

Blue Gum Trees on Tract No. 10853, Huntington Beach

CONSULTING ARBORIST'S REPORT

Prepared for
Hunsaker and Associates

Prepared by
Alden Kelley

CONTENTS

Project elements	1
Summary	2
Background	3
Description of trees	4
Potential value of preservation candidates	7
Table 1. Blue gum characteristics	9
Site map	
Consultant qualifications	

PROJECT ELEMENTS

Report date: 29 September 1996

Site study date: 29 September 1996

Subject: Arborist's report on Blue gum trees in a windbreak-type grove on Tract
No. 10853, Huntington Beach

Client: Hunsaker & Associates

Mr. Fred Graylee

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Irvine, CA 92618

Objectives:

1. Describe subject trees.
2. Assign Condition Ratings to subject trees.
3. Indicate for each tree whether removal is recommended or preservation is a feasible option.
4. Calculate potential values for preservation candidates.

SUMMARY

A linear grove/windbreak of Blue gum trees on Tract No. 10853 was inspected and assessed for preservation potential. The stand consisted of 26 live mature trees, 8 dead or dying trees, a grove-like cluster of 3 multitrunk trees by tree no. 6, and several dozen smaller trees that were either natural seedlings or regrowth from stumps of felled trees.

It was recommended that the site developer remove all dead trees and young trees (which were judged unsuitable as preservation candidates, owing to their attenuated form and related susceptibility to windthrow), and 19 of the mature trees (Condition Ratings below 50%: potential hazard trees).

Eight of the measured mature trees and the group of three multitrunked trees were designated for consideration as candidates for preservation. If site plans and development operations do not encroach unduly on those 11 trees, and if the trees are given appropriate protection and maintenance, they could provide exceptional enhancement and value increase to the tract.

BACKGROUND

On 29 September, the consulting arborist inspected Blue gum trees (*Eucalyptus globulus*) on Tract no. 10853, Huntington Beach, CA.

The present report includes a description of 26 living trees, 8 dead or dying trees, a grove-like cluster of three multitrunk trees closely associated with tree no. 6, and several dozen small trees which were eight natural seedlings or regrowth sprouts from felled trees.

Each of the 26 trees was assigned a Condition Rating, and designated as a necessary removal or as a potential subject for retaining on site. The latter trees were assigned prospective value figures based on appropriate measures for their protection and restoration.

DESCRIPTION OF TREES

The 26 live Blue gums (*Eucalyptus globulus*) and one dying tree (no. 16) were measured for trunk caliper (average trunk diameter at 4.5 feet above mean grade, or at the lowest level giving a single-trunk measure on trees no. 16, 19 and 23). Height and spread of crown were estimated, and locations were given in terms of approximate feet and direction from another numbered tree.

The 27 measured trees were marked by number in the sequence encountered in the field. The numbers were drawn with a felt-tip marker, between 2 and 6 feet above ground surface, on whatever side presented a bark area suitable for marking.

The approximate locations of the numbered trees are shown on the accompanying site map; and approximate relative locations are given in Table 1.

Table 1 summarizes the individual tree characteristics, viz., location, mean trunk caliper, estimated tree height and spread, and Condition Rating, as well as the indicated removal or restoration option.

The trunks were not circular in cross section, so average trunk diameter was computed as that of a circle having the same area as the elliptical trunk cross sections.

The calipers for trees with 2 or more trunks were expressed as the diameters of circles having the same area as the combined trunk cross sections.

Eight or more trees were dead, chiefly due to infestation by bark borers (Eucalyptus longhorn beetles, *Phoracantha semipunctata*). Those trees were noted in the field record but were not included in the report.

Several dozen small Blue gums were seen to be either natural seedlings ("volunteers") or regrowth from stump bases of previously felled trees. Because of the extent of crowding and the effects of shading by the established trees, the smaller trees typically had comparatively tall, thin trunks and narrow canopies. As such, they were not regarded as suitable candidates for preservation, and therefore were not measured or rated.

