (RPF). The RPF will be responsible for marking and designation of the timber and vegetation to be removed.

For the full text of this and related regulation, see http://www.bof.fire.ca.gov/board/board_proposed_rule_packages.aspx .

The following table summarizes the distinctions between the Board of Forestry regulations and AB 2420. It is expected that the Board of Forestry regulation will sunset because of the new legislation.

Table 1. Board of Forestry Emergency Notice vs. Exemption[28]

BOF EMERGENCY NOTICE	AB 2420 EXEMPTION
Begin in 15 days	Begin in 5 days
Complete in 120 days	Completed in 1 year
	Terminates January 1, 2008
High, very high or extreme fuel hazards	300 acres
Compliance on 80% of project area	Compliance on 80% of project area
1 structure per 20 acres	
¼ mile from structures adjacent to community	
500 feet of structures not adjacent to community; public, private or main haul roads; ridges; and infrastructure	

[28] John Hoffman, Regional Council of Rural Counties, personal communication, 11-17-04.

BOF EMERGENCY NOTICE	AB 2420 EXEMPTION
Less than 30 inches	Less than 18 inches or less than 24 inches if within 500 feet of structure or within CWPP designated fuel break
40 to 60% canopy closure	50 – 125 sq. ft. basal area retention
8 feet ground clearance	8 feet ground clearance
	Archaeology letter

The Mattole Restoration Council is developing a fuels reduction project pursuant to AB 2420 for qualifying landowners in the Mattole. They are currently seeking interested landowners who meet any of the following criteria:

- The stand to be thinned has many 16-18" Douglas-fir trees.
- The stand has relatively few tanoaks and brush species.
- The landowner plans to do some of the thinning work him/herself (rather than hiring a work crew).
- The stand is close to accessible roads.
- The landowner has an interest in improving forest productivity for long-term sustainable forestry operations.
- Thinned materials are burned rather than chipped.

Interested landowners should contact John Isom or Chris Larson at 629-3514. *For more information, see Appendix III, Draft North Coastal California Fire-Smart Landscaping.*

Fire Safe Building Materials and Reducing Structural Ignitability

How your house is constructed is often just as important as creating defensible space. For instance if you have a shake roof, your house is more likely to burn down from sparks, embers, or firebrands even if it has "fire-resistant shakes." If you have a shake roof one of your first actions should be to replace it. The roof is the most vulnerable part of your home to wildfires. During a wildfire, firebrands can fall on your roof, landing in your roof's nooks and crannies where a fire can easily start. Once your roof covering ignites, chances are very good that the rest of your home will follow."[29] Here are some things to think over:

- The best roofing material is metal or tile (with the tile ends capped).
- Second best is a composite roof.
- Shake siding on your house is much more prone to ignite than stucco siding or ferrous cement.

[29] Firewise, "Is Your Home Protected From Wildfire Disaster? A Homeowner's Guide to Wildfire Retrofit," 2001, page 9, Hhttp://www.firewise.org/pubs/is_your_home/WILDFR2.PDFH.

- Decks sticking out from your house act as kindling for fires. If you have a deck, make sure that you enclose the underside of it and your house if it's a post and pier foundation. Do this either with solid building materials or with lattice and tight screen with green, fleshy plants. This will give you much more storage space as well, since it is unsafe to store anything (especially firewood or cardboard boxes) under your house if it's open to the outside.
- If you have vents in your attic, make sure they are screened. Enclose eaves, fascia, and soffits with vents. Embers can get into these places if they are not screened, and burn your house down from the inside out.
- Make sure you have a screen on all chimneys.
- Use double-pane or safety glass on all large windows.

For more information on making your home safe from wildfire, check out "Is Your Home Protected From Wildfire Disaster? A Homeowner's Guide to Wildfire Retrofit," at http://www.firewise.org/pubs/is_your_home/WILDFR2.PDF,.

The following information is taken directly from: "Wildland-Urban Interface Ignition Resistant Building Construction Recommendations from the 2004 Community Wildfire Protection Plan Workshops, the California Fire Alliance and the California Fire Safe Council" by Ethan Foote, CDF/CNR Santa Rosa, August 19, 2004, ethan.foote@fire.ca.gov.

> One of the major objectives of wildfire control in general, and pre-fire management hazard reduction in particular, is to reduce the loss of life and property. The historical pattern of building loss during Interface fires indicates that vegetation fuel management must go hand-in-glove with ignition resistant building construction to maximize the effectiveness of fire loss mitigation measures.
>
> Building loss and survival on the 1961 Bel Air fire, which destroyed 505 houses, was well documented. The report "Decision Analysis of Fire Protection Strategy for the Santa Monica Mountains"[30] found that 71% of the buildings with 26-50 feet of brush clearance survived the fire. However, the survival rate of buildings exposed to the fire increased to 95% for houses that had both brush clearance and ignition resistant building construction (in this case non-wood roof covering). A similar pattern was seen on the 1990 Santa Barbara Paint Fire… (Source: "California's I-Zone: Urban/Wildland Fire Prevention & Mitigation" p.120).
>
> On the Paint Fire, which destroyed 479 houses and major buildings, the survival rate (above) was 86% for houses with both non-flammable roofing and 30 feet of brush clearance. Only 4% of the 438 houses surveyed in the Paint Fire survived where non-flammable roofing and 30 feet of brush clearance were absent. The modeling of structure loss and survival on the Paint Fire revealed that brush clearance alone only "explained" or accounted for 11% of the variation seen in the structure survival patterns. When brush clearance was combined with roof type in the model, and the

[30] Available at Hhttp://www.ucfpl.ucop.edu/UWI%20Documents/167.pdfH

effect of defensive actions was accounted for, the model explained 59% of the variability in structure loss.

This is strong evidence that vegetation management alone will not be able to fully explain, nor mitigate, building loss on wildfires. Hence, the need for the comprehensive approach in this plan, using a combination of vegetation management and addressing recommendations for ignition resistant building construction. There is also strong evidence that this comprehensive approach will work to significantly reduce Interfaces losses. The Los Angeles Times (April 1, 2004) reporting on the Southern California conflagrations of October 2003 clearly revealed the need for, and effectiveness of, combining vegetation management and ignition resistant building construction for reducing building loss in wildfires:

> 'Amid the ashes of the most costly wildfires in California's history lies evidence of a crucial lesson: Fire-resistant construction and vigilant removal of flammable vegetation significantly improved the odds of a home's survival, according to a Times analysis of fire records from more than 2,300 destroyed structures.
>
> 'The impression left by an out-of-control fire racing through communities can be one of random destruction, with one house, or a whole block, burned to the ground and the next one spared for no apparent reason.
>
> 'In fact, according to the Times analysis – which covered homes destroyed by the deadliest of the blazes, San Diego County's Cedar fire – houses built since 1990 were far less likely to burn than those constructed in any previous decade. Houses built during the 1990s were damaged or destroyed at less than half the rate of houses built earlier.'

The communities and homeowners covered by this plan have, for the past 40 years, had recommendations that can be (and have been) taken to reduce the ignitability of structures. An outcome of the 1961 Bel Air Fire was publication of the "Fire Safety Guides for California Watersheds" by the County Supervisors Association of California in 1965. These recommendations have been updated through the years. The current version of these "Fire Safe Guides" is "Structural Fire Prevention Field Guide for Mitigation of Wildfires" and can be found at http://osfm.fire.ca.gov/structural.html.

These recommendations for ignition resistant building construction include:

- Roofing
- Eaves & Balconies
- Exterior Walls
- Rafters
- Windows
- Doors
- Attic ventilation openings
- Underfloor Areas

In response to the persistent loss of life and property in wildfires the most important of the recommendations is now a requirement. All new buildings, and significant re-roofing of existing buildings, in the communities covered by this plan are required to

have ignition resistant roofing (California Building Code §1503). The State of California is also in the process of promulgating changes to the state building code expanding the interface roof requirements and including new requirements addressing exterior wall construction, vents, and ancillary structures.[31]

Signage/Addressing

Chances are fire fighters are not going to know where you live, especially in the case of a large fire where out-of-town firefighters are present. If your house has a visible address sign at the street, emergency service personnel (fire, ambulance, police) will find it. If not, they may not. Make sure you have a visible road/address sign. Work with your local fire department if you have specific questions regarding how to do this most effectively. Your sign should be of reflective material so that it is visible at night, and non-flammable (metal on metal post) so that it doesn't burn.

If you want emergency personnel to be able to find you, do your part. In a medical emergency a few minutes may be the difference between life and death.

Water

The amount of water you have stored to fight a fire will have a significant impact on the ability to fight a fire at your home. 2,500 gallons of water storage is the minimum required for new development. Storing water in the winter for use in the summer and fall is critical in this Mediterranean climate. There are many options available in terms of water tanks. Ideally, you should have a dedicated firefighting water tank, and a separate tank for domestic use. If you cannot do this, put your domestic water line out of your water tank in the middle of the tank, so you don't accidentally drain your tank into the garden or elsewhere, keeping the bottom half for emergency use. Put a dedicated fire water line out of the bottom of the tank. Your fire water line should be a two or three inch line, buried twelve inches below ground. An aboveground plastic water line will likely burn in a fire but a full plastic water tank will likely not. Put a metal standpipe at the end of the waterline with a fire-hose threaded adapter so firefighters can quickly attach to your water source. Fire hose thread is known as national thread, national standard, NST, NSFH, NH, or FHT. Before purchasing this adapter, talk to your local fire department to find out what they use *(see Table 4"Fire Organizations in the Upper Mattole" for contact information)*. Make sure that your standpipe is somewhere a fire truck can access it <u>and</u> turn around to leave. If it's not accessible, it's not going to be very useful. A home in the upper Mattole recently burned to the ground, while a large, full water tank sat nearby, unknown to firefighters. Finally, make sure your local fire fighters know where your tank is. Fire engines generally need twelve feet wide by fifteen feet clearance, and a seventy-foot T or forty-foot circle to turnaround for safe retreat.

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[31]Ethan Foote, *"Wildland-Urban Interface Ignition Resistant Building Construction Recommendations from the 2004 Community Wildfire Protection Plan Workshops, the California Fire Alliance and the California Fire Safe Council"* , August 2004.

Storing water in the winter for use in the summer and fall is critical in this Mediterranean climate. Friends of the Eel River (www.eelriver.org) and the Mattole River and Range Partnership (MRRP, for more information see page 46) have both done research into water conservation and storage methods. Pioneer brand water tanks (www.pioneertanks.com/au) are becoming increasingly popular locally. Whitethorn Construction has sold over 40 of these tanks in the last two years. The MRC can assist landowners in acquiring these tanks.

In an emergency, swimming pools and ponds provide a great source of water. Fire fighters can draft directly from these sources if they can get close to them. If you are going to depend on this water as your first response to a fire, you will need a pump and a generator for back up. Often when there is a large fire the power will go out. Therefore, the generator will be needed to pump water from your pool or pond.

Ponds can be a good route to water storage; see the MRC newsletter (Issue #19, http://www.mattole.org/html/publications_article_36.html) for more information on ponds. While ponds are ideal for storing large amounts of water for fire fighting, they must be properly sited to avoid erosion problems. Ponds built on unstable ground can give way, leading to large washouts and gullying, choking streams with sediment, in turn harming fish habitat. Ponds should be built on stable ground, have adequate overflow protection, and should not be built across seasonal or perennial creeks. Additionally, ponds can breed nuisance species such as bullfrogs, mosquitos, and non-native fish that can harm native salmon and steelhead.

The use of grey water systems is an alternative method for watering yards and vegetation. A grey water system is where water is collected after non-contaminating use such as the kitchen sink or washing machine, and stored and used for irrigation.

For more information on water storage, see Chapter 8 and Appendix V.

Roads

Roads are critical components in the fire equation. They are a great place for a fuel break.[32] They are also critical for evacuation. They are also needed for fire fighters to reach your home when fire strikes. Minimum clearance requirements along your roads for a fire engine to safely pass are twelve feet wide by twelve feet high. In addition, you need plenty of places on the road where vehicles can pass each other. If a wildfire is threatening and a fire truck is trying to get to your place and you're trying to evacuate at the same time, there needs to be areas in the road wide enough to accommodate traffic from both directions. Remember, when a wildfire is threatening, chances are it will be very dark and smoky, thus very disorienting. Take the time now to make it easier on yourself should that time come. A fire truck needs to be able to turn around to be able to leave. If they cannot safely get the engine in and out, that makes your home not defensible, as most fire fighters will not unnecessarily risk their equipment or lives to protect your property. Give them at least thirty feet to be able to safely turn around.

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[32] A break in continuous vegetation (such as forest or brush lands), where a fire will slow down and fire fighters can fight the fire. *See Section 0 Shaded Fuel Breaks.*

Firefighters will almost always turn around when they arrive to a fire for safer and quicker escape. This is good advice for you too. Get in the habit of parking your car/s facing out at home so you can leave quickly if necessary. If you have locked gates, they will very likely be cut by fire fighters. If you don't want that to happen, make sure you leave your gates unlocked. Additionally, bridges need to be evaluated for safe fire truck passage. Generally, if a propane or other fuel or water truck can make it across the bridge, then a fire truck can. If you have a bridge that will not safely carry a fire engine, you must contact your local volunteer fire department and let them know. Don't make their job any more dangerous than it already is.

3.3 Fuel Hazard Reduction

Much of what you need to do comes down to common sense and an awareness of your physical surroundings. An important thing to know about fire in forested rural areas is the concept of *fuel ladders*. A fuel ladder is simply a ladder of vegetation from the forest floor into a canopy of trees. There is also the concept of *fuel continuity* both vertical and horizontal. Vertical continuity is similar to the fuel ladder concept; it means a continuous vertical layer of fuel. Horizontal fuel continuity then means the same thing horizontally. That's when the fuels extend from something—like your house—continuously out into the forest. A good example of this is with decks on steep slopes, where the edge of the deck is next to the crowns of the trees (forest canopy). If a fire started either at the house, or in the forest, it would have a continuous line of fuel to spread from one to the other via the deck.

In the Mattole, an example of a fuel ladder (and vertical continuity) is brush on the ground climbing up or leading into smaller Douglas fir, redwood, or tanoak trees, especially via the dead limbs, which reach up into the canopy of the taller, or dominant trees. With this continuous ladder of fuel into the forest canopy, it is easier for a fire to climb into the trees and spread quickly. What is recommended to avoid this—especially near buildings and along roads—is to reduce the fuel ladder. Go into the forest surrounding your home and along your roads and remove brush on the forest floor (but don't scrape it clean or you could have erosion problems when it rains). *Limb up* or prune young trees (remove the lower limbs to create open space between the tree canopy and the forest floor) to a minimum of fifteen to thirty feet above ground, or at least six to ten feet above the nearest vegetation. Young, short trees should be pruned higher incrementally to reduce the chance of perceived ambiguity from the prescription. A rule of thumb when *limbing* trees is to leave at least one-half of the tree's height in live canopy so you don't harm the trees' ability to grow. If you leave clumps of shrubs, create at least three times the shrub height in space before the bottom branches of the trees. For example, if you have a three-foot high bush, leave nine feet of open, clear space (no vegetation), below the bottom branches.

Table 2. Tree Crown and Brush and Shrub Clump Spacing[33]

% Slope	Spacing between Tree Crowns (feet)	Spacing between Brush and Shrub Clumps
0 – 10%	10′	2 ½ x shrub height
11 – 20%	15′	3 x shrub height
21 – 40%	20′	4 x shrub height
>40%	30′	6 x shrub height

In some places it is adequate to only *brush* or clear or clean up an area. Basically, *brushing* entails removing brush alongside a road or structure to keep the forest floor relatively open. Removal of all dead materials—shrubbery, branches, etc.—is especially important. The idea is to remove anything that is particularly flammable from being anywhere near an ignition source, such as you, your kids, your car, or your house. When brushing or removing fuel ladders, focus on the fine or flashy fuels—such as small sticks that will burn quickly. Think in terms of building a campfire or a fire in your woodstove. For large pieces of wood to burn, kindling—or small pieces of wood or fuel—are needed. If you remove the kindling around your larger fuel sources, chances are much greater they will not ignite. When you are in your forest, make sure there are no concentrations of small sticks or brush right up against the trunks of trees.

Shaded Fuel Breaks

When you remove the fuel ladders around your property and leave the tree canopy in place, you are basically creating a *shaded fuel break.* A shaded fuel break is a break in fuel continuity—treating both surface and ladder fuels—to give fire fighters a chance to stop the fire and perhaps even slow down the fire. This occurs because of a lack of fuels and the modification of the types of fuels and their arrangement. It is called *shaded* because you leave most of the forest canopy intact. Some of the canopy may need to be removed however, if conditions are ripe for a crown fire. A shaded fuel break is different than a firebreak where something like a bulldozer is used to create a bare-ground break with no vegetation. These firebreaks tend to regenerate quickly with flashy fuels and require a lot of maintenance. The shade created by the forest canopy helps to reduce the regeneration of plants on the forest floor, thus keeping the amount of fuels low in these breaks and requiring less maintenance. Shaded fuel breaks also improve your evacuation routes, as they provide a place where a fire might slow down or decrease in intensity, making it safer for you to get out. Fuel breaks are important places for fire fighters to fight a wildfire.

33 Harris, F.C., Colorado State Forest Service, Creating Wildfire-Defensible Zones no. 6.302, Hwww.ext.colostate.edu/pubs/natres/06302.pdfH.

The exact prescription for a shaded fuel break depends on your objectives and existing, local conditions. Some landowners want to create as much cleared space—and hence fire safety—as possible. Others want to maintain as much privacy as possible, sometimes compromising, but almost always still improving fire safety. This difference can be seen with the shaded fuel break created along the Wilder Ridge Road by the Lower Mattole Fire Safe Council in 2003, although variation was also in a large part due to pre-existing forest conditions.

The following is a general prescription used by local contractor and wildland fire fighter Dave Kahan of Full Circle Forestry. Dave has been implementing fuel hazard reduction work in the Mattole for decades. His overall goal is to drastically reduce fine surface and ladder fuels to keep ground fires on the ground, which keeps them easily manageable. This plan is aimed at locals or others with a significant component of sprouting trees such as tan oak. If you have a forest with less sprouting trees, the canopy can be left less dense, as regeneration is not as intense of an issue. *For more information, Dave is listed in the "Resources for Fire Hazard Reduction" section in Appendix I.*

Dave recommends working in teams with a sawyer and a brush hauler because this can result in a more thorough job with less effort once safety and logistical issues have been worked out. The sawyer can make a small to moderate mess in one spot and then move to the next spot while the brush hauler cleans up the mess in the first spot. They then flip flop and the sawyer returns to the first spot to expand upon what's been done while the brush hauler cleans up the mess in the second spot. While this method requires teamwork and awareness, it will enable the sawyer to cut better with less to trip over and wrestle. Meanwhile the brush hauler is cleaning things up but is not in any danger from falling trees and limbs because they are working in separate areas.

Basic Prescription for First Entry

For the first entry, cut as much of the one-hour and ten hour fuels[34] (finer fuels) as possible. Cut as much of the one-hour (0-.24 inch in diameter) and ten hour fuels (.25-1.0 inch in diameter) as possible i.e., the finer fuels. Remove trees that look brushier (versus a more tree-like form), unhealthy, lacking vigor, overtopped by larger and/or more vigorous trees which block access to open spaces in the canopy. Eliminate dead vegetation of all sizes. Leave the overstory canopy as closed as possible. The more shade, the less regeneration, and need for maintenance. Shade will inhibit the regrowth of the sprouting species, which will not resprout

[34] One-hour timelag fuels are fuels which are less than 1/4 inch in diameter and respond very quickly to changes in their environment. These fuels will only take about an hour to lose or gain two-thirds of their equilibrium moisture content of their environment…Moving up in size, a fuel will lose or gain moisture less rapidly through time. Ten-hour fuels range in diameter from 1/4 inch to 1 inch, 100-hour fuels from 1 inch to 3 inches, and 1,000-hour fuels from 3 inches to 8 inches in diameter. 10,000-hour fuels are greater than 8 inches in diameter. Obviously, the 1,000 and 10,000-hour fuels do not burn easily. However, if they do burn, these size fuels will generate extreme heat often causing extreme fire behavior conditions. From: National Weather Service, Fire Weather Definitions, Dead and Live Fuel Moisture, Hhttp://www.crh.noaa.gov/fsd/firedef.htmH.

vigorously enough to be a major maintenance problem (provided that the forest is old enough and tall enough, and that a large enough vertical gap is created). Prune up all trees you leave behind as high as you can reach safely, with a chainsaw or pole saw.

Start low in the area and work gradually uphill. Also start with the lowest growing plants and work up the fuel ladder. This will help keep you from burying your work, and the result will be more thorough and cleaner.

Second Entry, or Advanced First Entry

Go to those trees and shrubs you weren't sure about on the first pass. Look at the leader (the new growth at the top of the tree) and the overall health and vigor of the tree in relation to other trees of the same species. The leader reveals the annual growth. How is the tree growing in relation to other trees? Is the leader longer or shorter? Does it look healthy? Leave the healthiest trees. Is there space for them to grow in the upper canopy? If not, can you create that space by removing the less healthy, or suppressed trees? If not, it is a good candidate for removal regardless of health and vigor. Imagine the same place in ten or twenty years. Will there be room for all the trees you have left? If not, remove some of the unhealthiest and smallest ones, or those in the way of your healthy trees. Keep in mind that the denser the canopy, the less regeneration (maintenance) you will have to address next year. Think about species composition. You will generally want to favor rarer species (a yew tree perhaps!). In the Mattole, you will almost always want to favor conifers (Douglas fir and redwood) over hardwoods (tan oak and madrone), to return the forest to a more natural balance.

Think about what you are leaving behind more than what you are removing. You can deviate from these general guidelines if you are doing so consciously, keeping in mind the overall principles mentioned above, foremost creating breaks in fuel continuity.

Pruning Individual Trees

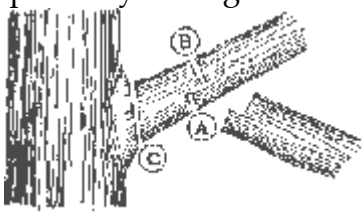
Prune as high as you can safely given your available time and financial resources. The more you prune the more slash you have to remove. Costs for this will vary widely depending on the size of pruned limbs. Reach as high as you safely can with a chainsaw or a pole saw. Leave one-half of the tree height in live crown. Only remove one-third of the total foliage at one time. Don't bother pruning anything that is shorter than you (unless it's right next to your house, then it should probably just be removed). Make sure to follow proper pruning techniques or you will create health problems in your landscape. Pruning is one of the most difficult skills to master but it is also one of the most important. For tips on proper pruning techniques, see Appendix II, Fuels Reduction Literature to get the link to an article titled "Prune trees for better health and higher value," by the California Forest Stewardship Program. The figure below shows proper pruning techniques.

Figure 3. Proper Pruning Techniques[35]

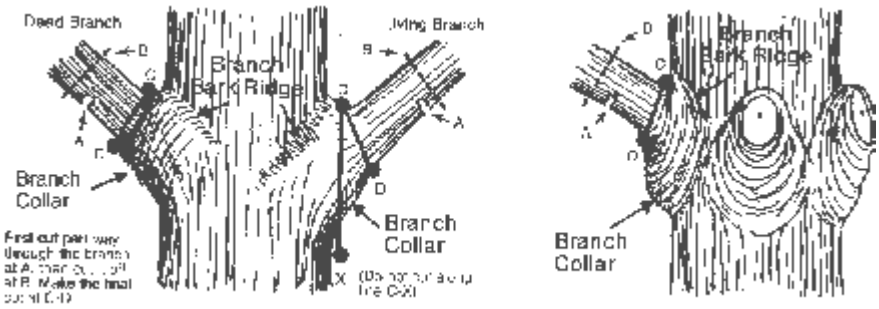
[35] California Forest Stewardship Program, Forestland Steward Newsletter, Winter 2002, Hhttp://ceres.ca.gov/foresteward/html/prune2.htmlH

Prune correctly (see illustrations below). The object of the operation is to remove the branches as close to the tree stem as possible without leaving any stubs.

A. Cut part way through the branch from beneath at a point one or two feet from the trunk.



B. Make a second cut on the top of the branch, at a distance of 1/3 to 1/2 the diameter of the limb from the first cut. This should allow the length of the limb to fall from its own weight and be safely removed.
C. Complete the job by making a final cut next to the trunk, just outside the branch collar; with the lower edge farther away from the trunk than at the top.



Using the illustrations above, final cuts should be made from points C to D. Do not cut along C–X, which is an imaginary vertical line to help you locate C–D. First cut partway through the branch at A, then cut it off at B. Make the final cut at C-D.
Source: California Forest Stewardship Program, Forestland Steward Newsletter, Winter 2002, http://ceres.ca.gov/foreststeward/html/prune2.html.

How to decide which trees to leave or take?

First look for the vigorous, healthy trees. Prioritize the healthy ones and create space around them to grow by removing less vigorous trees. Look for existing space in the canopy. Is there space for the tree to grow into the upper canopy? If so, leave it. If not, consider removing it. There may be trees that you will eventually want to remove—often intermediate trees—that are not cost-effective on the initial entry, but could be on subsequent entry. Some of the intermediate trees may have enough size or volume for lumber production. Therefore, if your removal costs are not high you may be able to offset some of the cost with lumber for personal use. You can only use wood products from your forestry operations on your own property. To sell anything from a forest operation requires a timber harvest plan, which is generally far too cost prohibitive for fuel hazard reduction in many cutover areas, especially for redwood forests. However, the new fuel hazard reduction exemption provides exception to this

regulation; see section 0 for more information. Firewood is also a great by-product of fuel hazard reduction. To sell firewood, you need a firewood exemption from CDF.

After you've created your shaded fuel break, take a final pass through the area. How does it look? Do you need to remove any branches or small fuels that were left behind? Did you miss some trees or shrubs that seem obvious to come out now?

Remember, you don't need to remove everything. You can leave clumps of vegetation for wildlife habitat. *See Table 2. Tree Crown and Brush and Shrub Clump Spacing for information on how to space clumps of shrubs.* In addition to providing fire safety, shaded fuel breaks and general fuel reduction provide many other benefits. Some of these are:

- Improved forest health and productivity. There will be less stress and mortality from reduced competition and this translates into lower fire intensity. Also, by removing the lower branches of your trees, you will have higher quality lumber (less knots) should you ever choose to harvest those trees for wood products.
- Improved wildlife habitat. Opening up the lower canopy and forest floor provides habitat for some of the larger or older-forest dwelling species.
- Improved aesthetics. Many landowners comment on how much nicer their view is after doing fire hazard reduction, as they can see out into the forest again.
- Creation of firewood.
- According to some residents, it's an extra exercise bonus for the person doing the work!

For more detailed information on fuel hazard reduction, please see Appendix II, Fuels Reduction Literature.

What to Do with Thinned Materials

As a result of your fire safety work around you property, you will soon accumulate a lot of branches and other materials that you have removed. There are a few principal options for dealing with thinned materials: burning, chipping, lop and scatter, some combination of these, small diameter wood products, and biomass.

<u>Burning</u>

Burning is the cheapest and usually the easiest method, as long as it is done safely. The following is a list of suggestions for safe burning:

- Arrange the material to be burned so that it will burn with a minimum of smoke. Place material of various sizes in the pile for adequate airflow.
- Except for large trees (diameter of six or more inches), ignite only the amount that can reasonably be expected to completely burn within the following 24 hours.
- Ignite outdoor fires only with ignition devices approved by the local air quality district and CDF.
- Ignite material to be burned as rapidly as practical within applicable fire control restrictions.

- Curtail, mitigate, or extinguish burning when smoke is drifting into a nearby-populated area or creating a public nuisance.
- Don't burn material unless it is free of tires, rubbish, tar paper and construction debris; is reasonably free of dirt, soil, and moisture; and is loosely stacked in such a manner as to promote drying and ensure combustion with a minimum of smoke.
- Some air districts and/or counties may limit the amount of needles and leaves within a pile, as well as burning hours throughout the day.[36]

As of January 2004, the Air Quality Management District requires burn permits in the Mattole area and the rest of the state. These cost $12 per year and are currently available from CDF or the North Coast Unified Air Quality Management District (NCUAQMD).[37] Burning is generally only allowed on "burn days." To find out if it is a "burn day" you can call 1-866-BURNDAY (287-6329) or 443-3091. For more burning information, you can contact NCUAQMD at 707-443-3093 or www.ncuaqmd.org. Burn barrels have been banned in many parts of the state as well. Contact NCUAQMD to find out if you can still burn in barrels where you live. Getting a group of people together in the winter to thin and burn can be an enjoyable way to spend a day outside.

Chipping

Chipping is another method for treating thinned materials. If you will be using a chipper, remember to stack all your branches in the same direction, so you can easily feed the chipper. Chippers can be rented locally. Some local fuel hazard reduction contractors have them *(see the "Resources for Fire Hazard Reduction Around Your Property" in Appendix I for a list of local contractors)*. CDF also has chippers available for use in organized community chipper days. One of these is available for organized community chipper days. To arrange a community chipper day, you can contact DNFSC or Kim Price at CDF, 726-1224.

Lop and Scatter

Lop and scatter is a method where the thinned materials are scattered about the forest—taking care not to form large piles (jackpots) of slash—in order to rot there. Lop and scatter can be very cost effective, but is a very site-specific treatment.[38] This is the best method for improving the soil fertility of your forest and hence the forest's long-term productivity. By removing the ladder fuels and scattering them low to the ground, you are improving the chances of your forest surviving a wildfire. However, because of increased short-term risk this is not a method to do near structures. Rather, it is more appropriate in the forested landscape, beyond your shaded fuel breaks.

The material should be cut down to an ideal height of one foot above the ground. However, lopping to less than or equal to twelve inches of the surface is likely beyond the skills of most,

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[36] California Forestland Steward Newsletter, How to Burn Piles Properly, Hhttp://ceres.ca.gov/foresteward/html/burnpiles.htmlH.

[37] NCUAQMD, Hhttp://www.ncuaqmd.org/summaryBurnRegBrochure.pdfH.

[38] Tim Jones, Arcata BLM Fire Management Officer, personal communication, 7/12/04..

eighteen-inches is better to strive towards. Remove all large pieces of wood, which, by the way, makes for great firewood. But dedicate some larger, heavier pieces to sit on top of the slash and weigh it down. Conifer slash "lies down" much easier with much less lopping than most hardwood slash due to its growth habit. Green slash of all species lays down easier than dry slash (if you're thinking of coming back later to lop). Make sure none of your material on the ground is touching the base of any trees or shrubs you have left standing.

The risk with this method is that fire may occur within your treated area before the fine fuels fall to the ground and decompose. Even so lop and scatter does reduce your fuel hazard because the fuels are no longer part of the fuel ladder, and there is vertical clearance between the surface fuels and the bottom branches of the trees (ideally a minimum of eight feet of space). However, your surface fuel hazard will increase from three to ten years depending upon the length of time it takes for these fuels to decompose.

Small Diameter Wood Products

Much effort has been made on the North Coast to develop markets for small diameter wood products, especially hardwoods. It is possible to use these materials commercially, and they often produce beautiful lumber. Small, suppressed Douglas fir—a softwood—often has a tight grain that makes for attractive trim. Local hardwoods such as tan oak and madrone are used by local woodworkers to create stunning furniture, cabinets, and floors. To be merchantable, the logs need to be straight and between at least six to ten inches in diameter. Two great sources for more information on this subject are the Institute for Sustainable Forestry (www.sustainablehardwoods.net) and the Watershed Center (www.thewatershedcenter.org).

The Mattole Restoration Council has initiated the Wild and Working Forests program to help landowners manage their forestlands for fire hazard reduction, forest habitat, and timber production. *For more information, see Appendix II, Fuels Reduction Literature.*

Biomass

Biomass refers to organic material from living things such as trees, shrubs, grasses and other plants. The temperate forests of the Pacific Northwest contain the highest amounts of biomass per-acre of any forests in the world, far exceeding tropical forests. Biomass is commonly used as lumber, firewood, and paper. Biomass can also be used for energy production."[39] In its simplest form, it is used to create heat, through a process called gasification. This technology is increasingly being used in schools in rural areas (see http://www.fuelsforschools.org for more information). Gasification uses woody materials as a source of energy to produce methane and hydrogen gases. These gases are then used as fuel to power an engine that creates electricity. Biomass can even be used to replace our dependence on fossil fuels, and cam be significantly better for the environment.

[39] Institute for Sustainable Forestry, Safeguarding Rural Communities: Fire Hazard Reduction and Fuels Utilization, Final Report, September 2001 to December 2002, pg. 23.

One of the noteworthy challenges associates with biomass as a source of energy is transportation costs. In order for biomass utilization to be economically feasible, the distance for the biomass to travel should not be more than twenty-five to fifty miles. In remote forestlands this is a significant hindrance. This could be overcome if some of the costs associated with biomass removal were subsidized by the government as fossil fuels are today.

On the North Coast biomass has received much attention but little progress in its development. In the interior region of Northern California, it is a technology that is being utilized. A thinning project in Seely Creek has revealed that for every acre thinned, 60 cubic-yards of material is generated.

There are a host of creative possibilities for using biomass, including combining community fire-hazard reduction and electricity generation using a mobile generator on-site. The University of Washington has invented a process that converts small trees to methanol. They have found that even the smallest trees and branches can be utilized as a power source for fuel cells.

Funding is available for biomass projects from the USFS and BLM under Title II of the Healthy Forests Initiative and Healthy Forests Restoration Act. Title II authorizes these agencies to overcome barriers to the production and use of biomass and to help communities and businesses create economic opportunities. Funding is available for research. There is also a biomass commercial utilization grant program, and assistance is available to community-based enterprises that use biomass and small diameter material.

3.4 During the Fire

Fire can be extremely frightening. However, taking steps now to prepare you and your family and your home for fire will make it easier to survive it, and it will likely reduce panic and help you to effectively deal with the situation. The following is a great summary of what to do when fire strikes. Make a copy of it and post it in a prominent place so you will see it if a wildfire is near.

The following page from Living with Wildfire, Pacific Northwest Wildfire Consulting Group, (http://www.or.blm.gov/nwfire/docs/Livingwithfire.pdf), can be copied and posted somewhere prominent in your home or with your emergency preparedness kit.

WHEN WILDFIRE APPROACHES

Should homes be threatened by wildfire, occupants may be advised to evacuate to protect them from life-threatening situations. Homeowners, however, do have the right to stay on their properties if they so desire and so long as their activities do not hinder fire fighting efforts. If occupants are not contacted in time to evacuate or if owners decide to stay with their homes, these suggestions will help them protect their properties and families.

- Evacuate, if possible, all family members not essential to protecting the house. Evacuate pets as well.
- Contact a friend or relative and relay your plans.
- Make sure family members are aware of a prearranged meeting place.
- Tune into a local radio station and listen for instructions.
- Place vehicles in the garage, have them pointing out, and roll up windows.
- Place valuable papers and mementos in the car.
- Close the garage door, but leave it unlocked. If applicable, disconnect the electric garage door opener so that the door can be opened manually.
- Place combustible patio furniture in the house or garage.
- Shut off propane at the tank or natural gas at the meter.
- Wear only cotton or wool clothes. Proper attire includes long pants, long sleeved shirt or jacket, and boots. Carry gloves, a handkerchief to cover face, water to drink, and goggles.
- Close all exterior vents.
- Prop a ladder near[40] the house so firefighters have easy access to the roof.
- Make sure that all garden hoses are connected to faucets and attach a nozzle set on "spray."
- Soak rags, towels, or small rugs with water to use in beating out embers or small fires.
- Inside, fill bathtubs, sinks, and other containers with water. Outside, do the same with garbage cans and buckets. Remember that the water heater and toilet tank are available sources of water.
- Close all exterior doors and windows.
- Close all interior doors.
- Open the fireplace damper, but place the screen over the hearth to prevent sparks and embers from entering the house.
- Leave a light on in each room.
- Remove lightweight and/or non-fire resistant curtains and other combustible materials from around windows.
- If available, close fire resistant drapes, shutters, or Venetian blinds. Attach pre-cut plywood panels to the exterior of windows and glass doors.
- Turn off all pilot lights.
- Move overstuffed furniture (e.g. couches, easy chairs, etc.) to the center of the room.
- Keep wood shake or shingle roofs moist by spraying water. Do not waste water. Consider placing a lawn sprinkler on the roof if water pressure is adequate. Do not turn on until burning embers begin to fall on the roof.
- Continually check the roof and attic for embers, smoke, or fire.
- If a fire should occur within the house, contact the fire department immediately. Continue to inspect your house and property for embers and smoke.

Most importantly, STAY CALM![41]

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[40] Not a wooden ladder! Put it on the ground near the house so it does not act as a ladder for the fire to climb up your house.

Conserve your water. Save it for when the fire is at your house, or the fire has passed. This is when you may need it to put out any embers or sparks.

If you have any experience or training fighting fire, create a fire fighting tool area that is easily accessible. Keep this in a non-flammable structure, such as a metal shed or your garage. Your collection should include tools such as shovels, hoes, Pulaskis, McLeods, etc. Keep a set of fire fighting clothes there as well, such as heavy cotton, and boots and gloves. Put fire hose at your water source and mark it well so you, your neighbors, and/or fire fighters can easily find and use it.

Emergency Communication

Another very important thing you can do to protect your property in the case of a fire is to be fully prepared for the eventuality of fighting a fire at your home. Create a map of your property that shows where the most valuable structures and other resources are. Mark on your map the location of your water sources, where your gas/propane/diesel tanks and shut-offs are located and any other highly flammable or explosive materials. Include where any locked gates are and the combinations to those gates. Also include locations of any pets or livestock. Put your name, phone number and/or CB handle, street address, and parcel number or GPS[42] coordinates on this map. Put a copy on the wall by a phone (or CB radio), with the number of your local fire department so you can use it in case of an emergency. If you are comfortable, put it up somewhere near the entrance to your property where fire fighters can see it, perhaps with your visible fire fighting tools. Check with your local fire department to see if they want a copy. Or better yet, invite them out to your property (not during fire season) to show them where everything is. This will help them effectively protect your property in case of fire. If you are concerned about security issues, you can talk to your local fire department to work out a compromise that will meet your confidentiality needs while making their job easier to defend your property if and when the day comes.

Remember to call 911. At a recent Mattole fire, residents were so anxious to attack a fire that they forgot to call 911, so fire fighters were late at arriving.

Should the time come that you do have to call 911, give your address (which must be visibly marked on the road so firefighters can find your home), or GPS coordinates if you have them, and the name of your nearest fire department. The folks at dispatch in Eureka or Fortuna are not terribly familiar with the back roads of the Mattole. Know which of the local fire organizations listed in Table 4. Fire Organizations in the Upper Mattole (not CDF or BLM) is closest to your home, and ask for them by name when you call 911.

After you call 911, go to the bottom of your road, and either have someone stand there, or put up a flag or some sign to let fire fighters know where the emergency is and the way to

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[41] Living with Wildfire, Pacific Northwest Wildfire Consulting Group, Hhttp://www.or.blm.gov/nwfire/docs/Livingwithfire.pdfH.

[42] Global Positioning System

your house. The easier you can make it for the firefighters, the higher your chance is of surviving a fire.

Finally, tune in to KMUD 91.1 FM, an excellent resource in the event of a local wildfire.

Evacuation

Be ready if you need to evacuate. Have everything you need packed beforehand. Drive your alternate evacuation routes now so you know them well. Do this in the dark too so you will be comfortable during a large fire, where visibility can be very low. Know at least two ways out. Make sure you are comfortable with both routes. Have keys or combinations to locked gates in your vehicle. Turn on your headlights, drive SLOW and careful. There could be many people trying to leave and/or fire fighters and other emergency service personnel trying to enter to protect you and your house. Sometimes your safest or quickest evacuation may be on foot. *For more information on evacuation, see CDF's Evacuation information in Appendix I, Fire Safe Literature.*

Safety Zones and Shelter in Place

The safest place to be in a fire may be in your house. In Australia and New Zealand, people are recommended to stay at home. Their motto is "Prepare, Stay, Defend." Many people die trying to evacuate, far more than die from the fire itself. As well, if you are at your home, you can put out any small fires that start around your property from embers and sparks, which can travel over a mile from a large fire. This is the concept of "Shelter in Place." You should only shelter in place at your home if you have good defensible space there, and are prepared to stay for whatever length of time necessary.

If you are unable to evacuate by road, know where your nearest "safe or safety zones" are. A safe zone is where you can go (other than your house) to shelter in place. These are places where you and your family can go to survive a fire without any special equipment or clothing, if your home is not safe, although it is often the safest place for you. Safe zones are also used as staging areas, but usually do not provide any services. Steep creek channels are not a good place to seek refuge as fire travels faster in steep canyons. The fire will consume the oxygen there before the flames arrive, and you could suffocate before the fire arrives. Instead, look for big open fields, large river bars, wide-open graveled or paved roads, or an open area that has already burned. This area should be four times wider than the fire's flame lengths. Talk to your local fire department about potential safe zones, and see the section for each neighborhood in Chapter 4 so that you are familiar with the area now.

Safe zones for residents are different than those for fire fighters. Do not attempt to shelter in a fire fighter safety zone if you are not actively fighting the fire.

If an evacuation is ordered or you are sent to a safe zone, you will be notified of where to go by local law enforcement. Some safe zones may be used as the Emergency Operations Center, and hence should be avoided so as not to interfere with the success of fire suppression efforts.

Often an area is designated for evacuation days before the fire actually gets there due to the potential for a rapid fire advance. If you decide to shelter in place and then for example leave for provisions two days into the evacuation order (because the fire is still not there), you may not be able to return. Law enforcement often closes an area for entry once an evacuation has been ordered. Therefore, to shelter in place you must also consider logistical issues such as water, sewer, electricity, etc. for the duration of your stay.

3.5 After the Fire

Assess Your Success and Plan for How to be Better Prepared Next Time

In the 2004 summer fires in Shasta County, some homes were threatened that had burned only a few years ago. Just because you live through a fire does not mean it couldn't happen again. Learn from the experience to be better prepared next time. The following article from *Forestland Steward* was published following the 2003 Southern California firestorms.

"Post-fire response: assess your situation

Although we all know that the California landscape is adapted to burn, we are seldom prepared for the reality of a large wildfire. The effects of a fire will have consequences for years. Approach the post-fire period thoughtfully. After a fire, there are important decisions to be made. What should you be concerned about and what needs to be done? The wrong choices could lead to problems down the road so take some time to assess your situation before taking any action.

Areas of concern:

The home site

- Damage to the home or other structures
- Loss of landscaping
- Hazardous trees or vegetation
- Danger of flooding, on-site sedimentation
- Drinking water quality and other environmental impacts

The landscape

- Safety hazards—trees, powerlines, etc.
- Regeneration and recovery
- Wildlife habitat
- Watershed functions
- Erosion concerns
- Condition of remaining vegetation

Streams

- Proximity to home, roads, other facilities
- Hydrologic connectivity of existing drainage facilities
- Potential of increased woody debris load, streamflow, flooding, debris flow

- Need for treatments to upper watershed to minimize downstream impacts, impacts to property

Roads

- Existing problems that may be exacerbated by wildfire effects
- Damage to stream crossings, culverts
- Gullies, potholes, fillslope failure, cutslope failure, sediment deposits, wet spots
- Potential for culvert obstruction & diversion

Discussion

Identify the type of habitat burned. Was it forest, oak woodland, chaparral, coastal scrub, or grassland? Most of the area that burned in southern California was chaparral and coastal sage scrub which recovers very quickly from fire through seed germination or resprouting (you can look up the fire response characteristics of various plant species at http://www.fs.fed.us/ database/feis/). In some California habitats it is best to let revegetation occur naturally.

