

SECTION IV:

PRE FIRE MANAGEMENT STRATEGIES

A: FIRE PREVENTION

- Ignition Analysis

It is extremely important to determine how fires are caused, where fires occur, and whether the Unit is meeting the Department’s goal of containing 95 percent of all wildfires at 10 acres or less. Determining causal trends can direct the Unit to specific prevention efforts to change that causal trend. The location where the majority of fires occur can help determine where prevention and pre-fire efforts might produce the greatest result.

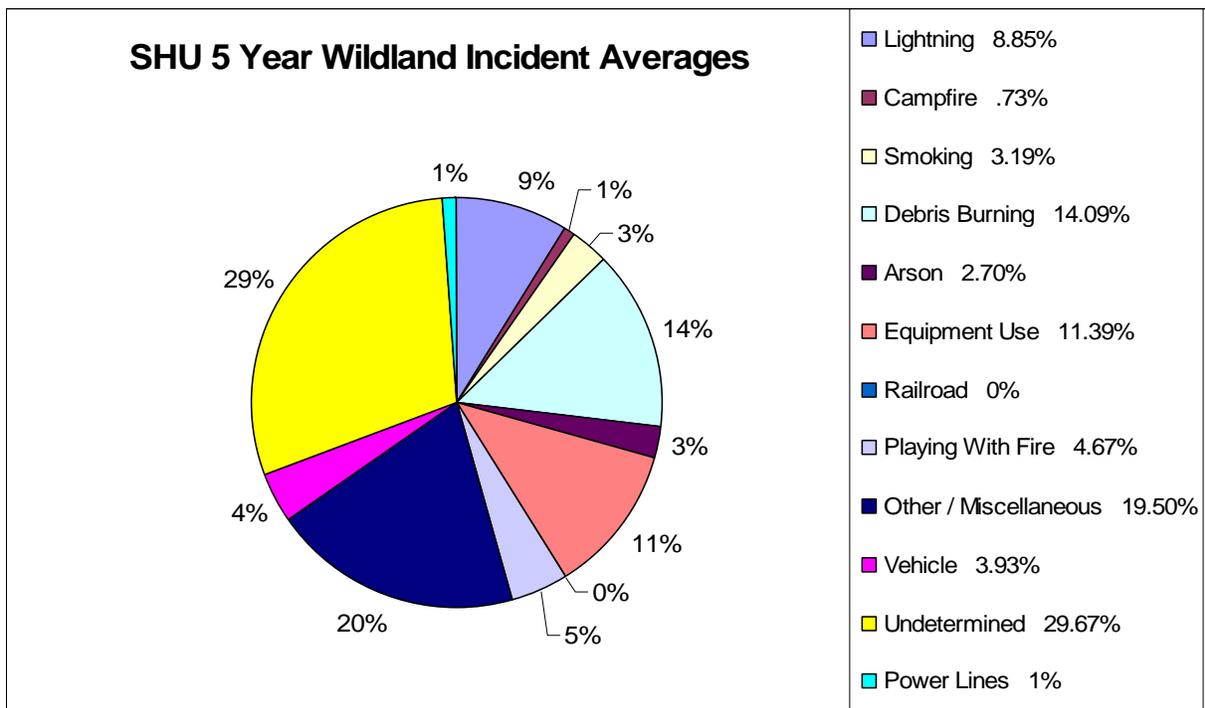
The ignition workload assessment is derived from data collected from CAL FIRE’s California All-Incident Reporting System (CAIRS). This fire reporting system utilizes the National Fire Protection Association (NFPA) Standard 901 coding convention. CAL FIRE has historically classified fire causes into twelve General Causes while the NFPA causal data is collected as causal factors. CAIRS data uses Lat/Long information that points the ignitions to the actual area of origin, instead of cornering the point at a Section/Township/Range corner, making the data much more accurate than the Emergency Activity Reporting System (EARS) used in past years.

The Fire Plan data only uses ignitions that have caused a vegetation fire. The Shasta Trinity Unit collects data for all ignitions including non-vegetation fires such as structure or vehicle fires. Many of these ignitions could have spread to the wildland vegetation, but suppression activity contained the fire to the original material ignited. This Unit data includes only State Responsibility Area (SRA) fires.

