COLESTIN & HILT

COMMUNITY WILDFIRE PROTECTION PLAN

May 20, 2005

INTRODUCTION

WHO WE ARE

The Colestin Valley is located on the Oregon-California border at the confluence of the Siskiyou and Cascade Mountain ranges, 10 to 30 miles from the nearest towns and major services in both states. Surrounded by mountains, travel can be difficult (and, at times, impossible) in winter. Residents have tended to be self-reliant individuals who helped their neighbors in times of need. With improvement in roads, transportation and services to the valley and surrounding area, and more people seeking escape from cities, the population of the Colestin Valley and its environs has increased, which also increases the fire risk from manmade causes.

The Colestin Rural Fire District formed in response to the 1981 Colestin Fire (caused by children playing with matches). Before the Colestin Fire, no local fire agency existed to provide either fire protection or legal authority in the Colestin Valley. Because the district geographically straddles an area where three different national forests converge, the attempt to establish a legal jurisdictional authority during the fire resulted in chaos between fire agencies from outside the area. In order to address the jurisdictional problems that occurred during the 1981 fire, as well as the need for local fire protection, the Oregon Department of Forestry suggested that Colestin form its own fire district.

On August 24, 1983, after two years of work by residents, Jackson County issued the mandate and the Colestin Rural Fire District became a legal entity within the State of Oregon. Through grants, donations and fund-raising, the District purchased equipment and paid for operating expenses. In November 1994, District residents approved a serial property tax levy for the fire district, which stabilized funding for essentials. From inception of CRFD through the present, most work of the District has been done by volunteers.

One of the problems CRFD had from the start was responding to fires and emergencies in the California area of the valley, as we were only legally responsible for the Oregon side. Historically and geographically, however, residents did not separate themselves from assisting one another on the basis of a politically determined line on a map. In March 1989, we developed a mutual aid fire protection agreement with Fruit Growers Company in their town of Hilt, in order to offer fire protection services on a year-round basis to residents in Hilt, California. In 1990, we developed a new mutual aid agreement with California Department of Forestry, which allowed CDF to respond to fire calls within CRFD. In addition, CDF agreed to work on a program to make the Hilt area a district within its jurisdiction. In 1994, the Hilt Volunteer Fire Department (HVFD) became a legally separate organization with its own Board of Directors and firefighting unit. Although separate legal entities, CRFD and HVFD function as a single unit when responding to fires and other emergencies.

THE FIRE PLAN DEVELOPMENT COMMITTEE

At a district-wide meeting in May 2004, representatives from Klamath National Forest, USFS, presented a program on their plans for fire mitigation efforts in forests adjacent to the CRFD and on grants to communities with fire plans. Following that meeting, the CRFD Board appointed a three-member committee to develop a fire plan for the Colestin-Hilt Fire Districts. After researching fire plans in other communities, the committee sent a survey to all CRFD/HVFC property owners requesting respondents to identify values, fire/emergency hazards, and ways to reduce those hazards. The survey responses were tabulated and presented to the community at a meeting in October 2004. Attendees were asked to further identify and prioritize these values, hazards and solutions. An outline of the proposed Fire Plan was also presented and volunteers were solicited to help compile data and write different aspects of the plan. In addition, volunteers were recruited to work on task groups dealing with specific hazards and solutions. Information from the surveys and community meeting has been incorporated into the Fire Plan being presented here.

MISSION AND GOALS OF FIRE PLAN

Our mission is to develop a fire plan that leads to increased fire preparedness and enhanced response by outlining specific projects to be accomplished by CRFD, HVFC and District residents.

LIST OF COLLABORATORS

Bureau of Land Management

California Department of Forestry

CalTrans

Central Oregon and Pacific Railroad

Colestin Rural Fire Protection District

Fruit Growers Supply Company

Hilt Volunteer Fire Company

Jackson County Department of Economic and Special Development

Jackson County Fire District 5

Jackson County GIS Services,

Jackson County Sheriff's Office

Jackson County Roads, Parks, and Planning Department

Jackson Soil and Water Conservation District

Klamath National Forest

Lomakatsi Restoration Project

Oregon Department of Forestry

Oregon Department of Transportation

Rogue River National Forest

Tashi Choling

DESCRIPTION OF FIRE DISTRICTS

PHYSICAL CHARACTERISTICS

ORIENTATION AND TOPOGRAPHY

Residents and visitors alike deeply value the beauty and wildness of this area. One's gaze is bound by the mountain views in all directions. Mt. Ashland (7533 ft.) dominates the Siskiyous crest to the northwest as does the striking silhouette of Pilot Rock (5910 ft.) to the east. To the south lie Cottonwood Peak (6607 ft.), the majestic volcano Mt. Shasta (14440 ft.) in the Cascade Mountains and the many ranges of the Klamath Mountain system marching westward to the coast. These dramatic formations are graced with rich mixed conifer forests, oak woodlands, and meandering creeks winding their way ultimately to the Klamath River.

The Colestin Rural Fire Protection District (CRFD) and the Hilt Volunteer Fire Company (HVFC) are divided politically by the Oregon-California border, but the landscape argues for a bioregional perspective. Located in the eastern Siskiyous Mountains (a subunit of the Klamath Mountains), the Colestin and Hilt Fire Districts encompass most of the Cottonwood Creek drainage. Consequently, the boundaries of the Districts are generally at higher elevations - the headwaters of Cottonwood Creek - sloping down to the valley lowlands running generally north to south through the center of the fire protection area. Elevation ranges from 5640 ft. to 1841 ft. The highest point is to the north along the Siskiyous crest, elevation falling as the Cottonwood Creek makes it way south towards the Klamath River. This southern aspect combined with rising elevations to the north has repercussions for fire weather and behavior. (See the Weather Section above). In spite of generally decreasing elevations towards the center and south of the area, the topography is rugged and extremely variable. Much of the area is not readily accessible by road, and is a complex mosaic of small ridgelines, hills, steep slopes, rock outcroppings, and narrow draws.

CLIMATE AND WEATHER

Colestin and Hilt's climate and weather pattern are similar to the greater region, except for variations due to our unique geography and local influential factors. In the local area, variations in precipitation, snowfall, temperature and humidity are a result of the various valleys and ridges present.

In collecting climate and weather data, several sources are used. Three of the four sources are maintained by the Western Regional Climate Center (WRCC). These include two local remote access weather stations (RAWS), which are located at Buckhorn Springs, Oregon (elevation 2780') and Brazie Ranch, California (elevation 3000'). See WRCC RAWS Site Map for site locations relative to the Colestin/Hilt area. The third WRCC station is Ashland, Oregon. The last source is Colestin weather records kept by Indigo Ray. Weather conditions such as humidity, fuel

temperatures, and wind are important factors influencing fire behavior. Some of these influences are discussed in greater detail below.

Elevation

The highest point of elevation in Colestin is approximately 5641 ft and the lowest point of elevation is approximately 1841 ft.

Precipitation

Colestin receives most of it's precipitation in winter/spring during February, March and April and in the fall/winter in November and December. Transition months appear to be May and October, where precipitation can vary widely. The lowest precipitation months are June, July and August. Refer to Precipitation Graphs, Appendix A.

Snowfall

Snowfall in Colestin is most prevalent during December and January. Refer to Snowfall Graphs, Appendix A.

Air Temperature

The coldest month is January, with the cold season going from November thru March. The hottest Months are July and August. Spring runs April through June. Autumn months are September and October. Refer to Air Temperature Graphs, Appendix A.

Fuel Temperature

Fuel temperature patterns are similar to those of air temperature. The coldest temperatures are found in January. The hottest months are July and August. The higher the fuel temperature, the easier it is for fuels to ignite and burn. [1] Refer to Fuel Temperature Graphs, Appendix A.

Humidity

Humidity is an important influence on fire behavior. The pattern of humidity is opposite that of temperature. This means that when the temperature is high, humidity is low and conversely, when the temperature is low, humidity is high. The highest humidity months are December and January. The lowest humidity months are July and August. This same humidity pattern holds true over the course of a day. For example, in early morning, temperature is lowest and relative humidity is highest. In late afternoon, relative humidity is lowest and temperature is highest. Then as the sun sets, the temperature drops and relative humidity increases. [2]

Dead forest fuels and the air are always exchanging moisture. Low humidity takes moisture from fuels. In high humidity, fuels take moisture from the air. Light fuels gain and lose moisture more quickly than heavier fuels. The drier the fuel the more easily it will ignite and burn, therefore, fire danger is higher when relative humidity is low. [3] Refer to Humidity Graphs and Temperature/Relative Humidity Chart, Appendix A.

Lightning

"Thunderstorms movement is generally in the direction of the winds aloft." [4] For Colestin, this effect can be observed when "afternoon thunderstorms that develop over the Trinity Alps and Scott

Mountains are pushed by a north-east wind across Colestin to the Dead Indian area. This is why the Colestin area may receive more lightning than Ashland, Oregon". [5]
In regards to fire, a "thunderstorm is potentially dangerous because it produces strong, gusty surface winds affecting the direction the fire will burn, its rate of speed and intensity" and "thunderstorms also produce lightning which can be dangerous." [6]

"The Siskiyou Mountains exhibit the highest patterns of lightning occurrence in the Pacific Northwest, as much as twice the number of lightning ignitions that occur in either the Cascades or Olympic Mountains. [7] The higher number of lightning ignitions is due to both increased lightning frequency and decreasing summer precipitation patterns characteristic of the Klamath-Siskiyou region. July and August have been reported as the months of greatest number of lightning strikes, but August and September have the highest proportion of actual lightning-caused fire ignitions." [8]
For more discussion of lightning see page 29.

Wind

Wind plays an important part in fire behavior. Winds can dry fuels, decrease humidity, increase oxygen supply, influence direction and rate of fire spread and carry firebrands. The Colestin/Hilt area experiences three types of wind patterns. In mountain topography, differential effects of heating and cooling occur giving rise to "Slope Winds" which begin immediately after the sun strikes the slope. The general pattern is to have upslope winds during the day and downslope winds at night. "Downslope winds usually are no stronger than 2-5 mi/h, whereas upslope winds often are 3-8 mi/h. This is one reason fire spreads faster uphill." [9] South and southwest slopes heat the most and have the strongest upslope winds. Upslope wind speeds on south slopes may be *several times greater than those on the opposite north slopes.* [10]

Valley Winds are the result of local pressure gradients caused by temperature differences between the air in the valley and the air at the same elevation over the adjacent plain or larger valley. Valley winds flow upvalley during the day and downvalley at night. Upvalley winds don't begin until the whole mass of air in the valley has been warmed, i.e., later in the day than upslope winds, typically late morning, and reach speeds of 10-15 mi/h during the afternoon. Downvalley winds begin a few hours after dark, can reach speeds of 5-10 mi/h" and diminish after sunrise. [11]

Occasionally a dry "Foehn Wind", known locally as an East Wind, will blow from the Cascades. A Foehn Wind can last for several days, blow quite strongly (40-60 M.P.H.), and result in lowered humidity and fuel moisture levels. The famous Santa Anas of Southern California and the Chinook winds of the Rockies are examples of foehn winds. [12]

GEOLOGY

The Hilt and Colestin Fire Districts are located south of the jagged crest of the Siskiyou Mountains along the watershed divide between the Rogue and Klamath River drainages. The district boundaries lie within the Klamath Mountain geologic province and are largely drained by the main and east forks of Cottonwood Creek and their tributaries.

The Klamath Mountains are steep, rugged mountains consisting mainly of metamorphic and igneous rocks that formed beneath the ocean and subsequently collided with the North American continent about 150 million years ago. Complexly folded and faulted rocks are bounded by belts of sparsely vegetated bands of serpentine. Rocks, including igneous, metamorphic, and sedimentary types, are very diverse and interspersed. The Klamath Mountains were formed, in part, by the rotation and westward movement of what was once the northern Sierra Nevada Mountains. Other rock types, including limestone and serpentine, formed under the ocean floor, were uplifted, and attached to the continent. Still other rocks (granites) formed from the melting and subsequent uplift caused by the sinking of the Pacific plate under the North American plate.

The Klamath Mountains are irregular and do not form well defined ranges. Most of the short ranges which do occur in the Klamath Mountains run east-west, an unusual characteristic for mountains in North America. The northern portion of the Klamath range is known as the Siskiyou Mountains They extend in an east-west arc for approximately 100 mi (160 km) from east of Crescent City, California northeast along the north side of the Klamath River into Josephine and Jackson counties in Oregon.

Oregon's oldest known rocks (425 million years old) are found in the Siskiyou Mountains. The Siskiyou Crest is a span of tall peaks beginning in the vicinity of Pilot Rock and Mount Ashland. The rocks vary in composition from granitic types (igneous rocks) to the metamorphosed peridotites (serpentine).

Within the boundaries of the Colestin and Hilt Fire Districts, the surface rock types are largely igneous intrusive rocks (magmas that cooled below the earths surface) and non-marine and oceanic sedimentary rocks of the Hornbrook Formation. The majority of the two Districts is underlain by granite rock related to the Mount Ashland Pluton (a large body of cooled magma) with a small area in the southwest near Interstate Route 5 that is underlain by volcanic lavas and sediments of the Hornbrook Formation.

The Mt. Ashland granites are light to dark grey and are comprised largely of varying amounts of the minerals quartz, feldspar, biotite and hornblende. The most widespread type is called quartz diorite or tonolite. The Hornbrook Formation in the eastern area of the Districts near Hilt is mainly comprised of soft, dark grey shale with 1-10 foot interbeds of fine, buff colored sandstone.

Various faults cut the Hornbrook Formation and the adjacent igneous rocks, however they are relatively old and not believed to be seismically active.

SOIL TYPE

The soils of in the Klamath-Siskiyou region are as diverse as the underlying geology. This is due to the variations in the parent rock type as well as abrupt changes in elevation (500 to more than 8,000 ft), and climatic regimes (precipitation ranges from 40-120 inches). In the Colestin and Hilt Districts soil types are largely influenced by parent material (igneous or sedimentary), slope steepness and slope orientation (north or south facing).

In the upper Colestin Valley where soils have largely formed on granitic or volcanic rock the soil texture tends to be loamy with appreciable silt and often characterized as cobbly or gravelly. Many of these soils, particularly on slopes over 20% are very shallow (less than 24 inches). Large areas of the Carney Clay and Carney Cobbly Clay Soil are found in open meadows and inter-ridge areas. This soil is very plastic, typically 50-60% clay and has extremely low permeability (high runoff potential).

Along the East Fork and Cottonwood Creek in its lower reaches, very sandy, gravelly soils are typical with soils of the Medford Silty Clay Loam series forming on adjacent terraces.

In the eastern portion of the Hilt District near the old town of Hilt soils have largely formed on shale of the Hornbrook Formation and are most often very clay rich, sticky and of extremely low permeability. Small subareas, generally open areas or flats, have formed on sandier interbeds in the Hornbrook Formation and the soils are somewhat lighter. Soils near Cottonwood Creek in this area are generally more silty than further up the Valley. Silty and silty clay loam soils have formed on broad terrace deposits along the Creek.

Detailed soil descriptions and maps for most of the Fire District's area are available from the USDA Soil Conservation Service:

US Dept. of Agriculture, Soil Conservation Service, Soil Survey of Siskiyou County California, Central Part, 1983.

US Dept. of Agriculture, Soil Conservation Service, Soil Survey of Jackson County Area , 1993.

PLANT AND ANIMAL DIVERSITY

The defining feature of the ecology in Klamath-Siskiyou area is the remarkable diversity of plants and animals. The diversity is so outstanding that it has been recognized as important on a global scale. Below are several factors that give rise to this unique situation.

- The geology is quite various, including a substantial concentration of ultramafic bedrock such as serpentinite, providing parent materials that support a broad range of plant life.
- Elevations from sea level to well over 7000' provide a wide variety of temperature and precipitation regimes.
- The tumbled topography gives rise to many micro-climates, as differing aspects and slopes interact.
- Four different ecoregions and their associated climates, flora and fauna intersect here: Cascade/Sierra Nevada, Oregon and California Coast Ranges, California Central Valley, and the Great Basin. For example, the region includes the southern distributional limit of Pacific silver fir, Alaska cedar and Engelmann spruce, as well as the northern limit for coast redwood, Jeffrey pine and Shasta red fir. ("Fire Regimes, Fire History and Forest Conditions in the Klamath-Siskiyou Region: An Overview and Synthesis of Knowledge", Frost and Sweeney)

- Tropical and arctic air masses are blocked by the east-west orientation of the Klamath Mountains helping to moderate climatic conditions.
- The east-west orientation has served as an important land bridge for plants and animals to disperse and migrate. One route runs directly through the Colestin District and another just south of the Hilt District along the Klamath River drainage. (Dispersal and Migration Map, Atzet)
- Dry summer weather creates an environment prone to fire disturbances which create and maintain diversity.

Residents of the Colestin Hilt area can attest to the great variety of plants and animals that live with us. The lucky viewer might catch a glimpse of top predators such as Black bear and Mountain lion. We enjoy frequent encounters with Black-tailed deer, Elk, and Grey squirrel, to name a few. Occasional sights of Great Blue Heron, Golden Eagle, Red-tailed Hawk, Band-tailed Pigeon, and Turkey Vulture jazz up the daily experience of Western Meadowlark, Oregon Junco, Mountain Chickadee, Scrub Jay, Stellar's jay and many, many more. An impressive list of at least seventeen tree species includes: Red Alder, Incense-Cedar, Golden Chinquapin, Black Cottonwood, Dogwood, Elderberry, Douglas-Fir, Shasta Red Fir, White Fir, Western Juniper, Madrone, Big Leaf Maple, California Black Oak, Oregon White Oak, Ponderosa Pine, Sugar Pine, and Willow. District residents value highly the opportunity to live in and steward an area of such natural abundance.

Here are a few of the scientific findings that detail the high degree of diversity of flora and fauna across the entire Klamath-Siskiyou ecoregion (summarized in "State of the Knot", DellaSala, 2004)

- at least 30 species of conifers have been identified
- 115 species of butterflies have been identified
- of the 235 species of mollusks (snails and mussels), 60% are endemic, i.e., are found no where else in the world
- 220 of the 3500 plant species identified are endemic
- the most diverse herpetofauna (reptiles and amphibians) of any similarly sized mountain range in the Pacific Northwest, including 79% of all herp species in the Northwest
- 2/3 of California's entire plant species can be found in the 1/10 of California's landmass within the ecoregion.

Broadly speaking, the Districts area is characterized as "Dry Oak-Conifer (Klamath) Zone". (Hickman map) The U.S. Environmental Protection Agency places the Districts area in the Klamath Mountains Ecoregion 78. The Level III description of this area is "physically and biologically diverse. Highly dissected, folded mountains, foothills, terraces, and floodplains occur and are underlain by igneous, sedimentary, and some metamorphic rock. The mild, subhumid climate of the Klamath Mountains (78) is characterized by a lengthy summer drought. It supports a vegetal mix of northern Californian and Pacific Northwest conifers." An even more precise Level IV description of the Klamath River Ridges (78g), states that our area experiences "a dry, continental climate and receives, on average, 25 to 35 inches of rain annually. Low elevation and south-facing sites have more drought resistant vegetation than elsewhere in the Klamath Mountains, including juniper, chaparral, and ponderosa pine. Higher areas and north-facing slopes are covered by Douglas-fir, white fir, and Shasta red fir. Ecoregion 78g has less precipitation, more sunny days, and a greater number of cold, clear nights than the Inland Siskiyous (78e). (http://www.gis.state.or.us/data/metadata/k250/ecoregion.pdf)

CHECKERBOARD OWNERSHIP

The Colestin and Hilt Fire Districts are a checkerboard of publicly and privately owned land. The history of the railroad line running down the center of the Districts explains the current landownership pattern. The checkerboard results from land grants made by Congress after the Civil War in an effort to settle the West. Land was granted to the State of Oregon, which transferred the land to the Oregon & California Railroad Company. These O&C lands were all odd numbered vacant sections of a township within 60 miles of the railroad. As timber grew in value, Southern Pacific Railroad refused to meet their obligation to sell lands to settlers. In 1916, the Federal government reclaimed millions of acres which are now managed by the Bureau of Land Management (BLM). In addition to the BLM, the United States Forest Service Klamath National Forest is the other major public landowner. Please refer to the Colestin are view of the Oregon State Forestry Department map on page 14.

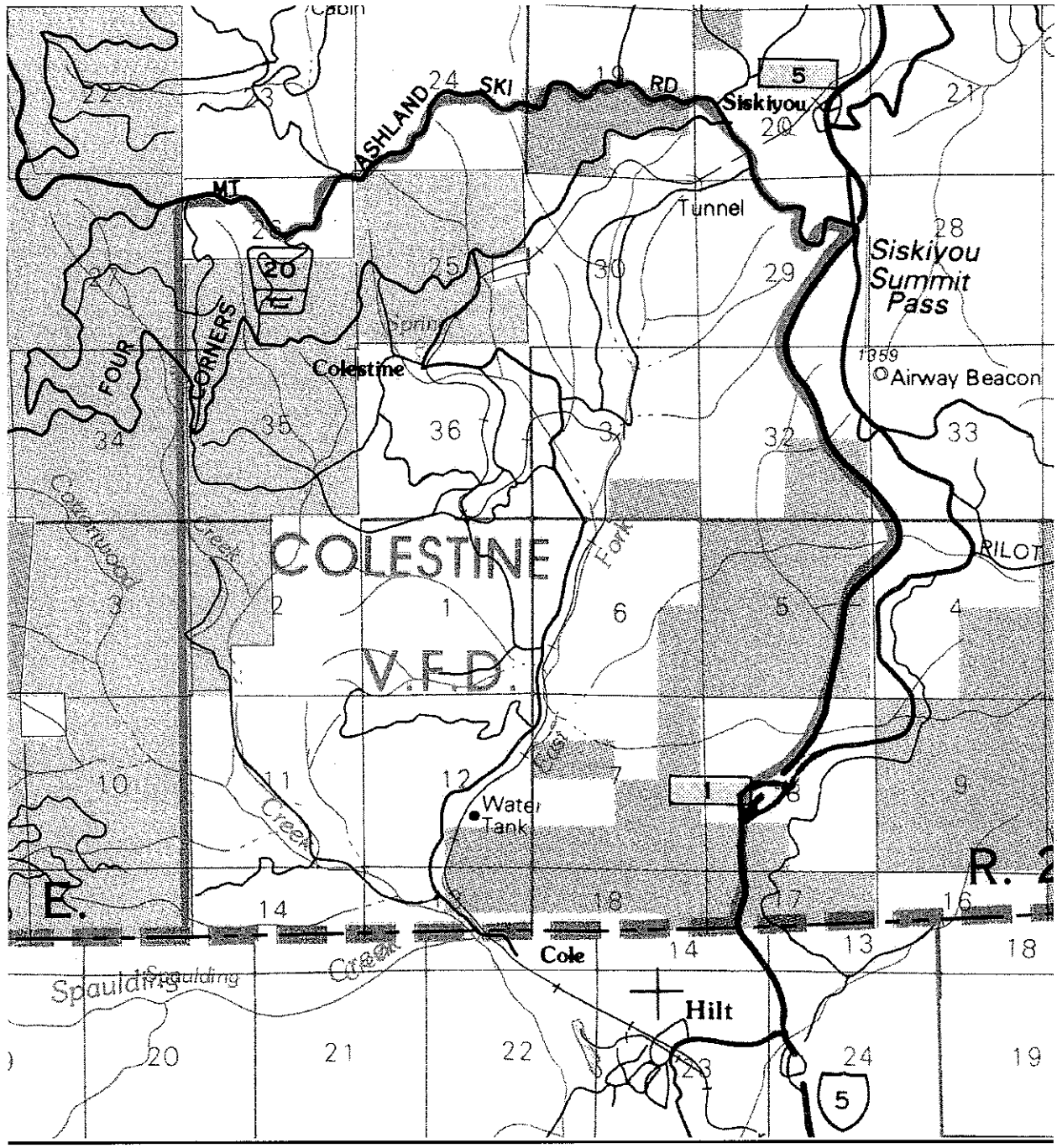
OWNERSHIP TYPE	# OF LOTS	ACRES	OWNERSHIP %
CRFD	1	2	0
FEDERAL BLM	7	2041.1	19
FEDERAL USFS	2	2008.1	19
PRIVATE	168	6713	62
STATE	1	7.6	0
UTILITY	1	20.5	0
TOTAL	**180**	**10792.3**	**100**

Mike Savage, Jackson County

Information on jurisdictional responsibilities for fire suppression can be found in "Existing Fire Protection Services" on page 24. An overview follows of issues relating to fire suppression policy and jurisdictional responsibility specific to the BLM Cascade Siskiyou National Monument and private lands within the Monument boundary.

Colestin Hilt area view of Oregon State Forestry Department Map

Ashland Subunit, Southwest Oregon Protection District, 1989



Green shaded areas are Klamath National Forest land
Beige shaded areas are Bureau of Land Management land
White areas are privately owned land

CASCADE SISKIYOUS NATIONAL MONUMENT

On June 9, 2000, the Cascade Siskiyous National Monument (CSNM) was designated on BLM lands. As the map on page 17 indicates, the boundary of the CSNM includes approximately 32,000 acres of private land interspersed within the 52,947 acres of the Monument. According to the BLM, "any management or regulations pertaining to the CSNM apply only to federally owned public land and not private lands. The CSNM boundary is for planning purposes only and does not include or restrict privately owned property." Below is a discussion of fire suppression policy in the CSNM taken from the official website, http://www.or.blm.gov/csnm/index.htm.

