

## ***The Fire Situation***

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### **General Description**

The primary ignition source for wildland fires in the Riverside Unit over the past ten years has been from equipment. In 2004, 37% of fires were equipment caused. The five-year average (2000-2004) shows equipment resulting in 30% of the fires, and the ten-year average (1995-2004) shows equipment as resulting in 28% of the fires. Riverside Unit further identified equipment caused fires into mowing, welding/grinding, and miscellaneous electrical, and miscellaneous equipment. Mowing does not appear to be a significant factor in ignitions, whereas miscellaneous electrical, welding/grinding, and miscellaneous equipment seem to be significant ignitions sources.

Excluding undetermined and miscellaneous ignitions sources, arson caused fires constitutes the next highest ignition source. In 2004 8% of the fires were arson caused, with a five-year average (2000-2004) of 10% and a ten-year average (1995-2004) of 9%.

Playing with fire was down in 2004 as well, at 5% of the fires in the unit. The five-year average (2000-2004) is 8% and the ten-year average (1995-2004) is 10%. This is in part due to the number of education programs and contacts Riverside Unit personnel make on a yearly basis.

### **Education**

	<b>Number of Programs</b>	<b>Number of Contacts</b>		<b>Hours</b>
<b>Schools</b>	107	15020		
<b>Career Days</b>	15	2000		
<b>Group</b>	344	43599		
<b>Fairs</b>	4	56540		
<b>Displays</b>				
<b>Parades</b>				
<b>Totals</b>	470	117159		
			<b>VIP Coordinator</b>	900
			<b>Other CDF</b>	6418
			<b>VIP</b>	0
			<b>Totals</b>	7318

## 2005 Riverside Unit Pre-Fire Management Plan

The following is a list of the significant wildland fires in Riverside Unit during 2004:

**2004 Significant Fires**

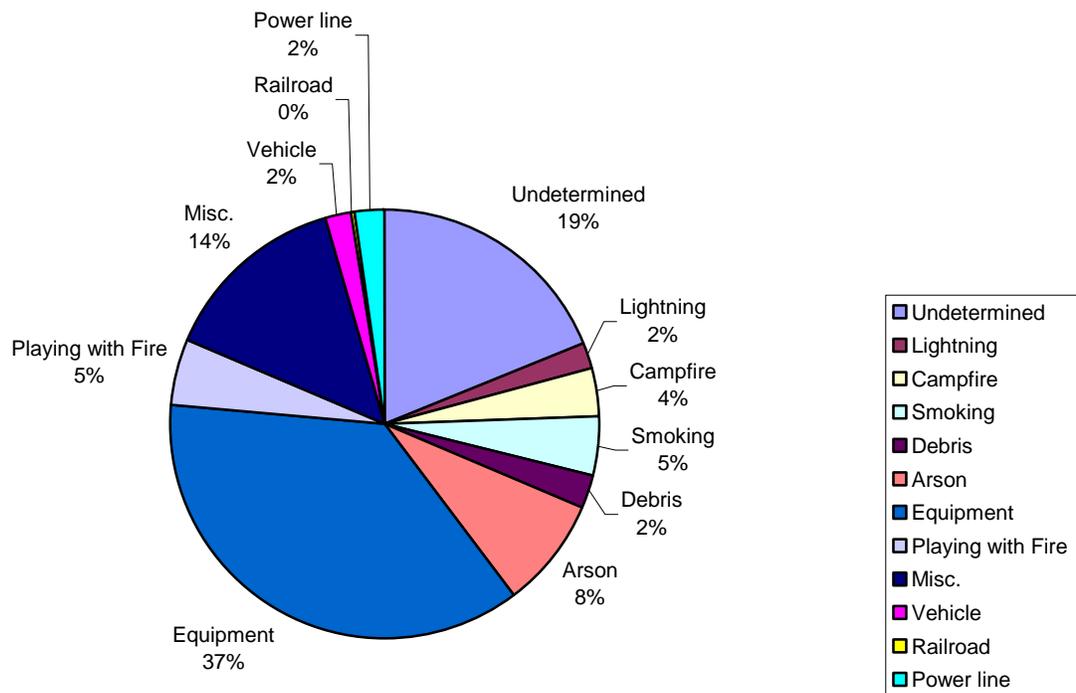
Name	RRU #	Cause	Acres
Cerrito	35517	Equipment	16,447
Citrus	58691	Equipment	682
Cottonwood	38418	Campfire	1,819
Eagle	35190	Equipment	8,945
Fish	36803	Equipment	63
Gafford	35197	Misc.	405
Lakeview	56039	Misc.	360
Melton	57236	Misc.	3,330
Morales	70756	Und	184
Pleasure	32913	Vehicle	2,456
School	35567	Misc.	359
Verbenia	55439	Equipment	3,138

