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June 29, 2013

Mr. Phil Ginsburg
General Manager
San Francisco Recreation and Park Dept.
McLaren Lodge
501 Stanyan St.
San Francisco, CA 94117

Re: Significant Natural Resource Areas Management Plan for Mt. Davidson Park

Dear Mr. Ginsburg,

I am writing to express my concern over the plan for removal of trees on Mt. Davidson. This concern is based on the historical importance of the trees, their contribution to San Francisco landscape, and several specific aspects of the Significant Natural Resource Areas Management Plan for San Francisco. As a Professor of Urban Forestry at the University of California I have for many years studied plantations of trees in the city and compiled several reports for the U.S. Army, National Park Service, Presidio Trusts, and the Golden Gate Conservancy concerning the condition and management of eucalyptus, Monterey pine, and Monterey cypress stands. My concern over the proposed management plan for Mt. Davidson is based both on my experience in urban forestry and on my experience as a citizen of the Bay Area who has enjoyed the urban forests of San Francisco for many years. These concerns are elaborated in the following paragraphs.

The eucalyptus and Monterey cypress on Mt. Davidson were planted under the direction of the former Mayor of San Francisco, Adolph Sutro. He was also responsible for planting other areas in the city that have subsequently become city parks. The plantations he established have served to protect park users from the wind, provide wildlife habitat, and in some cases define the visual character of the San Francisco landscape. They present **an important historical heritage** that I think should not be discarded lightly. I found no mention of the historical significance of the Mt. Davidson forest in justification for the proposed management in the Natural Areas Resource Management Plan for San Francisco. San Francisco might review the vegetation management plan developed by the Presidio Trust for the National Park Service to see the approach taken at the Presidio to maintain and manage historically significant forest plantations.

From a number of vantage points in San Francisco one can see several of the city's hilltops covered in plantations of eucalyptus and Monterey cypress. These plantations stand in contrast to the architecture that surrounds them. They have been part of the San Francisco landscape for over one hundred years. Eucalyptus plantations are as much a part of the California landscape as the coastal grassland, chaparral, and oak woodland plant

communities for many people growing up in the Bay Area. **I did not find the visual value of the eucalyptus and Monterey cypress plantations on Mt. Davidson addressed in the plan**. I was, however, alarmed by the use of the term "invasive forest" in reference to eucalyptus plantations. This is a pejorative term that should not be applied to eucalyptus plantations. I have found little evidence of eucalyptus invading adjacent areas of grassland or other native vegetation types in the San Francisco Bay areas in studies I conducted in open space areas (McBride, Sugihara, and Amme, 1987; McBride, Cheng, and Chorover, 1989; Cheng and McBride, 1992; Russell and McBride, 2003). Comparison of photographs of Mt Davidson taken in the 1920s and 1950s show **no evidence of the eucalyptus invading the adjacent grassland area** (Proctor, 2006). These photographs indicate that a stable boundary exists between the eucalyptus plantation and the adjacent grassland. I see no justification for the establishment of a stable boundary between the eucalyptus and grassland habitats as called for in the "Site Improvements" section of the Significant Natural Resource Areas Management Plan.

My concerns over the management plan for the eucalyptus and Monterey cypress plantation on Mt. Davidson are based on portions of the Significant Natural Resources Areas Management Plan : 5. General Recommendations, 6.2 Mount Davidson, Appendix F Urban Forestry Statements. I am concerned with the justification for tree removal and the proposed levels (%) of trees to be removed.

Justification for Tree Removal

The primary justification for tree removal in the documents is the restoration of native habitat. Various statements are made concerning the minimal amount of habitat within the eucalyptus urban forest. This assumption is not supported by any data or reference to publications on this topic. Stebbins (1976) concluded that **eucalyptus plantations in the East Bay were far richer habitats for vertebrates than either redwood or Monterey forest** and that they vie with 'dry' chaparral and grasslands in species diversity and 'attractiveness' to vertebrate species.

The general recommendation to maintain a basal area between 200 and 600 square feet per acre is appropriate. However, a conflict exists at Mt. Davidson where some stands (MA-1c) within the plantation currently have basal areas less than 200 square feet yet the plan proposes the removal of 82% of the trees. I think there is a problem with the use of tree density measured in eucalyptus stands in Glen Canyon Park in developing the proposed cutting of trees at Mt. Davidson. The point-quarter survey mentioned in Appendix F (Urban Forest Statements) of the Significant Natural Resources Areas Management Plan indicates a tree density of 353 trees per acre. Three eucalyptus plantations measured in the Golden Gate National Recreation Area had tree densities of 50, 98, and 726 trees per acre (McBride, Cheng, and Clausen, 2004). These numbers demonstrate the wide range of tree densities found within eucalyptus plantations in San Francisco. I estimated the tree density in stand MA-1c from Google Earth images of Mt. Davidson to range from 24 to 33 trees per acre. Trees in this stand average about 24 inches in diameter. Trees of this size with a density of 33 trees per acre would have a basal area of a little over 100 square feet per acre (103.6 square feet). No trees from the area designated MA-1c could be removed if the basal area recommendation was followed. The same would apply to stands MA-2e and MA-2c where recommendations are for removal of 23% and 31% respectively. I think **a major shortcoming of the Plan is that lack of stand-specific tree density data.**