Fire Suppression the Cascade Siskiyous National Monument

Many people and organizations have raised concerns that the BLM's wildfire suppression policy for the CSNM has changed since monument designation. The fire suppression policy for all BLM-administered lands in western Oregon, including the CSNM, is to suppress all fires. Under interim management, the wildfire suppression policy for the CSNM remains unchanged from pre-designation policy. The BLM has a contract with the Oregon Department of Forestry (ODF) to provide fire prevention, detection and suppression services. The contract calls for ODF to "take immediate action to control and suppress" all wildland fires. In western Oregon, ODF is responsible for fire protection on private lands outside municipalities and therefore, has the required infrastructure for fire suppression. As BLM-administered lands are generally interspersed with private lands, the BLM/ODF relationship was established to make fire management more efficient. As always, the protection of human life and private property are of foremost importance to ODF and BLM when determining appropriate fire suppression tactics.

Tools for Fighting Fire

Can fire fighters use heavy equipment to suppress fires?

There have not been any additional restrictions on the Oregon Department of Forestry's (ODF) ability to use helicopters, tractors, dozers, or any other tools necessary for suppression since the CSNM designation. Helicopters, tractors, and dozers are an essential part of firefighting.

However, during any fire suppression activity, ODF and BLM must consider the impacts of the suppression as well as the impacts of the wildfire. For example, the use of aerial retardant is prohibited on all rivers, streams and other waterbodies on BLM lands in order to protect drinking water and aquatic wildlife. In areas with fragile soils, it is standard policy to limit the use of tractors whenever practical to prevent soil damage and erosion.

As BLM-administered lands are generally interspersed with private lands, there is not a "let-it-burn" policy on any BLM-administered lands, including the CSNM. ODF will continue the immediate and full suppression of wildfires using the same tools and techniques available prior to monument designation.

Fire Access

Do firefighters have the access they need to fight fires?

In 1999, the BLM requested that the Oregon Department of Forestry (ODF) provide the Medford District with a list of roads necessary for effective fire suppression in the area that is now the CSNM. ODF responded by providing the BLM with a list of roads considered essential for fire suppression. The BLM has ensured that ODF has access to any road identified as necessary for fire suppression.

The BLM consulted with ODF to maintain appropriate road access for fire suppression operations. ODF will retain access to all identified gated roads; the Schoheim Road was not identified as required for successful fire suppression. If necessary, aerially delivered fire suppression, such as helicopter-delivered firefighters and aerial retardant, will be used. In sensitive areas, tractors and other major surface-disturbing activities will be limited but not restricted.

Resource Protection

How can the BLM balance resource protection with fire suppression?

There are times when the impact of certain fire suppression activities may be more significant than the impact of the fire. The BLM works with ODF to choose fire suppression tactics that best match the intensity of the fire and the sensitivity of the landscape. Listed below are some of the guidelines used for fighting wildfires on all BLM lands, including the CSNM:

- BLM resource advisors work with suppression forces to identify sensitive areas.

- When feasible, existing roads or trails are used as a starting point for burn-out operations designed to stop fire spread.

- Fire lines are constructed using the minimum width and depth necessary to stop the fire. Heavy equipment use is minimized and resource advisors are consulted.

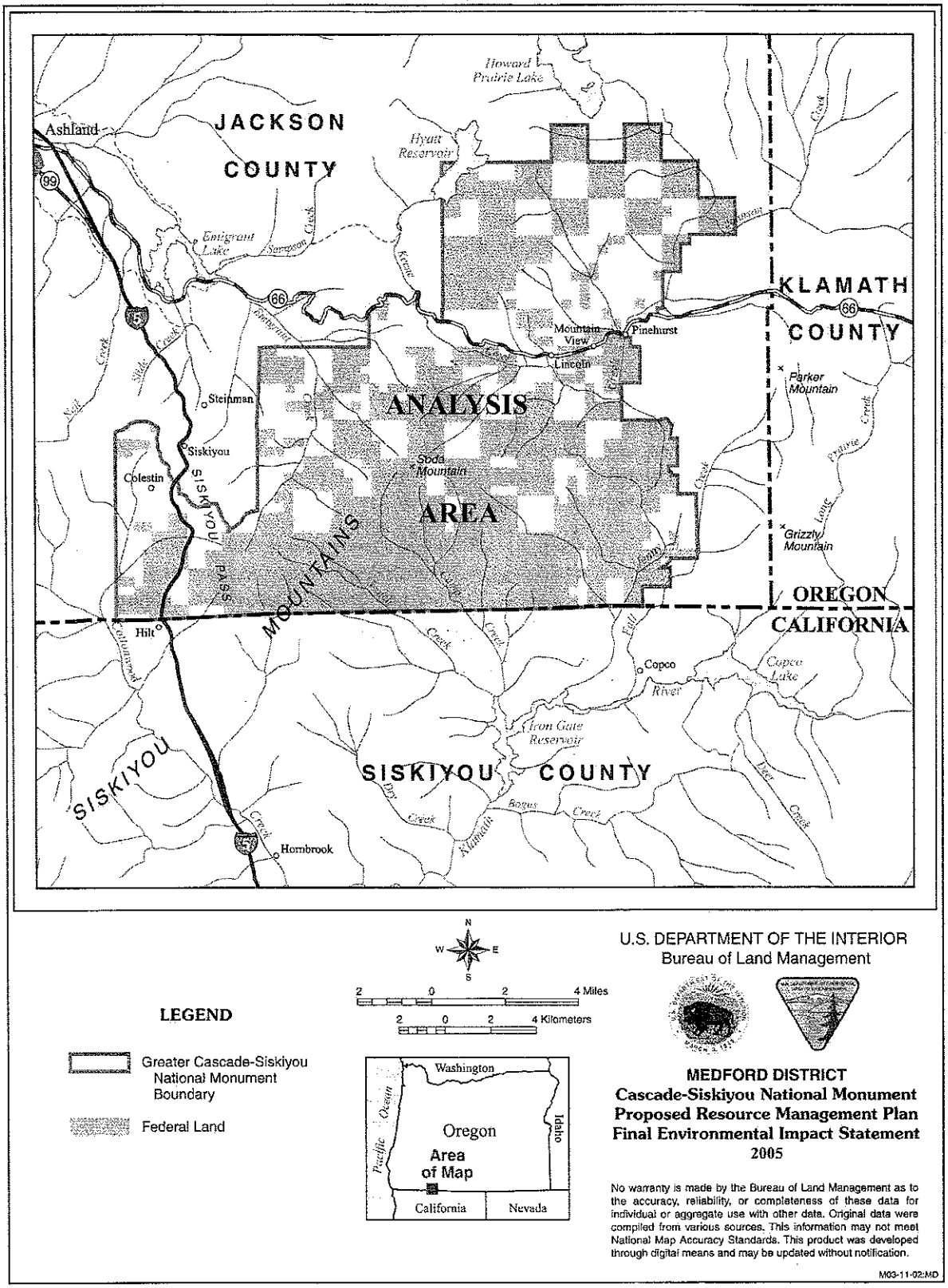
- Snags and live trees are only felled when they pose a safety hazard or jeopardize fire line integrity.

- Helicopter landings are minimized, using past locations or natural openings when possible.

- Retardant and foam drops are prohibited on surface waters and occupied spotted owl or eagle nests.

- Resource advisors determine rehabilitation needs to reduce impacts associated with fire suppression.

Map 1: Cascade-Siskiyou National Monument Vicinity Map



LEGEND

- Greater Cascade-Siskiyou National Monument Boundary
- Federal Land

N W E S

2 0 2 4 Miles

2 0 2 4 Kilometers

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management

MEDFORD DISTRICT
Cascade-Siskiyou National Monument
Proposed Resource Management Plan
Final Environmental Impact Statement
2005

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

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COMMUNICATION

Telephone (wire line)

Most, but not all, of the residents of the Colestin Valley area are served by wire-line telephone provided by Qwest. The telephone numbers have Ashland prefixes. Along the northern border of the District, the lines extend about one mile up the Mt. Ashland Ski Road from its intersection with Old Highway 99 near the Interstate 5 freeway exit 6 at the Siskiyou summit. Several residents and a bed-and-breakfast resort further up the Ski Road rely on Cell phones and a dedicated radio connection to the wire lines for communication.

The central part of the Valley is served by wire lines that connect to the main line along I5 east of about mile 5 on Colestin Road and backed up by means of a microwave terminal located near the CRFD fire station (see below). Those subscribers located near Colestin Road are served by an underground coaxial line along the road, while some others to the west are served by low-capacity overhead wires running with the power line. Several homes on upper Nepal Road, far out on Spaulding Creek Road, and others far from Colestin Road have no wire line service. An informal estimate is that approximately 10% of the residences in the CRFD have no wire line service.

The Hilt area, in California, is served by wire lines underground connecting to the main line along I5 near the border. Virtually all the residences in this area have wire line service.

911 Service

911 calls from Colestin Valley wire line phones are supposed to be answered by the Southern Oregon Regional Communication Service dispatch center in Medford, and relayed to the CRFD phone at the chief's home. If there is no answer, the call is then supposed to be relayed to CDF in Yreka for paging of the volunteer firefighters and dispatch of the CDF engine. (See below for the automatic aid arrangement with CDF) [This relay arrangement is some 10 years old. I will be checking with Jackson County agencies to determine the current operational procedures for our 911 calls]

Residents are instructed to call CRFD first at 488-1768, then, for emergencies only, CDF (1-530-842-3515) if no answer at CRFD

Cellular Telephone

Towers along I5

US Cellular on Soda Mountain (and Mt Ashland?) [check with Steve at Sis-Q Comm. for details]

UTILITES

Electricity

- Pacific Power and Light (PP&L) provides service to Oregon residents. Above ground power lines follow Old Hwy 99 South from Ashland to Siskiyou Summit with trunk lines proceeding south along Old Hwy 99 and west along Mt. Ashland Ski Road. Another trunk line parallels the Mt. Ashland Ski Road above the road, going underground at about MM 1.5. It serves the ski area, residences along the upper Ski Road and one residence on the upper Colestin Road.
- Iron Gate Power Plant (owned by PP&L) provides service to California residents and Colestin Valley Oregon residents.
- Several residents are off the power grid and use solar and hydro power for electricity.
- Many residents have back-up diesel or gasoline generators for use during power outages, which occur several times a year. Storage of diesel and gasoline pose a potential fire hazard, as do the generators if not properly ventilated.

Natural Gas and Propane

Natural gas is not available in the District. Propane is used by a large number of residents for heating, cooking, clothes dryers and/or hot water. Propane storage tanks pose potential fire hazards.

Heating

Almost all homes (and many outbuildings) have one or more woodstoves or fireplaces to provide all or part of the heating. One benefit in this situation is that the ready supply of wood fuel from dead and dying trees, thinning, and brush and site clearing can enhance fire mitigation efforts. Potential fire hazards include:

- overheated stoves
- improperly installed stoves
- chimney flue fires
- sparks igniting ground
- roof and in-home fires
- firewood storage too close to buildings
- ignition of wild-land fires from chainsaws used during fire season

Oil furnaces & kerosene stoves & space heaters are used in some homes. Potential hazards include:

- heating oil and kerosene storage tanks and containers
- improper ventilation
- being placed too close to flammable materials

STRUCTURES

Publicly Owned and/or Used

- Colestin Rural Fire District (CRFD) Station No. 1 is located at Mile Marker (MM) 3.4 on Colestin Road in Oregon. Fire vehicles, tools and supplies are stored in the Station.
- Hilt Church is located at MM.5 on the Hilt Road in California. It is owned by Fruit Growers Supply Company and leased by CRFD and Hilt Volunteer Fire Company (HVFC). The Church is used by the Fire Departments for meetings and by Fruit Growers for storage.
- Hilt School is located at MM .5 on the Hilt Road in California. It is owned by Fruit Growers and leased by HVFC for its fire station. HVFC uses the School for storage of firefighting vehicles, tools and supplies. Fruit Growers also uses for storage.
- Mt. Ashland Ski Area lodge and service buildings are located out of District at MM 9 on Mt. Ashland Ski Road in Oregon, but would receive assistance from CRFD in case of fire

Commercial

- Stateline Store and Service Station (café, liquor store, mini-market) is located at I-5 highway Hilt Exit at start of Hilt Road in California
- Fruit Growers Office Building is located on Fruit Growers Lane at MM .25 off Hilt Road in California.
- Traveler's Accommodations - Mt. Ashland Inn Bed & Breakfast is located at MM 5.25 on Mt. Ashland Ski Road, Oregon.

Private

- There are 107 Oregon addresses in the CRFD and 24 California addresses in the HVFC. Most homesites have dwellings as well as out-buildings (garages, barns, sheds, shops, guest houses, studios, etc.).
- One residence on the Mt. Ashland Ski Road has opted out of the District and is covered by Jackson County Fire District No. 5.
- About 17 properties without addresses have structures on them.
- Several properties, with and without addresses, do not have dwellings on them but may be built on in the future.
- Religious structures - A unique complex of buildings in the central Colestin Valley comprises the Tashi Choling Buddhist Temple & Retreat Center.

Location

Although addresses are clustered at about 13 locations (see NERT's on pages 56-58) along the main roads (Mt. Ashland Ski Road, Old Highway 99 South, and Colestin Road), structures may be a significant distance from the main roads and accessed only by primitive roads. Some driveways may not be wide enough or clear of overhanging foliage to allow easy access to emergency vehicles. In addition, the addresses have previously been assigned in a haphazard way resulting in their being out of sequence, thus making it difficult to find them. Both access to the structures and out-of-sequence addresses pose problems for emergency personnel. Another problem is having only one route in and out of some properties, which could trap the residents and firefighters in case of a fire.

NAME	LOCATION	DESCRIPTION	MAINTENANCE	HAZARDS
MAIN	PUBLIC ROADS	MAIN PUBLIC ROADS	MAIN PUBLIC ROADS	MAIN PUBLIC ROADS
Interstate 5	Extends 6 miles along the eastern edge of the CRFD border, crossing the highest summit along I-5 (4310 feet) and separating the main portion of the District from the annexed properties along Old Highway 99 South. The HVFC boundary continues 4 miles further south to the I-5 Bailey Hill Exit.	Has four public exits (#6 & #1 in Oregon; Hilt and Bailey Hill Exits in California) and an emergency exit at the Mt. Ashland Ski Road/Old Hwy 99 junction, which allow access for emergency vehicles	Oregon Department of Transportation (ODOT) and CalTrans (California road department).	Poses several hazards to which CRFD responds: vehicle fires, particularly in summer when they overheat going over the pass; vehicle accidents; chemical spills from the high volume of truck traffic; stranded travelers during winter snowstorms which close the pass.
Old Highway 99 South	Two-lane, mostly paved; ± 2 miles of intermittent gravel & pavement, including a section destroyed by a rock slide several years ago and not repaired	Extends 5 miles from I-5 Exit 6 to Exit 1 in Oregon.	Oregon Department of Transportation (ODOT)	Rock slides and unstable ground due to fault lines in Siskiyou Summit area making permanent repairs difficult; unexpected detour with concrete barrier ±MM 9.5; impassable in severe winter snowstorms.
Mt. Ashland Ski Road	Extends 9 miles from Old Highway 99 to the Mt. Ashland Ski Area; 5.5 miles are in the CRFD boundary.	Paved two-lane mountain road with many curves; climbs from about 4250 to 6200 feet elevation; several designated chain-up areas and several wide pullover areas are located along entire length, but road becomes significantly narrower with fewer pull-off areas during heavy snow periods.	Jackson County (Oregon) Roads Department in spring through fall; Oregon Department of Transportation plows in winter.	Rock slides; trees & debris falling into road during ice and wind storms; frequent vehicle accidents in winter due to high volume of traffic and icy/snow-covered roads; in winter, only one route for ingress and egress after passing Colestin Road at MM 1.5; portions of road have

NAME	LOCATION	DESCRIPTION	MAINTENANCE	HAZARDS
				occasionally sunk due to fault line paralleling road and several areas of fill dirt being used to construct road (particularly at Colestin Road).
Colestin Road	Extends 8 miles from the Mt. Ashland Ski Road on the northeast edge of the district to the California border where it becomes Hilt Road.	Dirt and gravel graded road with pull-outs and many curves and blind spots; some narrow areas; descends from about 4300 to ±2200 feet elevation.	Jackson County Roads Dept.	Steep, winding, with blind spots and sharp drop-off on downhill side MM 0 to 3; several vehicle accidents occur each year from people speeding and losing control on the dirt/gravel surface, slick surface when wet, or icy/snowy surface in winter. Narrowness is a problem for emergency vehicles during disasters when residents are trying to evacuate, as occurred during the July 1996 train derailment and chemical spill.
Hilt Road	Extends 2 miles from I-5 Hilt Exit in California at the southeast corner of the District to the Oregon border where it becomes Colestin Road.	Narrow, paved, two-lane for first one-half mile, then one-lane with a few pull-outs; cracks and potholes; not regularly maintained.	Maintained by Siskiyou County (CA) Roads Department as budget allows.	Narrow with blind spots.
USFS and	**BLM ROADS**	**USFS and BLM ROADS**	**USFS and BLM ROADS**	**USFS and BLM ROADS**
40S11 (Three	Extends about 2 miles from Mt. Ashland Ski Road at MM 5.5, just outside the northwest corner	Narrow, steep, winding primitive dirt road; poorly maintained.	Grading done by private loggers when logging on land accessed by the road, but this does not occur	Rock slides; trees & debris falling on road during ice and wind storms; impassable in

NAME	LOCATION	DESCRIPTION	MAINTENANCE	HAZARDS
Corners Road)	of the District, to USFS 40S06; lies outside District but provides access to west side of District.		every year. USFS responsible for maintenance; removes large boulders and trees that block road after the winter; occasionally private individuals remove the rocks and trees	winter, except to snowmobiles. Vehicles frequently get stuck in snow in late fall, early winter, and early spring. Road used in winter by Search and Rescue teams looking for lost skiers.
40S06 (Four Corners Road)	Extends from Colestin Road MM 2.5 in westerly direction through USFS land in northwest quadrant of the District. Connects with a network of USFS roads that wind through the Klamath and Rogue River National Forests, eventually reaching Hwy 96 and the Klamath River to the south in California, the Applegate Valley to the west, Mt. Ashland and Ashland to the north, and Hilt (via Grouse Creek, Long John, Trestle, and Hungry Creek Roads which feed into Haul, also called Hilt Hungry, Road) to the east.	Narrow, winding, primitive dirt road; gentle grade through most of the District with a few steep areas.	Maintenance: USFS responsible; graded in summer 2004, but not much done in past ten years due to decreased funding. (See maintenance under USFS 40S11 above.)	Wash-outs and hazards listed under USFS 40S11 above.
402E33 (Pilot Rock Road)	Extends from Old Hwy 99 South MM8.75 to Pilot Rock easterly 2 miles through private property; provides access to two properties annexed into the District and to Pacific Crest Trail (PCT) at MM 1 and Pilot Rock at MM 2, popular hiking	One-lane, primitive, gravel/dirt road; gentle grade to MM1, then steeper with total 300 foot elevation gain.	Poorly maintained by BLM, which has easement through private property; private resident clears snow for first .34 mile.	Icy/snow in winter; vehicles frequently get stuck in snow; blind spots last mile; narrow with only one turnaround.

NAME	LOCATION	DESCRIPTION	MAINTENANCE	HAZARDS
	and climbing areas.			
PRIVATE ROADS	**PRIVATE ROADS**	**PRIVATE ROADS**	**PRIVATE ROADS**	**PRIVATE ROADS**
	See map	**Most started as** primitive dirt logging, farming or property access roads; some follow old stage and auto roads. In addition to named roads, there are numerous dirt roads on properties that can provide access to uninhabited areas in the District for firefighting and other emergencies. **Nepal Road is only** "Designated Way" in District, which means it is a public road but privately maintained.	Condition and maintenance vary and are responsibility of property owners.	**Many are too narrow for** two-way traffic and have no turn-outs. **Many are dead ends or** circle back to where they start at main roads, thus providing no alternative egress in case of emergency. **Many are impassable in** winter, particularly to emergency vehicles. **In the Colestin Valley** during rainy periods, clay soils can make the roads impassable. **Overhanging tree limbs** and brush can make access difficult for emergency vehicles.

WATER SOURCES

Public

- Streams - Numerous streams are located throughout the District (see map) forming the Cottonwood Creek Watershed, which eventually feeds into the Klamath River. Most are year-round, but smaller tributaries may be dry in summer and fall when fire season is at its height. Some may not have sufficient flow for or be easily accessible to fire trucks.
- Ponds - 3 developed for CRFD use and easily accessible to fire trucks on Colestin Road at MM .3 near Mt. Ashland Ski Road, at MM 2.5 at Four Corners Road, and at MM 4.5 on Cottonwood Creek just south of the railroad tracks. (See map on page 23)
-

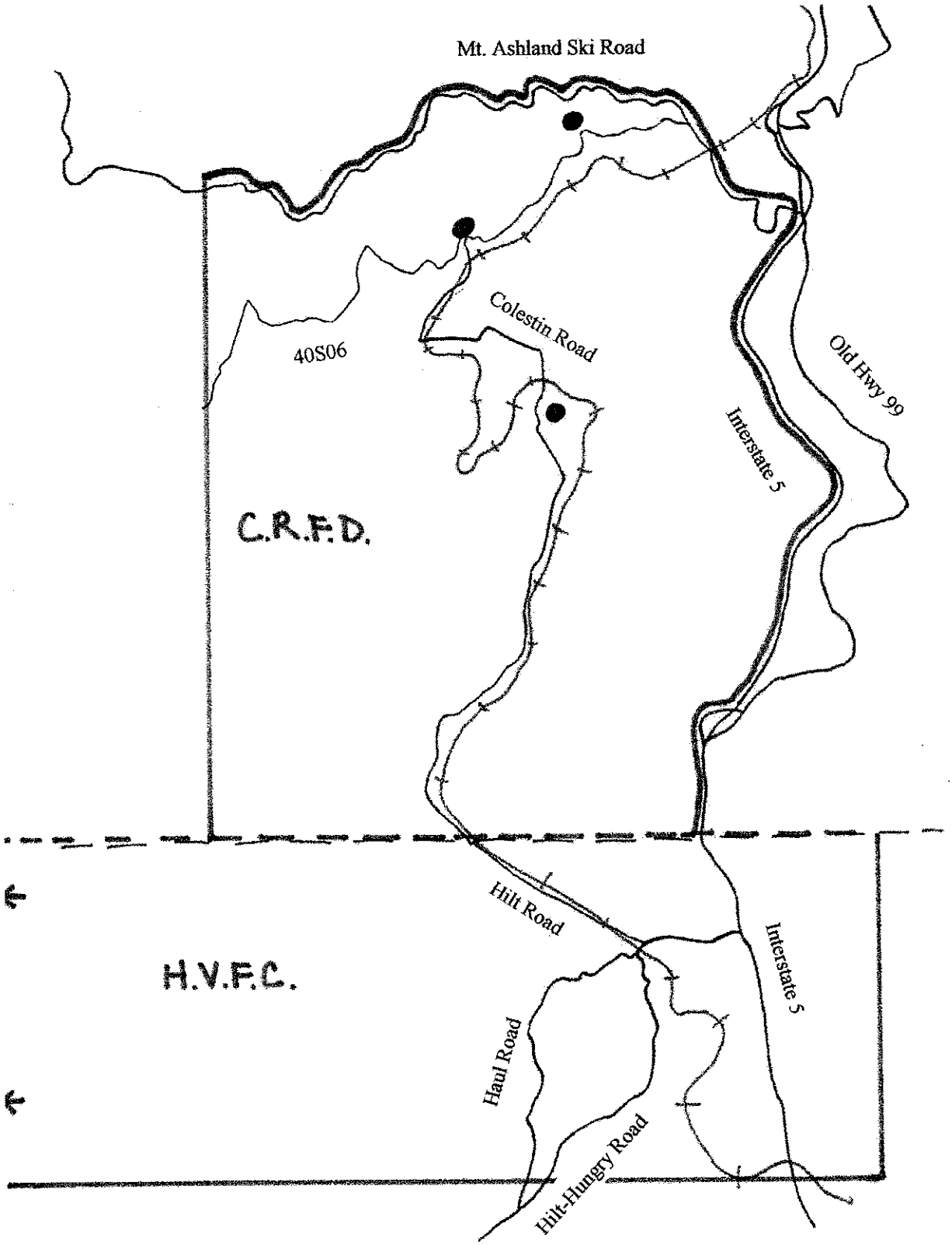
Private *(In fire situations, firefighting entities can use any private water sources.)*

- Fruit Growers Pond at the south end of the valley is about 3 acres and is easily accessible to fire trucks and helicopters with buckets. Many private landowners have developed ponds on their properties for recreational, aesthetic and fire fighting purposes. Usually these are easily accessible to emergency vehicles.

- Holding/storage tanks have been installed by many landowners to supplement their usual domestic water supply (i.e., wells and springs) and/or to be used in emergencies on their property. If not gravity-fed or able to be pumped by generator or other alternative energy source, some may be inaccessible in a power outage.

- Wells and springs are generally developed for domestic water supplies and may not provide sufficient pressure or quantities of water for firefighting. If not gravity-fed or able to be pumped by generator or other alternative energy source, some may be inaccessible in a power outage.

- Fire Hydrants are located throughout Hilt (installed by Fruit Growers when this former mill town was at its peak), but only two are working at this time. The one located near the Office building is locked. The water tower feeding these hydrants holds 35,000 gallons and is located on the hill just northwest of the Hilt School.



