01/04/2008

Save Strawberry Canyon
S. Dean, S. McLaughlin
L.E. Jones P. Rogers
J. Shively
J. Thomas

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Attorneys for Petitioners Lesley Emmington Jones , Henry M. Gehman, Sylvia C. McLaughlin, Janice Thomas, and Anne Paxton Wagley

ENDORSED
FILED
ALAMEDA COUNTY

AUG 17 2007

CLERK OF THE SUPERIOR COURT
By BARBARA LAMOTTE
Deputy

SUPERIOR COURT FOR THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF ALAMEDA

LESLEY EMMINGTON JONES, an individual, HENRY M. GEHMAN, an individual, SYLVIA C. MCLAUGHLIN, an individual, JANICE THOMAS, an individual, and ANNE PAXTON WAGLEY, an individual,

Petitioners,

v.

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, an agency of the State of California,

Respondent.

Case No.: RG07341224

VERIFIED PETITION FOR WRIT OF MANDATE

(Code Civ. Proc. §§ 1094.5, 1085; Pub. Res. Code §§ 21168, 21168.5)

Petitioners LESLEY EMMINGTON JONES, HENRY M. GEHMAN, SYLVIA C. MCLAUGHLIN, JANICE THOMAS, and ANNE PAXTON WAGLEY (collectively "Petitioners") petition this Court for a writ of mandate directed to respondent The Regents of The University of California, and by this verified petition, allege as follows:

1. This petition challenges the unlawful action of Respondent The Regents of The University of California ("Regents") in 1) adopting the University of California Lab 2006 Long Range Development Plan ("2006 LRDP") and all findings purporting to support such approval including without limitation those adopting mitigation measures and a mitigation monitoring

program, and 2) certifying the associated Final Environmental Impact Report ("FEIR") for the 2006 LRDP in violation of the requirements of the California Environmental Quality Act ("CEQA"), Public Resources Code § 21000 *et seq.*

2. The Lawrence Berkeley National Laboratory ("Lab") is located along the northern edge of Strawberry Canyon in the hills immediately above the City of Berkeley and the University of California, Berkeley campus on 202-acres of land owned by the Regents. The Lab is operated by the University of California for the United States Department of Energy. Constructed beginning in 1931, the Lab consists of more than 150 buildings with 1.76 million square feet of occupiable space to which about 4,375 people commute for work each day. The Lab is a secure facility, fenced in with three entrance gates. The gate's steep hillside location are accessed primarily via two roads leading up from the City of Berkeley and the main UC Berkeley campus. The Lab engages in a broad array of advanced scientific research, including research in the areas of energy science and technology, nanotechnology, biology and environmental science, chemical physics, computational science and engineering, nuclear science, high energy physics, and photon and particle beams. The Lab shares Strawberry Canyon and its environs with a number of significant landmarks and features, including the headwaters and upper reaches of Strawberry Creek, a U.C. Berkeley Ecology Study Area, the Stephen Mather Redwood Grove, the UC Berkeley Botanical Gardens, critical habitat for the endangered Alameda whipsnake, the Hayward Fault which cuts across the lower elevations and western edge of the Lab, and to the south, the Panoramic Hill Neighborhood Historic District. The Lab's sensitive hillside location is visible to millions of people who live, work and recreate along the eastern side of San Francisco Bay.

3. The 2006 LRDP is an overall land use plan for the Lab intended to guide the development at the Lab for the next 20 years. The 2006 LRDP contemplates 980,000 square feet of new development at the Lab. The 2006 LRDP calls for the demolition of up to 320,000 gross square feet of existing structures and buildings. Thus, a net development total of 660,000 gross square feet are contemplated by the 2006 LRDP. In addition, the 2006 LRDP calls for the

construction of 500 additional parking spaces on the hillside, covering 585,000 square feet of space for parking lots and parking structures.