Unit Wide Incident Data

5 Year Vegetation Fire Cause

Fire Cause	2006	2007	2008	2009	2010	5 Year Avg.	5 Year total % Average
Lightning	11	7	41	48	1	21.6	8.85%
Campfire	4	1	0	1	3	1.8	0.73%
Smoking	13	9	8	5	4	7.8	3.19%
Debris Burning	39	42	42	28	21	34.4	14.09%
Arson	9	8	7	3	6	6.6	2.70%
Equipment Use	48	28	28	16	19	27.8	11.39%
Railroad	0	0	0	0	0	0	0.00%
Playing With Fire	8	13	12	15	9	11.4	4.67%
Other / Miscellaneous	42	36	75	57	28	47.6	19.50%
Vehicle	28	7	5	3	5	9.6	3.93%
Undetermined	75	104	65	69	49	72.4	29.67%
Power Lines	7	2	2	3	1	3	1%
Totals	284	257	285	248	146	244	



Unwanted vegetation fires damaged approximately 55,965 acres of land during the last five years (2006– 2010), causing an estimated \$3,041,494 in property loss. In 2010, Other/Miscellaneous was the leading determined fire cause in the Shasta –Trinity SRA. Other/Miscellaneous causes are those fires started by events or activities that cannot be logically placed in any of the other cause classes and include, but are not limited to blasting, target shooting and spontaneous combustion.

- Specific goals and objectives within Fire Prevention to reduce ignitions in the unit

The goals of the Fire Prevention Bureau are Education, Information, Planning and Enforcement. The Prevention Bureau objectives to reduce ignitions are to identify and address all ignitions which threaten public safety and lands within our jurisdiction. We identify specific fire cause classifications along researching data then educate and inform the public. During this phase of education we will send out news releases, develop commercials, hand out flyers, and disseminate safety messages.

The Shasta Trinity Unit has experienced a considerable change in the ignitions table (fire starts) within the State Responsibility Area (SRA). Ten years ago, equipment caused fire was on a rise, however; in recent years we have seen an increase in two areas of the fire cause classifications. The first fire cause classification that has been increasing in the last couple of years is debris burn escapes. At the beginning of the fire season (usually prior to May 1st and up to three weeks after) citizens burn their debris piles and for several reasons they loose control of their burning. The Shasta Trinity Unit worked on educating the public on burning safety, informational news releases, along with verbal warnings and criminal citations. The second area we have experienced an increase in is children playing with fire. In 2009/2010, Shasta County (including areas

within the City of Redding, Anderson, Cottonwood, Happy Valley) saw an increase which doubled years past statistics of ignitions by juveniles. Both CAL FIRE and Redding City Fire Department have programs specifically designed to educate juveniles with the hazards and dangers of playing with fire. Identifying these juveniles through the investigation process was a key component to recognizing the growing problem. Secondly, providing educational information through the Juvenile Fire Starter Program corrected most juveniles (approximately 98% success rate) behavior.

- **Public Resource Code 4291**

The California Public Resource Code 4291 and Government Code 51182, amended by Governor Schwarzenegger signed into law on September 23, 2004, Senate Bill 1369 and became effective January 1, 2005, which increase the minimum clearance (defensible space) requirement from 30' to 100'. It also provides that state law or local ordinance rules or regulations to specify requirements of greater than 100' around buildings because of extra hazardous conditions or where a firebreak of only 100 feet around such building or structure is not sufficient to provide reasonable fire safety.

A defensible space perimeter around buildings and structures provide firefighters a working environment that allows them to protect buildings and structures from encroaching wildfires as well as minimizing the chance that a structure fire will escape to the surrounding wildland. These guidelines apply to any person who owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining any mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or any land that is covered with flammable material, and located within a State Responsibility Area (SRA).

The vegetation surrounding a building or structure is fuel for a fire. Even the building or structure itself is considered fuel. Research and experience have shown that fuel reduction around a building or structure increases the probability of it surviving a wildfire. Good defensible space allows firefighters to protect and save buildings or structures safely without facing unacceptable risk to their lives. Fuel reduction through vegetation management is the key to creating good defensible space.

