Red Flag Warning

Wildfire Risk in San Francisco's Glen Canyon

June 2025 Encampment Fire Lands End (courtesy of SFFD)

June 4, 2026

CITY AND COUNTY OF SAN FRANCISCO

2025–2026 CIVIL GRAND JURY

About the San Francisco Civil Grand Jury

The San Francisco Civil Grand Jury (the "Jury") is a government oversight panel of nineteen San Francisco citizens who volunteer for one year. Each Jury determines which local government entities within San Francisco it will investigate. The Jury cannot investigate disputes between private parties, criminal activity, or activities outside its jurisdiction, which is the government of the City and County of San Francisco ("City") and any other local governments within San Francisco city limits.

The Jury publishes public reports with findings and recommendations based on its investigations.

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This report is issued by the Grand Jury with the exception of one juror who was recused because of a current or recent connection with an entity whose actions might be relevant to this report. This juror was excluded from all parts of the investigation, discussion, and deliberations related to this report, and from the writing and approval of the report.

Summary

The 2025 Pacific Palisades fire was a wake-up call about the possibility of wildfire in urban settings. Inadequate vegetation management of flammable chaparral adjacent to the Pacific Palisades was cited as one of the causes of this and other recent wildland urban interface (WUI) fires. If entire suburban Los Angeles communities can be destroyed by brush fires, what is the vulnerability of more densely packed neighborhoods in San Francisco?

The Civil Grand Jury evaluated the wildfire risk in Glen Canyon posed by a fire adapted, invasive species: the blue gum eucalyptus tree. We also analyzed the planning and preparedness of the various City departments for a potential wildfire.

Dense unirrigated eucalyptus groves present a wildfire hazard because of their growth patterns, low ignition rating, and high fuel retention characteristics. The Jury learned that the most effective method to reduce fire risk is coordinated vegetation management of this species.

In other jurisdictions, eucalyptus are actively managed for fire abatement. These include many East Bay communities, federal lands in the Presidio, state property at UCSF and Cal Berkeley, and Portugal. Programs to fully eliminate eucalyptus in San Francisco given its wide presence are impractical due to erosion and high cost of removal.

The CAL Fire statewide Fire Hazard Severity Zone Map (FHSZ) rates San Francisco as low wildfire risk primarily due to the foggy and damp weather conditions. The San Francisco Fire Department (SFFD) concludes that wildfire risk is real and has taken numerous steps to prepare for fire in the wildland areas of the City.

The management of eucalyptus and other vegetation in Glen Canyon is divided among four local governmental agencies: Recreation and Parks Department (RPD), Department of Public Works (DPW), Public Utilities Commission (PUC); and the San Francisco Unified School District (SFUSD). This division of responsibility is an inefficient strategy for managing arborist resources and reduces accountability for fire abatement activities. The Jury recommends these agencies delegate vegetation management responsibilities for Glen Canyon to the RPD.

In part due to the CAL Fire low risk ratings, local agencies with jurisdiction over Glen Canyon do not devote significant resources toward wildfire abatement. For example, RPD's main fire abatement practices are mowing annual grasses and clearing brush within 30 feet of inhabited structures, also known as the defensible space strategy. Other than selective removal of eucalyptus from creekside habitat, the main concern is removing dead or dying trees that are hazardous to people, property or trails. Conversely, the PUC clear cuts eucalyptus and other non-native trees in its area of responsibility in Glen Canyon. SFUSD employs grazing animals to clear brush, external arborists to thin canopies, and closely follows CAL Fire recommendations.

The Jury discovered a positive potential partnership between DPW and CAL Fire in Glen Canyon to provide urban training sites for fuel reduction (limbing and debris removal) of eucalyptus, other non-native, and aging trees. Similar agreements can be expanded into other fire prone areas, such as McLaren Park and Mt. Davidson, to improve San Francisco's readiness for a wildland fire. The Jury recommends this agreement between DPW and CAL Fire be effectuated.

The City Environment Code assigns important advisory, planning assistance and coordination responsibilities for forest management to the Urban Forest Council. Wildfire prevention and planning has not been a major priority of their work. The Jury recommends that the Urban Forestry Council play a larger role in coordinating development of consistent wildfire prevention plans.

The SFFD takes wildfire risk seriously. The SFFD has purchased all terrain vehicles, specialized hoses, and equipment to fight wildland fires. The SFFD also provides accredited Fire Academy training and coursework on wildland fire techniques. Numerous staff earn "red cards" for extra study and participation in mutual aid exercises in other districts. The Jury recommends the SFFD play a greater role in raising awareness of wildfire risks among City agencies and the public.

Modern technology is increasingly being used to assist with mapping, location, age, species and other characteristics of urban and wildland trees. This technology can help departments prioritize forest management activities and reduce wildfire risk. The Jury recommends City agencies share licensing, data and best practices about deploying these systems.

Our investigation found aging eucalyptus groves in Glen Canyon constitute a wildfire risk. Mass removal of such trees is not feasible due to their wide dispersion, disposal costs, erosion risk and other factors. We concluded that vegetation management activities to thin canopies, clear tree litter, and identifying trees for removal due to age or disease in wildland areas is the path of least resistance going forward.

Although CAL Fire rates San Francisco wildfire risk as low, it is not zero. Red flag warnings and Diablo Wind events create perfect conditions for wildfire several days per year. The Jury found City agencies with wildland properties should develop and maintain Wildfire Mitigation Plans as a best practice. These same agencies should be more proactive in sharing forest management technology to decrease wildfire risk. The SFFD has invested in training and equipment to prepare for wildfire suppression. City agencies with wildland properties need to work more closely with the SFFD on wildfire prevention.

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Background

After the catastrophic January 2025 Pacific Palisades fire, the Grand Jury began an investigation into wildfire danger in the Glen Canyon Natural Area. Glen Canyon was identified as being at particular risk due to an abundance of aging, non-irrigated eucalyptus groves.

There are hundreds of eucalyptus species. The most common species in San Francisco is the Eucalyptus Globulus, commonly known as the blue gum. Blue gum eucalyptus trees are native to Tasmania where they receive year-round rainfall. San Francisco is an ideal environment for them as they get seasonal rain and are sustained by fog drip during summer months. They grow quickly in California soils and its climate.

Eucalyptus trees were introduced to San Francisco in the 1850's by Adolph Sutro, and other investors, like Jack London, to create timber for railroad ties and other uses. These speculators created large eucalyptus plantations on Mt. Davidson and Sutro Heights. However, its wood easily splits and warps so it is unsuitable for commercial applications, which resulted in the abandonment of the eucalyptus groves for commercial use.

Many interviewed by the Grand Jury often characterize eucalyptus as the City's "most political tree." Native plant enthusiasts tend to believe they should be removed along with all invasive species, while conservationists praise the tree as a habitat for monarch butterflies and other wildlife. Even though approved policies in various natural resource management plans generally call for culling of non-native trees, City officials have consistently deprioritized their removal.

The Significant Natural Resource Area Management Plan (SNRAMP) prepared by the Recreation and Parks Department (RPD), its related Environmental Impact Report, and a similar plan proposed by UCSF to thin or reduce eucalyptus in their respective areas received hundreds of negative comments. After such opposition, decisive action has not been taken to either remove or maintain eucalyptus in the wildlands species of flora.

There are numerous valid issues to explore. They include:

- Do eucalyptus groves present a fire hazard?
- What are the actual conditions in Glen Canyon that would create wildfire risk?
- Does the City have plans to fight wildfires, similar to its planned flood or earthquake responses?
- Does the SFFD have a strategy to combat wildfires in difficult terrains and non-urban areas?
- Do RPD and other departments with responsibilities for wildlands have adequate resources for maintenance and wildfire abatement?

Discussion

Is Eucalyptus a Fire Risk?

San Francisco is no stranger to eucalyptus-originated fires. Consolidated Eucalyptus Company ran a logging operation on Sutro Heights starting in 1909. A ten-acre fire occurred in September 1934 that required 400 firemen to extinguish and forced closure of the mill.[1] In November 2018, there was a series of arson fires in eucalyptus trees near the Polo Fields in Golden Gate Park. [2]

The characteristic aroma from eucalyptus forests derives from the high oil content of their leaves. Oil has a higher energy density and lower ignition point than leaf cellulose. The heat from an intense fire can drive these resins out of the leaf where they vaporize and combust. This characteristic is the reason eucalyptus trees are known to explode during wildfires.

A 2016 University of California paper concluded that trees with high resin content are more flammable than those without. On a scale of 1 to 10, with 1 equal to highly flammable and 10 having low ignition potential, eucalyptus trees scored 1 - 2 (very high). Dry grass also has a 1 ignition score, oak/bay woodland a 6 rating, scrub a 4 - 8, and redwood an 8.[3]

Debris from highly flammable eucalyptus trees also accumulates quickly. According to Australian bushfire experts, a dry eucalyptus forest might accumulate 8 to 12 tons of debris per acre[4]. California largely lacks native eucalyptus pests and related organisms to decompose this debris. As a result, according to a National Park study, flammable leaves and other eucalyptus litter decay slower than in their native habitat, accumulating 31 tons of debris per acre.[5] By contrast, native California bay laurel accumulate 19 tons per acre, coast live oak 12 tons per acre, and annual grasses 1 to 4 tons of material per acre.