4. The proposed expansion of the Lab authorized by the 2006 LRDP will have adverse impacts on millions of Bay area residents viewing the East Bay hills or recreating nearby the Lab, the significant cultural landscape of Strawberry Canyon, critical and essential habitat for the endangered Alameda whipsnake, the water quality and flow of Strawberry Creek, increased noise levels around the Lab and in the City of Berkeley, increased traffic, and expose well over a thousand additional people on a daily basis to the risk of being trapped by a large earthquake or other disaster with no identified means of egress in the event the two main exit roads crossing the Hayward Fault are blocked. Despite these pervasive adverse impacts on the environment and threats to public health and safety, the Regents failed to perform adequate environmental review, thwarting informed public and agency review and comment.

5. Petitioners LESLEY EMMINGTON JONES, HENRY M. GEHMAN, SYLVIA C. MCLAUGHLIN, JANICE THOMAS, and ANNE PAXTON WAGLEY are concerned residents of Berkeley, California who recreate, walk, view wildlife, engage in cultural and historic research, reside, and otherwise use and enjoy the natural and cultural resources of Strawberry Canyon and areas in and around the Lab that will be adversely affected by the project. Petitioners' environmental, aesthetic, recreational, scenic, scientific, historic, cultural and community interests will, unless the relief requested herein is granted, be adversely affected and injured by Respondent's failure to comply with CEQA in approving the project and the EIR. Petitioners bring this action on behalf of themselves and the public interest.

6. Respondent THE REGENTS OF THE UNIVERSITY OF CALIFORNIA is the lead agency responsible under CEQA for evaluating the environmental impacts of the project.

7. Respondent caused a draft environmental impact report for the project to be prepared and circulated from January 22, 2007 to March 23, 2007. The final EIR was completed in July 2007.

8. By motion, dated July 19, 2007, Respondent resolved to certify the adequacy of the EIR under CEQA, adopted Findings, adopted a Statement of Overriding Considerations, and

adopted a Mitigation, Monitoring and Reporting Program pursuant to CEQA. On July 19, 2007, Respondent approved the 2006 LRDP for the Lab. A notice of determination to carry out the project was filed by Respondent on July 20, 2007.

9. Petitioners, other agencies, interested groups, and individuals participated in the administrative proceedings leading up to Respondent's approval of the project and certification of the EIR, either by participating in hearings thereon or by submitting letters commenting on Respondent's Notice of Preparation, DEIR or FEIR. Petitioners attempted to persuade Respondent that its environmental review did not comply with the requirements of CEQA, to no avail. Respondent's approval of the 2006 LRDP and certification of the EIR is not subject to further administrative review by Respondent. Petitioners have availed themselves of all available administrative remedies for Respondent's violation of CEQA. Petitioners have no plain, speedy, or adequate remedy in the ordinary course of law within the meaning of Code of Civil Procedure § 1086, in that Respondent's approval of the 2006 LRDP and associated EIR is not otherwise reviewable in a manner that provides an adequate remedy. Accordingly, Petitioners seek this Court's review of Respondent's approval of the project and certification of their EIR, to rectify the violations of CEQA summarized above and detailed below.

10. Petitioners performed all conditions precedent to filing this action by complying with the requirements of Public Resources Code § 21167.5 in filing notice of the action on August 16, 2007.

11. Venue is proper in this court pursuant to Code of Civil Procedure § 393 because Respondents main office and the proposed project are located in Alameda County and Petitioner's cause, or some part of that cause, arises in that county.

12. This petition is timely filed within the applicable statute of limitations provided by CEQA.

13. Respondent is threatening to proceed with operation of the project in the near future, including the construction of specific projects the environmental review for which intend to tier from the FEIR prepared for the 2006 LRDP. Operation of the project will irreparably harm the environment in that Respondent will commence with construction or demolition

activities pursuant to the flawed FEIR prepared for the 2006 LRDP resulting in aesthetic, cultural, water quality, traffic, noise, and other environmental impacts to Petitioners. A temporary restraining order and preliminary and permanent injunctions should issue restraining Respondent from proceeding with projects relying upon the 2006 LRDP or the FEIR.