One of the most immediate concerns after fire is erosion. Vegetation provides protection for the soil; it anchors the soil and slows water runoff which aids absorption. Fire can change the soil chemistry, creating hydrophobic, or water repellent, soil. This can exacerbate the already accelerated runoff from vegetation loss.

However, reseeding is generally not a good answer to erosion and, in fact, can be detrimental to recovery. Although reseeding with ryegrass has long been recommended after fire, studies are now finding that ryegrass provides little erosion control and actually inhibits regrowth of native vegetation that can provide long-term protection to the soil. In addition, ryegrass can increase future fire risk and facilitate a change from a native plant community to a non-native grassland. There are many erosion control techniques available to stabilize soil until revegetation occurs. Mulching, fiber rolls, silt fences, straw matting, wood chips, logs, and other materials can help hold the soil in place and slow runoff. Be sure that the material you use is free from weeds.

Evaluate the condition of streams and roads on or near your property. The increased runoff due to fire can cause sedimentation which can be detrimental to aquatic life. Large wood and other debris from the fire can affect streamflow. Culverts and waterbars are commonly used to channel drainage. Make sure culverts are maintained and properly sized to accommodate the runoff.

Flooding and debris flows can be serious problems after a fire. Control flows with sandbags, gravel bags, check dams, fiber rolls, and other temporary or permanent materials. In some cases, you may need to consult an engineer or other expert for advice."[43]

As well, if you are in the unfortunate situation of losing your home to fire, learn from the fire in terms of what areas burned around your property versus those that didn't. Design your

[43] Forestland Steward, Spring 2004, page 1.

new fire-safe landscaping with this in mind. Perhaps most importantly, build or rebuild your home with fire resistant materials, as described in Fire Safe Building Materials and Reducing Structural Ignitability.

Finally, there is a "Checklist for Residents Returning Home" developed by PG&E that can be found in Appendix I, Fire Safe Literature.

4. Local Agency Fire Issues

4.1 *Land Management Agencies*

There are several agencies in the upper Mattole planning area that are responsible for land management. All of these agencies either have fire suppression and/or land management responsibilities for lands within the planning areas. Below is a brief description of these entities, as well as issues that affect fire planning on the adjacent private lands within the upper Mattole planning area.

Bureau of Land Management

The US Bureau of Land Management (BLM) manages the King Range National Conservation Area (KRNCA) as well as fire suppression in conjunction with the California Department of Forestry and Fire Protection (CDF) and local volunteer fire organizations. It has a King Range fire station at Thorn Junction with one staffed wildland fire engine that is available both locally and nationally, which means the engine could be called away from the upper Mattole to fight fires anywhere in the nation.

KRNCA roughly follows the Mattole watershed on its western side. It includes the very popular Lost Cost trail.

> The KRNCA includes approximately 58,000 acres of public and 6,000 acres of private lands, located along the rugged northern California coast…. An abrupt wall of mountains thrusts 4,000 feet above the Pacific, making the area one of the most spectacular and remote stretches of coastline in the continental U.S. The elemental beauty and ever-changing mood of the Pacific Ocean meeting the wild, undeveloped coastline, old-growth forests and rugged peaks of the King Range inspired the original [National Conservation Area] designation, and continues to draw people from all over the world to visit the Lost Coast of California. Visitors pursue a wide variety of activities, including hiking and backpacking eighty miles of trails, camping, beach-combing, surfing, hunting, and vehicular touring and sight-seeing on a 100+ mile network of BLM and county-maintained roads, environmental education, and wildlife viewing. Additional uses involve special forest products collection (mostly wild mushrooms) and livestock grazing by several local ranchers.[44]

The BLM recently updated its management direction for the KRNCA. The following information is from the KRNCA Proposed Resource Management Plan and Final Environmental Impact Statement regarding current fuel conditions in this area:

> No existing data is available for determining fuel load conditions and no current sampling is planned. However, local fire management personnel estimate that current fuel loads exist in a range that varies from 80 to 200 tons/acre. Visual observations

[44] US Dept. of Interior (DOI), Bureau of Land Management, King Range National Conservation Area, Proposed Resource Management Plan and Final Environmental Impact Statement. November 2004, pg. ES-1.

> reflect a variety of fuel conditions, including areas having both sparse and heavy duff/litter layers. Some areas have little to no existing ladder fuels, while other areas have very heavy ladder fuels, conditions that allow wildfire to reach into the canopy structure of stands.[45]

As previously mentioned, the 2003 Honeydew fire burned extensively throughout the KRNCA. According to Tim Jones, Fire Management Officer for the BLM's Arcata Field Office, the Honeydew fire burned approximately 2,700 acres in the Mattole watershed. Of that, he estimates "less than 5% was high severity fire behavior, almost all near the top of Honeydew Creek. Roughly 25% was moderate severity, with the remaining low severity."[46] In terms of other recent fire history in the KRNCA:

> Humans caused 36 of 44 fires (82 percent) of the total fires that have occurred over the 24-year period….There is a four-fold increase in human-caused fires in the 1990 decade when compared against the 1980 decade….[A]lthough the majority of human-caused wildfires in the KRNCA have been caused by recreation visitors, almost all of these fires have been small and limited to the coastal slope. In contrast, most of the large devastating wildfires began on private lands east of the KRNCA and spread onto public lands, or from lightning strikes on the ridgetops. This can be attributed to the fact that severe fire conditions are associated with offshore wind conditions.[47]

The following document from the National Fire Plan, Hazardous Fuels Reduction, California highlights some of the successes of the BLM at reducing fuels in the King Range.

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[45] US DOI, pg. 3-122.

[46] Tim Jones, Fire Management Officer, BLM, personal communication, 6/17/04.

[47] US DOI, pg. 3-126.

Figure 4. BLM National Fire Plan Report on Hazardous Fuels[48]

California

The Arcata Field Office with the NorCal BLM Hazard Fuel Modules, the California Department of Forestry and Fire Protection (CDF), and through private contractors has developed and maintained 18.2 miles of shaded fuel breaks in the King Range National Conservation Area. The fuel break system is designed to reduce the potential fire spread from the remote sections of the King Range National Conservation Area to the wildland/urban interface surrounding the federally registered Communities-At-Risk of Honeydew, Ettersburg, Whitethorn, and Shelter Cove.

The King Range National Conservation Area is under the direct protection for fire suppression by the CDF. On September 3, 2003 the Humboldt-Del Norte Ranger Unit of the California Department of Forestry and Fire Protection experienced a significant lightning event, resulting in 64 wildland fires. Resources were thinly spread, with priority placed on fires immediately adjacent to residences.

The #10 and #11 fires in the King Range National Conservation Area were placed in a monitor status until resources were available. They burned together on September 4, made a significant run, and crossed the road below the ridgeline. Upon reaching the ridgeline the fire bumped against the Saddle Mountain Shaded Fuel Break and which significantly slowed its forward rate of spread. When fire suppression resources became available and arrived the following day, the fire had crossed the Saddle Mountain Shaded Fuel Break for less than half an acre. Fire engines and handcrews were safely able to perform a backfiring operation along the fuel break for about ¾ mile. The #10 fire was contained on September 8, 2002, at 226 acres.

(Left) Saddle Mountain shaded fuel break stops the fire from spreading. (Right) Firefighters conducted burnout operations along the fuel break.

[48] Hhttp://www.fireplan.gov/reports/416-430-en.pdfH

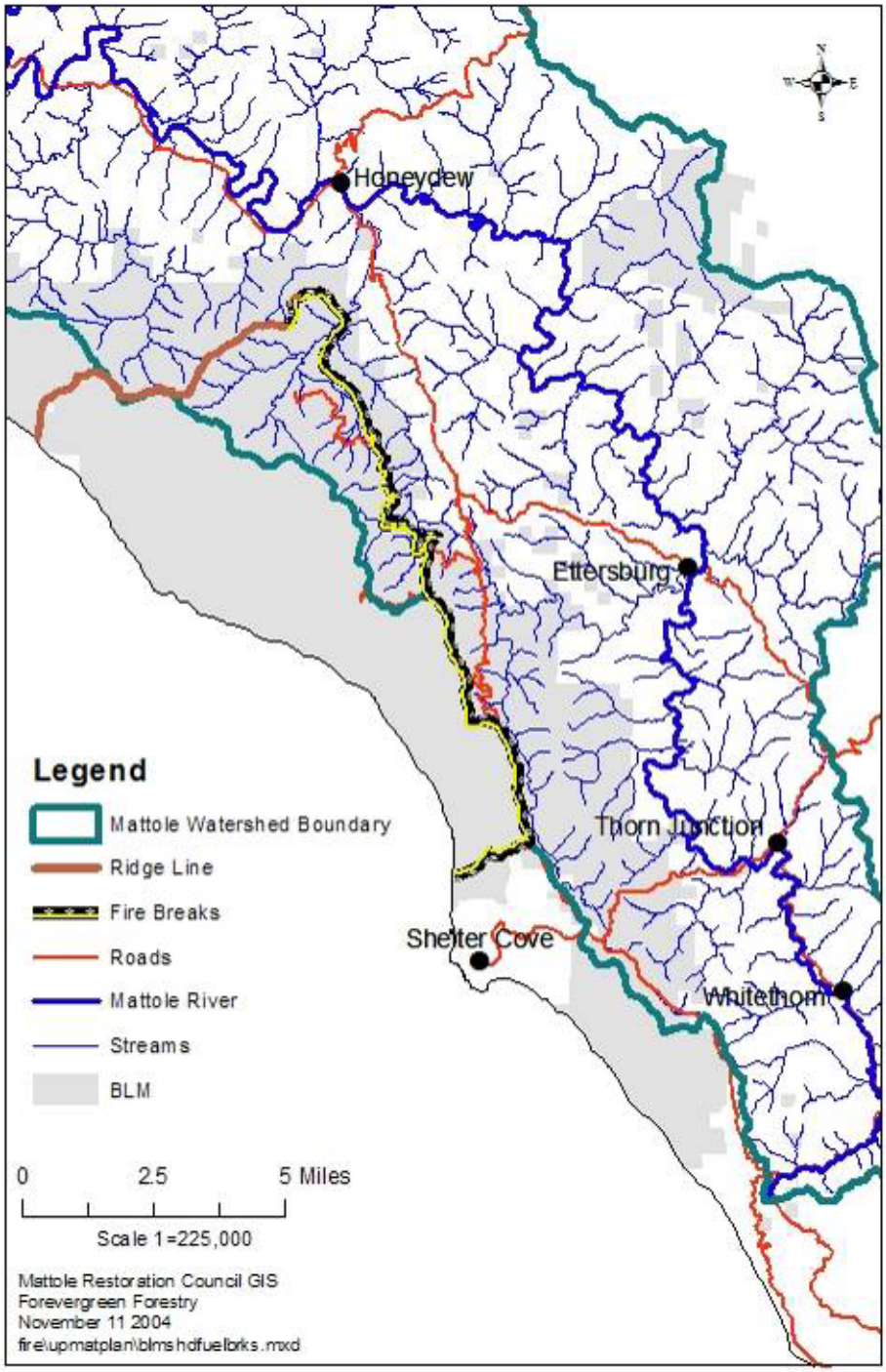
In terms of current fire management practices, the BLM is undertaking an active fuels reduction program, including mechanical treatments and prescribed burning.

> Little to no prescribed fire (broadcast burning) applications have occurred. Instead, slash has been cut, piled, and burned, which is labor intensive and costly work. A shaded fuel-break system is an integral part of BLM's suppression planning, and is approximately twenty miles long. The system is currently about 55 percent completed.[49]
>
> The main fuel break system runs east from Kaluna Cliff to the King Peak Road, and continues north to the Horse Creek Trailhead and up the ridgeline to Horse Mountain. It then follows the ridgeline north to the Buck Creek Trailhead and down to the King Range Road. From the north end of King Range Road the fuel break goes down Bear Wallow Ridge to Honeydew Creek and up to the Smith-Etter Road. Finally, it runs parallel to the Smith-Etter road along the ridgeline to the west, terminating at the North Slide Peak Trailhead….Additional locations currently planned include the 2003 dozer line on the Fire Hill (from the King Crest Trail to a slide above the beach), Paradise Ridge and Finley Ridge. Other locations may be added to meet the objectives of the area fire management plan….[50]

[49] US DOI, pg. 3-126 – 3-127.

[50] US DOI, pg. 4-61.

Map 6. BLM Shaded Fuel Break System



The Proposed KRNCA Plan consolidates management units into three geographic zones: Backcountry Zone, Frontcountry Zone, and Residential Zone.

The Backcountry Zone is the largest of the zones and includes the western coastal slope of the King Range, the Chemise Mountain area, and portions of the Honeydew and Squaw Creek watersheds. This zone covers 38,833 acres. It is essentially roadless, with a primary management goal focused on recognizing and managing this unique and

> primitive undeveloped coastal area…. The Frontcountry Zone covers 25,661 acres and forms an interface between the Backcountry Zone and surrounding private lands. It represents a broad mix of uses and tools for management. This is the zone where the most active resource restoration actions would occur, with key goals of developing a more natural vegetation mosaic in previously harvested forest stands, and improving watershed and fisheries health. Protection of private lands adjoining the KRNCA from wildfire risk would also be a primary focus. On-the-ground management activities would include forest stand improvement, fuels reduction work, firebreak construction, or use of heavy equipment for watershed restoration. Public uses in the Frontcountry Zone would include an extensive array of activities, including special forest products harvesting, fuelwood cutting (in specific locations), mountain biking, and camping in existing developed facilities...[The] 2,944-acre [Residential] zone represents the town of Shelter Cove, which is mostly private land except for approximately 180 acres of beachfront lots and coastal greenspace managed by BLM.[51]

The Frontcountry Zone is the interface area of most concern in this plan. This is the area where BLM is focusing its fuel reduction efforts.

The following is a summary of proposed wildland fire direction for the KRNCA.

- Full suppression of all fires, regardless of cause, within the Frontcountry and Residential Zones to protect human life and property and natural/cultural resources both within and adjacent to agency administered lands.
- Utilize prescribed fire and mechanical fuel reduction methods to manage fuels for low intensity wildfires and reduce fire spread potential within the Frontcountry and Residential Zones.
- Permits required for all campfires outside of developed campgrounds.
- In the Backcountry Zone, allow naturally ignited fires to burn. Manage fuels for variable intensity wildfires to create a landscape resistant to damages associated with large, high intensity fires, yet allow for the natural, dynamic effects of fire on the ecosystem. Suppress all human-caused fires in these zones, as well as natural fires that BLM and CDF agree may threaten private property, but minimize direct attack where possible. Practice Appropriate Management Response[52] within the Backcountry Zone to the extent it remains safe for fire suppression forces and does not pose a risk to adjacent private property.
- Complete and maintain planned fuel break system. The system may be augmented through fuels reduction using broadcast burning. Extend the system, if opportunity arises, in areas such as Paradise and Finley Ridges.
- Perform burned area rehabilitation to mitigate damages associated with wildfires.

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[51] US DOI, pg.s 4-1 – 4-5.

[52] Appropriate Management Response is the response to a wildfire based on an evaluation of risks to firefighter and public safety, the circumstances under which the fire occurs, including weather and fuels conditions, natural and cultural resource management objectives, protection priorities, and values to be protected. The evaluation must also include an analysis of the context of the specific fire within the overall local, geographic area, or national wildland fire situation.

- Assist CDF in wildfire prevention and education.
- Use prescribed fire in Frontcountry and Backcountry Zones for fuels reduction, forest health, and unique habitat improvement.
- Explore opportunities for stewardship contracts with local interests to meet goals of hazardous fuels reduction.[53]

Arcata BLM staff are active participants in local fire safe councils (FSC), both the Lower Mattole FSC and Southern Humboldt FSC. It is expected that this relationship will continue as long as current management staff are in place, and will facilitate many future cooperative fuels reduction projects. Currently, cooperative efforts should be centered on connecting the public and private land fuel break systems. Additionally, BLM can offer great service and support to the FSCs in providing fire safety education and materials to both local residents and visitors.

BLM is an active partner in addressing wildfire risks in the Mattole. Most of their actions will have an impact on the adjacent community of Shelter Cove, especially when local extreme fire weather conditions dictate fires burning towards the west or southwest. Most BLM property here is west of the planning area. For those scattered private parcels within the planning area, BLM can continue to cooperate on projects via the Southern Humboldt and Lower Mattole Fire Safe Councils.

California Department of Parks and Recreation, Sinkyone Wilderness State Park

The Sinkyone Wilderness State Park reaches into the southernmost section of the Planning Area, near Four Corners and Whale Gulch.

> Since its creation in 1973 Sinkyone Wilderness State Park (SP) has been known for its rugged coastline, sweeping ocean vistas, beaches, cultural resources, and recreational opportunities. The Park stretches for approximately 19 miles along the Pacific Ocean between Usal Beach and Whale Gulch and includes the Shadowbrook property and river corridor parcels along the Upper Mattole River. Included within the approximately 6,800 acres which comprise the park are small redwood groves, coastal terraces dominated by grass and brush, coastal scrub, and mixed conifer/hardwood forests. Visitation to the park includes day users, campers, and backpackers. The community of Whale Gulch is just northwest of the northern end of the coastal portion of the park. Sinkyone Wilderness SP is known for its rugged character and steep slopes.
>
> The California State Parks (CSP) are currently preparing a general plan for Sinkyone Wilderness State Park which will provide a long-term management approach and a planning framework that addresses the various management challenges facing the park. The California State Parks prepared a wildfire management plan for Sinkyone Wilderness SP in 1997. This plan is currently under review by the Mendocino Unit of the California Department of Forestry and Fire Protection (CDF). The wildfire management plan outlines strategies and approaches for wildfire suppression within

[53]Bullet list provided by Tim Jones, Fire Management Officer, BLM, personal communication, 5/11/04, from US DOI, pgs. 3-60 to 3-65.

the park and if signed by both the California State Parks and CDF will guide fire-fighting efforts. The plan calls for maintenance of defensible space around CSP buildings and structures and provides specifications for clearing standing and down vegetation within campgrounds and picnic areas. The park clears around campsites and picnic areas every year. Vegetation management around campsites, picnic sites and structures will reduce the chances of a wildfire starting at one of these locations.

The steep slopes found within Sinkyone Wilderness SP contribute to the potential for high fire intensity and difficult fire control conditions. More than half of Sinkyone Wilderness SP has a slope exceeding 50%. Over 77% of the park has a slope exceeding 26%. The steep slopes and continuous fuels make fire fighting challenging.

Sinkyone Wilderness SP has conducted prescribed burns on the coastal terraces between Jones Beach and Needle Rock to control exotic plants and prevent conversion of the vegetation from grass and shrub to conifer forest. The Department of Parks and Recreation and CDF are currently working on plans to prescribe burn those same coastal terraces again in 2005. In addition there have been discussions between CDF and CSP on ways to assist in the control of wildfires originating in the park from reaching the community of Whale Gulch.[54]

The California State Parks (CSP) are currently preparing a general plan for Sinkyone Wilderness State Park which will provide a long-term management approach and a planning framework that addresses the various management challenges facing the park. As a portion of the general plan preparation process, CSP has met with CDF and discussed ways to assist in controlling wildfires originating in the park from reaching the Whale Gulch community.[55]

State Parks participates in the Lower Mattole and Humboldt County Fire Safe Councils. Their efforts to reduce fuel hazards on Park lands in Humboldt Redwoods State Park through old-growth forest recruitment in cooperation with the Lower Mattole Fire Safe Council is commendable. More active participation by State Parks in the Southern Humboldt Fire Safe Council is needed to ensure coordination of activities for maximum fire safety for the upper Mattole communities.

Upper Mattole River and Forest Cooperative

The Upper Mattole River and Forest Cooperative, a collaborative entity, grew from what was originally named the Sanctuary Forest Reserve by its founders. This unique area was created by active local community members concerned over the planned removal of old-growth forest in the upper Mattole by industrial timberland owners. The beginnings of this forest protection organization centered on the efforts of the

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[54] Stephen Underwood, Associate State Park Resource Ecologist, California Department of Parks and Recreation, personal communication, 7/16/04.

[55] Steve Horvitz, District Superintendent, California Department of Parks and Recreation, personal communication, 9/13/04.

Redwoods Monastery, a community of Cistercian monastic women, whose members encourage local citizens to have reverence and respect for the trees and the beauty and contemplative quiet of the area.

The nonprofit organization Sanctuary Forest, Inc. was created. Its mission was to conserve the threatened old-growth Douglas fir and redwood parcels remaining in the Mattole headwaters and surrounding areas.

Over the course of the next fifteen years various parcels of forest were placed into conservation status through collaborations with state, private, and nonprofit entities…. In 1999 … the signing of a memorandum of understanding [created] the Upper Mattole River and Forest Cooperative (UMRFC). Signatory participants to this agreement are: Sanctuary Forest, Save-the-Redwoods League, Restoration Forestry, California State Parks, California State Coastal Conservancy, California Department of Forestry and Fire Protection, Bureau of Land Management, California Department of Fish and Game.[56]

In conjunction with the UMRFC, "the Southern Subbasin [of the Mattole] contains 4,538 acres of old-growth and second-growth mixed conifer forestlands held or to be held primarily for wildlife protection that form a nearly contiguous unit beginning at Anderson Creek and continuing to Four Corners. This is approximately 25% of the Southern Subbasin planning area. Approximate acreage of protected old-growth forest in the reserve is 1,500 acres…. The remaining ownership in the planning area is comprised approximately of 50% privately owned small homesteads and 25% industrial timberlands, primarily those of Barnum Timber Company."[57]

Table 3. Current UMRFC Ownership[58]

UMRFC Land Owner	Acres
California Department of Fish and Game	1,391
Restoration Forestry	949
Sinkyone Wilderness State Park	813
Sanctuary Forest (SFI)	491
Save-the-Redwoods League	414
Bureau of Land Management	94
Redwoods Monastery (cooperating participant)	353
Ravenswatch (SFI conservation easement)	14
Stage Coach Grove (SFI conservation easement)	11

[56] Sanctuary Forest, Upper Mattole River and Forest Cooperative Pre-Planning Analysis, February 2004, pg. 3.

[57] Sanctuary Forest, pg. 6.

[58] Sanctuary Forest, pg. 7.

The following is a list of fire management issues generated as part of UMRFC's cooperative management planning process:

- How will we establish emergency planning for the public/private matrix?
- What role will prescribed burning play?
- What will be the role of other fuel reduction activities?
- How will we develop roads and trails for fire management?
- How will we address and evaluate the impacts of historic versus current fire regimes, a fire return interval?
- What fire management is needed to maintain wildlife habitat?
- Can we, and if so how, mesh all fire plans for the area? (BLM, CDF, Sinkyone)[59]

Upper Mattole Fire Plan staff attended two meetings of the UMRFC, in February and May, 2004. At those meetings, the above-listed questions were discussed, as well as general fire management direction. Some of these issues are addressed throughout this plan, including emergency planning, proposed fuel reduction, shaded fuel breaks, and integration of different fire management plans.

The crux of how to proceed on many of these issues comes down to what is most ecologically appropriate for the area–for example, the return of fire to forests after excessive fuels have been removed – versus what is socially feasible in this dense wildland/urban interface community. With increased fire safety and preparedness on the part of all local residents, returning fire to the wildland landscape becomes more realistic, which is also more appropriate ecologically.

Sanctuary Forest will be tackling these questions for the UMRFC in the coming year. The Southern Humboldt Fire Safe Council could provide an excellent forum to address these issues across local jurisdictional boundaries, and with residents from throughout the planning area.

4.2 Fire-Fighting Agencies[60]

All local fire agencies participate in "mutual aid"— Beginnings, Honeydew, Shelter Cove, Telegraph Ridge, Whale Gulch, and Whitethorn. Mutual aid means that one department can call on other departments to assist them on an emergency call. New "auto aid" agreements are also being developed for this area. Auto aid means that the secondary agencies are automatically dispatched at the same time as the home area fire agency. Auto aid is either in place or being developed for the following areas:

- Thorn Junction—Whitethorn and Telegraph
- Blue Slide and China Creek—Beginnings and Telegraph
- Ettersburg—Telegraph and Honeydew[61]

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[59] Sanctuary Forest, pg. 9.

[60] Much of the data for this section is taken from raw survey data from the Humboldt County Master Fire Protection Plan, 2003.

A common issue for all volunteer fire organizations in the area is the aging population of the firefighters. There is an obvious lack of younger residents becoming and staying active in local fire organizations. Whale Gulch is the only local fire agency with a solid group of young firefighters. This has the potential to become a serious issue for all the rural residents who depend on volunteer firefighters for first response emergency fire and medical assistance.

All local volunteer fire organizations are in need of upgraded fire-fighting equipment, as most have trucks that are at least thirty years old. There is an additional need for training, water storage, and funds for all of this and other unexpected expenses. Whale Gulch Volunteer Fire Company has no fee-base to support it, and hence is stretched especially thin. Most firefighters are already overtaxed with their volunteer fire-fighting duties, and do not have time to take on the extra effort required of fire safe council volunteers implementing community fire safety education and fire hazard reduction projects. Rather, local fire safe councils (FSCs) can help support local fire-fighting organizations. Of course, volunteer firefighters can be an excellent fire expertise resource for fire safe councils, as they generally have very good working understanding of defensible space, and local fire issues and priorities on the landscape. The challenge to FSCs is how to make the best use of firefighter expertise while requiring minimal time commitment.

For a list of local fire agencies and contact phone numbers, see the table below.

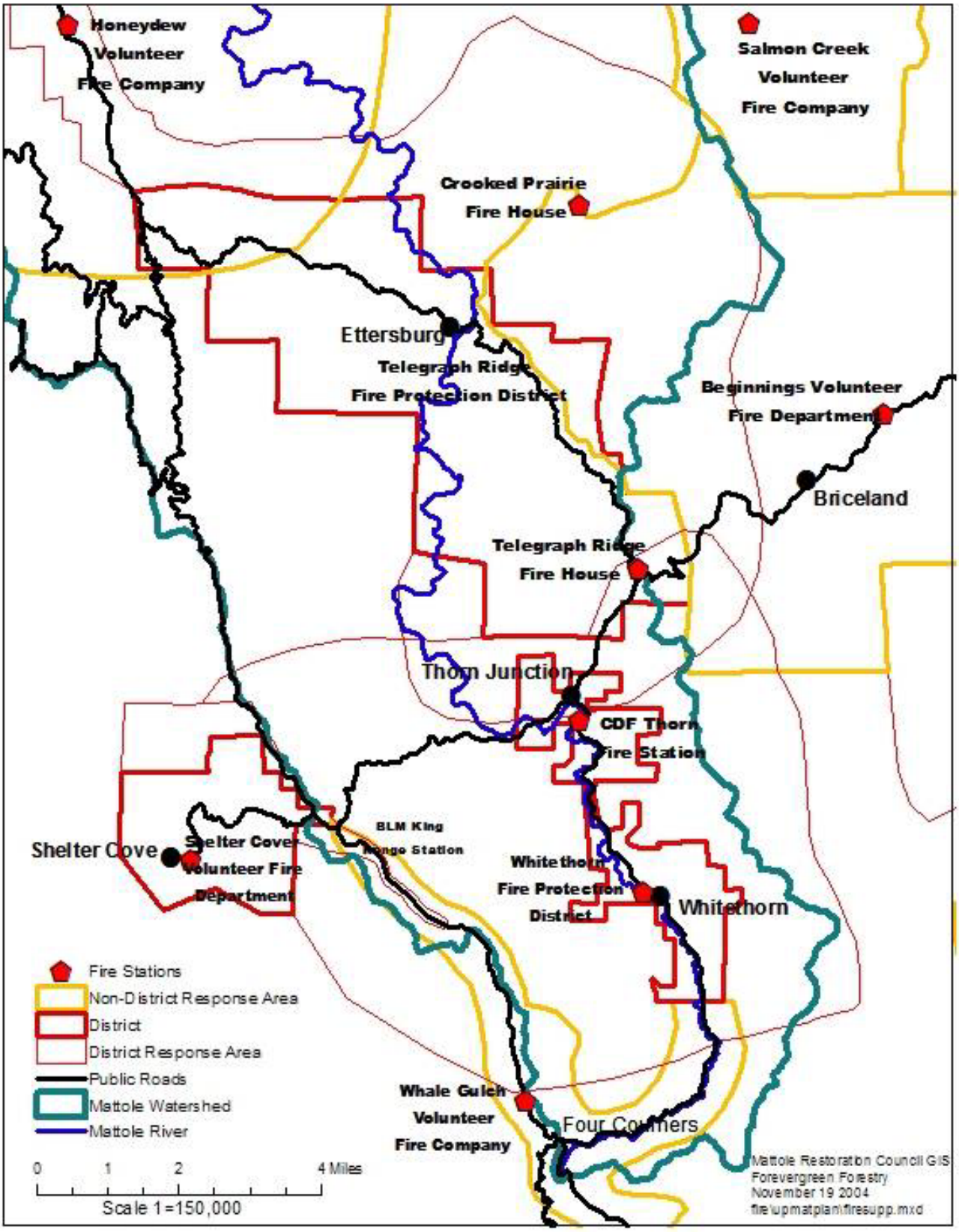
Map 6 shows both the service areas and official districts of local volunteer fire agencies. There are only two tax-based districts in the area, Telegraph and Whitethorn. These are the areas that are officially covered by these organizations, and are assessed an annual fee to support them. The service areas are those locales where these organizations provide service, depicted generally as a larger area on the following map (since they usually reach beyond official district boundaries when necessary).

Table 4. Fire Organizations in the Upper Mattole

Fire Organization	Chief/Captain	Non-Emergency Phone
Telegraph Ridge Fire Protection District	Peter Lawsky	986-7488
Whale Gulch Volunteer Fire Company	Leif Larson	223-1091
Whitethorn Fire Protection District	Ben Fieseler	986-7728
Beginnings Volunteer Fire Department	Tim Olsen	223-0822, 923-7204
BLM King Range Fire Station	Matt Shugert	986-5400, 825-2306
CDF Thorn Station	Don Scarlett	986-7553, 923-2645

[61] Honeydew Volunteer Fire Company has a new fire station on Wilder Ridge that is closer than the Telegraph Station to Ettersburg, although Ettersburg is part of the Telegraph Fire Protection District.

Map 7. Volunteer Fire Organizations Service Areas and Stations



Beginnings Volunteer Fire Department (BVFD)

Briceland's BVFD is part of Beginnings, Inc. They provide first-response emergency fire and medical service to the Blue Slide area of the Mattole (as well as an approximately 26-square-mile coverage area of more than 2,000 permanent residents[62]). Sixty percent of BVFD's service area is more than fifteen minutes' response time away from the station. The Blue Slide area is likely over twenty minutes' response from the Briceland fire station. BVFD is one hundred percent supported by fundraising and donations. BVFD has twelve active volunteer firefighters, all of whom have radios and turnouts (fire-fighting clothing).

BVFD currently has the following equipment: 2,500-gallon water tender, 1,500-gallon water tender, 200-gallon with foam wildland fire (brush) truck, 500-gallon pumper brush truck, 100-gallon brush truck, and a 750-gallon pumper structure engine. In addition, they have an ambulance and another 500-gallon pumper brush truck planned to arrive in 2004. Much of this equipment is over 30 years old.

In 2004, two members of the neighboring Crooked Prairie Fire Crew worked with BVFD to access a 200-gallon brush truck housed in Crooked Prairie using the BVFD organizational structure. The Crooked Prairie station will be maintained, with the addition of one more BVFD engine (likely the 500-gallon pumper brush truck) and two qualified BVFD certified firefighters. Crooked Prairie also has a quick-attack fire truck and a neighborhood water truck.

In addition, BVFD is now in communication with Blue Slide residents regarding housing an engine there, likely near a home in the upper part of the neighborhood. The 100-gallon brush truck may be moved to that location if three local residents are willing to train and be active BVFD fire-fighters.

BVFD has identified their current needs as:

- Two more wildland fire brush trucks (4x4)
- Over bank equipment (new basket stretchers, back boards, z-haul pulleys, ascenders, carabiners)
- AED (Auto External Defibrillator for heart attack victims) and extraction equipment
- HazMat training

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CDF) operates the Thorn Station during summer fire season in Whitethorn (generally June through November). It is staffed with three people, and one wildland engine. CDF has primary responsibility for the State Responsibility Area, which is basically everywhere in this planning area that is not within a fire protection district *(see Table 4)*. Furthermore, CDF has mutual aid agreements with most volunteer fire organizations to provide fire response along with them. This is especially crucial when the CDF station is not staffed, either when it is closed after fire season,

[62] Tim Olsen, personal communication.

or if the local engines are gone on another fire somewhere else in the state. CDF also provides direct protection for wildfires on BLM lands.

Telegraph Ridge Fire Protection District

This volunteer fire agency is one of a few official fire "districts" in the area. This means that they have an official service area, and property owners pay an annual fee to support the district. (Resident property owners pay $30/year, unoccupied parcels pay $10/year.) That fee provides 95% of the organization's funding. The reality is—like most fire protection districts—that the fire-fighters provide service to an area much greater than their district boundaries. The district is run with a five-member board in conjunction with a volunteer fire company. Telegraph's eight volunteer firefighters respond to ten to twenty calls a year, although from Christmas 2003 to July 2004, they already had fifteen calls, including mutual aid. Roughly half of their calls are medical or traffic-related, with the remainder being fire. They estimate that they serve 300-500 permanent residents in an eight- to ten-square-mile area. Over 75% of the area has a greater-than-fifteen-minute response time.

Telegraph has one fire station located at the south end of Ettersburg-Honeydew Road. It houses one wildland fire engine with 500 gallons of water, and one wildland fire (brush) truck with 175 gallons. They are in the process of building a fire department meeting and training space from funds derived from sales of t-shirts commemorating the Honeydew and Canoe fires.

Telegraph Fire has identified its current needs as:

- Better radios for vehicles
- Newer wildland fire engine
- Newer, better structure gear and SCBAs (self-contained breathing apparatus)
- Meeting space in firehouse with seating area (in process)
- GPS (global positioning system) equipment
- VCR and monitor in a training area with videos for training
- Rescue and over-the-bank training
- Good Map Book—The map book (an Upper Mattole Fire Atlas) will be produced as part of this project.

Whale Gulch Volunteer Fire Company (WGVFC)

The WGVFC has approximately eighteen active volunteers. Only some of those firefighters are equipped with radios and/or protective fire clothing (Nomex or turnouts). One hundred percent of their funding comes from fundraising and donations. They have a fire station across from Whale Gulch School with a 1500-gallon water tank. WGVFC has two wildland fire engines. There is a need for one more good place for water storage. Also need help/crews for brushing to create defensible space.

At the Whale Gulch neighborhood fire meeting, part of the discussion focused on the needs of WGVFC to better protect their very remote community. Communication was identified as

an area needing the most attention. The following suggestions were specific to improving local emergency communication:

- Improved committees at VFD
- Need better communication equipment (antenna for local radio communication, hand-held radios, CBs, base fire radio and dispatch)

The WGVFC is facing the issue of providing worker's compensation insurance like many other volunteer fire organizations. WGVFC has been in communication with Humboldt County and the Southern Humboldt Fire Chief's Association regarding acquiring necessary insurance. One local suggestion for covering these costs is to implement an "adopt a firefighter" program, where specific donations would be used to cover worker's compensation insurance and other expenses (e.g. training and gear) for specific firefighters.

Whitethorn Fire Protection District (WFPD)

Whitethorn is also a fee-based fire protection district, like Telegraph Ridge, which provides one hundred percent of their revenue. There are eight active volunteer firefighters. They have a fire station in Whitethorn with two wildland fire engines. Whitethorn provides first response emergency fire and medical services to approximately 300-400 permanent residents. Sixty percent of those residents are located within a ten-minute response time, with another fifteen percent located more than fifteen minutes from their station. WFPD responds to between twelve and eighteen calls per year. Approximately 15% are structural/residential fire, 25% are wildland fire, and the remaining are medical, traffic, or rescue.

WFPD has identified the following needs:

- Upgrade fire trucks (both are more than thirty years old)
- Radios
- Turnouts/Nomex (fire-fighting clothing). They currently do not have enough for all the firefighters.
- Training programs

5. Community Input Process

The development of this Plan was designed from the very beginning to allow for maximum community input. This aimed to ensure that local interests were accurately reflected and that recommended projects would be enthusiastically implemented. The entire area was divided into nine "neighborhoods." These "neighborhoods" were developed based on population centers, access, and watershed boundaries. Initial outreach to residents in the upper Mattole included a mailing in early December to 833 addresses. The mailing was sent to every absentee landowner in the Upper Mattole (from Four-Mile Creek on Wilder Ridge to Four Corners), all boxholders and rural routes in Whitethorn (where there is a post office), every resident landowner that has a post office box not at the Whitethorn Post Office, and approximately twenty agency or nonprofit personnel. In addition, newspaper articles were written in the two local papers. *(See Appendix IV for some meeting outreach literature.)* Following this outreach, an initial meeting was held at the Whitethorn Grange to introduce the project. This was followed up with nine neighborhood meetings, a mailing to select residents who were unable to attend the meetings, and the drafting of this document.

5.1 Introductory Meeting—Whitethorn Grange, December 4, 2003

An introduction to the project, fire-safing, and the Southern Humboldt and Lower Mattole Fire Safe Councils was held at the Whitethorn Grange on December 4, 2003. At that meeting, project staff and representatives from most of the agencies concerned with fire management in the Mattole made presentations to more than forty community members. Topics discussed included an introduction to the Upper Mattole Fire Plan, fire safety and defensible space, the Southern Humboldt Fire Safe Council, and local volunteer fire-fighting efforts and concerns, and BLM and CDF fire issues. The presentations were followed by an open discussion. Presenters included:

- Chris Larson, Executive Director, Mattole Restoration Council
- Kim Price, Fire Prevention Officer, California Department of Forestry and Fire Protection
- Tim Jones, Fire Management Officer, Bureau of Land Management
- Ben Fieseler, Chief, Whitethorn Fire Protection District
- Tim Olsen, Chief, Beginnings Volunteer Fire Department
- Ian Sigman, Lower Mattole Fire Safe Council/Honeydew Fire Company
- Dave Kahan, Full Circle Forestry
- Tracy Katelman, ForEverGreen Forestry
- Cybelle Immit, Advanced Planning, Humboldt County Community Development Services Dept.

5.2 Neighborhood Meetings—January through March

Following the initial meeting at the Grange, a series of neighborhood meetings was organized to allow for more focused discussions and more detailed community input. Extensive outreach was done by the MRC to encourage residents to attend their neighborhood

meetings. As stated, a mailing was sent to 833 recipients in early December announcing the project and meeting schedule. In addition, many phone calls were made to residents in each neighborhood in the week prior to the neighborhood meeting. Finally, public service announcements were made regularly on KMUD radio, as well as printed in the *Independent* and *Life and Times* local newspapers. *See Appendix IV for meeting posters and outreach literature.*

Following is the list of neighborhood meetings conducted:

Neighborhood Meeting Schedule

- Telegraph Ridge, January 6th
- Whitethorn, January 21st
- Four Corners, January 22nd
- Ettersburg, January 28th
- Whale Gulch, January 29th
- Dutyville, February 4th
- Huckleberry Lane/Nooning Creek, February 5th
- Blue Slide, February 18th
- Thorn Junction, March 16th

Meetings were held at someone's home in the neighborhood or a local community venue, and lasted from 6:30 to 9 p.m.

Neighborhood Meeting Structure

The agenda for the nine neighborhood meetings was generally as follows:

1. Introductions
2. Introduction to and discussion of fire safety and defensible space. Why bother? What are the benefits? Especially:
   - "winners and losers"
   - clearance around homes
   - clearance along roads
   - what to do with thinned materials
   - road conditions and fire engines
   - water sources
   - what to do in case of a wildfire
   - safe zones
3. Discussion of fire history in the neighborhood. What are your memories, and real experiences of fire there? How did it start? Where was it? What happened? How big was it? When was it? What did you do?
4. Where do you think a fire would start in this neighborhood and why? Identify high-risk and hazard areas. Mark on map with orange highlighter.
5. What can we do to reduce fire risks in the neighborhood? Can we reduce the probability of ignitions? If so, how and where? Can we remove fuels in high fire hazard areas? If so, how and where? Do we need more water storage in specific places? If so, where? How and where do you think National Fire Plan funds could be spent most effectively in your neighborhood? What are the projects that can be done without these funds?
6. Identify these projects and mark on map with yellow highlighter. Including:

- fuel reduction work
- additional water storage
- road improvements for fire-fighting access
- other priority neighborhood projects

7. Develop the local fire fighting atlas. Mark and identify on maps: roads (with local names), road outages/slides, gates, water tanks, power lines, homes, important outbuildings, domestic animals, etc.
8. Choose a neighborhood representative for the Southern Humboldt Fire Safe Council.

These neighborhood meetings provided very useful community input. They offered a range of perspectives and experience.

Upper Mattole Fire Atlas

A series of maps is being created out of these meetings that will be useful to firefighters, especially those from outside the area who come to fight fire in the Mattole. The *Upper Mattole Firefighter's Information Atlas* will display locations of occupied dwellings and other important structures and resources. It will also show locations of known water sources and road problems that could prevent fire truck passage. In order to maintain the confidentiality of participating landowners, this information will only be distributed to local firefighters.

The Atlas has been completed to a first draft level, and sent out to about seven local firefighting experts for review. As of November, 2004 the MRC received comments from one department, but expects to receive comments from the others over the winter. In general, further work on this project awaits additional funding, for which the MRC is currently seeking local foundation support.

5.3 The Southern Humboldt Fire Safe Council

At the neighborhood meetings, representatives were chosen to participate in the Southern Humboldt Fire Safe Council (SHFSC) for each neighborhood. The SHFSC has been in existence since 2002. It includes community members from as far as Salmon Creek and Palo Verde, and many places in between. SHFSC meets regularly, either at Beginnings or the Garberville CDF Station. Together with representatives from the various affected agencies, the SHFSC works together to collectively address long-term community fire issues. You can reach SHFSC at: POB 1381, Redway, CA 95560, or c/o Joel Ficklin, 707-845-3282.

5.4 This Document, The Upper Mattole Fire Plan

This Plan is designed to capture and document the concerns of the community at the preceding events. A draft was circulated throughout the upper Mattole watershed and to participating agencies for community review during the summer of 2004. The final Upper Mattole Fire Plan was published in November 2004. It is intended to be used by the Southern Humboldt Fire Safe Council, the Mattole Restoration Council, and the larger community to guide their fire hazard reduction activities in the short to medium term.

6. Project Prioritization Process

Following the neighborhood meetings, concerns expressed there and otherwise known were summarized into a series of priorities.

Biological priorities are based on known areas of ecological importance in the upper portions of the Mattole watershed, from data and experience of the MRC, Sanctuary Forest, and Mattole Salmon Group. These include ecosystems at risk, such as remnant stands of ancient forest.

The Mattole River, its estuary, and tributaries are of key biological importance, especially in the upper reaches that are included in this plan. If a large fire burned into the riparian areas, it could raise water temperatures for fish and otherwise threaten aquatic creatures' survival. A fire could also destabilize the banks, increasing erosion and water temperatures. It would take a tremendous fire to burn vegetation close to the river—as it is generally moist—but it is certainly possible. A major fire in the upper slopes of the watershed could also have catastrophic effects on the river if tremendous amounts of sediment are released into the water from upslope soil erosion. The 1973 Finley Fire burned many riparian areas in the Thorn Junction and Bear Creek areas, some of which are still in ecological recovery. Many of the creeks in that area have not yet been re-colonized by native frogs and salamanders.