● **PUBLIC WATER SOURCES**

EMERGENCY MEDICAL CARE AND SCHOOLS

Emergency Medical Care

- CRFD and HVFC have one trained Emergency Medical Technician (EMT), nine First Responders, and two emergency medical vehicles (one in CRFD and one in HVFC) which respond to vehicle accidents and other medical emergencies within the District and along CRFD's border on I-5.
- Nearest hospitals with emergency departments
    - Ashland Community Hospital, Ashland, Oregon, 12 miles north
    - Rogue Valley Medical Center, Medford, Oregon, 25 miles north
    - Providence Medical Center, Medford, Oregon, 30 miles north
    - Siskiyou General Hospital, Yreka, California, 23 miles south
- North Siskiyou Ambulance does most of emergency transport for District.
- No health care clinic or offices are located within the District.

Schools

Oregon residents attend school in Ashland (10 miles north). The school bus stops at the junction of Mt. Ashland Ski Road and Old Hwy 99 South. California residents attend school in Hornbrook (10 miles south) for grades K-8 and Yreka (25 miles south) for grades 9-12; the school bus stops at Stateline Store at I-5 Hilt Exit.

EXISTING FIRE PROTECTION SERVICES

The Colestin community is served by a unique constellation of fire services. The community, as defined by its members and influenced by geography, lies mostly in Jackson County, Oregon, but extends significantly into Siskiyou County, California. Furthermore, fire protection in the community is provided not only by our own volunteers but also by several larger agencies with overlapping or complementary jurisdictions and responsibilities. Each component of our fire service will be described separately for clarity, with their relationships indicted as we proceed.

COLESTIN RURAL FIRE DISTRICT 4-210

The Colestin Rural Fire District (CRFD) is a non-profit volunteer public service agency chartered by Jackson County in the State of Oregon, funded in part by an annual county tax levy, with supplemental support from district fundraising and private contributions. It is guided by an elected unpaid board of directors. All donations to the Colestin Rural Fire District are entirely tax-deductible. In addition to being a public agency, the CRFD is a 501 (c) 3 tax-exempt organization.

[The following two paragraphs will be updated, along with the web site, by Cheri.]

The primary purpose of the CRFD "is to provide fire protection and prevention and in-field medical services for the lives, homes, property, and resources in the 17-square-mile area within our district.

To meet these objectives, we respond to structure fires within our district; respond to wildland (vegetation) fires within or on our district boundaries in order to extinguish them or to contain and control them until state or federal firefighting agencies are able to respond; respond to medical and rescue emergencies; provide firefighter and medical training to our district members, and education in fire prevention to our community." source

The CRFD is staffed by some 30 volunteers. Most serve as firefighters; some provide support and communications. None, including the Chief, are paid. The volunteers train on suppression techniques for vegetation and structure fires, and on medical first response. The CRFD is the only agency with primary responsibility for structural fires and medical first response in our District.

The headquarters station consists in part of a district-owned heated garage located at the upper end of the Colestin Valley, where the road starts a three-mile steep climb to the ridge and the Mt. Ashland Ski Road. This garage accommodates two engines and a rudimentary shop. The remainder of the headquarters station is a small dispatch and office facility in a room of the chief's home across the road from the garage.

The district has two heavy duty engines (4413 & 4414) that carry 500 gallons of water each? and can attack either structure or wildland fires. We also have two lighter quick-attack wildland engines (4410 & 4412) based on heavy duty pickup trucks. One of each of these types is garaged at the

district headquarters at the upper end of the valley, and one of each is stationed on the ridge above the valley, on the Mt. Ashland Ski Road. This deployment is dictated by the long time required to drive a heavy water-filled engine up the slope to the ridge. Fortunately, a few volunteers live on the ridge, allowing them to respond quickly to this area, or downhill to the major part of the district. One of our unmet needs is a district-owned heated garage for the engines on the ski road. We have had various arrangements to garage these engines at private residences, but this situation is uncertain as homes change ownership. The district engines were all purchased used, and are maintained to a great extent by the volunteers.

In addition to the engines, the district has a rescue unit (4440) consisting of a Chevy Suburban with first aid and rescue supplies for rapid response to injuries, a pickup truck (4400) that serves as a utility and the chief's command vehicle, and a miniature 4WD off-road motor-cycle sort of thing that carries some hand tools and 20 gallons or so of water with a small pump for rapid access to vegetation fires away from roads. These units are located at the headquarters station. All these vehicles including the engines are 4-wheel drive.

The CRFD participates in a mutual aid agreement with the other fire agencies of Jackson County. This means that any of the agencies will respond to explicit requests for aid from any of the others, resources permitting.

Communication is critical to any fire service agency. Each engine, rescue, and the chief's truck is equipped with a good quality commercial two-way radio. Many of the volunteers have district supplied personal portable radios, and some members supply their own radios. We have a base station at the district headquarters. These radios operate on a dedicated channel assigned to the district. They also operate on the channels of the various agencies with which we cooperate. In addition to the two-way radios, the district provides each volunteer with a paging receiver that can be activated by the California Department of Forestry dispatcher in Yreka, California. (This arrangement is described below.)

HILT VOLUNTEER FIRE COMPANY

The Hilt Volunteer Fire Company (HVFC) is chartered by the State of California as a Hose Company. As with the CRFD, all members are volunteers. It is guided by a board of directors [how chosen?]. At present, the HVFC is staffed by an assistant chief and one firefighter in addition to the chief who serves in that capacity for both CRFD and HVFC.

The HVFC garages its equipment in a heated facility in an unused school building provided by the Fruit Growers Supply Company, a logging subsidiary of Sunkist Growers, based in Hilt. Fruit Growers also provides the two agencies with a training and meeting facility in the historic Hilt church, which it also owns.

The HVFC has the use of a structure engine (44) owned by Siskiyou County. It owns a wildland engine (4411) and a rescue vehicle (4441) similar to the corresponding units in the CRFD. These vehicles are equipped with radios similar to those of the CRFD.

Though the CRFD and the HVFC are structured separately, as they must be because of being in different states, their operation and training are completely integrated.

OREGON DEPARTMENT OF FORESTRY

The Oregon Department of Forestry (ODF) has the formal primary responsibility for suppression of vegetation fires in the non-federal parts of the Colestin Valley in Oregon. ODF does not respond to structure fires or vegetation fires in the immediate vicinity, a 7-acre area, around structures. ODF is staffed for fire suppression only during the annually declared fire season. Unfortunately for the Colestin community, the nearest ODF station is in Central Point (North of Medford), almost an hour away over the Siskiyou Pass.

CALIFORNIA DEPARTMENT OF FORESTRY

The California Department of Forestry (CDF) provides full-service fire protection and emergency medical response in the northern part of Siskiyou County, assisted by several volunteer agencies, of which the Hilt Volunteer Fire Company is one. The CRFD and HVFC respond as a single unit to all calls in the Hilt area under an automatic aid agreement with CDF. In turn, CDF responds automatically from its station in Hornbrook to calls in the parts of the Colestin district within 5 miles of the Oregon/California border. In order to implement this automatic aid, the CDF dispatch center in Yreka, California dispatches both the HVFC and Colestin units as a matter of routine.

In addition to the automatic aid and dispatching services, CDF generously includes Colestin personnel in the training it provides to the Hilt volunteers.

UNITED STATES DEPARTMENT OF AGRICULTURE, NATIONAL FOREST SERVICE

Approximately three square miles of the Colestin Fire District and all of the land directly to the west lies in the Klamath National Forest (KNF). While the Forest Service has the primary responsibility for suppression of vegetation fires on this property, their nearest station is in Yreka, which is over one-half hour away for a fire engine. The CRFD has a good working relationship, though no formal mutual aid agreement, with the KNF personnel. First response to fires in the national forest lands in and near our district is invariably by CRFD personnel.

The northern boundary of the District is either adjacent to or near to the lands of the Rogue River National Forest (RRNF). As with the nearby KNF property, CRFD units routinely respond to fires in the adjacent RRNF area.

LOCAL FIRE HISTORY

A history of fires in Siskiyou County shows an average of about a dozen a year over 100 acres, with some years early in the twentieth century having over forty. [1] There is a trend toward fewer large fires, probably attributable to improved fire suppression.

Evidence of fire in the form of old burned stumps and scarred trees can be found in many places in the plan area. In 1935, 6000 acres burned in the Mill Creek area in the timbered western portion of the district and beyond.

In August of 2001 about 3,500 acres of National Forest land at the headwaters of the Little Applegate River were burned in the 6,160-acre Quartz wildfire, which came to within a few miles of the northwest corner of our district. Heavy fuels, steep slopes and drier than normal conditions contributed to the intensity of the fire, which heavily impacted some parts of the watershed. [2]

The largest local fire in the memory of current residents burned for three days from August 10 through August 12, 1981, destroying or damaging 2 million board feet of pine and fir over 540 acres, and one building, in the northwest part of the district. It was started by children playing with matches. Over 700 firefighters were involved at a cost of over $1 million. [3] This fire, and the relatively long time required to notify, bring in, and coordinate state and federal fire-fighting forces, was the principal motivation for the formation of the CRFD, and the long-desired provision of telephone service in the valley.

Since 1981, each year has brought a few vegetation fires started by lighting, the railroad, occasional carelessness, and plain bad luck. All have been held to no more than a few acres, and most have been stopped at less than an acre. Now and then there is a structure fire, often started by a wood-stove flue. One, in 2003, unfortunately resulted in the total loss of a home.

The lesson to be learned from our fire history is that each year will see several fire starts in the district, most in areas covered by natural vegetation. A combination of weather (lightning often, but not always, comes with rain), alert citizens, and rapid response from our volunteer firefighters and mutual aid agencies has so far allowed us to control these fires before they spread far. Increasing density of undergrowth will erode this advantage over time. To continue our ability to control fires before they become highly destructive, we will need to manage our vegetation to minimize the spread rate and intensity of fires that do start.

REGIONAL FIRE HISTORY

The following information derives from a paper written by Evan J. Frost and Rob Sweeney and entitled "Fire Regimes, Fire History and Forest Conditions in the Klamath-Siskiyou Region: An Overview and Synthesis of Knowledge". [4]

Lightning-caused Ignitions

Lightning and humans are the two sources of fire ignitions that occurred historically and continue to occur in the Klamath Mountains. Lightning strikes are frequent across most of the region during the summer and have a sufficiently high density to ignite numerous fires. [5] The regional storms can ignite hundreds of fires almost simultaneously and can easily overwhelm fire suppression capabilities. For example, during the major fire episode of 1987, more than 1,600 lightning strikes were recorded during a twelve hour period in late August in southwest Oregon alone, leading to ignition of 600 fires. [6] For more discussion of lightning, see page 9.

Human-caused Ignitions

Anthropogenic (human-caused) ignitions have also been important in many forest types of the Klamath-Siskiyou region and can be divided into those started by Native Americans and by white settlers. While the exact extent and frequency of Native American ignitions remains unknown, it is clear from historic accounts that the Shasta, Takelma, Karuk, Tolowa and other tribes used fire for tribes for a variety of reasons: to maintain open stands of oaks, aid in the collection of insects, fungi and acorns, clear areas for travel, and to improve habitat for favored plants and game animals. [7] Indian burning appears to have been most frequent in low-elevation oak woodlands, prairies in the coastal forest belt, and eastside ponderosa pine/Douglas-fir forests. [8] According to Leiberg (1900), most Indian set fires occurred in the fall and were "small and circumscribed" but of frequent occurrence. In general, fires were ignited more frequently at lower elevations and decreased as elevation increased. [9] Outside of oak and pine-dominated forests, little convincing evidence exists that aboriginal ignitions were ecologically significant across large landscapes. "Within the vast mid-elevation, mixed conifer and mixed evergreen forests [comprising the largest vegetation types in the Klamaths], the extent of anthropogenic fire likely was limited and localized – i.e. confined to creating scattered, small openings. Aside from these localities, lightning-caused fire probably deserves more of the credit for the formerly open, park-like stands of most mid-elevation, mixed conifer stands". [10] While further investigations may shed light on the relative importance of Native American burning, at present the case for widespread influence in conifer-dominated forests in the Klamath-Siskiyou region is not convincing.

After Euro-American settlement, the relatively stable areas of land burned on a regular basis by Native Americans was replaced by accidental and land use fires ignited by white settlers. [11] Beginning in the mid-1800's and through early decades of 20th century, miners and ranchers were responsible for frequent ignitions. Historical accounts indicate that settler-ignited fires were generally larger in extent and burned at higher intensity than Indian fires, and most often occurred during the hot, dry summer as opposed to spring or fall. Settler fires also affected a broader range of vegetation types than those lit by Indians, and may have more greatly influenced the region's mid-elevation conifer forests. The primary reasons for historic-era burning that have been documented include: to remove vegetative obstacles for mineral prospecting or for easier travel, to drive game, enhance forage for livestock, and to clear land for agriculture. [12] Typically the intent

was to burn off as much vegetation as possible. Many fires also were initiated accidentally from campfires "which the settlers rarely took the time or trouble to extinguish when breaking camp". [13]

Historical data from 1900 to 1969 for the Rogue River National Forest indicate that between 10 – 60% of fires per year were human-caused. [14] Contemporary human caused ignitions tend to occur along travel routes and in highly accessible/developed areas where people are concentrated. [15]

Fire Suppression

After many years of using fire to promote livestock grazing and clear vegetation, organized fire suppression was initiated in 1906 with the creation of the federal forest reserves, later to become the U.S. national forest system. Although a matter of public policy, relatively little energy was actually directed toward putting out fires on federal lands in the early decades of the 20th century, mainly because the manpower available for fighting fires was hopelessly inadequate. The typical forest reserve was comprised of a million acres with a staff of eight personnel, including clerks. [16] Individual rangers were responsible for fire detection and control on hundreds of thousands of acres of remote, mountainous forest land. As a result, many fires grew to considerable size before even being detected. Once discovered, lack of effective means of communication often delayed report to the headquarters office. After report of a fire was received, lack of roads and trails made it difficult and often impossible to get an adequate fire-fighting force together with the necessary tools and supplies to the scene. As a result, fires often burned uncontrollably until they either burned themselves out or were extinguished by the weather. [17]

The ineffectiveness of these early fire-fighting efforts was made worse by the fact that numerous lightning-caused fires were often burning at the same time, which "made it impossible for the small force of rangers and guards to cope with the situation successfully". [18] Fire-fighting efforts were primarily directed at the most accessible and heavily settled areas to protect human life and private property, with little or no resources directed to control fires burning in more remote areas. [19] Given these limitations, it's unlikely that fire suppression was an important factor influencing the character of vegetation across large portions of the Klamath Mountains until at least the 1940's. This date is corroborated by several fire history studies that have documented surface fires burning uninterrupted into the middle of the 20th century. [20]

Fire suppression efficiency in the Klamath-Siskiyou region improved dramatically in the 1940's, the time period that is generally recognized as the beginning of the modern era of fire suppression. [21] The ability to influence the role of fire greatly improved during this period for two reasons. First, a rapidly expanding road transportation system on federal lands allowed for relatively quick access to previously remote and isolated areas. Secondly, major advances in fire-fighting technology, including lighter chain saws, versatile vehicles for transportation, and aerial fire-fighting support played a major role in increasing effectiveness. [22] Efficiency further increased soon afterwards when airtankers, fire retardant and helicopters became part of the fire-fighting arsenal in the 1950's. [23]

While significant gains have been made in the success of suppression efforts, lightning fires that start in remote areas and steep topography of the Klamath Mountains continue to present a very difficult control problem, particularly when multiple starts occur at the same time. [24] Under favorable weather conditions, wildfires continue to grow to large size, a recent example being the 49,000 hectare Big Bar Fire complex that occurred in 1999 on the Shasta-Trinity and Six Rivers National Forests. According to Morford's study of fire history in Siskiyou County, California

(1984), "A study of the action to control many of the individual fires causes one to ask if any progress has been made in the fire-fighting activity and methods in the last 40 years. In spite of dozers, tank trucks, helicopters and airtankers, fires continue to become large, doing great damage to the natural resources".

MITIGATION HISTORY

COLESTIN RURAL FIRE DISTRICT AND HILT VOLUNTEER FIRE COMPANY

By "mitigation" we refer to actions taken before a fire arises in order to reduce the damage a fire might cause. As a fire department, readiness to respond to fire emergencies is fundamental. Proactive measures include training volunteers and maintaining fire-fighting equipment. Vis a vis the public, the primary effort mounted by CRFD has been education. Utilizing Newletters, direct mail postcard announcements and now the website, www.crfd.org, the Districts have provided as much fire related information as possible. Additionally, the Districts have offered site inspections to encourage fire-wise decisions about defensible space for structures and improved access in case of emergency.

LOMAKATSI PROJECTS

National Fire Plan: Colestin Railroad Interface Fuels Reduction Project

Lomakatsi has coordinated this project with 30 landowners, in order to reduce fuel loads on private properties that are adjacent to railroad easements in the Colestin Valley area of southwestern Oregon. The project reduces fuels to create a 50-foot fuels-buffer on to private lands, extending 50-feet back from the railroad property, on *both* sides of where private property borders the railroad easements. The combined fuel buffers on both sides of the railroad easement will create an additional 100-foot fire-defensible zone along approximately 4 miles of tracks. The thinning project is guided by Lomakatsi's Ecological Principles, and improves forest health, community safety, and fire resiliency in an area of historically high wildfire ignition.

National Fire Plan Projects

- 2001 –2003 Lomakatsi worked with the B.L.M. and Cottonwood Creek Watershed Association, Colestin Rural Fire District (Chief Steve Avgeris) and Colestin Valley residents, to design fuels reduction activities and two National Fire Plan proposals that was funded in the area.
-
- 2001-2002 **Central Railroad Fuel Reduction Project / Colestin Valley -** Lomakatsi treated 50 acres on 31 contiguous properties along 4 miles of Central Oregon Pacific Railroad easements bordering private lands of extreme dense vegetation. This project was completed in January of 2002.

Activity: Fuels reduction along California Oregon Pacific Railroad easements, in Colestin area of southwestern Oregon (National Fire Plan)

Timeline: 2001-2002
Area: approximately 50 acres, over 30 landowners
Concerns: Sparks from railroad ignite numerous wildland fires, educate and organize community and numerous contiguous landowners for program success, steep slopes, technical falling, some areas of oak woodland restoration, requires hand-pile burning to dispose of debris in agreement with all landowners.

- 2002-2003 **Colestin Roadside Fuels Reduction Project** – Lomakatsi treated 25 acres of dense fuels along two miles of rural Colestin road in a higher concentration area of residences. Fuel Profile Management Zones were created beginning above the Colestin Rural Fire Station and extending 1 mile past the Buddhist Temple Flags. Project was completed in May 2003.

  Activity: Fuels Reduction along Colestin Road
  Timeline: 2002 - 2003
  Area: approximately 50 acres
  Concerns: single access-egress route through valley threatened by excessive fuel loads along roadside, areas of steep slopes, technical falling, fuel loads hindering all transportation in event of wildfire; educate and organize community and numerous contiguous landowners for program success, hand-pile burning to dispose of debris in agreement with all landowners. National Fire Plan project.

RISK ASSESSMENT

WHAT ARE WE PROTECTING ANYWAY?

As this is a community wildfire protection plan, the values and beliefs of the residents are the guiding force behind this document. In order to best assess residents' opinions about fire and our appropriate responses to the threat of wildfire, the fire plan committee first sent out surveys to all landowners. The surveys were designed to engender thoughtful self-assessment about the landowner's level of fire readiness and to bring that information back to the Fire Department and CWPP committee. Information was collected about Defensible Space, water sources, roads and visibility, building characteristics etc. The responses from the surveys then served as the backbone for a community meeting which was well-attended and produced the following three lists highlighting community members' priorities. The List of Values focuses on those things we most treasure in the big picture, not specific to fire issues per se. The List of Hazards represents those fire dangers that worry us most. Finally, the List of Solutions represents the many ways we can reduce our fire risk and increase our readiness. These Solutions have become the backbone of our Mitigation Strategy (the "Action Plan") in the following Section

LIST OF VALUES

Homes 141
People 107
Watershed Health And Management 61
Pets & Livestock 53
Fish And Wildlife Habitat 41
Tranquility 40
Timber 34
Viewshed Aesthetics 33
Unique Ecosystem 32
Air Quality 30
Recreation Hiking, Biking 18
United Community 14
Structures 12
Fishing, Hunting 6
Vehicles 5
Farming 3
Range 1
Cultural Heritage 1

LIST OF FIRE HAZARDS

OVERBURDEN OF FUELS 248

- Large areas of overdense vegetation **152**
- Land not being managed **42**
- Dangerous standing dead trees **32**
- Hazardous tall dry grass **11**
- Flammable non-native vegetation **8**
- RR ties along tracks **3**

HOME SITE ISSUES 136

- Limited water supply near homes **37**
- Addresses not rational **35**
- Lack of defensible space **34**
- Home issues: dirty chimneys, flammable roofs etc **17**
- Chemical stores **13**

IGNITION SOURCES 150

- Train **49**
- Lightning **32**
- Freeway **19**
- Parking in dry grass **14**
- Arson **14**
- Careless people **10**
- Illegal activities **7**
- Smoking **5**

ACCESS 94

- Access roads & driveways not cleared of vegetation, no turn-arounds, too narrow, etc. **30**
- Steep terrain **20**
- Roads and homes not signed **19**
- "Bottle neck" nature of roads **19**
- Tertiary roads unusable **3**
- Limited Accessibility **2**
- Hazard sign placement **1**
- Narrow steep stretch of Colestin Rd at mile marker 6

LIST OF SOLUTIONS

METHODS 191

- Get grant money for projects **69**
- Support individual landowners with financial or other assistance as possible to take responsibility for fire hazard reduction on their own land **33.5**
- Have qualified persons review and recommend what needs to be done **32**
- Creative matchmaking: offer resources free to willing users, i.e., access to fire wood, small diameter wood for posts, logging) **22.5**
- Work parties **14**
- Fire Safe Home Competition with reward, i.e., a vacation **10**
- Mediation **8**
- RR and Freeway (ODOT & CalTrans) participation **2**

DEFENSIBLE SPACE AND FUELS MANAGEMENT 193.5

- Remove ladder fuels and thin trees along driveways, homes and out-buildings **63.5**
- Create Fuel Breaks between managed and unmanaged land **46**
- Mow tall grass where threat to homes **25**
- Remove dangerous standing dead **23**
- Prescribed burns **18.5**
- Fuels Management **11**
- Fuel reduction on unmanaged land **6.5**

PROACTIVE MEASURES 99

- Education **30.5**
- Monitor ORV's esp. during Fire and Hunting Seasons **18**
- Lightning lookouts **17**
- Monitor RR **14**
- Prohibit parking in tall grass **7**
- Enforcement **6.5**
- Support of local Fire Depts. **2**
- Hire a Fire Prevention Officer offset by fines/grants/fees **1**
- Limit expansion of private dwellings **1**
- Public flogging **1**
- Awareness and prevention **1**
- Remove piles of RR ties

INFRASTRUCTURE IMPROVEMENTS:

ACCESS 63.5

- Remove ladder fuels and thin along main access roads **39.5**
- Correct address incongruities & work with County to prevent future mix-ups **16**
- Signage **4**
- Driveway improvement **3**
- Improvements of road systems **1**

WATER 45

- Increase number of holding tanks/ponds throughout valley **32**
- Ease permitting process for building ponds **8**
- Series of high (>6000') ponds along small creeks **5**

EMERGENCY RESPONSE 53

- Develop Evacuation Plan **35**
- Safety Zones **18**

MITIGATION STRATEGY
"THE ACTION PLAN"

METHODS

This section describes our "Action Plan". It discusses various projects we hope to undertake with the goals of preventing fires, and short of that, increasing our readiness to respond effectively in the event of fire and decreasing fire damage to ourselves, our homes, and our lands. Projects are immense undertakings that require planning, coordination, incentives, money, labor, follow through, and assessment. What are some of the underlying concepts that will enable us to meet our project goals?

GRANT MONIES

First and foremost, we will seek grant funds to underwrite the sometimes substantial costs involved. We hope to apply for grant money ourselves and to collaborate with other local groups, such as Lomakatsi Restoration Project, Jackson County, Oregon Department of Forestry etc.

PROFESSIONAL REVIEW AND RECOMMENDATIONS

In order to prioritize our projects, we plan to "have a qualified person/s review and recommend what needs to be done". Initially, we will be soliciting help from talent available through local agencies. In the future, we may also hire consultants to provide additional information, such as more detailed analysis for different projects.

CREATIVE MATCHMAKING

There is strong interest in "creative matchmaking", i.e., pairing the resources coming out of projects with resource users. For example, one neighbor may have woodland that needs thinning while another may have a need for firewood. Perhaps an enterprising furniture maker could be paired with a landowner who wishes to have manzanita thinned. Part of the impetus behind this approach is to utilize as much of the forest resource as possible (minimizing waste). Additionally, whenever possible we will defray costs of the project by finding markets for the materials removed. An example here might be small diameter trees being sold for poles.

WORK PARTIES

We recognize that grant money isn't available in the quantities needed to complete all our projects. Therefore, the burden of creating defensible space, at the very least, must fall to landowners themselves. Sometimes even this limited responsibility cannot be met for various reasons. We propose to convene work parties to help residents with special needs accomplish fuels reduction around their homes. Further, we will use work parties to address general community projects, for example erecting address signs for emergency response. It may be appropriate to hold some sort of picnic or other incentive as reward for these labors of love.