The significant fires wildland fires in 2004 further reflect this, in that 42% of the significant fires were equipment caused. The majority of these significant fires occurred during the month of May, with June following in the next busiest month.

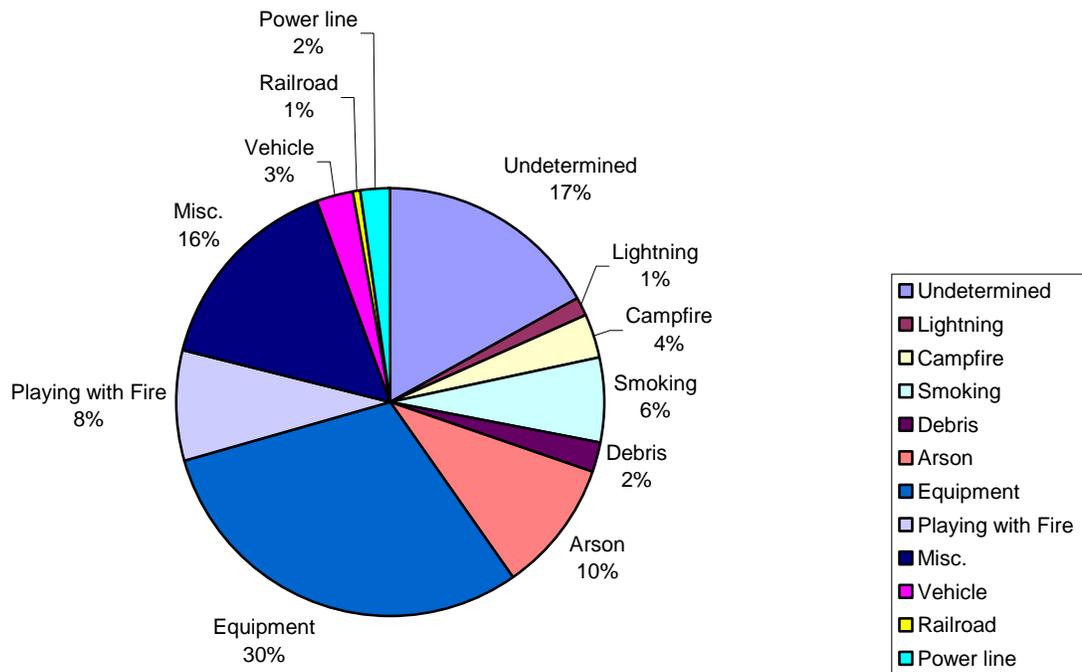
## Riverside Unit Wildland Ignition Data

2004			2000-2004			1995-2004		
Cause	Count	%	Cause	Count	%	Cause	Count	%
Undetermined	197	19%	Undetermined	871	17%	Undetermined	2023	17%
Lightning	19	2%	Lightning	72	1%	Lightning	146	1%
Campfire	39	4%	Campfire	186	4%	Campfire	375	3%
Smoking	47	5%	Smoking	331	6%	Smoking	831	7%
Debris	24	2%	Debris	116	2%	Debris	297	3%
Arson	87	8%	Arson	508	10%	Arson	1066	9%
Equipment	381	37%	Equipment	1576	30%	Equipment	3178	27%
Playing with Fire	53	5%	Playing with Fire	429	8%	Playing with Fire	1207	10%
Misc.	149	14%	Misc.	811	16%	Misc.	1939	17%
Vehicle	18	2%	Vehicle	132	3%	Vehicle	281	2%
Railroad	4	0%	Railroad	32	1%	Railroad	48	0%
Power line	23	2%	Power line	118	2%	Power line	341	3%
Total 1041			Total 5182			Total 11732		