A fast moving grass fire can easily ignite this litter under eucalyptus trees. The ground around these trees in Glen Park is littered with eucalyptus bark and leaves many inches deep in places as shown in Fig. 1.

Eucalyptus bark sheds in long flammable strips called ladder fuel, that can draw the fire up the trunk. Trees that are distressed by freezes or drought can sprout multiple stems, called

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[1] "Fire Threatens Sutro Forest: Ten-Acre Area Swept by Stubborn Blaze," *San Francisco Chronicle,* 15 Sept. 1934, p. 15.
[2] ABC NEWS Reports "String of six suspicious fires under investigation in San Francisco's Golden Gate Park" November 10, 2018
[3] Wolf, Kristina M., and Joseph DiTomaso. "Management of blue gum eucalyptus in California requires region-specific consideration," *California Agriculture*, vol. 79, no. 1, 2016, p. 41. *escholarship.org*, Accessed 18 March 2026.
[4] St. George, Zach. "The Burning Question in the East Bay Hills: Eucalyptus Is Flammable Compared to What?" Bay Nature Oct 18, 2016 pg 9
[5] Frank, Phil, and Keith Hansen. "Fire Management Newsletter: Eucalyptus: A Complex Challenge - Point Reyes National Seashore," U.S. *National Park Service*, Accessed 19 March 2026.

coppices, from a single trunk. These coppices create a basket structure which can accumulate debris and increase the fuel load as shown in Fig. 2.

Untrimmed, low hanging branches, can create a fuel ladder into the canopy. Once a blaze travels into the leaves it can create a high intensity crown fire which can rapidly spread between trees and adjacent structures. Further, the coiled bark fragments create ideal containers for embers which smolder for hours. These firebrands are swept aloft in the fire convection column and can travel over 10 miles on wind currents to ignite new fires.

Fig.1: Blue gum eucalyptus bark strips and flammable debris (Glen Canyon)

Fig. 2: Basket structure and ladder fuel in a blue gum eucalyptus (BV Park)

Eucalyptus Wildfire Risk Summary

Our research and interviews led the Jury to conclude that dense stands of unirrigated eucalyptus do present a wildfire risk. The main risk factors are the amount of tree litter and the flammable oil content in eucalyptus leaves. In addition, the eucalyptus canopy planted by commercial speculators in the 1900s is approaching its end of life resulting in aging trees which are highly vulnerable to wildfire risk.

Finally, periodic increased drought stress due to climate change may add even more risk in the future. Many jurisdictions in Northern California are addressing these risks by having active programs to thin eucalyptus groves and remove ladder fuel for fire abatement. San Francisco should learn from these initiatives and adopt similar programs.

Eucalyptus Management Approaches in Different Communities

East Bay

East Bay communities are keenly aware of the fire danger posed by eucalyptus trees, given the legacy of the October 1991 Oakland Hills Tunnel fire. That blaze started as a grass fire and spread to eucalyptus trees prevalent at the ignition site. A National Fire Protection Association investigation of the wildfire estimated that 70% of the fire's energy stemmed from the combustion of eucalyptus vegetation.[6]

In 2015, after years of procedural and legal challenges, the Federal Emergency Management Agency (FEMA) approved a $5.7 million grant to the California State Office of Emergency Services to remove eucalyptus and other non-native trees from UC Berkeley, the East Bay Regional Park District (EBRPD), and adjacent properties.[7] However, the grant was rescinded after lawsuits from non-profit organizations and public protests ensued.

After the FEMA grant was canceled, EBPRD developed its own Wildfire Resilience Plan,[8] and obtained state and federal funds to implement it. The plan maps high hazard eucalyptus trees, recommends removing ladder fuels and thinning dense stands of eucalyptus along roads to achieve a long term goal of phased elimination. The District recently completed a 667 acre fuel reduction program in Chabot Park aimed at removal of dead eucalyptus trees.[9]

The University of California at Berkeley (UCB) approved a Wildland Vegetative Fuel Management Plan containing extensive eucalyptus suppression and removal strategies.[10] The University successfully appealed lawsuits preventing removal of eucalyptus and other non-native trees on 185 acres of the campus. The University received $3.5 million from a CAL Fire grant for eucalyptus tree removal.[11]

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[6] "NFPA- Oakland Berkeley Hills Fire Investigation - Oct1991 - *HISTORICAL*." *California Governor's Office of Emergency Services*, National Fire Protection Association, October 1991, Accessed 17 March 2026.
[7] Lochner, Tom. "FEMA Pulls Most of East Bay Hills Fire Prevention Grant." *East Bay Times,* 23 September 2016.
[8] "The Wildfire Hazard Reduction and Resource Management Plan." *East Bay Regional Park District*, Accessed 24 March 2026.
[9] "Park District Completes 667-Acre Fuels Reduction Project in East Bay Hills." *East Bay Regional Park District*, 15 September 2025, Accessed 17 March 2026
[10] Rice, Carol. "University of California Berkeley Wildland Vegetative Management Fuel Management Plan," *UC Berkeley Capital Strategies, July 2020, UCB WVFMP Final DRAFT for Public*, Accessed 19 March 2026.
[11] "UC Berkeley can finally cut down dozens of acres of trees, " court says." *Berkeleyside*, 14 June 2023, Accessed 19 March 2026.

Nearby, Lawrence Berkeley National Lab and PG&E are also actively removing eucalyptus from their facilities to reduce wildfire risk.[12] In 2024 the City of Berkeley passed Measure FF, a parcel tax which allocated $8.5 million for fire prevention services, including an Understory Clean Up program.[13] This is a free one-time service to remove eucalyptus litter and lower limb branches to reduce neighborhood fire risk.

University of California San Francisco (UCSF)

In 1976, UCSF created a 61-acre Mt. Sutro Open Space.[14] The University applied for a FEMA grant to remove eucalyptus in 2009, but it was denied. This rejection is cited by some conservationists as proof that eucalyptus trees are not dangerous. In 2018 UCSF submitted an extensive Environmental Impact Report to the State of California under the California Environmental Quality Act (CEQA) in connection with an extensive Vegetation Management Plan, intended to reduce the eucalyptus component of the forest by 50%. This Plan governs eucalyptus removal and replacement with native plants.[15]

The Presidio Trust

Eucalyptus stands in the Presidio were planted by the Army, along with invasive Monterey Cypress and Monterey Pine in the 1880's for windbreaks and to transform the sand and marsh ecosystem. The cypress and pine are at their end of life, susceptible to pests, and are being actively replaced with younger trees. Eucalyptus has a longer lifespan and fewer insect pests, but the eucalyptus canopy also is aging.

The Presidio Trust prepared a comprehensive Vegetation Management Plan (VMP)[16] in 2001 and a Wildfire Management Plan (WMP) in 2020[17] as required by Federal Wildland Fire Policy. The plans acknowledge eucalyptus has an undue influence in reducing biodiversity which is one of the Trust's mandates. Both documents express concerns about the fire hazard posed by eucalyptus trees. The first paragraph of the WMP states:

> "It is important to safeguard the Presidio's historic forest, which is a significant landscape characteristic and a haven for visitors: the eucalyptus stands in the historic forest are of particular interest because of fuel accumulation and their flammable characteristics (Presidio Trust WMP, p. 5)."

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[12] Banuelos, Melissa. "Tree Removal Affects Lawrence Road Traffic," *Security and Emergency Services*, Lawrence Berkeley National Laboratory, 24 March 2021, Accessed 17 March 2026.
[13] Gallagher, Shanalee. "Eucalyptus Program — Berkeley FireSafe," *FireSafe Berkeley*, Berkeley Fire Department, Accessed 17 March 2026.
[14] "Mount Sutro Open Space Reserve | UC San Francisco," *UCSF*, Accessed 17 March 2026.
[15] HortScience, Inc. and Matt Greene Forestry and Biological Consulting. "Vegetation Management Plan Mount Sutro Open Space Reserve," *Mount Sutro Open Space Reserve*, 30 March 2018, Accessed 19 March 2026.
[16] Presidio Trust, Golden Gate National Recreation Area, US Department of the Interior, National Park Service. "Presidio of San Francisco Vegetation Management Plan and Environmental Assessment." *Presidio National Park*, December 2001, Accessed 19 March 2026.
[17] Wildland Resource Management. "Presidio Fire Risk Assessment And Management Plan." *Presidio National Park*, October 2020, Accessed 19 March 2026.

Unlike the land owned by UCSF, in the Presidio eucalyptus stands cannot be clear cut because of the National Historic Landmark status of the forest. Presidio arborists must maintain the "look" of the forest and consequently the Presidio Trust does not plan to fully replace the existing eucalyptus stands. The Trust is experimenting with different species of eucalyptus.