INCENTIVES

Ideas were floated at the community meeting to come up with fun ways to encourage participation. One idea was to hold a competition for the most fire safe home and offer a vacation as the reward. This idea isn't as far-fetched as it may first appear. We may well have a generous family in the area that has a beach house they might offer up for a weekend! Creative thinking like this is certainly welcome. The more fun we can have while working together to make our community safer the better.

MEDIATION

Lastly, we will avail ourselves of mediation as a tool for resolution of conflicts. One of our residents works with the Jackson County Mediation Works, to which we will turn if the need arises. There may also be talent within our community itself.

Ecological Principles for Forest Restoration and Fuels Reduction

Working with Nature: Lomakatsi's Forest Restoration Philosophy

Nature does the real restoration work. We are working to assist in the recovery of impacted ecosystems without causing additional problems…Here are some of the things we have learned:

Act conservatively
Don't change things too much at once
Respect what is already on site

- Retain old and large trees - the most fire resistant component of the forest.
- Consider broader landscape level conditions when planning site-specific restoration activities.
- Plan restoration thinning treatments over time; follow up the initial treatment using multiple entries in intervals over a several year period, allowing the forest to adjust to the alteration of the vegetation.
- Design and implement treatments for site-specific conditions. Adjust ecological thinning prescriptions and treatments to accommodate various eco-types and forest stands.
- Maintain uneven-aged stands and representatives of all age classes, to retain a diverse, multi-layered forest structure.
- As a goal when revegetating a site, plant only native species.
- Maintain shaded areas and over-story canopy cover in mixed conifer forests. (Adjust for differences in regional biodiversity, as in pine-oak savanna)
- Retain a diversity of tree and plant species.
- Include indigenous land use practices and traditional ecological knowledge as an historic guide and reference point in ecosystem restoration.
- Use prescribed burning to restore the beneficial effects of fire and to maintain fuel loads whenever possible. Plan burning treatments carefully, and do all necessary planning for ecological considerations and the safety of human communities.
- Following prescribed fire, reseed selected areas with native grasses to enhance site conditions.

Remember the wildlife

- Leave some areas untreated, for the birds and wildlife using the area.
- Thin in a mosaic pattern- leaving thickets, maintaining natural openings and meadows, and enhancing older forest stands by maintaining canopy cover.
- Leave some small piles of cut material un-burned, as habitat for wildlife.

- Leave buffers of undisturbed vegetation in streamside riparian areas.
- Retain snags for wildlife habitat. Chart their locations for monitoring, and fire safety precautions.

Remember the soil

- Leave some of the cut materials on the ground, perpendicular to the slope, to catch upslope erosion and contribute to future soil.

Remember the people

- Listen to residents and neighbors. They know the ways in which each site is unique.
- Match site diversity with worker diversity. Different cultures each have their own ways of understanding the complex diversity of nature.
- Train workers about ecological principles, and how to see the special characteristics of each place.
- Involve the workforce in the design, planning, and monitoring of restoration projects.
- Educate the restoration workforce about forest and fire ecology, watershed and riparian function, botany etc.
- Pay workers according to their training, experience, and quality of work.
- Pay workers well, and listen to them. Happy, respected people do the best work.
- Look for useable material to carry from the site for poles, furniture, spoons, fuels, etc.

Monitor and Learn

- Set community-oriented baseline monitoring data for each location, with the optional use of photo points, tree counts, leave-tree dbh, botanical species inventory lists, bird counts, etc.
- Keep complete records of prior conditions, work accomplished, and the time, money, and people that it took.
- Watch & document what happens over time.
- Review information about similar sites before deciding how to treat new ones.

Lomakatsi is the Hopi word for 'Life in Balance'

DEFENSIBLE SPACE FOR STRUCTURES

This section of the plan identifies the community goals related to development and maintenance of defensible space around homes and along their access routes. Our ambition is to have all dwellings in the Districts defensible in the event of fire. What does it mean to have a defensible home?

- The vegetation near each primary structure in the District is in a state such that a widespread vegetation fire in the vicinity would reduce to a low enough intensity around the structure that fire fighters could safely defend it.
- Low or no vegetation buffers to each side of primary access roads and driveways allow safe movement in and out during a fire.
- Home and driveway design, use of fire-resistant materials, and fire-wise landscaping all contribute to increase defensibility of structures.

The following goals are intended to increase availability and dissemination of information as well as to actually provide encouragement and means to individuals to get the necessary work done.

FUELS REDUCTION NEAR STRUCTURES AND DRIVEWAYS

Most homes in the district are immersed in a landscape of native vegetation. That is why we live here. While some may replace the native vegetation in the immediate vicinity of a structure with non-native ornamental plants, most owners opt for a "natural" landscape, so that will be our focus.

This CWPP itself does not need to describe methods for bringing the vegetation around a structure to a fire-safe or defensible condition. Everything anyone needs to know about these methods and techniques is available in numerous publications. Our favorite is Living with Fire, a Guide for the Homeowner, published by the University of Nevada, Reno (c. 2001). It is available:

1. in Appendix _TBA_.
2. at Colestin Fire Department Headquarters.
3. at http://www.or.blm.gov/nwfire/docs/Livingwithfire.pdf.

Defensible space does not need to be bare. In fact, after an area around a home has been converted from an unmanaged "green wall" to a defensible space, many find it much more attractive. Compared to more densely populated Wildland Urban Interface Zones, the Colestin community is fortunate in that most properties are large enough that they can be managed as defensible space without impinging on neighbors or seriously reducing privacy.

The detailed information in Living with Fire, a Guide for the Homeowner is given in terms of protecting structures, but the same guidelines apply to the access to a home. If it is not safe, or "defensible", for firefighters to approach or leave a home, the chances are that in a general fire emergency they will choose to go somewhere else.

The examples below are provided here only to show the level of detail and specificity in the referenced publication. Each property owner will need to study it to determine the appropriate type of management for their site. This is easily done as the critical information is contained on only four pages and is well illustrated.

Living with Fire, a Guide for the Homeowner provides specific examples of fire behavior in terms of flame length and rate of spread for several types of vegetation common to our area. For example, on level ground, in typical August weather, with a 20 mph wind, fire in an open pine forest can be expected to have flame lengths of 10 feet, travel at 1 ½ mph, and burn 150 acres after one hour. Remember that a good walking speed on smooth level ground is 2 mph. Such a fire will, of course, travel much faster uphill.

This and other examples have been analyzed to determine the density and nature of vegetation that can make a space defensible on different slopes. As an example, on a moderately steep slope, defined as between 21% and 40%, tree canopies should be spaced 20 feet. In all parts of the defensible space, lower limbs and underlying shrubs (the "ladder" fuels) should be cleared to prevent fire from climbing from the ground to the canopy.

Finally, the distance from a structure that the vegetation should be managed as described is shown for various combinations of vegetation type and slope. Here the examples escalate rapidly from 30 feet for low grasses and scattered shrubs on flat ground, of which we don't have much in the Districts, to 200 feet for shrub-dominated areas on moderate or steeper slopes.

Inside the outer portion of defensible space, the publication recommends that each structure be immediately surrounded by a "Lean, Clean, and Green" zone at least 30 feet in extent. This would consist of small amounts of low vegetation, kept free of dead material, and irrigated so as to stay green.

GOAL: Provide information on developing Defensible Space

Task: Make sufficient copies of Living with Fire, a Guide for the Homeowner available at the fire district headquarters for public distribution free of charge.

Schedule: To be available by June 1st 2005.

Task: Convene Home Inspection Task Group (for which volunteers were solicited at May 2004 CRFD/HVFC Community Meeting) to receive training in defensible space planning by a recognized agency such as ODF or CDF. Task Group members will then volunteer their consultation services to property owners.

Schedule: Accredited Assessors Certification training by Brain Ballou, O.D.F., and Jenna Stanke, Jackson County to receive will be held April 2nd.

GOAL: Assist Individuals in developing Defensible Space

Busy people may wish to bring their grounds to a defensible condition, but may not have the time or ability to do the work themselves, or even to do the research necessary to select contractors to do the work for them.

Task: Solicit a volunteer/s to develop a community data base of reliable contractors who can perform defensible-space vegetation management. The data base should contain not only bare references, but a history of work done, with some evaluation of results and an indication of costs. The Applegate Fire Plan pgs 144-158 is a good place to start.

Schedule: Solicit by June 2005. Complete task by December 2005.

Task: Solicit and convene a small volunteer team to become and remain knowledgeable about governmental programs which make funds available for assistance in developing defensible space and fire-safe landscaping; to provide this information to the CFRD website and The Buzz local newsletter; assist individuals in applying for the grants.

Schedule: Solicit members by June 2005.

Task: Solicit and convene a small group to identify residents in special circumstances (those who are unable to personally do the work necessary to create or maintain a defensible space or who face other challenges) and organize volunteer assistance on an ad-hoc basis.

Schedule: Solicit members by June 2005. Complete identification task and report to Boards by December 2005.

FIRE-WISE LANDSCAPING

Please refer to Appendix C- for reference material.

GOAL: Provide Landscape Planning Information

Task: Solicit a volunteer/s to develop a small library of references on fire-safe landscaping, including lists of less flammable plants, and maintain this library at the CRFD fire station or in the care of a long-term volunteer, and make this information available to district residents.

Schedule: Solicit by June 2005. Complete task by December 2005.

Task: Solicit a volunteer to develop a data base of examples of good defensible space landscaping where the property owner is willing to share experiences

and results with neighbors. (This may be combined with the Contractors list described above.)

Schedule: To be developed. Perhaps in the course of their assessments and follow-ups, a member of the Home Inspection Task Group might learn of property owners willing to offer their property as good examples for the community.

FIRE-WISE CONSTRUCTION MATERIALS AND DESIGN

In addition to reducing the heat load and flying embers from the surrounding vegetation by creation of defensible space, a home is made more defensible by choices of building materials and design. Unlike vegetation management, this is usually a one-time event, and, unfortunately, is often done by someone who is probably not well acquainted with the community.

Some control in this subject is exercised by the County Planning Department at the building permit stage, but there may be good and useful practices that are not included in the building code, which is all that the planning department can formally enforce, and may be all that some builders know of the subject.

It appears that a desirable goal is to determine whether there are indeed materials and design practices that provide more fire safety that those required by the building code. If this is the case, it will then be desirable to create a data base of such information, and develop a procedure to identify individuals contemplating building in our area before they make firm design choices, and at least inform them of good, attractive fire-safe alternatives. Because this subject is less well-defined than the others with we are concerned, and because it applies only to a few properties each year, the only specific task at this time is to research it.

GOAL: Provide Information on Fire-Safe Construction Materials and Design

Task: Solicit a volunteer/s who will research and report to the Boards whether specific building design and material choices beyond those mandated by the building code are likely to enhance the defensibility of new or rebuilt structures.

Schedule: To be developed.

All of the above comes to naught if property owners do not get off their duffs and actually perform or hire the necessary work. Some are hungry for information and leadership, and have already started or even finished. Some know they need to do something, but are just too busy, while others have personal objections to the whole concept.

The CRFD already publishes useful information in its newsletter and on www.crfd.org and exhorts people to trim their trees near the house. The tasks outlined in this plan will augment those forums.

Experience suggests, though, that this will not be enough to achieve our goals of a fire-safe community.

Experience also suggests that personal contact, when done right, is fairly effective in motivating people to do something that they already know they should do, and sometimes even in convincing them they should do something they initially reject. It is important, though, to note the "done right" part. Whether the process is called being sympathetic, politicking, mediating, or just plain schmoozing, there is a magic to it that some people have, and some don't. Training helps.

GOAL: **Encourage follow through by education and personal contact**

Task: ***compile a data base of level of compliance with defensible space standards at the level of individual properties throughout the district.***

Schedule: To be developed.

Comments: The first step in the area of compliance is to determine what the problem is. This inventory can be developed by the volunteer defensible-space consultants described earlier. It should be comprehensive, not just cover the properties where advice was requested. This part of the task can be jump-started by consultation with experienced senior CRFD personnel.

Just because questions of access to "unfriendly" properties may arise, we should not defer initiating this inventory. The process can proceed in phases, from easy to difficult.

Task: ***select and train one or two volunteers to contact property owners who express reluctance to cooperate in making their property fire-safe to the extent that it constitutes a hazard to the community, and to attempt to bring them into compliance without formal enforcement action.***

Schedule: To be developed.

Comments: Once the inventory is complete, or nearly so, CRFD officials can identify properties having low compliance where personal contact may be effective. At this point, it will be effective to call upon carefully selected, trained volunteers to work with the property owners to attempt to achieve compliance. For this, we may be able to obtain assistance from the **Jackson County Mediation Works** organization. The problem of uncooperative property owners is not expected to be large. We therefore do not need a large number of mediators.

LARGER SCALE FUELS MANAGEMENT

As evidenced both in the returned Resident Survey's and at the Fire Plan community meeting, residents in the Districts are keenly aware that "large areas of overdense vegetation" present a fire hazard. The combination of decades of fire suppression with greater numbers of human dwellings in wildland areas has created a potentially disastrous situation. The increased opportunities for human fire starts and unnaturally heavy fuels loads are likely to result in high-intensity fires tallying extreme economic as well as ecological losses. While we have targeted fuels reduction at individual homesites and driveways as essential to protection against catastrophic fire in the Wildland Urban Interface (WUI), larger scale projects are also necessary to address community values of safeguarding not only our homes, but also our wildlife habitat, timber resources, watershed health, and unique ecosystem.

FUELS REDUCTION

This generally means the reduction of surface and ladder fuels in order to reduce the spread of fire, both horizontally along the ground and vertically into the tree crowns. Common approaches include using hand crews to thin trees, remove lower limbs to reduce ladder fuels or "limbing", remove dead material, and remove brush or "brushing". Whenever possible, we will seek recoup some of project costs by using byproducts for firewood, poles, or by selling logs to small diameter users. Remaining slash is typically disposed of through burning, which is less expensive, or chipping. This work is labor-intensive and expensive, ranging from $1000-$2500 per treated acre. Lomakatsi Restoration Project has done several larger scale projects in the Colestin area, and continues to pursue funding to enable more projects pursuant to this CWPP. Some situations may permit the use of heavy machinery, such as dozers or slash busters. Larger projects may require professional logging contractors.

CREATION OF FUEL BREAKS

The community is very concerned about the threat of dense vegetation on unmanaged lands increasing the fire hazard for adjacent parcels and, indeed, the entire Districts. This situation can exist between private parcels, or between private landowners adjacent to public land which isn't being managed. There is overwhelming support for the idea of creating fuel breaks between managed and unmanaged lands. Projects to cordon off an area of unmanaged land from a relatively fire resilient area will likely take different forms, from heavy treatment to outright breaks.

PRESCRIBED BURNING

There is community support for incorporating the use of low-intensity burns to manage fuel loads and restore a historic ecological process to the landscape. At this time the Colestin Hilt Fire Plan

does not have prescribed burn projects included, but as our fire hazard reduction planning matures, we may elect to pursue this approach.

Based on community and fire department input, the following landscape level fuel reduction goals have been set. Every goal will be addressed through completion of specified tasks according to an established timeline.

GOAL: **To reduce fuel loads along the heavily forested upper Colestin Road, as it is the main access route in and out of the Colestin Valley.**

Task: Draw up a proposal, including who is going to do the work, to submit for grant consideration.

Schedule: 1-11-05 meeting with Lomakatsi to see if collaborating on a grant proposal is feasible. Proposal to be submitted for 2005 National Fire Plan Grant Opportunities, deadline 2-11-05.

Update: Lomakatsi will pursue grant for upper Colestin road work

GOAL: **To work with "qualified person/s" to perform fire risk assessment specific to our Districts and make prioritized recommendations for mitigation projects.**

Task: Solicit and convene a Risk Assessment Task Group to meet with Don Hall and Jeff Keiser of Klamath National Forest (KNF) and draw up a general risk assessment and prioritized list of projects

Schedule: To be completed by year end 2005.

GOAL: **To hire a consultant to perform fire risk assessment specific to our Districts and make prioritized recommendations for mitigation projects.**

Task: Contact consultant and draw up proposals to submit for grant consideration

Schedule: To follow upon initial risk assessment and project list drawn up with KNF foresters. Possible grant proposal target of 2006 National Fire Plan Grant Opportunities

GOAL: **Reduce fuel loads along main access roads.**

Task 1: Solicit and convene task group to prioritize roads by risk, internally and by working with KNF foresters and other qualified persons.

Task 2: Investigate possibility of work party to address roads by neighborhood.

Task 3: Pursue funding for projects, as directed by project priority list, through National Fire Plan and other grant opportunities.

Schedule: Task 1 to be completed in 2005.
Per Task 2, to convene a work party to treat a selected area before fire season 2006.
Per Task 3, Grant Writers Task Group to pursue funding for projects, as directed by project priority list, through National Fire Plan and other grant opportunities

GOAL: **To undertake creation of fuel breaks between managed and unmanaged lands to reduce fire hazard to community at large**

Task: Require consultant/s to consider this issue as part of planning process and produce prioritized projects to address this matter and describe scope of break necessary to achieve protection goals.

Schedule: Grant Writers Task Group to pursue funding for projects, as directed by project priority list, through National Fire Plan and other grant opportunities.

GOAL: **To create the structure for a cooperative arrangement whereby a pair of individuals working with chainsaws and power pruners (or hand tools if fire season restrictions require) would be stationed in a mobile trailer at strategic points in Districts and perform fuels reduction work for a season.**

Task: Create a committee to outline basic plan ideas.

Task: Seek funding to draw up final plan which could serve as a template for other communities and which would cover legal and insurance issues. Funding may also provide salary for laborers for the pilot program.

Task: Find pool of laborers

Task: Determine strategic locations.

Schedule: To be developed.

INFRASTRUCTURE IMPROVEMENTS

WATER SUPPLIES

Although numerous streams are located throughout the Colestin and Hilt Fire Districts, many smaller tributaries dry up in summer and fall when fire season is at its height. Also, some streams may not have sufficient flow or be easily accessible to fire trucks. Firefighters and residents recognize the need to have adequate, easily accessible water supplies near structures and throughout the Districts.

GOAL: **To create a map of all water sources available for fighting fire in the Districts.**

Task: Assign project to a volunteer utilizing information gathered from the returned Surveys.

Schedule: To be completed in 2005.

GOAL: **To increase number of holding tanks and ponds.**

Task: Investigate current process for pond permits and possibility for streamlining.

Task: Determine number of tanks and ponds needed and where needed. (Should each home/property have one?)

Task: Place three 10,000 gallon water tanks, owned by CRFD, at strategic locations throughout district.

Schedule: Convene "Water Supplies Task Group" (for which volunteers were solicited at May 2004 CRFD/HVFC Community Meeting) by June 2005. Solicit additional members as necessary. Complete tasks and make recommendations to CRFD & HVFC Boards (henceforth, "Boards") by November 2005.

GOAL: **To develop series of high (>6000 ft elevation) ponds along small creeks.**

Task: Investigate feasibility and costs with appropriate agencies (e.g., USFS, BLM, CRFD, HVFC, ODF, CDF, counties).

Schedule: Convene "Water Supplies Task Group" (for which volunteers were solicited at May 2004 CRFD/HVFC Community Meeting) by June 2005. Solicit additional members as necessary. Complete task and report to Boards by January 2006.

ACCESS

The majority of public roads throughout the Districts are unpaved and not regularly maintained making access to wild land fires difficult. In addition, many roads and driveways on private property are inaccessible to emergency vehicles and, often, poorly or illogically signed.

Roads and Driveway Improvements

GOAL: **To have all District roads and driveways accessible to emergency vehicles.**

Task 1: Investigate county and agency requirements and establish minimum requirements.

Task 2: Inform property owners of requirements (through CRFD newsletter & Website, BUZZ, special mailings, meetings, etc.).

Task 3: Identify roads and driveways needing improvement.

Task 4 Investigate costs, contractors, and grants and provide information to Boards and property owners.

Schedule: Create "Roads and Driveways Task Group" by June 2005.
Complete Tasks 1 & 2 by July 2005.
Complete Task 3 and report to Boards by August 2005.
Complete Task 4 and report to Boards by January 2006.

GOAL: **To maintain accessibility on roads and driveways in Districts.**

Task: Conduct yearly assessment of roads and driveways before fire season.

Schedule: Boards will appoint "Roads & Driveways Task Group" by February 1st each year. Task group will complete assessments by May 1st each year.

Task: Inform property owners in writing if their driveways are not accessible and need work.

Schedule: After "Roads & Driveways Task Group" has completed assessment, Boards will send letters to residents by June each year.

Task: Perform yearly clearing and maintenance of roads as needed in conjunction with appropriate agencies (county roads departments, USFS, BLM) and private contractors (e.g., logging companies).

Schedule: Boards will contact and request assistance from other agencies and contractors as appropriate after completion of assessment.

Task Task force will perform clearing on roads not done by others.

Schedule: To be finished by a date to be determined will which be consistent year to year.

Rationalize Addresses

GOAL: **To have all Districts addresses in sequential, logical and "user-friendly" order.**

Task 1: Keep informed of turnover of properties.

Task 2: Work with county to assign addresses in logical order when properties are sold and/or building permits are applied for.

Task 3: Create change of address packets to provide to property owners with out-of-sequence addresses to help them change addresses, if they desire.

Schedule: Create "Address Task Group" (can be one person) by June 2005.
Tasks 1 & 2 will be ongoing; report progress to Boards regularly.
Complete Task 3 by November 2005 and made available to Boards and property owners.

Signage

GOAL: **To install signs throughout Districts for all residences and roads.**

Task 1: Convene "Signage Task Group" (for which volunteers were solicited at May 2004 CRFD/HVFC Residents' Meeting).

Task 2: Investigate requirements and costs and report to Boards.

Task 3: Develop plan to install signs.

Task 4: Notify property owners of plan and request public comment.

Task 5: Install signs.

Schedule: Tasks 1, 2, & 3 were completed in Fall 2004.
Re Task 4, a letter was sent to property owners in January 2005; public comment period is to end April 1, 2005.
Complete Task 5 by January 1, 2006.

EMERGENCY RESPONSE

Since the 1981 Colestin fire and resultant formation of the CRFD and HVFC, significant steps have been taken to provide adequate fire protection and prevention and in-field medical services within the Districts. As more homes are built and more people move into the Districts, there has been a concurrent increase in demand for these services.

The CRFD and HVFC Districts are located in a rural area consisting of a valley surrounded by mountains with residences spread out over the ____ square miles comprising the Districts. There is limited access on well maintained roads in and out of the Districts. During a community-wide emergency (such as occurred during the 1981 Colestin fire and the (year) train derailment chemical spill), efficient, immediate communication with residents is essential, as is a plan for evacuation to avoid panic and traffic jams.

COLESTIN RURAL FIRE DISTRICT AND HILT VOLUNTEER FIRE COMPANY

GOAL: **To have adequate firefighting equipment to deal with fires most likely to occur in the District.**

Task 1: Obtain water tender (approx. $40,000).
Schedule: To be completed by year-end 2007.

Task 2: Obtain 10 sets of personal protective equipment ($16,000).
Schedule: To be completed by year-end 2007.

Task 3: Obtain 12 ultra-lite air bottles for SCBA's ($6000).
Schedule: Task 3 by 2008.

GOAL: **To have adequate storage and maintenance facilities for District vehicles and equipment located within ____ miles or ___ minutes of every residence in District.**

Task 1: Replace bay door in Fire Station #1 ($5000).
Schedule: To be completed by year-end 2009.

Task 2: Locate district-owned, heated garage for fire engines on Mt. Ashland Ski Road.
Schedule: To be determined.

Hilt Volunteer Fire Company: goals, tasks and schedule to be determined

PHONE TREE

GOAL: **Create phone tree, to include phone numbers or other means to contact residents in an emergency, which is easy to initiate and maintain.**

Task 1: Convene volunteer "Phone Tree Task Group" (for which volunteers were solicited at May 2004 CRFD/HVFC Community Meeting).
Task 2: Investigate types of systems and develop plan to present to Board and community for comment.
Schedule: To be completed by May 2005 Board meetings.

Task 3: Finalize plan and test system.
Schedule: To be completed by July 2005.

Task 4: Review, update and test system by June 1st yearly.

EVACUATION PLAN

GOAL: **Develop evacuation plan with identified safety zones and escape routes.**

Task 1: Solicit and convene volunteers for "Evacuation Plan Task Group.
Schedule: To be completed by June 2005.

Task 2: Investigate types of plans, potential zones and routes in consultation with county, state & federal agencies, CRFD & HVFC Boards, and residents.
Task 3: Develop plan.
Task 4: Educate residents about plan.
Task 5: Hold community-wide evacuation drill.
Schedule: To be developed.

NEIGHBORHOOD EMERGENCY RESPONSE TEAMS (NERTS)

GOAL: **Create NERTs throughout the District.**

Task 1: Identify neighborhood clusters and create map.
Schedule: To be completed by Fire Plan Committee by May 2005.

Task 2: Identify coordinator in each cluster.
Schedule: To be completed by Fire Plan Committee and Boards by July 2005.

Task 3: Develop list of functions NERTs could perform; have each NERT determine which functions it will perform and how it will operate.
Task 4: Develop system for how NERTs will relate to one another.
Schedule: To be developed.

