



# Stanislaus National Forest

## Fire Management Plan

### 2005

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## **SECTION I – INTRODUCTION**

### **A. Purpose of Plan**

Fire management plans must be developed for all areas subject to wildland fires in compliance with the following (FSM 5101, 5103, 5106, and 5108): Federal Wildland Fire Management Policy and Program Review; Wildland and Prescribed Fire Management Policy and Implementation Procedures Reference Guide; Managing Impacts of Wildfires on Communities and the Environment, and Protecting People and Sustaining Resources in Fire Adapted Ecosystems - A Cohesive Strategy; the interagency fire management plan template; and A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy Implementation Plan.

Federal Wildland Fire Management Policy and Program Review (USDI/USDA 2001) requires development of a Fire Management Plan (FMP) for all areas subject to wildland fires. The policy requires such plans to recognize both fire use and fire protection as inherent parts of natural resource management and to include a full range of fire management actions consistent with the Stanislaus National Forest Land and Resource Management Plan as amended by the Sierra Nevada Forest Plan Amendment (January, 2004) to ensure adequate fire suppression capability and support fire reintroduction efforts.

### **B. Collaboration**

Implementation of this FMP will be conducted in collaboration with communities, Fire Safe Councils, Tribal groups, private landowners, local government and cooperating agencies.

### **C. Link to Policy**

The FMP is a detailed program of action to carry out fire management policies as defined in the Federal Wildland Fire Management Policy and Program Review (USDI/USDA 2001). The FMP complies with the National Environmental Policy Act (FSH 1909.15), FSM 5106 Fire Management in Wildland/Urban Interface, as well as other State and Federal regulatory requirements.

### **D. Link to Land and Resource Management Planning**

The Regional Forester approved the Stanislaus National Forest Land and Resource Management Plan and Environmental Impact Statement (EIS) on October 28, 1991. The document "Stanislaus National Forest Forest Plan Direction" (June 2004) presents the current Forest Plan management direction, based on the original Forest Plan as modified through the Forest Plan appeals and amendments processes. The FMP tiers to the direction in these documents, together referred to throughout this plan as the LRMP. The FMP provides specific details of the fire program that most effectively meets fire management direction. The FMP is not a decision document. Rather, it provides the operational parameters needed to implement the LRMP.

### **E. Authorities**

Authorities for implementing this plan are found in Forest Service Manual (FSM) 5101 and 5108. FSM 5101 identifies acts that authorize and guide fire management activities for the protection of National Forest System lands and resources. FSM 5108 cites publications containing guidance on the minimum standards and procedures in various aspects of wildland fire management.

Common acronyms associated with this document:

FMU - Fire Management Unit

FPA – Fire Program Analysis

FSH - Forest Service Handbook

FSM - Forest Service Manual

LRMP - Forest Land and Resource  
Management Plan

MMA - Maximum Manageable Area

NAAQS - National Ambient Air Quality  
Standard

T & E - Threatened and Endangered Species

WFIP - Wildland Fire Implementation Plan

WFSA - Wildland Fire Situation Analysis

## **SECTION II - RELATIONSHIP TO LAND MANAGEMENT PLANNING AND FIRE POLICY**

### **A. Reference to Planning and Documents**

Land and resource management plan direction is to manage fire and fuels in a consistent manner across the national forests, coordinate management strategies with other ownership's, and integrate fire and fuels management objectives with other natural resource objectives.

### **B. Reference to Policy Documents**

The 2001 Federal Wildland Fire Management Policy revision contains goals and objectives to reflect the role and consequence of wildland fire and to achieve consistency with other federal agencies.

The LRMP and Federal Wildland Fire Management Policy set priorities for fire management actions to balance the need to restore fire as a key ecosystem process while minimizing the threat fire poses to life, property, and resources.

### **C. Goals and Desired Condition**

The management direction and goals in the Sierra Nevada Forest Plan Amendment (SNFPA) describe the desired future mosaic of land and resource conditions for the Sierra Nevada national forests and the planning, analysis, monitoring, and adjustments that must be done to make these goals a reality. Full attainment of these goals and objectives can be influenced by Congressional budget allocations, changed circumstances, or new information. Forest-wide goals and objectives are identified below:

- Reduce the amount and intensity of severe wildland fires.
- Where appropriate, reintroduce fire into fire-dependant ecosystems.
- Reduce the threat of wildfire damage to human communities and natural resources.
- Incorporate Resource Advisors in fire management planning and implementation.

Desired condition describes the condition of the land that management will be designed to maintain or move toward. Key desired conditions relating to fire and fuels management include:

- Allow for efficient and safe suppression of all wildland fire ignitions in the wildland urban intermix and provide a buffer between developed areas and wildlands.
- Reduce the spread and intensity of wildland fire to minimize adverse fire effects across the landscape.
- Restore key ecosystem components by moving landscapes from Fire Regime Condition Class 3 to 2 and Condition Class 2 to 1.
- Manage stand density to improve tree vigor and overall forest health.
- Enhance or maintain suitable wildlife habitat, forage, and cover conditions.
- Allow a natural range of conditions to develop, especially in wilderness, Near Natural, and Wild and Scenic River areas.

Refer to the LRMP for more detailed information on desired future conditions for each land allocation.

Standards and guidelines determine how management is to proceed within each land allocation and provide a detailed comprehensive strategy to move toward the desired conditions. The Forest-wide standard and guidelines are described in the LRMP, as well as limited operating procedures, and fuel treatment specifications for the specific land allocations.

The FMP formally documents the fire program based on LRMP direction in one single source document. The fire management program strategies compliment one another in support of an ecological approach to resource management.

## **SECTION III - WILDLAND FIRE MANAGEMENT STRATEGIES**

### **A. General Management Considerations**

General management considerations on the forest include the following:

- Fire Management Plan – Maintain a current plan that defines a program to manage wildland and prescribed fires with the appropriate management response or range of response strategies.
- Wildland Fire Management - Special resource concerns will be considered in all fire management activities.
- Provide a cost-effective fire management program to protect life, property, and Forest resources from the damaging effects of wildfire.
- Reduce hazardous fuels to levels commensurate with minimizing resource losses from wildfire.
- Provide opportunities for the use of fire in its natural ecological role

### **B. Wildland Fire Management Goals**

The goals for fire management have been expanded from those outlined in the LRMP. The goals tier from and are closely aligned with both national and regional fire management goals and federal fire policy direction. The fire management goals are listed below:

- Every fire management activity is undertaken with firefighter and public safety as the primary consideration.
- Fire management program activities are aligned to fully compliment one another in support of an ecological approach to resource management.
- Fire-related considerations are integrated into land management planning alternatives, goals, and objectives.
- Fire managers use the full range of wildland and prescribed fire options to protect, enhance, and restore natural and cultural resources, and to protect developments within and adjacent to the Stanislaus National Forest.
- Fire managers collaborate with other federal and state land management agencies, air regulators, and the public to coordinate fire management activities that may impact private or non-Forest lands and/or public health.

### **C. Wildland Fire Management Options**

This section displays the scope of fire management options that will be implemented. It includes all options authorized under current policy.

#### **1. Wildland Fire**

Wildland fire is defined as any vegetation fire, other than prescribed fire, that occurs in the wildland. Current policy allows for a full spectrum of response to wildland fire based on objectives, environmental and fuel conditions, constraints, safety, and ability to accomplish objectives. The appropriate management response to wildland fire is used to accomplish one of two broad objectives: wildland fire suppression or wildland fire use.

##### **a. Wildland fire suppression**

Human-caused fires or fires with a protection objective will be suppressed. The appropriate management response for these fires can range from initial attack to a combination of strategies to confine the fire. Guidelines for determining specific suppression strategies are outlined in Section IV of this plan.

##### **b. Wildland fire use**

Wildland fire use refers to the management of naturally ignited wildland fires to accomplish resource management objectives. The Fire Management Plan tiers

to the direction in the LRMP that provides guidance for the achievement of resource objectives through the use of fire. FSH 5109.19 Chapter 50 provides the required fire use elements to be included in the Fire Management Plan (FSM 5141.2). A Wildland Fire Implementation Plan (WFIP) must be prepared and approved for wildland fire use (FSM 5143.2).

## 2. Fuels Management

Fuels and vegetation management can be used to re-introduce fire, reduce fuel levels, and to mitigate consequences of large damaging wildfires. Treatments over the landscape are strategically designed so that wildland fire spread and intensity are reduced. Vegetation management can also be used to protect habitats, enhance old-forest ecosystems, and to re-introduce fire into fire-dependant ecosystems. Treatments can be designed to re-establish fuel profiles or vegetative conditions more characteristic of historic fire regimes, eventually allowing fire to function as a natural process. Forest-wide fuel treatment strategies include

- Strategically placed area treatments
- Wildland fire use
- Defensible fuel profile and fuel reduction zones adjacent to communities and areas of high value
- Priority-setting mechanisms established in the National Cohesive Fire Strategy

These strategies are incorporated in the Stanislaus National Forest Five-Year Vegetation Management Guide, currently in development. Fire managers will use these strategies for prioritizing projects and determining priority areas for fuel treatment. The fuel management goals include:

- Reduce the spread and intensity of wildland fire in the Wildland Urban Interface (WUI)
- Provide for firefighter and public safety
- Restore key ecosystem components by moving landscapes from Fire Regime Condition Class 3 to 2 and Condition Class 2 to 1.
- Improve Forest health and fire resiliency
- Reduce fire severity and level of resource damage
- Protect/enhance sensitive species and their habitat
- Support existing treatments through strategic placement
- Adhere to the directions, standards, and guidelines in the LRMP

Depending on funding, the proposed fiscal year 2005 program of work for fuel treatment is summarized in the chart below.