The WMP Plan does consider the real estate values of adjacent housing and advocates removing eucalyptus trees within recommended fire clearance distances from structures. The Trust has also removed eucalyptus from the three creeks that constitute Tennessee Hollow watershed. Where large stands of eucalyptus exist, they have been limbed to over 6 feet from the ground to reduce ladder fuels, and litter has been removed.

Portugal

In Portugal, eucalyptus is grown commercially for pulp and paper products. Eucalyptus is now the primary tree species in Portugal composing 26% of forested land. In 2017 over 50,000 hectares of eucalyptus plantations burned in the Pedrogrão fire, killing over 100 people.[18] In response to the fire, the government passed regulations limiting new eucalyptus plantations.[19]

[18] Mancini, David. "Portugal: wildfires and the eucalyptus curse." *Voxeurop,* European Data Journalism Network, 5 December 2023, Accessed 19 March 2026.
[19] "Portuguese Government Faces Strong Criticism on Eucalyptus Ban." *Paper Mart,* 25 Jan. 2018.

Wildland Urban Interface (WUI) Risk in San Francisco

San Francisco's Office of Resilience and Capital Planning produced the 2025 Hazards and Climate Resiliency Plan (HCRP) [20] which is a roadmap to minimizing the impacts of natural hazards on San Francisco infrastructure. Chapter 4.10 of the plan has a detailed discussion about WUI fire risk in San Francisco. It relies heavily on the 2025 Fire Hazard Severity Zone (FHSZ) CAL Fire map shown in Fig. 3.

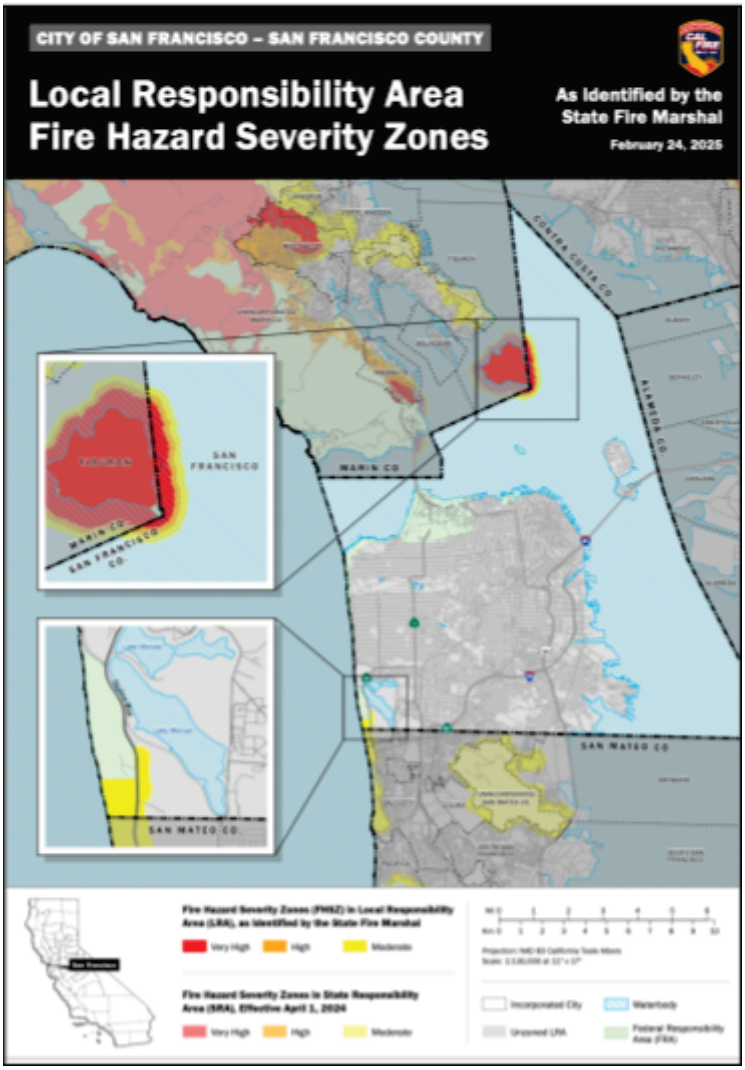
The report concludes, as Fig. 3 visually demonstrates, that overall wildfire risk in San Francisco is low, with the exception of high risk areas on Angel Island.

Previous iterations of the FHSZ map showed Moderate fire risk in Lake Merced, Stern Grove, the Presidio, Mount Davidson, Glen Canyon Park, Sutro Heights, Bayview Park, Yerba Buena Island, and other wooded neighborhoods.

Several people we interviewed agreed that the Moderate fire risk rating in previous FHSZ maps corresponded to a high concentration of eucalyptus vegetation in these locations.

Coincidently, Angel Island has extensive eucalyptus groves that were planted by the military for windbreaks and erosion control.[21] There is an active program to remove them.

Fig. 3: 2025 CAL Fire map of San Francisco Local Responsibility Area Fire Hazard Severity Zones



Red Flag Warnings

In the fall, San Francisco regularly experiences Diablo Wind phenomena. High pressure inland creates dry offshore gusts similar to the Santa Ana winds responsible for the Pacific Palisades fire. Diablo Winds were a major factor in the 1991 Oakland Hills fire.

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[20] Office of Resiliency & Capital Planning "2025 Hazards and Resiliency Plan" August 18, 2025.
[21] McBride, Joe R. "Eucalyptus Removal on Angel Island." *Igor's Urban Website,* University of California Division of Agriculture and Natural Resources, Accessed 26 Mar. 2026.

The National Weather Service issues a Red Flag Warning when strong winds, low humidity, and dry fuels create a high risk of rapid wildfire spread. The Bay Area typically gets about 3-6 Red Flag Warnings per year. 2019 was a record year with 8-10 alerts, and 4 in October alone, resulting in the Kincade fire.[22]

Fog moisture, particularly on the western slope of Twin Peaks, was cited by several interviewees as the reason wildfire risk is low and planning for wildfire prevention is not a high priority to date. Factors that suggest the need for greater focus on wildfire risk include that California routinely experiences multi-year droughts, which stress the trees and increase the amount of deadfall. Climate change also has the potential to alter fog patterns.

In establishing priorities for managing wildfire risks versus other responsibilities, City Departments, like RPD, defer to the CAL Fire FHSZ map. Given the perceived benefit of weather conditions to reduce fire risk, operational priorities for fire abatement have not been historically elevated beyond string trimming and occasional removal of dead trees. There is no systematic programming for more significant fire abatement efforts such as clearing of non-native and more flammable trees.

The impact of the Palisades and other California wildfires similarly has not resulted in significant changes in programming priorities. Environmental differences between the Bay Area and Los Angeles basin fires are cited as reasons to not elevate wildland fire prevention activities. These include the warmer dryer climate, much higher winds, and ground scapes of highly flammable chaparral that dominate the southland versus San Francisco.

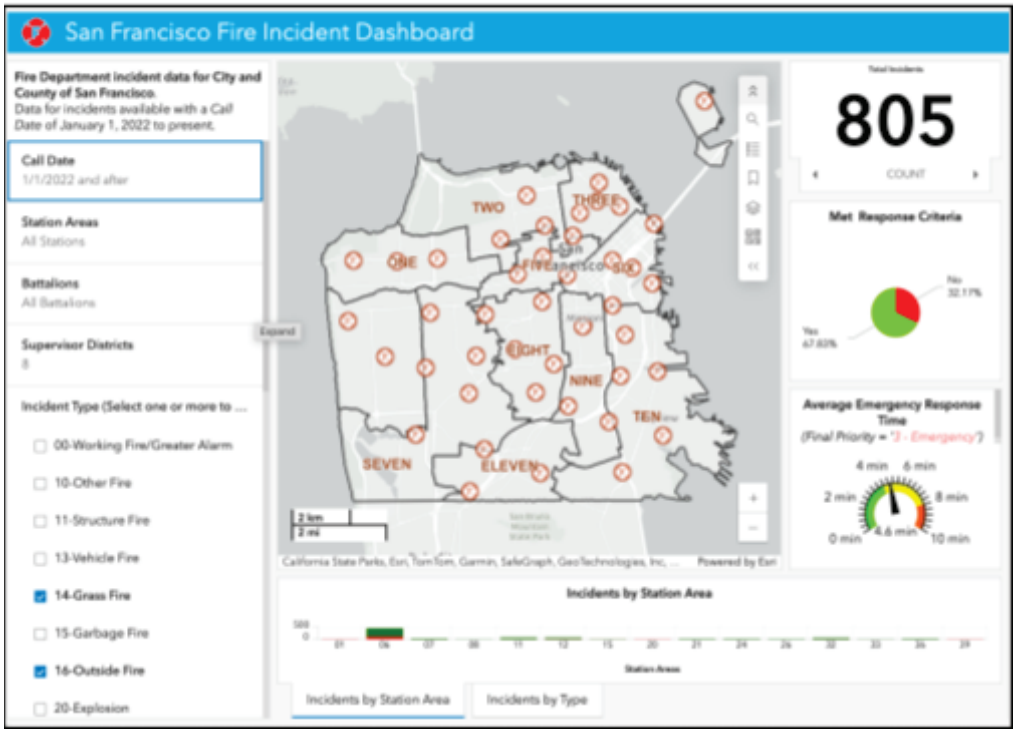
While the wildfire risk in San Francisco is low compared to other areas it is not zero. Black Swan events like the Palisades Fire happen. Several interviewees acknowledged there is a real wildfire risk in San Francisco. This assessment is based on hilly topography and late summer Diablo wind conditions, and the dominant wood framed construction situated on zero lot lines. There are several weeks per year where Red Flag warnings create perfect conditions for wildfire in the WUI areas of San Francisco.

