

XV. WILDLAND FIRE MANAGEMENT

BACKGROUND

The Mediterranean climate of California's San Francisco Bay Area affords District lands an unparalleled diversity of plants and **habitats**; from redwood forests on the coast and northern portions of the District to dry **chaparral** habitats and **hardwood** (oak, madrone) dominated forests in the southern end of the District. Given the diversity of rainfall, climate, vegetation, soil and geology, one constant emerges throughout the District (and in fact throughout California); all landscapes have been subject to periodic fires through time. The present and future will be no different.

To understand the role of **wildland** fire on District lands, it is important to understand the past. Native Americans within the area utilized fire as a tool for improving wildlife habitat for grazing animals (deer, elk, rabbits), maintaining productive vegetation communities for food procurement (grasslands, oak **woodlands**), to maintain travel routes, and to manage **pests**. Burning by Native Americans took place for thousands of years, a practice that significantly increased the frequency of fire locally. These practices, in addition to the benefits listed above, greatly reduced much of the **fuel load** on the ground and significantly reduced the severity of fires within these fire managed landscapes.

Many of the vegetation communities on District lands evolved with the occurrence of periodic fire and have acquired unique adaptations to withstand and regenerate after a fire. Without periodic fire, these plant communities build abnormally high and dangerous fuel levels and are susceptible to large scale destructive fire events. Fire is a **natural** occurrence on the landscape; our challenge is to find ways to live safely with fire.

From 1860 through the early 1920's unprecedented alterations took place within the forests of the Santa Cruz Mountains. The ancient "**old growth**" forests were mostly clear-cut and burned. This removed the largest, most fire-resistant trees from the forested landscape. The forest that has grown back typically consists of a much higher density of trees that are more susceptible to fire. This period of time also corresponded to the first wave

of development within the San Francisco Bay Region and ushered in a new paradigm for wildland fire response: immediate suppression.

This has increased the time interval between fires on most land to time periods substantially longer than Native American burning and natural lightning-caused fire. The result is a vegetated landscape that has largely been prevented from burning, and that has accumulated fuel loads and structural characteristics that have not occurred on the landscape for thousands of years, if ever.

The District was formed in response to the observed population growth and development pressure within the San Francisco Bay Region of the late 1900's. This has substantially reduced residential development in some areas, and significantly decreased the level of fire risk by precluding development that would have likely otherwise resulted in additional high risk communities. Nonetheless, there is some residential development (including some on District property) intermixed with District Preserves that deserve consideration.

The **wildland-urban interface (WUI)** refers to areas where residential development, from a few scattered houses to larger subdivisions or communities, exist immediately adjacent to or nearby parks, open space preserves, or other relatively undeveloped "wildlands". Important issues within this interface include **defensible space** around residential structures, emergency vehicle access, and residential fire improvements such as water tanks, fire hydrants, sprinklers, and fire resistant construction techniques.

The District is an active participant in coordinating with various **fire agencies** and community fire planning efforts. District participation in these planning efforts will continue. These include the development of regional fire plans, **Fire Safe Council** meetings, and the preparation of **Community Wildfire Protection Plans (CWPPs)**. The District also coordinates with local fire agencies and other park agencies conducting and participating in **prescribed fire** for **resource management** purposes.

The District, for many years, has undertaken various wildland fire management practices to effectively manage fuel loads and decrease wildland fire risk. Among these, the District annually maintains a series of disc lines (where vegetation is mechanically disked with a tractor to reduce dry fuel along ignition sources such as roads); vegetation is mowed or brushed back from roads and trails; roads, parking areas, and Preserve entrances

The WUI is an area where urban ignition sources such as vehicles, equipment, burn piles, barbeques, chimneys, smoking, fireworks, etc. from adjacent residential properties and public streets pose a threat to Open Space lands. Residential structures can also supply fuel for fire that can cross into open space lands.

are maintained to provide access for District patrol vehicles and other emergency vehicles; and vegetation is cleared from around District structures and residences. Preserve access points are closed when appropriate during periods of high fire risk. The District possesses a number of firefighting apparatus including a water tank truck, and smaller water tanks with hoses outfitted on Ranger vehicles, as well as portable water-pack/spray outfits for individual personnel. Fire training is also provided to District personnel who may be involved in combating wildland fire.