In the absence of tract plans showing intended building lots, it was not possible to identify expected proximity between individual trees and planned construction. Accordingly, trees which showed promise of long term survival (given high quality management) were designated as restoration options. That means that, in the arborist's opinion, those trees could be retained as acceptably safe specimens to enhance the overall landscape. If such options prove viable in the context of tract design, it is the arborist's recommendation that those trees be retained.

Of the 8 trees identified as preservation candidates (trees no. 1, 3, 6, 9, 13, 18, 19 and 23), trees no. 6 (and its associated "mini-grove" of multitrunk specimens) and 18 are judged to be worthy of special consideration. If grading and construction operations allow the retention of these trees, and if the trees are given appropriate protection and management, they would provide outstanding beauty and value for the community. The other six could also yield significant esthetic and environmental benefits, as well as enhanced value and distinctiveness of the development.

It is important to understand that the option to keep any or all of the 8 candidate trees depends critically upon scrupulous care and minimal disturbance of each. Nearby grading disturbances, or even neglect of the trees during construction could readily stress them to the extent that they would be invaded by the longhorn beetles that are so clearly present and active on the site. The trees could become hazard trees rather than landscape enhancements if not carefully protected and judiciously maintained.

Because the arborist is uncertain as to whether preservation is a realistic consideration, no protection or restoration guidelines are offered herein. If desired, a supplemental report can be prepared, outlining the appropriate measures and standards.

POTENTIAL VALUE OF PRESERVATION CANDIDATES

Properly maintained, the 8 restoration prospects could provide outstanding landscape and environmental enrichment for the tract. Effective protection and appropriate maintenance (pruning, soil management, and irrigation program) could result in the following levels of monetary values of the trees (computed by the Replacement Equivalency Method).

Tree no. 1. Reference value (wholesale equivalent) \$69,000.

Assessed value based on calculated cost of replacement in kind: \$33,000 - \$50,000.

Tree no. 3. Reference value (wholesale equivalent) \$100,000+.

Assessed value based on calculated cost of replacement in kind: \$55,000 - \$70,000.

Tree no. 6. Reference value (wholesale equivalent) \$100,000.

Assessed value based on calculated cost of replacement in kind: \$60,000 - \$90,000.

(Retaining and restoring the three nearby multitrunk specimens as well would approximately double that value range.)

Tree no. 9. Reference value (wholesale equivalent) \$51,000.

Assessed value based on calculated cost of replacement in kind: \$20,000 - \$40,000.

Tree no. 13. Reference value (wholesale equivalent) \$150,000+.

Assessed value based on calculated cost of replacement in kind: \$70,000 -
\$100,000.

Tree no. 18. Reference value (wholesale equivalent) \$225,000.

Assessed value based on calculated cost of replacement in kind: \$125,000 -
\$160,000.

Tree no. 19. Reference value (wholesale equivalent) \$130,000.

Assessed value based on calculated cost of replacement in kind: \$70,000 -
\$90,000.

Tree no. 23. Reference value (wholesale equivalent) \$120,000.

Assessed value based on calculated cost of replacement in kind: \$55,000 -
\$70,000.