14. Respondent's actions in certifying the FEIR, adopting Findings, adopting a Mitigation, Monitoring and Reporting Program, adopting the Statement of Overriding Considerations, and approving the 2006 LRDP constitute a prejudicial abuse of discretion in that Respondent failed to proceed in the manner required by law and its decision is not supported by substantial evidence as follows

(a) Respondent was required to recirculate the EIR in order to provide the public an opportunity to comment on the addition of new information in the FEIR including inadequate discussions of the Project's impacts to global warming and Strawberry Canyon's significant cultural landscape. Respondent's decision not to recirculate the EIR is not supported by substantial evidence.

(b) The EIR's project description is inadequate because it fails to describe the existing array of research at the lab sufficiently for the public and Respondent to evaluate, among other things, the Project's "functionality" goal, "partnership and collaboration" goals and feasibility of an off-site or partially off-site alternative.

(c) The EIR's project description is inadequate because it fails to adequately describe the "support structures" allowed to be constructed within the open space areas of the project, including within whipsnake critical habitat.

(d) The FEIR's discussion of the project's impacts on cultural resources fails to discuss adequately the impacts of the project on Strawberry Canyon as a likely significant cultural landscape. The conclusion stated in the response

to comments that the project will have no effect on potential significant cultural landscape is not supported by substantial evidence.

(e) The EIR's discussion of aesthetic impacts is misleading because use of an illustrative development scenario substantially larger than the project exaggerates impacts. Respondent's reliance upon visual representations of a development scenario that is substantially larger than the proposed project is not substantial evidence upon which to base a conclusion that aesthetic impacts of the project are unavoidable.

(f) The EIR's discussion of biological impacts is inadequate because Respondent fails (i) to include the results of any consultation with the United States Fish & Wildlife Service as required by Section 7 of the federal Endangered Species Act, 16 U.S.C. § 1536 *et seq.*, regarding the project's potential impacts to the Alameda whipsnake and its designated critical habitat and (ii) to adequately discuss the support structures and management activities that would be authorized to be built or implemented within the habitat of the Alameda whipsnake.

(g) The EIR's discussion of hydrology and water quality is incomplete and misleading because it fails to disclose applicable criteria and benchmarks protective of aquatic life and fails to disclose the existing quality of storm water discharged from the Lab and numerous exceedences of water quality criteria and storm water benchmark values. The EIR's assertion that Respondent's Lab is complying with the State of California's General Permit for Discharges of Storm Water Associated With Industrial Activity and the project will have no significant impact on water quality is not supported by substantial evidence.

(h) The EIR's discussion of hazardous materials already polluting soil and groundwater at the site is inadequate because it fails to correlate and

discuss the anticipated development's overlap with those plumes and impacts on existing or future remediation efforts.

(i) The EIR's discussion of the presence of tritium in monitoring wells is flawed and not supported by substantial evidence because its assertion that tritium concentrations in all monitoring wells at the Lab are currently less than the drinking water standard is inconsistent with data presented in the EIR.

(j) The EIR's discussion of noise impacts is inadequate because it fails to adequately address additional noise from thousands of truck trips per year resulting from the project's anticipated construction and demolition activities, including but not limited to failing to describe or analyze likely haul routes and potential noise impacts to neighborhoods and parks through which trucks will pass.

(k) The EIR's discussion of traffic impacts fails to adequately address traffic impacts from haul trucks as well as from haul trucks and project-related vehicle traffic combined.

(l) The EIR's discussion of emergency ingress and egress routes in the event of earthquake, fire, seismic instability, or other emergencies is inadequate and not supported by substantial evidence.

(m) The EIR's evaluation of cumulative impacts of the project and other existing or planned projects on the U.C. Berkeley campus and within the City of Berkeley is inadequate and not supported by substantial evidence.

