



March 16, 2012

Ms. Meghan Tiernan  
Recreation and Park Department  
City of San Francisco  
30 Van Ness Avenue, 5th Floor  
San Francisco CA 94102

Subject: Trail improvements  
Glen Canyon Park

Dear Ms. Tiernan:

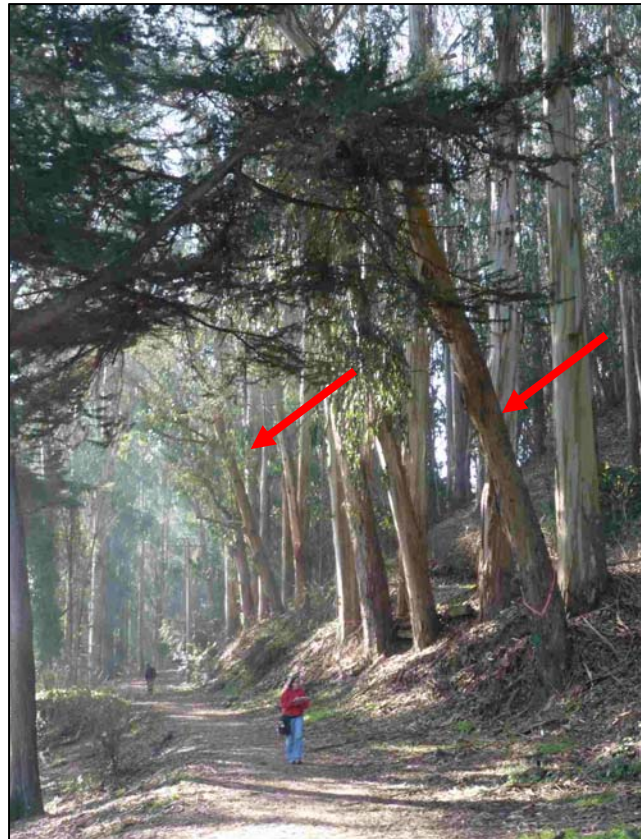
The Recreation and Park Department is planning to construct new trails as part of a series of improvements to Glen Canyon Park. The Department requested that HortScience assess the health, structural condition and risk associated with trees located along the proposed trails. I visited the site in January. You and I also recently walked the proposed trails with staff of the Department's Natural Areas Program (Lisa Wayne, Christopher Campbell, Rachel Kesel). This letter summarizes my observations and recommendations.

I visually assessed the health and structural condition, from the ground, of trees within 50' of the trails. The focus of the assessment was trees that were dead, dying, in poor health or possessed significant defects in structure that required abatement. Information on such trees included species and trunk diameter (Table 1, page 4). Tree location was recorded by Natural Areas Program staff. Trees were marked with green paint.

Forty-two (42) trees were noted as needing abatement treatment, either pruning or removal:

- **29 blue gum** (*Eucalyptus globulus*). Trees were mature in development with trunk diameters between 12" and 56". Blue gums were concentrated in the center and southern end of the park. Dead and dying trees were present as were trees with defects in structure such as lean and exposed roots (Photo 1).

**Photo 1.** Looking south near Recreation Center. Trees identified for removal in this area had significant lean over the trail (red arrows).



Included in this group was blue gum #627 which had been previously assessed. Located north of the Recreation Center, the crown is formed by three stems. One stem, 25" in diameter, leans severely to the east over another trail. The 25" stem should be removed.

- **7 arroyo willow** (*Salix lasiolepis*). Exclusively found along the existing and proposed trails, on the north side of the property. Trees were mature in development with trunk diameters ranging from 10" to 18". Mature willows develop extensive decay in the trunk and frequently fail at both the base of the trunk and branches, creating a dense thicket of leaning and failed stems (Photo 2).



**Photo 2.** Willow thicket. Trees marked for treatment possessed defects such as whole tree failure; dead, dying and broken branches and severe lean.

- **2 Monterey cypress** (*Cupressus macrocarpa*). Both trees dying with poor form and structure.
- **2 yellow willow** (*Salix lasiandra*). Both trees dying.
- **1 white alder** (*Alnus rhombifolia*). Dead tree.
- **1 river red gum** (*Eucalyptus camaldulensis*). A long heavy branch extended over the trail.

**Summary**

Existing and proposed trail improvements at Glen Canyon Park will require some excavation and construction. Trees along the trail alignments were visually assessed for health and structure. Forty-two (42) trees that were either dead, dying or possessing defects that required immediate abatement were identified. Thirty-two (32) were recommended for removal (27 blue gums, 2 yellow willow and one each of Monterey cypress, white alder and arroyo willow. Ten (10) trees were identified as needing to be pruned including 6 arroyo willow, 2 blue gum, one Monterey cypress and one river red gum.

Thanks very much for the opportunity to provide this assessment. Please contact me with any questions. I look forward to hearing from you.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Clark', written in a cursive style.