<b>Treatment</b>	<b>Hazard Reduction Acres Natural Fuels</b>	<b>Brush Disposal (BD) Acres Timber Sale Activity Fuels</b>	<b>Total</b>
Prescribed Fire	1000-1100	1000-1500	2000-2600
Non-Fire	5000-5500		5000-5500
Total	6000-6600	1000-1500	7000-8100



**a. Prescribed fire**

Prescribed fire is used to manage hazardous fuels for the establishment of fuel profiles that contribute to cost-effective fire suppression, aid in meeting resource management objectives, and sustain ecosystem values. Prescribed fire is the preferred method of managing fuels in areas sensitive to impacts of mechanical treatment, such as California spotted owl and northern goshawk protected activity centers (PACs), riparian conservation areas (RCA's), and on slopes greater than 35%. Prescribed fire can also be used to mimic naturally occurring fire, enhance native plant species, provide forage and habitat for wildlife species, contribute to soil nutrient cycling, and create diversity in vegetation structure and distribution.

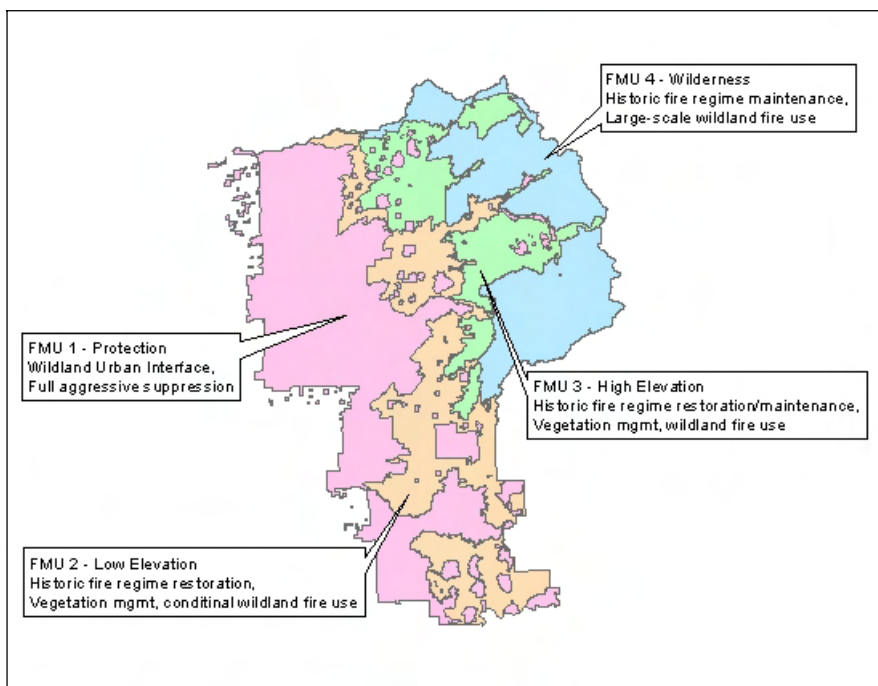
**b. Non-fire applications**

Non-fire treatments can be designed to remove or rearrange fuels, mitigate the consequences of wildfire, and allow for efficient and safe appropriate management responses to wildland fire ignitions. These treatments are especially useful in areas where prescribed fire is not feasible or in smoke-sensitive areas. Non-fire treatments can also be used to prepare areas for future fire applications by removing excessive ladder and surface fuels. Mechanical treatments are effective in disrupting horizontal and vertical continuity of fuels, removing larger size-class fuels, and selectively treating large areas with a defined prescription.

**D. Description of Wildland Fire Management Strategies by Fire Management Unit**

The Forest identified four Fire Management Units (FMUs) to address the fire management objectives in the LRMP The FMU's are defined as:

- FMU #1 – Protection**
- FMU #2 – Low Elevation**
- FMU #3 – High Elevation**
- FMU #4 – Wilderness**



These FMU's are differentiated by the management objectives associated with them, the values to be protected, and major fire regime groups. Refer to Appendix D for definitions of the fire regimes and condition classes. Each of these FMU's have predominate management objectives and strategies designed to accomplish these objectives. Forest-wide objectives related to fire management are described below for each FMU.

## **1. FMU #1**

### **a. FMU #1 – Protection (456,361 acres)**

The fire management goal in this FMU is the protection of life and property. The management objective is to enhance fire suppression capabilities by modifying fire behavior inside the unit and to provide a safe and effective area for possible future fire suppression activities. The primary strategies to achieve this objective include an appropriate management response to wildland fires with an emphasis on protection and intensive hazard fuel reduction treatments.

### **b. FMU Characteristics**

This FMU is composed of areas where LRMP direction either does not make provisions for use of fire for resource benefits or where complicating factors make fire use impractical at this time. The area encompassed as part of FMU #1 consists of private land, wildland urban intermix and areas outside of the forest's Direct Protection Area (DPA). FMU #1 contains the highest concentration of improvements at risk from wildland fire. The Wildland Urban Intermix (WUI) zone is an area where human habitation is mixed with wildland vegetation. The zone extends approximately 1.5 miles out from areas that have residences, commercial buildings, and administrative sites with facilities. Areas outside the Direct Protection Area include National Forest System lands protected by other agencies.

### **c. Strategic and Measurable Management Objectives Specific to the FMU**

The highest priority for fire management in this FMU is to protect human communities from wildfire and minimize the spread of fires that might originate in urban areas. The strategic measurable objectives specific to this FMU include:

- Design at least 50% of fuel treatment in and adjacent to WUI to maximize fire suppression effectiveness.
- Within the WUI, surface and ladder fuel conditions following treatment are such that crown fire ignition is highly unlikely.
- Prescribed fire and non-fire fuel treatments are designed to reduce flame lengths to less than 4 feet, reduce forward rate of spread to at least 50% of pre-treatment levels, minimize snags, and increase fireline production rates from pre-treatment levels.
- Initial suppression action on wildfires will be directed at minimizing resource loss based on the probable fire behavior, safety, and smoke management considerations.
- Develop and maintain cooperative agreements and working relationships with adjacent private landowners and other agencies to enable execution of hazard fuel reduction projects contiguously across jurisdictional boundaries.

### **d. Management Constraints or Criteria Affecting Operational Implementation**

- All management activities will consider safety of personnel and the public as the highest priority.

- Prevent unacceptable impacts to Threatened and Endangered (T & E) species, cultural resources, and sensitive sites.
- Meet Critical Aquatic Refuge and Riparian Conservation Area objectives.
- Protect Wild and Scenic River values.
- Design fuel treatments to meet LRMP land allocation guidelines.
- Smoke management and air quality will be considered during project planning to ensure projects are carried out in a manner consistent and compatible with the attainment of State and Federal air quality objectives.
- Visitors, businesses, and nearby communities will be notified of all fire management activities which have the potential to impact them.

#### **e. Historical Fire Occurrence**

Approximately 1549 wildfires have originated in FMU #1 between 1970 and 2003; 39% of the total fires on the Forest during that time. Approximately 69% of the fires in this FMU are human-caused; primarily from escaped campfires, smoking, debris burning, and arson. A majority of the acres burned in the 32-year period resulted from several large lightning fires in 1987.

#### **f. The Fire Management Situation**

##### **(1) Weather patterns influencing fire behavior**

The weather patterns influencing fire behavior are typical of west-side Sierra foothills. The predominant wind pattern is from southwest to northeast, although strong north winds may develop in association with frontal passages, especially in the spring and fall. Average annual precipitation over this FMU is approximately 35 inches of rain, primarily between October and April.

The Pacific high dominates summertime weather causing hot temperatures (90-100) degrees, moderately dry humidities (20-30%), and low 10-hour fuel moistures (3-5%). Summer rainfall is almost non-existent except for precipitation from passing thunderstorms, which mainly falls at higher elevations between June and September. July through September are the months of highest fire danger and when the largest fires of the season have occurred.

The ending of fire season is variable. The location of the jet stream plays a major role in determining the path of storms with season ending moisture being dependent on Pacific storms systems. Marine air often moves into the Forest from the west (delta breezes), dropping temperatures, raising relative humidity, and generally reducing fire danger and fire behavior for short periods without any long-term effects.

During the fall and winter months the Forest experiences foehn winds (mono winds), which are winds of compressed heating from the east or northeast. Ignitions occurring on the Forest during these wind events have the potential for extreme fire behavior. The Forest generally receives rain in October and November, which reduces the fire danger significantly.

##### **(2) Fire season determination**

Fire season is usually terminated after the first inch or two of rain with predictions for continued storm systems entering the Forest area.

### **(3) Fuel conditions in the FMU likely to influence fire behavior**

Human habitation has greatly influenced the amount and arrangement of fuel through fire suppression, logging, and other management activities. Houses and other structures have also become part of the fuel arrangement in this FMU, and continue to expand farther into the wildland vegetation. Vegetation is varied and includes areas of low-elevation chaparral, oak woodland, mixed conifer, ponderosa pine, and timber plantations. In the lower elevations, heavy surface fuel loads and ladder fuels in many areas result in increased potential for high flame lengths, rapid rates of spread, and development of crown fire.