Possible NERT's Clusters

Upper Ski Road

Mt. Ashland Ski Road Addresses: 500, 550, 480, 460, 4902, 9840, 10255

Upper Old 99

Old Hwy 99 Addresses: 11700, 11800, 12001, 12050, 12289, 12297

Upper Colestin Road

Colestin Road Addresses: 1192, 1211, 1585

Station One

Colestin Road Addresses: 1684, 1690, 1700, 1701, 1714, 1716, 1717, 1720, 1722, 1757, 1803, 1891, 1892, 1819, 1867, 1889, 1894, 1905

Nepal Road and Temple

Colestin Road Addresses (Nepal Road): 2000, 2001, 1985

Nepal Road Addresses: 101, 108, 222, 264

Theo Lane / Goat Ranch Road

Colestin Road Addresses (Theo Lane): 1968, 1980

Colestin Road Addresses (Goat Ranch Road): 2007, 1895, 2500, 2526

Whiskey Creek Road

Colestin Road Addresses (Whiskey Creek Road): 1977, 1945, 1975, 1969

Gravel Pit / Rising Sun Lane

Colestin Road Addresses (Gravel Pit): 1900, 2033

Colestin Road Addresses: 1909, 2181,2149, 2163, 2188, 2216, 2222, 2245, 2300

SS Bar Ranch Road

SS Bar Ranch Road Addresses: 2100, 1917, 1801, 1507, 1507 B, 1401, 1500, 1300

Lower Spaulding Creek Road / Leo Lane

Spaulding Creek Road Addresses: 2330, 2350, 2120, 2134

Leo Lane Addresses: 3000

End Spaulding Creek Road

Colestin Road Addresses: 2390, 2400, 2480, 2520

Cole Station / Wagon Trail Road

Hilt Road Addresses: 2301, 2139, 2205, 1701

Colestin Road Addresses: 2471, 2535, 1965

Hilt / Beehive Lane / Stateline / Jefferson Road

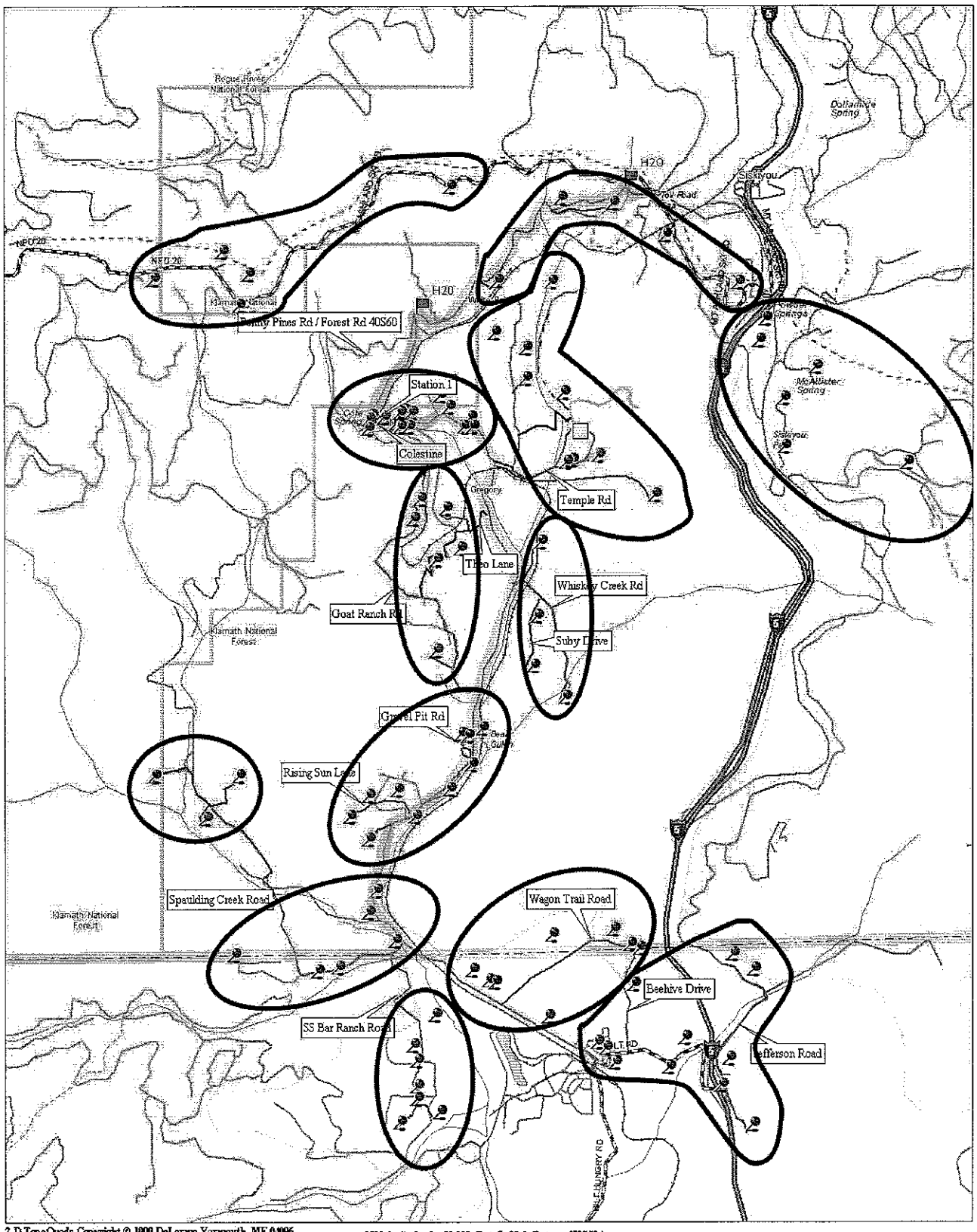
Colestin Road Addresses (Hilt Road): 1699

Siskiyous Avenue Addresses (Hilt Road): 4

Hilt Road Addresses: 1009, 614, 525, 212, 210

Jefferson Road Addresses: 21604, 22494, 22716

POSSIBLE NERT'S CLUSTERS MAP



IGNITION PREVENTION

Enhancing our ability to survive fire through fuels reduction and coordinated emergency response are important aspects of preparedness, but we serve ourselves well by taking steps to prevent fires in the first place. Most fires are started by people. In some cases, lack of education about fire safety and prevention measures is the culprit, as is the case in most flue fires. Fires also often result from illegal activities ranging from running prohibited machinery during high fire season to deliberate arson. Preventing human-caused fires is an important priority. District residents favor a two pronged approach which emphasizes fire safety education and increased monitoring of illegal activities and enforcement of the law.

FIRE SAFETY EDUCATION

We are very fortunate to have at our disposal two excellent sources of fire safety information, the CRFD website at www.crfd.org, and the CRFD Newsletter which is typically mailed to all landowners several times a year. Additionally, the CRFD places notices of an urgent nature on the two area bulletins boards, at the south end of the Districts on Hilt Road just south of historic Cole Station and at the north end of the Districts on the Mt. Ashland Ski Road at the mailboxes. Virtually all matters of fire safety and preparedness have over the years been addressed in the CRFD Newsletter, and now the website is a rich source of information including but not limited to: detailed information about wood stove operation and maintenance, firewood fuel values and ratings, defensible space, preparedness for fire season, fire danger level and activity restrictions, fire weather info and links, and online fire prevention information links.

GOAL: **To encourage use of the website as a tool to disseminate information about fire safety matters.**

Task: Reference website in local newsletter, The Buzz.

Task: Through word-of-mouth, reference website and encourage folks to access it for information.

Task: Use the Neighborhood Emergency Response Teams to get the word out.

Schedule: To be developed.

GOAL: **To arrange a series of single page fliers about fire safety issues which can be posted on the bulletin boards, in the Buzz, and on the CRFD website. Fliers would be time sensitive to address flue cleaning before the woodstove season, or raking leaves and cleaning gutters before fire season etc.**

Task: Find a volunteer (perhaps a Jr. Volunteer) to pen a beginning set of 6 such fliers.

Schedule: Canvass volunteers, especially Jr. Volunteers, to see if there is anyone who will do project. If not, ask for a volunteer at the community meeting tentatively scheduled for late May or early June 2005. Work to begin as soon as possible with a one year deadline.

MONITORING AND ENFORCEMENT

The community values monitoring, particularly during fire season, of ORV's, the railroad, and illegal activities in order to prevent ignitions. Although lightning fires can't be prevented, there is also a call for monitoring thunderstorms in order to enhance response. Monitoring the railroad and lightning strikes have previously fallen under the purview of the CRFD proper. When the railroad was running trains during the day during the height of fire season, fire department personnel were volunteering their time to follow the train as it passed through the Districts in order to spot any fires that may have occurred. When the train went to running at night, this practice was discontinued. Once the train is running again, very likely in time for fire season 2005, the CRFD will size up the situation and take appropriate action to safeguard the area. As to lightning monitoring, the CRFD usually has one or more lookouts positioned at high spots in the Districts to watch for "smokes" indicating potential fires.

GOAL: **To determine if there is a need for additional lookouts, and to recruit lookouts as needed.**

Task: CWPP committee chair to meet with Fire Chief to assess situation.

Schedule: As soon as possible.

As to monitoring other activities, currently there is no mechanism to have a designated person out in the district keeping an eye on things. As this is our community and we all share an interest in keeping it green and safe, it seems that a cost-effective and feasible approach to this subject would be to encourage all residents to participate in a sort of "neighborhood watch". The approach would be simply to encourage all residents to be alert to potential fire hazards (hazards would be detailed) and to report hazards to the Fire Department. There can be little enforcement of the laws that do exist to prevent fire starts if lawbreakers are not reported.

GOAL: **To increase fire safety in the Districts through a neighborhood watch type program which will teach residents to recognize situations that threaten fire starts and to report such situations immediately to the fire department.**

Task: Draw up a straightforward program (perhaps with a catchy name) that invites all residents to participate in keeping an eye out and describes what they should be on the lookout for. Program would also describe the reasoning behind a neighborhood watch and the benefits we hope to accrue.

Task: Get the word out via the CRFD Website, CRFD Newsletter, The Buzz community newsletter, special mailings, community meetings etc.

Schedule: Convene a small committee to complete tasks by July 2005 if possible, no later than fire season 2006

APPENDIX A
CLIMATE AND WEATHER GRAPHS

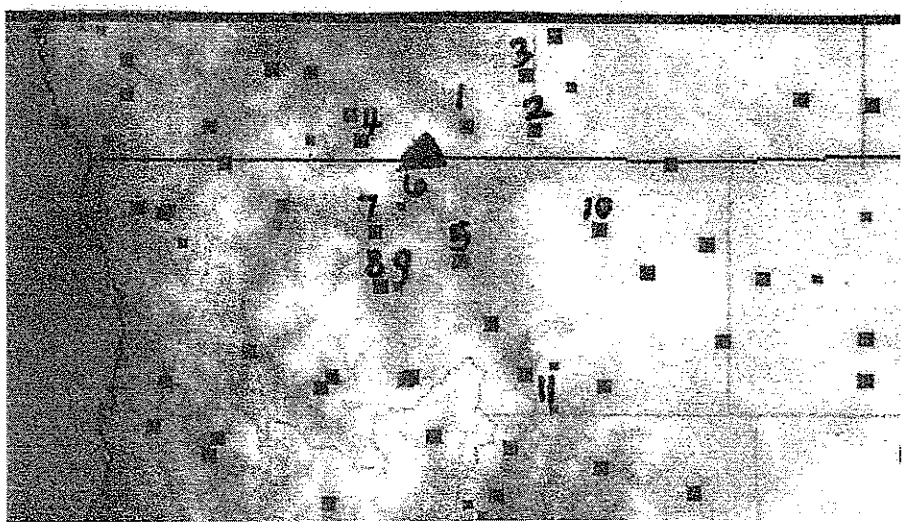
Western Regional Climate Center
RAWS Site Map

OREGON SITES

*1.Buckhorn Springs El. 2780'
Lat. 42 07'11'' W
Long. 122 33'48'' W
2.Parker Mtn. El. 5280'
3.Dead Indian El. 4900'
4.Squaw Peak El. 4964'

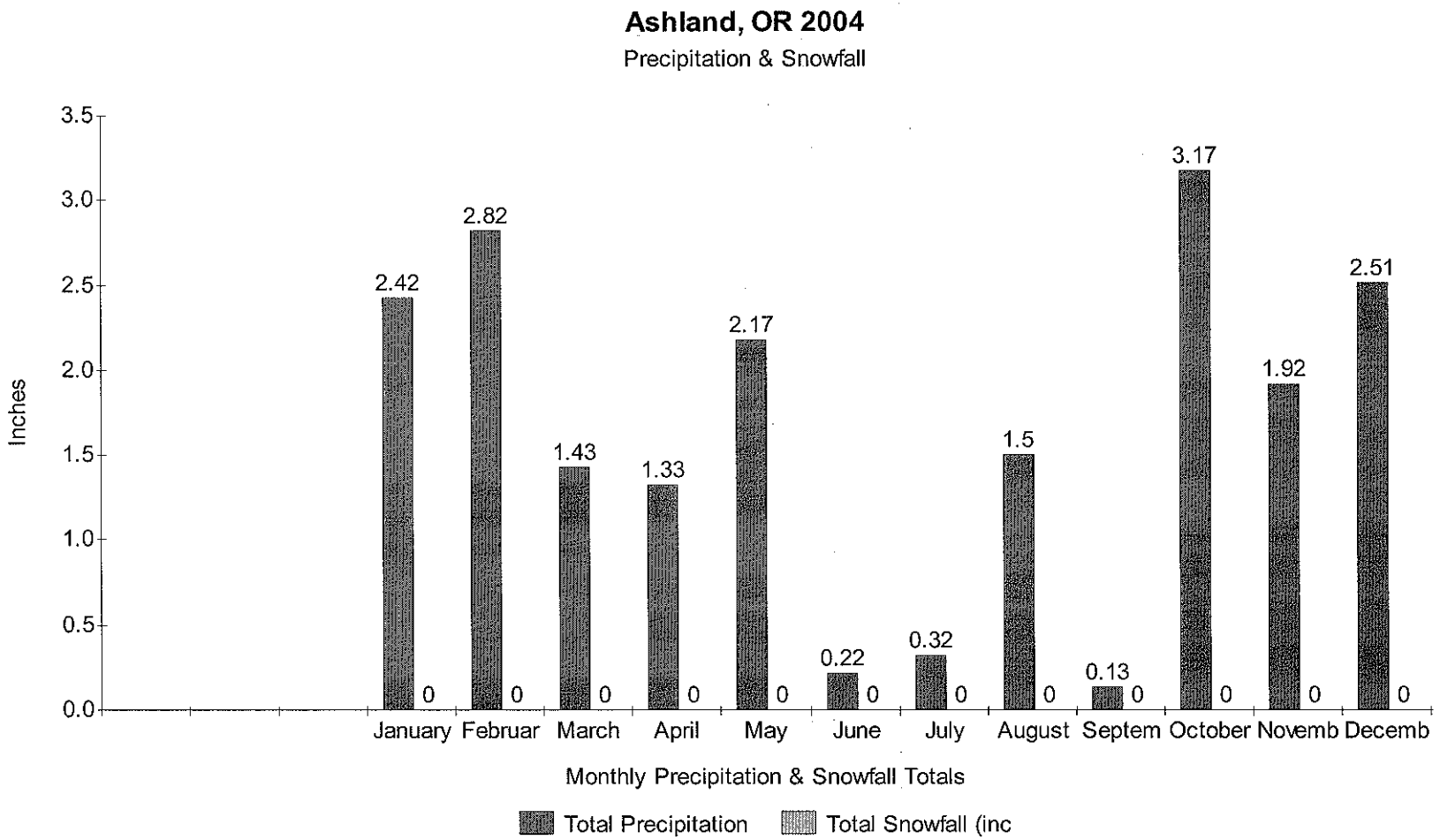
CALIFORNIA SITES

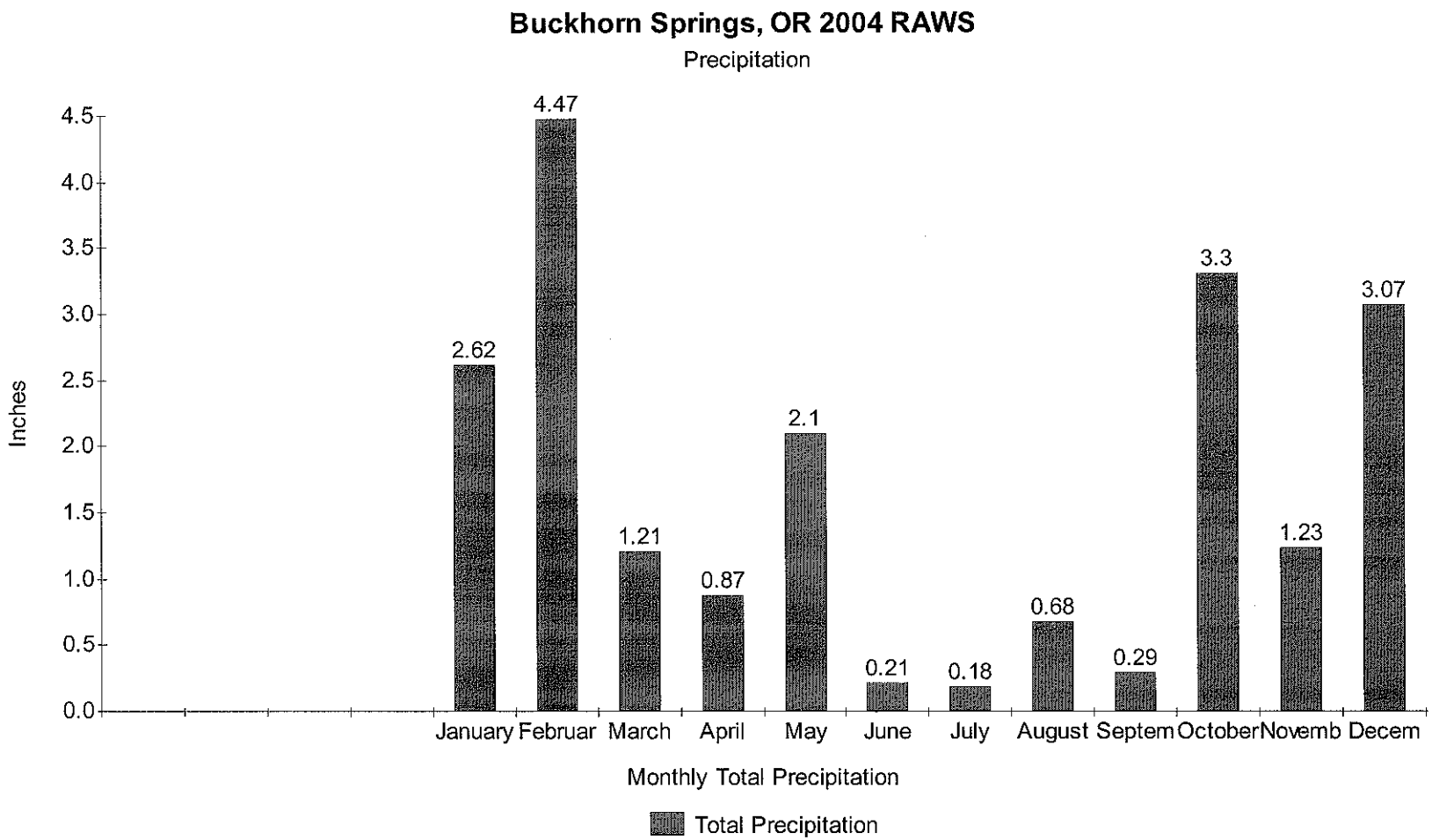
*5.Brazie Ranch El. 3000'
Lat. 41 41'07'' N
Long. 122 35'39'' W
6.Oak Knoll El. 2100'
7.Collins Baldy El. 5493'
8.Quartz Mtn. El. 4238'
9.Scott River El. 4000'
10.Juanita Lake El. 5400'
11.Mt. Shasta El. 3500'

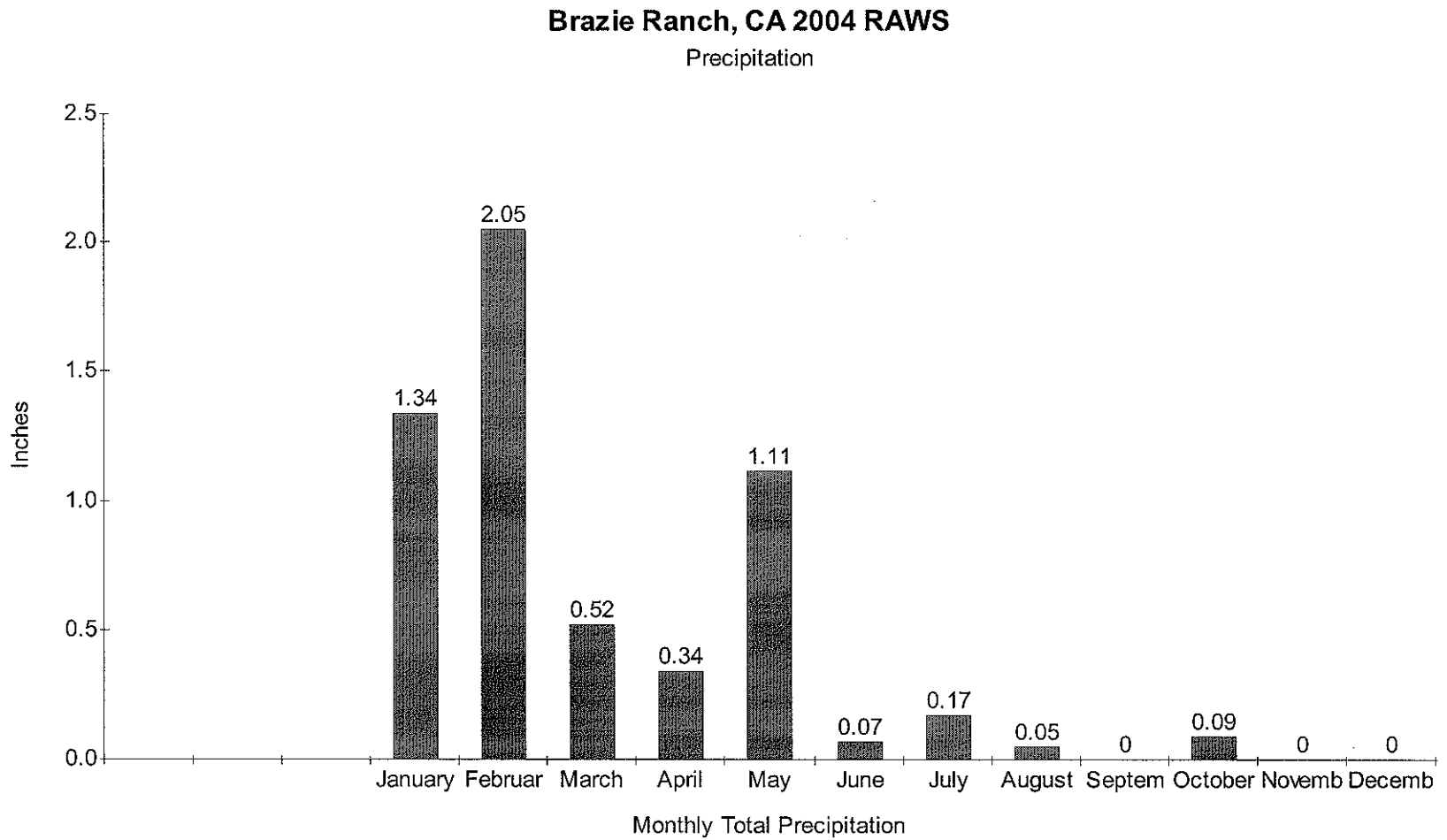


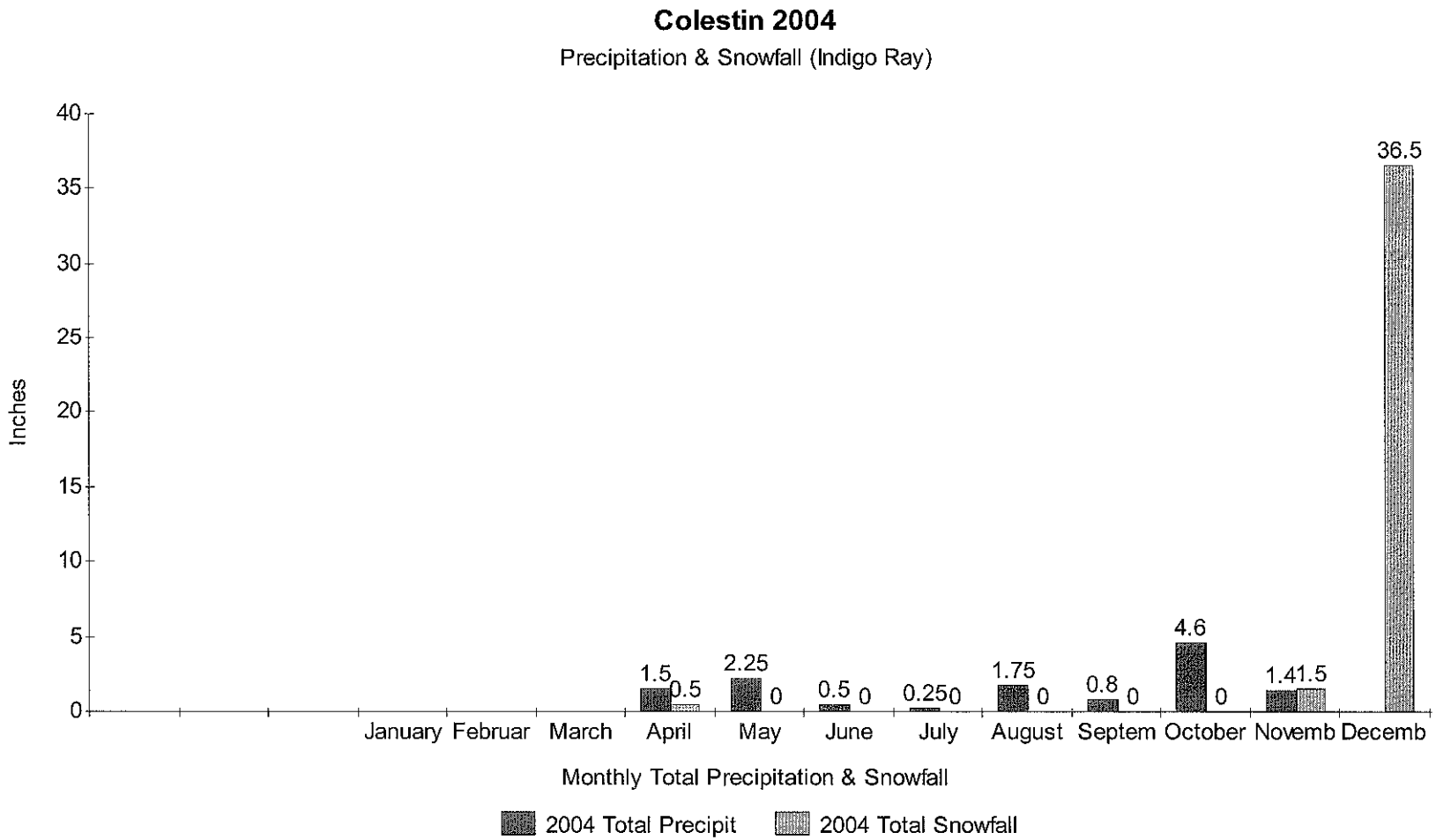
▲ Colestin
* sites recommended for data by Dennis Gettman, NWS, Science and Operations Officer