[22] National Weather Service. "San Francisco Bay Area, CA Weather Forecast Office Historic Fire Weather Conditions during October 2019." October 2019, Accessed 19 March 2026.

Fire Ignition Risk in Glen Canyon

In addition to natural causes, fire risk from homeless encampments and other human causes in an urban setting such as Glen Canyon are significant. A query of the San Francisco Fire Incident Dashboard in Fig. 4 shows 805 grass or outdoor fires between January 2022 and January 2026 in District 8, the supervisorial district where Glen Canyon is located. Such fires can come from human negligence and illegal fireworks (as outlined in the Grand Jury's May 2024 UnControlled Burn[23] report).

Fig. 4 San Francisco Fire Incident Dashboard



In addition, there are power lines traveling from the Glen Park Rec Center through the middle of the park which could ignite grass from a downed wire. The 1991 Oakland Hills Fire and 2025 Pacific Palisades disaster suggest that such grass or outdoor fires can expand into major disasters if not quickly addressed.

The Glen Canyon Fire reports from the SFFD for 2025 described five service calls, including an arson attempt in a trash bin with a gas can left behind, and a homeless cooking fire in the eucalyptus near the Ruth Asawa School of the Arts.

[23] 2023–2024 San Francisco Civil Grand Jury. Uncontrolled Burn: Dimming the Spark of Illegal Fireworks in San Francisco. City and County of San Francisco, 28 May 2024.

Invasive Species Management in Glen Canyon

Glen Canyon is one of 31 Natural Areas managed principally by RPD in San Francisco, including, Mt. Davidson, and the Interior Greenbelt (Sutro Forest). The Natural Area sites, encompassing approximately 1,100 acres are shown in Fig. 5. In 2006, RPD released the Significant Natural Resource Area Management Plan (SNRAMP) which recommends vegetation management priorities for wildland areas. It was later named the Natural Resources Management Plan (NRMP) and is available for review on the RPD website.[24] Section 6.3 of the Plan, Glen Canyon Park and O'Shaughnessy Hollow describes the geology, vegetation, tree species, and wildlife found in Glen Canyon Park, and provides management recommendations for this approximately 70 acre park.[25]

Significant Natural Resource Areas Management Plan (SNRAMP)

The management of the natural resources in Glen Canyon and other wildland areas in the City is outlined in SNRAMP.

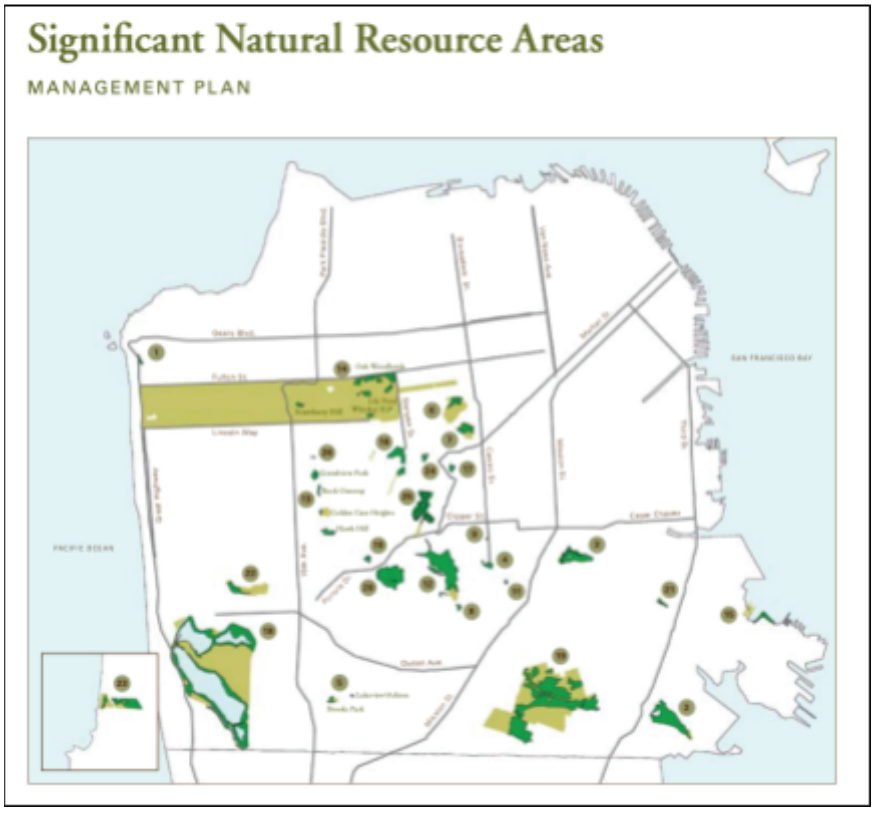
The main feature of the plan is to divide the Natural Areas into three different Management Areas.

MA1 has the highest level of biodiversity and contains endangered species and rare plant communities such as grasslands.

MA3 has the lowest level of biodiversity but includes blue gum eucalyptus, ivy, and other invasives.

MA2 are in between on a biodiversity scale. They contain many native plant components but ranked lower on a conservation scale.

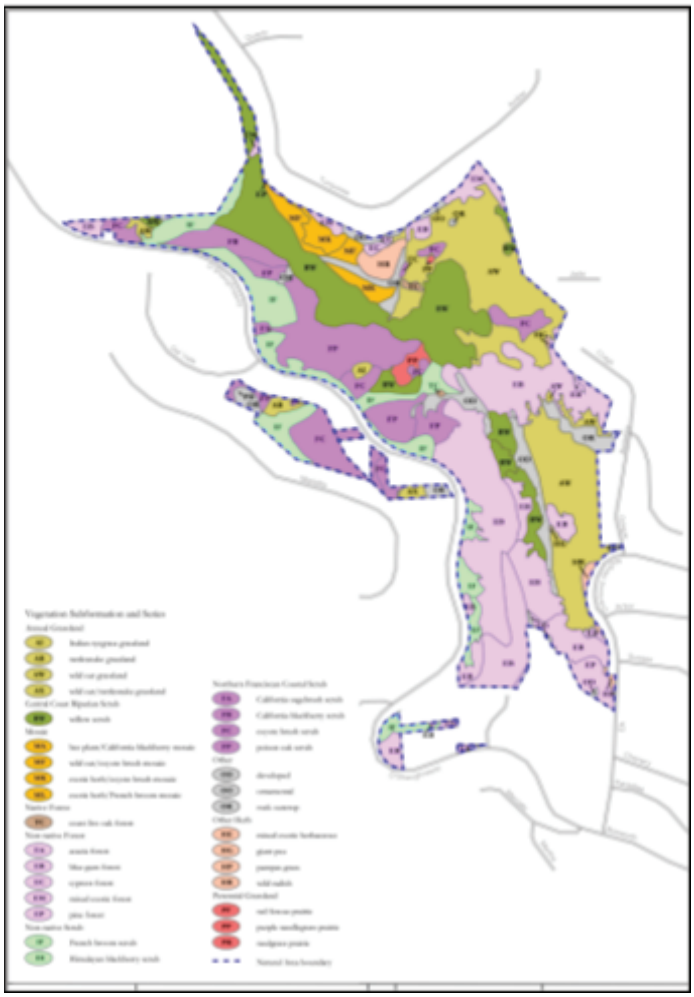
Fig. 5 Map of San Francisco from the Significant Natural Resource Areas Management Plan (SNRAMP) Executive Summary (pg. 2)



[24] San Francisco Recreation and Parks. "Natural Resource Management Plan." *San Francisco Recreation and Parks*, Accessed 26 Mar. 2026.
[25] *San Francisco Recreation and Parks.* "6.3 Glen Canyon Park and O'Shaughnessy Hollow" *Significant Natural Resource Area Management Plan, 6. Site-Specific Conditions and Recommendations*, Accessed 26 March 2026.

SNRAMP was subjected to an intensive Environmental Impact Report which was approved by the SF Planning Department in 2016 after generating over 400 public comments, mostly about dog access and eucalyptus removal. The Report was approved 9-1 by the Board of Supervisors in 2017.