Table 1. Blue gum characteristics

No.	Location (Distances & directions approximate)	No. of trunks	Size estimate			Condition Rating (%)	Options		Notes
			Mean trunk caliper (in.)	Height (ft.)	Spread (ft.)		Remove	Restore	
1	N end, W corner	2	27.1	65	40	55		X	
2	12' ESE of no. 1	1	19.3	50	40	40	X		
3	15' NE of no. 2	2	31.6	70	45	60		X	Borers in small branches.
4	SE of no. 3	1	26.0	70	35	40	X		
5	E of no. 4	1	23.9	80	35	45	X		
6	E of no. 5	1	30.3	55	45	60		X	
	E of no. 6 Grove of 3 multitrunks, est. 15. 14. 9, 9, 8, 5, 4 calipers: a landscape unit with no. 6.					60		X	
7	S of row 1 - 6	1	35.2	85	50	40	X		Very high crown
8	7' SW of no. 7	1	18.1	50	35	35	X		
9	15' WSW of no. 8	1	17.1	40	50	50		X	60° lean upslope
10	45' SSE of no. 9	1	24.1	85	55	30	X		High crown; kino
11	45' SSE of no. 10	1	14.8	55	30	40	X		High crown
12	40' SSW of no. 11	1	20.5	70	45	25	X		8' x 2' basal wound
13	S of no. 12	1	37.7	85	80	55		X	
14	50' SSW of no. 13	1	17.7	65	25	20	X		
15	3' SSE of no. 14	2	19.6	55	25	40	X		
16	40' ESE of no. 15	2	50	80	55	5	X		Dying: borers
17	SW of no. 16	1	34.4	75	40	40	X		
18	12' SW of no. 17	4	43.3	70	70	60		X	Exceptional beauty
19	100' S of no. 18	2	35.2	70	75	60		X	
20	30' SSE of no. 19	2	18.4	50	45	30	X		
21	7' SE of no. 20	1	13.8	55	30	35	X		
22	10' SE of no. 21	1	est 10	60	40	15	X		
23	25' SSE of no. 22	2	33.9	50	65	55		X	
24	In group of four	1	20.9	55	45	45	X		
25	(plus regrowth)	1	14.1	60	30	15	X		
26	at S end	1	16.2	50	30	25	X		
27	of grove	2	30.8	60	50	35	X		

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CREDENTIALS

EXPERIENCE:

Tree management; consulting arborist (CA, HI, IA, IN, MO, PA)	18 years
Writing and editing (scientific and technical)	11 years
Research (plant sciences)	7 years
Teaching (college, adult ed.: biology, botany, horticulture)	13 years

EMPLOYMENT:

1985 - present	Consulting Arborist, Expert Witness, Author (Southern California)
1981 - 1985	Tree maintenance service (Orange County, CA)
1980 - 1981	Cell Biologist (Beverly Hills, CA)
1978 - 1979	Plant care services/sales (Cypress, CA)
1966 - 1977	Associate Professor of Biology, Lycoming College (Williamsport, PA)
1964 - 1966	NIH Postdoctoral Research Trainee, The University of Texas (Austin, TX)
1962 - 1963	Assistant Professor of Biology, Parsons College (Fairfield, IA)
1958 - 1962	NIH Predoctoral Research Trainee, Purdue University (Lafayette, IN)
1956 - 1958	Research Associate: Seed treatment, Iowa State University (Ames, IA)
1952 - 1955	Tree trimmer, Teaching Assistant, Iowa State University (Ames, IA)
1950 - 1951	Groundskeeper's assistant (Springfield, MO)

EDUCATION:

B.S. (Horticulture) Iowa State University, Ames, IA (1954)
M.S. (Plant Physiology) Iowa State University, Ames, IA (1958)
Ph.D. (Plant Morphology; minors: Biochemistry, Plant Physiology) Purdue University, Lafayette, IN (1962)
Postdoctoral studies (Cell ultrastructure; electron microscopy) University of Texas, Austin, TX (1964 - 66)

CONSULTING SERVICES:

Forensic arboriculture: expert witness; liability assessment; hazard tree analysis

Tree evaluation: appraisal of property value of trees; damage assessment

Tree management: tree preservation/maintenance programs and operations; landscape design analysis; tree selection; performance standards; tree problem diagnosis and corrective measures; tree root/soil/hardscape studies

PROFESSIONAL ORGANIZATIONS:

California Urban Forests Council

International Society of Arboriculture

Street Tree Seminars

COMMUNITY SERVICES:

Tree Society of Orange County: Arboriculture Chair; educational programs; tree planting and pruning workshops