Safety priorities are those priorities that were principally identified at the neighborhood meetings regarding the ability of a neighborhood's residents to safely survive a wildfire. Of special concern is emergency evacuation. Clearing brush from alongside tight forest and ranch roads is a concern that was identified in several neighborhoods as a priority. Another significant safety concern throughout the upper Mattole is adequate water supply for fire fighting. Given that the threat of wildfires is greatest in the late summer and fall when springs, creeks, wells, and even the river can run dry, water storage for fire fighting is of utmost importance. This is especially critical here where the river has run dry in recent years. Members of the Mattole River and Range Partnership—including the MRC, the Mattole Salmon Group, and Sanctuary Forest — are actively implementing a water conservation program in this area that will have the added benefit of water storage for fire fighting. *See Appendix V, Water Conservation, for more information.*

Economic and Cultural priorities were identified as any known business that operates within a neighborhood and employs other local residents. There are many local businesses—often run from someone's home—that were not included, as it was assumed that they do not employ others.

In areas where known merchantable timber exists, these were identified as economic priorities in order to protect long-term timber resources. Finally, there are a few areas of active rangeland in the upper Mattole. In most cases, fire enhances rangelands by clearing brush and improving the grasslands. However, in the case of a catastrophic fire, serious economic losses could occur if livestock were to die, fences destroyed, etc. Safety measures to protect livestock, such as accessible fire fighting water sources near feeding or containment areas, may be able to help this situation somewhat.

Cultural priorities are those sites of important social or cultural significance to current residents, such as schools, historical sites, etc. Where known, indigenous cultural sites were also included.

The list of **recommended projects** at the end of each neighborhood section was derived from those projects identified as being biological, safety, or economic priorities as described above. Projects are prioritized based on the total number of residents served, or degree of fire danger. Project readiness—how soon the project could be implemented—was also considered, along with potential sources of funding. Projects that could be started immediately with volunteer labor were sometimes given priority here, as well as projects where partnering agencies may be able to come up with resources to assist in project implementation. Projects that are already underway were lowered in priority to encourage new projects. These recommended projects are identified as a place for residents, the SHFSC, and MRC to begin actively addressing issues of fire preparedness and fuels reduction in the upper Mattole.

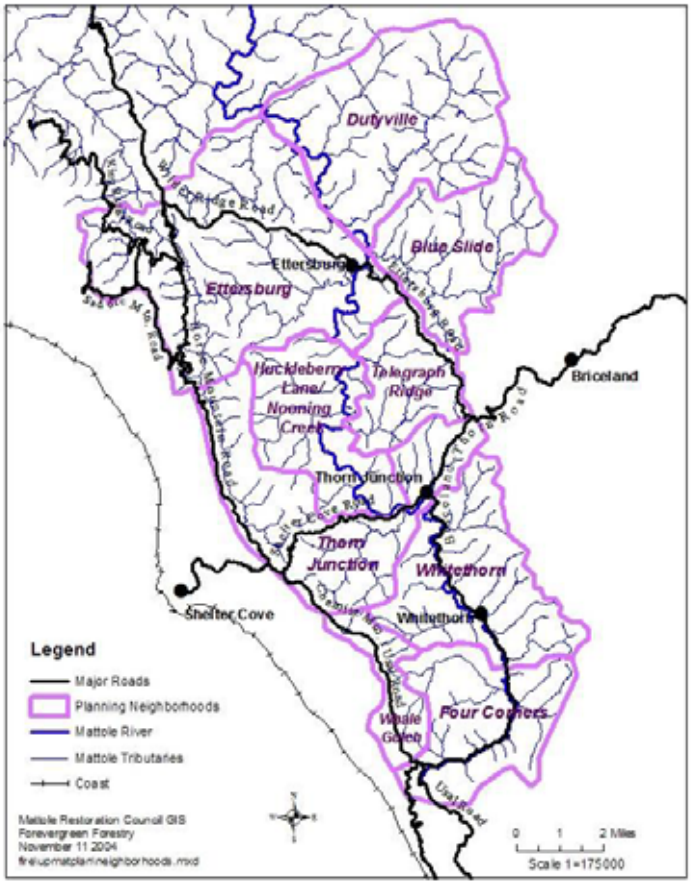
7. Comments and Recommendations from Neighborhood Meetings

What follows is a detailed discussion of concerns identified at each meeting, recommended projects, and the name of the neighborhood Fire Safe Council representative.

These notes contain some of the key points brought up in the neighborhood discussions. As previously stated, all meetings started with an extensive introduction to fire-safing. Additional information about fire-safing is available in *Appendix I.* As you will see in many of these notes, points were brought up at neighborhood meetings that are applicable to the entire upper Mattole area.

The following neighborhood information is organized geographically, starting at the north end of the "upper Mattole"[63]—the Dutyville/Ettersburg area of south Wilder Ridge—and continuing upstream towards the headwaters and Whale Gulch. Hence, the information is presented in the following order: Dutyville and Crooked Prairie, Ettersburg, Blue Slide, Telegraph Ridge, Huckleberry Lane/Nooning Creek, Thorn Junction, Whitethorn, Four Corners, and Whale Gulch. The neighborhood meetings did not occur in this order; each meeting report lists the date. *See Map 8* below for the approximate boundaries of the neighborhoods.

Map 8. Upper Mattole Fire Safe Planning Neighborhoods



[63] The Lower Mattole Fire Plan covered the area from the mouth of the river upstream to Wilder Ridge. This plan commences at that point in the watershed and continues to the headwaters.

7.1 Dutyville/Crooked Prairie

Dutyville/Crooked Prairie Neighborhood Description

The Dutyville neighborhood is comprised of homesteads ranging from ten to several hundred acres. It was settled in 1921 and supported the community of "Doodyville," the name apparently only being changed in recent years, by the County of Humboldt. The entire Dutyville neighborhood has one road in and out—the Dutyville Road. That dirt road leaves the paved Ettersburg-Honeydew (also known as Telegraph Ridge) county road just before it crosses the Mattole River near Ettersburg. It heads downstream, roughly parallel with the river, providing access to Fire Creek and Crooked Prairie, and eventually Blue Slide. This section of the road has narrow, heavily wooded spots that are in need of brushing. The road then crosses Mattole Canyon Creek, winds around and eventually passes through a series of small parcels before climbing up Duty Ridge. Some refer to the upper section of this road as "Duty Ridge Road," while others refer to it as "Dutyville Road" all the way to the top. It is approximately thirty minutes from the junction with the county road to the population centers of Redway and Garberville, and the nearest grocery stores. Telegraph Ridge Fire provides emergency response here.

Crooked Prairie is a small neighborhood of approximately four square miles adjacent to Dutyville. There are about 35 parcel owners with 45-50 year-round residents. The average size of the parcels is 40 - 80 acres, with a few 160-200 acre homesteads. This area was subdivided and settled in the late '60s / early '70s following the last big wave of logging. The primary access for the community originates at the county maintained Ettersburg Road at the Mattole River crossing. The first half mile of gravel road, called "River Road" or "Dutyville Road," is privately maintained with costs shared between the Crooked Prairie and Dutyville road associations. The next 3 miles of road is maintained by Crooked Prairie Community Association (since 1982) with voluntary road assessments. This section of the road is steep in places and overgrown almost everywhere, though it is in well within the CDF requirements of a 12' x 12' opening. At the top of the prairie is the Firehouse and the road splits into 2 forks, each with their own ad hoc road associations. West Fork (which actually heads south) ties into the Fire Creek community at about 1.5 miles. East Fork becomes China Creek Road at about 2.5 miles; and this eventually leads out to the county maintained Briceland-Thorn Road about 3 miles west of Briceland. Crooked Prairie residents formed a fire crew (Crooked Prairie Fire Crew, CPFCP) in the mid '70s following the disastrous Finley Creek Fire of 1973 (12,832 acres) which was the second fire in three years to threaten the community. For many years the volunteers were a real "hot shot" crew throughout southwestern Humboldt County. They assisted and encouraged the development of Beginnings Volunteer Fire Department, Telegraph Ridge Fire Department, and Honeydew Fire Department. Larry Heald was the fire chief for the first 25 years, and wrote the book *Homestead Fire Prevention*. Currently Crooked Prairie Fire Crew is a small uninsured group of volunteers responding only to the immediate neighborhood. Prevention, education and personal preparedness continues to be the main focus of CPFC.

The area is home to mixed hardwood forests, with Douglas fir, tan oak, and madrone as primary components. Much of this area was logged in the last sixty years, leaving many areas of dense young forest.

Dutyville/Crooked Prairie Neighborhood Meeting

The Dutyville meeting was held on February 4, 2004, at Robie Tenorio and Gil Gregori's home.

Neighbors present included: *Robie Tenorio, Gil Gregori, Claudia Thompson, Colum Coyne, Sherri Luallin, Jim Macy, Peter Genolio, Malcolm Stebbins, Laura Smith*.

Staff and agency representatives present included: *Sabrina Stadler (MRC), Jessica DeKelver (MRC), Chris Larson (MRC), Don Scarlett (CDF), Tracy Katelman (ForEverGreen Forestry).*

The following bulleted items are a summary of neighborhood comments and concerns:

Dutyville/Crooked Prairie Fire History

- The 1973 Finley Creek Fire (12,832 acres) was the closest large fire to this neighborhood.
- The 1970 Clark's Butte Fire (2,850 acres) burned the northern regions of this area. There are no other known large fires.

> When I first moved out here, in 1975, my in-laws were visiting late summer, and we were up at Crooked Prairie. A grass fire started downslope of us and was fanning out like mad, no houses, no development, no water. Boots and shovels were NOT making it. The in-laws, no spring chickens, poured the couple of gallons of water they had into a five gallon bucket, stuffed the picnic blanket into it to get it wet, and each took an end; they waltzed along the fire line laying the blanket down onto the fire for a minute or less, picked up and moved along a blanket length at a time, and THEY put that fire out! The other four younger, strong, and not inexperienced persons (me too) altogether did less than half as much line, though we did follow and 'spot' once we caught on. I thought at first we were seeing the beginning of catastrophe; no water, no phones short of the school or Frenches', no CB, and the fire moving way faster than we were… – Malcolm Stebbins[64]

Dutyville/Crooked Prairie Water Sources

- Jonah Love is a potential contact for pond-building needs.
- Telegraph Ridge fire trucks have 500- and 175-gallon water storage capacity.
- The Crooked Prairie Volunteer Fire Crew maintains a 200 gallon "quick attack" truck with an additional 300 gallons nearby for refill.
- Potential drafting at Mattole Canyon Creek.

Dutyville/Crooked Prairie Evacuation and Safe Zones

- The safe zone identified for Dutyville is the Mattole Canyon Creek delta.

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[64] Malcolm Stebbins, personal communication, 8/31/04.

- A possible evacuation route if Dutyville Road closes would be to cross the Mattole River on foot at Mattole Canyon Creek delta, and head through the Ochoa property along a road to Wilder Ridge Road near the Council Madrone.
- There are no other known evacuation routes from Dutyville Road.
- Traditionally the meeting place for Crooked Prairie has been the firehouse at the "top of the prairie".

Dutyville/Crooked Prairie High Fire Risk[65] and Hazard[66] Locations

- Several common ignition sources[67] for the area were identified, including: water pumps, house fires, indoor marijuana growing, electrical fires, arson, around structures, and lightning strikes.
- Campfires on the Mattole Canyon Creek delta.
- Places where people park, especially the junction of Dutyville and Crooked Prairie roads.
- The close proximity of homes along Dutyville Road where there are several 10-acre parcels (this parcel size is small for this area).
- China Creek subdivisions.

Dutyville/Crooked Prairie Potential Projects

- Fuels reduction along Dutyville Road starting at Ettersburg Road, and continuing past the Gregori residence.
- Upper Dutyville/Duty Ridge Road.
- Clearing around dense areas in the Crooked Prairie neighborhood.
- Create a shaded fuel break for the Crooked Prairie community from the county road at Ettersburg to the eastern boundary at China Creek (and beyond if possible).
- Encourage the creation of a shaded fuel break along China Creek Road out to the Briceland-Thorn Road.
- Ask PG&E to move power lines around Mattole Canyon Creek to provide easier access for helicopter getting water.

Dutyville SHFSC Neighborhood Representatives: Laura Smith and Jim Macy.

Crooked Prairie SHFSC Neighborhood Representatives: Kathy Weber and Ellen Orlofsky.

Dutyville/Crooked Prairie Biological Priorities

The Mattole River and Mattole Canyon Creek are both known habitat for coho and Chinook salmon and steelhead. Taking steps to maintain the riparian canopy is important here. Crooked

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[65] Fire Risk is generally related to the chance of a fire starting in a certain place i.e., a likely ignition source.

[66] Fire Hazard is related to the amount of fuel in a given place: the more fuel the higher the hazard.

[67] As these ignition sources are common to all areas in this plan, they will not be listed in other neighborhoods, unless a specific place is mentioned in relation to such an ignition source.

Prairie Creek and Fire Creek are biologically diverse areas with pockets of old-growth forests worthy of further study.

Dutyville/Crooked Prairie Safety Priorities

The Dutyville neighborhood is one of the more remote neighborhoods in the Upper Mattole, in that all residents live on a one-way in and out, private gravel road. Many local residents use four-wheel drive vehicles to access their properties along this road. The lower stretch of Dutyville Road, from the intersection with Ettersburg Road (county-maintained, paved) to the intersection with Mattole Canyon Creek Road, is an area used by all residents to access the county road. This stretch of road is also the primary access for residents of Crooked Prairie and Fire Creek, and an emergency evacuation route for Blue Slide Creek. There are sections of this commonly used stretch of road that are narrow and overgrown. Brushing and maintaining this section of Dutyville Road to create a shaded fuel break for evacuation is a priority for this neighborhood.

The upper portion of Dutyville/Duty Ridge Road as it leaves the dense subdivision (ten-acre parcels) along the river and climbs the ridge is a major concern in this neighborhood. This road would be an excellent location for a shaded fuel break, as it separates the Grindstone Creek watershed from the Mattole Canyon Creek watershed. It provides access for at least twenty residences. This is a critical evacuation route, as there are no other known vehicular escape routes from here. A shaded fuel break here will give residents a better chance of escaping a large wildfire. Further identification of the road network and residences at the top of Dutyville is a priority to assist local firefighters in this neighbor-hood, as well as to identify critical evacuation routes for that area.

Crooked Prairie is fortunate to have several access options: Ettersburg Road to the west, Briceland-Thorne Road via China Creek Road to the east, and Fire Creek Road to the south. A route through Salmon Creek is also an emergency evacuation option. Most property owners have deeded access through more than route. In the event of a major fire it is agreed that all locked gates would be opened for evacuation. The Crooked Prairie community can also offer access to the Fire Creek, Blue Slide and Salmon Creek communities if necessary. In fact, during the Canoe Fire of 2003, CPFC was in communication with the Salmon Creek community for the coordination of a possible evacuation of Salmon Creek residents through the Phelps ranch north of Crooked Prairie.

Dutyville/Crooked Prairie Economic and Cultural Priorities

There are no known businesses with employees in this neighborhood.

Dutyville/Crooked Prairie Recommended Projects

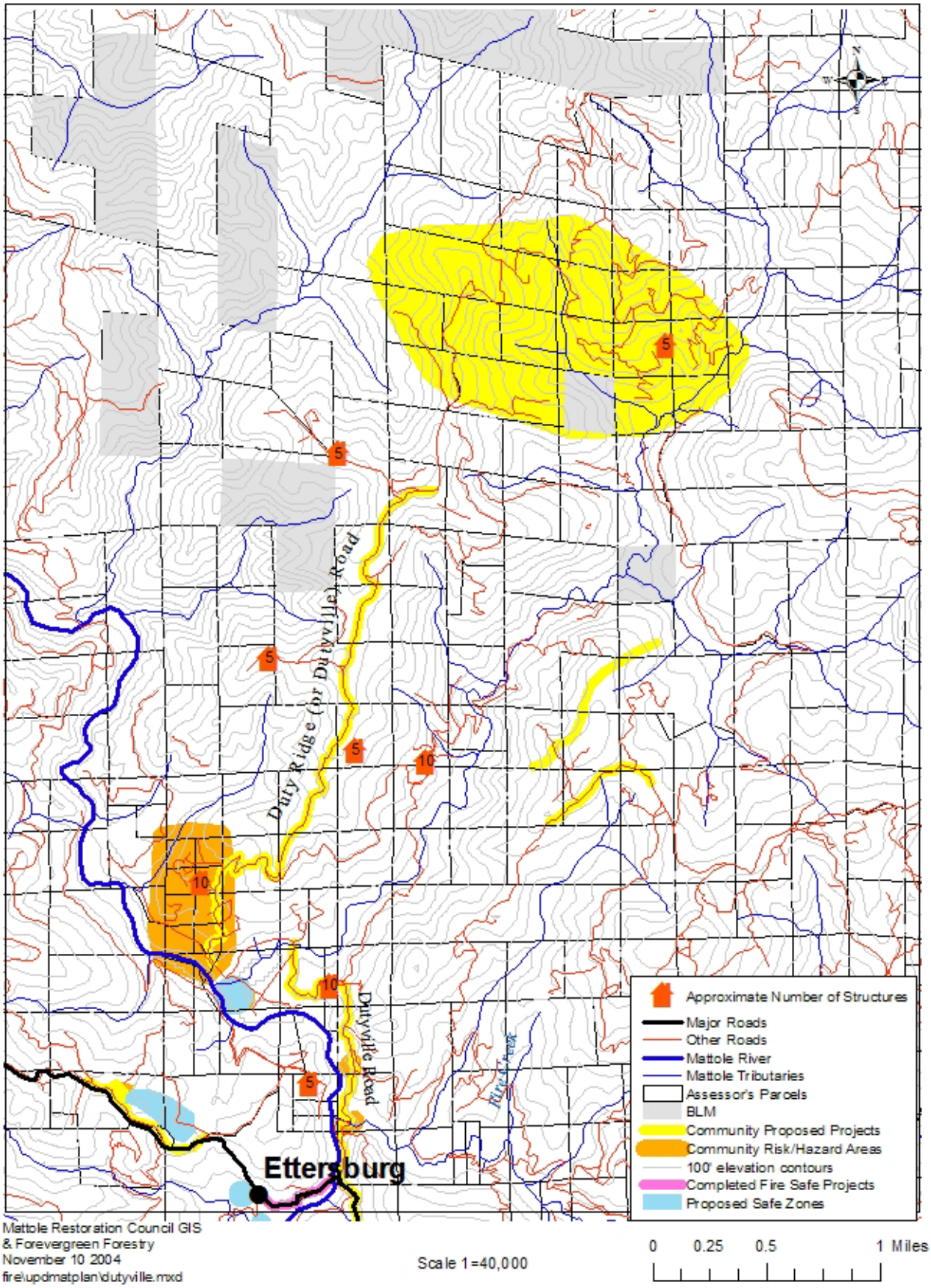
The highest-priority projects proposed for Dutyville/Crooked Prairie are:

1. Create a shaded fuel break along the lower portion of Dutyville Road, from the Ettersburg Road junction to Mattole Canyon Creek Road, and another short section as it passes through the subdivision before it climbs to Duty Ridge.

2. Residents must be diligent in creating their defensible space, as that will likely provide the best opportunity for surviving a wildfire. This should be done to 100 feet in most places, and up to 200 feet on steep slopes. Assistance is available from CDF, SHFSC, and several local contractors.
3. Create a shaded fuel break along the upper portion of Dutyville Road as it starts to climb to the top.
4. Create a shaded fuel break along all of Crooked Prairie Road including East Fork and West fork.
5. Inventory roads and residences on upper Dutyville Road for emergency access and evacuation.
6. Continue community outreach to new neighbors and adjacent neighborhoods to educate and encourage fire safety.

The following map shows information identified at the Dutyville community meeting. This same format is used for each of the neighborhoods discussed in this Plan. Please note that the approximate structure numbers per area are likely far below actual occupancy.

Map 9. Dutyville Community Identified Risks, Hazards, and Projects



7.2 Ettersburg

Ettersburg Neighborhood Description

The Ettersburg community was a large and early settlement. There are several pastures and large meadows in this turn along the river. The forest is generally mixed hardwood, with scattered parcels of Douglas fir, including an old-growth patch southeast from here across the river. This neighborhood has several large ranches. In this way, it is distinct from all other neighborhoods in the upper Mattole, and more similar to areas of the lower Mattole. Most homesteads here are along the paved county road, known as the Ettersburg-Honeydew Road. The road name changes to the Wilder Ridge Road in Ettersburg, as it climbs out of Ettersburg towards the Council Madrone, Wilder Ridge, and north to Honeydew.

Ettersburg Neighborhood Meeting

The Ettersburg meeting was held on January 28, 2004, at the home of Marty and Maurie Hobbs.

Neighbors present included: *Marty (CDF) and Maurie Hobbs, Sally and Richard French, Dave Kahan, Jeremy Wallace, Michael Etter, Eric Dalshaug, Larry Goff, Paula Goldie, Doug Huajardo, Garrett French, Ken Goldie*.

Staff and agency representatives present included: *Robie Tenorio (Telegraph Ridge Fire), Tracy Katelman (ForEverGreen Forestry), Jessica DeKelver (MRC), Sabrina Stadler (MRC), Don Scarlet (CDF)*.

The following bulleted items are a summary of neighborhood comments and concerns:

Ettersburg Fire History

- Aside from the 1973 Finley Creek fire, other recent fires have been around the Council Madrone (a couple of fires resulted there from gatherings with incense and crystals, and it has been struck twice by lightning).

Ettersburg Water Sources

- Telegraph Ridge Fire Department has 175 gallons of water and ten gallons of foam in the truck, and one additional 500-gallon truck.
- CDF has 500 gallons on their truck, which can last anywhere from three minutes to one hour depending on the fire and situation.
- Local sources for water for fire fighting: The Frenches' has a reserve (two 5,000-gallon tanks), and the pond at the Goffs' is available for fire fighting use. Eric Dalshaug has an old stone tank that could potentially serve as source for water for fire fighting in the future.
- Drafting from the River from the County Road.

Ettersburg Evacuation and Safe Zones

- Evacuation is out the Ettersburg-Honeydew Road, either north to Honeydew or southeast to Redway and Garberville via the Briceland-Thorne Road.
- Safe Zones identified for this area are:

- Frenches' meadow
- Hobbs' meadow
- Goffs' pond
- Wolf Ranch

Ettersburg High Fire Risk and Hazard Locations:

- Potential ignition sources identified include power lines and drop points, and along roads.
- On the road near the Wolfs', where people stop and talk on their cell phones.
- Between the Council Madrone land and the cattle guard on Wilder Ridge Road.
- The saddle by the Council Madrone, which is very windy.
- The Mattole Canyon Creek delta is a gathering spot with lots of campfires. Fire pits are removed on a regular basis by Robie and Gil (the legally responsible landowners). They encourage other neighbors to remove any fire pits they see in the delta.

Ettersburg Potential Projects

Several residents encouraged the summer damming of the Mattole River here, but said the California Department of Fish and Game wouldn't allow it. In the past the river was dammed in the summer by Richard and Sally French. This continued until the late 1980s. The Frenches' stopped because it was too expensive, but are willing to do it again if there is financial and agency support. This was identified as a great place for helicopter water access because there are few power lines there.

Complaints have been registered with State Parks about the condition of the Council Madrone, a definite ignition source from visitors leaving crystals in the sun, campfires, and burning incense. One way to deal with the threat is to remove the damaged, dry wood from the area. Some people wanted a sign put up about the fire risk there. It was brought up that many folks like the spot, as it is a traditional/historical and sentimental place. Another suggestion was to burn the grass around the area before fire season. Finally, some suggested that the parcel should be sold back to private property owners to maintain.

It was suggested that the County should regularly mow along the road, especially near the Council Madrone, but the upkeep is high. Since this is an unlikely option, suggestions for grazing and weed whacking were offered.

Ettersburg School was <u>not</u> identified as a high fire risk area, as it was cleared this past spring.

Robie asked for Ettersburg folks to join the Telegraph Ridge Fire District. Meetings are two times per month on the 2nd & 4th Saturday at 10:00 AM; CDF assists with yearly training. Telegraph Ridge Fire had four calls between Christmas and early February 2004, (two medical and one structure fire). Gear is provided.

A location for an Ettersburg fire department/fire station was discussed. Should the Ettersburg area be covered by Telegraph Ridge? Would it be possible to acquire another fire-fighting engine? More involvement in the Fire Department was brought up as a need. Eric Dalshaug is willing to go to meetings, which are now on Telegraph Ridge (they used to be in Ettersburg). Tax/coverage

questions surfaced, and a solution of spreading the current tax over the entire response area was suggested. However, since this would have to be voted upon by all landowners within the service area it was determined unlikely.

Additional water storage is needed: a good place is State Park land, but currently there is no water there. Maybe the Ettersburg School? Maybe somewhere on Wilder Ridge? Schools could work for water storage for engines, but helicopters cannot dip buckets out of tanks at schools.

Ettersburg SHFSC Neighborhood Representative: Eric Dalshaug.

Ettersburg Biological Priorities

The Mattole River is known habitat for coho and Chinook salmon and steelhead. In addition, the Mattole Salmon Group has trap sites as part of its "Mattole Salmon Stock Rescue Program"[68], in the river at Ettersburg and in Bear Creek just above its confluence with the Mattole. Protecting the riparian canopy in these areas is especially critical for the health of local salmonid species. As previously mentioned, there is a patch of old-growth forest here as well, one of the last remaining in this section of the watershed.

Ettersburg Safety Priorities

The safety priorities in the Ettersburg area are related to ignition sources, water storage, and fire-fighting capabilities.

Many residents were concerned with the Council Madrone as an ignition source because of visitation to the site. The Council Madrone was formerly the largest madrone tree on Earth, until it fell in February 2000. The downed tree is still in place as part of the long-term protection for the site. It is on an approximately two-acre parcel owned by the California Department of Parks and Recreation as part of the Sinkyone Wilderness State Park. There is much local and regional spiritual use there, often accompanied by candles, crystals, incense, and/or campfires. State Park fire management staff evaluated the unit's fire threat potential:

> When the Council Madrone fell it split into four major pieces which are physically separated from each other, except at the base of the tree. A significant amount of large-diameter fuel (greater than 6") remains, along with associated limb wood.
>
> Current fire risk concerns: Low visitation makes it unlikely that a wildfire will be started by the visiting public, however, the use of the site for religious rituals using candles, crystals, campfires, etc., is of concern. The grass, when cured, surrounding the remains of the tree could carry a wildfire outside the State Park. The remains of the Council Madrone are not likely to play a significant role in the spread of any such wildfire as the rate of fire spread would be higher in the surrounding grass, assuming it's cured, than in branch wood of the

[68] Mattole Salmon Group, "Five-Year Management Plan for Salmon Stock Rescue Operations," 2000.

tree. However, it is possible that branch wood from the tree is being used to start and tend campfires/rituals.[69]

The community members present at the fire planning meeting had several suggestions for remedying this situation, which were proposed to State Parks:

1. Burning the grass: This is a possible option for State Parks as a controlled-burn project, but is dependent on funding, staff availability, and approval from other agencies. According to Steve Horvitz, Northcoast Redwoods District Superintendent, all three of these factors are currently looking unlikely. Annual cutting of the grass by Parks seems like a more workable solution.
2. Removing the tree: State Parks was given this property by Save-the-Redwoods League (SRL) with a deed restriction that requires State Parks to protect the tree in perpetuity. Therefore, this is not a legal possibility as long as Parks owns and manages the piece.
3. Sell the property: Again, given that this was originally purchased by SRL, the property would only be able to be sold to SRL, or with SRL's permission.
4. Add signs, other development: According to State Parks, the SRL deed restricts any development beyond what is currently at the site.

To quote from the local State Parks representative again:

> What we (State Parks) can do: reduce the amount of small wood around the tree that might represent a fire hazard. 'Construct' a 'firebreak' between our property and our neighbor. The firebreak will require CEQA[70] [analysis] and a work force. Small wood removal from around the tree might make a nice community project. The area is currently (or has historically been) used by cattle, and this helps to keep the grass low and reduces the threat somewhat.[71]

A second proposed project in Ettersburg was in relation to water storage for fire fighting. Several neighbors expressed interest in renewing the summer dam on the Mattole here. As mentioned, this annual dam was retired because of financial constraints. Local residents are willing to share in the costs, but would need outside financial support to be able to recreate the dam.

The first question was whether such a project would still be permissible given current regulations. The California Department of Fish and Game was contacted and provided the following response:

> The Mattole River is on EPA's[72] California 303(d) impaired water list due to elevated sedimentation and water temperatures. Summer dams normally degrade instream conditions in many ways. A couple of the potential effects of summer dams on juvenile salmonids include reduced water quality and restricted or blocked fish passage. Among many other recommendations, both the Mattole River Watershed Assessment Report and

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[69] Steve Horvitz, Northcoast Redwoods District Superintendent, Humboldt Redwoods State Park, personal communication, 4/29/04.

[70] California Environmental Quality Act

[71] Horvitz, 2004.

[72] Environmental Protection Agency

the Coho Salmon Recovery Strategy Plan recommend measures for improving water quality and fish passage within the Mattole River watershed. Due to the presence of federally- and state-listed Chinook, steelhead, and coho, development of a summer dam within the Mattole River in the Ettersburg area would not be recommended.

The 1600 streambed alteration agreement process is the legal procedure for this type of project.[73]

In addition, there was no support for this project from local conservation organizations. Their concerns are also based on fish passage and summer water temperature issues as they relate to the health of salmonid populations.

Finally, concerns were expressed regarding the availability of fire-fighting equipment in this area. Previously, Telegraph Ridge Fire had an engine in Ettersburg. Now, the closest Telegraph Ridge engines are at the other end of Ettersburg Road, near the Briceland-Thorne Road. According to Telegraph Ridge Fire, there is a need for at least one active Fire District volunteer firefighter in this neighborhood. Marty Hobbs, a local resident, is a CDF Fire Captain. The nearest fire engine to this area is housed at the new Dan Trower Honeydew Volunteer Fire Company station on Wilder Ridge. Telegraph Fire and Honeydew Fire are developing an "auto aid" agreement for Ettersburg, so both organizations are notified immediately of fires in the Ettersburg area.

Ettersburg Economic and Cultural Priorities

There are several working ranches in this neighborhood with active grazing and timber production. The practices on these ranches tend to reduce fire hazards. The Ettersburg School is on the edge of this neighborhood. The old Ettersburg schoolhouse is now the Hobbs residence. This is an important historical site for this neighborhood and as such needs protection from fire.

Ettersburg Recommended Projects

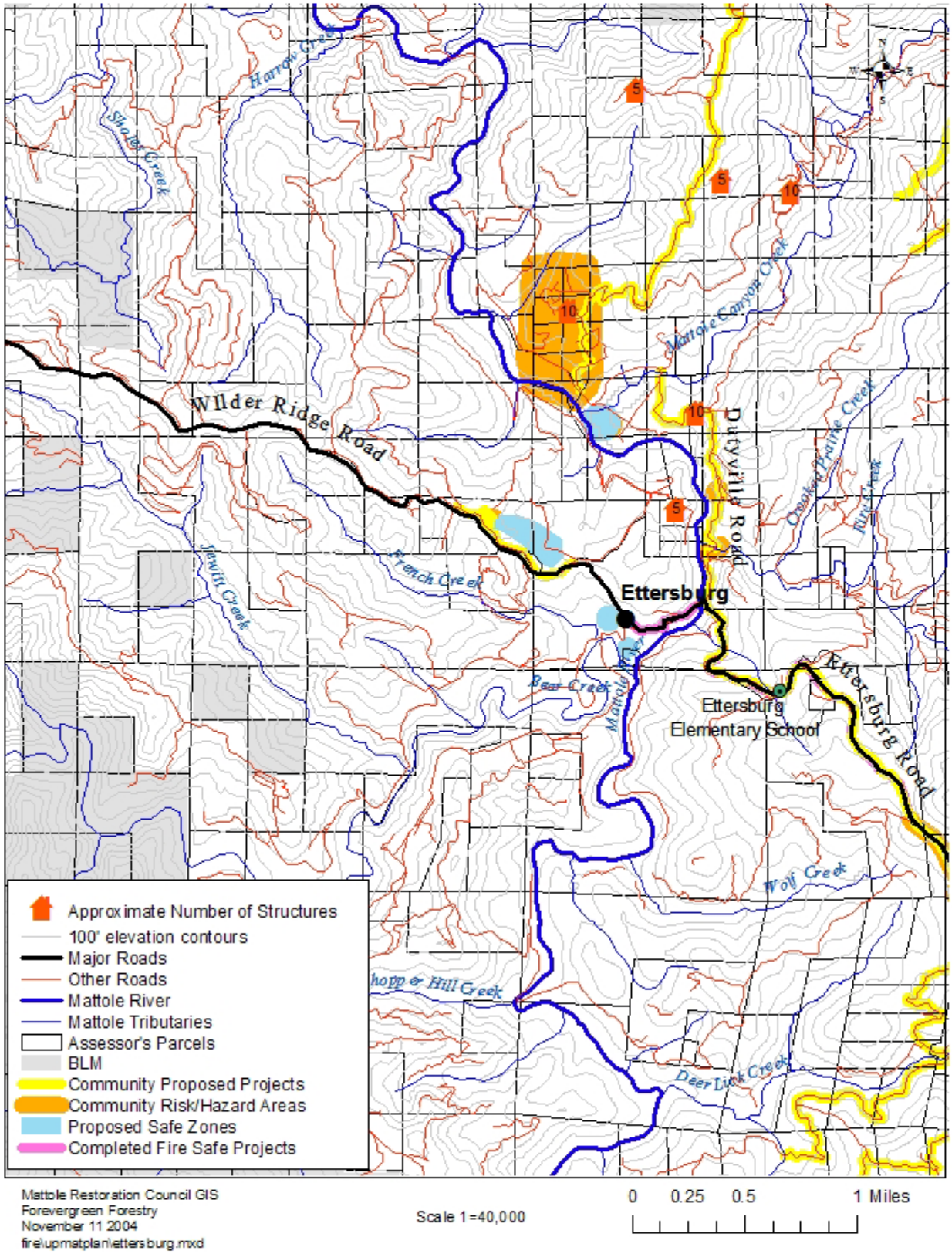
The highest-priority projects proposed for Ettersburg are:

1. Development of an active role with Telegraph Ridge Fire, including training residents in this area as firefighters.
2. Residents must be diligent in creating their defensible space, as that will likely provide the best opportunity for surviving a wildfire. This should be done to 100 feet in most places, and up to 200 feet on steep slopes. Assistance is available from CDF, SHFSC, and several local contractors.
3. Annual mowing or cutting of the grass around the Council Madrone in mid- to late summer by State Parks.
4. SHFSC, MRC, and State Parks meeting with neighborhood residents to identify workable education solutions to reduce fire risks around the Council Madrone. This could start with outreach by all parties to site visitors, whether they are local or not. Community education regarding the possible fire danger to nearby residents from the use of candles, incense,

[73] Michelle M. Gilroy, District Watershed Biologist, California Department of Fish and Game, personal communication, 5/7/04.

and such at the site would be helpful. The local grapevine is a great way to spread information.

Map 10. Ettersburg Community Identified Risks, Hazards, and Projects



7.3 Blue Slide

Blue Slide Neighborhood Description

The Blue Slide neighborhood is disjunct from the rest of the Mattole watershed in that access is provided principally from Briceland Road east of Ettersburg Road via China Creek Road. This is another very remote neighborhood with four-wheel-drive vehicles recommended on the private gravel road. Slides and road outages are common here in winter, especially on the less-traveled roads. Back access roads exist from Blue Slide along Crooked Prairie to Dutyville and Ettersburg Road or Salmon Creek to the west. These private roads require permission to access, but could likely be used for emergency evacuation.

This area is forested primarily in young, dense, mixed-conifer/hardwood forest. Douglas fir dominated forests are found throughout much of these headwaters, including a small patch of old growth. Most of these forests have very high fuel loads.

Blue Slide Neighborhood Meeting

The Blue Slide meeting was held on February 18, 2004, at the home of Nancy Noll.

Neighbors present included: *Giuliane Bratton, Fritz Oppliger, Katy Stern, Alison Jones, Mary Darby, Eric Martin, Jill McClure, Cheryl Goldman, Behr, Beth Bennett-Allen, Deborah Orlando, Francine Allen, Marty Wansick, Jamie Sheaffer, Todd McClure, Jama Chaplin, Robert Special, G. Albertine*.

Staff and agency representatives present included: *Don Scarlett (CDF), Tracy Katelman (ForEverGreen Forestry), Jessica DeKelver (MRC), Sabrina Stadler (MRC), Chris Larson (MRC), Tim Olsen (Beginnings VFD).*

The following bulleted items are a summary of neighborhood comments and concerns:

- Concern was expressed over the difficulty of tan oak removal, as re-growth of chopped trees is a major problem. A study by Mendocino Redwoods Co. on tan oak will be researched. *A summary of this study is in Appendix II.*

Blue Slide Fire History

- Five Corners.
- Clark Butte Fire, 2,850 acres in 1970.
- Johnda's Vineyard (shooting guns, starting fires, late '60s to early '70s).
- Since then there have been no large fires.

Blue Slide Water Sources

- Beginnings Volunteer Fire Department has between 75 and 1200 gallons available in quick-attack, structure, and engine rigs.
- Billy Rolff has a 1,700-gallon water truck and 50,000-gallon water tank in the neighborhood.
- Drafting from Mattole River at Blue Slide bridge.
- Eric and Jill have two 25,000-gallon tanks, one at the junction, the other on a separate parcel.
- Other neighbors have since installed water tanks since the community meeting.

Blue Slide Evacuation and Safe Zones

- There are two ways, both currently accessible by foot or four-wheeler, which could be used as evacuation to Elk Ridge: through the Berkeley parcel to Miller Creek, or via an old logging road that starts at Schultz's place, which connects to the Berkeley piece. These routes would take evacuees through Miller Creek Road or Elk Ridge Road to the Briceland-Thorne Road near Briceland.
- There is a bridge at Anne O'Connell's to Miller Creek that is out.
- There are also two roads that can be used as evacuation toward Crooked Prairie to the Ettersburg Road on Telegraph Ridge: Cream Sherry Road/Whitey's Road, or the end of Blue Slide Road through the Rolff property. This is a drivable private road, but it is most likely gated. There is an additional evacuation route through the Phelps Ranch to Salmon Creek and Miranda.
- One local safety zone was identified at the meadow above Nancy Noll's house.

Blue Slide High Fire Risk and Hazard Locations

- Possible ignition sources identified for Blue Slide are the County (Briceland) Road, or houses.

Blue Slide Potential Projects

- Clean up the existing fuel break along Blue Slide Road.
- Reopen the road to Miller Creek.
- Get fire stations with trucks in various neighborhoods (one in Blue Slide Creek, and perhaps another in China Creek).
- Map and identify where water trucks are; get a tank at Rick & Tony's or at the crossroads of Blue Slide and China Creeks.
- Mumser and Mary will work with the neighborhood to get permission for inmate crews to do CDF clearing along the road.
- Eric volunteered to locate all houses in the area via GPS. (This was completed and the information was passed on to the MRC for the *Fire Atlas*.)

Blue Slide SHFSC Neighborhood Representatives: Eric Martin and Mary Darby.

Blue Slide Biological Priorities

There is a patch of old-growth Douglas fir forest near the headwaters of Blue Slide Creek. The creek also supports a steelhead population.

Blue Slide Safety Priorities

Blue Slide resident concerns are centered on access and fire suppression capacity.

Clearing along Blue Slide Road has occurred in various sections over time. Upgrading this road into a shaded fuel break to increase the evacuation ability of the neighborhood is a top priority here. This break would serve all Blue Slide and China Creek residents (approximately forty

residences). CDF may be able to help implement this project using inmate crews.[74] To be successful, this would require excellent coordination with neighborhood residents. However, inmate crews are generally not allowed on private property.[75] This neighborhood is entirely private. Two residents agreed to contact their neighbors to discuss this possibility. Implementation by inmate crews would make this a very affordable project, and likely allow the project to be implemented soon. Since the neighborhood meeting, Blue Slide residents coordinated to hire Elk Ridge Forestry to brush approximately three miles of this road!

An additional priority is to enhance the evacuation route connecting Blue Slide to Miller Creek/Elk Ridge (Eel River watershed). A foot trail exists with a bad creek crossing that is currently only accessible by four-wheelers. Residents in this area want to see this passage upgraded to a 4x4 vehicle-passable road to provide emergency evacuation access. This would also provide neighboring Miller Creek residents an alternative evacuation route. Discussions to create this evacuation route are now happening between these neighboring parcels, and it is expected to be implemented in the spring of 2005.

Finally, there is a lack of nearby fire suppression equipment. It would currently take a fire truck a minimum of twenty minutes to reach many of these homesteads. Blue Slide residents are interested in working with Beginnings Volunteer Fire Department to build and staff fire stations to house one or more brush trucks in this neighborhood—one in Blue Slide and possibly another in China Creek. Following the community meeting here, neighbors developed information using a GPS[76] device to identify the location of homes and water sources. Additionally, there is a desire to map the location of existing water trucks, as well as to install a series of water tanks for fire fighting. Two recommended tank locations are Rick & Tony's, and the intersection of Blue Slide and China Creek roads.

Blue Slide Economic and Cultural Priorities

There are no known businesses with employees in this neighborhood, nor historical or cultural sites.

Blue Slide Recommended Projects

The Blue Slide neighborhood is highly motivated. Since the community meeting, they have installed water tanks, brushed the road, and worked on an alternative evacuation route. Any resources expended in this neighborhood would clearly be well spent.

The highest-priority projects proposed for Blue Slide are:

1. Continue the shaded fuel break along Blue Slide Road from the intersection with Briceland Road to the upper forks at the creek, where it was not already done by residents.