### **(4) Fire regime alteration**

The descriptions of fire regimes and condition classes are found in Appendix D. Historic fire regimes in this FMU are characterized by frequently occurring fire; primarily low severity surface fires with some areas of higher severity brush fires (Fire regimes I and II). The range of severity depends on the dominant vegetation. Protection of people and property has been the primary fire management objective in this FMU for over a century, with fires suppressed at the smallest size as quickly as possible. Vegetation and forest debris that normally would have been periodically cleared with passing fires has accumulated over time throughout the FMU. Over the years, several fire return intervals may have been missed, often leading to dramatic increases in surface, ladder, and crown fuels. The result is an increased potential for large, severe wildfires. This FMU is predominantly in condition class 3 with some areas of condition class 2.

### **(5) Control problems and dominant topographic features**

The most significant features on the Forest that contribute to wildland fire control problems are steep east-west drainages covered with vegetation and aligned with predominantly west to southwesterly winds.

### **(6) Other elements of the fire environment affecting management**

Developed areas and houses adjacent to and within wildland vegetation pose the greatest challenge to fire management in this FMU. Narrow roads and long travel times hamper access to some of these areas. Fuel treatment in this FMU has often been limited due to proximity to houses, high treatment costs, and the complexities of various ownerships across the landscape.

## **2. FMU #2**

### **a. FMU #2 – Low Elevation (245,848 acres)**

The dominant fire management objective in the FMU is to gradually restore conditions approximating the historic fire regime and to lower the potential for large, uncharacteristically severe wildfire. The primary strategies to achieve this objective include a combination of strategically placed fuel treatments and appropriate management response to wildland fire. As hazard fuel reduction treatments restore more natural conditions, a greater number of naturally occurring fires have the potential to be managed for resource benefits.

### **b. FMU characteristics**

This FMU includes land not included in FMU #1 that is characterized by historically frequent fire (fire regimes I and II). Most of the FMU is below 6,000 feet in elevation and is represented by fire regime I, which is one of frequent, low

severity surface fires. A few areas exist which historically exhibited higher fire severity (fire regime II).

**c. Strategic and measurable objectives specific to the FMU**

The highest priorities in this FMU are to restore vegetative and fire regime attributes to those more characteristic of historic conditions and to manage wildland fires through selection of appropriate management response.

The strategic measurable objectives specific to this FMU include:

- Use prescribed fire, mechanical treatment, and selected naturally occurring wildland fire to reduce fuel accumulations and ladder fuels, creating less flammable fuel profiles.
- Design fire and non-fire fuel treatments to reduce flame lengths and increase the distance from surface fuels to the base of the tree crowns, reducing the potential for crown fire development.
- Design mechanical treatments to avoid reducing canopy cover by more than 30% over pre-treatment levels.
- Design economically efficient fuel treatments by utilizing existing barren areas, adjoining previous treatments, and utilizing resulting wood products whenever possible.
- Develop and maintain cooperative agreements and working relationships with adjacent private landowners and other agencies to enable execution of hazard fuel reduction projects and wildland fire use contiguously across jurisdictional boundaries.

**d. Management constraints affecting operational implementation**

- All management activities will consider safety of personnel and the public as the highest priority.
- Use Minimum Impact Suppression Tactics (MIST) where possible to minimize fire management impacts to resources.
- Prevent unacceptable impacts to T & E species, cultural resources, and sensitive sites.
- Meet Critical Aquatic Refuges And Riparian Conservation Area objectives.
- Protect Wild and Scenic River values.
- Design fuel treatments to meet LRMP land allocation guidelines.
- Smoke management and air quality will be considered during project planning to ensure projects are carried out in a manner consistent and compatible with the attainment of State and Federal air quality objectives.
- Visitors, businesses, and nearby communities will be notified of all fire management activities which have the potential to impact them.

**e. Historical fire occurrence**

Approximately 1009 wildfires have originated in FMU #2 between 1970 and 2003; 26% of the total fires on the Forest during that time period. The majority of the fires (64%) and acres burned in this FMU are caused by lightning. Of the human-caused fires, escaped campfires and smoking are the most prevalent in this FMU.

**f. The fire management situation**

**(1) Weather patterns influencing fire behavior**

Average annual precipitation over this FMU is approximately 40 inches, falling as rain (and snow above 4000 feet), primarily between October and April. The weather patterns influencing fire behavior are the same as those for FMU # 1, described in that section.

**(2) Fire season determination**

Fire season is usually terminated after the first inch or two of rain with predictions for continued storm systems entering the Forest area.

**(3) Fuel conditions in the FMU likely to influence fire behavior**

Vegetation is varied and includes areas of low-elevation chaparral, oak woodland, mixed conifer, ponderosa pine, and plantations of various ages. In many areas, surface and ladder fuels have increased to relatively high levels due various factors including fire exclusion, insect infestations, and management activities. These factors have also contributed to changes in species composition, such as in the mixed conifer belt, where white fir and incense cedar have replaced much of the pine component. The result in many places is a dense forest of fire-intolerant species with ladder fuels reaching from the surface to the crowns.

**(4) Fire regime alteration**

Fire regime I and II have been altered from their historic characteristics in most of this FMU simply by the fact that fires have been put out at the smallest possible size for the past 100 years. Because most fires were not allowed to spread naturally, the fire return interval (0-35 years) over much of the land base has been interrupted. In many areas, several fire return intervals may have been missed, leading to dramatic increases in fuel loading, ladder fuels, and to changes in species composition and stand structure. The degree of departure from historic conditions varies in this FMU between condition class 2 and 3.

**(5) Control problems and dominant topographic features**

The most significant features on the Forest that contribute to wildland fire control problems are steep east-west drainages covered with vegetation and aligned with predominantly west to southwesterly winds.

**(6) Other elements of the fire environment affecting management**

Other elements affecting fire management include remote clusters of residences surrounded by dense vegetation, longer travel times on dirt and gravel roads, and limited water sources. Recreational visitor use is high in this FMU throughout the year. Fuel treatment in this FMU has been increasing in recent years and several projects have been planned for the near future.

**3. FMU #3**

**a. FMU #3 – High Elevation (150,278acres)**

The dominant fire management objective in this FMU is to restore and maintain the characteristics and components of the historic fire regime. The primary strategies to achieve this objective are an appropriate management response to wildland fire with an increased emphasis on use of fire for resource benefit and selected hazard fuel reduction treatments where necessary.

**b. FMU characteristics**

The FMU ranges in elevation from approximately 5000 feet to over 9,700 feet. The unit is characterized by relatively infrequent fire of mixed severity, depending on site and climatic conditions (fire regime III)

**c. Strategic and measurable objectives specific to the FMU**

- Use naturally occurring wildland fire to maintain or restore the characteristics and components of the historic fire regime.
- Use prescribed fire and/or mechanical treatment where necessary to restore fuel profiles to those more characteristic of the historic conditions.
- Reduce the risk of insect/pathogen/drought-related mortality by managing stand density levels through vegetation treatments.
- Avoid treatment activities within CA spotted owl Protected Activity Centers (PAC) to the greatest extent feasible, not to exceed treatment of 5% of the acres per year or 10% per decade (on a bioregional scale).
- Develop and maintain cooperative agreements and working relationships with other agencies and adjacent private landowners to enable execution of wildland fire use and hazard fuel reduction projects contiguously across both private and National Forest system lands.

**d. Management constraints affecting operational implementation**

- All management activities will consider safety of personnel and the public as the highest priority.
- Use Minimum Impact Suppression Tactics (MIST) to minimize fire management impacts to resources.
- Prevent unacceptable impacts to T & E species, cultural resources, and sensitive sites.
- Meet Critical Aquatic Refuges and Riparian Conservation Area objectives.
- Protect Wild and Scenic River values.
- Design fuel treatments to meet LRMP land allocation guidelines.
- Smoke management and air quality will be considered during project planning to ensure projects are carried out in a manner consistent and compatible with the attainment of State and Federal air quality objectives.
- Visitors, businesses, and nearby communities will be notified of all planned and unplanned fire management activities which have the potential to impact them.

**e. Historical fire occurrence**

Approximately 769 wildfires have originated in FMU #3 between 1970 and 2002; 19% of the total fires on the Forest during that time period. Most of the fires in this FMU (73%) and acres burned are from lightning. Human-caused fires in this FMU start primarily from escaped campfires and smoking.

**f. The fire management situation**

**(1) Weather patterns influencing fire behavior**

Average annual precipitation over this FMU is approximately 45 inches, falling as rain and snow, primarily between October and April. The mountainous terrain of the FMU causes frequent cumulus cloud development during spring, summer, and fall, often producing lightning. Summer rain can occur occasionally, although usually in the form of brief, scattered showers accompanied by lightning. Fire danger is relatively lower in this FMU, with lower temperatures, higher maximum relative humidities, and higher fuel

moistures at these higher elevations. Over half of the FMU is in the Low Hazard area of the Forest.

**(2) Fire season determination**

Fire season is usually terminated after the first inch or two of rain with predictions for continued storm systems entering the Forest area.

**(3) Fuel conditions in the FMU likely to influence fire behavior**

At mid to high elevations (6,000 to 8,000 feet), red fir and Jeffery pine are predominate. In the sub-alpine areas, whitebark pine, juniper, lodgepole pine, and quaking aspen are found. The timberline lies above 9,000 feet. Fuel conditions vary throughout the FMU, with sparse fuels in rocky high elevations and pockets of heavier fuels in lower elevation forested areas.

**(4) Fire regime alteration**

Most of the upper elevation vegetation groups are in Condition Class I, with fire regime characteristics similar to those of the historic regime. Fire return intervals were historically longer at these elevations, so fewer intervals have been missed over the past century. Also, less management activity occurred in these more remote areas, which can influence vegetation and fuel accumulation.

Lower elevation vegetation types are primarily in Condition Class 2, with fire regime characteristics moderately altered from those of the historic regime. Due to past fire policy, fires outside the wilderness were not allowed to spread naturally. Consequently some fire return intervals have been missed, primarily in the lower elevations.

