1982
J. Kaufman
Draft

COMMITTEE ON CONSERVATION AND ENVIRONMENTAL QUALITY

Report of the Task Force on the Management of Nature Areas on the Central Berkeley Campus

I. Introduction

The purpose of this report is to establish guidelines for managing the three nature areas -- Goodspeed, Grinnell and Wickson -- on the central Berkeley Campus, and also to propose designation of a fourth -- Observatory Hill -- as a nature area. These guidelines are consistent with those objectives proposed in 1970 by the Landscape Architecture Advisory Subcommittee (see attachment), which has since been replaced by this Committee.

History

In the late 1950's, Thomas Church was hired as consulting landscape architect to the Berkeley Campus. While Church was still developing his ideas for landscape development, he began to direct some changes on the campus. The clearing of brush and trees along Strawberry Creek north of the Life Sciences Building alarmed some faculty in Forestry, Zoology and Botany, who feared that similar treatment along the rest of the creek would result in the loss of unique plant and animal habitat. Although the Campus Planning Committee responded favorably to Church's plans, Chancellor Glenn Seaborg authorized formation of the Landscape Architecture Advisory Subcommittee (LAAS), composed of faculty members, to advise Church on areas of instructional value that

should be preserved. The LAAS eventually formulated the concept of reserved natural areas and fought hard through the 1960's for preservation of sections of campus. After a publicity campaign by involved faculty members and an eighteen-month trial period in 1969, Chancellor Roger Heyns approved the permanent establishment of three Natural Areas on the central campus. These were named the Wickson, Goodspeed and Grinnell Natural Areas. They are also referred to as Ecological Study Areas (ESA's). All three are long, narrow riparian swatches. Observatory Hill was proposed as an ESA, but denied the designation, leaving it vulnerable to construction plans (see map).

The management techniques recommended for the ESA's differed from those applied to the rest of the campus. Unmown grasses and vegetative debris, such as leaves and dead branches were to remain. This retention of natural detritus would encourage insect, small mammal and bird populations and allow the observation and study of natural processes.

In practice, only the Grinell ESA and Observatory Hill have been managed in this way. Goodspeed and Wickson, although far from manicured, have been cleared of hazardous trees and dead shrubs. (This may be because ~~they~~ these ESA's are so much smaller that fallen limbs and dead material would interfere with adjacent cultivated grounds.) They have not been cleared of any invasive plant material, however, in 1970, LAAS issued a proposal on the management of the ESA's. This proposal recognized that a management policy of almost total neglect was neither accomplish-

ing nor appropriate to the original objective. Recognizing that the campus ESA's were not at all "natural," it renamed the central campus ESA's "nature areas." The purpose of the proposal was to structure a management program that would preserve the wildlife habitat while enhancing the integrity of the plant communities. In order to accomplish this, certain invasive species, such as cestrum, cotoneaster, loquat, plum, would be replaced with native plants.

The Task Force recommended that LAAS become the body for supervising the development of policy with the Senior Landscape Architect and Grounds Department implementing the work. The Task Force also recommended a budget to cover administrative costs, new material, plant labels, brochures and a full-time gardener to be assigned to the nature areas and Strawberry Canyon.

Although the report was issued in 1970, it was never implemented and no funds were allocated.

LAAS was dissembled in _____. The Committee on Environmental Quality (its successor) was appointed in _____, but has never, until now, addressed management of the nature areas. Maintenance of the nature areas has continued to be minimal in the Grinnell ESA and on Observatory Hill. Grass is mop-mowed a few times a year to reduce fire hazard, and some shrubs are trimmed according to requests by the Police Department for patrol visibility.

The Goodspeed and Wickson nature areas have been greatly invaded by thoroughly "unnatural" species such as cestrum and

plum. Many of the oaks and bays are diseased. Those that pose a severe hazard to buildings or major circulation routes are removed as the budget permits. The LAAS report proposed replacing the invaders by the infiltration of desirable material, such as creek dogwood (Cornus stolonifera) and Gaultheria shallon. Cutting out of exotics would follow at an appropriate interval, thus avoiding stripping.

As the 1970's were a decade of reduced funds for both materials and labor, it has been a policy born of necessity to allow the nature areas, particularly Grinnell and Observatory Hill, to go practically "wild."

III. A Proposal for the Future

In the Summer of 1981, a Task Force under the direction of Russell A. Beatty, Landscape Architecture Department, was assigned to issue a report on "Campus Open Space, Landscape, Circulation and Parking." The Task Force report and master plan defends the Nature Areas as open space to be spared from consideration as building sites. However, it also recommended that the areas be upgraded by the removal of exotics, and replacement with indigenous plants. Concurrently with the development of the open space master plan, a campus landscape architect was hired to begin implementing the needed improvements identified in the plan. Such improvements require funds and as the grounds maintenance budget provided by the State is severely limited and becoming more limited annually, it behooves the

University to solicit other sources of support. One of these is to seek an endowment for the landscape. This would be a large sum of money that would be permanently invested in a long-term account, the interest on which would be drawn to finance landscape improvements. The Nature Areas would be some of the first areas to be improved.