Fig.# 6: Vegetation Map of Glen Canyon Park in SNRAMP section 6.3-25 (pg.192)



SNRAMP is designed to be a 20-year management plan for the natural areas of San Francisco. It has not been updated since its release, and it is difficult to know whether all the work outlined in the plan has been completed. In Section 6.3 of SNRAMP the eucalyptus genus is designated as an invasive species that accounts for 15.36 acres (21%) of the Glen Canyon Park area.

These trees dominate the western edge of the park along O'Shaughnessy Boulevard as shown on the pinkish areas of the Vegetation Map in Fig. 6.

Since the plan has not been updated, it does not reflect the current tree inventory of Glen Canyon and other parts of the City.

However, it is still considered by RPD to be the guiding document for natural resource management for the Natural Areas.

SNRAMP Eucalyptus Management Recommendations

SNRAMP contains general recommendations to remove eucalyptus trees and suppress growth for fire protection near structures and homeless encampments.[26] The species is also designated an "invasive species" which affects and reduces desired biodiversity. The general recommendations are:

[26] San Francisco Recreation and Parks. General Recommendations." Significant Natural Resource Areas Management Plan," Feb. 2006.

> **Issue GR-1 Invasive Plant Control and Revegetation:** San Francisco's natural heritage is housed in Natural Areas. These Natural Areas are threatened by invasive plant species (e.g., annual grasses, blue gum eucalyptus (Eucalyptus globulus), and French broom (Genista monspessulana), which are responsible for historic and present-day loss of biodiversity … (SNRAMP, General Recommendations, p. 1.)
>
> **Recommendation GR-13a:** As resources are available, SFRPD should discourage establishment of vegetation with high fire hazard ratings such as dense and aging French broom and eucalyptus stands adjacent to homes and other structures (EBMUD, 1992). When possible, minimum fire reduction zones of 30 feet should be maintained. Examples of fire reduction zones include grasslands and shaded fire breaks (i.e., open forests and scrub). Also, no brush piles shall be created within this zone. Trees determined to be hazardous to adjacent homes by the SFRPD Arborist should be removed.
>
> **Recommendation GR-13b**: To increase safety on trails, maintain clear passage ways by removing encroaching vegetation and maintaining site lines. Areas that become a focus for illicit activities and homeless encampments should be jointly addressed by SFRPD and the San Francisco Police Department as required. (SNRAMP, General Recommendations, p. 16.)

Eucalyptus trees consume large amounts of water. There were specific eucalyptus trees recommended for removal around the Islais Creek channel to conserve water, preserve riparian habitat, and improve light penetration in other areas of Glen Park per Section 6.3 of the plan below. [27]

> **Recommendation GC/OH-1e**: In order to enhance the sensitive species habitat that persists in and along Islais Creek, at the forest-grassland ecotone, and in the urban forest understory, invasive blue gum eucalyptus trees will be removed in select areas. Approximately 120 of an overall 6,000 trees in Glen Canyon Park would be removed in MA-1 and MA-2 areas.
>
> Remove approximately 10 eucalyptus trees within MA-1g to help protect and preserve the native grassland. The majority of the eucalyptus trees within this Management Area will remain in place.
>
> Remove approximately 100 smaller eucalyptus trees from the slope between O'Shaughnessy Boulevard and the Silver Tree Day Camp (MA-2e) to increase light penetration to the forest floor. This action will help shrubs and understory vegetation to survive, thereby creating a more diverse forest structure

[27] SNRAMP Section 6.3 page 11

The Urban Forestry Statements in Appendix F of SNRAMP advise restricting growth of new eucalyptus saplings in designated areas to encourage re-vegetation of native species.[28]

> As important of a resource as trees are in urban areas, the species that have been planted throughout the Natural Areas are almost entirely non-native and most are also invasive. These include eucalyptus (Eucalyptus globulus, Eucalyptus sp.), Monterey cypress (Cupressus macrocarpa), Monterey pine (Pinus radiata), acacia (Acacia longifolia, Acacia melanoxylon), plume acacia (Albizia lophantha), and myoporum (Myoporum laetum). While some of these species are native to California, none of them are native to San Francisco. In many Natural Areas, trees capture moisture from the coastal fog. This moisture drips onto the ground creating artificially wetter than normal conditions which favor invasive weed species. Invasive tree species provide nesting habitats for several species of birds, including some of those considered sensitive for this management plan. However, eucalyptus in particular do not provide a substantial source of food and the oils in their leaves inhibit the germination of plants in the forest understory. This creates a relatively open forest floor that severely limits the habitat value of eucalyptus forests.

2008 Bond Issue

The Clean and Safe Neighborhood Parks Bond was originally passed by San Francisco voters in February 2008 (Proposition A),[29] and renewed in November 2012 (Proposition B).[30] The allocated funds were used to provide tree maintenance in Glen Canyon, enhance trail access, and rehabilitate the Recreation Center. A 2008 presentation on the RPD website states the following:

- It is estimated that Glen Canyon Park has about 6,000 trees.
- Many trees have not received major physical attention in decades.
- On average, RPD has the funds to do work on each tree only every 50 years.
- The current forest is aging.
- Many tree stands are of a single age class, meaning trees reach the end of their life cycle at the same time.
- There is low species diversity.
- Many of the trees are in poor condition and/or are structurally unsound.[31]

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[28] San Francisco Recreation and Parks. Appendix F.
[29] San Francisco Department of Elections. "Voter Information Pamphlet: Consolidated Presidential Primary Election, February 5, 2008," *San Francisco Voter Information Pamphlets and Ballots*,, 2008.
[30] San Francisco Department of Elections. Voter Information Pamphlet: Consolidated General Election, November 6, 2012, *San Francisco Voter Information Pamphlets and Ballots,* 2012.
[31] San Francisco Recreation and Parks Department. "2008 Clean and Safe Neighborhood Parks Bond Glen Canyon Park Renovation: Tree Management Presentation," *San Francisco Recreation and Parks*, 7 Jan. 2013.

Fig 7 from 2012 HortScience Arborists report: "Blue gums #600 to 623 were part of a dense planting along O'Shaughnessy Blvd. Note extensive growth of vines along the trunks." (pg 2)

2012 Arborists Report

A 2012 Arborists Report prepared for RPD by HortScience, Inc.noted 427 densely planted blue gum eucalyptus in the Glen Canyon area, of which 84% were in poor to fair condition.[32] In addition, blue gum eucalyptus was the most frequently encountered species. The 427 eucalyptus species represented 67% of all trees evaluated. Blue gums were particularly dominant in the south and west sides of Glen Canyon and along O'Shaughnessy Blvd. As a general rule, blue gums were found in dense plantings as shown in Fig. 7. (HortScience, p. 2)

There has been no subsequent inventory of the Glen Canyon canopy since the HortScience report. Many of the trees in poor condition then could be dead now. In the Forest Management Technology section of this report, the Jury describes software and equipment used by different Departments to document their tree condition and species.

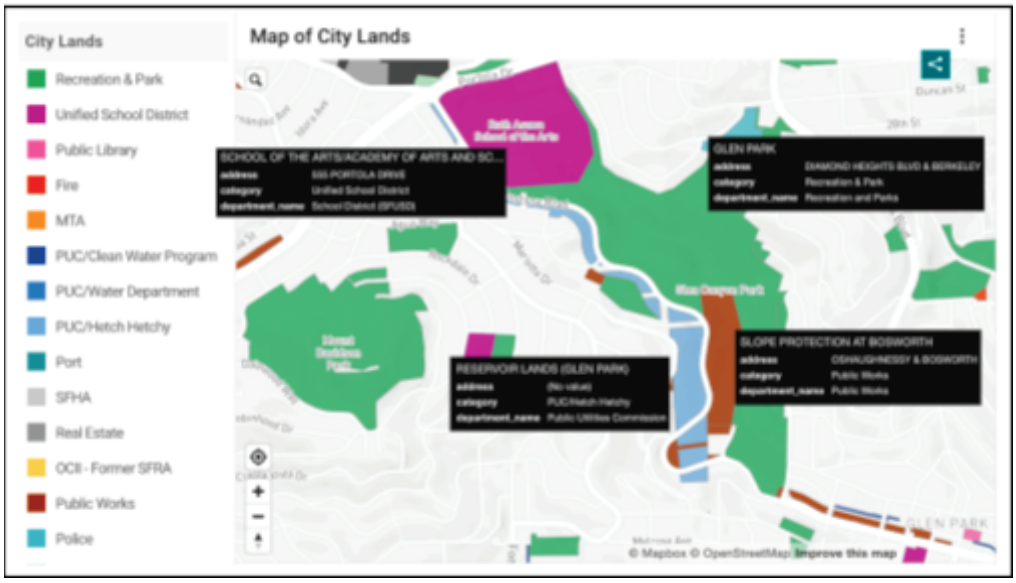
[32] HortScience, Inc. "Tree Assessment and Preservation Plan." *San Francisco Recreation and Parks*, October 2012, Accessed 19 March 2026.