**(5) Control problems and dominant topographic features**

Control problems in this FMU are primarily due to the fairly continuous fuels over most of the area and exposure to higher winds. However control problems are tempered by lower fire danger due cooler temperatures and higher fuel moistures associated with higher elevations.

**(6) Other elements of the fire environment affecting management**

There are few roads other than two main highways passing through the FMU. Along these highways there are developed campgrounds, as well as summer home tracts and seasonal businesses. There are a few remote structures and private land blocks with limited access on forest roads. Summer and fall recreational use includes hiking, fishing, camping, and hunting and usually involves campfires.

**FMU #4**

**a. FMU #4 – Wilderness (239,050 acres)**

The dominant fire management objective in this FMU is to maintain the characteristics and components of the historic fire regime. The primary strategies to achieve this objective are an appropriate management response to wildland fire with a primary emphasis on the use of fire for resource benefit.

**b. FMU characteristics**

The FMU ranges in elevation from approximately 6000 feet to over 11,000 feet. All of the three wilderness areas on the Stanislaus National Forest lie within this FMU, as well as proposed wilderness areas. Most of the unit is characterized by



relatively infrequent fire of mixed severity, depending on site and climatic conditions (fire regime III). The brush-covered slopes in the upper elevation canyons of the FMU have historically had infrequent, stand-replacement fires (fire regime IV).

**c. Strategic and measurable objectives specific to the FMU**

- Use naturally occurring wildland fire to maintain or restore the characteristics and components of the historic fire regime.
- Manage fire in a manner that protects and preserves natural conditions and minimizes human impact.
- Develop and maintain cooperative agreements and working relationships with other agencies and adjacent private landowners to enable execution of wildland fire use and hazard fuel reduction projects contiguously across both private and National Forest system lands.

**d. Management constraints affecting operational implementation**

- All management activities will consider safety of personnel and the public as the highest priority.
- Use Minimum Impact Suppression Tactics (MIST) to minimize fire management impacts to resources.
- All National Forest lands within this FMU will be managed in accordance with the Wilderness Act of 1964 as amended.
- Prevent unacceptable impacts to T & E species, cultural resources, and sensitive sites.
- Meet critical aquatic refuges and riparian conservation area objectives.
- Protect Wild and Scenic River values.
- Design fuel treatments to meet LRMP land allocation guidelines.
- Smoke management and air quality will be considered during project planning to ensure projects are carried out in a manner consistent and compatible with the attainment of State and Federal air quality objectives.
- Visitors, businesses, and nearby communities will be notified of all planned and unplanned fire management activities which have the potential to impact them.

**e. Historical fire occurrence**

Approximately 622 wildfires have originated in FMU #4 between 1970 and 2003; 16% of the total fires on the Forest during that time period. Most of the fires in this FMU (73%) and acres burned are from lightning. Human-caused fires in this FMU start primarily from escaped campfires and smoking.

**f. The fire management situation**

**(1) Weather patterns influencing fire behavior**

Average annual precipitation over this FMU is approximately 50 inches, falling primarily as snow between October and April. The mountainous terrain of the FMU causes frequent cumulus cloud development during spring, summer, and fall, often producing lightning. Summer rain can occur occasionally, although usually in the form of brief, scattered showers accompanied by lightning. Fire danger is relatively lower in this FMU, with lower temperatures, higher maximum relative humidities, and higher fuel moistures at these higher elevations. Most of the FMU is in the Low Hazard area of the Forest.

**(2) Fire season determination**

Fire season is usually terminated after the first inch or two of rain with predictions for continued storm systems entering the Forest area.

**(3) Fuel conditions in the FMU likely to influence fire behavior**

At mid to high elevations (6,000 to 8,000 feet), red fir and Jeffery pine are predominate. In the sub-alpine areas, whitebark pine, juniper, lodgepole pine, and quaking aspen are found. The timberline lies between 9,000 to 11,000 feet. Fuel conditions vary throughout the FMU, with sparse fuels in rocky high elevations and pockets of heavier fuels in lower elevation forested areas.

**(4) Fire regime alteration**

Most of the upper elevation vegetation groups are in Condition Class I, with fire regime characteristics similar to those of the historic regime. Fire return intervals were historically longer at these elevations, so fewer intervals have been missed over the past century. Also, less management activity occurred in these more remote areas, which can influence vegetation and fuel accumulation.

**(5) Control problems and dominant topographic features**

There are few control problems in this FMU due to the discontinuous nature of the fuel bed over most of the area and the lower fire danger. The south portion of the FMU (Emigrant Wilderness area) is characterized by rock surrounding pockets of sparse fuels, limiting fire spread. The northern end of the FMU tends to have more continuous patches of heavier vegetation enabling fire spread over larger areas. Lakes, streams, and rocky peaks break up the fuel continuity throughout the FMU.

**(6) Other elements of the fire environment affecting management**

There no roads within this FMU, however an extensive trail system is used heavily through the summer months. There are two main highways passing adjacent to the FMU along which are developed campgrounds, summer home tracts, and seasonal businesses. There are a few remote historic cabins within the FMU. Summer and fall recreational use includes hiking, fishing, camping, and hunting and usually involves campfires.

## SECTION IV - WILDLAND FIRE MANAGEMENT PROGRAM COMPONENTS

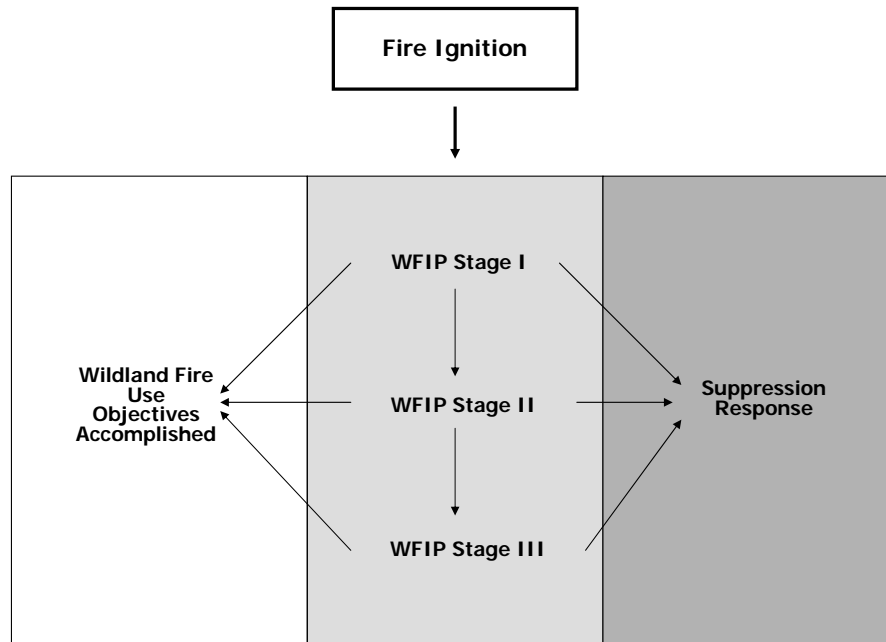
### **A. General Implementation Procedures**

Wildland fire implementation will be carried out in accordance with the Interagency Standards for Fire and Fire Aviation Operations (Redbook), the Incident Response Pocket Guide (IRPG), and the Wildland Fire Use Implementation Procedures Reference Guide. Review of these documents, as well as the Stanislaus National Forest LRMP and its amendments identifies priorities to be considered when determining the appropriate response to wildland fires.

Strategic priorities for wildland fire management on the Forest will be based on:

- Firefighter and public safety.
- Location and potential of the fire in relation to values at risk
- Current and predicted weather and fire behavior
- National and Regional preparedness levels, local fire activity, and availability of resources
- Wildland Fire Implementation Plan (WFIP), Stage 1 Assessment minimum requirement (Appendix H)

The Wildland Fire Implementation Plan Flowchart below (also located in Appendix H, Chapter 2) displays the options available and stages of implementation in wildland fire management.



The Appropriate Management Response (AMR) is any specific action suitable to meet Fire Management Unit (FMU) objectives. Typically, the AMR ranges across a spectrum of tactical options (from monitoring to intensive management actions). The range of appropriate management responses used on the Stanislaus National Forest will be based on public health and safety, risks to firefighters, FMU location and objectives, weather, fuel conditions, threats, values to be protected, and cost efficiencies.

### **Setting Out Implementation Procedures**

Wildland fires occurring in FMU #1 will generally be suppressed through initial attack, rather than managed for resource benefit. An exception to this may be applied in areas of FMU #1 surrounded by FMU #2, FMU #3, or FMU #4, provided there is written

agreement with the landowner or administrative agency to manage fire with the same objectives as the surrounding FMU. In accordance with current policy, human-caused fires occurring in any FMU will not be managed for resource benefit. A Wildland Fire Implementation Plan (WFIP) shall be initiated for all naturally occurring wildland fires. The Stage I: Strategic Fire Size-up and Decision Criteria Checklist provide the decision framework for selecting the appropriate management response. In cases where initial attack is the appropriate management response, the WFIP Stage I requirement may be satisfied through the initial fire information reported to the Emergency Command Center (ECC). In all other cases, the responding Incident Commander (IC) will be responsible for completing the Stage I document. An Incident Complexity Analysis (found in the IRPG) will be completed and documented for all wildland fire incidents.