TreePeople: lecturer; information resource

Fullerton Arboretum: Arborfest; fruit tree pruning demonstrations; tree plantings; Hispanic tree worker training program

Xeriscape: lecturer

University of California, Riverside: tree management seminars

U.C. Cooperative Extension Service: seminar programs; lecturer

Orange County E.M.A./Parks System: lecturer; advisory functions

Citizen/environmental groups and organizations: preservation and restoration of trees, tree stands and wildlife habitats (inventories, analyses, valuations, recommendations, conferences, public hearings)

CONSULTING PROJECTS

Forensic arboriculture:

Expert witness (deposition and/or court testimony): more than 80 cases; 60% plaintiff, 40% defendant.

Investigative reports (assessment of real or alleged loss; out of court settlement): more than 35 on behalf of plaintiff/claimant, more than 20 on behalf of defendant.

Specialties: Tree value appraisal; tree hazard assessment; condition rating; tree roots and hardscape; professional standards; herbicide injury; tree physiology and anatomy; tree growth; tree morphology; tree relocations; nursery standards; tree selections, siting and installation; stress factor analysis; design analysis; soil, water and mineral relations; tree diseases and decay processes; tree management practices; climatic factors in tree development and/or failure.

Diagnosis, correction, management programs:

Tree deterioration/decline: more than 70 residential, 20 corporate, 8 municipal.

Tree root/hardscape conflicts: more than 30 residential, 15 corporate, 4 municipal.

Landscape design analysis: more than 30 residential, 14 corporate, 5 municipal.

Tree preservation/restoral studies:

Tree inventories: more than 50 residential, 30 corporate, 4 municipal.

Tree and stand analysis (volunteer projects): 3 municipal, 2 county, 4 environmental organizations.

Selected consulting projects:

Parkway tree root/hardscape conflicts, City of Lakewood.

Oak tree inventory, Lake Sherwood site, Woodland Hills.

Aliso Viejo treescape design and substrate analysis.

Survey of tree root/hardscape relationships of desert gum and silver dollar gum.

Native tree stand analysis and relocation project, Foothill Ranch.

Analysis of landscape design and management-induced problems, Casta del Sol, Mission Viejo.

Study of abnormal variegation in *Myoporum* foliage, southern California coastal areas.

The value of urban greenbelts in Southern California.

Treescape design and management analysis, Sony Pictures Studios and Tristar.

Tree inventory and relocation program, Kaiser-Permanente, Fontana.

TEACHING EXPERIENCE

College level courses (Parsons College; Lycoming College)

- General biology
- General botany
- Plant anatomy
- Plant morphology
- Plant physiology
- Non-flowering plants
- Electron microscopy
- Field techniques in botany
- Evolution

Adult education (Lycoming College)

- General horticulture
- Plant propagation

Seminars (Various academic, professional and public service organizations in southern California)

- Pruning landscape trees
- Selection of landscape tree species
- Tree value appraisal
- Cost-effective tree management
- Decay in trees
- Drought tolerant native plants for southern California landscapes
- Tree roots: structure, growth and management
- Tree planting operations
- Troubleshooting tree problems
- Relocation of mature trees
- Hispanic tree worker training program (Fullerton Arboretum)