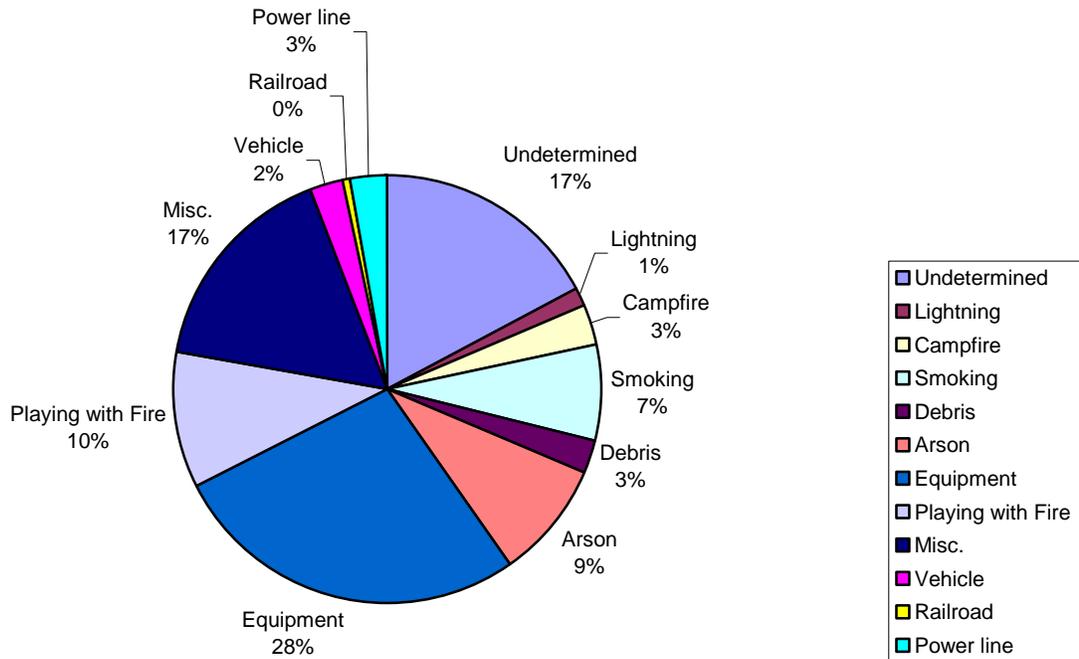
## Riverside Unit - 2004 Wildland Ignitions



## Riverside Unit - 2000-2004 Wildland Ignitions



## Riverside Unit - 1995-2004 Wildland Ignitions



## **General Description of Desired Future Condition**

### ***San Jacinto Mountains – MAST Goals***

- 1) Reforestation efforts will help restore species forest stand structure and composition back to un-evenaged and mix conifer.
- 2) Reforestation efforts will aid preventing erosion and protect water quality.
- 3) Shaded fuelbreaks are a method of protecting communities from catastrophic fire by removing (Brush) ladder fuels and while retaining larger mature trees
- 4) Generally, Height growth is a function of tree genetics and site quality; while diameter growth is a function of stand stocking or number of trees per area.
- 5) Fire behavior is a function of fuel, weather and topography. The amount and type of fuel can be treated so that catastrophic fire is mitigated.
- 6) An overall goal of 40-80 Trees Per Acre (TPA) is recommended, and staff is currently working to educate the public on the concept of Basal Area/Acre as the preferred method for determining stocking standards.

### **Ignition Workload Assessment**

Public Resources Code (PRC) Section 4130 sets for the following responsibilities for the Board of Forestry and CDF:

Directs the Board to classify all wildland within State Responsibility Area (SRA) based on cover, beneficial water uses, probable erosion damage and fire risks and hazards.

Determine the intensity of protection to be given to each type of wildland.

Prepare a Fire Plan to assure adequate statewide fire protection so that lands of each type can be assigned the same intensity of protection.

The ignition workload assessment will show how successful CDF has been in providing equal fire protection to similar lands. In addition, it will show where this goal is not being achieved and improvement is needed.