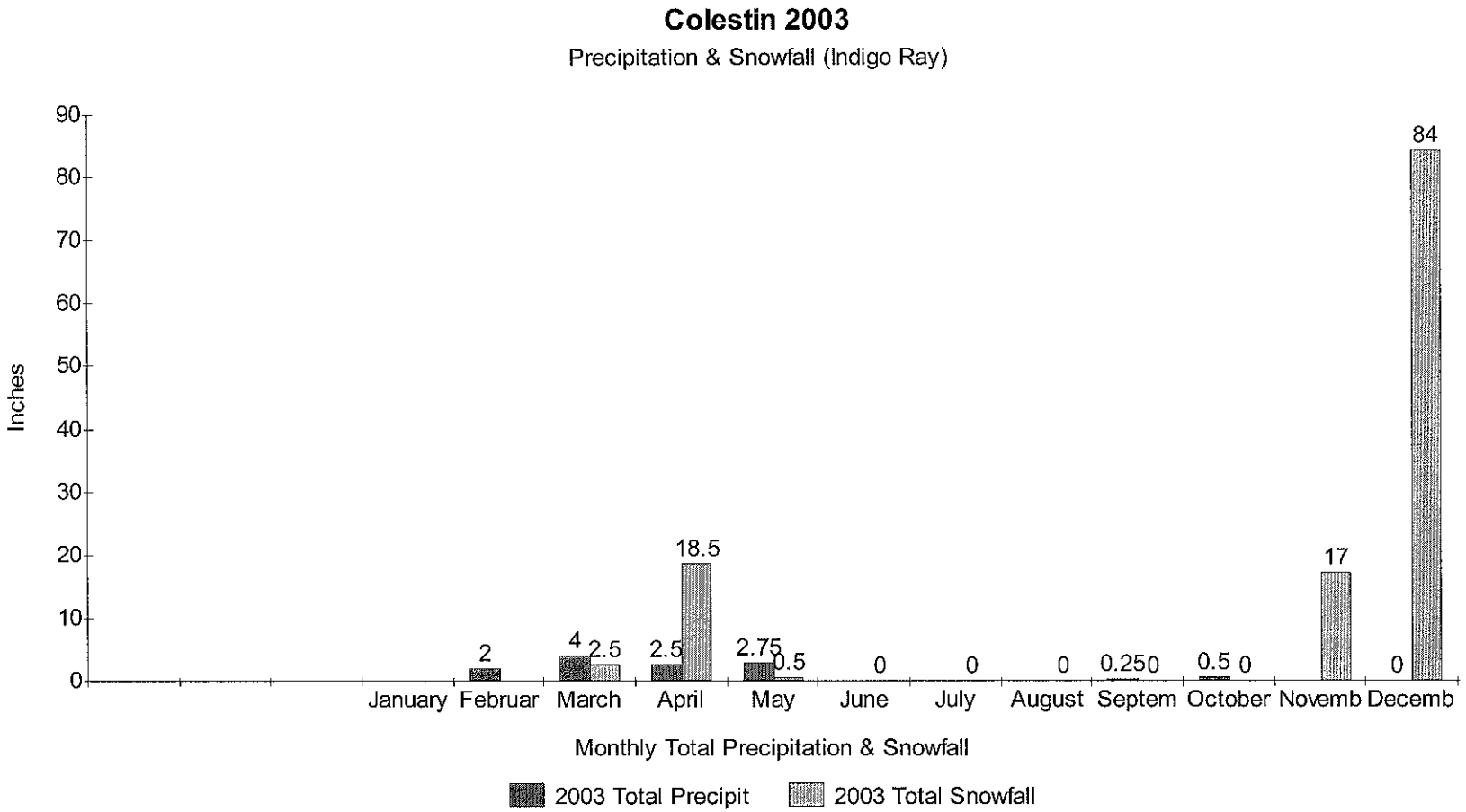
PREDIPITATION AND SNOWFALL GRAPHS

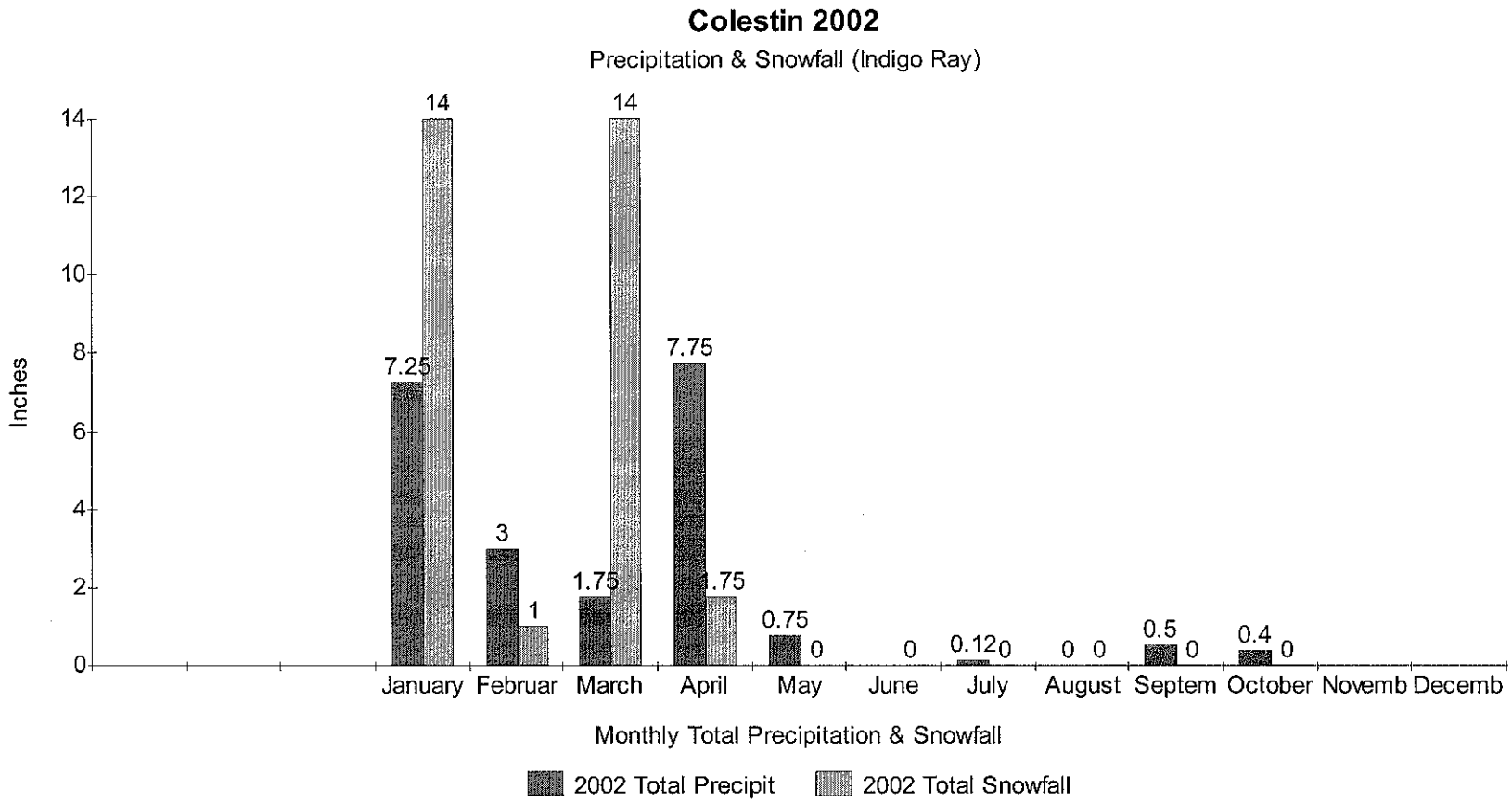

Ashland, OR 2004
Precipitation & Snowfall
Inches
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
2.42
0
2.82
0
1.43
0
1.33
0
2.17
0
0.22
0
0.32
0
1.5
0
0.13
0
3.17
0
1.92
0
2.51
0
January
Februar
March
April
May
June
July
August
Septem
October
Novemb
Decemb
Monthly Precipitation & Snowfall Totals
Total Precipitation
Total Snowfall (inc

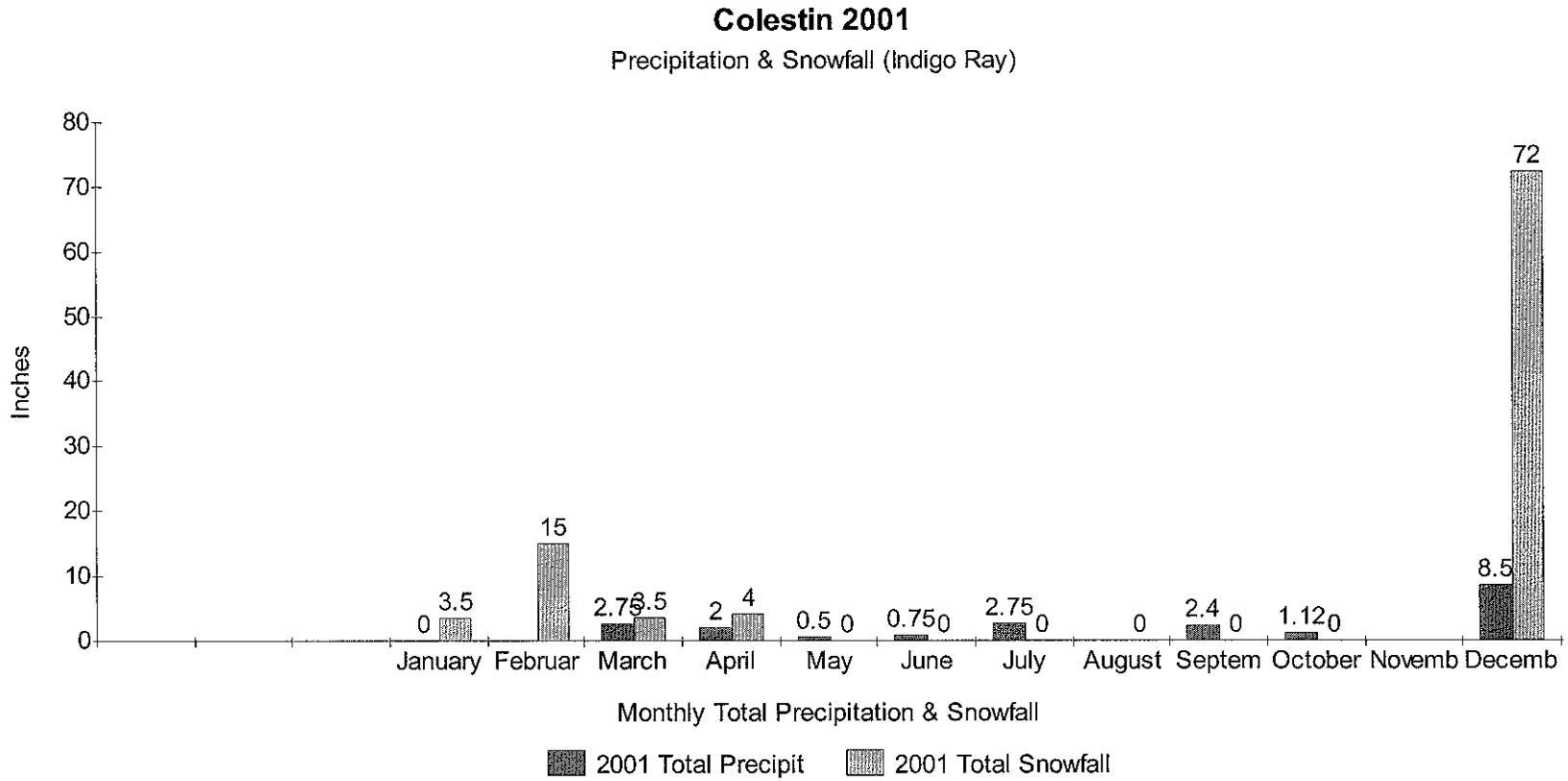

Buckhorn Springs, OR 2004 RAWS
Precipitation
Inches
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
2.62
4.47
1.21
0.87
2.1
0.21
0.18
0.68
0.29
3.3
1.23
3.07
January
Februar
March
April
May
June
July
August
Septem
October
Novemb
Decem
Monthly Total Precipitation
Total Precipitation


Brazie Ranch, CA 2004 RAWS
Precipitation
Inches
2.5
2.0
1.5
1.0
0.5
0.0
1.34
2.05
0.52
0.34
1.11
0.07
0.17
0.05
0
0.09
0
0
January
Februar
March
April
May
June
July
August
Septem
October
Novemb
Decemb
Monthly Total Precipitation


Colestin 2004
Precipitation & Snowfall (Indigo Ray)
Inches
40
35
30
25
20
15
10
5
0
1.5
0.5
2.25
0
0.5
0
0.25
0
1.75
0
0.8
0
4.6
0
1.4
1.5
36.5
January
Februar
March
April
May
June
July
August
Septem
October
Novemb
Decemb
Monthly Total Precipitation & Snowfall
2004 Total Precipit
2004 Total Snowfall


Colestin 2003
Precipitation & Snowfall (Indigo Ray)
Inches
90
80
70
60
50
40
30
20
10
0
2
4
2.5
2.5
18.5
2.75
0.5
0
0
0
0.250
0.5
0
17
0
84
January
Februar
March
April
May
June
July
August
Septem
October
Novemb
Decemb
Monthly Total Precipitation & Snowfall
2003 Total Precipit
2003 Total Snowfall


Colestin 2002
Precipitation & Snowfall (Indigo Ray)
Inches
14
12
10
8
6
4
2
0
7.25
14
3
1
1.75
14
7.75
1.75
0.75
0
0
0.12
0
0
0
0.5
0
0.4
0
January
Februar
March
April
May
June
July
August
Septem
October
Novemb
Decemb
Monthly Total Precipitation & Snowfall
2002 Total Precipit
2002 Total Snowfall


Colestin 2001
Precipitation & Snowfall (Indigo Ray)
Inches
80
70
60
50
40
30
20
10
0
0
3.5
15
2.75
3.5
2
4
0.5
0
0.75
0
2.75
0
0
2.4
0
1.12
0
8.5
72
January
Februar
March
April
May
June
July
August
Septem
October
Novemb
Decemb
Monthly Total Precipitation & Snowfall
2001 Total Precipit
2001 Total Snowfall

ASHLAND, OREGON (350304)

Monthly Climate Summary

Period of Record : 7/ 1/1948 to 9/30/2004

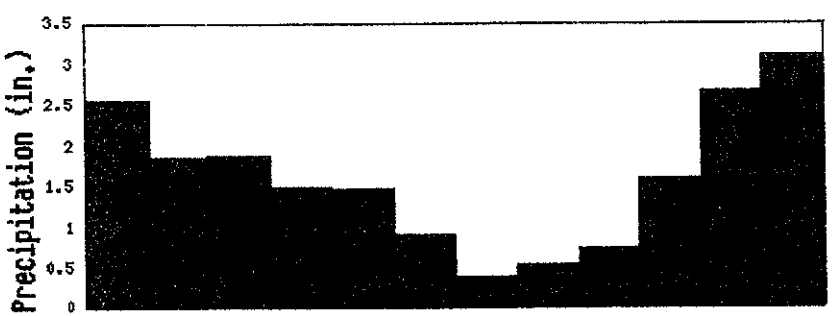
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	46.7	52.3	56.4	62.5	70.1	78.4	86.9	85.6	79.2	66.8	52.9	46.0	65.3
Average Min. Temperature (F)	29.7	31.6	33.3	36.2	41.6	47.3	51.4	50.8	45.3	38.4	33.1	30.1	39.1
Average Total Precipitation (in.)	2.58	1.86	1.91	1.47	1.47	0.92	0.41	0.54	0.75	1.61	2.70	3.12	19.34
Average Total SnowFall (in.)	2.7	1.4	0.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.6	7.1
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.

Max. Temp.: 99.2% Min. Temp.: 99.1 % Precipitation: 99.3% Snowfall: 98.7% Snow Depth: 98.6%

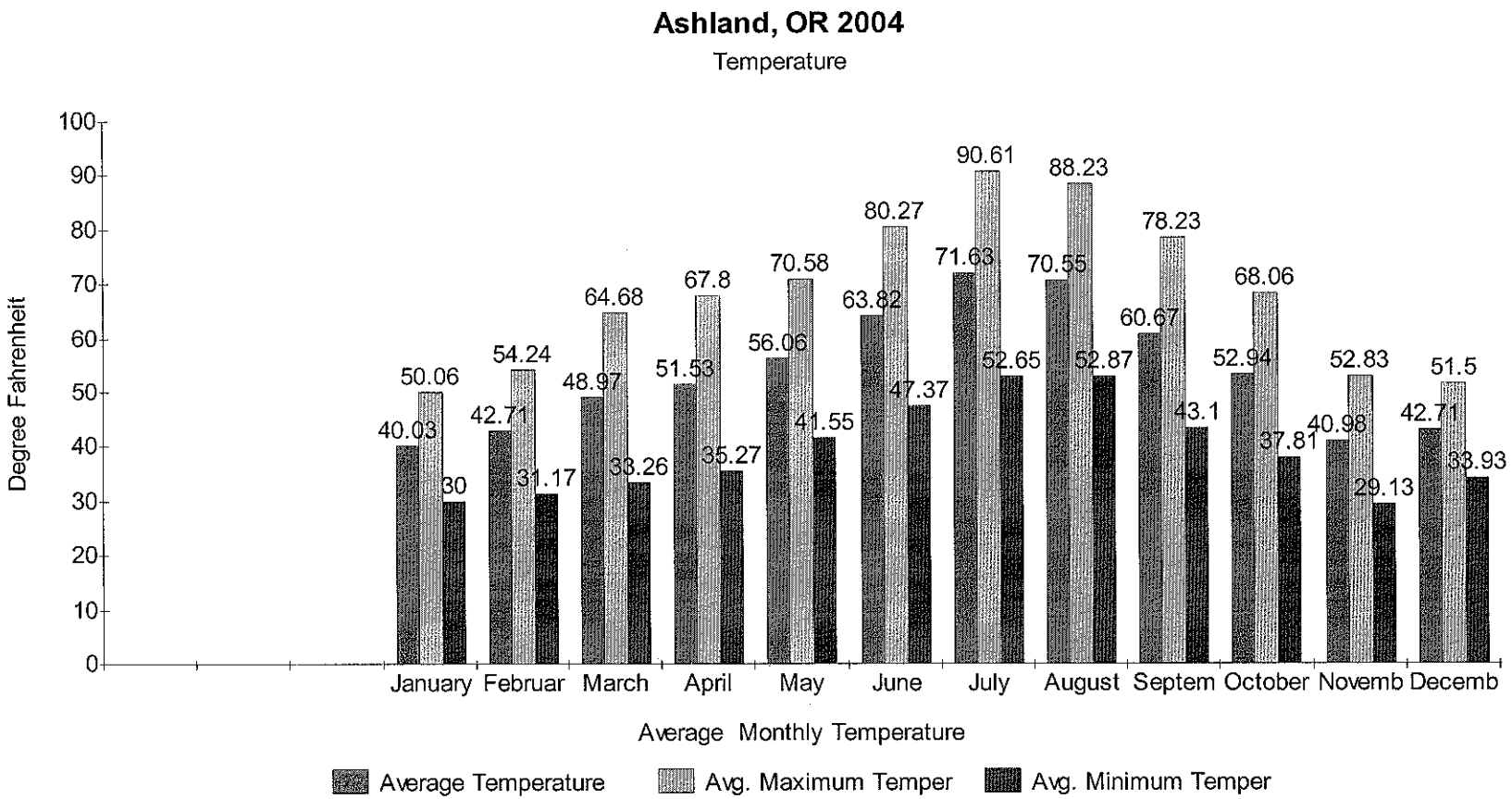
Check Station Metadata or Metadata graphics for more detail about data completeness. *Western Regional Climate Center; wrcc@ dri.edu*