The District has an active **vegetation management** program that has been **targeting** invasive plant species that can be fire hazards, such as eucalyptus and French broom. Active **livestock** grazing is being maintained and has been re-introduced on some Preserves to reduce the fuel loads in the mostly **non-native** grasslands. **Conservation grazing** is being used to encourage the vigor of native grasses and **forbs** that typically produce less fuel (thatch). Given their year-round growth cycle, perennial native grasses maintain moisture later into the dry season, reducing fire hazard. The vegetation management program at the District also utilizes prescribed fire for managing invasive species in addition to fuel load reduction benefits.

The substantial **historic** alterations of the landscape, the history of **fire suppression**, and the numerous jurisdictions involved in wildland fire management and suppression, present challenges in managing wildland fire, but also present many opportunities. Effective wildland fire management actions can be undertaken to reduce the severity of fires within the WUI and within the District's **ecosystems** and **watersheds**, when fires inevitably occur. Additionally, active management can achieve conditions suitable for the reintroduction of fire into many ecosystems, an ecological function that has been absent, except under atypically severe conditions, for most of the past century. Prescribed fire is a powerful tool that not only has ecological benefit, but also significant wildland fire management benefit.

WILDLAND FIRE MANAGEMENT GOAL, POLICIES, AND IMPLEMENTATION MEASURES

Goal WF- Manage District land under the concepts of ecological resiliency to reduce the severity of wildland fire and to reduce the impact of fire suppression activities within District Preserves and adjacent residential areas; manage habitats to support fire as a natural occurrence on the landscape; and promote District and regional fire management objectives.

Policy WF-1 Implement necessary fire and fuel management practices to protect public health and safety, protect natural resources, and to reduce the impacts of wildland fire.

- ◆ Prepare wildland fire management plans for District lands that address, at a minimum, public safety, District staff and firefighter safety, District infrastructure including residences and roads, natural resource protection (particularly **special status** species), **cultural resources**, and vegetation management for fire protection and **fire behavior** and hazardous fuels modification.
- ◆ Assess the degree of fire hazard by evaluating the degree of human use and occupancy of the wildland area, the level and ability of public services to respond to fires, and the natural setting of the wildland area.
- ◆ Identify, with input from responsible fire agencies and neighboring public agencies, **essential roads** for wildland fire access. Maintain designated roads for fire access and patrol purposes, and improve with surfacing, additional turnouts and safety zones when necessary and reduce roadside vegetation to a level that allows ease of access for emergency response personnel and equipment, improves public safety in the event of an evacuation, reduces the number of roadside fire starts, allows for quicker response, and ensures the safety of fire suppression personnel. Set a priority to work with neighboring public

agencies, including the California Department of Transportation (Caltrans), county roads departments and local municipalities to standardize clearing widths on each side of roads and driveways.

- ◆ Coordinate with fire agencies and local communities to identify locations where additional fire infrastructure is desirable and practical (e.g. hydrants, water tanks, helicopter zones, safety zones, **fuel breaks**, consistent with the **incident command system (ICS)**). Work cooperatively with these groups to permit as appropriate installation and maintenance of new infrastructure.
- ◆ Work with Cal Fire, other appropriate fire management and regulatory agencies, and tribal entities to develop and carry out plans that use prescribed burns to maintain and restore natural and cultural systems including through the use of traditional ecological knowledge.
- ◆ Maintain adequate fire clearance around District structures and facilities. (See FM-5 and WF-4:Measure 5)
- ◆ Expand fuelbreak systems and identify fuel reduction areas that reduce the fuel mass of flammable vegetation and combustible growth, thereby limiting the intensity of fire and slowing its rate of spread.
- ◆ Require lessees of District land or structures to maintain fire hazard reduction measures as directed.
- ◆ Prohibit activities that have a high risk of sparking fires during periods of **extreme fire hazard**.
- ◆ Close Preserve areas of particular concern during **extreme fire weather**, as appropriate, and increase patrol levels where appropriate.
- ◆ Seek grant opportunities and partnerships for fuel management and monitoring projects.