Fires are grouped into "success" and "failure" categories based on various factors. The assessment groups fires by general vegetation or fuel types (planning belts). Within the fuel type, fires are further classified based on final fire size and weather conditions at the time of ignition. Each fire is classified and labeled as either a successful initial attack or a failure.

Successes vs. failures by fuel types are attached. Riverside Unit shows very good initial attack success, for grass – 96%, brush – 91%, woodland – 94%, and conifer – 95%.

**Ignitions Workload Analysis Matrix**

**Unit: RRU**

**Planning Belt: G (grass)**

**FIRE SIZE**

**FWI**

	Spot	Small	Medium	Large	Escape
LOW	276	41	8	0	1
MEDIUM	124	25	8	4	2
HIGH	38	10	1	0	0
UNMATCHED	502	113	27	8	10

**Planning Belt ID:** 
**Unit ID:**

**Success: 96 %**

Fire Sizeclass Cutoffs for grass planning belt	FWI Index Intensity Cutoffs
Spot: Less than 1 acre(s)	Low: less than 15
Small: 1 - 10 acres	Medium: 15 - 30
Medium: 10 - 100 acres	High: greater than 30
Large: 100 - 500 acres	Unmatched: no weather observation available
Escape: greater than 500 acres	

**Ignitions Workload Analysis Matrix**

**Unit: RRU**

**Planning Belt: B (brush)**

**FIRE SIZE**

**FWI**

	Spot	Small	Medium	Large	Escape
LOW	759	60	53	29	53
MEDIUM	275	32	23	9	13
HIGH	60	4	5	6	6
UNMATCHED	794	94	63	22	40

**Planning Belt ID:** 
**Unit ID:**

**Success: 91 %**

Fire Sizeclass Cutoffs for brush planning belt	FWI Index Intensity Cutoffs
Spot: Less than 1 acre(s)	Low: less than 15
Small: 1 - 5 acres	Medium: 15 - 30
Medium: 5 - 25 acres	High: greater than 30
Large: 25 - 100 acres	Unmatched: no weather observation available
Escape: greater than 100 acres	

**Ignitions Workload Analysis Matrix**

**Unit: RRU**

**Planning Belt: W (woodland)**

**FIRE SIZE**

**FWI**

	Spot	Small	Medium	Large	Escape
LOW	269	41	7	7	4
MEDIUM	116	22	5	3	3
HIGH	31	3	4	1	1
UNMATCHED	451	86	25	7	17

**Planning Belt ID:** 
**Unit ID:**

**Success: 94 %**

Fire Sizeclass Cutoffs for woodland planning belt	FWI Index Intensity Cutoffs
Spot: Less than 1 acre(s)	Low: less than 15
Small: 1 - 10 acres	Medium: 15 - 30
Medium: 10 - 50 acres	High: greater than 30
Large: 50 - 200 acres	Unmatched: no weather observation available
Escape: greater than 200 acres	

**Ignitions Workload Analysis Matrix**

**Unit: RRU**

**Planning Belt: I (interior conifer)**

**FIRE SIZE**

**FWI**

	Spot	Small	Medium	Large	Escape
LOW	107	3	0	1	0
MEDIUM	25	3	6	0	1
HIGH	5	0	0	0	0
UNMATCHED	97	3	8	2	2