What follows is a prescription for each of the three designated nature areas and one of Observatory Hill which is here proposed as a permanent nature area.

IV. Prescription for Four Nature Areas

The three designated nature areas on the Berkeley Campus are Grinnell, Wickson and Goodspeed. Observatory Hill has in the past been proposed as a nature area, although never officially designated. It is here proposed that it be designated as one and a management prescription for it is included.

The prescriptions are developed in the following manner (each area is considered separately):

1. Description of the area and dominant species
2. ~~Special wildlife/other considerations~~
3. Prescription for management

A. Goodspeed Nature Area (see map)

The Goodspeed Nature Area is here subdivided into two sub areas: (1) the area between the east wall of Stephens Hall and the Church bridge to the Campanile, and (2) the stretch running east from the bridge to the east edge of The Faculty Club.

(1) Stephens Hall to the Church Bridge

a. Description of the Area

This section of Goodspeed is dominated by a mature coast redwood grove and a medium low understory of shrubs and mulch. In addition to the redwoods, there are birch, live oaks, tulip magnolias, Carellias, and rhododendrons. There are also many

invasive species such as cestrum, plum, pittosporum and broom.

~~b. Wildlife/Other Considerations~~

c. Prescription for Management

This 'nature area' is basically cultivated and should remain so. Dead limbs, and shrubs should be removed, and thinning performed as plants become overcrowded and overshaded. The understory should be developed to introduce Redwood Associates, such as redwood sorrel (oxalis oregana), wild ginger (asarum caudatum), bleeding heart (dicentra) shooting star (dodocatheon) and native ferns, such as woodwardia, polystichum, etc. The arrangement and trimming of plant materials should permit views of the creek and environs over the groundstory planting and under the tree canopy.

(2) Church Bridge to East Side Men's Faculty Club

a. Description of the Area

This stretch of creek is dominated by Mature Coast Redwoods, with California Bays and mixed species Pittosporum trees interspersed. The shrub middlestory is high, 10-12 feet, merging into the tree canopy, thus forming a continuous wall of vegetation along the north edges of Faculty Glade. The shrubs are mainly rhododendrons, azaleas and ferns, invaded

~~span~~ by broom, cotoneaster, cestrium, etc.

b. ~~Wildlife/Other Considerations~~

c. Prescription

The rhododendrons and azaleas are nearing the end of their life span. These and the invaders should be phased out and replaced with plants from the following list:

Azalea occidentale	Native Azalea
Cornus Stolonifera	~~Redwig~~ Dogwood
Polystichum munitum	Western Sword Fern
Woodwardia fimbriata	Giant Chain Fern
Rhododendron macrophyllum	Coast Rhododendron
Gaultheria Shallon	Salal

Diseased and declining trees should be phased out and replaced with

Acer macrophyllum	Bigleaf Maple
Aesculus Californica	Buckeye
Aluus rhombifolia	White Alder

The middlestory planting in this area should remain high (10 feet or more) to preserve the "privacy" and

backdrop of Faculty Glade.

The various non-invasive plant specimens, such as Holly and non-native rhododendrons should be preserved for botanical and aesthetic variety.

B. Wickson Nature Area

The Wickson Nature Area can be divided into two subareas (1) the stretch from Wickson Bridge to the Bridge east of University House and (2) the stretch from the University House Bridge to the east end of the University House Garden.

(1) Wickson Bridge to University House

a. Description of the Area

This stretch of Stawberry Creek is vegetated primarily by mature coast Redwoods with a few California Live Oaks, Bigleaf Maples and Buckeyes interspersed among them. Shrubs consist of exotic rhododendrons, camellias, azaleas, to a height of 5-8 feet. Invasive species in this area and cestrum, toyon, pittosporum, loquat and plum. The creek is visible in spots.

b. Wildlife/Other Considerations

b. c. Prescription

Invasive species should be phased out and in places replaced with Redwood associates (see list for Goodspeed, Stephens Hall to Church Bridge). Weak specimens that have been overcrowded or overshaded should be removed. All trees and shrubs should be pruned and all dead wood removed so that enough light penetrates to permit understory growth. The variety of plant species should be preserved and the various specimen trees enhanced by careful trimming of the plants around them. The creek should be about 50% visible, 50% masked by vegetation, shrubs should be no higher than 8 feet.