PRESENTATIONS TO PROFESSIONAL GROUPS

- 1985 How a tree gets its shape (Western Chapter, International Society of Arboriculture; Palm Springs)
Proper tree maintenance (Mission Viejo Company, Mission Viejo)
- 1986 Trees and money (San Diego Turf and Landscape Conference; San Diego)
Understanding decay in trees (Western Chapter, International Society of Arboriculture; Santa Barbara)
Pruning: art or science? (Annual Turf and Landscape Conference; Anaheim)
- 1987 Maintenance of trees (Xeriscape '87; Santa Ana)
Selection of trees (Home landscaping series; Metropolitan Water District; Riverside)
Tree pruning (Caltrans tree maintenance staff, Los Angeles)
Maintenance of streetside trees (Tree maintenance staff, Lakewood)
A systematic method of troubleshooting your landscape problems (Third Annual Troubleshooting Seminar, University of California; Riverside)
Tree Care (Mission Viejo Company, Mission Viejo)
Oak Tree Diagnostic Clinic (U.C. Cooperative Extension Service; Ventura County)
Tree management (Seminar: Profitably Managing Multihousing Landscape Dollars; University of California; Riverside)
- 1988 Understanding tree roots (Tree Management Seminar, University of California Cooperative Extension Service; Ventura County)
A system for selecting appropriate trees based on soil, climate, space, pest and disease factors, maintenance costs and esthetics (Tree seminar: Selecting Trees for Streets, Parks and Landscapes; Riverside)
Problems and expenses resulting from selection of inappropriate trees for specific sites (Tree seminar: Selecting Trees for Streets, Parks and Landscapes; Riverside)
- 1989 A new approach to tree value appraisal (Street Tree Seminar/International Society of Arboriculture Tree Management Symposium: Living With Our Trees; Arcadia)
Selection and management of trees (San Diego Xeriscape '89; San Diego)
- 1990 Pruning to reduce green waste (L.A. Recycling and Waste Reduction Division Workshop; Los Angeles)
- 1991 Pruning for tree health and increased property value (U. C. Cooperative Extension Short Course in Horticulture; Los Angeles, Buena Park, San Bernardino)
- 1992 Successful tree production - an arborist's viewpoint (Wholesale Nursery Production Seminar, Mt. San Antonio College; Walnut)
A celebration of trees (California Association of Nurserymen, California State University; Fullerton)
Tree management and developing standards for success (Tree Pruning Seminar, U.C. Riverside)
- 1993 Tree nutrition and fertilization (Arborist Certification Training Program; Riverside)
Water management: trees in the landscape (Water Efficient Landscape Conference, Santa Clara Water District; San Jose)
Oak growth and development as related to pruning practice (Oak Tree Maintenance Symposium, Descanso Gardens; La Canada-Flintridge)
- 1994 Pruning small trees: a different way to see trees (Western Chapter, International Society of Arboriculture/Street Tree Seminar Conference; Anaheim)

TREE MANAGEMENT GUIDELINES
(leaflets prepared for distribution at seminars and to clients, professionals and others)

- 1984 Correct and incorrect pruning methods
Best times to prune broadleaf trees in southern California
Effects of pruning method on tree value
- 1985 How to specify and recognize quality pruning
General specifications for pruning trees
Evaluation of trees
- 1986 Tree value approximation: a method for estimating the real estate value of your trees
Tree selection
Tree species likely to damage hardscape
Tree management
The eucalyptus longhorn borer: what can we do about it?
- 1987 Maintenance of trees
Tree selection: species
Tree selection: specimens
Selection of trees for streetside plantings
A systematic method for troubleshooting your landscape problems
- 1988 Site preparation: a neglected essential in tree management
Evaluation of trees by the PRC method
- 1989 One hundred trees for southern California landscapes
Tree value appraisal: why replacement cost is a more appropriate method than the I.S.A. formula method
- 1990 Drought tolerant native trees and shrubs for southern California landscapes
KAT program (Kids and Trees): guidelines for tree studies in elementary schools
Pruning effect on tree value: rough approximations
Replacement cost as a basis for assessing value of landscape trees
Space for roots
Species ratings and rankings for landscape trees in four southern California plantclimate regions
- 1991 Condition rating correction factors in tree value assessment
Holistic tree management: applied ecology...in landscapes as miniature ecosystems
Replacement cost as a measure of tree value: standardized wholesale costs and prices for installation in ready-access areas
Species ratings and condition ratings in tree value assessment
Trees for small spaces: soil volume
- 1992 Small trees and tree-shrubs for southern California coastal landscapes (plantclimate zone 24)
- 1993 Mulches and top dressings
Root corridors
Soil ecosystems, soil chemistry, and root system enhancement