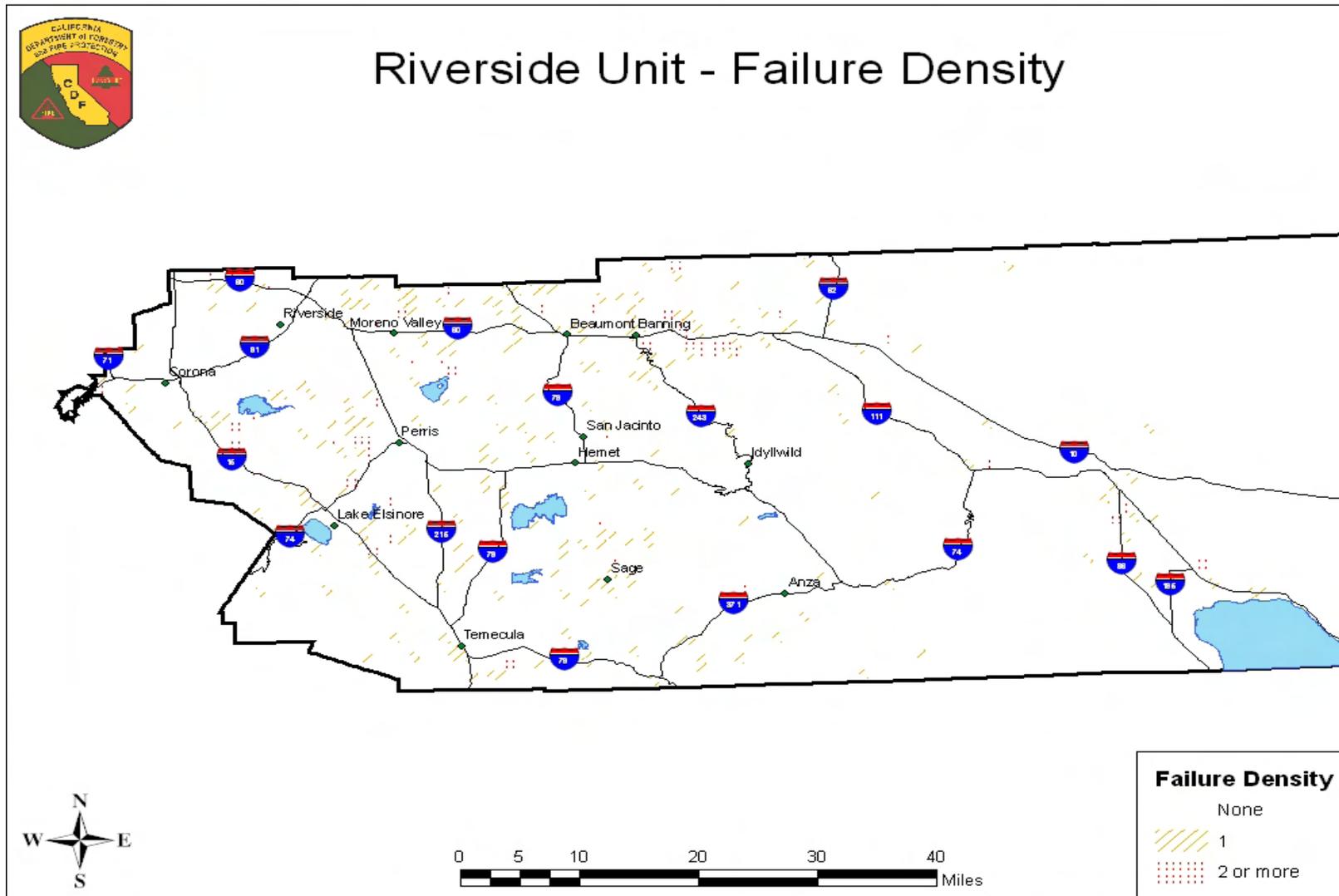
**Planning Belt ID:** 
**Unit ID:**

**Success: 95 %**

Fire Sizeclass Cutoffs for interior conifer planning belt	FWI Index Intensity Cutoffs
Spot: Less than 1 acre(s)	Low: less than 15
Small: 1 - 2 acres	Medium: 15 - 30
Medium: 2 - 10 acres	High: greater than 30
Large: 10 - 100 acres	Unmatched: no weather observation available
Escape: greater than 100 acres	







## **Vegetative Wildfire Fuels**

Wildland fuels (live and dead vegetation) are a key component of fire behavior. The various fuels found in California have specific characteristics, which allow fire behavior analysts to categorize them based on how they burn. The Fire Behavior Prediction System (FBPS) was the method chosen for categorizing fuels for the fire plan process. This method classifies fuels into 13 different fuel models, each of which has specific physical and burning characteristics. The models include 3 grass, 4 brush, 3 timber and 3 slash fuel types. Custom fuel models have also been developed from these basic models to take into account the variations found in desert areas and wildland areas with an urban component.

The fuel models are used to label current and historic fuels. Historic fuels, those fuels that existed prior to a significant wildfire or VMP burn, are important because they tell us what the climax vegetation and fuel type will be for a particular area. The historic fuel models are used to label the Unit's planning belts in the fire plan.