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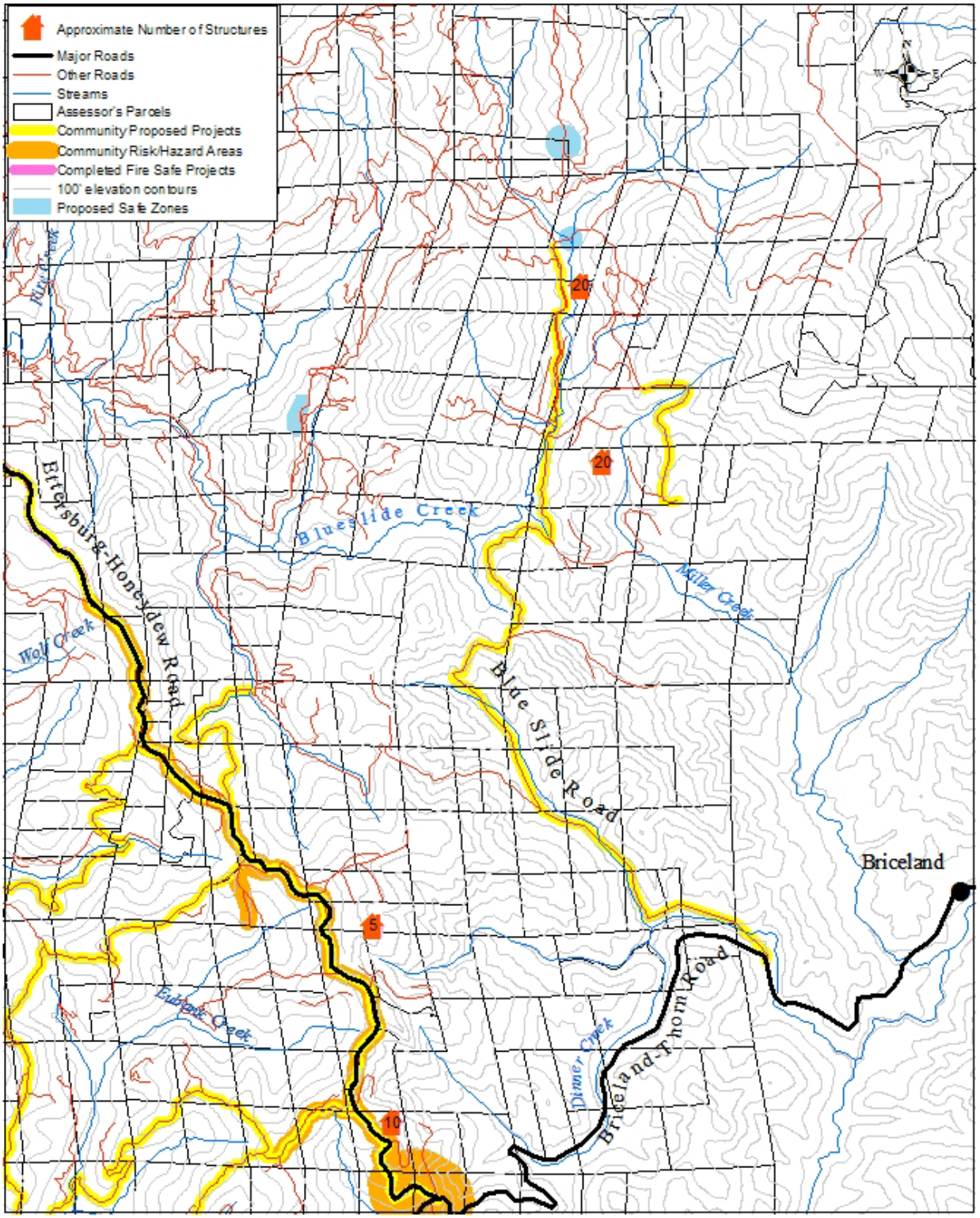
[74] Inmate crews from CDF Conservation Camps.

[75] There are specific situations where this is allowed, almost always only with private landowner permission. As a result of this upper Mattole planning process, use of these crews for fire safety projects identified in a Community Wildfire Protection Plan such as this was affirmed by CDF at the state level.

[76] Global Positioning System

2. Continue coordination with residents in upper Miller Creek to develop an alternative evacuation route, possibly implemented in conjunction with local fire-fighting organizations.
3. Work with Beginnings Volunteer Fire Department (BVFD) to: a) identify the location of existing water trucks in this neighborhood; b) find a location for a brush truck and find the appropriate equipment; and c) train several (BVFD requires at least three) local residents as active volunteer firefighters to be able to operate this new equipment. BVFD is already working with a local resident to locate an engine on her property, likely a 100-gallon capacity brush (4x4) truck.
4. Get involved in Southern Humboldt Fire Safe Council to help other neighborhoods undertake similar projects as those already accomplished in Blue Slide.
5. Residents must be diligent in creating their defensible space, as that will likely provide the best opportunity for surviving a wildfire. This should be done to 100 feet in most places, and up to 200 feet on steep slopes. Assistance is available from CDF, SHFSC, and several local contractors.

Map 11. Blue Slide Community Identified Risks, Hazards, and Projects



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7.4 Telegraph Ridge

Telegraph Ridge Neighborhood Description

The Telegraph Ridge neighborhood is located along the Ettersburg-Honeydew Road (also known locally as Telegraph Ridge Road). It begins at the intersection with Briceland-Thorne Road and runs north towards Ettersburg. This area is similar to Blue Slide in that it has dense young, mixed conifer-hardwood forests. There are several large hardwood trees along the road as it comes to large, open meadows before reaching the Ettersburg School at the northern end of the neighborhood.

Telegraph Ridge Neighborhood Meeting

The Telegraph Ridge meeting was held on January 6, 2004, at Peter and Susan Lawsky's home.

Neighbors present included: *Dave Kahan, Peter Lawsky, Susan Lawsky, Ross Baumstone*.

Staff and agency representatives present included: *Chris Larson (MRC), Sabrina Stadler (MRC), Dylan Brown (MRC), Tracy Katelman (ForEverGreen Forestry), Jessica DeKelver (MRC), Don Scarlett (CDF).*

The following bulleted items are a summary of neighborhood comments and concerns:

Telegraph Ridge Fire History

- Fire activity near this neighborhood includes: the Canoe and Honeydew fires of 2003 and the Finley Creek Fire of 1973. The Finley Fire began in the western edge of this neighborhood and traveled west away from here. The Clarks Butte Fire burned to the northwest of here in 1970. In addition, the Harold Lawrence fire burned 234 acres to the west of the river along Little Finley Creek in 1959.

Telegraph Ridge Water Sources

- Telegraph Ridge Fire Protection District (TRFPD) needs water fill sites on the uphill side of the road. They currently use private water sources to fill the engines. In late summer, lack of water is a serious issue, at which time TRFPD travels out of the district to fill water from sources in Thorn Junction and Whitethorn, or to pump from the river.

Telegraph Ridge Evacuation and Safe Zones

- The evacuation routes for this neighborhood have been identified as:
  - Michael Torbert's road connection to Goodman Ranch Road (west and to Shelter Cove Road)
  - Goodman Ranch Road (west and to Shelter Cove Road)
  - Cream Sherry/Whitey's Road (east via Blue Slide and China Creek to Briceland Road)
  - Dutyville Road (east via Blue Slide and China Creek to Briceland Road or to Salmon Creek)
- Safe zones for this neighborhood have been identified as:
  - Whitethorn Construction meadow

- Joe Wolf's field
- Frenches' ranch (Ettersburg)

Telegraph Ridge High Fire Risk and Hazard Locations

- China Creek area subdivisions
- Whitethorn Construction complex

Telegraph Ridge Potential Projects

- Shaded fuel break along Telegraph Ridge (fifty-foot clearance below road, one hundred feet above road).
- Fuel break around Ettersburg School (this was reportedly brushed in early 2004).
- Shaded fuel breaks along spur[77] ridges adjoining Telegraph Ridge.
- TRFPD would like to have a year-round water source that would be upslope of the main road within the District. A potential site for this is on the Colwell property.
- Two fire safety information boards could be created to foster community awareness. These signs could be placed at Ettersburg School and at the junction of Ettersburg Road and Shelter Cove Road.

Telegraph Ridge SHFSC Neighborhood Representative: Dave Kahan

Telegraph Ridge Biological Priorities

There are no known biological priorities in this neighborhood.

Telegraph Ridge Safety Priorities

Three priorities were identified in terms of community safety: fuel breaks, water storage, and fire safety awareness signs.

Ettersburg-Honeydew Road—also known as Telegraph Ridge Road—is a county-maintained, paved road that provides access to the entire middle and lower Mattole watershed, eventually leading to Honeydew and Petrolia. The right-of-way is 25' on either side of center. Fuels reduction work was done on Ettersburg Road about twenty years ago. Locals have some concern with the use of inmate crews. This is a critical evacuation road for hundreds of square miles of private and public land. Implementation of a sufficiently wide break along this road (it was suggested at this meeting fifty feet below the road and one hundred feet above, for neighbors wishing to participate) is a critical component of a larger strategy of regional fuel breaks. Several projects have been developed to create a shaded fuel break along this ridge in recent years, both by the Southern Humboldt Fire Safe Council and CDF using federal funding through the National Fire Plan. In 2004, the MRC worked with CDF to submit another proposal to implement the Telegraph Ridge Project. That project was ranked tenth in the state, but only the top six projects were funded. This is clearly a priority project for this neighborhood and the planning area in general.

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[77] Spur roads or ridges are secondary roads or ridges that branch off of the main road or ridge.

In 2003, CDF created a shaded fuel break along the Briceland-Thorne/Shelter Cove Road. That break begins just west of the intersection with the Ettersburg-Honeydew Road, and travels through the Mattole valley up to Paradise Ridge and down towards Shelter Cove.

A series of shaded fuel breaks along the spur ridge roads to Telegraph Ridge would provide additional evacuation support for residents of those areas, as well as provide control points for fire suppression. Identified roads include Eubanks (also known as Shanti and SFP Road), the Staflien/Harlander/Winthers Road loop that ties back to Eubanks, Goodman Ranch Road (which connects to the Mattole River and the Huckleberry Lane neighborhood), and finally Cream Sherry/Whitey's Road (which connects to the Blue Slide neighborhood).

Given that much of this neighborhood is along the ridge, and that the TRFPD engines are housed here, water storage for fire suppression is often insufficient. TRFPD needs a 2,500-gallon tank with plenty of water available both on Telegraph Ridge and Wilder Ridge. Identification is needed of potential year-round water fill sites (for the fire trucks) that are on the uphill side of the road. These sites must have space for a truck to park, fill, and turn around safely and efficiently. Additionally, the strategic placement of water tanks is a priority. The Colwell residence was suggested as a potential water tank site.

Finally, Ettersburg Road is an excellent location for community fire safety information signs. Two locations were suggested; the first would be at the junction of Shelter Cove/Briceland Road with Ettersburg Road. There is a big pull-out there that would be a great location. The second could be at the driveway to Ettersburg School on Ettersburg Road.

Telegraph Ridge Economic and Cultural Priorities

Ettersburg School is located here. It is both an economic and cultural priority, and therefore needs priority fire protection. There has reportedly been recent clearing in this area. Maintaining adequate defensible space around the school needs to continue to be a priority fire safety project.

There is a non-industrial timber management plan on the Torbert property in the Eubanks Creek watershed.

Telegraph Ridge Recommended Projects

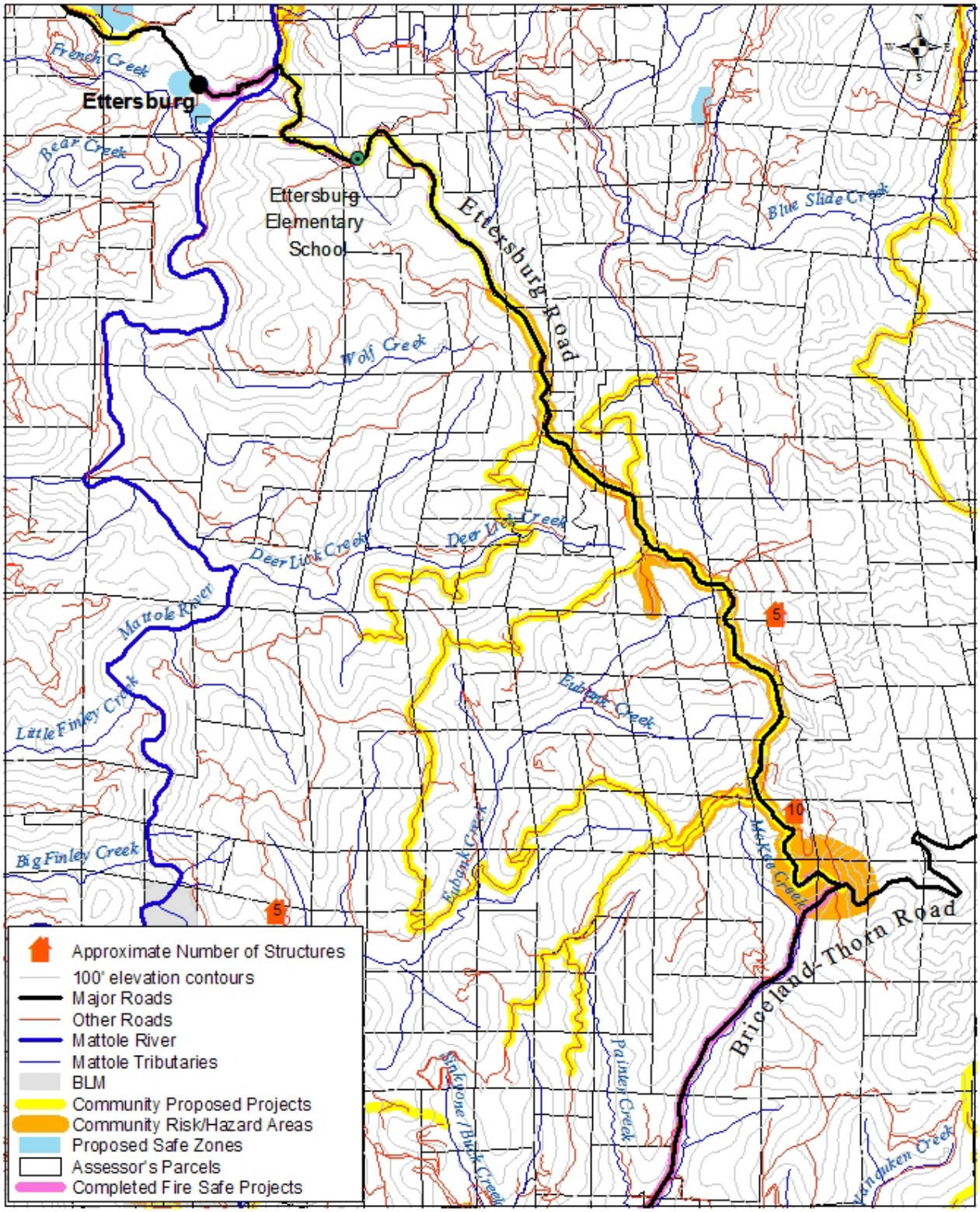
The highest-priority projects proposed for Telegraph Ridge are:

1. Creation of a wide shaded fuel break along the Ettersburg Road is critical for evacuation and fire suppression efforts throughout the Mattole watershed. This break should be tied to the fuel break in progress on Wilder Ridge Road, and the system in place on the BLM's King Range National Conservation Area. SHFSC, LMFSC, MRC, and CDF must continue to pursue funding for this critical project.
2. Residents must be diligent in creating their defensible space, as that will likely provide the best opportunity for surviving a wildfire. This should be done to 100 feet in most places, and up to 200 feet on steep slopes. Assistance is available from CDF, SHFSC, and several local contractors.
3. A simple project that could be implemented immediately is the creation of two community fire safety signs. Construction and maintenance of these signs could be a joint project among the Southern Humboldt and Lower Mattole Fire Safe Councils, the TRFPD, the Mattole Restoration

Council, and CDF via the Fire Safe Councils. A system could be developed among these groups to keep the information current and specifically fire-related.

4. Development of water storage and fill sites along the Ettersburg Road will provide much-needed resource support to the TRFPD for its volunteer fire suppression services. Work with SHFSC and/or MRC to purchase two 2500-gallon water tanks and associated hardware to be housed on Telegraph Ridge and on Wilder Ridge, with possible construction by CDF inmate crews.
5. Southern Humboldt Fire Safe Council can facilitate communication between TRFPD and Ettersburg School to develop an ongoing program to create and maintain defensible space around the school. This could be done as part of an educational program at the school in which the children are introduced to fire safety and defensible space, through a fire safety curriculum, and they help design the defensible space for the school.

Map 12. Telegraph Ridge Community Identified Risks, Hazards, and Projects



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7.5 Huckleberry Lane/Nooning Creek

Huckleberry Lane/Nooning Creek Neighborhood Description

The Huckleberry Lane/Nooning Creek neighborhood is accessed from Shelter Cove Road west of Thorn Junction. (The Briceland-Thorne Road turns south to Whitethorn at Thorn Junction, and the road west then is called the Shelter Cove Road.) This area is more heavily subdivided than most neighborhoods downstream, with parcels ranging from approximately two to eighty acres. As with most neighborhoods, the private access roads are dirt, and often require four-wheel-drive vehicle capability. There are large meadows at the base of this neighborhood (near Shelter Cove Road). As one continues upstream along the river and further into this area, there are more conifer forests.

As previously mentioned, the county road from near the junction with the Ettersburg Road continuing towards Shelter Cove had a fuel break created along it by CDF in 2003 with federal assistance through National Fire Plan funding.

Huckleberry Lane/Nooning Creek Neighborhood Meeting

The Huckleberry/Nooning meeting was held on February 5, 2004, at home of Jimmy Friel.

Neighbors present included: *Jimmy Friel, Kristine Perry, Lela Benson, Donna Durr, Gary Leduc, Kevin Arnoul, Michael Torbert, Heather Scharlack, Patty McGuire (Whitethorn VFD).*

Staff and agency representatives present included: *Jessica DeKelver (MRC), Tracy Katelman (ForEverGreen Forestry), Don Scarlett (CDF).*

The following bulleted items are a summary of neighborhood comments and concerns:

Huckleberry Lane/Nooning Creek Fire History

- The 1973 Finley Creek fire, which ended up consuming more than 12,000 acres, burned extensively through the western portion of this area.
- Kay Conner fire (small).

Huckleberry Lane/Nooning Creek Water Sources

- Concern was raised about the issue of water tanks being assessed for increased property taxes. Several area residents are working to resolve this.[78] Kevin Arnoul has a large water tank that he provides access to Telegraph and Whitethorn fire departments to fill their truck.

Huckleberry Lane/Nooning Creek Evacuation and Safe Zones

- An alternative evacuation route would be to go from Huckleberry Lane northwest through Torbert's property, then the Goodman Ranch Road to Ettersburg Road. There are locked gates on this route.
- Safe zones identified for this neighborhood are:

[78] This issue was brought to our attention at this neighborhood meeting. Since that time steps have been taken to address this at the county and state level. This will be further discussed in Chapter 8, Overall Policy Recommendations.

- Whitethorn Construction. This business is located in a large meadow along Shelter Cove Road. It has been designated as both a safe zone—because of the large meadow—as well as a hazard area, because it is the location of a construction business with heavy equipment and a lot of traffic. The two areas are adjacent, but distinct.
- Tranquility Lane orchard.
- Kevin Arnoul's place.

Huckleberry Lane/Nooning Creek High Fire Risk and Hazard Locations

- Whitethorn Construction businesses.
- Roads: Nooning Creek, Huckleberry Lane, Buck Creek. Nooning Creek swimming hole.
- Subdivisions along lower Huckleberry and Buck Creek Roads.
- Absentee landowners along the lower stretch of Huckleberry Lane.
- Heavy fuels at the bottom of Huckleberry Lane, before and after the orchard.
- Scotch broom locations: Nooning Creek, upper Buck Creek.

Huckleberry Lane/Nooning Creek Potential Projects

- Ask BLM to brush Nooning Creek Road near the swimming hole and unofficial camping area. There has been poor brushing in the past there. It was done by a machine that ripped up trees and brush.
- There is concern over absentee landowners with unmanaged land and high fuel loads. Suggestions for this were: speaking with neighbors, and education and outreach.
- Fuel break along Nooning Creek Road and Huckleberry Lane.

Huckleberry Lane/Nooning Creek SHFSC Neighborhood Representatives: Patty McGuire, Lela Benson, Kristine Perry.

Huckleberry Lane/Nooning Creek Biological Priorities

The Mattole River here is known habitat for coho and Chinook salmon and steelhead. Protecting the riparian canopy in these areas is critical for the health of local salmonid species.

Huckleberry Lane/Nooning Creek Safety Priorities

There are several roads in this neighborhood that need clearance work to create a series of shaded fuel breaks and provide safe neighborhood evacuation. Huckleberry Lane near the beginning of the road, and again past the orchard/flat area, on to the Green Gate, is a priority area for a shaded fuel break. It has PG&E power lines and many dead trees near the road, making it a fire hazard concern to local residents. Furthermore, this area contains several small parcels between the road and the river, treatment on the uphill side of these parcels would slow fires from spreading in either direction. These homesteads are considered an ignition source for this neighborhood. Huckleberry Creek Lane eventually connects via private roads to the other side of the river and Goodman Ranch Road, although this is not an easy access route, and is only a likely option for emergency evacuation.

Nooning Creek Road (private, with BLM unadvertised public access) provides access to several homesteads, a very popular local swimming hole, and an unofficial BLM camping area. The swimming hole is at the mouth of Nooning Creek at the Mattole. From here the road is closed and blocked from further access. Both the swimming and camping areas are considered a fire risk due to campfires and other uses. This is also an area of dense Scotch broom.

> There is no developed campground at Nooning Creek. However, people are allowed to camp anywhere on public lands in the King Range, except where prohibited, for up to two weeks per calendar year. Camping at Nooning creek is subject to the same restrictions regarding fire as anywhere else in the King Range. There are specific areas in the King Range where camping is currently prohibited, like within 500 feet of Mattole campground, along King Peak road between mile 2 and 7, between Humboldt and Telegraph creeks at Black Sands beach, etc. … people can camp in the vicinity of Nooning creek. However, we [the BLM] don't refer the public to Nooning creek since it is in a neighborhood with a mix of private and public land, the access to the swim hole is difficult, the jumping rocks can be a little dangerous, etc. The people who end up camping there are usually homeless types who our law enforcement rangers get to move on as soon as they become aware of them. Some have camped for long periods on the private parcel that is north of the swim hole parking area.[79]

BLM has brushed the federal portion of the road every other year for the past six years at least. This was done twice with chainsaws, pole saws, and a chipper. However, they found it to be more cost-effective and lasted longer to contract a local masticator[80] to clear this road. The masticator does leave it looking "messy" until the following growing season. Residents consider this more of a fire danger the following season because of dead brush, and complain of the aesthetics because it looks bad for three to four years.

The agency is planning a fuel reduction/shaded fuel break on eight acres at the swimming hole – along the access road, around the parking area, and on the flat north of the existing parking area/turn around at the end of Nooning Creek Road. Only small-diameter (under five inches diameter at ground level) brush will be cut, and the resulting slash will be chipped. The project is designed to decrease the ladder fuels available to a wildfire originating from the swimming hole on BLM lands. It is scheduled for completion in 2006 or 2007.

In addition, the BLM is exploring opportunities to perform a potential small-diameter (under ten inches diameter at breast height) project near the Nooning Creek swimming hole. This hazardous-fuel reduction project would occur on twenty acres in the area immediately northwest of the swimming hole parking lot. The concept is that the contractor would be able to sell some products from the thinning. This project is still in the rudimentary planning stages, with the earliest possible start date in 2007.

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[79] Gary Pritchard-Petersen, King Range Manager, BLM, personal communication, 11/16/04

[80] A large machine that cuts and masticates vegetation.

The bottom section of the Buck Creek Road up to the first driveway on the right is another priority area, providing access to several homes above it. Upper Buck Creek also has dense Scotch broom.

Finally, creation of a shaded fuel break is a priority from the top of Buck Creek Road, along the ridgeline separating this area from Eubanks Creek, and down to Huckleberry Lane. There are two peaks along this ridge; the higher (1,642 feet) would make a possible helicopter landing zone.

Huckleberry Lane/Nooning Creek Economic and Cultural Priorities

Whitethorn Construction is located at the base of this neighborhood (as well as adjoining Thorn Junction). It is the largest employer in the entire planning area, providing employment to at least 25 people. The site is also home to several other local businesses and nonprofit organizations, including Luminart Candles (seven current employees), the Mattole Restoration Council (seven employees), Mattole River Studios (four employees), Sanctuary Forest (five employees), and Whitethorn Winery (two employees). Protection of this area is critical for this community. It will also likely serve as either a safe zone or emergency operations center in the event of a nearby large wildfire.

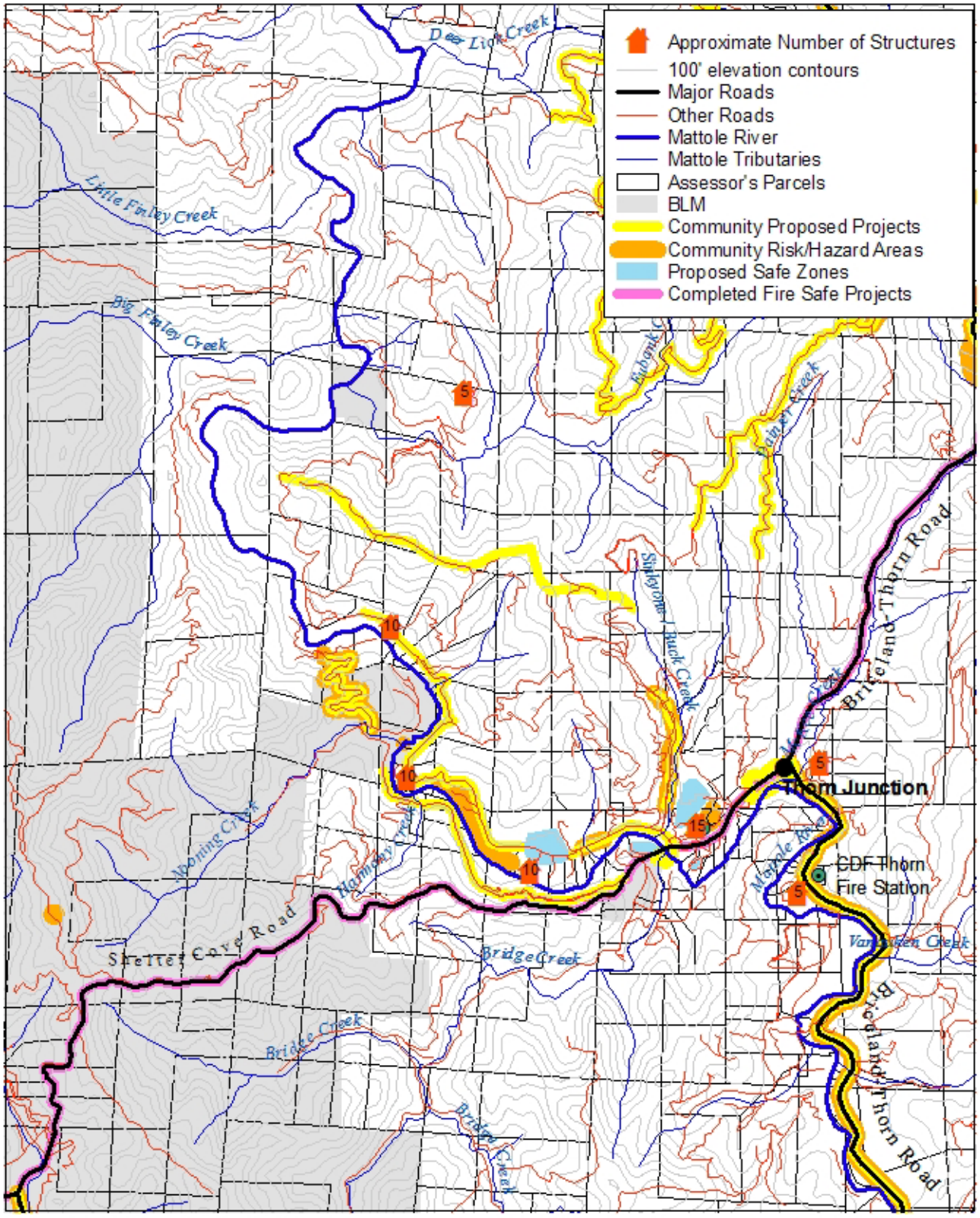
There is a non-industrial timber management plan on the Torbert property in the Eubanks Creek watershed, which is also accessed from Huckleberry Lane.

Huckleberry Lane/Nooning Creek Recommended Projects

The highest-priority projects proposed for Huckleberry Lane/Nooning Creek are:

1. Create a shaded fuel break along Huckleberry Lane, starting with the lower section, to provide evacuation access to this area, as well as to areas of Telegraph Ridge.
2. Residents must be diligent in creating their defensible space, as that will likely provide the best opportunity for surviving a wildfire. This should be done to 100 feet in most places, and up to 200 feet on steep slopes. Assistance is available from CDF, SHFSC, and several local contractors.
3. Create a shaded fuel break along the private section of lower Nooning Creek Road. In conjunction, SHFSC should coordinate with BLM to provide continued clearance along Nooning Creek Road near the swimming hole. This coordination could ensure community support for the clearing, and shuold involve a community workday to help make the project more aesthetically pleasing.
4. SHFSC should coordinate with BLM on the two proposed clearing projects near the Nooning Creek swimming hole to support those projects in whatever way is deemed appropriate and feasible.
5. Create a shaded fuel break along lower Buck Creek Road.
6. Create a shaded fuel break along the ridge between this area and Eubanks Creek, from the top of Buck Creek Road. Work with CDF to explore the possibility of creating a helicopter landing zone here.

Map 13. Huckleberry Lane/Nooning Creek Community Identified Risks, Hazards, and Projects



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Scale 1=40,000

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7.6 Thorn Junction

Thorn Junction Neighborhood Description

This large area encompasses land along the Shelter Cove Road from the junction with the Ettersburg Road to Chemise Mountain and Paradise Ridge Roads. This is a diverse area, comprised of both steep hills and valley bottoms. It is diverse in vegetation as well, with agricultural lands, chaparral scrub, and hardwood, mixed conifer, and redwood forests. In 2003, CDF created a shaded fuel break along the Briceland-Thorne/Shelter Cove Road through this entire neighborhood. Thorn Junction is the economic center of the upper Mattole. The Whitethorn Construction facility is here, with all its supported businesses, as well as the Whitethorn Post Office, and the BLM King Range National Conservation Area Whitethorn Field Office and Fire Station.

Thorn Junction Neighborhood Meeting

The Thorn Junction meeting was held on March 16, 2004, at the home of Dorrie Kennedy and Del Penny.

Neighbors present included: *Nancy Brown, Jani Cook, Erlinda Knapp, Larry Knapp, John Jennings, Kent Griggsmiller, Charlotte Griggsmiller, Dorrie Kennedy, Eric Goldsmith (Sanctuary Forest), Noah Levy (Sanctuary Forest).*

Staff and agency representatives present included: *Gary Pritchard-Peterson (BLM), Tracy Katelman (ForEverGreen Forestry), and Jessica DeKelver (MRC).*

The following bulleted items are a summary of neighborhood comments and concerns:

Thorn Junction Fire History

- 1973 Finley Creek Fire.
- Honeydew Fire 2003 was nearby.
- 1959 Bear Creek Fire burned 392 acres in the Bridge Creek watershed.
- This area sees significant initial attack fires every year.

Thorn Junction Water Sources

- There is a need for water sources here along the ridgetops. The upper portion of the Chemise Mountain road travels along the South Fork of Bear Creek, which has water much of the year, although likely not draftable late in fire season.

Thorn Junction Evacuation and Safe Zones

- Chemise Mountain Road (to the south and Four Corners) or King Peak Road (to the north and Wilder Ridge) are evacuation routes off Shelter Cove Road near Paradise Ridge.
- Safe zones for this neighborhood have been identified as:
  - Whitethorn Construction area
  - Shelter Cove airstrip, Pacific Ocean beach

Thorn Junction High Fire Risk and Hazard Locations

- Roads, houses, campgrounds, ridgetops (at higher risk in lightning strikes)
- Swimming hole, Sean Akselsen memorial (candles and fires there)
- Paradise Ridge helicopter landing pad (from firearms)
- Whitethorn Construction lumber yard
- Kaluna Cliff trailer area

Thorn Junction Potential Projects

- Fire-safe the swimming hole at Thorn Junction. Due to the sensitivity of the memorial there, it was suggested that a thinning project be conducted as a community volunteer project. Perhaps this project is something the family and friends of Sean Akselsen and/or the schools could help to initiate. Also, since the swimming hole is a common place for local youth to congregate, making this thinning a community project may help to create awareness of the danger of fires (which do happen there).
- Paint a yellow line all the way down Shelter Cove Road. This will help with traffic accidents that are potential fire ignition sources.
- Fuel breaks around BLM campgrounds (Wailaki and Nadelos).

Thorn Junction SHFSC Neighborhood Representatives: John Jennings; Alternate: Dorrie Kennedy.

Thorn Junction Biological Priorities

The Mattole River, South Fork Bear Creek, and Bridge Creek are all home to coho and Chinook salmon and steelhead. McKee Creek is home to coho and steelhead. Therefore, protection of the riparian areas is important for salmonid population health. In addition, the Mattole Salmon Group has two rearing facilities along South Fork Bear Creek-one on Chemise Mountain Road and the other on Horse Mountain (Paradise Ridge) Road.

There is a stand of old-growth forest at the headwaters of Bridge Creek. There are also several stands along South Bear Creek within the BLM's King Range National Conservation Area.

Thorn Junction Safety Priorities

The upper portion of the Chemise Mountain Road traverses this neighborhood, from north of Whale Gulch to the intersection with the Shelter Cove Road. This is an important evacuation route for residents here as well as Whale Gulch. Chemise Mountain Road is a windy gravel road that is narrow in several places. Creation of a shaded fuel break along this road is important both for community access as well as to provide a break between the private subdivisions to the east and the King Range National Conservation area to the west.

Another safety priority here is the creation and posting of fire safety awareness signs throughout the area. These signs would target both local residents as well as visitors. Suggested sign locations are the BLM King Range Office, the intersection of Chemise Mountain and Shelter

Cove Roads, and Thorn Junction. These signs could be created as a project at the Whitethorn School, in conjunction with a fire safety curriculum there, to ensure they are not vandalized.

In addition, traffic accidents occur along the Shelter Cove Road, some of which create a fire danger. The number of visitors to this area has radically increased in the last decade. With that increase in visitation has come an increase in traffic accidents and other fire risks. Local residents would like to see the yellow stripe painted completely down the road to help reduce the number of accidents.

It was suggested at this meeting that further fuel reduction efforts be conducted at the Nadelos and Wailaki BLM campgrounds on Chemise Mountain Road. According to the BLM, every year these campsites are cleared of surrounding brush and patrolled by the BLM fire engine and law enforcement staff during high use periods. BLM also uses Fire Prevention Orders that are significantly more restrictive than state requirements.[81] *For more information on those Fire Prevention Orders, see Appendix VII.*

Thorn Junction Economic and Cultural Priorities

The Thorn Junction area employs the most people in the upper Mattole planning area. As previously mentioned, Whitethorn Construction is located here. *(See Huckleberry Lane/Nooning Creek Economic and Cultural Priorities section for a detailed description.)* Protection of this area is critical for this community. Futhermore, it will likely serve as either a safe zone or emergency operations center in the event of a nearby large wildfire.

Other businesses and/or sites that provide local employment here include the BLM King Range National Conservation Area Whitethorn Field Office and Fire Station, employing eight full-time and six seasonal people. Nearby Tranquility Lane Flowers has four employees. The Whitethorn Post Office is located on Shelter Cove Road and employs three people.

A new cultural priority for the local youth is the memorial to Sean Akselsen, located at Thorn Junction on the road near the swimming hole.

Thorn Junction Recommended Projects

The highest-priority projects proposed for Thorn Junction are:

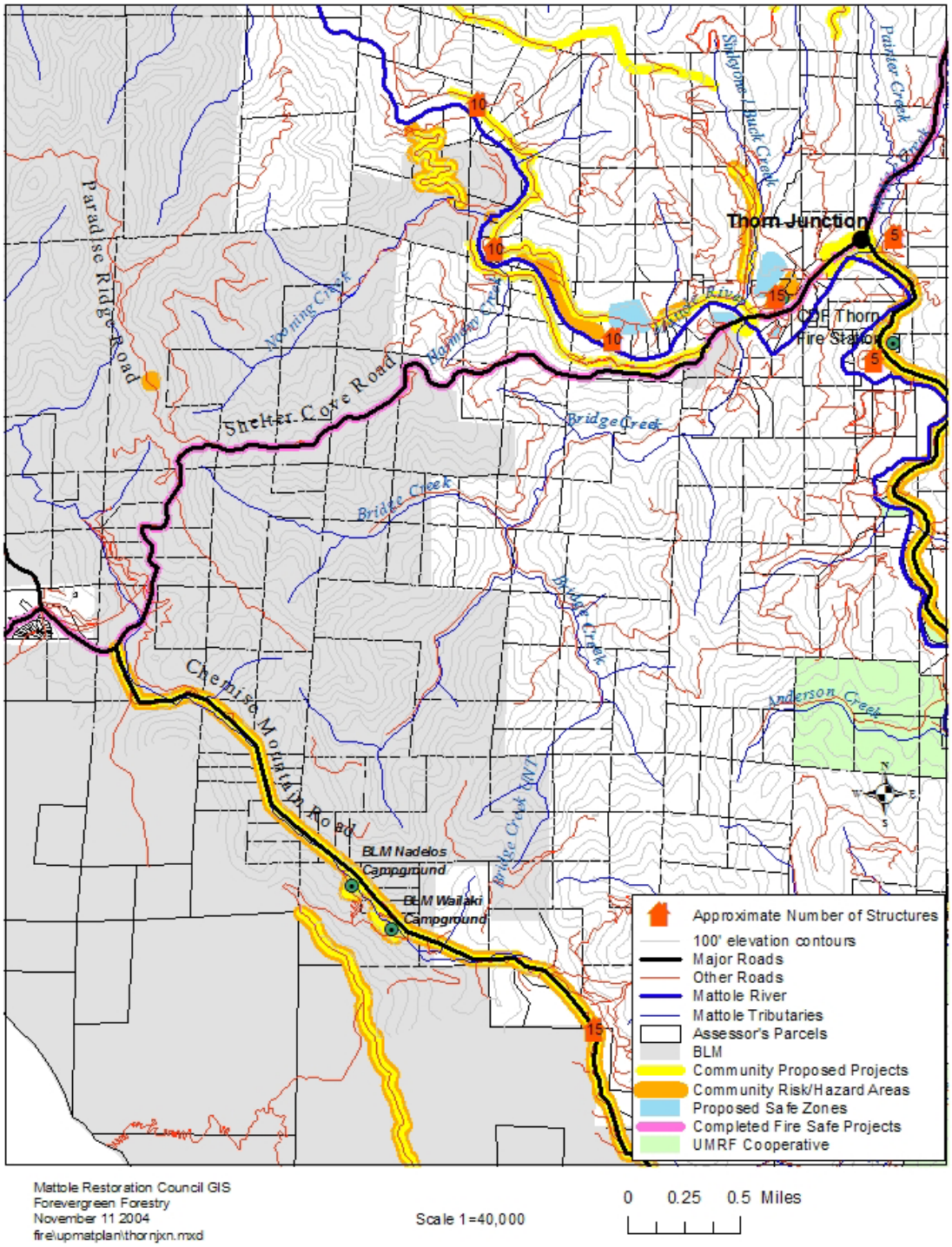
1. SHFSC can work with the friends and family of Sean Akselsen to fire-safe the area around the swimming hole and create fire safety messages for the area. Use this as the base for a community outreach program with local youth.
2. Residents must be diligent in creating their defensible space, as that will likely provide the best opportunity for surviving a wildfire. This should be done to 100 feet in most places, and up to 200 feet on steep slopes. Assistance is available from CDF, SHFSC, and several local contractors.
3. SHFSC, BLM, MRC, and Whitethorn School, in conjunction with local volunteer firefighters, should develop a series of fire safety awareness signs. These signs would be posted at Thorn

[81] Tim Jones, Fire Management Officer, BLM, personal communication, July 2004.

Junction, the BLM King Range Office, and the junction of the Shelter Cove and Chemise Mountain Roads. Do this in combination with a fire safety curriculum at the Whitethorn School.

4. Explore working with Humboldt County to get a yellow stripe painted completely down the center of the Shelter Cove Road.
5. SHFSC should work with BLM to identify possible projects at BLM campgrounds.

Map 14. Thorn Junction Community Identified Risks, Hazards, and Projects



7.7 Whitethorn

Whitethorn Neighborhood Description

The Whitethorn neighborhood spans Briceland-Thorne Road along the Mattole River. This area has the densest population in the planning area, with parcels less than one acre in size near "downtown" Whitethorn. Many private spur roads off the Briceland-Thorne Road provide homes for hundreds of people, many within the second-growth redwood forest. Redwood is abundant here. It is a fire-adapted species, which means it likes fire to open its cones. This area has the most managed timberland in the planning area, some actively managed. The Whitethorn area follows the Mattole River towards its headwaters. Its many tributary streams here provide habitat for native salmon and steelhead.

Whitethorn Neighborhood Meeting

The Whitethorn meeting was held on January 21, 2004, at the Whitethorn School.

Neighbors present included: *Tracy Schilling, Dian Bacigalupi, Campbell Thompson, Eric Shafer, Lynda Gross, Glenn Hawthorne, Chris Christianson (Whitethorn VFD), Roy Baker, Ray Wilcox, Michele Palazzo, Kazimi Forestry.*

Staff and agency representatives present included: *Chris Larson (MRC), Jessica DeKelver (MRC), Sabrina Stadler (MRC), Tracy Katelman (ForEverGreen Forestry), Don Scarlett (CDF).*

The following bulleted items are a summary of neighborhood comments and concerns:

Whitethorn Fire History

- The last area fire that people noted at this meeting was in 1908.
- Forrest Miller Fire burned 470 acres in the Mill Creek and Thompson Creek drainage in 1950.
- The William Happy Fire burned 2,592 acres south of Thompson Creek in 1951.

Whitethorn Water Sources

- Water storage could be developed on a hill above Whitethorn (where there is a large population). This would be a good place to have water available for fire fighting.
- More than forty Pioneer water tanks ranging in size from 25,000 gallons to 50,000 gallons have been installed in the greater Whitethorn area in the last few years.

Whitethorn Evacuation and Safe Zones

- This community is situated along the county (Whitethorn) road, which is the main evacuation route. An alternative evacuation route is from Four Corners along the Chemise Mountain Road north to the Shelter Cove Road near the South Fork of Bear Creek. However, this is a long, winding, gravel road with heavy fuels in many places.
- Safe zones[82] identified in this neighborhood are:

[82] The smaller safe zones are not visible on the following map.

- Stanley Creek mouth
- State Park Meadow at mouth of Baker Creek
- Mouth of Baker Creek
- Green's airplane field
- Whitethorn School (potentially, may be small)
- Whitethorn Construction area

Whitethorn High Fire Risk and Hazard Locations

- Gopherville area
- Old Farm House/Syd Green's place/stagecoach house (the power lines)
- Whitethorn Construction
- LuminArt Candles
- Wilcox Enterprises
- State Parks/Barnum area where people ride bikes and shoot firearms
- Smaller parcel subdivisions

Whitethorn Potential Projects

- Shaded fuel breaks:
  - Around downtown Whitethorn, including up Upper Mill Creek Road
  - Along the hill behind the shooting range on State Parks property
  - Anderson Creek
  - Briceland-Thorne Road from Thorn Junction to Whitethorn
  - Around Whitethorn School
  - Gibson Ridge as a continuation of a break along Telegraph Ridge
- Defensible Space projects:
  - Gibson Creek Road
  - Harris Creek Road
  - Stanley Creek Road
- Remove Scotch broom from Baker Creek.

Whitethorn SHFSC Neighborhood Representative: Lynda Gross.

Whitethorn Biological Priorities

There are several streams here that provide important spawning habitat to coho and/or Chinook and/or steelhead. Van Auken Creek, Thompson Creek, and lower Yew Creek are home to coho and Chinook salmon and steelhead. Mill, upper Yew, and lower Baker creeks (and other tributary stream reaches such as Anderson and Ravasoni [East Anderson] Creeks) are home to coho and steelhead. All of these are priority protection areas for the Mattole Salmon Group. The Mattole Salmon Group has a trap site here, downstream from Anderson Creek.

The lower reaches of the Upper Mattole River and Forest Cooperative (UMRFC) are found around Whitethorn. "The Upper Mattole River and Forest Cooperative is a collaborative entity of public, private, federal, state, and nonprofit organizations working together to manage a 4,000-acre old-growth and salmon reserve known as the Sanctuary Forest."[83] Most of the UMRFC lands in the Whitethorn area are working forestlands that contain important forest habitat. Management of these properties in relation to fire is part of an ongoing planning process. Please see *Chapter 4, Local Agency Fire Issues* for a more detailed description of the UMRFC and its fire safety related issues. Old-growth forests in this area are found in the Baker and Thompson Creek drainages.