(n) The EIR fails to evaluate a reasonable range of alternatives, including, for example, an alternative with no-growth at the hill campus coupled with expansion off-site. The EIR's discussion of a single off-site alternative is vague, insufficient and not supported by substantial evidence.

(o) Respondent approved a project with significant environmental impacts and failed to adopt feasible alternatives and mitigation measures that would diminish or avoid significant environmental impacts.

(p) Respondent's failure to make any finding regarding the project's impacts to the cultural landscape of Strawberry Canyon is contrary to CEQA.

(q) Respondent's failure to make any finding regarding the project's contributions to global warming is contrary to CEQA.

(r) Respondent's findings that the project's impacts to scenic vistas and scenic resources, traffic congestion, construction and demolition related noise, and traffic congestion are unavoidable are not supported by substantial evidence.

(s) Respondent's findings of less than significant impacts are not supported by substantial evidence as follows:

i. Respondent's finding that the project's potential take of Alameda whipsnakes or their habitat is a less than significant impact is not supported by substantial evidence.

ii. Respondent's finding that the project's impacts relating to earthquakes, wildfires and other emergencies are less than significant is not supported by substantial evidence.

iii. Respondent's findings that the project's adverse affects on storm water will be less than significant either from the project alone or cumulatively are not supported by substantial evidence.

iv. Respondent's finding that potential exposure of construction workers or the environment to hazardous releases, including for example, exposure to existing soil and ground water contamination from future construction and demolition activities, is not supported by substantial evidence.

v. Respondent's finding that noise levels associated with additional traffic resulting from the project will have a less than significant impact is not supported by substantial evidence.

vi. Respondent's finding that truck traffic associated with the project will have a less than significant impact is not supported by substantial evidence.

vii. Respondent's finding that all alternatives to the project are infeasible is not supported by substantial evidence.

(t) Respondent failed to adopt a legally adequate statement of overriding considerations in that their decision to proceed with the project despite finding unavoidable significant impacts to scenic visas, scenic resources, air quality, historic resources, demolition and construction noise levels, and traffic impacts was not informed by adequate consideration of an alternative evaluating a feasible, off-site component to the project and was not supported by substantial evidence.

15. Respondent thereby violated its duties to certify an EIR and adopt findings conforming to the requirements of CEQA and the CEQA Guidelines. Accordingly, Respondent's certification of the EIR for the 2006 LRDP and the decision approving the 2006 LRDP must be set aside.

WHEREFORE, Petitioners demand entry of judgment as follows:

1. For a stay of Respondent's decisions certifying the EIR and approving the 2006 LRDP pending trial.

2. For a temporary restraining order and preliminary injunction restraining Respondent from taking any action to carry out any site-specific projects relying in whole or in part upon the 2006 LRDP or the EIR pending trial.

3. For a peremptory writ of mandate directing:

a. Respondent to vacate and set aside its certification of the EIR for the project and the decision approving the 2006 LRDP.

b. Respondent to suspend all activity under the certification of the EIR and approval of the 2006 LRDP that could result in any change or alteration to the physical environment until Respondent has taken actions that may be necessary to bring the certification and project approval into compliance with CEQA.

c. Respondent to prepare, circulate, and consider a new and legally adequate EIR and otherwise to comply with CEQA in any subsequent action taken to approve a LRDP for the Lab.

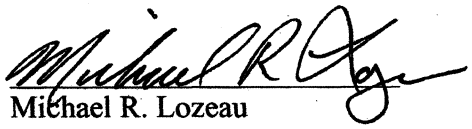
4. For its costs of suit.