Vegetation Management Responsibilities in Glen Canyon

Four local agencies share responsibility for the land within Glen Canyon: RPD, PUC, and DPW on behalf of the City, as well as SFUSD. The map in Fig. #8 shows the jurisdictional boundaries within the park. Most of the park (green shading) falls under RPD jurisdiction.

The western slopes between Islais Creek and O'Shaugnessy Boulevard are split between PUC and DPW. The northwestern edge is home to Ruth Asawa School of the Arts and the Academy at McAteer, two SFUSD high schools that share a campus. This division of responsibility is unique to Glen Canyon. There is some coordination among the departments. For example, eucalyptus falls from the DPW area of responsibility are disposed of by RPD arborists.

Fig. 8: Map of Glen Canyon property ownership



Each agency has different vegetation management practices which has led to visibly different treatment of the trees in Glen Canyon. Any activities dedicated to wildfire prevention related to trees are typically built into their ongoing operational priorities versus calling out fire abatement and prevention as a specific budget category.

The McChrystal Group was hired by the Los Angeles County Board of Supervisors to provide a comprehensive after action review of emergency notification, response, and evacuation policies following the Eaton and Palisades fires. In their Report, one of the findings was:

> "Additionally, brush management responsibilities for fire prevention purposes across the region are split between local, county, and state jurisdictions, complicating suppression efforts (McChrystal Group[33], p. 21)."

[33] McChrystal Group, OFFICIAL After-Action Review of Alert Notification Systems and Evacuation Policies for the Eaton and Palisades Fires, 23 Sept. 2025.

This multi jurisdictional oversight and wildland area control is exactly the current situation in Glen Canyon.

Current Departmental Vegetation Management Practices

Recreation and Parks Department (RPD)

RPD is guided by SNRAMP policy, which focuses on ensuring removing aging dangerous trees and maintaining 30-foot "defensible space"[34] guidelines. Certain trees in Glen Canyon were cut down, but it is unclear that the specified eucalyptus removal recommendations from the SNRAMP plan have been completed.

RPD's policies regarding wildfire risk management policies are driven by the belief that in San Francisco the wildfire risk is low due to cool humid climate. The Natural Areas Habitat Restoration webpage says fire abatement best practices are coming soon. The 2025 HCRP states RPD meets with the SFFD, identifies fire risk in the natural areas, and develops work plans by May of each year. RPD leadership meets regularly with SFFD, but has received minimal formal recommendations from them about fire abatement.

Fire abatement in the wildlands areas is performed by a small team of eight RPD field staff and one field supervisor. They are supported by a similarly small urban trails unit. In locations with challenging access, like McLaren Park, the team gets support from park service area gardeners. Volunteers that help with fire abatement are used infrequently as they are difficult to mobilize in a timely fashion.

The statement below from the 2025 Hazards and Climate Resilience Plant report (Chapter 07, pg. 325) [35] summarizes RPD mitigation activities.

> "Fire abatement work includes cutting dry grass, raking flammable vegetative material, removing downed limbs, and pruning flammable (i.e., typically dead and dry) vegetation. It does not include removing green vegetation, live plants and trees, and low-fuel material. SFRPD's fire abatement work is generally completed by May 31st each year."

There is no separate fund to do fire abatement work. It is performed as part of regular park maintenance. Extraordinary fire abatement efforts mostly stem from responding to citizen complaints about fire risks such as in the grassland area around Bernal Heights. Monthly work plan spreadsheets list different fire abatement tasks. These tasks are organized geographically and as efficiently as possible. Work plans the Jury reviewed for fire abatement in Glen Canyon mainly listed string trimming and raking debris in grasslands near homes.

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[34] CalFire Defensible Space Strategy.
[35] Office of Resiliency and Capital Planning "2025 Hazards and Climate Resilience Plan" August 18, 2025

RPD's wildfire risk abatement program focuses on reducing risks to human life and buildings and ensuring that the 30-foot, no-fuel zone around adjacent houses and structures defensible spaces on RPD land are maintained.

RPD arborists evaluate trees primarily based on public safety. Tree removal for habitat enhancement is less frequent. Prioritization of removal of the eucalyptus grove that surrounds the Silver Tree day camp on the west side of Glen Canyon is carried out due only to poor health of the trees. Where the SNRAMP plan called for specific tree removal in the area, only the sickest members have been and are actually removed due to resource limitations.

There have been major eucalyptus falls on Edgehill Way, Shrader St., Myra Way, Rockdale Dr., Juanita St. and other areas where trees have damaged houses. There are also many tree falls in the natural areas impacting trails and roads. RPD conducted an assessment of tree hazards which prioritized areas adjacent to roadways, paths, buildings, and structures for this type of fire abatement work.

RPD is budgeting $6.1 million for urban forestry activities for FY 26. This funding is used to manage over 3,400 acres of RPD property encompassing an estimated 131,000 trees. Staff in this area includes a Full Time Equivalent (FTE) headcount of 28 gardeners, arborists, technicians, urban forestry inspectors, and general laborers. The general fund capital budget allocates $800,000 this year for contract work for larger-scale removals and pruning that the permanent staff cannot undertake.

The Park and Recreation Commission in the past has had a $2 million USDA Federal grant (line item 10041520) for reforestation. The program objectives were to plant 500 trees over the next 5 years and train pre-apprentices in tree care: planting, maintenance, irrigation, workplace safety and hand/power tool training. However, in the FY 26-27 budget this grant was eliminated.

There are some new budgeted initiatives which peripherally address fire abatement. These include working to populate a newly purchased Tree Plotter database to track every tree with a GPS point, which will improve work tracking. Estimated at $2 million, the cost of fully inventorying the tree population under RPD control is considered prohibitive. RPD is working initially and incrementally to draw on any existing databases.

Public Utilities Commission (PUC)

As part of its wildlands management approach, in January 2025 PUC removed a significant number of non-native, hazard, and encroaching trees within their area of responsibility; specifically, on O'Shaughnessy Boulevard near Bosworth Street. (*see photo Fig.9*).

Fig. 9: PUC Tree Removal from Glen Canyon off O'Shaughnessy Blvd

The reason given for the cut operation was that PUC arborists assessed the eucalyptus there suffered from age, drought stress, and pest pressures. A key factor for the removal was its proximity to the roadway. The Department has concerns about trees falling on cars or catching fire from automobile crashes.

The PUC recently completed a major eucalyptus removal project around Lake Merced in partnership with Daly City. Several hundred non-native trees were cut down for habitat restoration, falling hazard, and wildfire fuel concerns.

The PUC has a small tree crew in San Francisco to manage their "postage stamp" properties like Laguna Honda and Twin Peaks. A much larger staff operates in the watershed areas like Crystal Springs Reservoir and Hetch Hetchy.

The PUC updates its annual Wildfire Mitigation Plan which is mandated by the State for power distribution facilities.[36] Their current Wildfire Mitigation budget is $9.3 million for projects like fuel breaks to protect power assets. They have approved $5.3 million in contracts for a separate Annual Vegetation Management Plan to perform hazard tree removal along transmission/distribution rights-of-way, brush near watersheds, and replanting.

The PUC works closely with CAL Fire on multiple projects including risk minimization analysis, prescribed burns and firefighter training including training crews to use chainsaws, and create fire breaks. The PUC frequently brings CAL Fire crews into the Crystal Springs Watershed during the off season for understory fuel reduction projects.

Department of Public Works (DPW)

DPW has responsibility for the land along O'Shaughnessy but has not removed trees in part because of concern that such removal would increase the risk of landslides and soil erosion.

[36]San Francisco Public Utilities Commission, "Wildfire Mitigation Plan," *San Francisco Public Utilities Commission,* Accessed 24 March 2026.

Tree roots do prevent erosion, which in turn stabilizes O'Shaughnessy during large storms. The slopes are very steep, and the potential washout has been compared to those seen near Big Sur and Santa Cruz should the trees be removed. While the area could be replanted after removal, the entire hillside would need to be re-engineered at a significant cost.

Although not currently formalized, DPW is developing an agreement with CAL Fire to both undertake underbrush cleaning and training in the Glen Canyon Park area in exchange for equipment the City and County would buy for CAL Fire. This program would increase DPW's capacity in fire abatement activities.

Regarding maintenance of street trees, San Francisco approved Proposition E in 2016, effective in 2017, amending the City Charter to transfer responsibility for the care of the City's 124,000-plus trees and surrounding sidewalks from property owners to Public Works. Under the new responsibility called StreetTreeSF, DPW adopted a "worst first" approach. The focus has been on street trees and sidewalks that pose a safety risk and are located near bus stops, schools and senior centers. DPW also responds to emergency work, such as fallen limbs, pedestrian and visibility obstructions and damaged trees during storm season that pose safety hazards. StreetTreeSF's annual budget has grown to $24.3 million for FY 25-26. There is no breakdown as to funds dedicated to trees versus sidewalk maintenance or any specific mention of work in this program to address any fire risk issues.