Various sections of the Significant Natural Resource Areas Management Plan justify tree removal as a means of allowing re-vegetation with native understory vegetation. Species commonly found in the understories of native forests and woodlands of the Bay Area are adapted to the low light intensity of these forests and woodlands. **Removing the eucalyptus overstory up to 82% as proposed for area MA-1c will expose the ground surface to light levels that most native understory plants will not be able to tolerate.** The management plan also points out that removal of eucalyptus will result in the promotion of growth of existing exotic understory species. These will no doubt, compete with any native species for the site. **The suggestion that these exotic species will be controlled by manual removal and the use of herbicides indicates the City is prepared for a large investment of time and labor to combat these plants. Projects to eliminate exotic understory plants at the Presidio after overstories of Eucalyptus and Monterey cypress have been removed have proved to be very expensive and only partially successful.**

The Significant Natural Resource Areas Management Plan states that the proposed forest management will not result in long-term changes in recreational use of the natural areas. I cannot agree with this conclusion. **The proposed cutting of trees will increase the windthrow and wind breakage of the remaining trees.** Trees that have grown up together in a plantation have buffeted each other from the wind. When individuals are exposed by the removal of surrounding trees they are very vulnerable to the wind. This is well documented in studies of native forests and forests which have been thinned or opened for subdivision development (Franklin and Forman, 1987; McBride, 1999, 2002, 2003; Sinton et al, 2000). The tree fall and wind breakage **hazard to walkers using the Mt. Davidson area** after the proposed tree removal and thinning would, I believe, seriously compromise the use of the area for recreational purposes. The existing forest plantations currently contribute to the use of Mt. Davidson by walkers because of the reduction in wind velocity by the trees. Forest plantations studied at the Presidio and at Lands End significantly reduce wind velocity and protect people walking from uncomfortable wind chill effects (McBride, 2002; McBride and Leffingwell, 2003). Choice of coastal bluff trails at the Sea Ranch made by walkers is often dependent on the amount of protective cover from the wind provided by areas planted with Monterey cypress. The exposure of Mt. Davidson to winds from the ocean will result in a less pleasant recreational experience if trees are removed.

There is an assumption in the Significant Natural Resource Areas Management Plan that minimal impact will occur to species such as hawks and owls as a result of tree removal because the overall acreage of the forest will remain high. This is not a valid assumption for two reasons. First, hawks and owls choose specific trees for nesting and perching. These trees are chosen on the basis of their position in a forest stand and the structure of the tree. Nests are used by some species year after year so that the **removal of a nesting tree can present a major problem for the specific bird using the tree.** Avoiding the cutting of nest trees during the nesting season, but felling of these trees after the nesting season is a major impact that should not be part of the management plan. It is also important to not remove trees surrounding nesting trees. Most recovery plans for rare and threatened tree nesting birds require a **protected area with a minimum radius of 300' around a nesting tree.** No trees can be removed within this zone.

In the "Site Improvements" section of the Significant Natural Resource Areas Management Plan it is suggested that the management proposals will improve the health of the eucalyptus forest. It is suggested that tree thinning will promote a more healthy forest. This certainly is true in densely stocked forest stands, but **I did not observe conditions in the eucalyptus plantations where tree density required thinning.** Several standing dead eucalyptus trees are present at Mt. Davidson, but the standing dead trees I examined had all been girdled. It was evident that some individual or individuals have had a vendetta against eucalyptus trees and had **girdled trees** in the past. I did not see any indication of natural mortality in the overstory of the plantations. Concern has been raised over the potential for ivy to grow up the trunks and eventually smother the eucalyptus trees. I have not observed this taking place in eucalyptus plantations in the East Bay. Ivy (English and Algerian) may climb the trunks of trees, but in my experience it does not have the capacity to grow over the smaller limbs and branches. There were a couple of eucalyptus snags completely covered by ivy at Mt. Davidson, but these snags were the result of girdling of the trees snags, not the growth of ivy. The **ivy, Cape ivy, and the Himalayan blackberry** in the under story of the eucalyptus plantation are restricting establishment of eucalyptus seedlings. I do not see this as a problem at the current age of the plantation. Perhaps in another hundred years an examination of the plantation could establish the need for regeneration. At this time in the life of the Mt. Davidson plantation **I do not consider the lack of regeneration a problem. Removal of the exotic understory species at this time would reduce the habitat quality of the plantation**, especially the removal of Himalayan blackberry that provides a valuable food source for many species.

I conclude that the Significant Natural Resource Areas Management Plan for the removal and thinning of different portions of the eucalyptus plantation on Mt. Davidson is not justified. The plantation serves an important role in the history and visual characteristics of the city. Trees and the existing understory provide habitat for wildlife and wind protection for walkers. The justifications for the management prescriptions have not been properly developed. Furthermore, the cost of removal of the trees seems unjustified in view of other priorities in the San Francisco budget.

Sincerely,

Joe R. McBride

Joe R. McBride
Professor

CC: Mayor Edwin M. Lee
City and County of San Francisco Board of Supervisors
San Francisco Recreation and Park Commission
San Francisco Planning Commission
San Francisco Urban Forestry Council
Park, Recreation and Open Space Advisory Committee
Bill Wycko, Environmental Review Officer (Case No. 2005.1912E)

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