Policy WF-2 Aggressively support the immediate suppression of all unplanned fires that threaten human life, private property or public safety and develop a response plan that, in the event of wildfire, allows the District to reduce post-fire impacts and initiate habitat restoration.

- ◆ Identify a Resource Advisor as the District contact in the event of an unplanned fire on District lands.
- ◆ Respond to wildland and structure fires on District lands in coordination with responding fire agencies.

- ◆ Prioritize and prepare Preserve specific wildland fire response plans that identify appropriate fire suppression activities for District lands in the event of a wildland fire. Plans should include detailed maps of infrastructure such as roads, fuel breaks, structures, water sources (hydrants, water tanks, ponds), as well as sensitive natural and cultural resources to be avoided during fire suppression activities.
- ◆ Direct bulldozer actions to areas identified in wildland fire response plans to minimize and reduce ground disturbance, erosion, and rehabilitation efforts wherever possible.
- ◆ Develop guidelines for appropriate rehabilitation measures to address erosion, **revegetation**, invasive species, trail and road stability, security, public safety, and natural and cultural resources following fires.
- ◆ Encourage rapid post-fire assessment, when and where appropriate, to determine values at risk within and downstream of the fire perimeter from flooding, debris flows, and excessive surface erosion. Provide preliminary emergency protection measures that can be implemented in a timely manner and help coordinate project implementation with appropriate agencies. (See also GS-2)
- ◆ Assess the effects of pre- and post-fire treatments to refine best management practices and address rapid treatment of fuels in high-priority areas.
- ◆ Consider allowing unplanned ignitions to burn to predesignated areas for resource benefit where there is no clear threat to life, property, or safety and when considering how to prioritize the suppression of multiple ignitions.
- ◆ Encourage and, where appropriate, partner with fire agencies and residential communities so that adequate evacuation routes and vegetation clearance around structures are maintained on adjacent non-District lands. Coordinate with fire agencies and local communities to define locations where community and regional fire protection infrastructure is desirable and practical.

Policy WF-3 Work with adjacent landowners and fire agencies to maintain adequate fire clearance around qualifying structures. (See FM-5 and WF-1: Measure 5)

- ◆ Maintain a permit system that enables adjacent landowners to maintain defensible space clearance surrounding homes and other qualifying structures across property boundaries and onto District land as long as the activity is recommended by the local fire agency and is

Defensible space is the area adjacent to a structure where basic wildfire protection practices are implemented, providing a key point of defense for an approaching wildland fire or area to escape from a structure fire. Cal Fire publishes guidelines for fuel (vegetation) treatments to create a perimeter around buildings and structures in order to maintain minimum conditions for firefighters to defend a property.

consistent with the District's resource management policies, including protection of environmentally sensitive habitat.

- ◆ Implement fire clearance recommendations and defensible space around District-owned structures, as appropriate.
- ◆ Collaborate with and support fire departments and fire scientists in educating landowners, residents, fire safe councils, and business owners to understand that fire prevention is more than defensible space, including why structures ignite, the role embers play in such ignitions, and the importance of fire safe building materials, designs, and retrofits. (See also PI-3)
- ◆ Seek fire agency guidance on understanding trends in fire cause and focus prevention and education efforts to modify human behavior and reduce ignitions.
- ◆ Work with fire agencies and local governments to develop requirements for new development to maintain required fire clearance distance from District land wherever possible.
- ◆ Focus non-prescribed fire fuel management activities in areas adjacent to development, essential facilities and improvements, major egress and emergency routes, essential fuel breaks, and sensitive natural and cultural areas.
- ◆ Investigate alternative funding sources in conjunction with fire agencies and residential communities within the WUI adjacent to District Preserves to fund and implement fire hazard reduction projects.

