Prefire Management Initiative

Introduction

Over time, all California's wildlands *will* burn. However, various factors contribute to increased risks that fires will occur; that they will be larger, more intense and more damaging; that fighting them will cost more; and that they will take a higher toll (in economic and non-economic terms) on the people of California and, in some cases, on stakeholders from a broader arena, such as federal land and resources owned by all United States citizens.

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CDF proposes a prefire management budget change proposal (BCP) to reduce wildfire damage fires andcosts of suppressing fires. The prefire management initiativeincludes a systematic application of risk assessment, fire safety, fire prevention and fire hazard reduction techniques.

The state's extreme diversity and complex pattern of land use and ownership require equally diverse and complex techniques to effectively manage the fire environment. Some options are the responsibilities of state, federal and local governments; others fall to private citizens or businesses; most are joint responsibilities. Custom strategies for each situation can be created through combinations of prefire management, suppression, and postfire management. They should lessen the costly impacts of future wildfires and offer alternatives to continually increasing suppression forces.

Some background: Vegetation in California's Mediterranean climate was dominated by a complex succession ecology of more, smaller and less damaging wildfires before European settlement began. The evolution of fire suppression since then has produced these results:

- Increasing life, property, resources and ecological losses.
- Difficulty of fire suppression, increasing safety problems for firefighters and reducing productivity by fire crews on perimeter lines
- Longer periods between recurring fires in many vegetation types by a factor of 5 or more. For Ponderosa pine vegetation areas on certain western Sierra slopes,

for example, the average period between fires is 175 years, where it once was 30 to 40 years.

- Increasing volumes of fuel per acre.
- Increasing fire intensities.
- Increasing taxpayer costs and asset losses.

Other factors also contribute to a complex fire environment prone to large disastrous wildfires:

- More people are living and recreating in wildland intermix areas. That adds to the demand for — and value of — finite natural resources in the wildland, and increases ignition sources, resulting in more fires.
- California's extended drought increased the dead and dying vegetation, the volumes of drier fuel per acre, and the number of days annually of lower humidity and fuel moisture.
- Continued set-asides of federal lands, without an aggressive prefire management program, limit fuels management and contributes to the annual fuel loading increases. (Supporting data on increased fuel volume is contained in the USDA Forest Service draft environmental impact report on the California spotted owl.)

Even when fires are not necessarily larger, they are burning more intensely. They are more costly to control and create greater risk of losses to the resources, improvements and people in wildland areas; examples include fire storms in the Oakland Hills (1991), Southern California (1993) and Marin County (1995). In the 10 days between October 25 and November 3, 1993, wind-driven wildland fires consumed over 189,000 acres of valuable Southern California watershed and wildlife habitat. It also damaged or destroyed 1,260 structures, claimed three lives and injured hundreds of people. The cost of suppressing these fires is estimated at nearly $60 million; the damage will exceed $1 billion.

This new fire environment requires the combination of new partnerships and strengthening old ones to provide a fire protection system that will ensure natural resource protection and provide for an acceptable level of public health and safety. CDF's new system emphasizes prevention and minimizing risk as well as trying to make better use of existing resources because of shrinking public revenues.

The prefire management initiative:

- addresses the components of fuel loading, fuel arrangement, land-use patterns, building construction standards and ignition management;
- gives priority to high-risk, high-value areas most likely to burn under severe fire weather conditions; and
- focuses effort by more aggressively emphasizing fire prevention, vegetation management, land-use planning and forest health programs.

Key Components of Prefire Management

Fire Prevention

CDF addresses fire prevention through its engineering, education and law enforcement programs. Their shared objective is reduced fire hazard and risk. This is more narrowly addressed in a planning process based on ignition management and loss reduction; it includes biomass harvesting, fire resistant landscaping, mechanical and chemical fuels treatments, building construction standards, infrastructure, and land use planning. The basic planning unit is the fire management analysis zone (FMAZ).

Ignitions are managed by preventing fires.

Ignitions are managed by preventing fires likely to exceed the capabilities of available attack forces and could result in large damaging fires. Loss reduction is integral to mitigating large and damaging fires. Significant improvement can be attained by reducing hazards (fuel buildups around structures and communities) and working with private industry to implement hazard reduction plans around residential developments in the rural-urban intermix areas.

Successful programs permit more effective utilization of CDF's initial attack forces and enhance firefighter safety.

Vegetation Management

An average of 30,000 acres a year have been treated with prescribed fire.

Since 1981, approximately 500,000 acres — an average of 30,000 acres a year — have been treated with prescribed fire under the vegetation management program. Prescribed fire has been the means of fuels management on virtually all that land. However, a program review has identified needed changes.

The typical vegetation management project in the past targeted large wildland areas without assessing all of the values protected. Citizen and firefighter safety and the creation of wildfire safety and protection zones are a major new focus of the new prefire management program.Now, increasing population and development in state responsibility areas often preclude the use of large prescribed fires. (They remain an option inless populated areas.)

The vegetation management program will shift emphasis to smaller projects closer to the new developments, and to alternatives to fire, such as mechanical fuel treatment. In some instances the program may be limited to simply providing

Prescribed fire projects such as this reduce risks to life and assets. (Photo courtesy of San Francisco Chronicle)

wildland safety and protection zones around high value assets.