5. For an award of attorney fees pursuant to Code of Civil Procedure § 1021.5.

6. For other equitable or legal relief that the Court considers just and proper.

Dated: August 17, 2007

LAW OFFICE OF MICHAEL R. LOZEAU



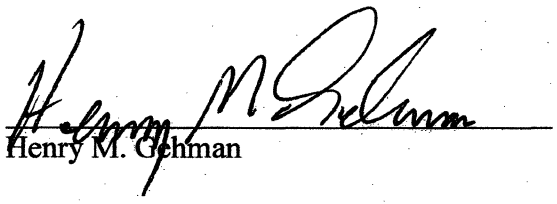
Michael R. Lozeau
Attorney for Petitioners Lesley Emmington Jones, Henry M. Gehman, Sylvia C. Mclaughlin, Janice Thomas and Anne Paxton Wagley

VERIFICATION

I, Henry M. Gehman, say:

I am one of the petitioners in this action. I have read the foregoing petition and know its contents. The facts alleged in the above petition are within my own knowledge and I know these facts to be true.

I declare under penalty of perjury under the laws of the State of California that the above is true and correct and that this declaration is executed on August 16, 2007, at Alameda, California.



Henry M. Gehman

1/7/08 Save Strawberry Canyon. S. Dean, L.E Jones, S. McLaughlin, P. Rogers, J. Shively
J. Thomas

10/28 listings

17493 US 65S,
Damascus, 05001170,
LISTED, 10/19/05
(Mixed Masonry Buildings of Silas Owens, Sr. MPS)

CALIFORNIA, ALAMEDA COUNTY,
Panoramic Hill,
Panoramic Wy, Canyon Rd., Mosswood, Orchard Ln., Arden Rd.,
Berkeley, 05000424,
LISTED, 10/21/05

1/4/08

Save Strawberry Canyon:

Shirely Dean
Lesley Emmington Jones
Sylvia McLaughlin
Phila Rogers
John Shively
Janice Thomas

MAINE, ANDROSCOGGIN COUNTY,
Keystone Mineral Springs,
Keystone Rd.,
Poland, 05001175,
LISTED, 10/19/05

MAINE, CUMBERLAND COUNTY,
Battery Steele,
Florida Ave., Peaks Island,
Portland, 05001176,
LISTED, 10/20/05

MAINE, CUMBERLAND COUNTY,
Lakeside Grange #63,
Main St., jct. of Main St. and Lincoln St.,
Harrison, 05001173,
LISTED, 10/19/05

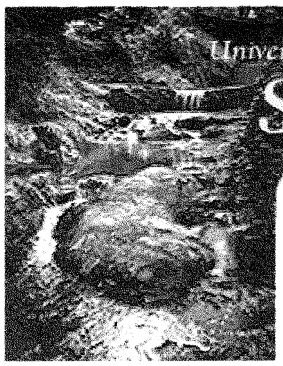
MAINE, HANCOCK COUNTY,
Garland Farm,
1029 ME 3,
Bar Harbor, 05001174,
LISTED, 10/19/05

MISSOURI, MADISON COUNTY,
St. Louis, Iron Mountain and Southern Railroad Depot,
Allen St., 150 ft. N. of jct. of Allen and Kelly Sts.,
Fredericktown, 05001178,
LISTED, 10/19/05

MONTANA, PARK COUNTY,
Hepburn, John, Place,
626 E. River Rd.,
Emigrant, 05001177,
LISTED, 10/19/05

NEW MEXICO, SANTA FE COUNTY,
Kelly, Daniel T., House,
531 E. Palace Ave.,
Santa Fe, 05001182,
LISTED, 10/19/05
(Buildings Designed by John Gaw Meem MPS)

OREGON, MULTNOMAH COUNTY,
Harrison Court Apartments,
1834 SW 5th Ave.,
Portland, 05001179,
LISTED, 10/19/05



University of California, Berkeley
Strawberry Creek

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Creek Management
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Strawberry Creek Management Plan

In 1987, in response to campus and community concerns over the deteriorated environmental quality of Strawberry Creek on the UC Berkeley campus, the campus Office of Environmental Health and Safety (EH&S) sponsored a comprehensive study of the creek. The results of the study completed by Robert Charbonneau were published in December 1987 as the "Strawberry Creek Management Plan" (1987 SCMP).