Whitethorn Safety Priorities

Briceland-Thorne Road is a paved public road that provides access to all residents upriver of Thorn Junction. There are several areas along this road where clearance would be beneficial as a shaded fuel break and evacuation route.

The community of Whitethorn is the densest population center in this planning area. There are small parcels around downtown Whitethorn, as well as lower Harris and Gibson Creeks. Providing clearance along lower Harris and Gibson Creek roads would likely reduce the spread of a domestic fire in this area. Creating a fuel break around the greater Whitethorn community would provide protection for those residents as well as the large forested parcels near here. Part of this break was created southwest of Whitethorn through a California Forest Improvement Project (CFIP) this year on the Restoration Forestry property. That fuel break is planned to connect to a fuel break along a permanent road that enters Briceland-Thorne Road just upstream from Whitethorn School.

Creating a defensible space around Whitethorn School is a clear safety priority for the children of this community.

Other safety priorities identified in this area include the creation of fuel breaks around the mouth of Baker Creek (a popular party spot), and the nearby State Parks' property at the mouth of Yew Creek (which is often used as a shooting range). Clearing along Anderson Creek was identified as another safety priority.

Finally, a shaded fuel break along Gibson Ridge through Barnum Timber Company property was suggested as a strategic place to stop a fire coming from the northeast, where hot summer fires often begin. This fuel break is envisioned to tie in with the proposed fuel break along Telegraph Ridge. It is reported that Gibson Ridge Road is already on its way to becoming a good fuel break. Barnum Timber chose not to participate in this project; therefore, that information could not be confirmed.

Whitethorn Economic and Cultural Priorities

Whitethorn School provides employment to approximately ten area residents. It is a significant place in this community in that it serves as a central gathering place in addition to being the local elementary school. The nearby Whitethorn Grange is a significant local building just downriver from the school.

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[83] Upper Mattole River and Forest Cooperative, Pre-Planning Analysis, February 2004.

CDF has a summer fire station here, Thorn Station, that provides area employment as well as critical fire support in summer and fall.

Wilcox Enterprises employs roughly six people at rock and quarry facilities near Whitethorn and on construction work throughout the region.

Restoration Forestry employs several area residents here throughout the year, whether in logging, restoration, or educational activities. Barnum Timber also manages an extensive amount of industrial timberland here. There is a non-industrial timber management plan being actively managed on the Johannesen property in the Gibson, Harris, and Stanley Creek watersheds adjacent to Barnum timberlands.

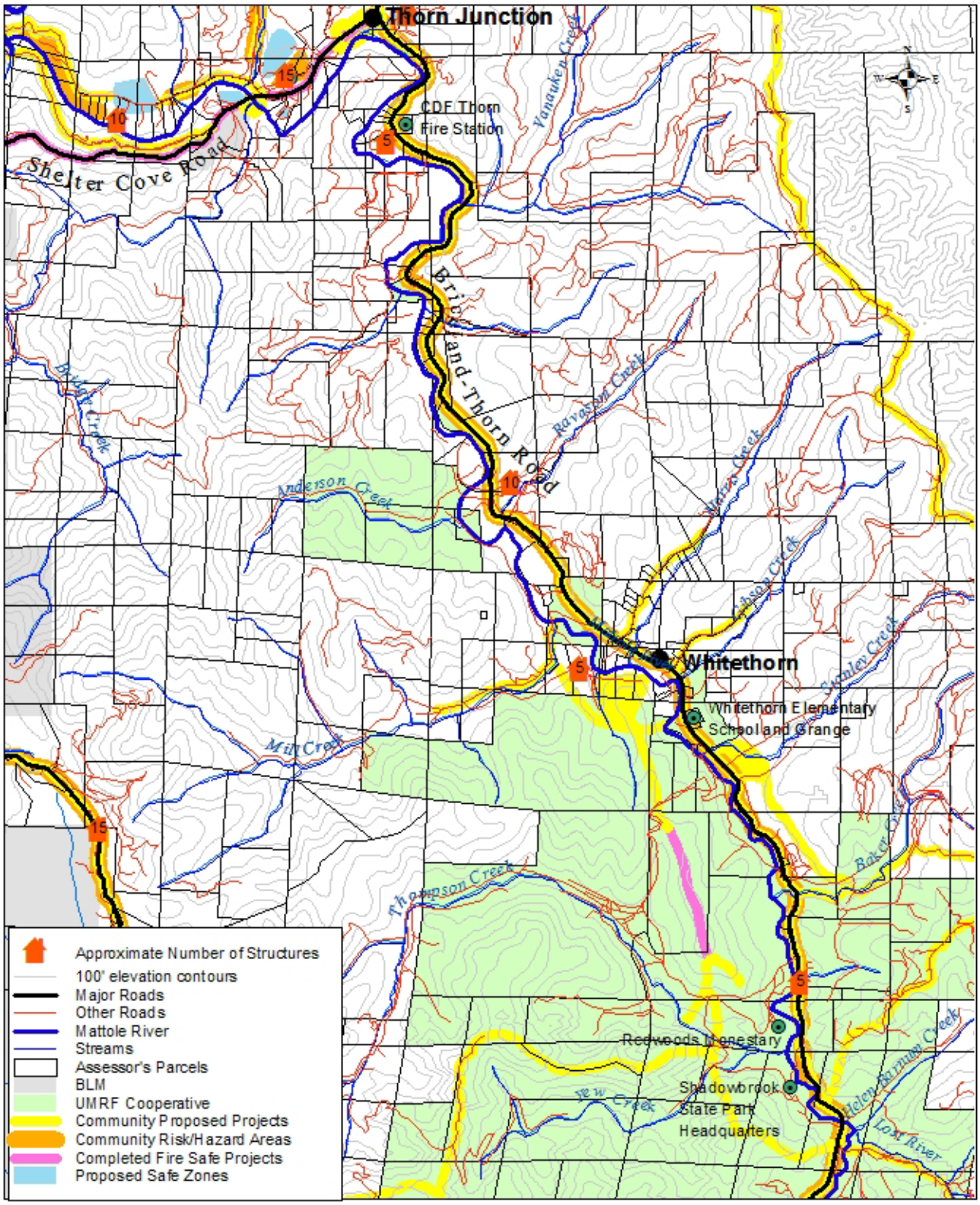
Finally, the former Lost Coast General Store was across the street from the old Whitethorn Store. Over the years, one of these buildings has been opened on and off to provide the community with a few supplies, as well as employment, and occasionally a functioning public pay phone. However, neither is currently open.

Whitethorn Recommended Projects

The highest-priority projects proposed for Whitethorn are:

1. Creation of a shaded fuel break along Briceland-Thorne Road is a top priority here, as it provides access for hundreds of area residences in Whitethorn and upstream. This project could be done by the Southern Humboldt Fire Safe Council (SHFSC) in conjunction with CDF and the inmate crews, as this is a public road. This road will be a key component of a regional system of fuel breaks, connecting with Shelter Cove Road which saw a shaded fuel break completed in 2003.
2. Residents must be diligent in creating their defensible space, as that will likely provide the best opportunity for surviving a wildfire. This should be done to 100 feet in most places, and up to 200 feet on steep slopes. Assistance is available from CDF, SHFSC, and several local contractors.
3. SHFSC and MRC should work with Whitethorn School and State Parks to develop fire safety signage for visitors to the Parks property. Experience in Petrolia has shown that signage developed by local school kids has less chance of being vandalized. Tie this in with a fire safety curriculum at the school and clearance on Parks property around popular party spots.
4. Work with Barnum Timber to create a shaded fuel break along Gibson Ridge to tie into existing or proposed fuel breaks in the area, and to join with the proposed Lost River Road fuel break and continue on to Four Corners.
5. Work with Upper Mattole River and Forest Cooperative participants and adjacent private landowners to create a shaded fuel break system immediately around the downtown Whitethorn area.
6. Expand the future Briceland-Thorne Road fuel break to include the bottom areas of Stanley and Baker Creeks, including creation of defensible space here.
7. Create shaded fuel breaks and defensible space along the lower stretches of Gibson, Harris, and Anderson Creeks.

Map 15. Whitethorn Community Identified Risks, Hazards, and Projects



Mattole Restoration Council GIS
Forevergreen Forestry
November 11 2004
fire\upmatplan\whitethorn.mxd

Scale 1=40,000

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7.8 Four Corners

Four Corners Neighborhood Description

Four Corners is the junction between the Briceland-Thorne Road to the east, what is locally called the Needle Rock Road to the west, Usal Road to the south, and generally the Chemise Mountain Road to the north, although the name of this road changes (from Usal to Chemise Mountain) a bit north of this intersection. Much of this neighborhood is in Mendocino County, with some of the north end spilling into Humboldt County. The Briceland Road is Mendocino County Road #435. This area is home to the headwaters of the Mattole River, with many healthy tributary streams supporting native steelhead and salmon populations. There are many acres of old-growth redwood forest here, mostly as part of Sanctuary Forest and the Upper Mattole River and Forest Cooperative. This area is distinct from other neighborhoods in that it is comprised principally of large parcels of wildlands, with few subdivisions and/or homesteads. It is also home to the Redwoods Monastery.

Four Corners Neighborhood Meeting

The Four Corners meeting was held on January 22, 2004, at the Redwoods Monastery.

Neighbors present included: *Kathy DeVico, Theresa Valloton, Tasha McKee (Sanctuary Forest), Maricela Garcia, Annette Madsen, Greg Felando, John Grieser, Kathie Prince, Richard Gienger.*

Staff and agency representatives present included: *Jessica DeKelver (MRC), Tracy Katelman (ForEverGreen Forestry), Sabrina Stadler (MRC), Don Scarlett (CDF).*

The following bulleted items are a summary of neighborhood comments and concerns:

Four Corners Fire History

- 1989; lots of lightning strikes, lots of fires, 100 acres or so burned on Barnum lands, which were fought by local folks, as CDF was unavailable.
- Three or four fires in Gopherville.
- 1955 Four Corners fire.
- 2003 lightning strike fires.
- The William Happy Fire burned 2,592 acres south of Thompson Creek in 1951.
- The Andersonia #3 Fire burned 1,497 acres in the uppermost headwaters of Lost River and over the ridge south of the Mattole watershed in 1959.

Four Corners Water Sources

- There are no known large water sources available in this neighborhood for fire fighting. This area does follow the Mattole River to its headwaters, although no reliable drafting areas were identified. Installing a fire water storage tank at Four Corners would provide water for this neighborhood, as well as nearby areas out of the Mattole watershed.

Four Corners Evacuation and Safe Zones

- Safe Zones identified for this neighborhood:
  - Redwoods Monastery meadow
  - Gopherville
  - Small clearing at Four Corners
  - Baker Creek (off road)
  - Needle Rock was a safe zone in the Finley Fire.
- Usal Road is in poor condition, as is Chemise Mountain Road. Therefore, escape routes are not good from this neighborhood.

Four Corners High Fire Risk and Hazard Locations

- Gopherville area.
- All residential areas.
- Sinkyone Wilderness State Park (from campfires)

Four Corners Potential Projects

- Shaded fuel breaks on ridgetops were proposed. Isolate pockets where people live by creating fuel breaks around those areas. Many thinning projects were suggested for this area:
  - Tying in with the shaded fuel break on the Restoration Forestry property, continuing up the ridge between the forks of Thompson Creek following the ridge line south or along the Thompson Creek Road, and connecting to Swift Peak Road out of Whale Gulch.
  - Branching off the above fuel break on Thompson Creek and heading south along a ridge around the Redwoods Monastery lands to Lost River.
  - Lost River Road to the ridge at the southern boundary of the Mattole watershed, tying in to Usal Road.
  - Around the mouth of Whale Gulch along Chamise Mountain Trail.
  - Coordinate with Sanctuary Forest tree planting on Vista Ridge to explore creating a fuel break in conjunction with that project.

Four Corners SHFSC Neighborhood Representative: No representative has yet been identified for this neighborhood. Interested community members should contact Jessica DeKelver at the MRC, 986-1078.

Four Corners Biological Priorities

This area is likely the most biologically important section of this planning area, if not the entire Mattole watershed. It is the headwaters of the Mattole River. There are several streams here that support coho and Chinook salmon and steelhead, in addition to the river itself. They are Helen Barnum, Lost River, and Ancestor Creeks. Furthermore, Arcanum Creek is home to the Mattole Salmon Group's primary incubation box and hatchbox.

This area has the largest extent of old-growth redwood forest in the planning area. Most of this forest is located within the boundaries of the Upper Mattole River and Forest Cooperative. Specifically, there are old-growth stands in the Baker, Helen Barnum, Thompson, Arcanum, and Dream Stream drainages.

Four Corners Safety Priorities

There are two primary safety concerns in the Four Corners area. One is an alternative access route; the second is the interface between rural subdivisions and extensive wildlands.

In terms of evacuation, Briceland-Thorne Road provides the principal access here. The good news is that there are alternative routes that intersect here. The two roads that meet going north-south at Four Corners are the Usal Road to the south and Chemise Mountain Road to the north. The Usal Road is impassable much of the year, and then often only passable with four-wheel drive vehicles. It is a very narrow, winding, dirt road, often crowded with unsuspecting tourists in the summer. It is difficult to imagine this road as an evacuation route.

The other alternative is Chemise Mountain Road that runs to the north and joins with the Shelter Cove Road near the South Fork of Bear Creek. Chemise Mountain Road is a public gravel road that bisects the community of Whale Gulch. It is a slow-going road with several very narrow and brushy spots. The other challenge about this road is that it is in both Mendocino and Humboldt Counties. Therefore, in order for improvements to happen here, both governments would need to be convinced of the importance of improving and maintaining this road located at the far extent of their jurisdiction. The Mattole Restoration Council has submitted a proposal to the Department of Fish and Game to do road upgrades on the Chemise Mountain Road, primarily replacing culverts. Humboldt County has offered a cost share for the project, and some brushing may be incorporated. However, this project will only be done in the Mattole-draining portion of the road – the northernmost mile of unpaved road north of Whale Gulch.

As previously mentioned, this area is home to the bulk of the Upper Mattole River and Forest Cooperative lands. There are now several thousand acres of preserved land in this area in public or nonprofit ownership. Given that much of this neighborhood is old-growth redwood, the fire hazard here is lower than other areas of the Mattole. However, the recent Canoe Creek fire in Humboldt Redwoods State Park in the Eel River watershed reminded this community that old-growth redwood does in fact burn. Interspersed within the old forests are stands of dense, young forest. These forests certainly have plenty of fuels to carry a fire into the older forests. Therefore, a series of shaded fuel breaks was identified at the Four Corners neighborhood meeting in order to create a distinct defensible area within this wild landscape. That proposed series of breaks ties into the existing fuel break being developed by UMRFC participant Restoration Forestry on Thompson Creek, and circles around this area south via Lost River Road, generally west along the southern ridge of the Mattole headwaters and a Barnum Timber road, north on the Usal and Chemise Mountain county roads to Swift Peak Road northwest of the Whale Gulch School, and east to the Thompson Creek road and through Restoration Forestry back to the Redwoods Monastery. Any projects on UMRFC partner lands (especially State Parks) would have to be designed to meet ecological priorities.

Finally, there was concern in Four Corners about a fire starting at the mouth of Whale Gulch from campers there, or along Chamise Mountain Trail. However, given local weather conditions, it is unlikely that a high-intensity fire would come inland up the Gulch without moisture from the ocean, to start a fire upslope here, although a recent fire in Shelter Cove proved otherwise.

Four Corners Economic and Cultural Priorities

Redwoods Monastery, a community of Cistercian monastic women, is located on 353 acres with eleven year-round residents and ten to twelve guests, primarily in summer. The Monastery is an important cultural component of this remote community. As previously mentioned, a fuel break is proposed along the back ridge of this property to protect it from the surrounding wildlands. In addition, State Parks has an office and native plant nursery here at Shadowbrook. Shadowbrook is across Thompson Creek from Redwoods Monastery and accessed by a road upstream on the Mattole, just to the west of the County Road 435 Bridge. There is discussion of a possible visitor's center for the nearby Sinkyone Wilderness State Park to be located here. However, according to District Ranger Steve Horvitz, "State Parks does not own the Four Corners property; as a result, we do not have the goal of installing a visitor center at that location." If that plan were to proceed, the number of visitors to this area (and therefore the likelihood of ignition sources) would significantly increase, requiring a comparable increase in fire safety education and fuels reduction on behalf of Parks to protect local residents from the increased threat of wildfire. Finally, Arcanum Ranch Pottery employs two people here, as well as housing the Mattole Salmon Group hatchbox facility.

Restoration Forestry actively manages its property and provides seasonal employment in logging and restoration, as well as local opportunities for natural history field trips. Barnum Timber does not currently have any active timber management here.

Four Corners Recommended Projects

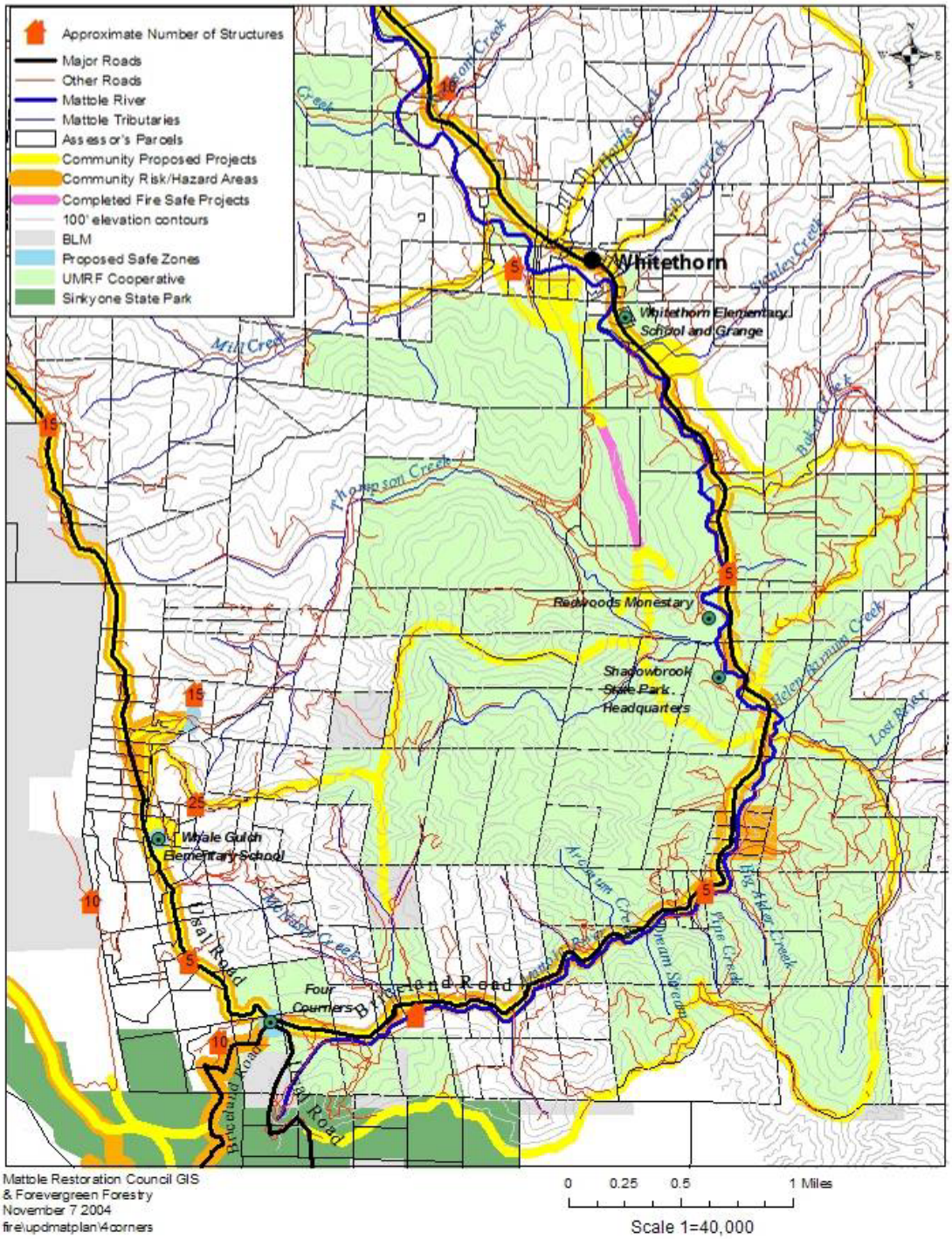
The highest-priority projects proposed for Four Corners are:

1. Continue the shaded fuel break along Briceland-Thorne Road to its terminus at Four Corners, as described in the Whitethorn neighborhood section 7.7.
2. Work with Mendocino County to ensure the road washout/slide near the Monastery is fixed and maintained to allow safe passage of emergency vehicles and residents during an evacuation.
3. Residents must be diligent in creating their defensible space, as that will likely provide the best opportunity for surviving a wildfire. This should be done to 100 feet in most places, and up to 200 feet on steep slopes. Assistance is available from CDF, SHFSC, and several local contractors.
4. Work with Mendocino and Humboldt Counties to create a shaded fuel break along Chemise Mountain Road—in conjunction with proposed MRC project here—to provide emergency access from this area, and to protect the Sinkyone Wilderness from fires that may start in this urban/wildland interface area.
5. Creation of a shaded fuel break—starting at Restoration Forestry on Thompson Creek, traveling virtually south behind the Redwoods Monastery, then climbing the Lost River Road to the Usal Road and Four Corners. This would provide a good north-south fuel break and would be key for stopping fires from spreading between the Indian Creek and Mattole River watersheds. The

break would protect this valuable forested area from the likelihood of fires starting inland and moving to the ocean (as is the pattern here, as evidenced by both the Honeydew and Finley fires.)

6. Expand the above-mentioned fuel break from Thompson Creek southwest to Swift Peak Road and Chemise Mountain/Usal Roads via Whale Gulch.

Map 16. Four Corners Community Identified Risks, Hazards, and Projects



7.9 Whale Gulch

Whale Gulch Neighborhood Description

Whale Gulch is unique in this planning area in that it is far more isolated than many of its neighboring communities. In this way, it is more representative of the isolated communities of the lower Mattole. In addition, much of this community falls outside the Mattole River watershed. However, given its remote nature and the fact that it is only accessible from the Mattole, it was included in this Fire Plan. This community straddles the Humboldt/Mendocino County line. Whale Gulch School is part of the Leggett (Mendocino County) School District. Another distinguishing factor about Whale Gulch is that it contains principally smaller subdivisions, generally from two to forty acres each. It is a relatively densely populated area sandwiched between large blocks of wildlands, bounded on the west by the King Range National Conservation Area and Chamise[84] Mountain Trail. The Chamise Mountain area is unique locally in that it is a coastal scrub ecosystem. It also has some significant areas of residual old-growth Douglas fir and Douglas fir forest. To the south is the Sinkyone Wilderness State Park. To the east are the lands of the Upper Mattole River and Forest Cooperative. This ownership pattern makes Whale Gulch a community-at-risk from wildland fire, despite its close proximity to the ocean. The community is bisected by a public gravel road, Chemise Mountain Road. That road connects to Shelter Cove Road at the South Fork of Bear Creek, and to the Briceland-Thorne Road at Four Corners.

Whale Gulch Neighborhood Meeting

The Whale Gulch meeting was held on January 29, 2004, at Whale Gulch School.

Neighbors present included: *Estrella Quiroga, Curtis Sherman, Christopher Larson, Marie Mills, Nancy Peregrine, Mem Hill, Frank Letton, Kelly Adams, Lisa Moore, Will Salter, Lucien Eddisford, Rod Brown, Shasta Kersh, Kyle Umina, Richard Gienger, Sandra Tilles, Bruce Anderson, Charlie Wilson.*

Staff and agency representatives present included: *Gary Pritchard-Peterson (BLM), Tim Jones (BLM), Don Scarlett (CDF), Jessica DeKelver (MRC), Tracy Katelman (ForEverGreen Forestry).*

The following bulleted items are a summary of neighborhood comments and concerns:

Whale Gulch Fire History

- The most notable fire near this neighborhood was the Finley Fire of 1973, which did not burn here, but in nearby Shelter Cove.
- 2003 lightning strike fires.
- The William Happy Fire burned 2,592 acres south of Thompson Creek in 1951.

[84] The mountain and trail are referred to as Chamise, whereas the road is Chemise, as named by Humboldt County.

Whale Gulch Water Sources

- The Whale Gulch Volunteer Fire Company has some water accessible in the event of a fire. There is a tank across the road from Whale Gulch School that holds 1,500 gallons. There is a need for at least one more good place for water storage.
- On State Parks lands, a need for water storage was identified by residents, as there are many potential ignition sources within the Sinkyone Wilderness State Park. There is a 1,000 gallon tank located at the Needle Rock Visitor Center, and at Shadowbrook.
- There are several good drafting locations at small perennial streams, which cross Mendocino County Road #435 between Four Corners and Orchard Camp. These streams could be temporarily dammed during a wildfire emergency and the water used for fire suppression.

Whale Gulch Evacuation and Safe Zones

- Chemise Mountain Road is the main evacuation road for this area, with Briceland-Thorne Road as an equally good alternate and in better condition. There is no herbicide use allowed here for roadside clearance. Roger Rodoni is the current Humboldt County Supervisor for this area. Mendocino Department of Transportation contacts are Howard Dashiell and Bob Mayo. The current Mendocino County supervisor for the area is Patty Campbell until January 1, 2005 when Supervisor-elect Kendall Smith takes office.
- Safe zones identified for this neighborhood are:
  - Whale Gulch School.
  - Four Corners meadow.
  - Thompson Creek meadow.

Whale Gulch High Fire Risk and Hazard Locations

- Fire rings along the Chamise Trail.
- According to residents, the mouth of Whale Gulch is not a legal fire area, but has often been a place where campers make fires.
- Jones Beach, although a developed campsite, is a source of fires that residents are concerned will escape.
- Houses, roads, lightning on ridges, and campgrounds.

Whale Gulch Potential Projects

- Get Whale Gulch Fire Company certified as a Fire Company for insurance purposes. A resource for this would be Cybelle Immitt at Humboldt County Community Development Services.
- Communication was identified as an area needing improvement here. The following suggestions were specific to improving local Whale Gulch Volunteer Fire Company emergency communication:
  - Improved committees at VFC.
  - Need better antenna for local radio communication.
  - More hand-held radios.

- CBs should be used and functioning throughout the community as a good back-up in an emergency.
- Base fire radio and dispatch.

- Fuel reduction projects:
  - Clearing around Whale Gulch school—a potential inmate or community work day.
  - Fuel breaks on Chamise Mountain Ridge.
  - Shaded fuel break on Chemise Mountain Road.
  - Fuel break between mouth of the Gulch and upslope areas.
- Suggestions were offered to lessen the risk of fires at nearby BLM campgrounds (Wailaki, Nadelos): make fire rings taller, impose a seasonal ban on fires, have fire extinguishers on hand. BLM representative Gary Pritchard-Peterson said that the management plan for the BLM lands was under development and that these suggestions would be considered. He also said that BLM now has a ranger who will be patrolling the campgrounds.
- Another suggested project was to put up fire danger signs. Locations suggested include: the BLM fire station at Whitethorn, on Shelter Cove Road, at Four Corners, and at the BLM campgrounds. Due to the number of signs vandalized, it was suggested that maybe the school kids could make the signs, as there has been success doing this in the Petrolia area, with less vandalism to those signs made by children.

Whale Gulch SHFSC Neighborhood Representatives: Christopher Larsen and Estrella Quiroga.

Whale Gulch Biological Priorities

The headwaters to several Mattole streams are found in the upper reaches of this neighborhood, most notably Thompson Creek, which supports salmonid species. There is a patch of old-growth forest north of Whale Gulch along Chemise Mountain Road. Sinkyone Wilderness State Park and the King Range National Conservation Area both border this neighborhood. Aside from these, other biological priorities are unknown, as this area is primarily outside of the Mattole watershed.

Whale Gulch Safety Priorities

Access is a critical factor for this community. In addition to the previously mentioned project to create a shaded fuel break along the Briceland-Thorne Road, improvement to Chemise Mountain Road is also a priority. As mentioned, this is a narrow gravel road in severe need of brushing. Coordination would need to occur between both Mendocino and Humboldt Counties in order to implement this project.

The Whale Gulch Volunteer Fire Company (WGVFC) provides all emergency first-response services to this community as residents are likely over an hour from primary medical care. Several suggestions were made to improve the fire company's ability to function here and to increase the community's ability to survive a wildfire. WGVFC is somewhat unique in this area in that it does not have an associated fire protection district to provide basic financial support. The first issue facing WGVFC is insurance. WGVFC has been in communication with the County and the Southern Humboldt Fire Chief's Association regarding acquiring appropriate insurance. This

process seems to be well underway. One suggestion for covering these costs is to implement an "adopt a firefighter" program, where donations would be used to cover worker's compensation insurance and other expenses—gear, training, etc.—for specific firefighters. Second is improving WGVFC's communication abilities. Several suggestions were made on this front, most centering on acquiring and using radios, whether they be CB, hand-held, or a base station. Finally, as with many local VFDs, there is a need for additional water storage here. Potential water storage sites are being explored.

Whale Gulch School is the hub for this community. A project was suggested to create a fuel break around the school using inmate crews. At this meeting, the community decided they could undertake this project without outside assistance. Clearance was provided around the school in the spring of 2004 through a series of community volunteer days. The community is having ongoing meetings as a result of the January 29th planning meeting.

The creation of a fuel break along Chamise Mountain Ridge was suggested, as there is a highly trafficked public trail there. Brushing this trail would reduce the chance of a fire starting along it. However, given that the trail is west of the Gulch, it is less likely to threaten this community.

Other fuel breaks were recommended at this meeting. In terms of that proposed into Whale Gulch, State Parks District Ranger Steve Horvitz commented:

> We are principally concerned with the project extending from Mendocino County Road #435 Park down to and across Whale Gulch. The project's size would make it expensive to install and maintain and its remote location would make supporting suppression actions trying to take advantage of the fuel reduction very difficult. In addition, much of the project is likely to fall within lands that may be classified as wilderness at the conclusion of the park's General Plan process. This would make the use of motorized equipment for non-emergency construction and maintenance difficult. You might consider adjusting this to reflect that expanse between peak 1730' on the Usal Road in Section 3 and the small pond near the Pacific Ocean between sections 4 and 9 as suitable for stand naturalization projects to occur. This may fit within wilderness designations that may be applied to the park. We believe this is a more practical alternative and would assist in protecting the Whale Gulch community from fires originating in the vast majority of the park. We would also like to point out that the campsites between Jones Beach and Bear Harbor have developed fire rings and are routinely maintained to reduce grass height thereby reducing the chance of wildfires. The number of human caused wildfires associated with recreational activities within Sinkyone Wilderness State Park is very low.[85]

Finally, creation of a series of educational signs was suggested to alert visitors to the high fire danger at different times of year and to convey simple fire safety precautions.

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[85] Horvitz, 9/13/04.

Whale Gulch Economic and Cultural Priorities

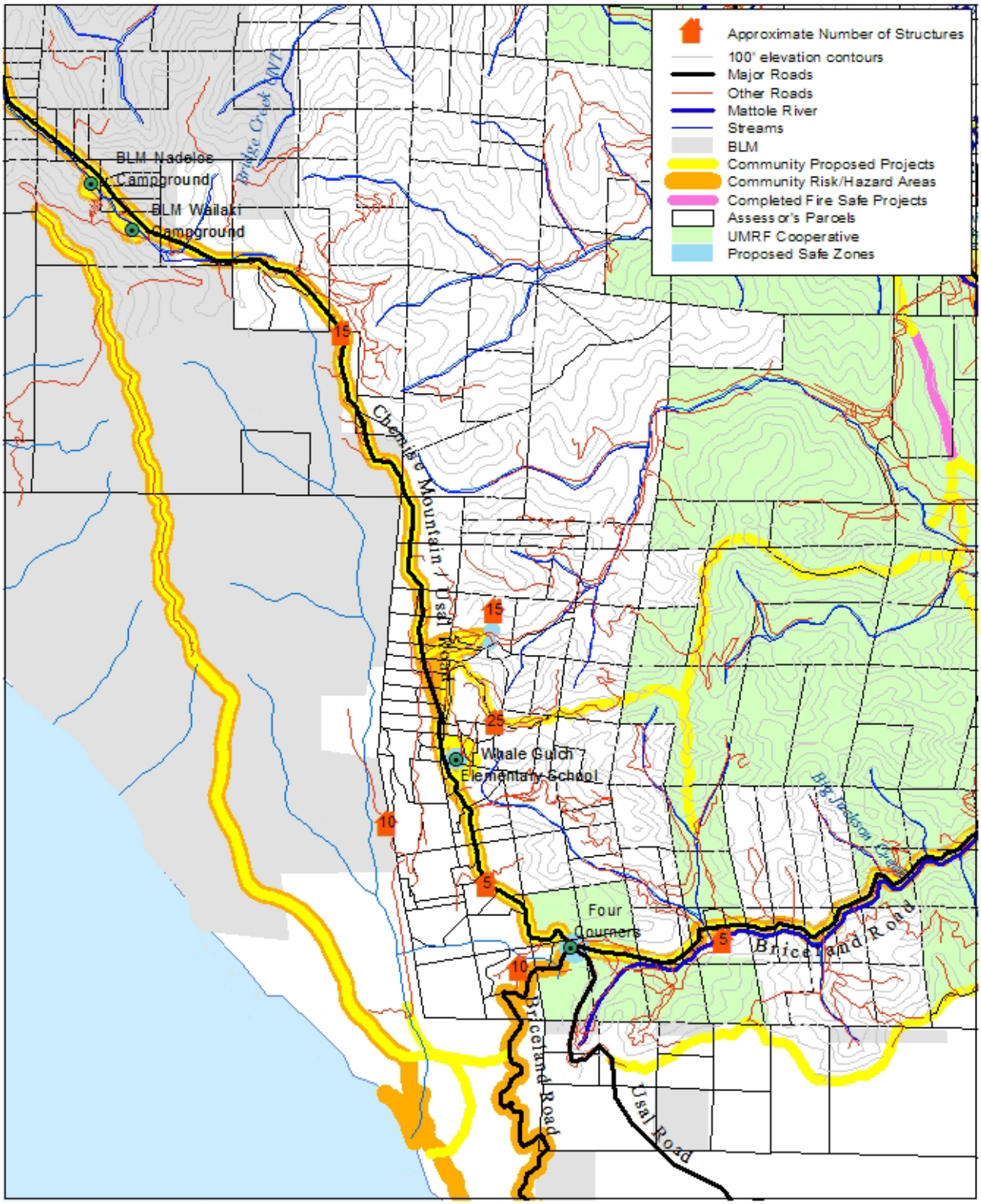
Whale Gulch School is the principal employer here, with fourteen employees. It is also an important cultural center. The other cultural center is the meadow at the headwaters of Thompson Creek, which is generally moist much of the year, but dry during fire season.

Whale Gulch Recommended Projects

The Whale Gulch neighborhood is to be commended for its motivation to work together to reduce fuel hazards and fire risks. The highest-priority projects proposed for Whale Gulch are:

1. Creation of a shaded fuel break along Chemise Mountain Road is the highest priority for this area. It will assist in emergency access, as well as provide a fuel break through the middle of this densely populated, isolated community.
2. Residents must be diligent in creating their defensible space, as that will likely provide the best opportunity for surviving a wildfire. This should be done to 100 feet in most places, and up to 200 feet on steep slopes. Assistance is available from CDF, SHFSC, and several local contractors.
3. The Southern Humboldt Fire Safe Council can work with Whale Gulch School, BLM, CDF, and MRC to create a series of fire hazard and fire safety information signs. These signs can be posted along Shelter Cove Road at the BLM King Range Office and the junction with Chemise Mountain Road, at BLM's Nadelos and Wailaki campgrounds on Chemise Mountain Road, and at Four Corners and the CDF Thorn Station on Briceland-Thorne Road. This project could be done in conjunction with a fire safety curriculum at the Whale Gulch School.
4. Southern Humboldt Fire Safe Council and Mattole Restoration Council can work with WGVFC to acquire necessary radios and any other communication equipment, and to implement the "adopt a firefighter" fundraising program to cover worker's compensation insurance, gear, and training costs for this volunteer, entirely community-supported fire company.
5. SHFSC and Whale Gulch residents work with State Parks to implement a shaded fuel break between peak 1730' on the Usal Road in Section 3 and the small pond near the Pacific Ocean between sections 4 and 9.
6. Expand the shaded fuel break along the Mattole watershed boundary as described in Four Corners projects, from Gray's driveway on the Usal Road north to Four Corners.

Map 17. Whale Gulch Community Identified Risks, Hazards, and Projects



Mattole Restoration Council GIS
Forevergreen Forestry
November 11 2004
fire\upmatplan\whalegulch.mxd

Scale 1=40,000

0 0.25 0.5 1 Miles

8. Priority Projects

During the neighborhood meetings several projects were identified throughout the upper Mattole watershed and neighboring Whale Gulch community to reduce risks from wildfire, and to begin the long-term process of returning natural fire to this landscape. Priority projects were generally focused on the creation of shaded fuel breaks to slow down wildfire and allow for safe evacuation, water storage for fire fighting and water conservation; and community education to encourage fire safety throughout this largely wildland-urban interface landscape.

All projects identified in this plan qualify as community identified priority projects. The following are those given the highest priority for initial action.

8.1 Fuels Reduction

Defensible Space

First and foremost, fuel reduction begins at home. Creation of defensible space around rural properties in the Upper Mattole is no longer an option. As residents learned from the Canoe and Honeydew fires, a large fire can happen to anyone in our remote community. Therefore, the first priority in reducing fuels in the Upper Mattole is to encourage and aid residents in creating defensible space around their homes, generally from 100 to 200 feet. This can be done in conjunction with the education projects outlined later in this chapter.

The concept of community chipper days was popular at many meetings. The idea is that people would fire-safe areas of their property and drag the brush to a place along a road. Then, on scheduled days, a chipper would come by to chip the piles. CDF has three chippers; one at Eel River Camp and two at High Rock Camp that are available for use. "Authorized users include trained CDF Staff, trained VFD staff, and trained FSC members provided the FSC has nonprofit status and liability insurance or posts an insurance bond."[86] There are likely other chippers as well that could be borrowed for these events. Purchase of community chippers to be located in various neighborhoods, perhaps housed or owned by local fire departments, would be very beneficial for creating defensible space around structures. In addition to purchasing a chipper, purchasing several power pole saws would also be useful. With any of this equipment, issues surrounding operators, insurance, and maintenance would need to be resolved.

An inexpensive project for the SHFSC to undertake would be to organize a series of community fire safe workdays. These workdays could be scheduled to take place at the home of an elderly or disabled community member who needed fire-safing done around their property. For example, following the Whale Gulch community meeting, local residents organized a work day to clear around the Whale Gulch School. A chipper and other equipment would be great assets to these work parties. A calendar could be created with a different location each time. The SHFSC could explore different ways to make these events fun. The recipient could provide snacks and beverages. A more complex fuels reduction project would involve organizing road-brushing crews to begin to

[86] Jim Robertson, Battalion Chief, CDF, personal communication, 6/27/04.

open up roads with dense brush identified as priorities in the neighborhood meetings. For areas where the workload is not immense, work parties could be organized by the SHFSC similarly to those described above. In this case, the target volunteers would be the residents of the road. For larger projects such as the priority shaded fuel break projects on public and/or private roads identified below, grant funding would need to be secured and a crew hired to undertake the work.

- SHFSC, CDF, and local fire departments collaborate to educate and encourage residents regarding defensible space.
- CDF, SHFSC, and local fire departments organize a series of community chipper days to assist residents in disposing of treated materials.
- MRC, VFDs, and SHFSC explore purchase of chipper and other fuel reduction equipment.
- CDF, SHFSC, and local fire departments provide outreach and assistance to residents in doing defensible space assessments.
- Residents must be diligent in creating their defensible space, as that will likely provide the best opportunity for surviving a wildfire. This should be done to 100 feet in most places, and up to 200 feet on steep slopes. Assistance is available from CDF, SHFSC, and several local contractors.
- SHFSC can help community members fire-safe their own properties through assistance in the form of education, materials, equipment, and even labor.
- The SHFSC and the MRC could offer trainings to help more community members become skilled in fire hazard reduction techniques.

Targeting local youth for some of these trainings would have a number of positive benefits for the community as well. *See "Resources for Fire Hazard Reduction Around Your Property" in Appendix I for a current list of local contractors and organizations involved in fire hazard reduction.*

Strategic Shaded Fuel Breaks

Reducing fuel loads to non-hazardous levels around the Mattole is a long-term project and can be overwhelming to consider. Nonetheless, through this planning process, areas of high priority for fuels reduction have been identified in many of the neighborhoods. These projects are rather large in scope and require further development. For example, exact location of fuel breaks would need to be identified on the ground, along with a list of participating landowners. In some cases, fuel breaks were proposed adjacent to or near public lands. In these instances, the agencies may be able to play a significant role in helping to secure funding for the projects, or provide matching assistance, such as the use of CDF's inmate crews.

The top priority for this area is to create a system of strategically placed shaded fuel breaks. These breaks need to be located in places that make sense in terms of local fire conditions as well as population centers, ignition sources, and access roads. Fuel breaks are usually focused on roads, ridges, or rivers as they are logical places to contain a fire. Generally, large wildfires on the North Coast burn from the east or northeast to the west or southwest. Therefore, providing breaks upwind of communities makes a lot of sense. Creating a network of fuel breaks allows firefighters to contain a wildfire in a smaller area. Networks create distinct areas in the landscape surrounded

by fuel breaks where a fire can theoretically be fought and contained. These are especially important to separate Wildland-Urban Interface (WUI) communities from surrounding wildlands.

There is the beginning of a network of shaded fuel breaks in the upper Mattole watershed. The BLM's fuel break system is growing, although much of it is to the west of the planning area (see

Map 6). Given that local wildfires have demonstrated that they run from northeast to southwest, the BLM network is unlikely to provide much protection to upper Mattole communities during these events; rather, they will protect the BLM properties and the community of Shelter Cove.

In 2003 CDF created a shaded fuel break along the Briceland Road from the Ettersburg/Honeydew Junction to the Whitethorn Junction and then along the Shelter Cove Road from the Whitethorn Junction to Shelter Cove.

Public roads in the upper Mattole are a logical place to begin an area-wide strategic fuel break system, although most are not ridgetop roads. (Establishing certain ridgetops for shaded fuel breaks is also a critical consideration.) However, these roads generally bisect most of the landscape covered in this plan. Improvement of these roads through brushing and clearing will enhance their usefulness as emergency evacuation routes. This is a critical consideration in this remote area.