Terrain, climate conditions and vegetation interact to affect fire behavior and fuel reduction standards. The diversity of California's geography also influences fire behavior and fuel reduction standards as well. While fuel reduction standards will vary throughout the State, there are some common practices that guide fuel modification treatments to ensure creation of adequate defensible space:

- Properties with greater fire hazards will require more clearing. Clearing requirements will be greater for those lands with steeper terrain, larger and denser fuels, fuels that are highly volatile, and in locations subject to frequent fires.
- Creation of defensible space through vegetation management usually means reducing the amount of fuel around the building or structure, providing separation between fuels, and or reshaping retained fuels by trimming. Defensible space

can be created removing dead vegetation, separating fuels, and pruning lower limbs.

- In all cases, fuel reduction means arranging the tree, shrubs and other fuels sources in a way that makes it difficult for fire to transfer from one fuel source to another. It does not mean cutting down all trees and shrubs, or creating a bare ring of earth across the property.
- A homeowner's clearing responsibility is limited to 100 feet away from his or her building or structure or to the property line, which ever is less, and limited to their land. While individual property owners are not required to clear beyond 100 feet, groups of property owners are encouraged to extend clearances beyond the 100 foot requirement in order to create communitywide defensible spaces.
- Homeowners who do fuel reduction activities that remove or dispose of vegetation are required to comply with all federal, state or local environmental protection laws and obtain permits when necessary. Environmental protection laws include, but are not limited to, threatened and endangered species, water quality, air quality, and cultural/archeological resources. For example, trees removed for fuel reduction that are used for commercial purposes require permits from the California Department of Forestry and Fire Protection (CAL FIRE). Also, many counties and towns require tree removal permits when cutting trees over a specified size. Contact your local resource or planning agency officials to ensure compliance.

CAL FIRE is dedicated to public safety and Defensible Space Inspections. CAL FIRE inspects private properties with structures to educate and advise the public in making their structures compliant with the 100' defensible space requirements giving their homes a better chance of survival in the event of a wildfire. These inspections are done year round, with the majority of the inspections done in the late winter and early spring months, giving homeowner's time to mitigate non compliance issues around homes and structures before the summer months when the fire danger higher.

http://www.fire.ca.gov/communications/downloads/fact_sheets/DefensibleSpaceFlyer.pdf

http://www.fire.ca.gov/cdfbofdb/pdfs/4291finalguidelines2_23_06.pdf

- ENGINEERING & STRUCTURE IGNITABILITY

Fire Protection Planning

The Fire Safety Standards are codified in the Shasta County Development Standards as Chapter 6. The Development Standards are uniformly applied throughout the County. Other agencies may elect to enforce stricter standards. However, the Fire Safety Standards are the minimum level of fire protection planning allowed. The Standards incorporate elements of Title 19, Title 24, and Public Resources Code 4290 and Government Code sections 51175-51189. The current Standards adopted in 2004 primarily address access and water. The standards are applied to all new land divisions

within Shasta County when projects are submitted to the County for review. Due to the Cooperative Fire Agreement, the Unit Chief is appointed as the County Fire Warden. The Board of Supervisors delegates authority to the Fire Warden to enforce the Fire Safety Standards for all new land divisions within the County. This authority is, in turn, delegated to the Fire Marshal of the Shasta County Fire Department. The Fire Marshal works closely with the Planning Department and is an integral component of the review process. Applicable conditions are applied to each project to ensure conformity with the Fire Safety Standards. Once projects are approved by the Planning Commission and/or Board of Supervisors, the Fire Marshal inspects work completed to ensure it meets the conditions applied to the project.

Structure Ignitability and WUI

Starting January 2008, the new 2007 California Building Code (CBC) became effective. For products to be used in the Wildland Urban Interface (WUI) there are some regulations that required building products to comply with specific standards.

In an effort to provide the home owners, industries, designers, local fire and building officials a readily list of “compliance WUI products”, the State Fire Marshal has publishing the “WUI Products Handbook”.