San Francisco Unified School District (SFUSD)

SFUSD manages approximately 3,000 trees on its roughly 430 acres of school property.[37] The District lacks internal urban forestry staff and cannot address tree maintenance of trees over 12 feet high. Under StreetTreeSF's Prop E the district is eligible for $500,000 annually for additional tree maintenance through DPW. They established a Memorandum of Understanding with DPW for funding and perform tree work using their own contracts, after which DPW reimburses them. This funding is used to pay for the hazard assessment work done by arborist consultants.

The District performed a tree inventory and hazard assessment several years ago. It is now engaging arborists to develop a reforestation policy and plan that will be attached to the Schoolyard Comprehensive Plan. The District has no specific policy regarding eucalyptus trees, but its goal is to preserve climate appropriate and native species first.

SFUSD performs fire mitigation where its property meets the wildland interface, focused on protecting buildings by reducing fuel loads. The District is in regular contact with CAL Fire and has received a grant from CAL Fire for reforestation activities. SFUSD has two vegetation management contracts for fire abatement in its adjacent schoolyards in Glen Park to perform fuel reduction twice a year as directed by CAL Fire. Terra Landscape has a contract to conduct fire abatement through mechanical means - weed whackers, chainsaws, mowers, and hand tools. City Grazing utilizes goats to remove weeds and brush that are immediate fuel.[38] They

[37] 2024 Annual Urban Forest Report, Pg 16
[38] City Grazing. "Why Grazing?" City Grazing, Accessed 25 Mar. 2026.

recently pruned several hazardous trees that were overhanging O'Shaughnessy Blvd. SFUSD conducts fire mitigation efforts at multiple school sites, in the BayView and near McLaren Park close to the wildland interface. These include June Jordan High, Visitation Middle School, Brettheart Elementary, Malcolm X Elementary, Willie Brown Middle School, and Thurgood Marshall High School.

The SFUSD is the only one of the four local agencies responsible for Glen Canyon management not included in the Urban Forestry Council (UFC). They are in contact with several UFC members and are amenable to joining the Council to share information and collaborate on projects.

Interdepartmental Coordination for Urban Forestry Planning

Coordination for urban forestry planning and management is assigned by Chapter 12 of the Environment Code to an Urban Forestry Council (UFC). Its specific roles are to advise the City's Board of Supervisors, Mayor and departments and commissions, on urban forestry issues and to develop urban forest plans and facilitate coordination of tree-management responsibilities among agencies, along with other functions. The UFC, along with DPW and the Planning Department, was instrumental in preparing the 2014 Urban Forest Plan;[39] Phase 1 of which established a management blueprint for San Francisco's street trees.

The UFC currently has five members appointed by the Board of Supervisors, three representing DPW, two from RPD, one from the Planning Department, one from the Port, and one from the Golden Gate National Recreation Area (Presidio Trust). Several member seats remain vacant and others have expired. The UFC is supported by only one part-time staff member.

The Jury found that the UFC recently has not played a strong role in carrying out responsibilities assigned to it under Chapter 12 of the Environment Code. For example, the proposed Phase 2 of Urban Forest Plan, focused on Trees in Parks & Open Spaces, has not been initiated. The UFC appears to play a limited role in coordinating wildfire abatement policies and practices among City departments. During the 2025 session, many regular meetings were canceled.

In its FY 2024 Annual Report, the UFC did report on the significant risk of wildfires and specifically the threat posed by the eucalyptus trees in Glen Canyon Park. Members of the UFC toured Glen Canyon Park in May 2024 along with City staff and community stakeholders. The tour resulted in a memo from a forestry expert that there were trees with signs of severe decline. There are also healthy eucalyptus trees on-site, which indicates that general maintenance is occurring. The memo also noted that while the park is well-maintained and meets general standards for fire mitigation, it could benefit from a collaborative vegetation management plan among the agencies responsible for Glen Canyon Park. (Annual Urban Forest Report, p 19).[40]

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[39] San Francisco Planning Department. Urban Forest Plan (Phase 1: Street Trees). Sept. 2014,. City and County of San Francisco.
[40] San Francisco Urban Forestry Council. *Annual Urban Forest Report: Fiscal Year 2024*. San Francisco Environment Department, 2024, Accessed 24 March 2026.

Does the SFFD have a Strategy to Combat Wildfires in Non-Urban Areas?

SFFD is aware of the specific challenges of a wildfire in the Glen Canyon and other natural areas with difficult access and topography.

Pre-Fire Plans

The SFFD has developed specific pre-fire plans, describing hazards, access points, and water supply, and other considerations for fire suppression in San Francisco's wildland areas. We reviewed the Glen Canyon Pre-Fire plan and it contained detailed information about topography, vegetation characteristics, water pressure in hydrants, prevailing wind direction, and seasonal conditions. It also describes fire suppression strategies, command center location, evacuation priorities, and specific vehicles to dispatch to a fire.

Specialized Equipment and Drills

To be better prepared for a wildfire in wildland areas, the SFFD has invested in specialized vehicles and equipment including five Type VI Engines[41] from CAL Office of Emergency Services CALOES[42] (Located at Stations 21, 25, 32, 43, and 44) to assist in mutual aid situations, and five Type 6 Engines purchased by the SFFD (Located at Stations 17, 25, 31, 43, and 51). These Engines are 4 wheel drive vehicles equipped with light weight cotton jacketed 1" / 1.5" wildland fire hoses which are maneuverable over steep rough terrain.[43]

As discussed earlier, there are no low pressure (white) hydrants on O'Shaughnessy Blvd. This lack of hydrants is typical for major thoroughfares such as the 101 or 280 freeways. In the event of a fire in Glen Canyon, according to SFFD, crews would not fight the fire mid slope, but flank it or place apparatus uphill and make a defensive stand in front of the homes on Malta or Marietta Drive.

To build preparedness, the SFFD has carried out drills in Glen Canyon Park and identified low pressure hydrants near the Club House and Elk St. They have maneuvered equipment through the easement walkway and past the parking lot behind the baseball field into the park during these drills. The first responses would come from Battalion 6 with support from Battalion 9.

After the Pacific Palisades fire, SFFD adapted its response patterns based on lessons from that experience. For example, it has changed its dispatch codes and operating procedures regarding vegetation management and red flag warning events .

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[41] BME Fire Trucks. "Type 6," *BME Fire Trucks*, Accessed 25 Mar. 2026.
[42] California Governor's Office of Emergency Services. "Ahead of 2023 Wildfire Season, Cal OES Adds New Type VI Fire Engine into Mutual Aid System." *Cal OES News*, 31 May 2023.
[43] Fire Hose Direct. "Forestry & Wildland Fire Hose." *Fire Hose Direct*,, Accessed 25 Mar. 2026.

Wildland Fire Training

SFFD runs an accredited Recruit Training Academy which includes certification for S-190 Introduction to Wildland Fire Behavior.[44] Firefighters can also participate in voluntary 2 week deployments outside the county and take additional classroom training (S130, S131, S290) to obtain a red card for wildland firefighting.[45] The SFFD runs annual wildfire refresher training prior to fire season including off road driver training.

Mutual Aid Response

The SFFD's mutual aid response for WUI fires in San Bruno Mountain, West Marin, or the Oakland Hills is code named "Call Box 5499." The SFFD has ten Type VI engines pre-positioned around the CIty with wildland equipment, personal protection equipment (fire shelters), pulaski shovels and rakes. Additional wildland hose is available at station 19 in the Mission. Call Box 5499 trains annually in May prior to the fire season. This crew could also be deployed to WUI fire within City limits.

The Grand Jury investigated the potential to use airborne fire suppression techniques in the event of a severe windborne fire. SFFD has considered this approach under mutual aid scenarios, but it has never been used in San Francisco. Air tanker delivery requires total evacuation of the area as the retardant weighs eight pounds per gallon and will knock down or injure firefighters working in the drop zone. Air suppression is rarely used on homes. Typically they would stripe retardant on the boundaries of wildland areas to hinder fire expansion.

Emergency Fire Water System (EFWS)

The PUC maintains a High Pressure Emergency Fire Water System (EFWS) fire suppression system (Black, Red, Blue top hydrants) built to complement the Low Pressure (White top) hydrants after the 1906 quake.[46] The EFWS consists of several seawater pumping stations, a 10.5 million gallon reservoir on Twin Peaks which feeds high capacity Ashbury and Jones St tanks, connected by a 135 mile pipeline network. The reservoir is full.

The nearest EWFS system hydrant is some distance away from Glen Park on Monterey Blvd. However, the SFFD carries routine testing of 4" hose, used by a fleet of hose tenders which can distribute water from the EWFS hydrants a distance of one mile.

Forest Management Technology

There are several rapidly evolving technologies available for Forest Management. These include Geographic Information Software (GIS) and remote sensing technology that can populate data about the canopy. Investment and application of these forest management systems is not uniformly distributed across City agencies.

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[44] "Recruit Training." SF Fire Website, San Francisco Fire Department, Accessed 24 Mar. 2026.
[45] "BIA Fire Training." National Interagency Fire Center, Accessed 26 Mar. 2026.
[46] "Emergency Firefighting Water System." San Francisco Public Utilities Commission, City and County of San Francisco, Accessed 25 March 2026.