- A top priority for fire safety in the upper Mattole is the creation of shaded fuel breaks along the following public and/or private roads:

Priority Projects – Fuels Reduction – Proposed Shaded Fuel Breaks on Public Roads:

1. Ettersburg-Honeydew Road along Telegraph Ridge. This would start at the junction with the Briceland Road and continue to the end of the road in Ettersburg. There are some areas here that will not need treatment; others that will require extensive treatment. This project was proposed in 2004 by CDF as a Wildland Urban Interface (WUI) grant project for National Fire Plan funding, and ranked tenth in the State, but not high enough to be funded. This section of the road serves 39 parcels directly and many more on spurs. The preferred prescription for this project would be a shaded fuel break one hundred feet above and fifty feet below the road. This break would tie in with CDF's existing break on the Briceland-Thorne/Shelter Cove Road, as well as the break being developed in stages along Wilder Ridge by the Lower Mattole Fire Safe Council.
2. Briceland-Thorne Road from Thorn Junction to Four Corners. This section of the road serves all of the parcels along the Briceland-Thorne road and off the spur roads around the community of Whitethorn, and on to Four Corners in Mendocino County. It also serves as an alternative evacuation route to Whale Gulch. This project is well suited for implementation by CDF's inmate crews, and was proposed by CDF's Garberville Station staff. Like the Telegraph Ridge shaded fuel break discussed above, this project has both dense and clear areas. Given that this neighborhood is less steep, fifty feet of below-the-canopy clearance on both sides of the road would likely be adequate, although the final prescription will need to be designed after a more in-depth survey. In areas where there is a steep uphill slope, especially with neighboring subdivisions, the break should be up to one hundred feet on the uphill side. This will also tie into the existing break on the Briceland-Thorne/Shelter Cove Road.
3. Chemise Mountain Road. At its south end this road (which is in poor condition) begins in Mendocino County at Four Corners and travels north through the community of Whale Gulch until it ends at the Shelter Cove Road east of Shelter Cove, in Humboldt County. This road provides critical access for Whale Gulch and is also a potential evacuation route

for Whitethorn and Four Corners. The Mattole Restoration Council has submitted a proposal to work on the northern gravel section of this road, where it drains to the Mattole. This project would need to be coordinated with both county governments.

Priority Projects – Fuels Reduction – Proposed Shaded Fuel Breaks on Private Roads:

1. Dutyville Road (aka "River Road"). This is a private road that carries at least one hundred residences (if not more) and leaves the Ettersburg-Honeydew Road southeast across the Mattole River from Ettersburg. It serves as primary for Dutyville, Crooked Prairie, and Fire Creek, and secondary access for Blue Slide and China Creek. The lower section of this road, from its junction with the county road (Ettersburg-Honeydew Road) until Mattole Canyon Creek, and a small stretch up the road in the ten-acre subdivision section, is the highest priority, as it serves the most residents. A second priority is to continue the project at the section of the road from the dense subdivision (past Mattole Canyon Creek) up the hill towards Duty Ridge. This area was identified as very high hazard by CDF's fuel hazard assessment ranking.
2. Huckleberry Lane. This private road leaves the Shelter Cove Road west of Thorn Junction and travels northwest along the Mattole River. This road serves the residences along it and also provides an alternative evacuation route from the north side of Telegraph Ridge.
3. Blue Slide Road. This neighborhood has already completed three miles of fuel reduction here. This fuel break should be continued on untreated areas between the base of the road to the upper forks of the creek.
4. Gibson Ridge Road. This private road traverses Barnum Timber property south of the Mattole and Whitethorn. A shaded fuel break along here could tie into the proposed Telegraph Ridge project and create part of a ring around the upper Mattole and King Range, as well as to the proposed break on Lost River Road to Four Corners. There is somewhat of a break already here on Barnum Timber land.
5. Private Roads east of Whitethorn. There are several roads here that follow creeks up the hill south of the Mattole and the Briceland-Thorne Road into residential subdivisions. Those roads are along East Anderson, Harris, Gibson, Stanley, and Baker Creeks. The south slope of these areas were identified by CDF's fuel hazard ranking as very high. Shaded fuel breaks and defensible space should be created in these areas.

Priority Projects – Fuels Reduction – Proposed Shaded Fuel Breaks on Public and Private Lands:

1. Four Corners/Upper Mattole River and Forest Cooperative. Creation of a shaded fuel break—starting at Restoration Forestry on Thompson Creek, traveling virtually south behind the Redwoods Monastery, then climbing the Lost River Road to the Usal Road and Four Corners. This would provide a good north-south fuel break and would be key for stopping fires from spreading between the Indian Creek and Mattole River watersheds. The break would protect this valuable forested area from the likelihood of fires starting inland and moving to the ocean (as is the pattern here, as evidenced by both the Honeydew and Finley fires.)

a. Expand this break from Thompson Creek southwest to Swift Peak Road and Chemise Mountain/Usal Roads via Whale Gulch.
b. Expand this break from Gray's driveway on the Usal Road north to Four Corners.

Generally, fuel reduction treatments should be implemented one hundred feet above and fifty feet below the roadway. Treatment prescriptions should focus on one-hour and ten-hour fuels in the understory and lower canopy in order to break up horizontal and vertical continuity and to reduce flashiness of remaining fuels. Total fuel loads should be reduced by approximately 100 tons per acre. Chainsaw thinning will prepare fuels. Pile and burn is the preferred method of slash treatment, with chipping as an alternative if the timeline requires operating during burning bans. After treatment, ignitions will be noticeable and remain manageable for a drastically longer time period versus a similar untreated area. In a larger-scale incident, residents will have safer escape routes for longer periods, due to the road-based location of the projects. In an extreme situation, the area on both sides of the road will be already prepped to anchor a backfire. In some instances these types of treatments have been observed to alter "running crown" fire behavior and drop it to the surface, allowing direct attack. The strategic orientation of this proposed network of shaded fuel breaks complements similar work ongoing within King Range National Conservation Area boundaries.[87] *For a general description of shaded fuel break prescriptions, see Chapter 3, Shaded Fuel Breaks.*

Costs for thinning or brushing forest stands vary widely, depending on the condition of the forest, access, and slope. Locally, it can cost anywhere from $300 to $1,500 per acre. However, in many cases, a supply of firewood is a result of the work. This can bring the price down if residents are accustomed to paying for firewood.

Another wildland fire hazard reduction issue relates to local watershed restoration projects designed to reduce sediment erosion into streams. Areas of exposed soil are mulched with either straw or brush and branches. The latter method is called "native mulch." It makes use of materials removed during thinning and other aspects of the restoration project. The challenge with this method is that in can result in the creation of an extremely high fire hazard, with piles of dead brush and trees scattered throughout the landscape. However, these are generally neither dense nor cover a large part of the landscape. Steps can be taken to ensure that this practice does not increase fuel hazard levels. Most importantly, the issues of horizontal and vertical fuels continuity must be addressed. In other words, for vertical discontinuity of fuels, there needs to be sufficient space between the top of these piles and the bottom of the neighboring tree canopy. In general, it is safest to leave a space at least three times the vertical height of the fuels (in this case the native mulch) below the lowest tree branches. For instance, if the mulch is four feet high, there needs to be twelve feet of vertical space between the top of the native mulch and the bottom branches of the tree canopy. Horizontal fuel continuity must also be addressed. There needs to be space between the native mulch areas and any other potential fuels (brush, trees, buildings, etc.). It is especially important that mulch is not within at least one foot (preferably much more) from the base of trees. *See Table 3 in Chapter 3* to determine horizontal spacing based on slope, using the column for Tree

[87] Dave Kahan, Full Circle Forestry, personal communication, 7/5/04.

Crown Spacing. For example, for areas of 11-20% slope, there should be at least fifteen feet of horizontal space between the native mulch and other fuels (i.e., the rest of the forest).

- SHFSC and MRC work with restoration community to ensure native mulch projects are fire safe.

Finally, encouraging local entrepreneurs to develop herds of goats or sheep (fire goats!) that can be moved around the community to consume fuels could be a very inexpensive way to reduce fuel loads in some areas.

- SHFSC work with interested residents to develop fire goat herds and advertise their availabiltiy.

8.2 Water Supply

A clear priority for several neighborhoods was to increase water storage for use in fighting fires. Under optimal conditions, assuming that the local fire trucks can pump approximately 300 gallons per minute, and given that the tank reservoirs on the trucks are usually under 1,000 gallons, a truck can drain its tank in about three minutes. (Firefighters can also make that same amount of water last for hours if necessary, using it much more judiciously, and only where it is absolutely necessary. With more water on a fire, chances of suppression are almost always much greater.) Ideally one wants to be able to fill a tank and return to the fire within five minutes. Therefore, there will need to be water sources located within one mile of a fire in densely populated areas (such as Whitethorn, Whale Gulch, and Thorn Junction).

Water conservation is a critical issue in the upper Mattole, as the river has dried out in recent years. Through the Mattole River and Range Partnership (MRRP), the Mattole Restoration Council, Mattole Salmon Group, and Sanctuary Forest are working together to improve local water conservation efforts. Together these groups are providing public education on the topic, as well as offering water-saving devices at a reduced cost. They are exploring the possibility of assisting landowners with installation of tanks or ponds for water storage. The basic concept is to store winter rains—either by channeling rainwater or utilizing springs or the river—for use in late summer and fall, when water supplies are low and fire hazard is high. Current obstacles to creating water storage include funding and permitting from the State Water Resources Control Board and the Department of Fish and Game, as well as potential property tax assessment increases.

Hence, a priority project for the SHFSC and MRRP partners should be to secure funding to purchase a series of water tanks to be placed throughout the upper Mattole area. Identifying strategic locations for the water tanks will be the first step in this process. Access and the ability of fire-fighting vehicles to turn around are critical design components. Another issue that will need to be addressed is the maintenance of the tanks, such as refilling them and/or topping them off occasionally throughout the year. This should be coordinated with local fire-fighting organizations.

- SHFSC and MRRP partners secure funding for purchase of community water tanks.
- SHFSC, MRRP, and local fire departments identify priority locations and maintenance plans for water tanks.

Priority Projects – Water Supply – Proposed Water Tank Locations:

1. Telegraph Ridge along the Ettersburg-Honeydew Road. Telegraph Fire needs a 2,500-gallon tank on the uphill side of the road. It would need water supply, access, and efficient turnaround space.
2. Whale Gulch, on the uphill side of Chemise Mountain Road.
3. Thorn Junction, near the junction with Paradise Ridge Road.
4. Wilder Ridge along the Wilder Ridge Road near Ettersburg. Telegraph Fire needs a 2,500-gallon tank on the uphill side of the road. It would need water supply, access, and efficient turnaround space.
5. Blue Slide Road, at Rick and Tony's or the junction with China Creek Road.
6. Whitethorn, downtown, uphill from town.
7. Four Corners, near the Four Corners intersection.
8. Dutyville Road, on the road up to Duty Ridge.

Another option for water supply is ponds. This option is much cheaper per unit of water stored and is often easier to access by firefighters. However, ponds can dry up at critical times of the year. By providing discounted pond liners, the SHFSC could create a contract with landowners to ensure that not all the water would be used for agricultural or domestic purposes and therefore be available for fire fighting during the critical late summer/early fall months.

While ponds are ideal for storing large amounts of water for fire fighting, they must be properly sited to avoid erosion problems. Ponds built on unstable ground can give way, leading to large washouts and gullying, thus choking streams with sedimentation and damaging fish habitat. Ponds should be built on stable ground, have adequate overflow protection, and should not be built across seasonal or perennial creeks. Additionally, ponds can breed nuisance species such as bullfrogs, mosquitoes, and non-native fish that can also harm native salmon and steelhead. For more information on ponds for fire water storage, please see http://www.mattole.org/html/publications_article_36.html.

Finally, the SHFSC may want to explore the bulk purchase of fire hoses and other fire-fighting equipment to sell to local residents at discounted prices. This would help ensure that proper fire-fighting equipment is spread around the Mattole, and help the local fire-fighting agencies' ability to control fires.

- SHFSC work with CDF and fire departments to identify sources of inexpensive fire-fighting equipment and educate residents as to its availability.

8.3 Education

Several neighborhoods suggested the idea of community fire safety awareness signs. These are used effectively in many other fire-prone areas around the country. Given the history of vandalism of signs, it was suggested that local school kids create the signs. This has been effective in discouraging vandalism of BLM signs at the mouth of the Mattole near Petrolia. Additionally, this would be done in conjunction with a fire safety curriculum at the local schools.

- ➢ SHFSC work with other partners and local schools to develop community educational signs.

Signs were suggested for the following locations:

- Ettersburg
- Ettersburg School
- Ettersburg-Honeydew Road junction with Briceland-Thorne Road (beginning of Telegraph Ridge)
- Thorn Junction
- BLM King Range Office on Shelter Cove Road
- Shelter Cove Road junction with Chemise Mountain Road
- CDF Thorn Fire Station on Briceland-Thorne Road
- Whitethorn School
- Four Corners
- Whale Gulch

Fire safe education needs to start with the children. Curricula about fire ecology, dynamics, and safety exist and could be brought into local schools. Regional Fire Safe Councils are a resource for speakers that can be brought into schools, as well as into the community at large. *For a list of sample fire safety curriculum, please see Appendix I.*

- ➢ SHFSC work with local schools to implement fire safety curriculum at all grade levels.

In addition to the trainings mentioned in the fuels reduction section above, there are additional trainings that could benefit the general community. Trainings on the basics of fire fighting would be a great local investment. CDF and the local volunteer firefighters could be brought in to help lead these trainings. Combined with the availability of discounted fire-fighting supplies, these trainings could have a large, positive impact on the community's ability to stop fires quickly at their source, especially given the scattered nature of homes in the upper Mattole. If local residents could jump on a fire as soon as it started, the chances of total containment would be much higher when firefighters did arrive on the scene.

- ➢ Local fire departments, CDF, and SHFSC organize series of trainings in fire-fighting basics for non-firefighters.

The community education and discussions regarding fire safety that have happened as a result of this planning process as well as the recent Honeydew and Canoe fires have been inspiring. The SHFSC could develop an ongoing community education program to keep everyone thinking about fire and how to be proactive. Educational venues could include speakers, updated literature, and demonstrations. This should be done in conjunction with KMUD radio, which provided excellent community leadership during the Canoe and Honeydew fires.

- ➢ SHFSC continue community educational efforts on fire safety.

Finally, community education efforts need to focus on local youth. This is especially important because of the aging population of local volunteer firefighters. There is a critical need to inspire youth and those in their twenties and thirties to take an active role in their local fire departments.

- ➢ Local fire departments work with SHFSC and local media to create outreach and training program for young fire fighters.

8.4 Ongoing Neighborhood Meetings

Several people have expressed the desire to have ongoing neighborhood Fire Safe Council meetings such as those that took place during this process. Ongoing meetings would be a great venue for information to flow back and forth between SHFSC representatives and neighborhood residents. In this way, more people would have the opportunity to contribute to the long-term development of priority projects for fire hazard reduction and fire safety. The SHFSC could explore whether to hold such meetings regularly, such as once or twice a year, to ensure ongoing community input and assistance. Many people expressed a desire to help their Fire Safe Council be successful. This is a natural way to involve interested community members.

These meetings could happen in conjunction with SHFSC meetings. Currently, SHFSC meets regularly at Beginnings in Briceland or the CDF Station in Garberville. The SHFSC should rotate their meetings around Southern Humboldt to encourage more widespread community participation. SHFSC meetings could easily be held in the upper Mattole in Thorn Junction or Whitethorn.

- SHFSC hold neighborhood fire safety or FSC meetings in the Upper Mattole, in locations such as Thorn Junction and Whitethorn.

8.5 Agency Cooperation

One of the greatest benefits of Fire Safe Councils (FSCs) is that they open channels of communication between the community and the various agencies that are concerned with fire. In the upper Mattole representatives of the Bureau of Land Management (BLM), California Department of Forestry and Fire Protection (CDF), California Department of Parks and Recreation (State Parks), local Volunteer Fire Departments, and nonprofit organizations can coordinate their activities through the Southern Humboldt FSC.

FSC meetings are a great opportunity to flesh out the specifics of cooperative programs between and/or among agencies and landowners. The following is a brief summary of potential agency involvement.

- BLM, State Parks, and CDF continue to work closely with SHFSC and actively participate in projects.

Several projects were identified at neighborhood meetings on agency lands or in cooperation with agencies. Some of those are listed here.

- BLM fuel reduction or educational projects:
  - Nooning Creek Swimming Hole
  - Chamise Mountain Trail
  - Nadelos and Wailaki Campgrounds
  - Signage at King Range office and other locations
- CDF fuel reduction projects, using inmate crews:
  - Ettersburg-Honeydew Road
  - Briceland-Thorne Road

- Chemise Mountain Road
- Community chipper days
- Home fire safe inspections

• State Parks fuel reduction or educational projects[88]:
- Council Madrone
- Fuel breaks around Four Corners and Whale Gulch
- Shadowbrook

• Volunteer Fire Organizations
- Local expertise

Local fire departments can play an active role in the FSC as the community's in-house fire experts. They can help with training and identification of needs, especially relating to equipment and water, and will be the key resources on many projects. However, local volunteer fire-fighting organizations are generally understaffed, while the number of emergency response calls are increasing. Therefore, community projects to support and strengthen fire-fighting organizations through local FSCs must be a priority.

8.6 Policy Issues

For this plan to be accepted as a Community Wildfire Protection Plan, it must be approved by local government, CDF, and local fire departments. Therefore, the MRC and SHFSC need to work with CDF, Humboldt County, and the Southern Humboldt Fire Chiefs' Association at a minimum to approve this document. Mendocino County approval would assist in implementation of those projects within that County. All local fire departments—Whale Gulch, Whitethorn, Telegraph, and Beginnings—could also approve this in lieu of the Fire Chiefs Association.

➢ MRC and SHFSC obtain necessary approvals to finalize this Plan as a CWPP.

One principal policy issue that has arisen out of this process is the fact that landowners who install water storage for fire hazard and/or water conservation are penalized by their property taxes being increased. Humboldt County officials were contacted and are exploring this issue. This has been addressed by the board of the California Fire Safe Council and is being examined for statewide legislation, potentially in cooperation with the County. A list of exemptions from property tax increases would need to be created for water tanks. This could be done for community storage tanks as well as for private landowners who install water storage tanks on their own initiative. For the latter, one option would be to have the local fire department sign off on the tank as serving fire suppression needs. The challenge is to develop agreements to ensure the water is in fact available for fire fighting, and not all used for domestic or agricultural purposes.

➢ Humboldt County work with local legislators to develop new policies related to taxing of water storage.

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[88] Of course, State Parks should be consulted before any funding is requested to ensure that the goals, location and specifications are compatible with the mandates of the State Park system and the specific park involved.

Additionally, the issue of where CDF's inmate crews can work was questioned in this process. Inmate crews are generally not allowed to work on private property for security reasons. However, in rural areas where homes are often far from roads, it seems secure to have the crews work on such roads. According to Case Butterman, Deputy Chief for CDF's Conservation Camp Program:

> Pre-fire fuels reduction is the #1 priority of the CDF conservation camp program, and we will assist all Fire Safe Councils to reduce hazard in local communities. Contact should be made at the local level with the camp Division Chief to assess projects, and schedule them for work.
>
> We are restricted from working on private property by law. There are a few exceptions to this, so each project must be evaluated to determine if it is appropriate. Projects are also reviewed by CDC to determine proximity to homes, and other security concerns[89]

- CDF cooperate with SHFSC and MRC to use inmate crews on prioritized fuel reduction projects.

Finally, there is a potential and need for furthering sustainable forestry and watershed recovery goals in conjunction with the fire safe effort. Neighborhood Fire Safe Councils can be the basic building block unit for this comprehensive approach – landowners and residents joining together to meet community needs. For example, the Orleans-Somes Bar Fire Safe Council has been a leader in the state for combining fire safety projects and habitat restoration. Additionally, in many communities, fire safe projects are facilitating thinning of forests with some commercial byproduct. In many instances these would qualify for sustainable forestry certification such as forwarded by the Forest Stewardship Council. The MRC is advancing a project as part of its Wild and Working Forests program to reduce fuels while practicing sustainable forestry. More projects of this type should be explored at all levels. Fire Safe Councils are a natural organization to facilitate community discussion of resource management as it relates to fuel hazard reduction, which can naturally lead to ecologically sustainable forest management and habitat and watershed restoration.

- Agencies work with MRC, SHFSC and others to expand fuel reduction projects to include watershed and habitat restoration, as well as sustainable forestry objectives.

[89] Case Butterman, Deputy Chief, CDF Conservation Camp Program, personal communication, 11/10/04.

9. Potential Sources of Funding

Funding is becoming increasingly available for the type of projects outlined in this Plan. Different programs are targeted at different audiences. For example, while some programs are specifically for landowners who want to carry out fuels reduction work on their property, most are targeted toward organizations or agencies that can facilitate larger projects. Through the combined efforts of the local neighborhood and agency Fire Safe Council representatives, funds will likely be able to be secured to undertake large fuels reduction projects. To ensure the most effective use of the secured funds, priority is usually given to projects that either cross property lines or will have an impact on a large area or to several ownerships. Public funds are always spent first on projects that have the greatest public benefit. Therefore, projects that include multiple ownerships or will provide benefit to a large number of community members are most likely to get funded. Single private-property projects are most often funded by agency cost-share programs (see below).

All of the participating state and federal agencies have access to funds that may be available to the FSC. In addition to internal funding sources, there are cost-share programs offered to help landowners cover the expense of fuels reduction work on their own property. The Natural Resources Conservation Service (NRCS) is the agency that administers the Environmental Quality Incentives Program (EQIP), a federal cost-share program funded by the Farm Bill. CDF administers both the California Forest Improvement Program (CFIP) and the Forestry Incentives Program (FIP).

Cooperative proposals can be submitted for funding to state, federal, and private foundation granting programs. As mentioned, they are generally very successful in competing for limited grant funds. FSC projects identified as a priority in this Plan are very well positioned to receive grant funding.

The Mattole Restoration Council sees sustainable forest management as a key tool for reducing wildfire risks throughout our watershed, and to that end is contributing resources for private land management. To help landowners meet their goals, the MRC created the Wild and Working Forests Program, which offers landowners technical and financial assistance to reduce fire risk, improve wildlife habitat, and provide opportunities for sustainable forestry. The Program will help landowners through the maze of regulations around forest management, and connect landowners with resources, labor, and foresters to complete forestry projects. The Wild and Working Forests Program places an emphasis on working with multiple landowners within a given area to achieve broad forest health improvements. For more information, please contact John Isom at (707) 629-3514.

9.1 Cost-Share Programs

There are several state and federal agencies that provide *cost-share* (where the government shares in the costs of work done on private property) programs to enhance natural resource stewardship. Cost-share funding for fire hazard reduction work is becoming more and more of a priority, both at the state and national levels. The general understanding is that for every $1 spent on fire prevention, $10 is spent on fire fighting; therefore, it makes sense to invest in prevention. The following is a summary of the programs available for qualifying landowners. Additional information is available on all of these programs through the California Fire Safe Council (CFSC), the California Department of Forestry (CDF), NRCS, or the Internet. In most cases, the landowner

cost-of-share ranges from 25% to 35% of the total project cost. Qualifying landowners generally must have between 10 and 5,000 acres, not be in the principal business of timber production, and agree to keep the funded practices in place for at least 10 years.

The Mattole Restoration Council sees sustainable forest management as a key tool for reducing wildfire risks throughout our watershed. To help landowners meet their goals, the MRC created the Wild and Working Forests Program, which offers landowners technical and financial assistance to reduce fire risk, improve wildlife habitat, and provide opportunities for sustainable forestry. The Program will help landowners through the maze of regulations around forest management, and connect land owners with resources, labor, and foresters to complete forestry projects. The Wild and Working Forests Program places an emphasis on working with multiple landowners within a given area to achieve broad forest health improvements. For more information, please contact John Isom at (707) 629-3514. *For more information, see Appendix II, Fuels Reduction Literature.*

California Forest Improvement Program (CFIP)

CFIP is a forestry incentive program that is intended to provide funds to forest landowners for:

1. Management Plan—A long-term Forest and Land Management Plan must be prepared if you are applying for site preparation, tree planting, thinning, pruning, release, or follow-up. The plan is designed to help you develop your land management objectives and feasible projects, based on a professional analysis of your property's potential and opportunities. Your Management Plan must be prepared and signed by a Registered Professional Forester (RPF). CFIP can fund up to 75% of the cost for preparation of a new plan or revision of an existing plan (if the area is substantially damaged, up to 90% may be reimbursed). Plans may vary in format, but all plans include a description of the property, e.g., history, inventory, map of land uses; an analysis of the area's condition and capability for improved management; and a statement of the owner's forest management objectives. The Management Plan also identifies projects, sets priorities, and may propose timelines.
2. RPF Supervision—Eligible for funding (note that RPFs are not eligible for reimbursement for supervising work on their own property).
3. Site Preparation—The removal of vegetation competing or potentially competing with planted trees. Methods include using heavy machinery such as bulldozers, cutting and removing vegetation with chainsaws, scalping the soil with hand tools, using prescribed fire to burn the site, and/or chemical treatments of the competing vegetation prior to planting.
4. Trees and Planting—The purchase of tree seedlings or seeds, the costs of transporting and storage of seedlings, and the planting costs are all eligible.
5. Tree Shelters—The cost of vexar or tree shelters needed to protect seedlings from browse damage is eligible for funding.
6. Pre-Commercial Thinning—Reducing the number of stems of young commercial tree species to a predetermined spacing to improve growth.
7. Release—Removal of competing non-commercial trees or shrubs.

8. Pruning—May be funded in conjunction with thinning or release. Pruned trees must be less than 15 inches in diameter.
9. Follow-up—Whatever work is necessary to promote the survival of seed or seedlings and undertaken within 36 months of planting. In most cases, follow-up work such as insect, disease, rodent, weed, or brush control will qualify for funding.
10. Land Conservation/Wildlife/Fisheries Projects—To reduce soil erosion and sedimentation of streams, as well as a variety of projects to improve habitat for fish or wildlife species. Eligible practices include: protect a forest stand from fire, planting native oaks, prescribed burning to improve habitat.[90]

CFIP was traditionally funded through receipts from the State's Demonstration Forests. However, that funding has been lacking in the last few years. Funding may also be provided from other state and federal sources. There are limited funds coming to CFIP between now and June 2005 for management plan purposes only. To find out the funding status of CFIP you can call 1-800-738-TREE. For non-management plan-related projects, landowners are encouraged to apply for CFIP in order to get their application in the system if and when funding does become available. CFIP is a 75% cost-share program for landowners with between 20 and 5,000 acres of "forestland." 90% cost-share rates are available on lands substantially damaged by fire, insects, and earthquakes within the past ten years. Land must be zoned for uses compatible with forest resource management. The intention of CFIP is to invest in timber stand improvement projects in order to yield future marketable forest products and/or improved natural resources. Work required to comply with the Forest Practice Act and Rules is not eligible for CFIP funding.

Fuels management is funded under CFIP via thinning of densely stocked timber stands. All practices funded under CFIP have cost-share *cap rates*—the maximum amount that can be spent on any one practice and the projects in total. The 2001 cap rates for *pre-commercial thinning* ranged from $200 to $400/acre, or $150 to $300/acre from CDF as the 75% cost share. However, given that cap rates are for such a limited amount, and actual thinning costs in the upper Mattole are likely to average closer to $1,000 an acre, the actual cost share ends up being much lower than 75%.

Also available for fuels management from CDF is the Vegetation Management Program (VMP). VMP is a "cost-sharing program that focuses on the use of prescribed fire, and mechanical means, for addressing wildland fire fuel hazards and other resource management issues on State Responsibility Area (SRA) lands. VMP allows private landowners to enter into a contract with CDF to use prescribed fire to accomplish a combination of fire protection and resource management goals. The projects which fit within a unit's priority areas (e.g., those identified through the Fire Plan) and are considered to be of most value to the unit are those that will be completed. The Vegetation Management Program has been in existence since 1982 and has averaged approximately 35,000 acres per year since its inception."[91] For more information please go to: http://www.fire.ca.gov/ResourceManagement/VegetationManagement.asp.

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[90] California Forest Improvement Program (CFIP) CDF User's Guide 2003 Edition, Volume 1, December 2003.

[91] CDF Resource Management and Forestry, Vegetation Management Program, Hhttp://www.fire.ca.gov/ResourceManagement/VegetationManagement.aspH.

If landowners are interested in applying for CFIP funds, they can submit an application to Jim Robbins at Fortuna CDF. He suggests that given the current funding situation, landowners do not incur a lot of costs in developing their applications by getting a forester involved at this time. He is available to advise landowners on how to fill out the application. Once you submit the application, he can come out and inspect your property to see if it qualifies (if and when funds arrive). Given the intention of CFIP, applications should focus on improving the quality of your timber stands by thinning, with fire hazard reduction as an added benefit. Landowners can contact Jim Robbins directly at 726-1258 or James.Robbins@fire.ca.gov. The CFIP User's Guide 2003 Edition is available at: www.ceres.ca.gov/foreststeward/html/CFIP.html.

Environmental Quality Incentives Program (EQIP)

The Environmental Quality Incentives Program is funded through the National Farm Bill and administered by the Natural Resources Conservation Service (NRCS, formerly Soil Conservation Service). This program primarily funds conservation efforts on agricultural land and includes road-related erosion and forestry-related projects. Cost-share rates are 50%, with many of the same or similar restrictions as CFIP. California received $45 million in EQIP funds for fiscal year 2004.[92] "The Local Work Group for Humboldt and Del Norte Counties focused the EQIP program on practices which address water quality concerns, while encouraging cost-effective practices to maintain and improve watershed health."[93] Consequently, allocations in Humboldt and Del Norte Counties are apportioned as follows: 60% for improvements related to water quality and watershed health issues on grazing land, 20% for water quality improvements and watershed health issues related to woodland, and 20% for water quality improvements related to dairy waste. For more information on this program, contact NRCS Forester Judy Welles at 442-6058, extension 110, or judy.welles@ca.usda.gov. The NRCS website is www.ca.nrcs.usda.gov.

Forestland Enhancement Program & Enhanced Community Fire Protection (FLEP)

The Forestland Enhancement Program (FLEP) is a new program under the 2002 Farm Bill. It is a 75% cost-share program for landowners with up to 1,000 acres, petitionable up to 5,000 acres. FLEP "provides for technical, educational, and cost-share assistance to promote sustainability of the NIPF [non-industrial private forestland] forests."[94] State forestry agencies can use FLEP funds to achieve a broad array of objectives, including: (1) Forest Stewardship Plan Development, (2) Afforestation and Reforestation, (3) Forest Stand Improvement, (4) Agroforestry Implementation, (5) Water Quality Improvement and Watershed Protection, (6) Fish and Wildlife Habitat Protection, (7) Forest Health and Protection, (8) Invasive Species Control, (9) Wildfire and Catastrophic Risk Reduction, (10) Wildfire and Catastrophic Event Rehabilitation, and (11) Special Practices. Unfortunately, due to the budget crisis and the destructive 2003 wildfire season, the funds for this program have been

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[92] NRCS, EQIP Funding Allocations in California, Hhttp://www.ca.nrcs.usda.gov/Programs/EQIP/2004/EQIPfunding2004.htmlH.

[93] NRCS, Northern California County 2004 EQIP Application Information, Humboldt County, EQIP Program Description, Hhttp://www.ca.nrcs.usda.gov/Programs/EQIP/2004/EQIP2004norcal.htmlH.

[94] USDA Forest Service, Forestland Enhancement Program, Hhttp://www.fs.fed.us/spf/coop/programs/loa/flep.shtmlH.

depleted through 2007.[95] This program is currently being administered locally by Jim Robbins, CDF, at 726-1258 or mailto: Jim.Robbins@fire.ca.gov.

The Enhanced Community Fire Protection Program is a federal-state cooperative program to "(1) focus the Federal role in promoting optimal fire fighting efficiency at the Federal, State, and local levels; (2) expand outreach and education programs to homeowners and communities about fire protection; and (3) establish space around homes and property that is defensible against wildfire."[96] This third objective is clearly relevant to our need for fire hazard reduction funds. There is currently no dollar amount allocated to this program.

For the latest information on these cost-share programs, check out the NRCS (www.nrcs.usda.gov), USFS (www.fs.fed.us), and CDF (www.fire.ca.gov) websites, or contact Jim Robbins at CDF (726-1258), Judy Welles at NRCS (442-6058, extension 110), or Yana Valachovic at UC Cooperative Extension (445-7351).

9.2 Government Funding Sources

Recently the California Fire Alliance and the California Fire Safe Council created a Grants Clearinghouse to most effectively distribute National Fire Plan funds in California. The Clearinghouse is a "one-stop shop" for funding fuel hazard reduction and fire safety projects in the state. "The clearinghouse gives eligible organizations the ability to apply to multiple programs with one concept paper. It gives funding agencies the ability to coordinate planning, and to consider funding projects they might otherwise not know about."[97] The design is for interested parties to go the website http://www.grants.firesafecouncil.org and submit a "concept paper." The concept paper is then reviewed by all of the participating funding agencies – most of the federal agencies that fund this type of work in California. A committee (with input from the participating agencies) decides which grant program is most appropriate for your project and if your project should be funded. Potentially funded concept papers then require a follow-up application to the specific grant program in order to compete for funding. For more information, see the clearinghouse website.

9.3 Private Funding Sources

There are private foundations that will fund fire hazard reduction work. Often, it has to be tied to something else, such as habitat improvement or community development, for example. Like government programs, foundations tend to prefer funding efforts that will have a large effect, such as across many ownerships. Foundation funds could be used to support planning and project development efforts, which can then be used as a match for project implementation funding. The Humboldt Area Foundation Rooney Resource Center, the Mel and Grace McLean Foundation, and the Bertha Russ Lytel Foundation are great places to look for sources of local private foundation

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[95] USDA, Forest Land Enhancement Program Briefing Paper, 2/3/04, Hhttp://www.fs.fed.us/cooperativeforestry/library/FLEPbriefing.pdfH.

[96] USDA Farm Bill 2002 Title VIII Forestry, http://www.usda.gov/farmbill/forestry_fb.html.

[97] California Fire Safe Council, Hhttp://www.grants.firesafecouncil.orgH.

funding. Contacts with these foundations by SHFSC members would help establish relationships that could lead to funding. A good online information source for funding information is www.conservationgrants.com.

Appendix I. Fire Safe Literature

FIRE SAFE YOUR NEIGHBORHOOD!

A few simple things you can do NOW.

√*AROUND THE HOUSE*

- Move firewood, lumber, and debris at least 30 feet away from your home, fences, outbuildings or other combustible materials.
- Prevent burning embers from getting in, or under, your buildings. Screen vents (with ½-inch screen), seal eaves, enclose areas under houses and decks.
- Mow or weed-eat any grass 30 to 100 feet from your home. Remove any leaves and branches up to ten feet from exterior walls and roof. Clean leaves from your gutters.
- Thin out any thick brush close to a structure. Remove smaller-diameter materials (branches, shrubs, etc.) and leave the bigger trees for shade! Pay special attention to "ladder fuels" (vegetation that provides an easy avenue for fire to travel from the ground level through bushes and small trees into the tree canopy, and eventually your home)!

√*AROUND THE NEIGHBORHOOD*

- Let your local firefighters know:
  - The exact location of your **home**, and house or parcel number if possible**.**
  - The name of your **road**.
  - Where the **water sources** are located on your property.
  - Any specific **road hazards** (such as rickety bridges, steep grade, etc.).
  - Information about **locked gates**, including combinations.
- Look carefully at your road.
- Could a fire engine (minimum 12 feet wide by 12 feet high) get up and down it without much difficulty, especially at the same time you are trying to get out?
- Could thinning/brushing work be done to reduce fire intensity along the road?
- Would you be comfortable using that road as your escape route?
- Identify safe zones! A safe zone is an area where you can survive the passing of a fire front, without the aid of special equipment. A home with adequate defensible space may be a safe zone. Keep in mind, with thicker brush or more people, safe zones must be larger. Work with neighbors to locate and create additional safe zones for yourselves and fire-fighting equipment.

TALK WITH YOUR NEIGHBORS, TALK WITH YOUR FIREFIGHTERS!

Let's work together to reduce the risk of wildfires in our neighborhoods.

For more information, contact Jessica DeKelver at 986-1078.

Resources for Fire Hazard Reduction Around Your Property

Organizations/Agencies

Bureau of Land Management, King Range Conservation Area (BLM) *POB 189, Whitethorn, CA 95589, 707-986-5400; Tim Jones, 825-2306.* Big chipper available for BLM-coordinated projects.

California Department of Forestry and Fire Protection (CDF) *Hugh Scanlon 726-1206; Kim Price 726-1224 (Fortuna). Thorn Station, 13298 Briceland-Thorn Rd., Whitethorn CA 95589—Don Scarlett, Captain, 986-7553 (Open summer-fall). Jim Robertson, Battalion Chief, Garberville Station 923-2645.* Jim and Don can provide tips on fire-safing your home and property, as well as helping to coordinate resources for smaller burns. *Jim Robbins, CDF Staff Forester, 726-1258 (Fortuna)* can help you find cost-share assistance for your own fire hazard reduction projects. CDF is eager to help with fuels-reduction projects, and can make a chipper available for neighborhood "chipper days." CDF will also help coordinate resources necessary for large controlled burns through the Vegetation Mgmt. Program.

Coastal Headwaters Association POB 12, Whitethorn, CA 95589; 986-1554.

Crooked Prairie Fire Crew *POB 631, Garberville, CA 95542, Ellen Orlofsky or Kathy Weber 986-7771* A very local, small first responder volunteer fire crew for Crooked Prairie. Larry Heald's book Homestead Fire Prevention is available through the above address for a donation of $5.

Institute for Sustainable Forestry (ISF) *POB 1580, Redway, CA 95560; 923-7004 (Garberville)* Resources about fuels reduction work and timber stand improvement. Database of available resources for forestry work.

Lower Mattole Fire Safe Council (LMFSC) *POB 20, Petrolia, CA 95558, Amanda Freeman 629-3514 (Petrolia/Honeydew)* LMFSC meets quarterly at the Mattole Grange to identify and implement fire safety projects in the lower Mattole area.

Mattole Restoration Council (MRC) *POB 223, Whitethorn, CA 95589, 986-1078* The MRC conducts fuels reductions projects in the Mattole watershed and can help your neighborhood develop a plan for reducing fuels. Also has an extensive resource library, offering GIS and mapmaking services. www.mattole.org.

Natural Resource Conservation Service (NRCS) *Judy Welles, Forester, 442-6058, ext. 110; 822-7090, ext. 101 (Eureka)* Judy is the local representative for accessing cost-share programs through NRCS (such as the Environmental Quality Incentives Program or EQIP.

Southern Humboldt Fire Safe Council (SHFSC) *POB 1381, Redway, CA 95560, Joel Ficklin 845-3282 (Garberville)* SHFSC meets regularly at Beginnings in Briceland to identify and implement fire safety projects in the greater Southern Humboldt area.

Telegraph Ridge Fire Protection District *POB 1152, Redway, CA 95560, 986-7488* Provides fire protection and medical assistance in and around the Telegraph Ridge Fire Protection District. If you dial 911 within the District, ask for Telegraph Ridge by name.

Whale Gulch Volunteer Fire Company *POB 12, Whitethorn, CA 95589, 223-1091* Provides emergency fire and medical services in the Whale Gulch area and portions of the Lost Coast.

Whitethorn Volunteer Fire Department *POB 183, Whitethorn, CA 95589, 986-7688* Provides emergency fire and medical services in the Whitethorn area.

Appendix I. Fire Safe Literature

Individuals/Contractors

Steve Bowser, *822-8803 (Honeydew)* Has a small airplane in Rohnerville that is available for flights (at $75/hour) to fly over your property and get the big picture perspective.

Dave Collins *272-1318* Available for brush clearing and hazardous fuels reduction. Has experience in fire fighting, reforestation, trails, exotic plant removal.
Chompers Cook *629-3428 (Petrolia)* Fire hazard reduction (thinning, pruning, clearing, etc.) and heavy equipment operation, as well as firewood production from thinned/cleared materials.

Bill Douglas *986-9652 (Whale Gulch)* Fire hazard reduction work around properties, including limbing and removal.

Logan Edwards *986-1578, 496-3353 (Ettersburg)* Chipper, pole pruner, available for hire for clearing and chipping.

Elk Ridge Forestry, *923-7777* Forest management, fire suppression, fuel reduction, brush chipping, water delivery, and dust abatement.
John Farris, Sunny View Tree Works *223-1099* Experienced arborist with chainsaw and climb gear. Locally trusted. Available for hazardous fuels reduction.
Dan Gribi *943-3006 (Salmon Creek)* Has a plane available in Garberville for flights.

Doug Huajardo/Lost Coast Services *223-0363 (Ettersburg*) Doug owns a firewood processing machine and tractor (running on bio-diesel). Doug's clearing of roads or firebreaks can provide a value in firewood, sometimes above the cost of his labor.

Mike Jakubal *923-5063 (Briceland)* Portable saw mill, can mill local hardwoods.

Dave Kahan, Full Circle Forestry *POB 436, Whitethorn, CA 95589, 986-7376, 923-1867 pager (Ettersburg)* Dave can muster a crew to do fuels reduction or timber-stand improvement work. He has two 20-foot power pole pruners. He has undertaken fuels reduction projects as large as 55 acres, and can do this type of work for $300 to $2000 per acre, depending on the density of vegetation/conditions.

Tracy Katelman, ForEverGreen Forestry *POB 9068, Eureka, CA 95502, 443-2400 (Eureka)* Upper Mattole Fire Plan Project Coordinator. Registered Professional Forester, therefore can assist with cost-share applications and Management Plans.

Leif Larson *PO Box 2331, Redway, CA 95560, 223-1091* Chief of Whale Gulch Fire Department. Backhoe with thumb and four way bucket, available for even tight access, tree removal, log stacking, brush reduction, and can do homestead defensibility ratings, fuels profiling, chain saw work.
Bill Malinowski, North Coast Construction, *986-9782 (Shelter Cove).* Has 6-inch chipper.

Tim Metz, Restoration Forestry *496-0322 (Garberville)* Has chipper and is a Registered Professional Forester. Can assist with cost-share applications and Management Plans.

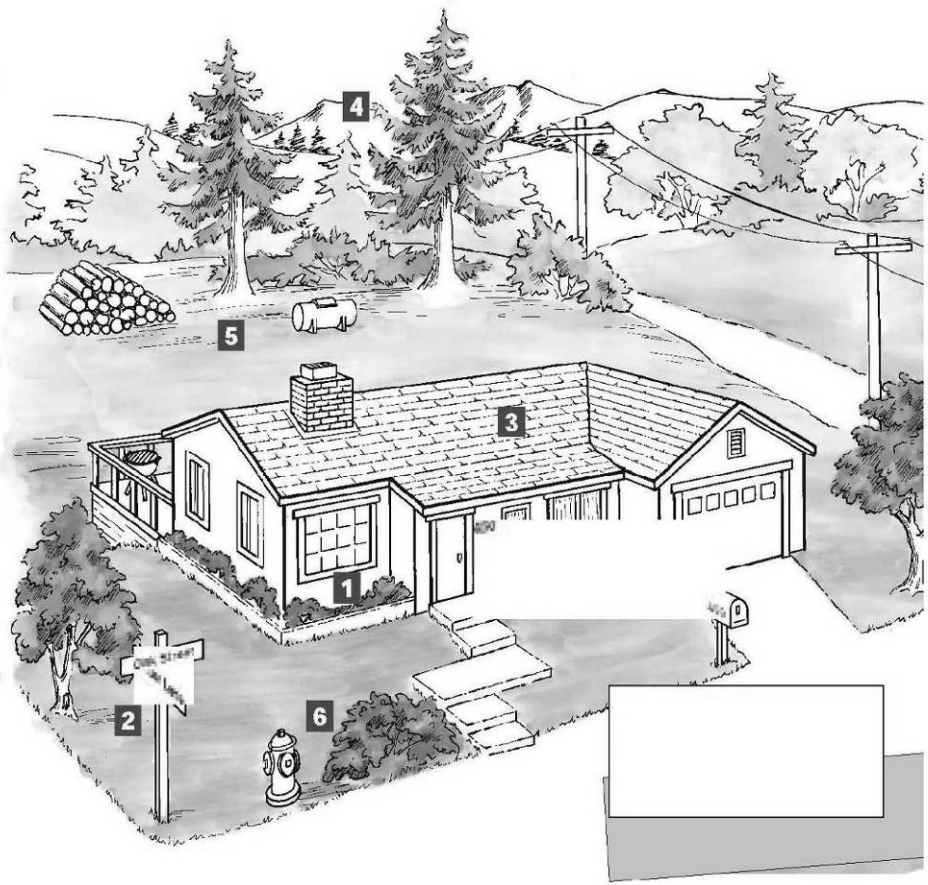
Diana Totten, *POB 1631 Redway, CA 95560, 923-3805 (Redway).* Affiliated with Elk Ridge Forestry. Has a small crew for fuel hazard reduction work, and lots of experience in wildland fire fighting. Has backhoe and small bulldozer for larger jobs, possible chipper. Also consults with homeowners in how to do-it-yourself most effectively.