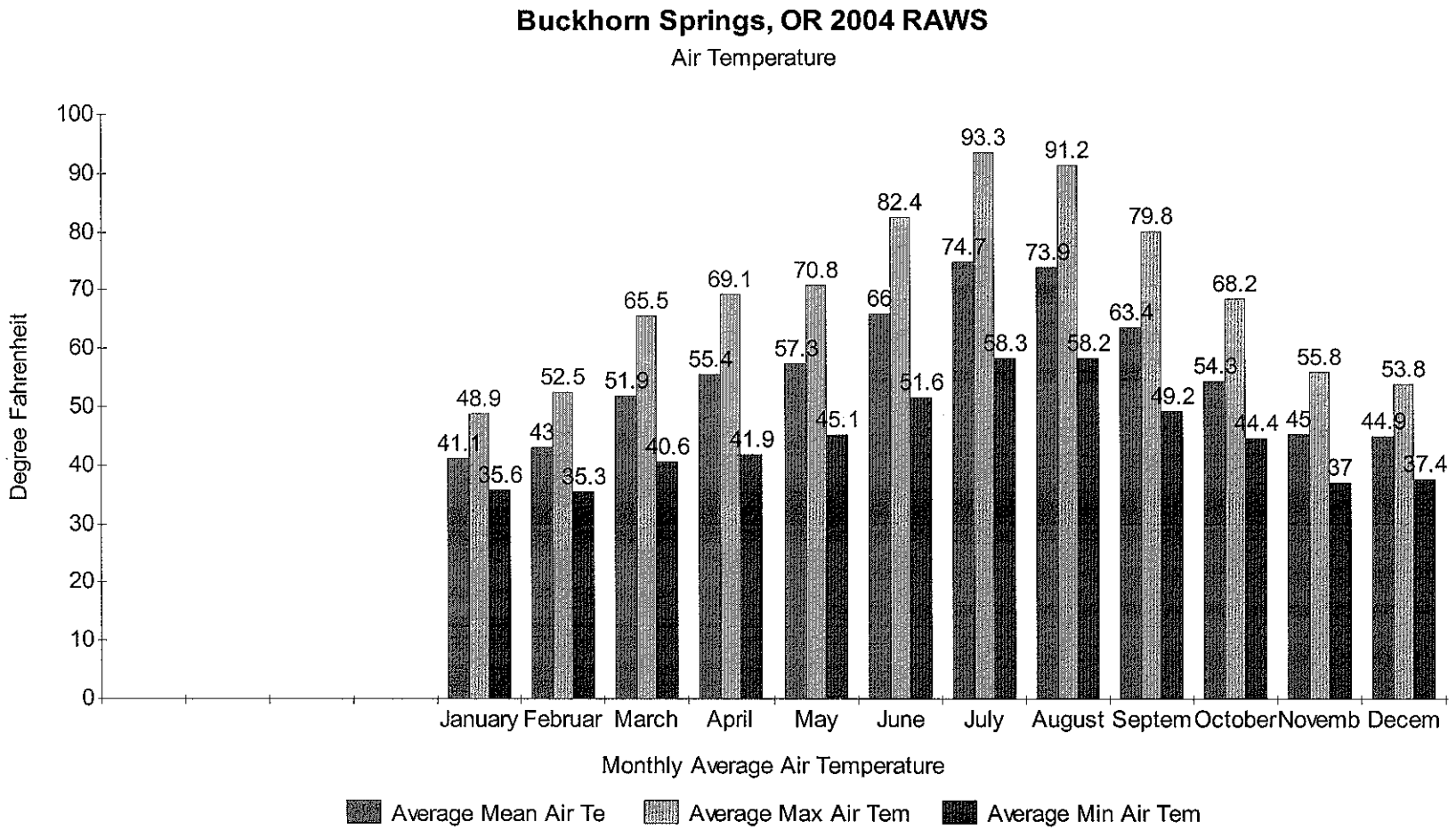
Monthly Average Total Precipitation

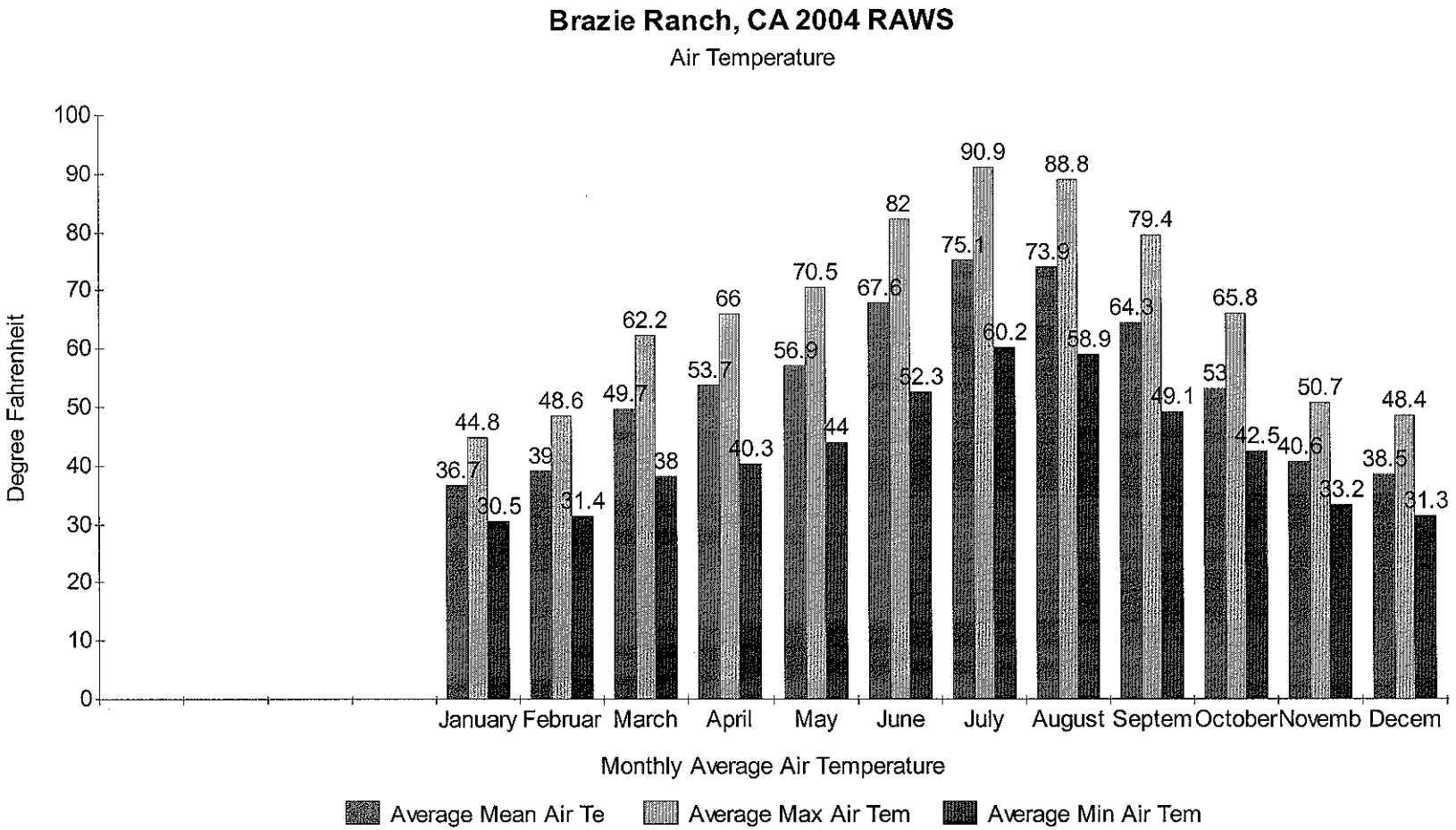


Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

AIR TEMPERATURE GRAPHS


Ashland, OR 2004
Temperature
Degree Fahrenheit
100
90
80
70
60
50
40
30
20
10
0
40.03
50.06
30
42.71
54.24
31.17
48.97
64.68
33.26
51.53
67.8
35.27
56.06
70.58
41.55
63.82
80.27
47.37
71.63
90.61
52.65
70.55
88.23
52.87
60.67
78.23
43.1
52.94
68.06
37.81
40.98
52.83
29.13
42.71
51.5
33.93
January
Februar
March
April
May
June
July
August
Septem
October
Novemb
Decemb
Average Monthly Temperature
Average Temperature
Avg. Maximum Temper
Avg. Minimum Temper


Buckhorn Springs, OR 2004 RAWS
Air Temperature
Degree Fahrenheit
100
90
80
70
60
50
40
30
20
10
0
41.1
48.9
35.6
43
52.5
35.3
51.9
65.5
40.6
55.4
69.1
41.9
57.3
70.8
45.1
66
82.4
51.6
74.7
93.3
58.3
73.9
91.2
58.2
63.4
79.8
49.2
54.3
68.2
44.4
45
55.8
37
44.9
53.8
37.4
January
Februar
March
April
May
June
July
August
Septem
October
Novemb
Decem
Monthly Average Air Temperature
Average Mean Air Te
Average Max Air Tem
Average Min Air Tem


Brazie Ranch, CA 2004 RAWS
Air Temperature
Degree Fahrenheit
100
90
80
70
60
50
40
30
20
10
0
36.7
44.8
30.5
39
48.6
31.4
49.7
62.2
38
53.7
66
40.3
56.9
70.5
44
67.6
82
52.3
75.1
90.9
60.2
73.9
88.8
58.9
64.3
79.4
49.1
53
65.8
42.5
40.6
50.7
33.2
38.5
48.4
31.3
January
Februar
March
April
May
June
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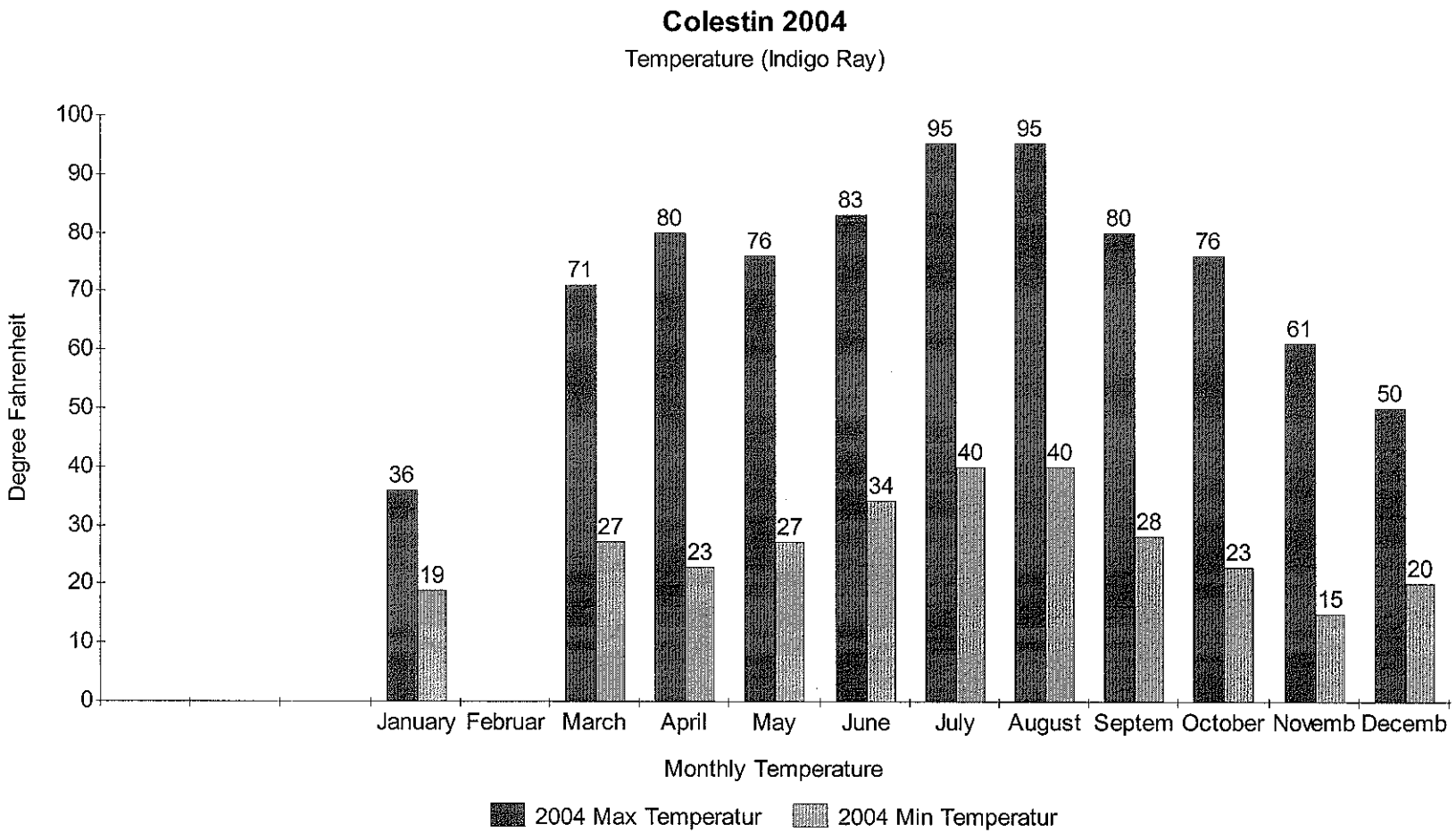
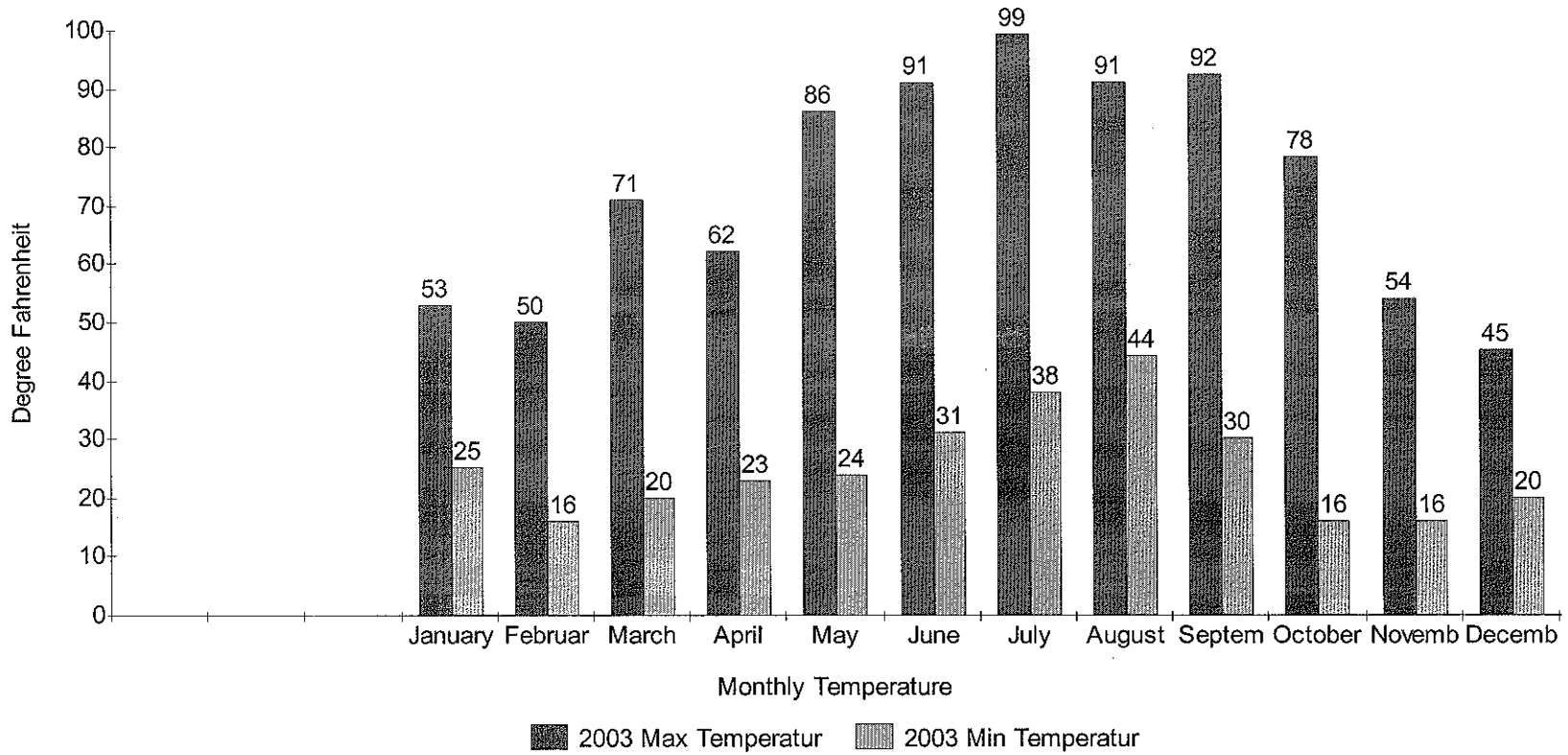
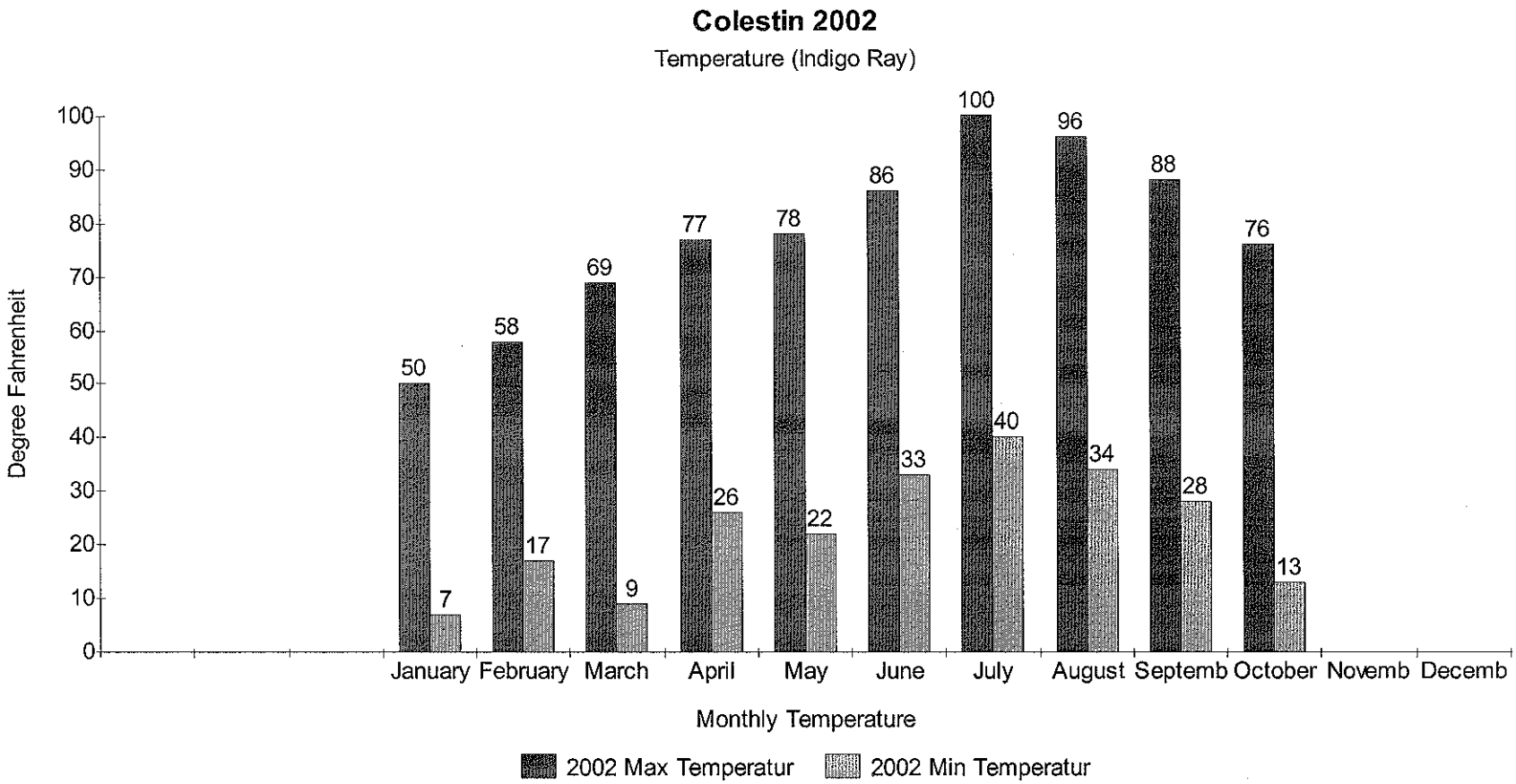
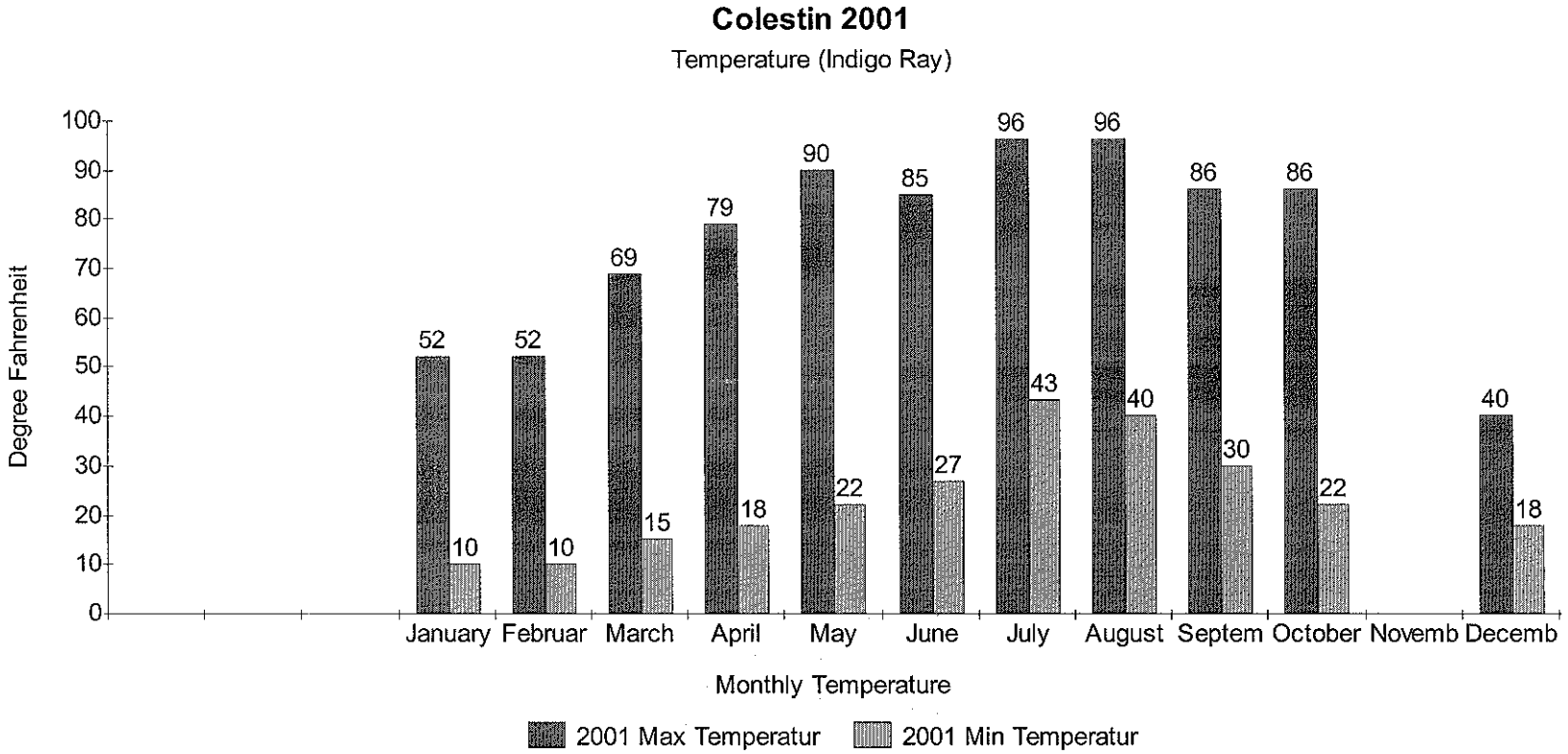
Monthly Average Air Temperature
Average Mean Air Te
Average Max Air Tem
Average Min Air Tem

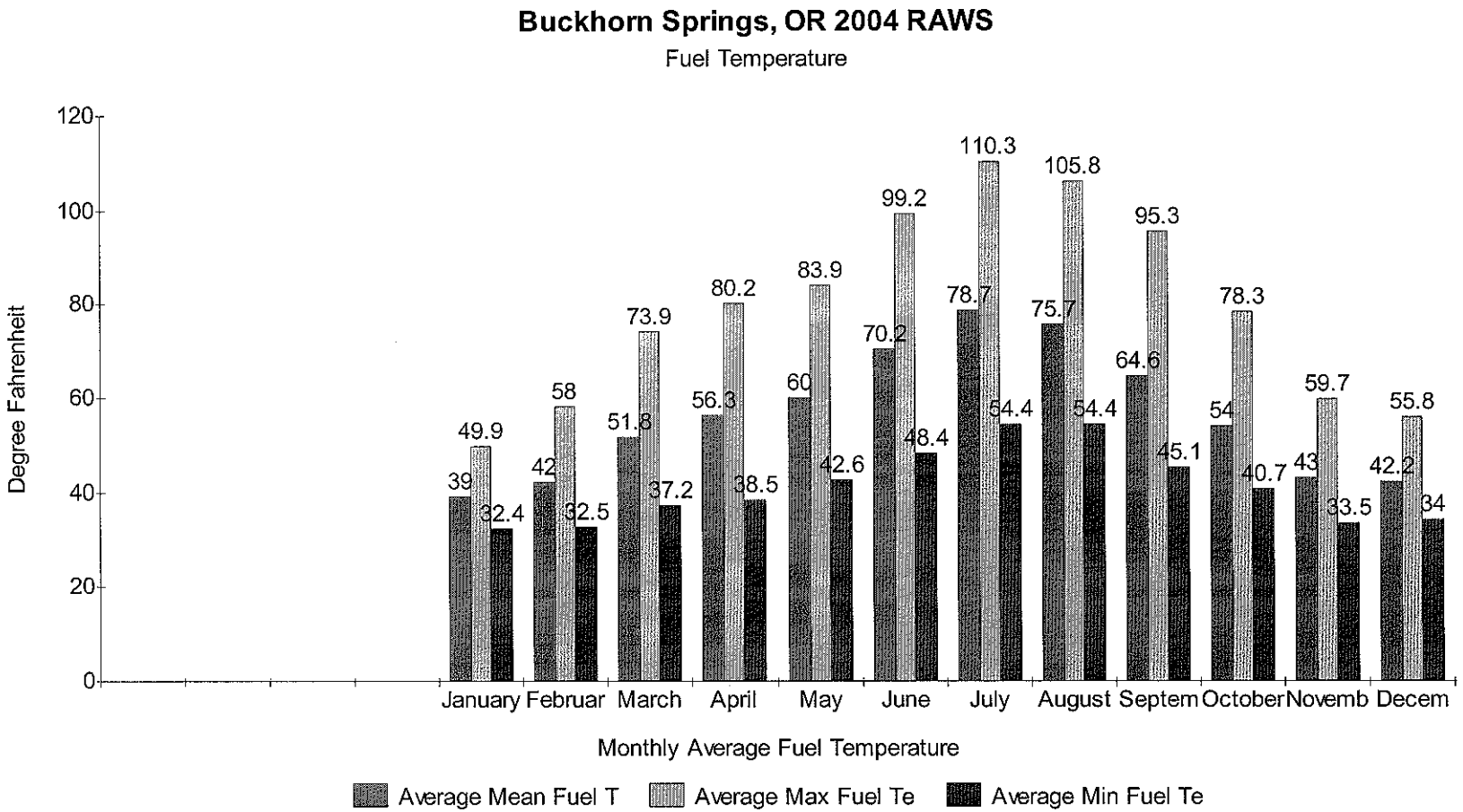

Colestin 2004
Temperature (Indigo Ray)
Degree Fahrenheit
100
90
80
70
60
50
40
30
20
10
0
36
19
71
27
80
23
76
27
83
34
95
40
95
40
80
28
76
23
61
15
50
20
January
Februar
March
April
May
June
July
August
Septem
October
Novemb
Decemb
Monthly Temperature
2004 Max Temperatur
2004 Min Temperatur


Colestin 2003
Temperature (Indigo Ray)
Degree Fahrenheit
100
90
80
70
60
50
40
30
20
10
0
53
25
50
16
71
20
62
23
86
24
91
31
99
38
91
44
92
30
78
16
54
16
45
20
January
Februar
March
April
May
June
July
August
Septem
October
Novemb
Decemb
Monthly Temperature
2003 Max Temperatur
2003 Min Temperatur


Colestin 2002
Temperature (Indigo Ray)
Degree Fahrenheit
100
90
80
70
60
50
40
30
20
10
0
50
7
58
17
69
9
77
26
78
22
86
33
100
40
96
34
88
28
76
13
January
February
March
April
May
June
July
August
Septemb
October
Novemb
Decemb
Monthly Temperature
2002 Max Temperatur
2002 Min Temperatur


Colestin 2001
Temperature (Indigo Ray)
Degree Fahrenheit
100
90
80
70
60
50
40
30
20
10
0
52
10
52
10
69
15
79
18
90
22
85
27
96
43
96
40
86
30
86
22
40
18
January
Februar
March
April
May
June
July
August
Septem
October
Novemb
Decemb
Monthly Temperature
2001 Max Temperatur
2001 Min Temperatur