DPW's publicly accessible StreetsTreeSF GIS map provides a transparent and prioritized tree maintenance system by which the government can communicate with the public. It was initially populated from permit records. DPW is implementing a Street Tree LiDAR Survey program. This involves using vehicle-mounted LiDAR (Light Detection and Ranging) to capture detailed 3D point cloud data of street trees to extend the database to include historic trees or those planted without permits. The goal is to provide up-to-date, high-resolution information on tree location, size, structure, health indicators, canopy, and other metrics. This improves urban forest management such as pruning schedules, risk assessment, and overall care of San Francisco's roughly 100,000+ street trees.

The PUC uses advanced technology for wildfire abatement including LIDAR flights to inventory the tree canopy, ArcGIS FieldMap Dashboards, and the TechnoSylva Wildfire Analyst software. This software analyzes realtime humidity, wind speed/direction, temperature, etc. to recommend work stoppages and other preventive measures on red flag days.

RPD currently does not have a database or map of its trees for internal vegetation management or general public information, although there are plans to develop this information. RPD has acquired Tree Plotter, a tree census tool similar to what DPW uses for street trees. In addition to giving every tree a GIS point, it will show which trees are near buildings and streets. This will allow RPD to identify and clear additional defensible spaces near structures. Funding will dictate how soon this system will be operable. Overall, though RPD currently lacks species inventory maps, predictive modeling software (FLAMAP), and other technology is necessary to reduce wildland urban interface fire risk.

Findings and Recommendations

Finding 1 Eucalyptus Wildfire Danger

The highly flammable, aging eucalyptus canopy in San Francisco poses a material wildfire danger and a risk of collapse during storms.

Recommendation 1.1

By June 30, 2027, the UFC should create comprehensive guidelines for its members to create defensible space by clearing eucalyptus and other tree litter, raise canopies, and identify specific groves for removal due to age or disease in wildland areas.

Finding 2 Division of Vegetation Management Activities

Four local governmental agencies manage vegetation in Glen Canyon without sufficient coordination to deploy arborist resources efficiently and to provide accountability for fire abatement activities.

Recommendation 2.1

By June 30, 2027, RPD, which has principal management responsibilities in Glen Canyon, should develop a Memorandum of Understanding with the other three agencies (DPW, PUC, SFUSD) to assume vegetation management responsibilities within the Glen Canyon Natural Area.

Recommendation 2.2

By June 30, 2027, RPD should prepare an analysis for the Board of Supervisors for any additional resources required to perform tree maintenance work in Glen Canyon as specified in the SNRAMP guidelines.

Finding 3 DPW Management Zone

The absence of a plan to address aging eucalyptus groves and other tree litter in the DPW management zone of Glen Canyon increases the risk of fire and destabilization of the hillside supporting O'Shaughnessy Blvd.

Recommendation 3.1

By June 30, 2027, the DPW, PUC, and RPD should each propose a Memorandum of Understanding for execution with CAL Fire for fire crew training to reduce fuel loads on their properties in Glen Canyon .

Recommendation 3.2

By September 30, 2027, and after the eucalyptus canopy is trimmed, RPD should plant native understory species to increase biodiversity and stabilize the steep western hillside.

Recommendation 3.3

As eucalyptus and other non-native species are felled by storms or removed as hazards, RPD should replace these trees with less flammable native species as recommended by the SNRAMP guidelines.

Finding 4 WildFire Mitigation Plans

City agencies with wildland properties generally lack current Wildfire Mitigation Plans.

Recommendation 4.1

By January 30, 2027, RPD should update its Fire Abatement Best Practices page on their website.

Recommendation 4.2

By June 30, 2027, the DPW, PUC, and RPD should develop Wildfire Mitigation Plans for wildland properties under their jurisdiction and update them annually thereafter.

Recommendation 4.3

By June 30, 2027, SFFD should share its Pre-Fire Plans for wildland areas with the DPW, PUC, and RPD and review their Wildfire Mitigation Plans for adequacy.

Finding 5 Urban Forestry Council Roles

The UFC has not provided guidance and practice standards to its members about wildfire risk mitigation and management of invasive species, such as eucalyptus.

Recommendation 5.1

By June 30, 2027, the UFC should review and comment on the Wildfire Mitigation Plans of its members to ensure consistency.

Recommendation 5.2

By June 30, 2027, the UFC should develop an agenda and schedule kick off meetings between key agencies to begin work on Phase 2, "Trees in Parks and Open Spaces" of the Urban Forest Plan[47] with specific focus on invasive species management and wildfire abatement .

Finding 6 Technology Sharing

City agencies currently do not share licensing, data, and best practices about technology that can be used to inventory and manage their urban forest areas.

Recommendation 6.1

By June 30, 2027, the UFC should sponsor seminars with the PUC, DPW, and RPD to share knowledge about GIS systems, LIDAR, and other technology that can help improve operational efficiency and reduce fire risk in urban wildland areas.

Recommendation 6.2

By June 30, 2027, RPD and DPW should prepare a best practices document describing remote canopy mapping technologies, potential licensing efficiencies, and deployment resources for their respective forest inventory applications: StreetTreeSF (ESRi) and TreePlotter (PlanITGeo).[48],[49] .

Recommendation 6.3

By June 30, 2027, Data from the RPD TreePlotter application should be a publically accessible on-line application to help manage the urban forest as specified in the 2026 San Francisco Climate Action Plan.[50]

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[47] San Francisco Planning Department. Urban Forest Plan (Phase 2: Trees in Parks & Open Spaces). Sept. 2014, p. 68, City and County of San Francisco.
[48] Esri. Esri GIS Software, Accessed 24 Mar. 2026.
[49] Plan-It Geo. "TreePlotter Software," Accessed 24 Mar. 2026.
[50] San Francisco Climate Action Plan 2026 pg. 89

Finding 7 SFFD Preparedness

The SFFD has taken steps to prepare for potentially catastrophic wildfire events in San Francisco through their planning, training, and specialized equipment purchases.

Recommendation 7.1

By June 2027, SFFD should expand its wildland urban interface fire drills to other areas with difficult topography, such as Twin Peaks, Mt. Davidson, Laguna Honda, and McLaren Park .

Recommendation 7.2

SFFD should provide After Action Summaries of lessons learned within 60 days of drill completion to the DPW, PUC, and RPD staff responsible for wildland properties in order to improve Wildfire Mitigation Plans.

Recommendation 7.3

By June 30, 2027, SFFD should prepare on-line educational materials about wildland urban interface fire risk in San Francisco and how to maintain defensible spaces around buildings.

Required and Invited Responses

The following responses are required pursuant to California Penal Code Sections 933 and 933.05.

Required Respondent	Findings	Recommendations
Mayor of San Francisco (60 Days)	F1, F2, F3, F4, F5, F7	R2.1, R3.1, R4.1-3, R5.2, R7.1
Board of Supervisors (90 days)	F1, F5	R5.2

Invited Respondent (60 Days)	Findings	Recommendations
Recreation and Parks Department	F1, F2, F3, F4, F6	R2.1-2, R3.1-3, R4.1-2, R6.1-3
Urban Forestry Council	F1, F5, F6	R1.1, R5.1-2, R6.1
SF Fire Department	F4, F7	R4.3, R7.1-3
Department of Public Works	F3, F4, F6	R3.1, R4.2, R6.1-2
Public Utility Commission	F3, F4, F6	R3.1, R4.2, R6.1

Methodology

The Grand Jury's work included carefully reviewing hearings of the Board of Supervisors and other commissions**.** SNRAMP, and the 2006 vegetation management plan. Reports such as CAL Fire's Fire Hazard Severity Map were also reviewed. City budgets for key departments, RPD, PUC, DPW and SFUSD with jurisdiction in Glen Canyon Park along with SFFD were reviewed.

Grand Jury members interviewed staff of various City departments connected with urban forestry, fire, safety, and environmental health in the City. Site visits were made to wildland and natural areas including Glen Canyon Park, and the emergency water system.

Background research entailed reviewing City reports on climate action, parks and tree management, and biodiversity. External research readings included the Palisades After Action Report and the Presidio Fire Risk Assessment Plan, readings on Australian bush fires, and the Oakland Hills fires. The investigation team reviewed close to 1,000 pages of government reports and academic reading.

Glossary / Acronyms

AARPEF	After Action Review of Palisades and Eaton Fires
DPW	Department of Public Works
EBRPD	East Bay Regional Park District
HCRP	2025 Hazards & Climate Resiliency Plan
FHSZ	Fire Hazard Severity Zone
NRMP	Natural Resources Management Plan
RPD	Recreation and Parks Department
SFFD	San Francisco Fire Department
PUC	San Francisco Public Utilities Commission
UFC	San Francisco Urban Forestry Council
SFUSD	San Francisco Unified School District
SNRAMP	Significant Natural Resource Area Management plan
UCSF	University of California San Francisco
UCB	University of California Berkeley
WUI	Wildland Urban Interface