The Strategic Fire Size-up and decision to manage a fire for resource benefit must be made within eight hours of assessment of a natural ignition as described in the Wildland Fire Use Implementation Procedures Reference Guide (Appendix H). If the decision is to continue management of the fire for resource benefit, the completion of Stage II is required within 48 hours. Stage III is required within 7 days of when the Periodic Fire Assessment indicates the need.

The Forest Supervisor has authority and responsibility for approving the WFIP and this authority may be delegated (FSM 5140.42.2). The appropriate line officer must assign a qualified Fire Use Manager (FUMA) for each wildland fire managed for resource benefits (FSM 5145.3). Refer to Appendix R for the FSM 5140-Fire Use Chapter. Refer to Appendix S for the WFIP implementation stages, requirement status, and completion timeframes.

Standard operating procedures have been developed for use in all aspects of fire management on the Stanislaus National Forest (Appendix F). In addition, specific implementation procedures required by the Thirty-Mile Hazard Abatement Plan are included in Appendix O.

## **B. Wildland Fire Suppression**

### **1. Range of Potential Behavior**

Potential fire behavior varies greatly across the Forest, ranging from fast-spreading brush fires, to high severity crown fires, to slow-spreading, low intensity surface fires. Hazard areas (low, moderate, and high) have been defined to coincide with expected fire behavior under typical summer weather conditions (Appendix M).

### **2. Preparedness Actions**

#### **a. Fire Prevention, Community Education, Community Risk Assessment, and Other Community Assistance Activities (Firewise)**

The Forest receives over two million recreation visitor days per year due to its proximity to major population centers. Visitors enjoy four seasons of recreation. The result of this high use is a high frequency of human-caused fires around popular recreation sites.

##### **(1) Annual prevention program**

The Forest focuses on public contact, issuing campfire permits, conducting home inspections, issuing burn permits, and participates in fire prevention education programs and events. The Forest's Fire Prevention Plan identifies the general and specific actions related to the fire prevention program.

The Stanislaus National Forest works cooperatively with other agencies and local Fire Safe Councils to provide education and fire prevention information to communities.

**(2) Special orders and closures**

Fire managers, law enforcement, and public affairs officers coordinate the implementation of special orders or closures. Cooperators and adjoining forests will be notified of special orders or closures by the Fire Management staff. The media will be notified by the Public Affairs Officer (PAO) of the special orders or closures. Refer to Appendix M for the Stanislaus National Forest fire restriction implementation criteria graph. All California Public Resources Codes (PRC) applicable to fire management activities and Code of Federal Regulations (CFR) related to fire prevention, detection, and preparedness will be enforced.

**(3) Industrial operations and fire precautions**

The sale administrator and/or fire prevention personnel will inspect the industrial operation for the required fire safety measures included in the contract. Project Activity Level and Sale Activity Level information is calculated using the charts in Appendix T, recorded daily, and broadcast via Forest Service radio (Forest Net).

**b. Annual Fire Training Activities**

Refer to Appendix J for the annual fire training activities, forest fire qualifications review committee, the red card system, and mandatory training needed annually.

**Qualifications and needs assessment**

The policy and guidelines in the 5109.17 Wildland Fire Qualifications Handbook, 310-1 Wildland Fire Qualifications Subsystem Guide, and the R-5 Fire Training Nomination and Selection Process provide for standardization of Forest training requirements and documentation. Contact the Emergency Command Center for the current red card qualifications list.

**c. Fire Season Readiness**

**(1) Annual preparedness check schedule**

The Forest Fire Management Officer conducts readiness inspections for all suppression and prevention modules. The readiness inspections include training documentation and folders, safety drills, knowledge of standard fire orders and watch out situations, and hoselay and line construction skills. Refer to Appendix J for a readiness inspection checklist.

**(2) Fire season start and stop criteria with typical dates**

The fire season criteria are based on the historical fire season duration. Approximately 90% of all fires occur between May 12th and October 20th. Refer to Appendix I for the historical fire season graph. Fire season typically starts in mid-May unless conditions warrant an earlier or later start. Fire season normally ends in October or November following a 1-2 inch rain event with more rain in the forecast.

**(3) Forest fire cache considerations including appropriate stocking levels and management**

The following standard caches and equipment are available for any incident in progress. All the caches are stocked to inventoried specifications.

- Regional Cache - located at the South Zone Cache in Ontario, Ca.
- Forest Cache - located at the Hotshot Base
- Communications Trailer - located at the Hotshot Base
- Engine, Crew, and Prevention Patrol Replacement Caches - Adequate to restock apparatus and crew for immediate initial attack capability and located at individual stations
- Hotshot Cache - Adequate to maintain crew availability and located at the Hotshot Base

**d. Detection**

**(1) Fixed detection**

This is primarily from established lookout towers, however, district fire managers use many unofficial observation points. The activation of the lookouts is dependent seasonal fire danger outlook and availability of funding. The financial operating plan identifies those that are activated on a fire season basis.

Lookouts:

- Duckwall
- Mount Elizabeth
- Smith Peak
- Pilot Peak.

Other Agency Lookouts:

- Mt. Zion CDF
- Crane Flat YNP
- Blue Mountain CDF

**(2) Aerial & Ground detection**

The Stanislaus contracts for a fixed wing aircraft during fire season to support the suppression effort by providing air attack as well as aerial observation and reconnaissance. The policy on aircraft use is found in the aviation management plan (Appendix E). In addition, a Call When Needed (CWN) helicopter can be used to supplement the aerial detection program. An important part of detection mobilization is ground detection. The Stanislaus National Forest Lightning Detection Plan is found in Appendix W. In addition, each ranger district annually updates a Lightning Detection Plan that organizes ground detection during lightning concentrations. This system can also be used for responding to increased person-caused ignitions.

**e. Fire Weather and Fire Danger**

Fire weather predictions are made based on fire weather information obtained from stations that coincide with National Weather Service forecast zones. Throughout all elevations on the Forest the NFDRS fuel model G best represents the area.

**(1) Weather Stations**

Station Name	Fuel Model	Elev.	Aspect	Slope Class	Climate Class	ERC*		BI *	
						90	97	90	97
Mt Elizabeth	G	4938	NW	3	3	84	89	82	91
Buck Meadows	G	3200	S	3	3	77	84	80	93
Pinecrest	G	5600	E	3	3	61	70	67	78
Blue Mountain	G	6067	N	3	3	84	95	87	100

\* Based on station location and quality of historical weather data, Mt. Elizabeth is the representative station for determining forest-wide weather indices used for dispatch levels, activity levels, and other decision criteria (See Appendix I).

## **(2) National Fire danger Rating System (NFDRS)**

NFDRS Fire danger indicators are used in determining dispatch levels, activity levels, fire restrictions, and as aids in decision-making for appropriate fire management response. Energy Release Components (ERC), live fuel moisture, and 1000-hour fuel moisture are used as a criteria for decisions based on weather trends because they are not subject to large daily fluctuations. Ignition Component (IC), Burning Index (BI), 10-hour fuel moisture, and windspeed are more likely to fluctuate daily and, therefore, are more useful in decisions involving short-term weather factors. The charts in Appendix I illustrate how NFDRS indicators are used on the Forest. The criteria levels were determined through analysis of historical weather data from Mt. Elizabeth weather station (1972-2004) using the FireFamily Plus software program.

### **f. Policy and Forest Service Manual and Handbook Direction**

#### **Module Leader Supervisor:**

Engine, Hotshot, Helitack, and other regular crews used for fire suppression must be trained to standards and accompanied by properly qualified supervisors. On the regular supervisor's day off, a qualified employee will serve as the alternate supervisor. If no qualified supervisor is present, the module is not available for fire dispatch.

#### **Module strength:**

- Engine module - Qualified supervisor, engine operator, trained crew. The recommended staffing for a Type III engine crew is five-person effective. A minimum of three persons, including a qualified engine boss/driver-operator is allowed for reasons such as limited funding, extended staffing, or drawdown. A Type IV engine crew is three-person effective.
- Hotshot crew and Type I handcrew - Minimum of 18 and maximum of 20 persons, including the superintendent, captains, and trained crew.
- Helitack module – Minimum five-person effective including a qualified supervisor, assistant supervisor, and trained crew.
- Handcrew – Qualified supervisor, assistant supervisor, trained crew, with a maximum of twenty-one people including a trainee.
- Fire use module - Qualified supervisor, assistant supervisor, trained crew.

#### **Minimum draw down:**

Minimum draw down of fire suppression resources for the Forest will consist of:

- 1 forest duty officer
- 2 field duty officers - minimum Type IV Incident Commander and Division Supervisor qualified
- 5 engines - Type III, minimum three-person effective
- handcrew - 20-person
- helicopter and module – minimum Type III and three-person effective

#### **Employee protection for all risk incidents:**

Personnel protective equipment and procedures for response to situations involving hazardous materials, medical emergencies and other non-fire incidents are found in the Stanislaus National Forest Safety and Health Desk Reference on file at each duty station (pending completion). Procedures and requirements regarding the use of Self-Contained Breathing Apparatus (SCBA) are found in the R5 SCBA Policy on file at each duty station.

**g. Aviation Management**

The Forest uses fixed and rotor wing aircraft for a variety of tasks including: fire suppression, personnel transport, recon/detection, project work, search and rescue, prescribed burning, photographic work and administrative use. Refer Appendix E for the Forest Aviation Management Plan that establishes policy and guidelines.

**3. Initial Attack**

Suppression actions range from aggressive initial attack to a combination of strategies to achieve confinement. All suppression actions will be consistent with firefighter, public safety, and values to be protected. The intensity of suppression action will be based on local and predicted conditions at the time of the fire. The Duty Officer or responding Incident Commander will determine the appropriate initial suppression action.