There also will be a new emphasis on quality over quantity of acres treated. Projects will be chosen that will provide the most cost-effective means of protecting assets at risk from major disastrous wildfires.

The Board of Forestry and the State Air Resources Control Board will develop a joint policy on the use of prescribed fire. The policy will recognize the value of prescribed fire in reducing the emissions of wildfire during the summer high-air-impact period.

Fire-Safe and Land Use Planning

Population increases create wildfire problems.

Population increases in wildland areas have raised strategic concerns about wildfire protection. Clearance laws, zoning, and related fire safety requirements implemented by state and local authorities need to address these factors:

- **Fire-resistant construction standards:** We can no longer view a wildland fire as affecting only watershed, wildlife and vegetation resources; we must now consider their effect on people and their structures. Further, this increase in people and structures have provided increasing ignition sources for fire which, due to their proximity, can spread into the wildland. Building construction standards that encompass such items as roof covering, opening protection and fire resistance are designed to both protect the structure from external fires and to contain internal fires for longer periods.
- **Hazard reduction near structures** (defensible space): The public image of defensible space as part of prefire management should be expanded to include such immediate benefits as improved aesthetics, increased health of large remaining trees and other valued plants, and enhanced wildlife habitat. The use of defensible space that provides landscape naturalness, along with its compatibility with wildlife, water conservation and forest health, should be emphasized.
- **Infrastructure:** Effective fire protection in the intermix cannot be accomplished solely through the acquisition of equipment, personnel and training. The area's infrastructure also must be considered during the formulation of development plans. Specific fire hazard areas should be evaluated and reasonable safety standards adopted, covering such elements as adequacy of nearby water supplies, routes or throughways for fire equipment, addresses and street signs, and maintenance.

The ultimate objectives for fire-safe planning and construction are (1) improve the ability of communities and other high value assets that will survive a large, high-intensity wildfire with minimal fire suppression effort and (2) provide for improved citizen and firefighter safety.

Forest Health

Years of aggressive fire protection and timber management have dramatically changed the character of California's forests. Pre-European Sierra forests were open,

park-like pine and fir forests that were subject to frequent low-intensity fires. Current forests are smaller, younger, and more dense; they have high fuel loads and are prone to very intense fires. Developments have been superimposed in many of these forest types. The resulting fire problem, in critical fire weather periods, is a difficult control situation for any fire agency.

CDF resource management programs are aimed at keeping forest fuel values low enough that wildfire can be contained. Densities of dead and dying trees, understory vegetation and development must be managed. This includes advice to landowners on timber management, environmental protection, fuels treatments, prescribed fire treatments and development planning.

CDF is in the unique position to provide these services to forest landowners and communities. It also includes the proper treatment of stands during commercial timber harvesting. The Forest Practice Act and rules of the Board of Forestry have as their objective reducing the risks of wildfire costs and losses in timber harvest areas.

The objective is to service a large high-intensity wildfire without direct fire protection.

Prefire Management as Part of the Fire Plan

The prefire management initiative is a blend of existing CDF programs — fire prevention, land-use planning, vegetation management and forest health improvement, with risk assessment and systems analysis expertise. The initiative is being implemented in 1996 in the Nevada-Yuba-Placer, Tuolumne-Calaveras and Riverside ranger units. Beginning July 1, 1996, an additional 27 months will be required to expand the prefire management program to all 22 CDF ranger units and the six contract counties.

GIS maps will be provided for each asset at risk, with overlays showing level of service success and failure rates; hazards; asset values; and severe fire weather days by year. Each criterion will be summarized on the GIS maps and categorized for high, medium or low risk. After the risk areas are mapped, separate GIS maps will be generated that identify high-risk areas, for development of prefire management projects.

At the community level, representatives of all stakeholder groups for each asset at risk will be contacted and invited to a meeting. The purpose is to acquaint the stakeholders with the process and bring their expertise and knowledge to bear on the asset maps that identify risk levels. They will review the level of service that applies to the location of the assets. Areas where they find the level of service unacceptable will be identified on the hazard and risk maps for later use.

Ranger unit personnel will provide ground review and validation of the high-risk prefire management areas; maps will be corrected to reflect the need on the ground. New high-risk GIS maps will be generated for use in developing prefire management projects. Ranger unit staff will define

The fire management projects will reduce total costs and losses of a major fire burning through the area during a period of severe fire weather.

prescriptions for prefire management projects that will reduce total costs and losses of a major fire burning through the area during a period of severe fire weather. Budgets will be developed for the projects.

Ranger unit staff, with assistance from area offices, headquarters staff and stakeholders with specific expertise, will identify economic and non-economic assets protected and estimated reductions in costs and losses if the prefire management projects are implemented. Ranger unit staffs, with assistance of area office and headquarters staff, will identify the mix of state, federal and local government and prefire management projects will be ranked in priority, based on cost effectiveness and the priorities of the ranger unit chief.

Additional meetings will be held with stakeholders when more than state funding is needed for the prefire management projects. Ranger units will then conduct community public hearings for the general public and stakeholders to review the assessment and proposed projects. After this final public input, the prefire management projects in the three ranger units will be aggregated at the state level for the budget change proposal and funding.

Final results of the fire plan process will be presented to the Board and monitored to use in adjustment of statewide policies.