Fire Safe Council

Homeowners Checklist

www.firesafecouncil.org

How To Make Your Home Fire Safe



OUTSIDE

1 Design/Construction

- __ Consider installing residential sprinklers
- __ Build your home away from ridge tops, canyons and areas between high points on a ridge
- __ Build your home at least 30-100 feet from your property line
- __ Use fire resistant materials
- __ Enclose the underside of eaves, balconies and above ground decks with fire resistant materials
- __ Try to limit the size and number of windows in your home that face large areas of vegetation
- __ Install only dual-paned or triple-paned windows
- __ Make sure that electric service lines, fuse boxes and circuit breaker panels are installed and maintained as prescribed by code
- __ Contact qualified individuals to perform electrical maintenance and repairs

2 Access

- __ Identify at least two exit routes from your neighborhood
- __ Construct roads that allow two-way traffic
- __ Design road width, grade and curves to allow access for large emergency vehicles
- __ Construct driveways to allow large emergency equipment to reach your house
- __ Design bridges to carry heavy emergency vehicles, including bulldozers carried on large trucks
- __ Post clear road signs to show traffic restrictions such as dead-end roads, and weight and height limitations
- __ Make sure dead-end roads, and long driveways have turn-around areas wide enough for emergency vehicles
- __ Construct turnouts along one-way roads
- __ Clear flammable vegetation at least 10 feet from roads and five feet from driveways
- __ Cut back overhanging tree branches above roads
- __ Construct fire barriers such as greenbelts
- __ Make sure that your street is named or numbered, and a sign is visibly posted at each street intersection
- __ Make sure that your street name and house number are not duplicated elsewhere in the county
- __ Post your house address at the beginning of your driveway, or on your house if it is easily visible from the road

3 Roof

- __ Remove branches within 10 feet of your chimney and dead branches overhanging your roof
- __ Remove dead leaves and needles from your roof and gutters
- __ Install a fire resistant roof. Contact your local fire department for current roofing requirements
- __ Cover your chimney outlet and stovepipe with a nonflammable screen of ½ inch or smaller mesh

4 Landscape

- __ Create a "defensible space" by removing all flammable vegetation at least 30 feet from all structures
- __ Never prune near power lines. Call your local utility company first
- __ Landscape with fire resistant plants
- __ On slopes or in high fire hazard areas remove flammable vegetation out to 100 feet or more
- __ Space native trees and shrubs at least 10 feet apart
- __ For trees taller than 18 feet, remove lower branches within six feet of the ground
- __ Maintain all plants by regularly watering, and by removing dead branches, leaves and needles
- __ Before planting trees close to any power line contact your local utility company to confirm the maximum tree height allowable for that location

5 Yard

- __ Stack woodpiles at least 30 feet from all structures and remove vegetation within 10 feet of woodpiles
- __ Locate LPG tanks (butane and propane) at least 30 feet from any structure and maintain 10 feet of clearance
- __ Remove all stacks of construction materials, pine needles, leaves and other debris from your yard
- __ Contact your local fire department to see if open burning is allowed in your area; if so, obtain a burning permit
- __ Where burn barrels are allowed, clear flammable materials at least 10 feet around the barrel; cover the open top with a non-flammable screen with mesh no larger than ¼ inch

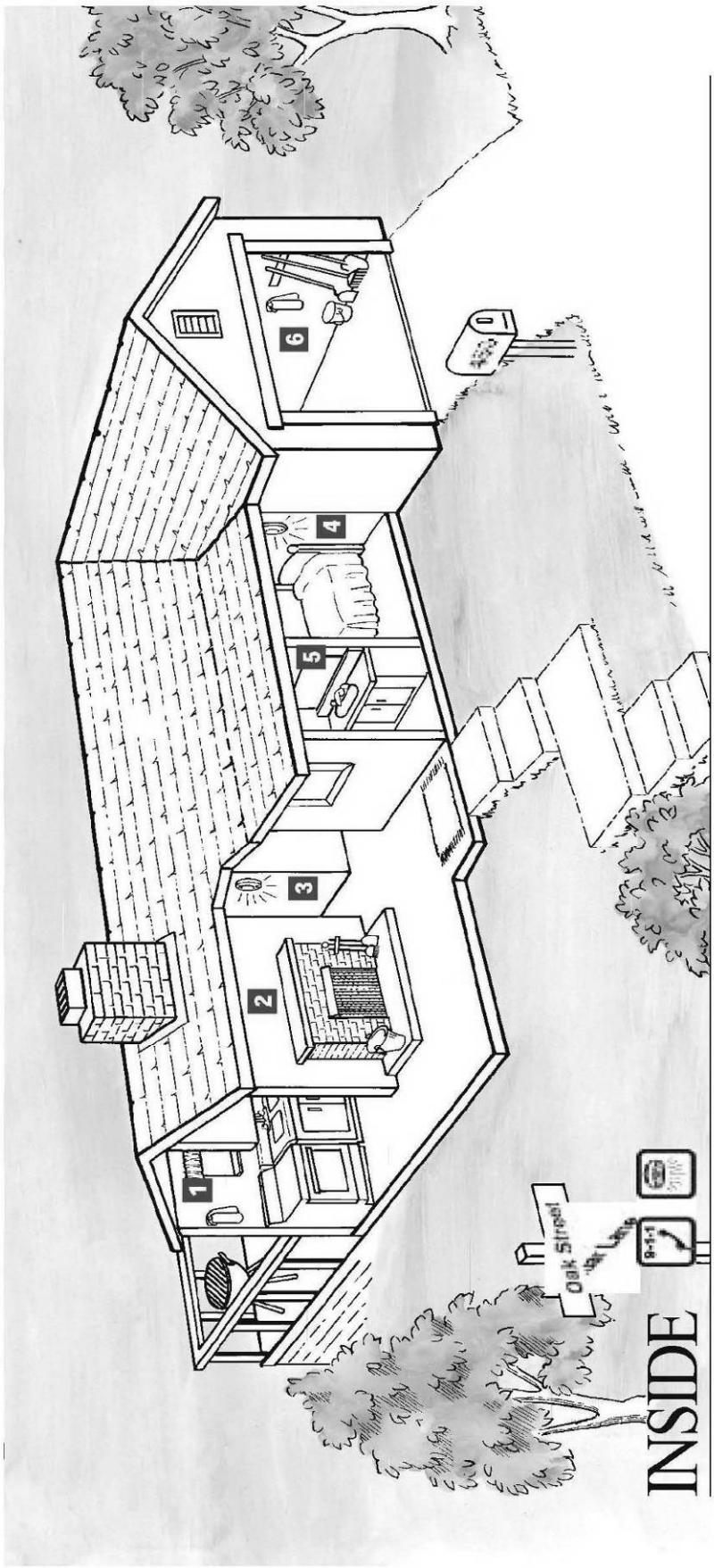
6 Emergency Water Supply

- __ Maintain an emergency water supply that meets fire department standards through one of the following:
  - a community water/hydrant system
  - a cooperative emergency storage tank with neighbors
  - a minimum storage supply of 2,500 gallons on your property
- __ Clearly mark all emergency water sources
- __ Create easy firefighter access to your closest emergency water source
- __ If your water comes from a well, consider an emergency generator to operate the pump during a power failure

Flex your Power

December 2001

Appendix I. Fire Safe Literature



1 Kitchen

- Keep a working fire extinguisher in the kitchen
- Maintain electric and gas stoves in good operating condition
- Keep baking soda on hand to extinguish stove-top grease fires
- Turn the handles of pots and pans containing hot liquids away from the front of the stove
- Install curtains and towel holders away from burners on the stove
- Store matches and lighters out of the reach of children
- Make sure that electrical outlets are designed to handle appliance loads

2 Living Room

- Install a screen in front of fireplace or wood stove
- Store the ashes from your fireplace (and barbecue) in a metal container and dispose of only when cold
- Clean fireplace chimneys and flues at least once a year

3 Hallway

- Install smoke detectors between living and sleeping areas
- Test smoke detectors monthly and replace batteries twice a year, when clocks are changed in the spring and fall
- Install child safety plugs (caps) on all electrical outlets
- Replace electrical cords that do not work properly, have loose connections, or are frayed

4 Bedroom

- If you sleep with the door closed, install a smoke detector in the bedroom
- Turn off electric blankets and other electrical appliances when not in use
- Do not smoke in bed
- If you have security bars on your windows or doors, be sure they have an approved quick-release mechanism so you and your family can get out in the event of a fire

5 Bathroom

- Disconnect appliances such as curling irons and hair dryers when done; store in a safe location until cool
- Keep items such as towels away from wall and floor heaters

6 Garage

- Mount a working fire extinguisher in the garage
- Have tools such as a shovel, hoe, rake and bucket available for use in a wildfire emergency
- Install a solid door with self-closing hinges between living areas and the garage
- Dispose of oily rags in (Underwriters Laboratories) approved metal containers
- Store all combustibles away from ignition sources such as water heaters
- Disconnect electrical tools and appliances when not in use
- Allow hot tools such as glue guns and soldering irons to cool before storing
- Properly store flammable liquids in approved containers and away from ignition sources such as pilot lights

Disaster Preparedness

- Maintain at least a three-day supply of drinking water, and food that does not require refrigeration and generally does not need cooking
- Maintain a portable radio, flashlight, emergency cooking equipment, portable lanterns and batteries
- Maintain first aid supplies to treat the injured until help arrives
- Keep a list of valuables to take with you in an emergency; if possible, store these valuables together
- Make sure that all family members are ready to protect themselves with STOP, DROP AND ROLL
- For safety, securely attach all water heaters and furniture such as cabinets and bookshelves to walls
- Have a contingency plan to enable family members to contact each other. Establish a family/friend phone tree
- Designate an emergency meeting place outside your home
- Practice emergency exit drills in the house (EDITH) regularly
- Outdoor cooking appliances such as barbecues should never be taken indoors for use as heaters

Appendix I. Fire Safe Literature

Fire Safe Curriculum and Educational Resources

American Red Cross Fire Prevention & Safety:
http://www.redcross.org/disaster/masters/firesafety/

FEMA for Kids, Resources for Teachers: http://www.fema.gov/kids/firecurr_13.htm

Kent, WA Fire District #37 offers classes for K-12. Can look at their brochures detailing these classes, also has good handouts you can download. Offers a newsletter for school children called Fireflies:
www.ci.kent.wa.us/fireprevention/publiceducation/default.htm#educationalclasses

National Fire Protection Association Risk Watch:
http://www.nfpa.org/riskwatch/RWND/wildfire.html

Oregon Office of State Fire Marshal, Oregon Fire Safety Skills K-6 Curriculum:
http://159.121.82.250/Comm_Ed/FSSC/FSSC.htm

South Carolina Dept. of Labor, Licensing & Regulation K-5 Curriculum:
www.llr.state.sc.us/freddie.asp

Staying Alive - Teaching K-8 Curriculum: http://www.stayingalive.ca/educators.html

Texas Dept. of Insurance, State Fire Marshal's Office K-12 Curriculum:
www.tdi.state.tx.us/fire/fmcurric.html

Washington State Dept. of Natural Resources K-3 Curriculum:
www.dnr.wa.gov/htdocs/rp/prevention/k-3_curriculum.htm

Appendix I. Fire Safe Literature

The following literature is available from the Fire Safe Council, the Mattole Restoration Council, or on the Internet. Many of these documents are available on the California Forest Stewardship Program website: http://ceres.ca.gov/foresteward.

Before, During and After Wildfire: a Checklist, California Department of Forestry and Fire Protection (CDF), go to: http://www.fire.ca.gov/php/education_homeowner.php and click on Before, During and After Wildfire.

Be Prepared for Wildfire, Larimer County, CO, Office of Planning & Building Services, Wildfire Safety, http://www.co.larimer.co.us/wildfire/prepared_for_wildfire/sld001.htm.

Danger spots around your home, California Forest Stewardship Program (CFSP), http://ceres.ca.gov/foresteward/html/danger.html.

Defensible Space and Healthy Forest Handbook: A Guide to Reducing the Wildfire Threat, Placer Hills Protection District, Placer County Resource Conservation District and NRCS, contact the Placer County RCD, 251 Auburn Ravine Rd., Suite 201, Auburn, CA 945603-3719 or call them at 916-885-3046, http://ceres.ca.gov/foresteward/html/firesafehandbook.html.

FAQs about defensible space, California Forest Stewardship Program (CFSP), *Forestland Steward* Newsletter, Spring 2002, http://ceres.ca.gov/foresteward/html/faqsdef.html.

50 things you can do to protect your home, Firewise Minnesota, Minnesota Department of Natural Resources, http://www.dnr.state.mn.us/firewise/50things.html.

Fire Risk Rating for Homes, Washington State Dept. of Natural Resources, Resource Protection Division, 1111 Washington St. SE , MS: 47037, Olympia, WA 98504-7037, Phone (360) 902-1300 or online at: http://www.dnr.wa.gov/htdocs/rp/rp.html.

Fire Safe – Inside and Out, CDF, http://www.firesafecouncil.org/education/insideout/firesafebig.html.

Fire Safe Landscaping, Jeanette Knudson. CDF *Tree Notes*, No. 17, January 1993. These resources are available from your local forester at any CDF Unit or call/write Jesse Rios, Forest Pest Specialist, PO Box 944246, Sacramento, CA 94244 (916) 653-9476. *Tree Notes* will also be available soon on the California Forest Stewardship website, http://ceres.ca.gov/foresteward.

Fire Safe Landscaping, Fire Safe Council, http://www.firesafecouncil.org/education/landscaping/index.html.

Fire-Resistant Trees and Shrubs, California Forest Stewardship Program (CFSP), http://ceres.ca.gov/foresteward/html/Moritz.html.

Firewise Landscaping, Bruce W. Hagen, California Forest Stewardship Program (CFSP), http://ceres.ca.gov/foresteward/html/landscaping.html.

Home Protection Guide, 1990, Washington State Dept. of Natural Resources, Resource Protection Division, 1111 Washington St. SE, MS: 47037, Olympia, WA 98504-7037, Phone (360) 902-1300 or online at: http://www.dnr.wa.gov/htdocs/rp/rp.html.

Appendix I. Fire Safe Literature

Homeowners Checklist: How to Make Your Home Fire Safe, CDF, Fire Safe Council, http://www.firesafecouncil.org/educationindex.html.

Is your Home Protected from Wildfire Disaster? A Homeowner's Guide to Wildfire Retrofit, Firewise, http://www.firewise.org/pubs/is_your_home/WILDFR2.PDF.

Living with Fire, A Guide for the Homeowner, Pacific Northwest Wildfire Coordinating Group, Northwest Fire Prevention Education Program, www.or.blm.gov/nwfire/docs/Livingwithfire.pdf.

Ranch fire highlights value of pre-fire planning, California Forest Stewardship Program (CFSP), http://ceres.ca.gov/foresteward/html/ranchfire.html.

Ready for Wildfire? Jim Rossi, *North Coast Journal*, August 7, 2003, http://www.northcoastjournal.com/080703/cover0807.html.

Seven steps to creating a defensible space, California Forest Stewardship Program (CFSP), http://ceres.ca.gov/foresteward/html/defenspace.html.

Ten simple things you can do to increase your fire safety, California Forest Stewardship Program (CFSP), http://ceres.ca.gov/foresteward/html/tensimple.html.

Welcome to the I-Zone, California Forest Stewardship Program (CFSP), *Forestland Steward* Newsletter, Summer 1999, http://ceres.ca.gov/foresteward/html/izone.html.

What to do when you are threatened by wildfire, includes Wildfire Survival Checklist, Fire Safe Council, http://www.firesafecouncil.org/education/insideout/firesafebig6.html.

When Wildfire Approaches, Applegate Valley Fire Plan, Section V. To obtain a copy, contact the Applegate Partnership, http://www.grayback.com/Applegate-Valley/fireplan/index.asp**.**

Wildfire and Home Pre-Fire Safety Tips, December 18, 2002, Washoe County Sheriff's Office, Reno, NV, http://www.washoesheriff.com/pages/safetytips/firesafetywildfire.html.

Wildfire…Are You Prepared? Family Emergency Preparedness by American Red Cross, Federal Emergency Management Agency (FEMA), and U.S. Fire Administration, http://www.redcross.org/static/file_cont258_lang0_123.pdf.

Wildfire! Preventing Home Ignitions, video, Firewise http://www.firewise.org, 2001, 19 minutes.

Wildland-Urban Fire—A Different Approach, Cohen, Jack D., Missoula Fire Sciences Laboratory, Rocky Mountain Research Station, USDA Forest Service, http://www.nps.gov/fire/download/pub_pub_wildlandurbanfire.pdf,

Will Your Home Survive? A Winner or Loser? A Guide to help you improve the odds against wildland fire! R.D. "Dick" Harrell and William C. Teie, Deer Valley Press, (www.deervalleypress.com), 2001, 56 pages.

Appendix I. Fire Safe Literature

The Law: Public Resources Code 4291

Firebreaks; trimming of trees; chimney screens; variance or exemption by regulations of state forester.

Any person that owns, leases, controls, operates, or maintains any building or structure in, upon, or adjoining any mountainous area or forest-covered lands, brush-covered lands, or grass-covered lands, or any land which is covered with flammable material, shall at all times do all of the following:

1. Maintain around and adjacent to such building or structure a firebreak made by removing and clearing away, for a distance of not less than 30 feet on each side thereof or to the property line, whichever is nearer, all flammable vegetation or other combustible growth. This subdivision does not apply to single specimens of trees, ornamental shrubbery, or similar plants which are used as ground cover, if they do not form a means of rapidly transmitting fire from the native growth to any building or structure.

2. Maintain around and adjacent to any such building or structure additional fire protection or firebreak made by removing all brush, flammable vegetation, or combustible growth which is located 30 feet to 100 feet from such building or structure or to the property line, whichever is nearer, as may be required by the director if he finds that, because of extra hazardous conditions, a firebreak of only 30 feet around such building or structure is not sufficient to provide reasonable fire safety. Grass and other vegetation located more than 30 feet from such building or structure and less than 18 inches in height above the ground may be maintained where necessary to stabilize the soil and prevent erosion.

3. Remove that portion of any tree which extends within 10 feet of the outlet of any chimney or stovepipe.

4. Maintain any tree adjacent to or overhanging any building free of dead or dying wood.

5. Maintain the roof of any structure free of leaves, needles, or other dead vegetative growth.

6. Provide and maintain at all times a screen over the outlet of every chimney or stovepipe that is attached to any fireplace, stove, or other device that burns any solid or liquid fuel. The screen shall be constructed of nonflammable material with openings of not more than one-half inch in size.

7. Except as provided in Section 18930 of the Health and Safety Code, the director may adopt regulations exempting structures with exteriors constructed entirely of nonflammable materials, or conditioned upon the contents and composition of same, he may vary the requirements respecting the removing or clearing away of flammable vegetation or other combustible growth with respect to the area surrounding said structures.

No such exemption or variance shall apply unless and until the occupant thereof, or if there be no occupant, then the owner thereof, files with the department, in such form as the director shall prescribe, a written consent to the inspection of the interior and contents of such structure to ascertain whether the provisions hereof and the regulations adopted hereunder are complied with at all time.

EVACUATION

California Department of Forestry and Fire Protection

Evacuations are done to save lives,
and to allow responding personnel to focus on the emergency at hand.
PLEASE EVACUATE PROMPTLY WHEN REQUESTED!

Evacuation Orders

You will often hear the terms Voluntary and Mandatory to describe evacuation orders, however, local jurisdictions may use other terminology such as Precautionary and Immediate Threat. These terms are used to alert you to the significance of the danger and ALL evacuation instructions provided by officials should be followed immediately for your safety.

The Law

Whenever a menace to the public health or safety is created by a calamity such as flood, storm, fire, earthquake, explosion, accident, or other disaster, officers of the law may close the area where the menace exists. [Penal Code 409.5 (a)]

Any unauthorized person who willfully and knowingly enters an area that has been closed and who willfully remains within the area after receiving notice to evacuate or leave shall be guilty of a misdemeanor. [Penal Code 409.5 (c)]

Long Before A Fire Threatens

Create and Maintain:
- A Defensible Space around your home and other structures on your property.
- Be involved in fire safe planning in your community.

Prepare an *Evacuation Checklist* and Organize:
- Critical medications.
- Important personal papers, photos, etc.
- Essential valuables.
- Pet and livestock transport, limited amount of pet food.
- Change of clothing, toiletries, etc.
- Cell phone.
- Critical papers and effects in a fire proof safe.
- An Evacuation Route Map with at least two routes.*
- Drive your planned route of escape before an actual emergency.*

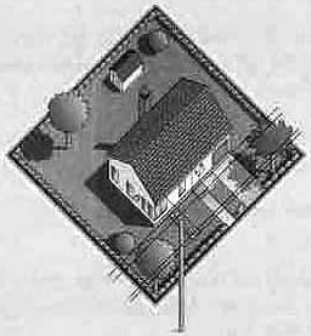
During an evacuation law enforcement/ emergency personnel may determine your route.

If Evacuation Is A Possibility

- Locate your ***Evacuation Checklist*** and assemble the items on it. PLACE THEM IN YOUR VEHICLE.
- Park your vehicle facing outward and carry your car keys with you.
- Locate your pets and keep nearby.
- Prepare farm animals for transport.
- Place a ladder outside for roof access.
- Place connected garden hoses and buckets full of water around the house.
- Assemble fire fighting tools near an outside door (shovel, rake, hoe, etc.).
- Move propane BBQ appliances away from structures.
- Cover up. Wear long pants, long sleeve shirt, heavy shoes/boots, cap, dry bandanna for face cover, goggles or glasses. 100% cotton clothing preferable.
- Leave lights on in the house - door unlocked.
- Leave windows closed - air conditioning off.

CHECK LIST

FOR RESIDENTS RETURNING HOME



Unfortunately a fire has passed through your area and considerable damage has occurred. To ensure your safety as you return, Pacific Gas and Electric Company and the California Department of Forestry and Fire Protection would like you to keep in mind these precautions.

Thank you for your cooperation.
We wish you a safe return to your property.

If you find any of these conditions:

Fire

- ☐ Stay away and report condition to a local fire or law enforcement official in the area or call Fire information at:

Damaged Utility Equipment

- ☐ Report electrical problems and damaged equipment to your local utility.

Gas Leaks

- ☐ Report gas service problems to your local supplier.

Other

- ☐ Report emergencies to 911.

After checking your property continue to use caution and note outdoor conditions:

- ☐ Trees & poles with deep charring, particularly if still smoking should be considered hazardous.
- ☐ Smoldering holes in the ground can be full of hot coals.
- ☐ White ash is evidence of hot material.

California Dept. Forestry and Fire Protection
COOPERATIVE FIRE PREVENTION
PG&E

When you have secured safety outside your home, check inside for fire or fire damage:

- ☐ Embers in the attic, which may have entered through vents.
- ☐ If electricity is off, before turning it on, check all appliances to be sure they are off. Once you are sure all appliances are turned off, there is no fire damage to your building and the meter does not have any visible damage you may turn on the main circuit breaker.
- ☐ Check if the phone is working.
- ☐ Check if security system and alarms are working.
- ☐ Use flashlights to help inspect your home and surrounding area.

Richard A. Wilson
Director
California Department of Forestry and Fire Protection

Douglas P. Wheeler
Secretary for Resources
The Resources Agency

Pete Wilson
Governor
State of California

Appendix I. Fire Safe Literature

When driving to your property check for:

- ☐ Trees, brush and rocks which may be weakened or loosened by fire.

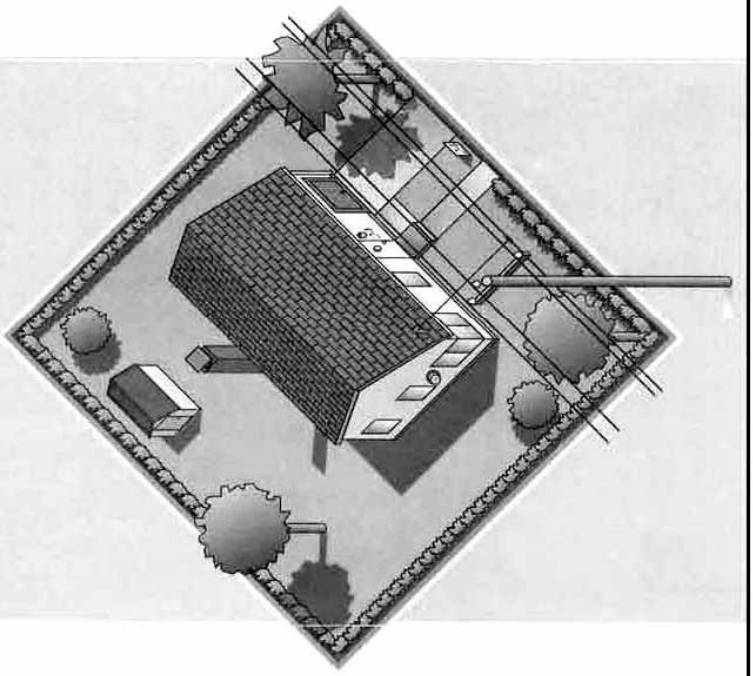
  Trees and brush weakened by fire may lose limbs or fall.

  Rocks loosened by fire may roll and crumble. If rocks have rolled down a slope expect more to follow.
- ☐ Debris or damage from fire on roads and driveways.
- ☐ Debris on the road near your home and in your driveway.

  Clearing the debris to the edge of your driveway and removing it later will help keep your home safe from fire.
- ☐ Utility poles weakened by fire.

At your property, check for fire or fire damage:

- ☐ Hot embers in rain gutters, on the roof and under overhangs.
- ☐ Hot embers under decks and in crawl spaces.
- ☐ Hot embers in wood piles, debris piles and lawn.
- ☐ If well or pump-house is in working order.
- ☐ If your electrical service has not been interrupted you may continue to use your power for such things as pumping water, etc.



If your services are off check for burned service equipment & facilities:

- ☐ Is there damage to the gas meter, gas lines, or propane tank. If there is ANY visible damage DO NOT attempt to repair or turn on these services. Call your local propane company or utility.
- ☐ Look at the electric meter. If there is any visible damage DO NOT ATTEMPT to turn the breaker on.
- ☐ If there are electrical wires on the ground STAY CLEAR and contact your local utility immediately.

If there is any electrical or gas service damage call your local utility. When you have secured safety outside your home, check inside for fire or fire damage.

Appendix II. Fuels Reduction Literature

The following literature is available from the Fire Safe Council, the Mattole Restoration Council, or on the Internet. Many of these documents are available on the California Forest Stewardship Program website: http://ceres.ca.gov/foresteward.

A Do-It-Yourself Guide to Thinning a Young Forest, Dave Kahan, Institute for Sustainable Forestry, PO Box 1580, Redway, CA 95560, (707) 923-7004.

Breaking Up Fuel Continuity and Fuel Ladders, California Forest Stewardship Program (CFSP), *Forestland Steward* Newsletter, Summer 1999, http://ceres.ca.gov/foresteward/html/fuelladder.html.

Chain saw safety is common sense, California Forest Stewardship Program (CFSP), http://ceres.ca.gov/foresteward/html/chainsaw.html.

Getting a handle on broom, parts I and II, John LeBlanc, California Forest Stewardship Program (CFSP), *Forestland Steward* Newsletter, Summer 2001, http://ceres.ca.gov/foresteward/html/broom.html and http://ceres.ca.gov/foresteward/html/broom2.html.

How to burn piles properly, Heather Morrison, California Forest Stewardship Program (CFSP), *Forestland Steward* Newsletter, Spring 2002, http://ceres.ca.gov/foresteward/html/burnpiles.html.

Meet the masticator, California Forest Stewardship Program (CFSP), *Forestland Steward* Newsletter, Spring 2002, http://ceres.ca.gov/foresteward/html/masticator.html.

Numerous options for fuels management, California Forest Stewardship Program (CFSP), *Forestland Steward* Newsletter, Spring 2002, http://ceres.ca.gov/foresteward/html/fuelsoption.html.

Protect your forest from wildfire, California Forest Stewardship Program (CFSP), http://ceres.ca.gov/foresteward/html/protectforest.html.

Prune trees for better health and higher value, California Forest Stewardship Program (CFSP), *Forestland Steward* Newsletter, Winter 2002, http://ceres.ca.gov/foresteward/html/prune2.html.

Reducing Fire Hazard: Balancing Costs and Outcomes, US Forest Service Pacific Northwest Research Station, Science Update #7, June 2004, http://www.fs.fed.us/pnw/pubs/science-update-7.pdf.

Thinning for increased forest health and profit, California Forest Stewardship Program (CFSP), *Forestland Steward* Newsletter, Winter 2001, http://ceres.ca.gov/foresteward/html/thinning.html.

Appendix II. Fuels Reduction Literature

Mattole Restoration Council
PO Box 160 Petrolia, CA 95558
707.629.3514 • 707.629.3577 FAX
www.mattole.org • mrc@inreach.com

July 30, 2004

To: Mattole forestry partners
From: Chris Larson
Re: Fuels Reduction Projects, Mattole Watershed, 2004-2006

For two decades the Mattole Restoration Council has worked to restore the Mattole River watershed. Much of our effort has focused on areas upslope of the river and creeks, especially those areas where sediment inputs could be reduced.

After developing the 2002 *Lower Mattole Fire Plan*, we realized that today's forest conditions present significant threats to the health of our watershed. Clearcut logging and poor forest regeneration have led to a landscape of overly dense and suppressed forests, both of which increase the risk of catastrophic wildfire. The Council now sees that restoring our forests' resiliency to catastrophic fire will benefit not only water quality, fish habitat, and sediment reduction efforts, but also human livelihood and welfare.

Since then, the MRC has successfully secured public funding to create shaded fuel breaks along key public and private access roads. However, because dangerous fuels conditions are so widespread, we have found that the need for fuels reduction work far outstrips available public resources to conduct it. Therefore, we are proposing to work directly with willing private landowners to thin forests throughout the Mattole, using the proceeds from forest byproducts to lower treatment costs to the landowner for this important work. In addition, that public funding which is available will be applied to all planning, insurance, and regulatory compliance work, lowering the cost to a level affordable to many Mattole landowners.

Because of the landscape-scale nature of this work, the MRC will prioritize the work based on community-derived fire safe priorities. Work will be focused on ridgetops, where there is the best chance to create effective shaded fuel breaks and to affect landscape-scale fire behavior. Once treatable ridgetops are identified, aerial photograph analysis will pinpoint locations for suitable projects. Landowners will be approached to gauge interest and to identify cost share ranges.

The MRC will retain a registered professional forester (RPF) to plan and oversee implementation of these projects. Because projects will be conducted under either

the Board of Forestry's emergency fuels reduction exemption or the exemption that will be developed pursuant to AB 2420 (pending), a Timber Harvest Plan (THP) does not need to be filed. Under these exemptions, landowners may cut trees up to 18 inches in diameter (24 inches in some circumstances), must increase the quadratic mean diameter of the stand, and have an RPF certify that the project reduces hazardous fuel loads in the project area.

All projects will be conducted in accordance with CEQA and California Forest Practice Rules. Additionally, there is the possibility that individual projects could generate FSC-certified products. Costs to landowners are expected to range between $600 and $1000 per acre, in contrast with $1500 per acre, a regional norm. These costs will fluctuate based on stand type, distance to roads, and market conditions, and may be further lowered if additional forest stand improvement funds, such as CalFIP, are applied to the project.

We anticipate that 8-10 landowners within 2-3 ridgetop project areas would participate in a pilot project, and if successful, this approach would be expanded to other landowners in other priority areas. Through this approach, the MRC hopes to improve fire safety and forest health in a time when public funds for this work are scarce.

Appendix II. Fuels Reduction Literature

Mattole Restoration Council
PO Box 160 Petrolia, CA 95558
707.629.3514 • 707.629.3577 FAX
www.mattole.org • mrc@inreach.com

July 30, 2004

To: Mattole forest landowners
From: Chris Larson, Mattole Restoration Council
Re: Fuels Reduction Projects in the Mattole Valley

For two decades the Mattole Restoration Council has worked to restore the Mattole River watershed. The recent fires, and their impacts on the watershed, have highlighted the importance of improving fire safety and the health of our forestlands.

After developing the 2002 *Lower Mattole Fire Plan*, we realized that **today's forest conditions present significant threats to the Mattole's health.** Clearcut logging and poor re-growth have led to stands of dense, young forests, both of which increase wildfire risks. **The California Dept. of Forestry and Fire Protection considers most of the Mattole watershed to be at a *very high* risk of wildfire.**

To address the situation, the MRC created shaded fuel breaks along key public and private access roads using public funds. **However, we have found that the need for fuels reduction work far outstrips available public resources to conduct it.** Therefore, MRC will work with private landowners who are willing to make an investment in their own safety to thin forests throughout the Mattole, using the proceeds from thinning byproducts to offset costs.

Approaching fuels reduction in partnership with the MRC can reduce your cost from over $1500 per acre to $600-800 per acre. While it is not free, the investment will benefit your fire safety, improve wildlife habitat, and improve the growth and health of your forest.

Here's how it works:

1. MRC's forester completes an initial site assessment, paid for by MRC. This assessment will help determine the total cost of the thinning work, and the amount of money that could be recovered by selling small-diameter logs. At this stage, the landowner can determine which parts of his/her property would be considered for the work.
2. If the landowner feels the costs are reasonable, MRC will apply for all necessary permits, mark trees and stands for thinning, and can even hire the crews to do the work.

3. MRC coordinates the sale of small-diameter logs for landowner, and the forester, paid by MRC, oversees the job to make sure that work is completed under strict environmental safeguards.

Is this right for me?

This approach will result in significant savings if any of the following are true:

- The stand to be thinned has many 16-18" Douglas-fir trees.
- The stand has relatively few tanoaks and brush species.
- The landowner plans to do some of the thinning work him/herself (rather than hiring a work crew).
- The stand is close to accessible roads.
- The landowner has an interest in improving forest productivity for long-term sustainable forestry operations.
- Thinned materials are burned rather than chipped.

Details:

Because projects will be conducted under either the Board of Forestry's emergency fuels reduction exemption, a Timber Harvest Plan (THP) does not need to be filed. Under these exemptions, landowners may cut trees up to 18 inches in diameter (24 inches in some circumstances), and have a forester certify that the project reduces hazardous fuel loads in the project area.

All projects will be conducted in accordance with the California Forest Practice Rules. Additionally, there is the possibility that individual projects could generate Forest Stewardship Council-certified products. Costs to landowners are expected to range between $600 and $1000 per acre, in contrast with $1500 per acre, a regional norm. These costs will fluctuate based on stand type, distance to roads, and market conditions, and may be further lowered if additional forest stand improvement funds, such as CalFIP, are applied to the project.

The project can happen at any scale – a landowner can choose to do thinning work in one area of the property, or can do it throughout the property. If stand types differ across the ownership, certain portions may be more cost effective to treat than others. Considerations of relative fire risk, creation of defensible space around structures and road access can also determine the amount of acreage a landowner may wish to work on.

Questions?

Please call Chris Larson at the Mattole Restoration Council: (707) 629-3514 or (707) 986-1078, or chris@mattole.org.

Appendix II. Fuels Reduction Literature

This is an early summary of ongoing studies by the Mendocino Redwood Company to explore alternatives for killing tan oak sprouts and other hardwood species.

Mendocino Redwood Company, L.L.C., Herbicide Alternatives Case Study, 2-Year Results

Location: Charlie M. Timber Harvest Plan, Upper Ackerman Creek Watershed, Ukiah Inventory Block

Methods:

The herbicide trial area, consisting of fourteen adjacent 2.3-acre units (dimensions approximately 650′ by 150′), was surrounded on three sides by the Charlie M. timber harvest plan. Fourteen different herbicide or alternative treatments were applied to the trial area in two main groups: those units treated with stump applications of a solution with a sprayer, and those units treated with alternative cutting techniques but no herbicide solutions. In the nine "solution" units the harvesting procedure mimicked the AP Rehabilitation silviculture used in the surrounding Charlie M. THP, which consisted of harvesting marked conifers and merchantable (>10″ DBH) tan oaks. Additionally, all smaller hardwoods were cut in the nine "solution" treatment units, while in the remainder of the THP these small hardwoods were left standing and injected with herbicide. Following are the nine "solution" treatment names and rates applied:

Treatment	Rate Applied
Accord	100%
Ammonium Sulfamate	1 kg /gallon water
Arsenal	6 oz. /gallon water
Defol. 6	100%
Eucalyptus Oil	100%
Garlon 4	100%
Neem Tree Oil	100%
Oust	1 oz. /gallon water
Vinegar	100%

Treatment application took place in July 2000. All products were applied to the cambium of cut stumps with backpack sprayers within 0.5 hours of harvesting. Target species included tan oak of all diameters and madrone less than 10 inches in diameter. The remaining five trial units were treated with alternative cutting techniques as follows:

Technique	Description
Control (no harvest)	Leave as found.
Cut All Tan oak	Cut marked conifers and all tan oak.
Cut Merchantable Tan oak	Cut marked conifers and tan oak >10″ DBH.
High Stump	Cut marked conifers, cut all tan oaks to a 4′-5′ stump.
Shade	Cut marked conifers, retain strategically-located larger tan oaks for shade.

The "Cut All Tan oak" unit was harvested in the same manner as the nine "solution" units yet no herbicide solution was applied, providing a control. The unit labeled "Control (no harvest)" demonstrates planted seedling response if no rehabilitation harvest had occurred.

Data were collected in September 2002 in order to assess two-year progress of the herbicide trials. In each treatment unit, fourteen 100th-acre circular plots were measured. Variables measured for conifers and hardwoods included tree, brush, and seedling stem diameter; height; crown size; leader length and condition; and vigor. Summaries of the data are presented on the following pages. No data collection took place prior to harvest; therefore the results given here are intended for comparison between units, not to a pre-treatment state. It should be noted that since there was only one unit of each treatment this analysis lacks the replication necessary for statistical validity, yet is useful as a case study.

Interpretation of results:

The traditional herbicides seemed to be the most effective in controlling hardwood brush cover. The Control (no harvest) and Shade units also contained low hardwood cover, but this condition could be due to less cutting of hardwood causing decreased sprouting ability. The Vinegar treatment seemed to increase brush *and* seedling growth. The Eucalyptus Oil and Defol. 6 units demonstrated similar results to each other for all variables measured. In these two units hardwood brush cover was relatively low, yet seedling leaders were among the shortest in the study.

Varying residual tree basal area and crown cover is likely to have caused confusing results. For example, the Oust unit had unusually high residual conifer and hardwood (madrone and black oak) basal area and crown cover. Those residual trees probably reduced brush regrowth as well as seedling growth, vigor, and survival. It is also possible that fewer seedlings were planted in areas containing more residual trees.

At the time of data collection it was determined that two years was too early to accurately draw conclusions about conifer seedling response. One unexpected observation was that some conifer seedlings were thriving under large brush patches, while other seedlings growing in the open had poor vigor. As time progresses, this situation may give way to more predictable results.

Although an attempt was made to reduce variability between and among units, there were a few confounding issues:

- Varying residual conifer basal area and crown cover
- Possibility of varying per-acre planting rates
- Burn-pile areas which had better than average seedling growth, probably due to higher nutrient content in the topsoil.

Additional information:

Results of the Herbicide Alternatives Study in the Alder Creek area will be available soon. For more information on the herbicide studies, contact Tom Bendure at Mendocino Redwood Company Inventory Department, 707-485-6730.

Appendix III. Draft North Coastal California Fire-Smart Landscaping

Most of us create landscapes around our homes that are aesthetically pleasing or to attract desirable fauna such as birds and butterflies. If you live in or near a forest or rangeland, there are other factors worth considering such as plant flammability, and whether they can stand up to wildlife such as deer. The following are some general characteristics to consider when designing and/or maintaining your fire safe landscape.

Design Tips/Considerations

- When designing a fire-smart garden, consider: the local area's fire history, site location, overall terrain, prevailing winds, seasonal weather, property contours, and boundaries.
- The area closest to your home should be a well-irrigated area encircling the home for at least 30' on all sides, providing space for fire suppression equipment in the event of an emergency. Plantings here should be limited to carefully spaced low flammability species.
- 30' away from your home use low flammability plants that are low-growing, and irrigate this area as well.
- Moving still further away from your home continue to use low flammability plants that are low-growing as well as well-spaced trees. Keep the volume of fuel low.
- The area furthest away from your home should be a natural area. Selectively prune and thin all plants here and remove highly flammable vegetation.
- Consider positioning of a plant in terms of what's around it, isolate and surround a poor fire-risk plant with more resistant species to create a specimen/focal point.
- Consider a plant's water retention ability and its irrigation needs. Use plants that retain water and don't need much irrigation such as fleshy-leafed plants.
- Plants that are not properly irrigated or pruned or that are planted in an inappropriate climate zone will have increased fire risk.
- Group plants of similar height and water requirements to create a "landscape mosaic" that can slow the spread of fire and use water most efficiently.
- Consider a plant's characteristics in terms of fire, such as fuel, texture of leaves for ignition, aromatic oils: Fuel volume should be low, so stick to plants that are low growing, have limited spread and little dead material. Leaves with high water content or fleshy leaves don't ignite as readily. Plants containing resins and volatile oils can increase fire intensity.
- Consider a plant's size; you don't want to plant things that have a large mass or volume.
- Plant a wide swath of native groundcover adjacent to the lawn or garden leading to fire-resistant shrubs nearer the forest in order to create a buffer between your home and the forest.
- Keep trees furthest from your house.
- Fire barriers of fire-resistant plants should be planted so that they cross the likely paths of possible fires i.e., downhill slopes from buildings.
- Planting fire-resistant plants in groups, rows, and wind breaks around buildings can: decrease wind speed and turbulence, catch sparks and embers, decrease fire intensity, and absorb radiant heat energy that cause other plants and structures to burn.
- Avoid planting flammable plants in large quantities or near your home.
- Shrubs in the defensible space should be planted in (or thinned into) clumps, or islands, with open space between them (open space or cleared areas include: walkways, driveways, patios, lawns, paved areas, vegetable patches, orchards, etc.).
- Within the defensible space area, vertical separation between fuel layers should be at least three times the height of the lower fuel layer. For example, a 4' shrub growing next to an incense cedar should be separated by 12 vertical feet (4' x 3').
- Space trees at least 10 feet apart, and keep branches trimmed at least 10 feet from your roof. For trees taller than 18 feet, prune lower branches within 10-15 feet of the ground.
- The following chart represents the minimum spacing recommended between tree crowns as well as brush and shrub clumps based on slope. Thin trees and large shrubs so there is at least 10 feet between crowns. Crown separation is measured from the furthest branch of one tree to the nearest branch on the next tree. On nearly level ground, minimum spacing recommendations between clumps of brush and/or shrubs is 2 1/2 times the height of the vegetation. Maximum diameter of clumps should be 2 times the height of the vegetation. As with tree crown spacing, all measurements are made from the edges of vegetation crowns.