**a. Information Used To Set Initial Attack Priorities**

New suppression incidents on the Forest will be given top priority for resources to stop the spread at initial attack. A Computer Aided Dispatch system determines the type and number of resources necessary based on the dispatch level and location of the fire. Once on scene, the Incident Commander will adjust the resources as necessary.

**b. Criteria for the Appropriate Initial Attack Response**

The Forest is organized into initial attack response areas. Each area has been analyzed for the appropriate number and type of resources to be dispatched by the dispatch level rating. Refer to Appendix V for the response area map and run cards for each dispatch level, map and cards will be updated annually.

There are three levels of dispatch ratings (low, moderate, high) based on daily fire danger indices. Typically, an increase in the numbers of resources is dispatched as dispatch levels change from low to high. The table below illustrates how the dispatch levels are calculated from Ignition Component (IC) and Energy Release Component (ERC).

		IC				
		0 – 30	31 – 45	46 – 50	51 – 60	61 +
ERC	0 – 45	Low	Low	Mod	Mod	High
	46 – 70	Mod	Mod	High	High	High
	71 +	High	High	High	High	High

**c. Confinement as an Initial Action Strategy**

Confinement may be used as a strategy during initial attack actions resulting from the initial fire assessment in Stage I of the WFIP as long as it is not used to meet resource objectives. Confinement can also be a strategic selection through the Wildland Fire Situation Analysis (WFSA) process when a fire has exceeded or is expected to exceed extended attack capability or planned management capability. Prepare a WFIP or WFSA as the fire or management considerations



dictate. Refer to Appendix H for templates of the WFIP Stages in the Wildland Fire Use Implementation Procedures Reference Guide and to <http://www.fs.fed.us/fire/wfsa> for an electronic version of the WFSA.

**d. Response Times**

Individuals and modules with initial attack responsibilities shall be able to respond within two minutes of dispatch during normal duty hours.

**e. Restrictions and Special Concerns**

The table below shows the limitation on equipment use, aircraft use, chemical fire retardant, tracked equipment and other mechanized equipment for wilderness and special management areas on the Stanislaus National Forest.

A. Aerial applied retardant colored B. Aerial applied retardant clear C. Helicopter use D. Smokejumpers or cargo E. Use of Portable Pumps F. Use of chainsaws		G. Snag Felling H. Use of Motorized vehicles I. Hand constructed fireline J. Helispot construction K. Back firing L. Dozer constructed fireline or Trails											
Management Areas	Fire Management Tactics Needing Approval											Approving Official	
	A	B	C	D	E	F	G	H	I	J	K	L	
Wilderness													
Recommended Wilderness								H				L	Forest Supervisor
Wilderness			C		E	F				J	K		Forest Supervisor
Wilderness								H				L	Regional Forester
Wild and Scenic River													
Scenic River										J		L	Forest Supervisor
Wild River								H		J		L	Forest Supervisor
Special Interest Areas										J		L	Forest Supervisor
Research Natural Area										J		L	Forest Supervisor

**f. Social and Political Concerns**

Local resources are hired through Emergency Equipment Rental Agreements (EERA) on file at the Stanislaus Emergency Communications Center (ECC). Communication and coordination regarding local incidents is conducted with state and local fire agencies. Issues and concerns will be addressed by fire managers, line officers, and affected parties.

**4. Extended Attack and Large Fire Suppression**

- Extended attack occurs on wildland fires that cannot be controlled during the first suppression response action as determined by the Incident Complexity Analysis or where appropriate suppression management response has not been successful. This may also be applied to prescribed fires where the prescription or management actions were unsuccessful.

**a. Determine Extended Attack Needs**

If the fire cannot be controlled with the initial suppression response, the incident should be considered in an extended attack mode. Transition from initial attack (IA) to extended attack (EA) when:

- Attempts to complete an IA incident with normal tactics are unsuccessful.
- Management complexity increases beyond current capability.
- Current and/or predicted resource availability will not achieve tactical objectives.

- Predetermined decision points, or established thresholds dictate impending EA actions. These could be perimeter limits, drought indices, or fire behavior indicators, all of which are locally determined and reflect measurable fire line conditions.
- Information is sporadic, incomplete and not understood by all.
- Crew, Supervisory Control and Management Oversight Levels meet or exceed predetermined levels. These levels are based on locally established fire danger levels. These supervisory controls will be maintained at the 3-5 span of control and qualifications will match current and expected complexity. Management oversight will be conducted by qualified personnel and should be ordered as fire danger thresholds are potentially met to ensure adequate staffing prior to fire occurrence.

When complexity and span of control exceed the capabilities of the extended attack, a WFSA will be developed.

**b. Implementation Plan Requirements - WFSA Development**

The WFSA documents the decision making process for determining the appropriate suppression action and estimated cost of an incident, which is expected to, or has exceeded, the planned management action (FSM 5131.1). The WFSA will also aid in the development of strategies and suppression tactics, considering economics, resource loss, complexity, and probability of success. A template for the WFSA can be found at <http://www.fs.fed.us/fire/wfsa>. The WFSA computer program and supplemental information, including a sample WFSA, has been distributed to individuals with line officer responsibilities. Additional copies of this information can be obtained from the Supervisor's Office fire staff.

**c. Complexity Decision Process for Incident Management Transition**

The Stanislaus National Forest Incident Checklist and Transition Guide (Appendix N) should be used to document all information regarding initial attack, incident growth, and incident transition. The Extended Attack Transition Analysis Checklist on the above-mentioned form can be used to evaluate the need for a Type I or II Incident Management Team. When the decision has been made to order a Type I or Type II Incident Management Team to take over management of a wildland fire, the responsible Line Officer or that official with jurisdictional and/or protection authority for the area on which the incident occurs shall ensure that the designated Incident Commander is briefed regarding wildfire suppression objectives, considerations, and constraints. Refer to Appendix N for an outline.

**d. Unit Example of Delegation of Authority for the Incident Commander**

A delegation of authority letter (FSM 1230) outlining authority and responsibility shall be issued by the appropriate line officer to the assigned Incident Commander or Fire Use Manager. Refer to Appendix F for the Delegation of Authority templates.

**5. Exceeding Existing WFIP - Selecting a New Strategy**

When wildland fires cannot be controlled during the initial suppression action or when the appropriate management response in a fire use area has not been successful, the WFIP is considered to have been exceeded. The WFSA is initiated at this stage. Initiation of the WFSA is also necessary when implementation of a prescribed burn plan

is not successful and must be suppressed. Appendix I contains information that can be used in WFSA preparation on the Forest.

#### **6. Minimum Impact Suppression Tactics (MIST) Requirements**

Minimum Impact Suppression Tactics (M.I.S.T.) will be used for managing fires in all wilderness areas and where possible in all other areas. Refer to Appendix G for the M.I.S.T. guidelines.

#### **7. Other Fire Suppression Considerations**

The Stanislaus National Forest Incident Checklist and Transition Guide (Appendix N) should be used to document all information regarding initial attack, incident growth, and incident transition. Agency administrator and incident commander responsibilities are outlined in the Thirty-Mile Hazard Abatement found in Appendix O.

Other considerations include:

- Communications – procedures outlined in the Stanislaus National Forest Communication Plan will be used for all forest incidents (Appendix X).
- Hazmat – follow procedures in the Hazmat Contingency Plan (Appendix Y)
- Search and Rescue – follow procedures outlined in the Stanislaus National Forest Search and Rescue Plan (Appendix Z).

### **C. Wildland Fire Use**

Wildland fire use refers to the management of naturally ignited wildland fires to accomplish resource management objectives.

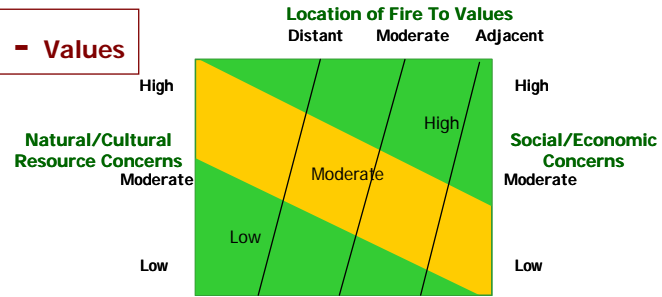
#### **1. Objectives**

The objectives are to use fire from natural ignitions in a safe, carefully planned, and cost effective manner to benefit, protect, maintain, and enhance National Forest System resources, to reduce future suppression costs, and, to the extent possible, to restore natural ecological processes and achieve management objectives adopted in approved Forest land and resource management plans (FSM 1920, 5140.2).

#### **2. Factors Affecting Decision Criteria for Wildland Fire Use**

The ability to adequately predict long-range fire behavior is a critical decision factor in assessing fire risk and complexity. Computer programs and tools such as RERAP, BEHAVE, Fire Family Plus, and Farsite can be used to help assess long-range fire behavior. Decision elements outlined in chapter 3 of the Wildland Fire Use Implementation Procedures Reference Guide (Appendix H), the Wildland Fire Relative Risk Assessment (below), Historical ERC Trends, and Historical Fire Season Duration (Appendix I) will also aid in assessing fire risk and complexity.