(2) University House Bridge to University House Garden

a. Description of the Area

The dominant tree species in this area is California Bay with a few Coast live oaks, Pittosporum, Cedar, Magnolia and buckeyes mixed in. Shrubs are mainly raphiolepis and cestrum, grown high. All the growth is very tangled. Many of the Bays have heart rot and the oaks are declining. In this area, a solid border of vegetation is appropriate in order to provide privacy and security for University House.

This area has a less cultivated look and should remain this way. The cestrum should be controlled, but not eradicated. Diseased trees should be removed, as should poor speciments which have been overcrowded. Important trees should be preserved by

deadwooding them and trimming encroaching plants around them.

C. Grinnell Nature Area

The Grinnell Nature Area can be subdivided into 4 subareas (see map).

(1) The Eucalyptus Grove and its adjacent creek border
(2) The Le Conte Pine Grove
(3) The Live Oak Grove south of LSB
(4) The Redwood Grove (creekside planting) east of the Le Conte Pine Grove and south of the Oak Grove.

(1) The Eucalyptus Grove and its adjacent creek border

a. Description of the Area

The historic Eucalyptus Grove is dominated by over 100 mature Eucalyptus globulus. The ground cover consists of mulch made up of leaves and bark from these majestic trees. "Furnishings" consist of several large benches roughly carved from redwood trees. There is also a barbecue pit and a few lights strung from the trees. Although there are still over 100 trees, the number of trees is declining as dead, diseased and hazardous trees are removed.

Strawberry Creek runs along the south ~~end~~ and west edge of the grove. In this area it is inhabited primarily by California Buckeye, live oak, Coast Redwood, and California Bay.

Invasive species are plum, cotoneaster, broom, and baccharis.

b. Wildlife/Other Considerations

c. Prescription

The Task Force Report on Open Space, Landscape, Circulation and Parking (Beatty, 1982) states that no development should be allowed within 100 feet of the Eucalyptus Grove. New Eucalyptus should be planted to fill in the Grove as old ones die out, and remaining Eucalyptus should be trimmed, and otherwise treated to perpetuate their health.

Creekside planting should be cleared of invasive species which are dead, highly diseased or interfering with more important native species.

Fallen trees should be left, and vegetation remain thick to provide a solid border to the grove and creek.

(2) Le Conte Pine Grove

a. Description of the Area

The Le Conte Pine Grove is primarly a stand of mature Pinus radiata with some live oaks interspersed. The

pines are all nearing the end of their life span. Several have died. These have either been felled and are still lying on the ground, or topped to a height of 20 feet or so. These latter are simply bare trunks with no limbs. The primary shurb is toyon (Heteromeles Arbutifolia), concentrated at the east end. Much of the area is covered by grasses which are mop-mowed as required to contain the fire hazard.

b. ~~Wildlife/Other~~ Considerations

b c. Prescription for Management

The rustic and woodsy quality of the area should be preserved. A few fallen logs and dead trunks give the area a character unique on the campus and in an urban setting. Invasive species such as Mayten and Cotoneaster should be removed, along with dead or highly diseased toyon shrubs.

A few dead pines and oaks should be left both for visual interest and educational purposes. Those which are interfering with healthy growth should be removed. Overcrowded and overshaded vegetation should be thinned in favor of the pines and oaks. Some new shrubs native to dry California hillsides should be added to replace some of the invasive and dead material being removed.

Some examples are:

Romneya coulteri	Matilija Poppy
Dendromecon rigida	Bush Poppy
Fremontodendron californicum	Flannel Bush
Arctostaphylos spp.	Manzanita
Ceanothus spp.	California Lilac

(3) Oak Grove South of LSB

a. Description

The Oak Grove South of LSB consists solely of mature California Live Oaks (Quercus agrifolia) and one magnificent European Beech (Fagus Sylvatica). The ground plane is simply a mulch made of the fallen oak leaves.

b. Wildlife/Other Considerations

c. Prescription for Management

The oak trees need considerable trimming to remove dead wood. Other than that, the grove and mulch should be left as is. Additional varieties of Beech should be planted to the north of this grove on the other side of the flagstone path (see map) for teaching

purposes and to extend the life of the grove. Similarly, new oaks should be phased in where room permits or as old ones die out.

(4) Redwood Grove (Creekside planing)

a. Description

Strawberry Creek in this area is dominated by Coast Redwoods, Buckeye, Bay, Bigleaf maple. The shrub border is dense and high. Primary invasive species are acacia and baccharis.

b. Wildlife/Other Considerations

c. Prescription for Management

Dead and invasive shrubs should be removed along with overcrowded and weak specimens. Shrubs should be kept solid but trimmed to prevent their crowding or interfering with specimen buckeyes and bigleaf maples.