Policy WF-4 Manage District vegetation communities to reduce the risk of catastrophic fire and to maintain biological diversity and to promote resilience. (See VM-1, FM-6, and CC-4)

- ◆ Prioritize ecosystem function, resilience, and **ecological diversity** focused on multiple species benefits rather than aiming to prevent ecological change or return to past conditions.
- ◆ Evaluate, study, and implement additional land management strategies to promote ecosystem resilience.
- ◆ Promote the **restoration** and development of late-seral forest communities.
- ◆ Evaluate the potential to reduce forest fuel loading in accordance with a Vegetation Management Plan that includes removal of smaller trees to reduce forest floor fuel buildup and **ladder fuels**, development of additional fuelbreaks, and identification of **fuel reduction zones**.

Manage scrub, shrub, and chaparral communities to maintain a mosaic of ages and species within strategic management corridors on roads, on ridgetops, and near residential development or other critical infrastructure to compartmentalize preserves and reduce fuel loads. Manage forest diseases such as Sudden Oak Death (SOD) to improve forest health and resiliency and to reduce fuel loads.

- ◆ Continue to utilize and expand the District's **conservation grazing** program to reduce grassland fuels, brush encroachment, and encourage the vigor of native grass and forb species.
- ◆ Use prescribed fire to address multiple management objectives such as: training opportunities, public safety through fuels reduction, use of traditional ecological knowledge as imparted by Native American tribes, enhancement of native plants and habitats, and improved natural resource response to fire and rangeland resources.

Policy WF-5 Utilize programmatic documentation to increase the pace and scale of fuel treatments, ensuring that they are performed with the appropriate considerations for biological, cultural, and other natural resource constraints and to reduce regulatory hurdles to implementation.

- ◆ Perform fuel management activities under an approved Wildland Fire Resiliency Program that defines vegetation management, prescribed fire, pre-fire plans, and monitoring.
- ◆ Work to streamline or remove regulatory or policy or cost barriers that limit fuels reduction activities through the use of the programmatic documentation and defined mitigation, and CEQA exemptions, where feasible.
- ◆ Coordinate with air quality regulators to enable increased use of prescribed fire and to allow unplanned ignitions to burn to predesignated areas for resource benefit.

Policy WF-6 Conduct prescribed burns to re-introduce fire into native ecosystems and maintain natural ecological processes on District lands.

- ◆ Continue to utilize fire as a resource management tool to reduce fuels and reestablish fire for **resource benefit** where vegetation conditions, access, and public safety permit. Coordinate with other agencies and tribes for planning and implementation. and perform prescribed burns following defined safety processes and protocols.

Sudden Oak Death mortality is also a potential concern within the wildland- urban interface area, as well as within other areas of District Preserves. This concern is currently being studied by researchers in conjunction with District staff. These studies should provide additional insight into the potential fire hazard associated with SOD mortality and propose effective management options.

- ◆ Continue to utilize prescribed fire to reduce and prevent unwanted fire damage resulting from excessive fuel load and altered **plant community** structure and to control invasive species.
- ◆ Conduct prescribed burns in an ecologically sound manner which mimic natural **fire** regimes and/or traditional ecological knowledge practices, and to promote **biodiversity**. Consider how traditional, indigenous fire management for food, fiber, and all forms of subsistence are different management tools and outcomes than defensible space, thinning, and prescribed fire, for example. Document/monitor the impact of traditional fire management on biodiversity, water yield and quality, and ecosystem resiliency.
- ◆ Develop burn units based on science and implement site-specific fire prescriptions to improve regeneration of fire-adapted and special status vegetation and to improve habitat conditions for special status wildlife in fire-dependent ecosystems where feasible (see ES-3).
- ◆ Develop and implement an alternative management protocol to encourage seedling establishment of special status and disturbance-adapted species in aging stands when regeneration by fire is not feasible
- ◆ Conduct public **outreach** to recreational users, adjacent landowners and the general public through mailings, web site postings and press releases related to the benefits of prescribed fire and other fire management activities and inform the public of the District's safety protocols and processes associated with prescribed burns.

Policy WF-7 Foster and maintain interagency fire management partnerships.