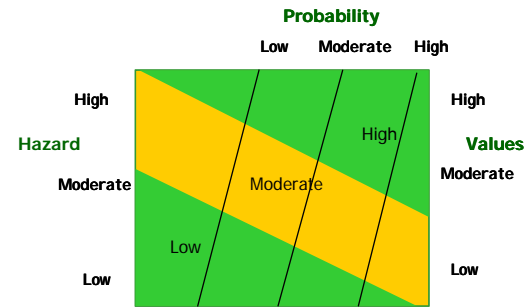
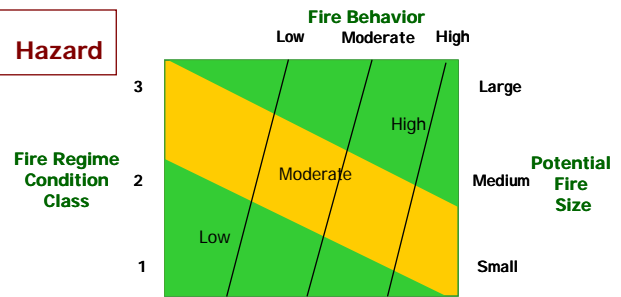
**1 - Values**



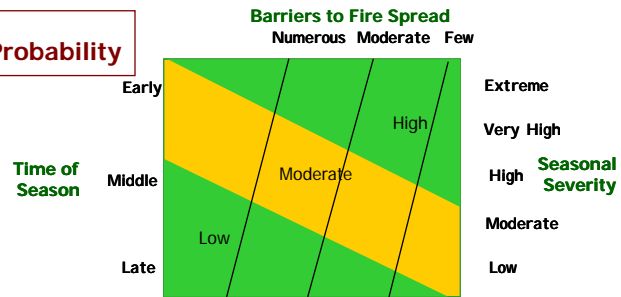
**Wildland Fire Relative Risk Assessment**

**4 - Relative Risk**

**2 - Hazard**



**3- Probability**



**Complete Steps 1 -3:** Connect the left and right variables with a line. At the top of the chart, select the appropriate value; follow the line beneath this value down to its intersection with the line connecting the left and right variables. Take results as inputs to Step 4.  
**Complete Step 4:** Read the relative risk from the background area where the intersection occurs.

**3. Preplanned Implementation Procedures**

Wildland fires occurring in FMU #1 will generally be suppressed through initial attack, rather than managed for resource benefit. An exception to this may be applied in areas of FMU #1 surrounded by FMU #2, FMU #3, or FMU #4, provided there is written agreement with the landowner or administrative agency to manage fire with the same objectives as the surrounding FMU. In accordance with current policy, human-caused fires occurring in any FMU will not be managed for resource benefit. A Wildland Fire Implementation Plan (WFIP) shall be initiated for all naturally occurring wildland fires. The Stage I: Strategic Fire Size-up and Decision Criteria Checklist provide the decision framework for selecting the appropriate management response. In cases where initial attack is the appropriate management response, the WFIP Stage I requirement may be satisfied through the initial fire information reported to the Emergency Command Center (ECC). In all other cases, the responding Incident Commander (IC) will be responsible for completing the Stage I document. An Incident Complexity Analysis (found in the IRPG) will be completed and documented for all wildland fire incidents.

The Strategic Fire Size-up and decision to manage a fire for resource benefit must be made within eight hours of assessment of a natural ignition as described in the Wildland Fire Use Implementation Procedures Reference Guide (Appendix H). The completion of Stage II is required within 48 hours. Stage III is required within 7 days of when the Periodic Fire Assessment indicates the need.

#### **4. Impacts of Plan Implementation**

Impacts to air quality, wildlife, botany, heritage resources, Forest visitors, and possible economical impacts to resort and campgrounds may occur. Resource management personnel will be involved as needed in development of mitigation measures for potential impacts. The WFIP for each individual fire will address these impacts and necessary mitigation measures.

#### **5. Required Personnel**

Refer to Appendix K for qualified personnel.

#### **6. Public Information**

Public information and education will be an important part of the management of wildland fire use incidents. The WFIP for each individual fire will address the potential impacts to the public and communities and provide an information plan.

#### **7. Records**

A documentation package will be maintained by the FUMA or assigned individual for each wildland fire use incident. The contents of the package will vary with size and complexity of the incident and should include as a minimum:

- Approved planning documents that guided management actions (for example, the wildland fire implementation plan and the wildland fire situation analysis). Include all amendments and revisions.
- Monitoring reports, summaries of findings, and a summary of all monitoring activities, including a monitoring schedule.
- Periodic fire assessment and certification documents.
- Funding codes and cost accounting.
- Permanent perimeter map of all fires greater than 10 acres for inclusion in the official fire history archives and a point location map of all smaller fires.
- Other information as appropriate for the situation, such as photo points and digital photos.

#### **8. Cost Tracking**

A management code will be assigned by the ECC for each wildland fire use incident to track costs.

### **D. Prescribed Fire**

#### **1. Planning and Documentation**

##### **a. Annual Activities**

The annual activities are listed below:

- Inventory and identify fuel treatment units
- Participate in interdisciplinary teams (IDT)
- Complete required NEPA documentation
- Prepare project plans and layout
- Prioritize proposed projects
- Prepare and approve burn plans
- Obtain burn permits
- Implement projects
- Award contracts
- Complete monitoring requirements
- Report accomplishments

## **b. Long-Term prescribed fire strategy as it relates to each FMU**

The long-term prescribed fire program varies in purpose and scope with each FMU.

- FMU #1 - prescribed fire is applied to enhance fire-fighting capability in strategic areas and provide a buffer around communities. The priorities for prescribed fire treatment in FMU #1 are areas where mechanical treatment is prohibited, defensible fuel profile zones (DFPZ), and areas in condition class 2.
- FMU #2 - prescribed fire is used on a relatively larger scale to lower or maintain fuel profiles to reduce the damaging effects of fire. The priorities for prescribed fire treatments in this FMU are maintenance of previously treated areas, high hazard areas in condition class 2, and as a follow-up entry to mechanical treatment in condition class 3 areas.
- FMU #3 - prescribed fire is used with wildland fire use primarily to maintain condition class 1 areas and to reduce fuel profiles in areas of condition class 2 and 3.
- FMU #4 - prescribed fire treatment is not currently planned for this FMU. Wildland fire use is the primary strategy for maintaining the components of the historic fire regime.

FMU #1 – Adhere to standards and guidelines for the urban wildland intermix zone.

FMU #2 and #3 – Adhere to standard and guidelines for the specific land allocation. Refer to Appendix A for the crosswalk of vegetation and fuels treatment standards and guidelines developed by the Forest FIT team.

## **c. Numbers of qualified personnel**

Training and qualifications procedures are outlined in the NWCG 310-1, FSM 5140, and FSM 5109.17. The Forest training officer maintains the qualification and training database. Burn projects will only occur when there are sufficient and qualified personnel on scene as specified in the burn plan. The list of persons qualified for prescribed fire is in Appendix K.

## **d. Define the weather, fire behavior, and fire effects monitoring**

A fire prescription is outlined in the burn plan. The prescription includes parameters for fire behavior and environmental variables. Weather observations are monitored at the project area by manual weather collection of temperature, relative humidity, wind speed and direction, and cloud cover, or by remote automated weather station (RAWS). The RAWS collects the dry bulb, wet bulb, relative humidity, calculated 10-hr. fuel moisture, wind speed and direction, minimum and maximum temperature and humidity (past 24 hours), and rainfall. A post burn summary and checklist form located in the burn plan is completed to determine if the resource goals and air quality objectives were met. A risk assessment is included in the burn plan to address and mitigate potential hazards. The measurable objectives identified in the FMU are verified and monitored through the burn plan as described above.

The prescribed fire manager and/or burn boss will maintain a burn project folder that will contain the following documentation:

- Approved burn plan, smoke plan, and job hazard analysis
- Go-no-go checklist

- Post burn monitoring and accomplishment forms
- Burn organization chart
- Maps
- Weather files containing: spot request forms, daily spot weather forecasts, RAWS weather data, on site observation forms, smoke monitoring and dispersion observations

**e. Provide the format for critiques of prescribed fire projects**

Analysis of burn plan objectives and tolerable deviations will be used to critique prescribed burn projects.

**f. Describe reporting and documentation for accomplishments**

Prescribed fire accomplished acres are reported to the Emergency Command Center (ECC) daily and recorded in a tracking database. All fuel treatment acres accomplished by fund type are summarized in the Management Attainment Report (MAR) each fiscal year. Daily summaries of burned acres (prescribed fire and wildland fire use) are also reported to the county Air Pollution Control District (APCD) offices each calendar year. Report fuel treatment accomplishments in accordance with MAR procedures (FSH 6509.11k).

**g. Develop a historic fuel treatment map of post burn activities that affect planned actions**

See Appendix U for a map of past fuel treatments.

**h. Prescribed fire burn plan format**

Burn plans will be completed using the standard R-5 format consistent with the direction found in FSM 5140 and Chapter 4 of the Implementation Guide. Refer to Appendix Q for the standard R-5 format with instructions. A blank form is filed electronically on the corporate server at the following location:

K:\rp\fam\5100\_fire\_mgmt\5140\_fire\_use\planning\general\r5std\_format.doc

**2. Exceeding Existing Prescribed Fire Burn Plan**

Prescribed burns exceeding the parameters of the plan will be suspended or suppressed. Reporting of the escaped fire will be consistent with the direction provided in FSM 5140. Fire suppression actions will be the same as described in the Wildland Fire Suppression section of this FMP (Section IV.B). A WFSA will be initiated as described in Section IV. B.4.a & b of this document. Refer to the Contingency Plan section of the Prescribed Burn Plan if further information is needed to complete the WFSA.

**3. Air Quality and Smoke Management. -add EBAMS**

**a. Describe pertinent air quality issues**

The primary air quality issues relate to local air district coordination and mitigation of negative air quality effects from various smoke sources. Sources of smoke on the forest include agricultural burning in the valley to the west of the Forest, burning of forest debris by various agencies and the public, woodstoves, campfires, and wildland fire. Smoke from some of these activities can also travel to neighboring forests and states under certain atmospheric conditions. Recent efforts have focused on information sharing between burners and air regulators, consistency between air districts, and stronger coordination with the California Air Resources Board.