D. Observatory Hill

Although Observatory Hill is not officially designated as a Nature Area, it has been managed similar to one. It was proposed as a Nature Area at the same time as the other

three, but not adopted. As it is the only remaining natural topography on the central campus, and as it is primarily an oak and woodland habitat, which is original and highly indigenous to the area, it is here recommended that it be reconsidered and designated a nature area. Failing that, any new construction should be sited to preserve and take advantage of existing oaks and land form.

(1) Description

The top of Observatory Hill is dominated by California Live Oaks and grasses. Redwoods on the west and north slopes are declining. Cedars dominate the lower southerly slopes. Shrubs are mixed, with toyon and buckeye invaded by bacharis baccarus, acacia, pittosporum, acanthus and cotoneaster. Many of the toyon have thrips. Others are dead or declining. The ruins of Leuschner Observatory are covered in wisteria.

(2) Wildlife/Other Considerations

(3) Prescription for Management

Observatory Hill should be restored as an oak woodland and grass habitat. The ruins of the Observatory should be removed along with the wisteria and other exotics. Dead,

diseased and overcrowded toyon and other natives should be removed. Cedars should be confined to the lower southwest slopes and Redwoods to the north slopes. Native grasses should be seeded on top of the hill under and around the oaks. Native shrubs from the following list should be planted in masses for aesthetic as well as educational and wildlife purposes:

Aesculus Californica	California Buckeye
Ceanothus spp.	California lilac
arctostaphylos spp,	Manzanita
Cercis occidentalis	Western Redbud
Romneya coulteri	Matilija Poppy
cercocarpus betuloides	Mountain Mohagany
Fremontodendron Californicum	Flannel Bush
Dendromecon rigida	Bush Poppy
Quercus spp (native)	California Native Oaks

LIST OF DESIRED PLANT SPECIES

[illegible]side Woodland Habitat - Native Plants

[illegible]:

Acer macrophyllum - bigleaf maple

Acer negundo - box elder

Aesculus californica - buckeye

Alnus rhombifolia - white alder

Cornus californica - creek dogwood

Quercus agrifolia - coast live oak

Salix lasiolepis - arroyo willow

Sambucus caerulea - blue elderberry

Umbellularia californica - California laurel

[illegible]rubs:

~~Baccharis pilularis — coyote bush~~

Ceanothus sorédiatus - Jim brush

Corylus cornuta var. californica - California hazel

~~Heteromeles arbutifolia~~ - toyon

Physocarpus capitatus - nine-bark

Rhamnus californica - coffee berry

Ribes sanguineum var. glutinosum - red flowering currant

Rubus parviflorus - thimbleberry

Symphoricarpos albus - snowberry

Redwood Forest Habitat - Native Plants

Trees: Acer circinatum - vine maple

Lithocarpus densiflora - tanbark oak

Sequoia sempervirens - coast redwood

Shrubs: Ceanothus ~~thrysiflorus~~ spp - ~~blueblossom~~

Gaultheria shallon - salal

Myrica californica - ~~wax maple~~ pacific myrtle

Rhododendron occidentale - western azalea

Vaccinium ovatum - California huckleberry

Whipplea modesta - ~~modesty~~ Yerba Santa

Forbs: ~~Aralia californica - elk clover~~

Aspidium rigidum - California wood fern

Athyrium filix foemina - lady fern

Blechnum spicant - deer fern

Oxalis oregana - redwood sorrel

~~Peltophyllum peltatum - Indian rhubarb~~

Polypodium californica - licorice fern

Polystichum munitum - western sword fern

Trillium ~~sessile~~ ovatum - common trillium

~~Vancouveria parviflora - inside-out flower~~

Woodwardia fimbriata - giant chain fern

Adiantum pedatum

Dry Oak Grassland - Native Plants

Trees: Aesculus californica - buckeye (californica)

Quercus agrifolia - coast live oak

Shrubs: Carpenteria californica - Bush Anemone

Heuchera maxima - Island Alum Root

Ribes viburnifolium - Evergreen Currant

Forbs: Oenothera ovata - golden eggs ?

Sisyrinchium bellum - blue-eyed grass

(S. douglasii)

LIST OF DESIRED PLANT SPECIES

Streamside Woodland Habitat - Native Plants

Trees:

Acer macrophyllum - bigleaf maple

Acer negundo - box elder

Aesculus californica - buckeye

Alnus rhombifolia - white alder

Cornus californica - creek dogwood

Quercus agrifolia - coast live oak

Salix lasiolepis - arroyo willow

Sambucus caerulea - blue elderberry

Umbellularia californica - California laurel

Shrubs:

Baccharis pilularis - coyote bush

Ceanothus sorediatus - Jim brush

Corylus cornuta var. californica - California hazel

Heteromeles arbutifolia - toyon

Physocarpus capitatus - nine-bark

Rhamnus californica - coffee berry

Ribes sanguineum var. glutinosum - red flowering currant

Rubus parviflorus - thimbleberry

Symphoricarpus albus - snowberry