- ◆ Annually coordinate with fire management and other resource agencies to discuss pre-fire planning conditions and needs in advance of the fire season ,and also coordinate with tribes regarding feedback on prescribed burning plans and goals.
- ◆ Participate in county **Fire Safe Councils** efforts.
- ◆ Incorporate and include the recommendations of the Community Wild-fire Protection Plans (CWPPs) adopted for San Mateo and Santa Clara Counties into the District's vegetation management practices, as appropriate and where they align with the District's practices.
- ◆ Train with fire agencies and participate in training burns when possible.

- ◆ Complete and distribute to fire agencies up-to-date maps of Preserve infrastructure including existing road network available for wildland fire management, helicopter landing zones, safety zones, evacuation routes, and other pertinent information as the maps become available.

Policy WF-8 Conduct research and monitoring to refine fire management practices.

- ◆ Census and mMap in geographic information systems (GIS) databases forest and fuel conditions, including hazardous fuel areas, treatment areas and zones, tree hazard management zones or areas, and other hazards and update regularly (See also RC-1)
- ◆ Monitor pre-project vegetation, soil, erosion, and **water quality** to establish baseline conditions for post project analysis.
- ◆ Monitor post fire and vegetation management projects to assess the achievement of project objectives and to identify potential impacts to vegetation, soil, erosion, and water quality. Implement **adaptive management** to respond to ecological feedback from monitoring efforts to optimize future fuel treatments and to determine the level of resources necessary to effectively identify, plan, and implement fire management activities. Manage fire breaks to decrease erosion and the spread of invasive plants.
- ◆ Conduct monitoring in a manner consistent with other land management agencies to obtain comparable data. Implement dynamic/interactive mapping and other methods to actively share information with surrounding and partner agencies and jurisdictions and information technology infrastructure allows.
- ◆ Utilize the latest technology to monitor weather and other real-time conditions on the preserves to improve response in the event of wild-fire.
- ◆ Integrate the latest research, techniques, and technology on fire resiliency and risk into the District's forest health and vegetation monitoring, forestry practices, and fuels management practices, as part of the **adaptive management** strategy.
- ◆ Foster relationships with educational institutions, scientists, tribal entities, and other land management professionals to inform District land management decisions based upon sound, current science, and to create opportunities for continuing research. Seek grants and pursue partnerships for research and monitoring.

- ◆ Integrate wildland fire management into District **interpretation** and education programs.
- ◆ Collaborate with local fire departments and safe fire councils to educate adjacent landowners about the need to: maintain defensible space between their properties and parklands; inspect and remove hazard trees; detect and treat diseased plants; and contain spread of disease.
- ◆ Collaborate with the tribes on traditional ecological knowledge practices for prescribed fire.

Policy WF-9 Wildland Fire management actions on District lands in the Coastside Protection Area will be in accordance with the policies established in the Service Plan for the San Mateo Coastal Annexation Area.

- ◆ In consultation with the County of San Mateo Environmental Services Department and fire agencies, determine whether the construction of dry hydrants on specific lands acquired is feasible in order to provide additional remote area water supplies for fire suppression activities
- ◆ Select native plant materials and/or seed mixes utilized at staging areas or along trails for their low maintenance and drought and fire resistant characteristics to minimize additional fuel available to wildland fires to the extent feasible.
- ◆ Where compatible with other trail characteristics, planners shall locate trail alignments and access points to allow trails to also serve as emergency access routes for patrol or emergency medical transport. Where feasible for more remote areas, emergency helicopter landing sites shall be provided.
- ◆ Coordinate with appropriate agencies, such as the County and Cal Fire to formalize mutual aid agreements.
- ◆ Consult with fire agencies in developing site-specific **fuel modification** and management programs for specific lands acquired as part of its Use and Management planning process, in addition to continuing the current District fuel management practices.
- ◆ Prohibit smoking, firearms, fireworks and off-road vehicle use and limit trail use, picnicking, and camping to designated areas.
- ◆ Develop and maintain staging areas and trail heads in accordance with the wildland fire **hazard mitigation** measures established in the Service Plan for the Coastside Protection Area.

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
RESOURCE MANAGEMENT POLICIES
WILDLAND FIRE MANAGEMENT