Current fuel models are used along with slope class, ladder fuel component, crown closure, and difficulty of control rating to derive the fuel hazard rank for each quad 81st. It has been determined that in California no wildland fuel can be considered to have a low hazard rating, so the adjective descriptions only include medium, high or very high.

In Riverside County, as well as San Bernardino and San Diego, we have seen dramatic and historic changes in our montane chaparral and timber fuel types in just the last year. The record-breaking drought has killed huge stands of timber and brush over tens of thousands of acres in our mountains. It has become the number one fuel problem for our County. Mortality mapping is constantly being updated cooperatively through the MAST using GIS technology.

### ***Battalion 1 – Perris***

Generally Battalion 1 consists of a light grass in the populated areas on the west and east sides of the Battalion. The medium fuels are in some of the same areas, but in the more sparsely populated areas, such as Santa Rosa Mine Road and Juniper Flats.

### ***Battalion 2 – Lake Elsinore***

The Battalion 2 area primarily consists of light brush and heavy grass throughout the area. Due to the frequent fire history in the area, these areas are maintaining the light brush and heavy grasses. The Ortega front country, in the Trabuco Ranger District consists primarily of a medium to heavy brush, which is one of the more volatile areas of Riverside Unit.

***Battalion 3 – Beaumont***

The fuels in Battalion 3 are widely varied, ranging from grass, coastal sage scrub, chamise, Russian Thistle to scrub oaks. In the area north of Cherry Valley, manzanita is the predominate fuel. The heavy rains this past winter contributed to a significant grass crop throughout the Battalion.

***Battalion 4 – Corona***

In the Santa Ana River bottom there is a continual bed of fuels just east of the Van Buren Boulevard bridge in Pedley extending west to Highway 71 along the county line. The river bottom fuel load is made up of annual grasses, bamboo, various brush species and various types of trees.

In the Chino Hills area annual grasses are abundant, with small patches of brush and a few oak/sycamore trees in the canyon areas.

In the Dawson Canyon and Spanish Hills area the fuels are annual grasses and light brush. These hills have been burned numerous times over many years, with the exception of a few canyons. Because of the light fuel load, the large fires in this area have been predominantly wind driven.

In the foothills that run along the Cleveland National Forest the fuels are generally light grasses with heavy brush.

***Battalion 5 – San Jacinto***

The fuels in Battalion 5 below 2000' in elevation mostly consist of grasses and coastal sage scrub (Fuel Model 2). Above 2000' in elevation the fuel type is dependent on the length of time since last fire, i.e. less than 20 years ago - grass and medium brush (Fuel Model 6), greater than 20 years ago - heavier mixed brush (Fuel Model 4).

***Battalion 11 – Mountain***

**Station 23 – Pine Cove**

The fuels in the Pine Cove/Idyllwild area are composed of mature chaparral with a mixed conifer forest overstory. The predominant understory species include manzanita, chaparral whitethorn, deer brush and chamise. The tree over story consists of mixed stands of Jeffery Pine, Ponderosa Pine, Coulter Pine, Incense Cedar, White Fire and Sugar Pine. There is no recorded fire history for the area since fire records started being kept around 1924; therefore it is assumed the vegetative community is at least 75 years old.

**Station 29 – Anza**

The fuel types in the Anza area consist of approximately 25% fuel model 1 mostly located on the valley floor on the Cahuilla Indian Reservation and along the Cooper Cienega Truck trail to the south. Fuel model 4 is approximately 30%, inter-mixed in areas through the valley. Fuel model 6 is approximately 45%, consisting of

## 2005 Riverside Unit Pre-Fire Management Plan

larger stands of manzanita and red shank with plant height as high as 10-15 feet on average.

Overall, the area has a grass under story, which is 12-18" in height. The grass is also matted down, which adds to the fuel loads. The red shank is showing new stringy bark, which adds to the ladder fuels in the brush fields.

### Station 30 – Pinyon

The fuels in the Pinyon area consist of Fuel Models 4 and 6, with patches of Fuel Model 1 located throughout.

### Station 53 – Garner Valley

The dead fuel from the last seven years of drought is still dead, the only difference is with the amount of rainfall this winter there is a significant grass crop to carry a potential fire. The brush that is not dead is showing heavy growth this year. On the positive side, the local cattle population is way up due to the Federal lands being opened up to more grazing permits, so the local cattle population is helping reduce the grass crop.