FUEL TEMPERATURE GRAPHS


Buckhorn Springs, OR 2004 RAWS
Fuel Temperature
Degree Fahrenheit
120
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80
60
40
20
0
39
49.9
32.4
42
58
32.5
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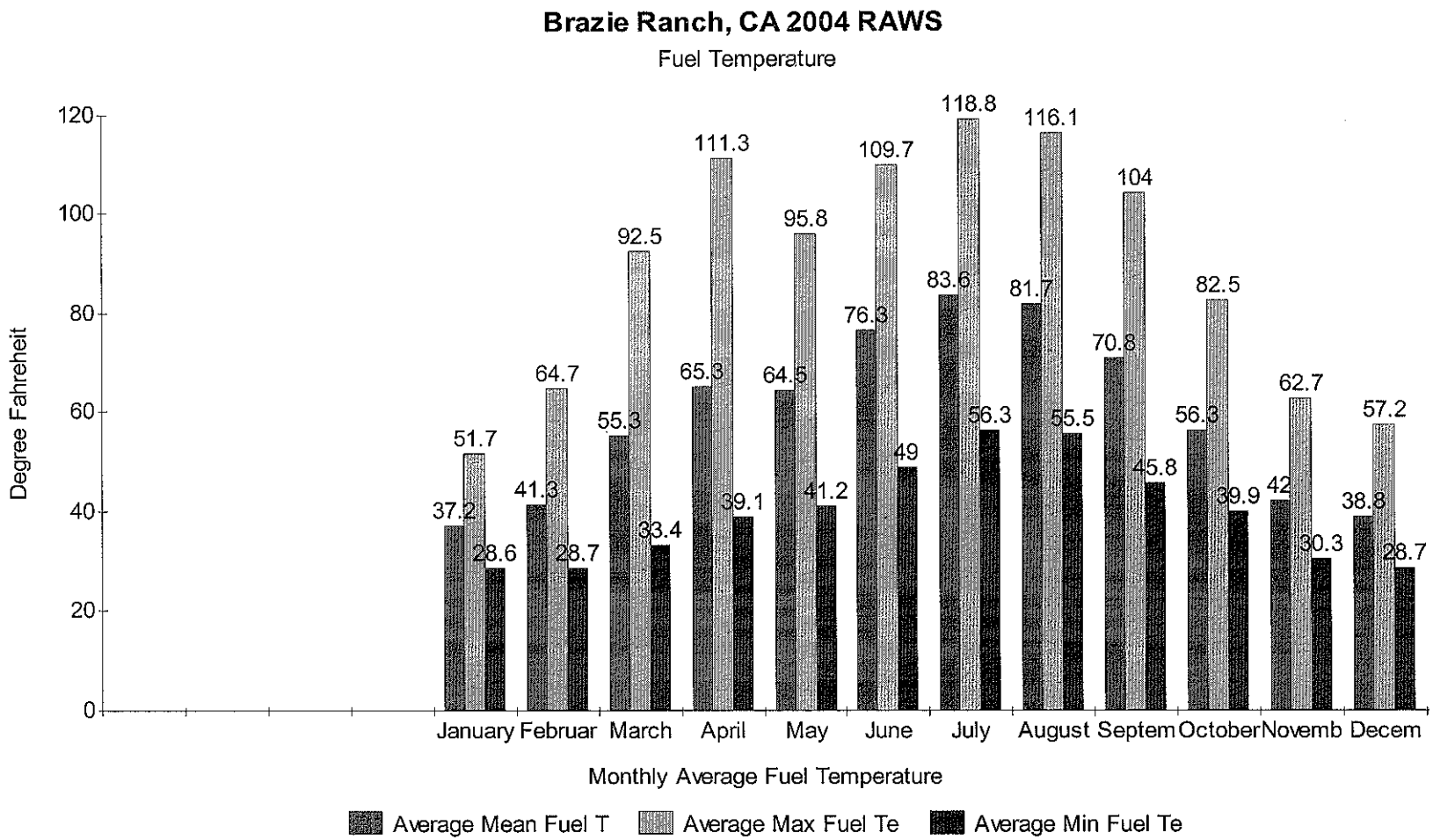
Brazie Ranch, CA 2004 RAWS
Fuel Temperature
Degree Fahreheit
120
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111.3
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41.2
76.3
109.7
49
83.6
118.8
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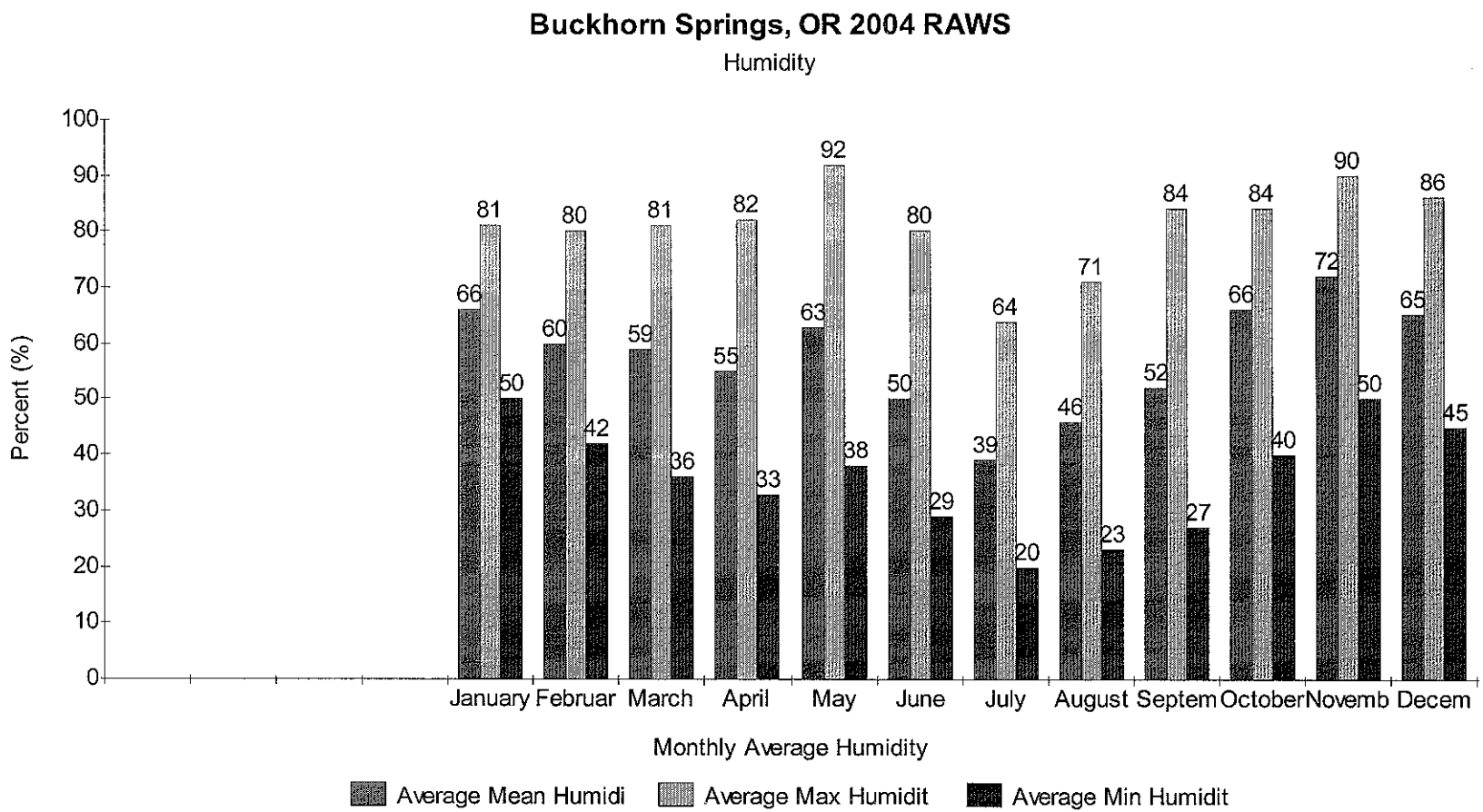
HUMIDITY GRAPHS


Buckhorn Springs, OR 2004 RAWS
Humidity
Percent (%)
100
90
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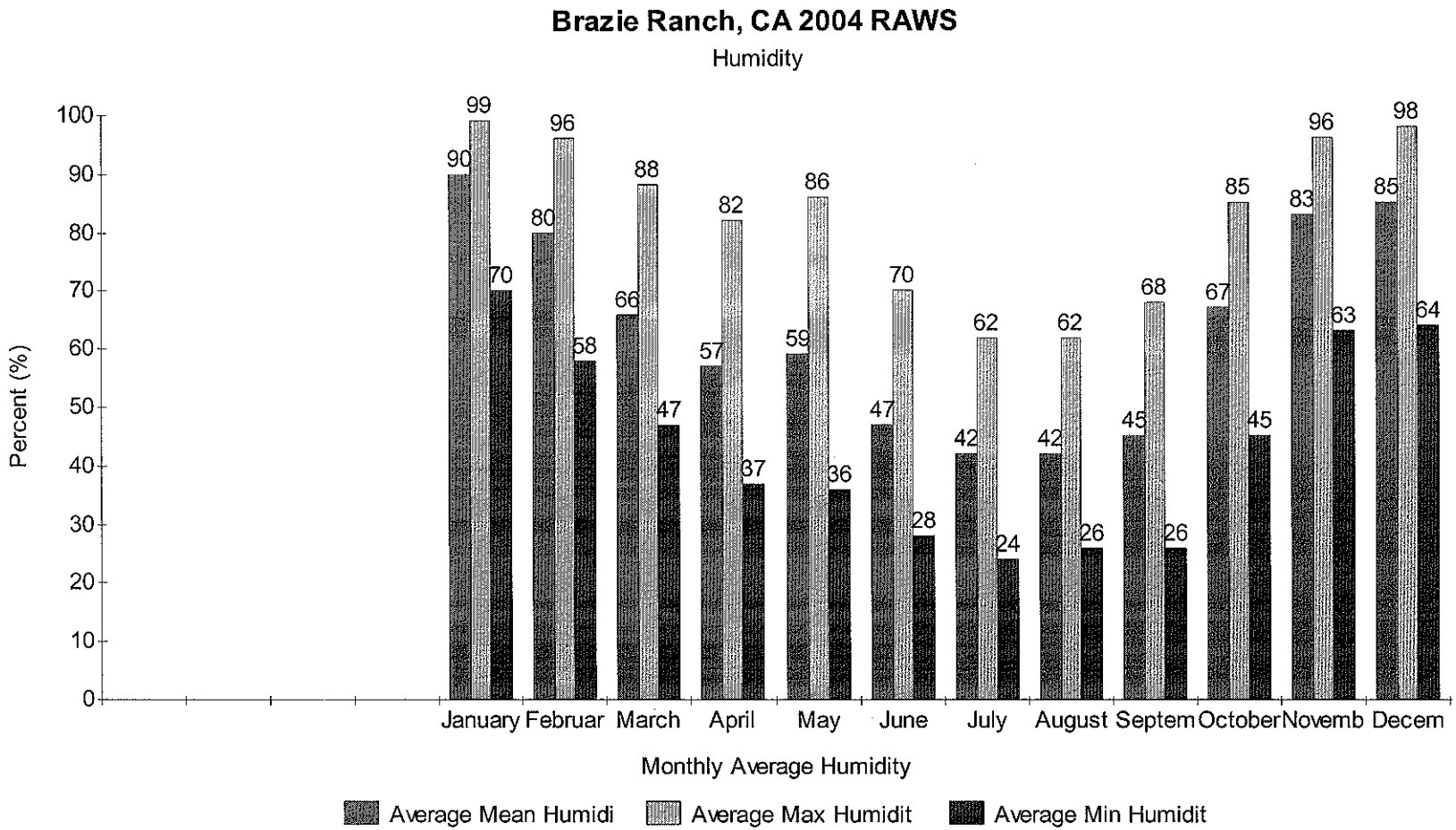
Brazie Ranch, CA 2004 RAWS
Humidity
Percent (%)
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APPENDIX B
LIVING WITH FIRE

APPENDIX C
FIREWISE LANDSCAPING INFORMATION

Selected Common Plants of the Klamath Siskiyous Region

Trees

- ☐ Ponderosa Pine
- ☐ Douglas-fir
- ☐ White Fir
- ☐ Incense-cedar
- ☐ Oregon White Oak
- ☐ California Black Oak
- ☐ Western Juniper
- ☐ Bigleaf Maple
- ☐ Black Cottonwood

Shrubs

- ☐ Deerbrush
- ☐ Wedgeleaf Ceanothus
- ☐ Greenleaf Manzanita
- ☐ Whiteleaf Manzanita
- ☐ Rubber Rabbitbrush
- ☐ Green Rabbitbrush
- ☐ Klamath Plum
- ☐ California Hazel
- ☐ Snowberry
- ☐ Willows
- ☐ Tall Oregon Grape
- ☐ Dwarf Oregon Grape
- ☐ Pacific Serviceberry
- ☐ Oceanspray
- ☐ Choke cherry
- ☐ Bitter cherry
- ☐ Curleaf Mountain Mahogany
- ☐ Birchleaf Mountain Mahogany
- ☐ Wild Rose
- ☐ Blackberry spp.
- ☐ Red-flowering Currant
- ☐ Blue Elderberry
- ☐ Poison Oak

Forbs & Grasses

- ☐ Cheatgrass
- ☐ Mudusahead Grass
- ☐ Bluebunch Wheatgrass
- ☐ Lemmons Needlegrass
- ☐ Idaho Fescue
- ☐ Dryland Sedge
- ☐ Calypso Orchid
- ☐ Phantom Orchid
- ☐ Tolmie's Cats Ear
- ☐ Klamath Fawn-lily
- ☐ Western Trillium
- ☐ Spotted Coralroot
- ☐ Striped Coralroot
- ☐ Owl Clover
- ☐ Larkspur
- ☐ Tower Butterweed
- ☐ Blue Flax
- ☐ Indian Paintbrush
- ☐ Foothill Lomatium
- ☐ Fern-leaved Lomatium
- ☐ Fiddleneck
- ☐ Pursh's Milk-vetch
- ☐ Shelton's violet
- ☐ Western Buttercup
- ☐ Sierra Snakeroot
- ☐ Tarweed
- ☐ Columbine
- ☐ Sulphur Eriogonem
- ☐ Miner's Lettuce
- ☐ Dwarf Waterleaf
- ☐ California Waterleaf
- ☐ Wild Strawberry
- ☐ Oregon Gold
- ☐ Balsamroot
- ☐ Storksbill
- ☐ Star Flow
- ☐ Yarrow
- ☐ Royal Polemonium
- ☐ Spring Beauty
- ☐ Spreading Phlox
- ☐ Azure Penstemon
- ☐ Yerba Santa
- ☐ Sierra Stonecrop

Rare, Threatened or Endangered Plants

- ☐ Greene's Mariposa Lily
- ☐ Pygmy Monkey-flower
- ☐ Clustered Lady's Slipper
- ☐ Bellinger's Meadowfoam
- ☐ Ashland Thistle
- ☐ Sierra Onion
- ☐ Green-flowered Wild Ginger
- ☐ Siskiyou Fritillary

APPENDIX D
LOMAKATSI PRESCRIPTION AND TREATMENT EXAMPLES

LOMAKATSI RESTORATION PROJECT
Organizing Communities to Restore Native Eco-Systems
(541) 488-0208 * PO Box 3084, Ashland OR 97520

NATIONAL FIRE PLAN 2003 -FUEL HAZARD REDUCTION PROJECT

Prescriptions & Treatment Outlines

Introduction

Lomakatsi Restoration Project (LRP) will organize, facilitate and implement 5 separate fuel hazard reduction projects with 2003 National Fire Plan funds. LRP will carry out projects in Williams, Cave Junction, Talent, Siskiyou Mountain Park above Ashland, and the Colestin Valley.

To accomplish fuels reduction activities, LRP work crews will perform manual treatments by using chainsaws, gas operated pole pruners, chippers, drip torches, and hand tools.

Fuels Reduction Treatments will be site specific based on vegetation, soil types, slope, aspect, and individual landowner objectives. The methods of either hand pile and or swamper burning will be used to dispose of the majority of the slash and debris accumulated through the thinning operations. In certain situations chipping will be used to dispose of debris in areas close to roadsides, near homes sites, or as the preferred method of the landowner.

All projects will have detailed site-specific prescriptions written prior to project implementation.

Fuel Hazard Reduction Projects

Goals

1. To make the forest less susceptible to crown fire.
2. To reduce the intensity of wild fire.
3. To make fire suppression efforts safer and more effective as a result of reduced fuel loads along roads and around home sites.
4. To maintain native species diversity.
5. To maintain wildlife habitat.
6. To control problematic, invasive non-native species.

7. To provide erosion control where appropriate, (lop & scatter / contour falling) with materials from fuels reduction activities.

Method

1. Thinning the understory
2. Favoring the largest, most fire resilient, and most healthy trees adapted to the location.
3. Burning or chipping the smaller fuel loads.

Vegetation Types

There are four distinct vegetation types that Lomakatsi will carry out fuels reduction work for N.F.P. 2003 projects. Within these vegetation types, there are slight variations and conditions that are site specific to each location. Prior to on the ground treatments, prescriptions will be written to address the diversity of each situation.

Below are Lomakatsi standard prescriptions for treatment within each vegetation type.

Project Name	Location	Vegetation Type
Siskiyou Mountain Park woodland	Ashland	1) pine oak savannah / chaparral
West Williams cedar	Mungers Creek Road	1) mixed Conifer / Mesic Port Orford
	Caves Camp Road	1) mixed Conifer/ Mixed Harwood-Doug fir / madrone
Anderson Creek	Anderson Creek Road Mystery Creek Driveway	1) mixed Conifer/ Mixed Harwood-Doug fir / madrone
Colestin Valley	Colestin Road Railroad easement	1) oak woodland 2) mixed Conifer / mixed Harwood white fir zone

Cave Junction	coordination needed for exact locations.	1) oak woodland 2) mixed conifer / mixed hardwood 3) Pine oak savannah / chaparral woodland

Project Acreages

West Williams	100 acres
Cave Junction	100 acres
Colestin	75 acres
Talent, Anderson	50 acres
Siskiyou Mt. Park	25 acres

Pine Oak Savannah / chaparral woodland

Prescription Outline

- In Chaparral fields - Thin for a mosaic and fuel connectivity separation: Reduce manzanita and buck brush on site by 50% by creating randomly spaced clearings, corridors, clumps, and thickets.
- Retain all large hardwood and conifer specimens.
- The most favored trees in decreasing order of preference are sugar pine, ponderosa pine, Oregon white oak, California black oak, Doug fir, and madrone.
- Small stature trees (less than 7 feet) and brush should be removed within a thirty-foot radius of large over-story Ponderosa pine, and oak species.
- Douglas fir stems up to 8" and under that are encroaching under leave trees should be thinned from below and out from the driplines.
- High limb leave trees to increase fire resiliency. Prune & limb larger leave trees up to 12 feet. Prune smaller diameter leave trees up to 6 feet.
- For vegetative diversity it is recommended that representatives of all species on site be left.
- Retain all Mountain mahogany, however dead wood and lower fine fuel components of Mt. Mahogany should be pruned / removed as part of treatments.
- Due to lack of dead standing habitat, retain all large snags above 12" DBH.
- Thin individual clumps of madrone and black oak to encourage vertical structure and open form crown development.
- Reduce excessive dead ground fuels throughout the treatment area.
- Dispose of thinning debris by either hand pile or by swamper burning.

- Follow burning with the sowing of native grasses in the mineral rich ashes and disturbed soils to reduce colonization by non-native species.

Mixed Conifer / Mixed hardwood / Port Orford cedar

Prescription Outline

Roadside and Upslope Treatment

- Retain large conifers, thin excessive stems (8" and under) below the crowns of dominant trees.
- Mix the thinning treatment with releasing larger trees, and also thinning around clusters of trees.
- Leave clumps and groupings of conifers where it is appropriate. Thin aggressively around tree groupings to break up fuel connectivity between islands.
- Favor oaks and madrones. Retain hardwoods for habitat, and thin conifers away from hardwood crowns.
- Retain *all* Alders and big leaf maple.
- Retain *all* Pacific Yews on sites.
- Favor Chinquapin, scullers willow, red huckleberry, and pacific yew whenever possible to encourage biodiversity.
- Favor Port Orford cedar over Doug fir in most circumstances.
- Leave representatives of all species on site
- Lop and scatter some coarse woody debris on areas steeper than 55% slope.
- Reduce dense green huckleberry patches in the understory by 50%. Thin back excessive Doug fir stems around huckleberry patches to create filtered light conditions.
- Along roadsides and driveways: Remove over arching madrones and hazard tree snags.
- High limb all leave trees up to 12 ft.
- Reduce excessive dead ground fuels throughout the treatment area.
- Dispose of thinning debris by either hand pile or by swamper burning.
- Keep burning off of slopes of 60% or greater, especially at headwalls, along draws, and where lose boulders are found.
- Follow burning with the sowing of native grasses in the mineral rich ashes and disturbed soils to reduce colonization of such site by non-native species.

Mixed Conifer / Mixed hardwood / Douglas fir - Madrone Vegetation Type

Prescription Outline

- Retain large conifers, thin excessive stems under the crowns of dominant trees.
- Mix the thinning treatment with releasing larger trees, and also thinning around clusters of trees.
- Leave clumps and groupings of conifers where it is appropriate. Thin aggressively around tree groupings to break up fuel connectivity between islands.
- Favor oaks and madrones. Retain hardwoods for habitat, and thin conifers away from hardwood crowns.

- Thin small stems around late successional habitat islands, and below the drip lines of dominant trees to protect biodiversity and ecological integrity of these locations. Drag and burn thinned materials away from future late serial islands to prevent crown scorch.

- Thin out small diameter excessive madrone, to release competing Douglas firs.
- Reduce excessive dead ground fuels throughout the treatment area
- Thin excessive fir stems back and out from the driplines of dominant conifers.
- Retain and protect sugar pine by thinning excessive Doug fir stems from the drip lines.
- On exposed slopes favor ponderosa pine by thinning excessive fir stems.
- Leave representatives of all species on site.
- High limb leave trees up to 15 feet for fire resiliency. On more exposed sites high limb up to 8 feet to prevent sunscald on Douglas fir.
- Keep burning off slopes of 60% or greater especially at headwalls, along draws, and where loose boulders are found. In these situations, lop and scatter cut materials.
- Lay some cut material perpendicular to slope for soil stability
- Retain nurse logs to hold water, provide substrate for fungi and mycrorhiza associates, and to encourage slope stability
- Swamper burn cut material. – Drag and burn thinning debris away from leave trees to prevent excessive crown scorching.
- Reseed burn piles with native grasses to decrease risk of noxious weed spread

Oak Woodland

Prescription Outline

- Retain oaks and woodland form
- Remove only dead small diameter oaks.
- Thin excessive buck brush back from white oak groupings
- Thin Doug fir stems out from the driplines of oak clusters.
- In open buck brush fields, thin for a mosaic and fuel connectivity separation: Reduce buck brush on site by 50% by creating randomly spaced clearings, corridors, clumps, and thickets. Space buck brush islands up to 25 feet.
- Prune the buck brush clumps that are left to three feet height.
- Retain large dead standing oaks for wildlife habitat.
- Retain all Mountain mahogany, however dead wood and lower fine fuel components of Mt. Mahogany should be pruned / removed as part of treatments.
- Thin back serviceberry from oak groupings. Isolate and retain serviceberry patches.
- High prune mainly dead and low growing branches of larger oaks near roadsides and drive ways.
- Reduce excessive dead ground fuels throughout the treatment area.
- Dispose of thinning debris by either hand pile or swamper burning.
- Follow burning with the sowing of native grasses in the mineral rich ashes and disturbed soils to reduce colonization by non-native species

Snags

Roadsides, Driveways, Home sites

- Fall all snags directly along roadsides, driveways, or near home sites. Downed snags will be cut into manageable lengths to transport off site for firewood by the landowner.
- Retain 2 snags per acre in distances where snags are 100' from roadsides, driveways, or homes sites. The largest diameter snags will be chosen to leave, and preferably structural class 1 will be chosen for habitat longevity.
- All leave snags will be high limbed up to 15'.
- Vegetation and ground fuels will be thinned around leave snags.

Forestland Treatments - such as Siskiyou Mountain Park where entire stand die off in Douglas fir is severe due to flat headed borer beetle (*Melanophilia drummondi.)*

This encompasses 10 acres of the project area.

Treatment

- Snag fields will be reduced up to 90%, especially along ridgelines
- 2-4 snags per acre will be retained.
- In some cases, groupings of snags will be retained
- Leave a diversity of structural classes 1, 2, and 3.
- Snags with visible nests will be retained.
- Snags will be contour felled and ground contact will be made
- Tops and branches of snags will be burned.
- All snags left will be high limbed up to 15'

LRP has performed treatments over the last 8 years in the WUI in stands that resemble the condition mentioned above. Lomakatsi has worked with the City of Ashland Fire & Rescue, Ashland Parks & Recreation, and ODF to address this situation. We have consulted with the Ashland City Forester – Marty Main, to come up with the most ecologically responsible treatment in regard to habitat values and wildlife.

Prior to the treatment of units with these conditions present, LRP would like to consult with B.L.M. wildlife staff to receive feedback on this issue.

APPENDIX E
SOURCE CREDITS

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