Publications:

1. Kelley, A.G. 1958. Floral induction in apples. M.S. Thesis, Iowa State University, Ames, IA.
2. Kelley, A.G. and S.N. Postlethwait. 1961. Fern gametophytes as a tool for the study of morphogenesis. *Proc. Ind. Acad. Sci.* (1960) 70:56-60.
3. Kelley, A.G. and S.N. Postlethwait. 1962. Effects of 2-chloroethyltrimethylammonium chloride on fern gametophytes. *Am. J. Bot.* 49:779-786.
4. Kelley, A.G. 1962. Studies on morphogenesis in gametophytes of *Pteridium aquilinum* (L.) Kuhn. Ph.D. Thesis, Purdue University, Lafayette, IN.
5. Mollenhauer, H.H., D.J. Morre and A.G. Kelley. 1965. The widespread occurrence of plant cytosomes resembling animal microbodies. *Protoplasma* 62(1):44-52.
6. Skvarla, J.J. and A.G. Kelley. 1968. Rapid preparation of pollen and spore exines for electron microscopy. *Stain Tech.* 43:139-144.
7. Skvarla, J.J. and A.G. Kelley. 1969. Fine structure of *Canna generalis* sporocytes: dictyosomes. Pre-congress Conference on Pollen Physiology. 50th Annual Meeting, AAAS, Pacific Div. Aug. 18-23, 1969. Washington State University.
8. Skvarla, J.J. and A.G. Kelley. 1971. Dictyosome development during microsporogenesis in *Canna generalis*. In: J. Heslop-Harrison, ed. *Pollen: Development and Physiology*. Butterworths, London.
9. Kelley, A. 1985. Cost-effective tree care. 1. What is a tree worth? *Orange County Apartment News* 25(8):22ff.
10. Kelley, A. 1985. Cost-effective tree care. 2. The effect of the pruning method on tree value. *Orange County Apartment News* 25(9):13-14.
11. Kelley, A. 1985. Cost-effective tree care. 3. Selecting a reliable tree care service. *Orange County Apartment News* 25(10):19-20.
12. Kelley, A. 1985. Cost-effective tree care. 4. Specifications for tree pruning. *Orange County Apartment News*. 25(11):9ff.
13. Kelley, A. 1985. Cost-effective tree care. 5. How to recognize quality pruning. *Orange County Apartment News*. 25(12):35.
14. Kelley, A. 1985. Topping: the most expensive form of pruning. *Arbor Age* 5(11):20ff.
15. Kelley, A. 1987. City trees: are they worth it? *Arbor Age* 7(4):12ff.
16. Sydnor, T.D., G. Watson and A. Kelley. 1988. Interim-transplanted blue spruce show improved branch, root development. *The Landscape Contractor* 29(7):14-15.
17. Degan, J., J. Frainie, A. Kelley and A. Remyn. 1989. Street trees suitable for southern California. (chart) Street Tree Seminars, Inc.

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FEE SCHEDULE

Consulting services (including conferences, site study, research, travel, analysis, report preparation, correspondence): \$150 per hour; \$1,200 for 8 - 10 hours per calendar date.

Expert witness services:

Investigation, analysis and reporting: \$150 per hour; \$1,500 retainer required prior to initiation of work; successive advances required upon depletion of previous payments.

Testimony: (including deposition, court appearance; 2 hour minimum): \$250 per hour.

Per diem (for one or more days away from home base): \$150 per day, in addition to travel and lodging. Advance payment required.

Expenses: Per receipted items (travel, lodging, supplies, professional services).

Routine photographic expenses, report duplication costs, and ancillary expenditures are normally provided at no cost to client.

Testing and analytical services, and other non-routine materials and services will be billed at cost.