### Station 77 – Lake Riverside

The Lake Riverside area is located near Aguanga. The fuels near Highway 79 and Highway 371 consist of grass (Fuel Model 3) and progressing northeast on Highway 371 the fuels change into fuel model 4.

### ***Battalion 13 - Menifee***

Battalion 13 is 42 square miles and has roughly the following boundaries: North of Murrieta city, South of Perris city, West of the Winchester area and just East of Elsinore (halfway down Railroad Canyon Road). The fuels consist of light native California vegetation, i.e. brush. The area is surrounded and interspersed with a healthy grass crop that has already “turned”.

### ***Battalion 15 – Temecula***

#### Station 12 – Temecula

The fuels in the Temecula area include annual grasses (Fuel Models 1 and 3) and brush species chamise, sage, buckwheat (Fuel Models 4,5 and 6).

#### Station 75 – Bear Creek

Within the SRA of Station 75's IA there are Fuel Models 1 and 3 (Short and tall annual grasses) along with Fuel Models 4, 5, and 6 (Chaparral and dormant brush including chamise and coastal sage).

#### Station 92 – Wolf Creek

Station 92's fuels are generally made up of annual grass (Almost all of which are located in last year's fire areas) and chaparral, dormant brush including chamise and coastal sage.



## Structure Fuels

### *Defensible Space/Fire Safe Inspections*

Riverside Unit is conducting Fire Safe Inspections utilizing the LE-38 program throughout the county. Unit Forestry staff have developed a database which allows the records of inspection to be stored electronically on the station computers. The LE-38 form contains a compilation of codes, from both the Public Resources Code and the Riverside County Ordinance 787.2, which adopts the Uniform Fire Code. This allows for the utilization of PRC 4291, and some more site specific regulation required by the County Ordinance.

As a part of the MAST Organization the private lands in the San Jacinto Mountains are being inspected by three different agencies, the California Department of Forestry and Fire Protection/Riverside County Fire, the United States Forest Service, and The Idyllwild Fire Protection District. Unit staff held a training day with all the agencies to go over to the changes associated with PRC 4291, and to ensure equal enforcement and interpretation of the laws across the area.

## LE-38 SRA INSPECTIONS REPORT

Number of VIP Inspections	0
Number of CDF Inspections	19276
Number in Compliance	16035
Number of Violations	3241
Number Cited	15

### *Ordinances Regarding Construction*

The Riverside Unit has adopted the 2000 Edition of the Uniform Fire Code, which specifies various requirements for the development of new construction within the County. The Planning and Engineering Department of the Riverside County Fire Department is responsible for ensuring new developments within the county meet the various ordinances pertaining to building homes in the wildland. These ordinances include PRC 4290, PRC 4291, Riverside County Ordinance 787.2, and the new Fire Marshal Building Standards.

Unit Staff are working with the local Fire Safe Councils to disseminate information and educate the public on the message of Firewise home construction practices. The LE-38 program at the station level provides for a one-on-one contact with residents. This is the opportunity for residents to discuss what they can do to ensure their homes survivability in the event of a catastrophic wildland fire.

### **Frequency of Severe Fire Weather**

Fire behavior is dramatically influenced by weather conditions. Large costly fires are frequently, though not always, associated with severe fire weather conditions. Severe fire weather is typified by high temperatures, low humidity, and strong surface winds.

The Fire Plan's weather assessment considers different climates of California, from fog shrouded coastal plains to hot, dry interior valleys and deserts to cooler windy mountains. Each of these local climates experiences a different frequency of weather events that lead to severe fire behavior (severe fire weather).

The Fire Plan's weather assessment uses a Fire Weather Index (FWI) developed by USDA Forest Service researchers at the Riverside Fire Lab. This index combines air temperature, relative humidity, and wind speed into a single value index. This index can be calculated from hourly weather readings such as those collected in the Remote Automatic Weather Station (RAWS) data collection system. The FWI does not include fuel moistures, fuel models and only uses topography to the extent that RAWS station weather readings are influenced by local topography.

Weather assessment information will be used to help analyze how changes in fire suppression forces will affect the Unit's level of service.