All products published in this handbook have been reviewed and verified their compliance in accordance with the new 2007 CBC by SFM staff. All products published in the WUI Products Handbook are “approved” by the SFM. They are not “Listed” unless a SFM Listing number is attached. It should be noted that products are not in the WUI Products Handbook may still comply with the standards since it is not a requirement for any products to be in the WUI Products Handbook.

<http://osfm.fire.ca.gov/strucfireengineer/pdf/bml/wuiproducts.pdf>

The California Building Commission adopted the Wildland-Urban Interface (WUI) codes in late 2005. The majority of the new requirements took effect in 2008 and has been updated in the 2010 California Building code. These new codes include provisions for ignition resistant construction standards in the wildland urban interface. The updated fire hazard severity zones will be used by building officials to determine appropriate construction materials for new buildings in the wildland urban interface. The updated zones will also be used by property owners to comply with natural hazards disclosure requirements at time of property sale. It is likely that the fire hazard severity zones will be used by local government as they update the safety element of general plans. The new building standard for the Fire Hazard Severity Zones will be enforced by the Building Official as projects go through the plan checking process. To best assist them in determining if a product meets the code requirements, the State Fire Marshal's Building Materials Listing program (BML) is accepting applications for materials for listing or for the review of meeting the standards. These materials will be posted on the SFM BML website at:

<http://osfm.fire.ca.gov/strucfireengineer/pdf/bml/wuiproducts.pdf>

, and the Wildland Urban Interface Building Codes page of the Wildland Hazards and Building Codes at:

http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_codes.php

The SFM listing service provides building authorities, architectural and engineering communities, contractors, and the fire service with a reliable and readily available source of information.

Since the materials under Wildland Urban Interface Building Codes (except roof wood shakes and shingles) are not required by law to be listed by the SFM, the listings for these products are strictly voluntary. Materials not listed by the SFM may still qualify for use provided they met all the requirements under Chapter 7A. If not listed on the SFM site, all documentation and testing certificates showing compliance must be submitted to the building official having jurisdiction for final approval.

Information regarding all Wildland Urban Interface issues can be downloaded at:

http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland.php

Code Enforcement

Within Shasta County, each fire protection Authority Having Jurisdiction (AHJ) is responsible for conducting fire safety inspections and code enforcement. The Shasta County Fire Department conducts inspections of all non-residential occupancies falling within its jurisdiction. The target interval for inspections is every three years. Any complaint regarding alleged violations of the Uniform Fire Code is investigated immediately. The Fire Marshal's office coordinates and conducts the Fire Safety Inspections.

Shasta County has adopted the 2010 Uniform Fire Code, Residential Code, and Uniform Building Code for all new construction and inspections in the jurisdiction. The Fire Marshal's office works closely with the County Building Department to ensure applicable fire safety codes are applied. (See APPENDIX D)

- INFORMATION AND EDUCATION

The Shasta – Trinity Unit has an education program that is geared to educating the citizens of Shasta and Trinity counties as a whole. There are three major components to the fire prevention and education programs.

- School programs – SHU prevention staff, utilizing both paid and volunteer personnel participate in school programs on an annual basis reaching out to nearly 5,000 children and young adults, also included in this demographic are a number of programs addressing children with special needs. Teaching children about the dangers of fire play and the consequences of such actions is important in preventing wildland fires resulting from children or young adults playing with fire.
- Juvenile Fire Setter Program – In cases where children or young adults have been playing with fire and staff is able to identify those persons, they are enrolled in a juvenile fire setter intervention class (JFSI). The JFSI is key in identifying the reasoning behind the fire play and ensuing consequences will help to mitigate the recurrence of such activity.
- Public and community information events or programs – Using venues such as home and garden shows, earth day festivals and other community oriented events, SHU Prevention Staff are able to educate residents of all ages regarding fire safety and prevention of fire. The emphasis at these events is educating the residents of the need for defensible space, but at the same time advising of the factors that can ignite a fire while achieving that defensible space. Fires can be ignited by equipment (i.e. mowers, trimmers, etc.) that produces heat, ignites duff, or causes sparks. In addition, staff has educated the general public at these events on other ways fires start including dooryard debris burning regulations (when applicable) and outdoor fire safety when recreating in the wildland.