The goals of air resource management on the Forest are to minimize air pollutants caused by Forest management activities and cooperate with California Air Resources Board and applicable Air Pollution Control District's in monitoring and regulating Forest air pollution sources. Emphasis will be placed on air quality-related values in Class I airsheds and in communities. The objective is to maintain or improve air quality to meet requirements under the Clean Air Act. Mitigating the effects of fire and fuels management on air quality include "remediating impairment of visibility in mandatory Class I federal areas which impairment results from manmade air pollution" (Clean Air Act Visibility Protection, Subpart II, 42 U.S.C. & 7491 et seq.)

**b. Location of Class I airsheds**

Class I airsheds exist in the Emigrant Wilderness, Carson-Iceberg Wilderness, Mokelumne Wilderness, and Yosemite National Park.

**c. Description of pre-identified smoke sensitive areas**

The communities and recreation areas within and adjacent to the Stanislaus National Forest are the pre-identified smoke sensitive areas.

**d. Local and Regional restrictions and procedures**

A Smoke Management Plan is required for all Prescribed Burn and Wildland Fire Use projects greater than 10 acres or projected to exceed 10 acres in size. An example of a Smoke Management Plan, Tuolumne County Air Pollution Control District Smoke Management Plan template, and air quality monitoring restrictions and procedures is located in Appendix P.

**E. Non-Fire Fuel Applications**

The Forest applies a strategic approach for locating both prescribed fire and non-fire fuel treatments across broad landscapes. Urban-wildland intermix zones have the highest priority for hazard fuel reduction treatments. Old Forest emphasis areas characterized by high fire hazard and risk have the next highest priority for fuel treatments, followed by General Forest with high hazard and risk. Fuel treatments within sensitive habitats are approached more cautiously, and the intensity is limited within Old Forest emphasis areas, PACs, California spotted owl home range core areas, and stands characterized by large trees and moderate to dense canopy cover.

**1. Mechanical Treatment and Other Applications.**

The Forest utilizes a variety of equipment for non-fire applications. Some of the methods used are: biomass, thinning, lop and scatter, shredding, mastication, goat grazing, and chipping. These treatments are especially useful in areas where prescribed fire is not feasible or in smoke-sensitive areas.

**a. Describe annual activities to prepare for and implement the program**

The annual activities are listed below:

- Inventory and identify fuel treatment units
- Participate in interdisciplinary teams (IDT)
- Complete required NEPA documentation
- Prepare project plans and layout
- Prioritize proposed projects based on current year budget allocation
- Implement projects
- Award contracts
- Complete monitoring requirements
- Report accomplishments



**b. Equipment and seasonal use restrictions as it relates to each FMU**

The Sierra Nevada Forest Plan Amendment establishes land allocations with specific guidelines for limited operating periods (LOPs) and fuel treatments (Appendix A). Project Activity Level (PAL) restrictions due to fire danger are based on the chart in Appendix T.

**c. Documentation requirements for monitoring**

The fuel project manager will monitor the measurable objectives identified in the FMUs and will maintain a project folder that will contain the following documentation:

- Approved NEPA documentation
- Maps
- Cost accounting
- Completed accomplishment information

**d. Provide the format for critiques of mechanical treatment projects**

Analysis of the project objectives will be used to critique mechanical treatment projects.

**e. Describe cost accounting**

Project managers will account for costs using the appropriate job codes.

**f. Describe reporting and documentation requirements**

Non-fire accomplishments are reported to the S.O. Fire/Fuels staff monthly and recorded in a tracking database. All fuel treatment acres accomplished by fund type are summarized in the Management Attainment Report (MAR) each fiscal year (FSH 6509.11k).

**g. Provide the annual planned project list**

Refer to Appendix U for the current year planned program of work.

**F. Emergency Rehabilitation and Restoration**

Fires greater than 300 acres in size will be evaluated by a Burned Area Emergency Rehabilitation (BAER) Team using direction found in the Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook (FSH 2509.13).

## **SECTION V - ORGANIZATIONAL AND BUDGETARY PARAMETERS**

### **A. Current fiscal year budget and the ability to support planned and unplanned actions**

The Forest has been using the National Fire Management Analysis System (NFMAS) for out year budgetary planning. NFMAS is a formal process that provides a consistent and objective method for estimating both the effectiveness and the economic efficiency of alternative fire management programs. NFMAS analysis requires compiling and summarizing historical weather and fire data to determine the most efficient level (MEL) of fire management organization. Refer to Appendix L for documentation of the MEL organization and budget and the planned expenditure of the current year budget allocation.

Within the next year, the Forest will begin implementing a new fire management planning process called Fire Program Analysis (FPA). The FPA process will eventually replace the NFMAS process for outyear budgetary planning and will be consistently applied across all federal agencies grouped by geographic location into fire planning units (FPU). The Stanislaus National Forest is within California FPU #7, which also includes the Sierra National Forest, Yosemite National Park, San Luis National Wildlife Refuge, and the southern half of the Folsom District of the Bureau of Land Management.

The FPA process uses a non-monetary system to determine the relative importance of fire protection and benefits of fire use across the FPU landscape. This determination will be used to optimize the amount and type of resources necessary, based on historic fire and weather, to achieve the objectives of the FPU in the most cost effective manner at a given budget level.

### **B. Organization chart supported by the current fiscal year budget**

Refer to the organizational chart in Appendix L.

### **C. Cooperative agreements and interagency contacts**

The ability to execute the daily emergency management of incidents in a timely and cost efficient manner on the Stanislaus is a direct result on how well we work with our cooperators. The location of the Stanislaus National Forest results in an aggressive program of fire protection and public safety. The Forest maintains mutual aid through the "Four Party" and "Five Party" agreements. The Cooperative Fire Protection Operating Plans and contact list binder is located in the Forest fire management office.

The scope of the cooperative effort on this Forest is as follows:

- California Department of Forestry and Fire Protection- South Sierra and North Sierra Regions
- California Department of Forestry and Fire Protection- Tuolumne-Calaveras Ranger Unit
- California Department of Forestry and Fire Protection- Madera-Mariposa Ranger Unit
- Bureau of Land Management
- Yosemite National Park
- Southern Sierra Province (Sierra National Forest, Sequoia National Forest)
- Eldorado National Forest
- Humbolt-Toiyabe National Forest
- Tuolumne/Calaveras County Fire Departments
- Volunteer Fire Departments
- Local Fire Districts
- National Weather Service
- Local area Law Enforcement agencies
- Air Pollution Control Districts: Tuolumne County, Calaveras County, Mariposa County, and Great Basin Unified

**D. Equipment rental agreements**

The updated list of emergency rental agreements is located in the Emergency Command Center office.

**E. Contract suppression and prescribed fire resources**

The updated list of emergency contracted equipment is located in the Emergency Command Center office.

## **SECTION VI - MONITORING AND EVALUATION**

### **A. Annual Monitoring Requirements**

Monitoring and evaluation play a central role in adaptive management and are conducted for three primary purposes:

- To ensure appropriate implementation of standards and guidelines (implementation monitoring)
- To track resource conditions and mark trends toward or away from desired conditions (status and change monitoring)
- To deal with uncertainties regarding the effectiveness and effects of land management activities (cause and effect monitoring)

Information gained through monitoring and evaluation will be used to adjust management direction in the future, where warranted, and inform future LRMP amendments and revisions.

The Forest implementation and effectiveness monitoring will tier to the Adaptive Management Strategy. Refer to Appendix C of this plan for Fire and Fuels – Adaptive Management Strategy. Information is also located in the Appendix E of the SNFPA EIS.

### **B. Reporting Requirements**

Annual reporting requirements include:

- Management Attainment Report (MAR)
- Brush Disposal (BD) fund balance
- Individual fire reports (5100-29)
- Annual fire report
- Agricultural burning summary reports to each Air Pollution Control District
- National Fire Plan Information Database
- Training accomplishments
- Accident reports
- Aircraft summaries
- Current year budget summary (5100-2)

## **APPENDICES**

- A. Standards and Guidelines/ Desired Conditions
- B. Fire and Fuels Management Strategy
- C. LRMP Goals and Objectives for Fire and Fuels/ Adaptive Management Strategy
- D. Definitions/Descriptions of Fire Regimes & Condition Class
- E. Aviation Management Plan
- F. STF Fire Management Standard Operating Procedures
- G. Minimum Impact Suppression Tactics
- H. Wildland Fire Use Implementation Procedures Reference Guide
- I. Historical Fire Season Duration & Historical ERC Trends
- J. Annual Fire Training Activities and Fire Readiness Review Checklist
- K. Wildland Fire Use and Prescribed Fire – Qualified Personnel
- L. Organizational Chart/ NFMAS Data
- M. Fire Restriction Implementation Criteria
- N. Large Fire Transition/ Ordering Incident Teams
- O. Thirty-Mile Hazard Abatement Responsibilities/ Pocketcard
- P. Smoke Management Plan, Tuolumne County Air Pollution Control District Smoke Management Plan
- Q. Prescribed Fire Burn Plan
- R. FSM 5140 – Fire Use
- S. WFIP requirements
- T. Project Activity Level Chart
- U. Fuel Treatments, Past and Current
- V. Response Area Map and Runcards
- W. STF Lightning Plan
- X. STF Communications Plan
- Y. STF Hazmat Contingency Plan
- Z. STF Search and Rescue Plan