% Slope	Tree Crown Spacing	Brush and Shrub Clump Spacing
0 – 10%	10'	2 ½ x shrub height
11 – 20%	15'	3 x shrub height
21 – 40%	20'	4 x shrub height
>40%	30'	6 x shrub height

Harris, F.C., Colorado State Forest Service
Creating Wildfire-Defensible Zones no. 6.302

- Shrubs and trees with high levels of resins or volatile oils should not be planted on slopes down from and near buildings in fire prone areas.
- Use native vegetation that has evolved to thrive in local conditions.

Appendix III. Draft North Coastal California Fire-Smart Landscaping

Maintenance Tips

- Anything over three feet needs to be pruned up from the ground and have the branch structure thinned in order to reduce the risk of fire spread. Prune all trees so the lowest limbs are 10-15 feet above the ground. This will reduce the "fuel ladder" which allows fire to climb from the ground into the shrubs and trees.
- Remove leaf clutter and dead and overhanging branches.
- Mow the lawn regularly.
- Always remove dead branches/material on the ground or on plants near your home.
- Remove or chip cuttings and debris promptly, according to local regulations.
- Thin weak, dead, or overcrowded trees.
- Trim branches that extend over the eaves of the home or within 15 feet of the chimney.
- Clean pine needles and debris from roofs and gutters.
- Relocate woodpiles and other flammable objects at least 30 feet from buildings.
- Maintain an irrigated greenbelt immediately around your home.
- Reduce the density of the forest surrounding the defensible space.
- Clear vegetation around fire hydrants, cisterns, and propane tanks.
- Clear all dry grass, brush, and dead leaves at least 30 feet from your home, and at least 150 feet if you're on a hill.

While no plant is immune from fire, certain plants do exhibit traits that can slow or reduce the spread of fire. Fire resistant plants do not readily ignite from a flame or other ignition source. They generally look green (not brown), healthy, and vibrant. In addition, fire resistant plants have:

- leaves that are moist and supple,
- little dead wood and tend not to accumulate dry, dead material within the plant
- sap that is water-like and does not have a strong odor.

Most deciduous trees and shrubs are fire resistant.

The following chart is a list of fire-smart plants that will grow on the North Coast of California, and some of their characteristics. *This chart is a draft and we welcome any comments, suggestions, or revisions. Please send them to: Tracy Katelman, ForEverGreen Forestry, POB 9068, Eureka, CA 95502.*

Common Name	Botanical Name	Plant Type	CA Native	Deer Proof	Fire Resistant
Plants Less Than 10" Tall:					
Aloe	*Aloe spp.*	Succulent		Some	√
Beach strawberry, Sand strawberry	*Fragaria chiloensis*	Perennial	√	√	√
Big blue lily turf	*Liriope muscari*	Perennial			
Blue-eyed grass	*Sisyrinshium bellum*	Perennial	√	√	√
Blue fescue	*Festuca glauca*	Perennial		√	
California poppy	*Eschscholzia californica*	Annual	√	√	√
Cape weed	*Arctotheca calendula*	Perennial			√
Carpet bugle	*Ajuga reptans*	Perennial		√	√
Common thrift	*Armeria maritima*	Perennial	√		√
Creeping boobialla	*Myoporum parvi-folium*	Evergreen		√	√
Creeping red fescue	*Festuca rubra*	Perennial	√		√
Creeping thyme, Mother-of-Thyme	*Thymus serpyllum, T. praecox arcticus*	Perennial		√	√

Appendix III. Draft North Coastal California Fire-Smart Landscaping

Common Name	Botanical Name	Plant Type	CA Native	Deer Proof	Fire Resistant
Dwarf periwinkle	*Vinca minor*	Perennial		√	√
Emerald carpet, Crinkle-leaf creeper	*Rubus calycinoides*	Evergreen		√	√
Emerald carpet manzanita, Kinnikinnick	*Arctostaphylos uva-ursi x nummularia*	Evergreen	√	√	√
Green santolina	*Santolina virens*	Evergreen		√	
Gum plant, Coastal wild gum	*Grindelia stricta*	Perennial	√	√	√
Hens and chicks	*Echevaria spp*	Succulent			√
Iceplant	Yellow (*Delosperma nubigenum*) or Purple/pink (*D. cooperi*)	Succulent		√	√
Indian mock strawberry	*Duchesnea indica*	Perennial			√
Island alum root, Coral bells	*Heuchera maxima*	Perennial	√		√
Japanese spurge	*Pachysandra terminalis*	Evergreen			√
Lithodora	*Lithodora diffusa*	Perennial		√	√
Moss pink	*Phlox subulata*	Perennial		√	√
Roman chamomile	*Anthemis nobilis*	Perennial		√	
Silver thyme	*Thymus vulgaris var.'Argenteus'*	Perennial		√	√
Snow-in-summer	*Cerastium tomentosum*	Perennial		√	√
Stonecrop	*Sedum spp*	Succulent	√		√
Sweet woodruff	*Galium odoratum*	Perennial			
Trailing ice plant	*Lampranthus spectabilis*	Succulent			√
Wild buckwheat	*Eriogonum spp*	Perennial	√	√	√
Wild ginger	*Asarum caudatum*	Perennial	√	√	√
Yellow-eyed grass	*Sisyrinchium californicum*	Perennial	√	√	√
Plants 12-24" tall:					
Australian fuchsia	*Correa spp*	Evergreen		√	
Basket-of-Gold	*Aurinia saxatilis*	Perennial		√	√
Beard tongue	*Penstemon spp*	Perennial	Some		√
Black-eyed Susan	*Rudbeckia fulgida*	Perennial			
Brewer saltbush	*Atriplex lentiformis breweri*	Evergreen	√		√
Bush anemone	*Carpenteria californica*	Evergreen	√	√	
California fuchsia, Hummingbird flower	*Zauschneria californica*	Perennial	√	√	√
Cape honeysuckle	*Tecomaria capensis*	Evergreen			
Chilean guava	*Ugni molinae*	Evergreen		√	√
Chives	*Allium schoenoprasum*	Perennial		√	√
Cleveland sage	*Salvia clevelandii*	Perennial	√	√	√

Appendix III. Draft North Coastal California Fire-Smart Landscaping

Common Name	Botanical Name	Plant Type	CA Native	Deer Proof	Fire Resistant
Coastal wild gum	*Grindelia stricta venulosa*	Perennial	√	√	√
Common snowberry	*Symphoricarpos albus*	Deciduous	√	√	√
Common thyme	*Thymus vulgaris*	Perennial		√	√
Common yarrow, Milfoil	*Achillea millefolium white*	Perennial	√	√	√
Coreopsis	*Coreopsis spp*	Perennial	Some	√	√
Cranesbill	*Geranium spp*	Perennial	Some	√	√
Creeping mahonia (may pop when hot)	*Mahonia repens*	Evergreen	√	√	√
Currant, Gooseberry	*Ribes spp*	Deciduous	Some	√	√
Daylily	*Hemerocallis hybrids*	Perennial			√
Dwarf lily-of-the-Nile	*Agapanthus var 'Peter Pan'*	Perennial			
Evergreen currant, Catalina perfume	*Ribes viburnifolium*	Evergreen	√		√
Fireweed	*Epilobium angustifolium*	Perennial	√		√
Fortnight lily	*Dietes spp*	Perennial			
French lavender, Toothed lavender	*Lavandula dentata*	Evergreen		√	√
Germander	*Teucrium chamaedrys, T. cossonii majoricum*	Perennial		√	
Germander sage	*Salvia chameadryoides*	Perennial	√		√
Golden yarrow	*Eriophyllum confertiflorum*	Perennial	√		√
Heartleaf bergenia	*Bergenia cordifolia*	Perennial		√	√
Island bush snapdragon	*Galvezia speciosa*	Evergreen	√		√
Iris	*Iris spp*	Perennial	√	√	√
Lamb's ears	*Stachys byzantina*	Perennial		√	√
Lantana, shrub verbena	*Lantana camara*	Evergreen		√	
Lavender cotton	*Santolina chamaecy-parissus*	Evergreen	√	√	√
Lemonade berry	*Rhus integrifolia*	Evergreen	√	√	√
Lilac	*Syringa spp*	Deciduous			√
Lily-of-the-Nile	*Agapanthus africanus*	Evergreen		√	
Lupine	*Lupinus spp*	Ann/Per/ Evergreen	Some	√	√
Maritime Ceanothus	*Ceanothus maritimus*	Evergreen	√		
Mock orange	*Philadelphus spp*	Dec/Ever	Some		√
Monkey flower	*Mimulus longiflorus (Diplacus longifolius)*	Perennial	√	√	√
Orchid rockrose	*Cistus purpureus*	Evergreen		√	
Oregon boxwood	*Pachystima myrsinites*	Evergreen			√
Ozark Sundrops	*Oenothera missouriensis*	Perennial			√

Appendix III. Draft North Coastal California Fire-Smart Landscaping

Common Name	Botanical Name	Plant Type	CA Native	Deer Proof	Fire Resistant
Pacific coast iris, Douglas iris	*Iris douglasiana*	Perennial	√	√	√
Perennial blue flax	*Linum perenne*	Perennial			√
Plantain lily	*Hosta spp*	Perennial			√
Privet	*Ligustrum texanum*	Evergreen		√	√
Purple coneflower	*Echinacea purpurea*	Perennial			√
Red-hot poker, torch-lily	*Kniphofia uvaria*	Perennial		√	√
Rose	*Rosa floribundas*	Dec/Ever			
Rosemary	*Rosmarinus officinalis 'Tuscan blue'*	Evergreen		√	
Sandhill sage	*Artemisia pycnocephala*	Evergreen	√		√
Santa Barbara daisy, Mexican daisy	*Erigeron karvinskianus*	Perennial		√	
Scented penstemon	*Penstemon palmeri*	Perennial		√	√
Sea lavender, seafoam statice	*Limonium perezii*	Perennial		√	
Sedge	*Carex spp*	Perennial	Some		√
Shasta daisy	*Chrysanthemum maximum*	Perennial		√	
Sonoma sage, Creeping sage	*Salvia sonomensis*	Perennial	√		√
Squaw carpet, Mahala mats	*Ceanothus prostratus*	Evergreen	√		√
Sumac	*Rhus spp*	Deciduous	Some	√	√
Sunrose	*Helianthemum nummularium*	Evergreen		√	√
Sword fern	*Polystichum munitum*	Evergreen	√	√	
Wood's rose	*Rosa woodsii*	Deciduous	√		√
Woolly blue curls	*Trichostema lanatum*	Evergreen	√		√
Yarrow	*Achillea spp*	Perennial	Some	√	√
Yucca	*Yucca spp*	Evergreen	Some	√	√
Plants over 3' tall:					
American sweet gum	*Liquidambar styraciflua*	Deciduous			√
Ash	*Fraxinus spp*	Deciduous	Some		√
Aspen, Cottonwood, Poplar	*Populus spp.*	Deciduous	√		√
Beech	*Fagus spp*	Deciduous			√
Bigleaf maple	*Acer macrophyllum*	Deciduous	√		√
Birch	*Betula spp*	Deciduous	Some		√
Black locust	*Robinia pseudoacacia*	Deciduous			√
Blue blossom	*Ceanothus thrysiflorus*	Evergreen	√	√	√
Butterfly bush, Summer lilac	*Buddleja davidii*	Deciduous			√

Appendix III. Draft North Coastal California Fire-Smart Landscaping

Common Name	Botanical Name	Plant Type	CA Native	Deer Proof	Fire Resistant
California buckeye	*Aesculus californica*	Deciduous	√	√	√
California lilac	*Ceanothus 'concha'*	Evergreen	√	√	√
California sycamore	*Platanus racemosa*	Deciduous	√		√
Carol Mackie daphne	*Daphne x burkwoodii var 'Carol Mackie'*	Evergreen		√	√
Chokecherry	*Prunus virginiana*	Deciduous	√		√
Coast live oak	*Quercus agrifola*	Evergreen	√		√
Coffeeberry	*Rhamnus californica*	Evergreen	√	√	√
Common flannel bush	*Fremontodendron californicum*	Evergreen	√	√	√
Common hackberry	*Celtis occidentalis*	Deciduous			√
Common horsechestnut	*Aesculus hippocastanum*	Deciduous			√
Eastern redbud	*Cercis canadensis*	Deciduous			√
European mountain ash	*Sorbus aucuparia*	Deciduous			√
Flowering crabapple	*Malus spp*	Deciduous	Some		√
Flowering dogwood, Eastern dogwood	*Cornus florida*	Deciduous			√
Fremontia, Flannel bush	*Fremotodendron spp*	Evergreen	√	√	√
Holly-leafed cherry	*Prunus ilicifolia*	Evergreen	√		√
Honey locust	*Gleditsia triacanthos*	Deciduous			√
Kentucky coffee tree	*Gymnocladus dioica*	Deciduous			√
Lodgepole pine, Beach pine	*Pinus contorta*	Evergreen	√		√
Longleaf Mahonia	*Mahonia nervosa*	Evergreen	√		√
Madrone, Madrona	*Arbutus menziesii*	Evergreen	√	√	√
Manzanita	*Arctostaphylos spp*	Evergreen	√	√	√
Mountain alder	*Alnus tenuifolia*	Deciduous			√
Norway maple	*Acer platanoides*	Deciduous			√
Ocean spray, Cream bush	*Holodiscus discolor*	Deciduous	√	√	√
Oregon grape	*Mahonia aquifolium*	Evergreen		√	√
Oregon white oak, Garry oak	*Quercus garryana*	Deciduous	√		√
Pacific wax myrtle	*Myrica californica*	Evergreen	√	√	√
Pin oak	*Quercus palustris*	Deciduous			√
Pink winter currant, red flowering currant	*Ribes sanguineum*	Deciduous	√	√	√
Point Reyes Ceanothus	*Ceanothus gloriosus*	Evergreen	√		√
Ponderosa pine, Western yellow pine	*Pinus ponderosa*	Evergreen	√		√
Potato vine	*Solanum jasminoides*	Evergreen		√	
Quaking aspen	*Populus tremuloides*	Deciduous	√		√

Appendix III. Draft North Coastal California Fire-Smart Landscaping

Common Name	Botanical Name	Plant Type	CA Native	Deer Proof	Fire Resistant
Red alder	*Alnus rubra*	Deciduous	√		√
Redberry	*Rhamnus crocea*	Evergreen	√		√
Red oak	*Quercus rubra*	Deciduous			√
Red-osier dogwood, Redtwig dogwood	*Cornus stolonifera*	Deciduous			√
Redwood, Coast redwood	*Sequoia sempervirens*	Evergreen	√		
Robinson crabapple	*Malus var. 'Robinson'*	Deciduous			
Rockrose	*Cistus spp*	Evergreen		Some	√
Rocky mountain maple	*Acer glabrum*	Deciduous	√		√
Salal	*Gaultheria shallon*	Evergreen	√	√	√
Serviceberry	*Amelanchier spp*	Deciduous	Some		√
Sugar pine	*Pinus lambertiana*	Evergreen	√		√
Sunset maple, Scarlet maple	*Acer rubrum*	Deciduous			√
Toyon, Christmas berry, California holly	*Heteromeles arbutifolia*	Evergreen	√	√	√
Vine maple	*Acer circinatum*	Deciduous	√		√
Walnut	*Juglans spp*	Deciduous	Some		√
Western azalea	*Rhododendron occidentale*	Deciduous	√	√	√
Western catalpa	*Catalpa speciosa*	Deciduous			√
Western larch, Tamarack	*Larix occidentalis*	Deciduous			√
Western redbud	*Cercis occidentalis*	Deciduous	√	√	√
Western spirea	*Spiraea douglasii*	Deciduous	√		√
White alder	*Alnus rhombifolia*	Deciduous	√		√
Wild lilac	*Ceanothus spp*	Evergreen	√	√	
Willow	*Salix spp*	Deciduous	Some		√
Winged Euonymus	*Euonymus alata*	Deciduous			√

This brochure was produced by Praline McCormack and Tracy Katelman of ForEverGreen Forestry, POB 9068, Eureka, CA 95502, 707-443-2400.

We relied heavily on the following people and resources in creation of this list. Thanks to all of them for their work:

- Barton, Lee Ann, California-certified nursery professional, Dazey's Supply, Redway, CA.
- California Forest Stewardship Program (CFSP), Fire-Resistant Trees and Shrubs, http://ceres.ca.gov/foresteward/html/Moritz.html, provides information regarding the design of a firewise landscape.
- California Forest Stewardship Program (CFSP), *Forestland Steward* Newsletter, Summer 1999, Breaking Up Fuel Continuity and Fuel Ladders, http://ceres.ca.gov/foresteward/html/fuelladder.html, provides information regarding the arrangement of fuels.

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- City of Oakland, Watershed Improvement Program, Firewise Native Plants, http://oaklandpw.com/creeks/fireplants.htm.
- Fire Ready Wildfire Prevention & Protection Services, Defensible Space Issues & Explanations, Your Best Defense, http://www.fireready.net/noframes/defense.html#defense, provides information on how to create a defensible space.
- Fire Safe Council, Fire Safe Landscaping, http://www.firesafecouncil.org/education/landscaping/index.html, provides information on defensible space, planning, spacing, watering, maintenance.
- Firewise, Firewise Landscaping Checklist, http://firewise.org, checklist to help you design and maintain a firewise landscape.
- Fitzgerald, Stephen, and Amy Jo Waldo, Oregon State University Extension Service, Forest Resource Note No. 6, April 2002, Fire-Resistant Plants for Oregon Home Landscapes, http://extension.oregonstate.edu/deschutes/forestry/documents/FireResPlantsPictorial.pdf, suggests specific types of vegetation that may reduce your risk from wildfire.
- Hagen, Bruce W., California Forest Stewardship Program (CFSP), Firewise Landscaping, http://ceres.ca.gov/foreststeward/html/landscaping.html, provides information on how to create a defensible space including plant selection.
- Harris, F.C., Colorado State Forest Service, Creating Wildfire-Defensible Zones no. 6.302, www.ext.colostate.edu/pubs/natres/06302.pdf, great article regarding plant spacing.
- Jepson Manual, *Higher Plants of California*, edited by James C. Hickman, 1993, University of California Press: Berkeley and Los Angeles, California.
- Madrone, Rose, Ecological Botanist, Private Consultant.
- Planting for Fire Protection, http://environment.prsc.qld.gov.au/FireProtection.asp, good information on plant and fire characteristics.
- Scripps Howard News Service, 20 March 2004, Consider fire-resistant plants, http://web.redding.com/newsarchive/20040320handg017.shtml, newspaper article discussing fire-resistant plants including a few examples of fire-retardant plants.
- Southern California Water Agencies, bewaterwise.com, Fire-resistant California Friendly plants, http://bewaterwise.com/fire.html, lists California native plants.
- *Sunset Western Garden Book*, 1995, Sunset Publishing Corporation: Menlo Park, California.
- *Sunset Western Garden Book*, 2001, Sunset Publishing Corporation: Menlo Park, California.
- UC Berkeley Forest Products Lab, Fire Safe Demonstration Garden Plant List & Garden Layout, www.ucfpl.ucop.edu/HOPlantList.htm.

For Additional Information Regarding Fire Safe Plants Go To:

- Fire Safe Landscape Database, www.ucfpl.ucop.edu/491/Garden/searchALL.htm.
- Nevada County Fire Safe Council, Fire Safe Plants, www.firesafecouncilnevco.com/html/fire_safe_plants.html.
- UC Berkeley Forest Products Lab, Introduction to the I-Zone, Chapter XIV – Fire Safe Vegetation, http://www.ucfpl.ucop.edu/I-Zone/chapter14.pdf, great article regarding vegetation in the fire zone and landscape design and maintenance.
- UC Berkeley Forest Products Lab, Defensible Space Landscaping in the Urban/Wildland Interface, Plants with a Favorable Fire Performance Rating, www.ucfpl.ucop.edu/I-Zone/XIV/vegetati.htm, lists plants that have a high or moderate fire resistance rating.

Appendix IV. Meeting Outreach Literature

NEIGHBORHOOD FIRE SAFETY MEETINGS | JANUARY/FEBRUARY '04

Dear Upper Mattole Community Member:

The Mattole Restoration Council is working with Upper Mattole residents to create a plan of action to improve fire safety and reduce hazardous forest fuels. A series of neighborhood meetings will bring people together to identify what work can be done to improve fire safety in our area. The Upper Mattole Fire Plan will put forth a strategy to improve fire safety to protect residences, the forest, and lives.

Once projects, such as fuels reduction, water storage or access improvements, are identified, the Mattole Restoration Council and partners will work with interested landowners on a voluntary basis to complete projects to improve fire safety.

The neighborhood meetings, listed below, are a great way to learn more about fire safety and work together to lessen wildfire risks.

If you have any questions, please contact Jessica at the Mattole Restoration Council, (707) 986-1078.

Sincerely,

Jessica DeKelver
(707) 986-1078
jessica@mattole.org

Tracy Katelman
(707) 443-2400
tracy@sohum.net

NEIGHBORHOOD	DATE	PLACE	CONTACT
Whitethorn	January 21	Whitethorn School Take Thorn Junction to downtown area	Jessica DeKelver (707) 986-1078
Four Corners	January 22	Redwoods Monastery Lower Thompson Creek, Mattole Headwaters, Four Corners	Redwoods Monastery (707) 986-7419
Ettersburg	January 28	Richard and Sally French's Residence South Wilder Ridge, Ettersburg	Richard French (707) 986-7552
Whale Gulch	January 29	Whale Gulch School Chemise Mountain Road to Whale Gulch	Jessica DeKelver (707) 986-1078
Dutyville	February 4	Tenorio / Gregori's Residence Dutyville Road	Tenorio / Gregori (707) 986-7787
Huckleberry	February 5	Jimmy Friel's Residence Huckleberry Lane, Nooning Creek	Jimmy Friel (707) 986-7199
Blue Slide	February 18	Nancy Noll's Residence Blue Slide Creek Road / China Creek Road	Nancy Noll (707) 986-7155
Thorn Junction	February 25	Dorrie Kennedy / Del Penny's Residence Shelter Cove Road, Kings Peak Road, Paradise Ridge	Dorrie Kennedy / Del Penny (707) 986-7050

FIRE SAFETY MEETINGS

Create a plan of action to improve fire safety and reduce hazardous forest fuels.

Identify projects: fuels reduction, water storage, or access improvements.

Improve fire safety to protect residences, the forest, and lives.

Learn more about fire safety and work together to lessen wildfire risks.

NEIGHBORHOOD	DATE	PLACE
Whitethorn: Thorn Junction to downtown area	January 21	Whitethorn School
Four Corners: Lower Thompson Creek, Mattole Headwaters, Four Corners	January 22	Redwoods Monastery
Ettersburg: South Wilder Ridge, Ettersburg	January 28	Richard and Sally French's Residence
Whale Gulch: Chemise Mountain Road to Whale Gulch	January 29	Whale Gulch School
Dutyville: Dutyville Road	February 4	Tenorio / Gregori's Residence
Huckleberry: Huckleberry Lane, Nooning Creek	February 5	Jimmy Friel's Residence
Blue Slide: Blue Slide Creek Road / China Creek Road	February 18	Nancy Noll's Residence
Thorn Junction: Shelter Cove Road, Kings Peak Road, Paradise Ridge	February 25	Del Penny / Dorrie Kennedy's Residence

ALL MEETINGS BEGIN AT 6:30 PM

MATTOLE RESTORATION COUNCIL
P.O. Box 160 / Petrolia, CA 95558
Phone: (707) 629-3514

FOR MORE INFORMATION, contact Jessica De Kelver in the Whitethorn office at (707) 986-1078.

Appendix V. Water Conservation

WATER CONSERVATION Guide

Water for the Salmon & Steelhead
Healthy Summer Flows for the Mattole River

brought to you by the

MATTOLE RESTORATION COUNCIL

PO Box 160
Petrolia, CA 95558
Phone: (707) 629-3514
Fax: (707) 629-3577
mrc@mattole.org

PO Box 223
Whitethorn, CA 95589
Phone: (707) 986-1078
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upriver@mattole.org

Funding for this booklet was provided by the Department of Fish and Game.

Appendix V. Water Conservation

WHY CONSERVE WATER?

Water is important to everyone - many people in the Mattole watershed rely on creeks or the river for their water, and the salmon depend on cool, clean water for summer rearing habitat. In recent summers, sections of the Mattole and some of its tributaries have dried up. By conserving water, we can help to keep the Mattole flowing year round! Use this guide to help you explore water conservation in your home and garden, and learn about the various options for water storage.

STORAGE RESOURCES

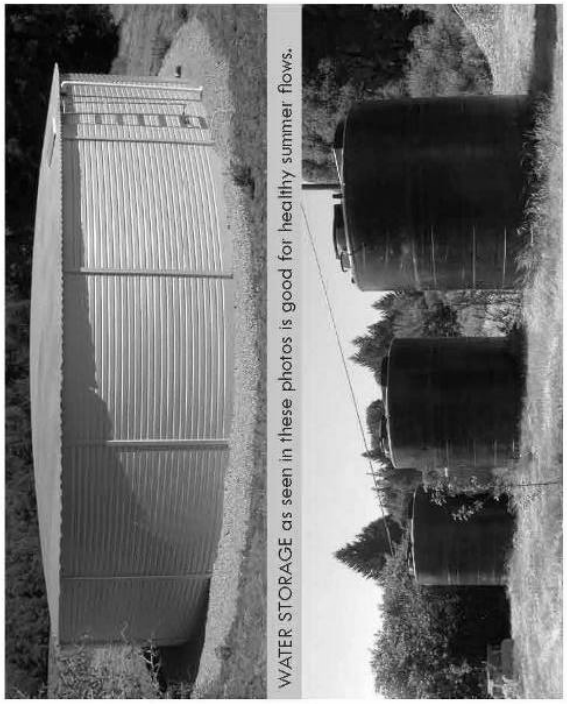
Plastic tanks are available at Whitethorn Construction (707) 986-7416, Dazey's Supply (707) 923-3002 and Just Rent It (707) 923-1414.

Pioneer water tanks can be purchased through Frank Groggins (distributor) at (707) 965-3600. Bulk orders can be coordinated through MRC to reduce shipping charges. Joseph Cook is available for hire to help with installation at (707) 986-1567.

Pond construction Is available through Wilcox Enterprises (707) 986-7486, Whitethorn Construction (707) 986-7416, Greg Mullins (707) 986-7734, R.M. Etter Construction (707) 629-3420, Cedar McCulloch (707) 629-9499 and Sterling McWhorter (707) 629-3307.

Pond liners can be found at Drip Works: (707) 459-6323.

Resource/Funding Consultation The Mattole Restoration Council can provide information on non-native species control, erosion potential, site planning, and funding for agricultural pond improvements. Call the MRC at (707) 986-1078.



WATER STORAGE as seen in these photos is good for healthy summer flows.

Reducing Household Use | 2 |

ACCORDING TO THE AMERICAN WATERWORKS ASSOCIATION, the average American consumes 86.2 gallons of water per day: drinking, showering, washing clothes and dishes, cooking, flushing the toilet, and watering the lawn. Hundreds of people using hundreds of thousands of gallons daily has a big impact on the Mattole River in the summer. To keep the river flowing strong all summer, consider the following inexpensive conservation upgrades.

Toilets Some older toilets use between 5 and 7 gallons of water every time you flush. Installing a more efficient toilet is a good way to conserve water. If your budget doesn't allow for this, you may use a "displacement device" such as a brick, a large rock, or a full and closed bottle of water in your tank to fill up some excess water storage space. Make sure these items are not in the way of flushing mechanisms.

Showers Buy inexpensive, low-flow valves for the shower. Limit your time in the shower and shut off water while lathering up and shampooing.

Washing Machines Horizontal axis washing machines that tumble the clothes, instead of agitating them, require much less water and electricity to clean clothes effectively and are much more gentle as well. Only use the washer when you have a full load ready.

In the kitchen Use a faucet aerator in your sink. An aerated faucet uses approximately 1 gallon of water per minute while a normal sink faucet may run at upwards of 2 to 3 gallons per minute. Run the dishwasher only when it's full. If you wash dishes by hand, consider filling the sink instead of running water constantly.

Everyday activities You can find many ways to conserve water through being mindful of how you use water in your daily life. Try turning off the water in the bathroom sink while brushing your teeth. Even more water will be saved if you keep it off while lathering hands or while shaving.

Water Storage | 5 |

MATTOLE RESIDENTS STORE WATER to take advantage of plentiful winter rains and to avoid the hassle of pumping during the dry summer months. Many people have invested in storage to minimize their impact on the river.

STORAGE TANKS Covered tanks are the most common and longest lasting storage solutions. The cover must be screened and tight enough to keep animals from getting into your drinking water. The most common materials are polypropylene, corrugated metal, and concrete.

Plastic/Polypropelene For drinking water, fire protection or irrigation. Available in sizes from 300-10,000 gallons, and well-suited for smaller storage needs.

Pioneer A corrugated metal structure equipped with an Aqualiner of food grade quality. A good choice for those with 20,000+ gallon needs.

Concrete These water storage tanks are made of poured cement on a steel bar frame. Potential to crack in earthquake or leach calcium into drinking water and leave hard water deposits in water pipes.

SHUTOFF VALVES Used to keep your water storage tank topped off without wasteful overflow.

Mechanical Used when water source is higher than your storage tanks. Cost $35

Electrical Used to shut off electric or gas pumps. Cost $100

How Much Water Do I Need?
(Average usage of 2,500 gal/mo)

To keep a 3.5 month summer storage:

INDIVIDUALS	GALLONS
One	8,750
Two	17,500
Three	26,250
Four	35,000

To include water storage for fire, add 2,500 gallons. If you garden, you can add on 500 gallons for every 100 square feet.

Cost Comparison for Water Storage Methods*

TANK TYPE	VOLUME	COST	COST PER GALLON
Pioneer	43,000	$6,300	15 cents
Pioneer	30,000	$5,000	17 cents
Plastic Tanks	3,850	$1,275	33 cents
Ponds	200,000	$14,000	7 cents

*Prices are approximate and do not reflect shipping or installation costs. Construction costs for ponds vary greatly due to site considerations. Pioneer Tanks are from Australia and are subject to exchange rate variances.

Reducing Garden Use | 3 |

When gardening, consider the following easy water reduction methods:

- Use native plant species. They are suited for the local environment and require no watering.
- Choose drought tolerant varieties. These will still flourish without excessive watering.
- Consider installing drip irrigation. It has been proven to reduce water use by 20-50%.
- Group plants by watering needs.
- Mulch, mulch, mulch!

USING DRIP IRRIGATION

Drip irrigation, the most efficient watering system, applies water directly to the soil by use of a special hose with holes in it. Water is conserved with this method because water soaks into the soil before it can evaporate or run off and is applied at the plants roots, where it is needed.

native species to plant:

TREES
- Big Leaf Maple
- Buckeye
- California Bay
- Wax Myrtle
- Grand Fir
- Redwood
- Douglas-fir
- Pacific Dogwood

GRASS
- Fescue
- Calamagrostis

PLANTS & SHRUBS
- Columbine
- Bleeding Heart
- Humboldt Co. Fuschia
- Yarrow
- Douglas Iris
- Violets
- Western Pennyroyal
- Huckleberry
- Hazelnut
- Vine Maple
- Salal
- Blue Blossom
- Elderberry
- Salmonberry
- Oregon Grape
- Purple Sage
- Black Sage
- Lupine
- Honeysuckle
- Western Azalea
- Bush Monkey Flower
- Currants
- Gooseberries
- Snowberry
- Rhododendron

GROUND COVER
- Bunch Berry
- Wood Strawberry
- Redwood Sorrel
- Sword Fern
- Phacelia

Ponds | 4 |

PONDS, when built on stable ground, are a good option for irrigation needs as well as fire safety.

- collection of excess runoff water during winter months
- distribution of water in dry season for various uses
- provides beautiful habitat for a rich variety of flora fauna
- higher water capacity than water storage tanks

Proper planning and good design are critical in pond development. If the pond is placed or sized inappropriately, it can cause significant erosion and harbor unwanted invasive species.

Ponds should never be constructed on unstable hillslopes, particularly grassy hillsides that exhibit slow soil creep (earthflows). Ponds on these hillsides can fail in large storms, rupturing downhill and causing massive amounts of erosion. Installation of an armored overflow outfall pipe can reduce erosion risks. Consult with the MRC for more information on pond design for your land.

Also, if a stream is diverted through a pond and then back into the stream, it can raise water temperatures and also carry invasive species back into the stream that may have colonized the pond. This type of pond has de-watered sections of the Navarro River, causing great problems for salmon survival.

There is an additional issue with disposal of large leftover pieces of polyethylene. Trimmings from the edge can be used for small ponds, but there is usually waste. Another concern is safety. If not protected, animals or people could get in and drown due to the slippery sides. Used carpet or fencing along the banks are good solutions.

POND LINERS A liner keeps the water from seeping into the ground and away from your pond. Some popular choices are: **Clay** A mixed bentonite clay and soil layer can serve as a liner, placed before adding water to the pond. This doesn't work in porous soils. **Ferro-cement** A more labor-intensive alternative than plastic, but has the advantage of rigidity. They're also susceptible to cracking in earthquakes. **Plastic** There are various kinds of plastic to choose from. See your local nursery or hardware store for options. **No Liner** This option is for people who have clay soil and are placing their pond near the water table.

Appendix VI. Fire Ecology/Management

The following literature is available from the Fire Safe Council, the Mattole Restoration Council, or on the Internet. Many of these documents are available on the California Forest Stewardship Program website: http://ceres.ca.gov/foresteward

California Fire Plan Overview, California Department of Forestry and Fire Protection (CDF), http://www.fire.ca.gov/FireEmergencyResponse/FirePlan/fireplanoverview.pdf.

Fire Cycles, Claralynn Nunamaker, California Forest Stewardship Program (CFSP), http://ceres.ca.gov/foresteward/html/firecycles.html.

Fire Ecology of Pacific Northwest Forests, James K. Agee, Island Press (www.islandpress.org), 1993, 505 pages.

Fire in America: A Cultural History of Wildland and Rural Fire, Stephen J. Pyne and William Cronon, University of Washington Press (http://www.washington.edu/uwpress), 1997, 680 pages.

Fire, Native Peoples, and the Natural Landscape, Thomas Vale, Island Press (www.islandpress.org), 2002, 238 pages.

Flames in Our Forest: Disaster or Renewal?, Stephen F. Arno and Stephen Allison-Bunnell, Island Press (www.islandpress.org), 2002, 245 pages.

Friend and Foe, the paradox of fire, California Forest Stewardship Program (CFSP), *Forestland Steward* Newsletter, Spring 2002, http://ceres.ca.gov/foresteward/html/paradox.html.

Homestead Fire Prevention, Larry Heald, Crooked Prairie Fire Crew, POB 631, Garberville, CA 95542, 986-7771, available for a donation of $5.

Learning to Live with Fire, August 1999, California Department of Forestry and Fire Protection (CDF), go to: http://www.fire.ca.gov/php/education_homeowner.php and click on Learning to Live with Fire.

Wildfire: A Reader. Edited by Alianor True, Island Press (www.islandpress.org), 2001, 228 pages.

Appendix VII. BLM Fire Prevention Orders

ORDER NO. CA-330-04-01
STATE OF CALIFORNIA
BUREAU OF LAND MANAGEMENT
ARCATA FIELD OFFICE

F I R E PREVENTION ORDERS

Pursuant to Title 43 Code of Federal Regulations (CFR), Section 9212.2., and due to high fire danger the following acts are prohibited on all BLM public lands within the Arcata Field Office Area until further notice.

1. It is illegal to build, maintain, attend, use or be in the presence of a fire, campfire, or barbecue outside of fire rings or stoves provided within a developed recreation site or a specifically posted campsite or area. Portable stoves using gas, jelled petroleum or pressurized liquid fuel are exempt from this restriction when accompanied by a valid "Fire Permit".
2. It is illegal to operate an internal combustion engine except on a road or other designated trails. Chainsaws with functional spark arrester's operated in accordance with activity levels specified in contract clauses are exempt from this restriction.
3. It is illegal to possess, operate or use any motorized vehicle off established/maintained roads and trails on public lands.
4. It is illegal to use or possess any fireworks, including safe and sane on all public lands. An exemption is in place for July Fourth, when State Fire Marshall-approved fireworks can be used within posted areas on Black Sands and Mattole beaches and at Samoa Dunes Recreation Area. The exemption from the restrictions is for July 4, 2003, only.
5. It is illegal to smoke, except within an enclosed vehicle or in developed Recreation Areas.
6. It is illegal to discharge any ammunition with a steel jacket, steel core, armor piercing, tracer, exploding type projectile, or any other incendiary type ammunition or device (including but not limited to flares, signaling devices and Bullz-I and other exploding targets).
7. It is illegal to violate any Federal, State, County, or Local law, regulation, or ordinance designed to support wildfire prevention.

Pursuant to section 9212.2(3), the following persons are exempt from this order:

1. Persons with permit specifically authorizing the otherwise prohibited act.
2. Any federal, state, local officer, or member of an organized rescue or fire-fighting resource in the performance of an official duty.
3. Any other person meeting exemption requirements specified in the order.

The lands, roads and trails effected by this order are all public lands within the BLM Arcata Field Office Area for the counties of Humboldt, Del Norte, Mendocino, and Trinity. For more information regarding these prevention orders you can call the Arcata Field Office at 707-825-2300.

Done at Arcata, California, on the twenty-eighth day of June, 2004.

Lynda Roush
Arcata Field Office Manager

Upon conviction, violators of these Fire Prevention Orders will be subject to a fine of not more than $100,000 or imprisonment for not more than 12 months, or both (Title 43, C.F.R. 9212.4). In addition, the California Department of Forestry and Fire Protection could hold violators liable for costs associated with wildland fire suppression on public lands.

Appendix VIII. Acronyms Used

AED—Automatic External Defibrillator

BLM—Bureau of Land Management

BVFD—Beginnings Volunteer Fire Department

CAIFMG—California Interagency Fuel Mapping Group

CB—Citizens Band

CDF— California Department of Forestry and Fire Protection

CEQA—California Environmental Quality Act

CFIP—California Forest Improvement Program

CFSC—California Fire Safe Council

CSP—California State Parks

Coop—Upper Mattole River and Forest Cooperative

EPA—Environmental Protection Agency

EQIP—Environmental Quality Incentives Program

FIP—Forest Incentives Program

FRAP—California Fire and Resource Assessment Program

FSC—Fire Safe Council

GIS—Geographical Information System

GPS—Global Positioning System

HRSP—Humboldt Redwoods State Park

HVFC—Honeydew Volunteer Fire Company

ISF —Institute for Sustainable Forestry

KRNCA—King Range National Conservation Area

LMFSC—Lower Mattole Fire Safe Council

MMU—Minimum Mapping Unit

MRRP—Mattole River and Range Partnership

MRC—Mattole Restoration Council

NPS—National Park Service

NRCS—Natural Resources Conservation Service

PRC—Public Resource Code

PVFD—Petrolia Volunteer Fire Department

RPF—Registered Professional Forester

SCBA—Self-Contained Breathing Apparatus

SFI—Sanctuary Forest

SHFSC—Southern Humboldt Fire Safe Council

SP—State Parks

SRL—Save-the-Redwoods League

TRFPD—Telegraph Ridge Fire Protection District

UMRFC—Upper Mattole River and Forest Cooperative

USFS—US Forest Service

VFD—Volunteer Fire Department

WFPD—Whitethorn Fire Protection District

WGVFC—Whale Gulch Volunteer Fire Company

Appendix IX. Useful Links

Applegate Valley Fire Plan home page — http://www.grayback.com/applegate-valley/fireplan/.

Bureau of Land Management home page — http://www.blm.gov/nhp/.

CDF's Fire and Resource Assessment Program — http://frap.cdf.ca.gov/.

California Fire Alliance home page — http://www.cafirealliance.org/.

California Fire Safe Council— http://www.firesafecouncil.org.

California Forest Stewardship Council, Forestland Steward newsletter site. Lots of great information in past newsletter issues— http://ceres.ca.gov/foreststeward/html/newsletter.html.

California Interagency Fuels Group — http://frap.cdf.ca.gov/projects/interagency_fuels/caifg_update.html.

Cost-share funding directory produced by UC Cooperative Extension — http://ceres.ca.gov/foreststeward/html/financial.htm.

Deschutes County, Oregon, site with fire safe information for landowners and others — http://www.firefree.org/.

Firewise, National Wildland/Urban Interface Fire Program — http://www.firewise.org/.

Josephine County Integrated Fire Plan — http://cwch.uoregon.edu/CCWP/JCIFP/.

Mattole Restoration Council — http://www.mattole.org.

Mendocino County listing of CDF, How to Apply for Fire Safe Regulations Clearances — http://www.co.mendocino.ca.us/planning/PermitPlace/PermitPlace75.htm.

Mendocino County listing of CDF requirements regarding Fire Safe Standards — http://www.co.mendocino.ca.us/planning/PermitPlace/PermitPlace77.htm.

National Interagency Fire Center — http://www.nifc.gov/.

National Wildfire Coordinating Group — http://www.nwcg.gov/.

Society of American Foresters' publication, "Preparing a Community Wildfire Protection Plan." — http://www.safnet.org/policyandpress/cwpphandbook.pdf.

State of California official legislative information website, to get background and/or updates on any relevant legislation — http://www.leginfo.ca.gov/.

Trinity County Fire Plan — www.tcrcd.net/pdf/ValuesAtRiskFromFire.pdf.

US Forest Service State and Private Forestry page, where information is available about cost-share programs and other programs to support private forestland owners — http://www.fs.usda.gov/spf/.

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CDF, California Forest Improvement Program (CFIP) User's Guide 2003 Edition, Vol. 1, http://www.ceres.ca.gov/foreststeward/html/CFIP.html, December 2003, 13 pages.

CDF, FRAP, Fire Perimeters, Project Introduction, http://frap.cdf.ca.gov/projects/fire_data/fire_perimeters/

CDF FRAP, Maps, http://frap.cdf.ca.gov/data/frapgismaps/select.asp.

CDF FRAP, Surface Fuels Maps and Data, http://frap.cdf.ca.gov/data/fire_data/fuels/fuelsfr.html.

CDF, Humboldt Del Norte Unit, Fire Management Plan 2003, 20 pages.

CDF Resource Management and Forestry, Vegetation Management Program, http://www.fire.ca.gov/ResourceManagement/VegetationManagement.asp.

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Fire Safe Council Handbook, http://www.firesafecouncil.org/educationindex.html, 19 pages.

Firewise, "Is your home protected from wildfire disaster," http://www.firewise.org/pubs/is_your_home/WILDFR2.PDF, 25 pages.

Firewise, "Wildfire! Preventing Home Ignitions," video, http://www.firewise.org, 2001, 19 minutes.

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Humboldt County Master Fire Protection Plan, 2003.

Humboldt County Community Development Services, Geographic Information System Database

Institute for Business and Home Safety, "Is Your Home Protected From Wildfire Disaster: A Homeowner's Guide to Wildfire Retrofit," http://www.ibhs.org, 20 pages.

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North Coast Watershed Assessment Program (NCWAP), Mattole River Watershed Overview, http://www.ncwatershed.ca.gov/mattole/mattole_river.html.

NRCS, California 2004 Environmental Quality Incentives Program (EQIP), http://www.ca.nrcs.usda.gov/programs/eqip/2004/eqip2004.html.

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NRCS, Northern California County 2004 EQIP Application Information, Humboldt County, EQIP Program Description, http://www.ca.nrcs.usda.gov/programs/eqip/2004/eqip2004norcal.html#Humboldt.

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