The use of these information and education components is key to raising public awareness of how fires start and how they can be prevented. In addition, fire prevention staff are members of the Shasta County Fire Prevention Officers Association where ideas and collaboration in the fire prevention help to educate the public.

B: VEGETATION MANAGEMENT

Fuel Reduction

The Forest Practice Program provides several functions, including enforcement of laws that regulate logging on privately-owned lands in California through the Forest Practice Act to preserve and protect our fish, wildlife, forests and streams. The Forest Practice Act provides several timber harvesting permits which facilitate fuel reduction around homes, property and communities. These permits include Harvesting Dead, Dying or Diseased Exemption, 150 foot Fire Hazard Removal Exemption (around habitable structures), removal of Substantially Damaged Timber, Forest Fire Prevention Exemption, Woody Debris Slash Removal Exemption, Fuel Hazard Reduction Emergency Notice, as well as Sanitation Salvage and Fuelbreak/ Defensible Space Timber Harvest Plans.

The Vegetation Management Program (VMP) offers similar fuel reduction plans but focusing on prescribed burning. Through prescribed burning and other fuel reduction methods, the risk of wildfire can be diminished. Prescribed burns remove the thick underbrush in wildland areas in a controlled manner rather than through destruction from a wildfire. Fuel reduction not only improves the growing conditions of native plant and wildlife species but, a treated site can act as a fire break, stopping a wildfire in its tracks, or providing firefighters with safe areas to make a stand against a fire. Specialized CAL FIRE personnel coordinate with landowners to determine sites and create plans for prescribed burns. CAL FIRE works with other cooperators, such as the Air Quality Management District and wildlife agencies, to ensure burning is done with minimal impact on air quality or biological diversity.

Suppression Repair

Our Department's 7000 manual outlines the standard protection measures for Suppression Repair. 7013.11.3 states: "The Pattern for mitigation measures rest in large part on the standards in the Forest Practice Regulation. These are the same standards that CDF foresters enforce on private logging operations." The Forest Practice Program (through the staff Forester I, II and III's) often provides lead on Suppression Repair activities. To the extent possible and practical, indirect damages to soil, streams, fish habitat, and private property should be minimized but with due consideration for fire suppression requirements.

Vegetation Management Program coordinators are also familiar with Suppression Repair activities, have a strong knowledge base on local concerns and issues, and often the preplanning and implementation aspect of a VMP project reduces the need for post-fire suppression repair.

Forest and Range Health

The goal of forest management under the Forest Practice Program in relation to the Forest Practice Act falls into four objectives:

1. Achieve a balance between growth and harvest over time.
2. Maintain functional wildlife habitat with a planning watershed.

3. Retain or recruit late and diverse seral stage habitat components for wildlife.
4. Maintain growing stock, genetic diversity and soil productivity.

Likewise, the goal of any VMP project is to meet the criteria of the California Environmental Quality Act (CEQA).

CAL FIRE forester's and VMP coordinators diversity in education, training and background experience help strengthen our Departments ability to help local landowners, communities and Counties manage the health of their forests and rangelands. The Forest Practice Program and the Vegetation Management Program work with other cooperators such as the Department of Fish and Game, Regional Water Quality Control Boards, US Fish and Wildlife Service, as well as others to provide solid and balance perspectives to forest and rangeland health.

State law (Public Resource Code 4789) requires the California Department of Forestry and Fire Protection to periodically assess California's forest and rangeland resources. The Forest Practice Program and the Vegetation Management Program utilize the information provided by Fire and Resource Assessment Program (FRAP), which identifies emerging resource issues on wildlands, analyzes the results of different types of land use and management on wildland conditions, reviews and evaluates policies by federal, state, and local agencies as they relate to wildland protection, and identifies and analyzes policy options for the Board of Forestry and Fire Protection. The program has established a statewide geographic information system (GIS) of biological, physiographic, demographic, and other types of data needed to address CAL FIRE's mission, including information on vegetation, wildlife, soils, watersheds, fire behavior, and ownership.