James R. Clark, Ph.D.  
Vice President

**Table 1. Proposed tree risk abatement. Glen Park Trails Improvement Project. San Francisco CA.**

Tree No.	Location	Species	Trunk Diameter (in.)	Notes	Proposed Action
1	W., south end of trail	Blue gum	24	Top of slope; exposed roots; twig dieback; bowed E. over trail; poor.	Remove tree
2	W.	Blue gum	26	Top of slope; leaning & bowed E. over trail; base outside dripline.	Remove tree
3	W.	Blue gum	24	Top of slope; basal cavity; twig & branch dieback; bowed E. over trail; base outside dripline.	Remove tree
4	W.	Blue gum	28	Top of slope; large basal cavity on W.; high narrow crown.	Remove tree
5	W.	Blue gum	43	Slight lean E.; upper crown bowed E. over trail.	Remove tree
6	W.	Blue gum	26	Slight lean E.; upper crown bowed E. over trail.	Remove tree
7	W.	Blue gum	22	Slope; very strong lean E. over trail; upper crown bowed flat; base outside dripline.	Remove tree
8	W.	Blue gum	22	Back from trail; sharp lean & one-sided crown to E.	Remove tree
9	W.	Monterey cypress	26,25	Codominant trunks @ 5'; 25" stem largely dead.	Prune to remove 25" stem.
10	W.	Monterey cypress	28	45' tall snag.	Remove tree
11	W.	Blue gum	54	All but dead; codominant trunks @ 12'; 1 stem veridical; 1 stem bowed NE.; extensive twig dieback throughout tree.	Remove tree
12	W.	Blue gum	56	Severe exposed roots; codominant trunks @ 6'; 1 stem vertical; 1 stem bowed E. over trail; history of branch failure; basal wound.	Remove tree
13	E.	Blue gum	24	Exposed roots; poor form & structure; lost central leader.	Remove tree
14	E.	Blue gum	20	Exposed roots; leans E.; poor.	Remove tree
15	E.	Blue gum	18	Strong lean NE.; upper crown bowed flat; poor form & structure.	Remove tree

**Table 1, continued. Proposed tree risk abatement. Glen Park Trails Improvement Project. San Francisco CA.**

<b>Tree No.</b>	<b>Location</b>	<b>Species</b>	<b>Trunk Diameter (in.)</b>	<b>Notes</b>	<b>Proposed Action</b>
16	W.	Blue gum	12	Sharp lean E. over trail.	Remove tree
17	W.	Blue gum	14	Sharp lean SE.; base outside of dripline.	Remove tree
18	W.	Blue gum	16	Mid-slope; severe exposed roots.	Remove tree
19	W.	Blue gum	25	Severe exposed roots; twig & branch dieback; all but dead.	Remove tree
20	W	Blue gum	48	Severe exposed roots; upright but one-sided towards trail.	Remove tree
21	E.	Blue gum	27	No basal flare; top of slope; lost central leader; upper crown bowed E.	Remove tree
22	E.	Blue gum	14	Leans S.; base outside dripline.	Remove tree
23	W.	Blue gum	31	High crown with slight lean W.	Remove tree
24	W.	Blue gum	34	Severe lean SE.; hung up in crown of #25; failing @ base of trunk.	Remove tree
25	W.	Blue gum	29	One-sided to E.	Remove tree
26	creek	White alder	16	Dead.	Remove tree
27	creek	Blue gum	36	Snag.	Remove tree
28	creek	Blue gum	28	Decay; very thin crown; basal cavity on N.	Remove tree
29	W.	Yellow willow	15	Decay @ base; leans E.; N/S form.	Remove tree
30	W.	Yellow willow	12	Crook @ base; basal cavity on S.; branch dieback to 4".	Remove tree
31	E.	Arroyo willow	12	Leans W. over trail; codominant trunks @ 7'; cracked apart; 8" lateral branch already broken.	Remove tree
32	E.	Arroyo willow	12	Leans over trail; cracked branches.	Prune to remove cracked, dead & broken branches.

**Table 1, continued. Proposed tree risk abatement. Glen Park Trails Improvement Project. San Francisco CA.**

Tree No.	Location	Species	Trunk Diameter (in.)	Notes	Proposed Action
33	E.	Arroyo willow	18	Failed @ base from creek, now leaning against top of bank; spans trail.	Prune to cut notch/opening in trunk @ trail. Leave rest of tree on both sides.
34	E.	Arroyo willow	16	Leans E. against rock outcrop.	Prune to clear trail. Possible removal based on trail alignment & construction impact.
35	E.	Arroyo willow	15	On ground to S.; 8" lateral over trail cracked apart.	Prune to remove cracked, dead & broken branches.
36	W.	Arroyo willow	15	Leans E.; bowed flat; high up in crown of adj. tree with broken branch.	Prune to remove hung up branch. Allow tree to fall to ground, off-trail.
37	E.	Arroyo willow	18,15,10,10	Multiple attachments @ base; center of trail; 10" dead; other branches broken.	Prune to remove cracked, dead & broken branches.
38	E.	Blue gum	multi	Multiple attachments @ base; 3 stems vertical; 25" stem with sharp lean E.	Prune to remove leaning 25" stem.
39	E.	Blue gum	21	Leans W. over trail; base outside dripline; cavity low on trunk on tension side.	Remove tree
40	E.	River red gum	33,31,29	Multiple attachments @ 3'; rangy form; heavy lateral limb to NW.	Prune to remove 17" heavy lateral branch on NW. side of crown.
41	E.	Blue gum	40	Leaning & bowed over trail; base outside dripline; poor form & structure.	Remove tree
42	E.	Blue gum	29, 28, 25	<b>Tree tag #627</b> ; multiple attachments near base; 25" stem with sharp lean E.	Prune to remove 25" stem.