Implementation of the 1987 SCMP significantly improved water quality in Strawberry Creek, as evidenced by the successful reintroduction of locally native fish species to the creek in 1989 - the first resident fish population in the creek in approximately 100 years.

» **1987 Strawberry Creek Management Plan**

Full Document [6,937 kb]
Chapter 1: Executive Summary [19 4kb]
Chapter 2: Introduction [428kb]
Chapter 3: Creek and Watershed Description [3,211kb]
Chapter 4: Environment Assessment [1,698 kb]
Chapter 5: Management Strategies [860 kb]
Chapter 6: Implementation [47 kb]
References [174 kb]
Appendix A: Baseline Water Quality Data [128 kb]
Appendix B: Comparative Water Quality Data [132 kb]
Appendix C: Native Riparian Vegetation [55 kb]
Appendix D: Impact Assessment Criteria [36 kb]

» **2006-07 Updates to the Strawberry Creek Management Plan**

Strawberry Creek Water Quality- 2006 Status Report

1/4/08 Save Strawberry Canyon
Shirely Dean
Lesley Emmington Jones
Sylvia McLaughlin
Phila Rogers
John Shively
Janice Thomas

Subj: **Re: request for information**
Date: 1/2/2008 8:55:53 A.M. Pacific Standard Time
From: JGPhilliber@lbl.gov
To: JThomas621@aol.com

Hi Janice:

Sorry for the delay (the Lab shut down between close-of-business Dec. 21 and this morning). I am checking with the folks who have those ppt presentations right now and will get back to you.

Happy New Year,

--Jeff

JThomas621@aol.com wrote:

> Hi Jeff.
>
> I am in receipt of the Human Genome Lab EIR and also the human health risk assessment for the CRT and Helios. However, the public hearing PowerPoint only had the CEQA portion of the presentation and not the presentation about the facility and the research. This is to request that portion too.
>
> Also, I did not hear back from you regarding my request for the PowerPoint presentation for the Helios Energy Research Facility that was given Monday, December 17. This is to renew my request.
>
> Thanks so much.
>
> Janice Thomas
> 37 Mosswood Road
> Berkeley, CA 94704

1/4/08 Save Strawberry Canyon
Shirely Dean
Lesley Emmington Jones
Sylvia McLaughlin
Phila Rogers
John Shively
Janice Thomas

Subj: **request for information**
Date: 12/22/2007 6:54:56 P.M. Pacific Standard Time
From: JThomas621
To: jgphilliber@lbl.gov

Hi Jeff.

I am in receipt of the Human Genome Lab EIR and also the human health risk assessment for the CRT and Helios. However, the public hearing PowerPoint only had the CEQA portion of the presentation and not the presentation about the facility and the research. This is to request that portion too.

Also, I did not hear back from you regarding my request for the PowerPoint presentation for the Helios Energy Research Facility that was given Monday, December 17. This is to renew my request.

Thanks so much.

Janice Thomas
37 Mosswood Road
Berkeley, CA 94704

1/4/08 Save Strawberry Canyon

Shirely Dean
Lesley Emmington Jones
Sylvia McLaughlin
Phila Rogers
John Shively
Janice Thomas

Subj: **request for PowerPoint presentation**
Date: 12/17/2007 11:08:37 P.M. Pacific Standard Time
From: JThomas621
To: jgphilliber@lbl.gov

Hi Jeff.

This is to request an electronic copy of the PowerPoint presentation given tonight on the Helios project. If it is not possible to send me an electronic copy, please send a hard copy to my home address.

Thanks so much, Jeff.

Janice Thomas
37 Mosswood Road
Berkeley, CA 94704

1/4/06 Save Strawberry Canyon
Shirely Dean
Lesley Emmington Jones
Sylvia McLaughlin
Phila Rogers
John Shively
Janice Thomas

1/4/08
Save Strawberry Canyon

Shirely Dean
Lesley Emmington Jones
Sylvia McLaughlin
Phila Rogers
John Shively
Janice Thomas

Subj: **RE: BMC off-line**
Date: 1/2/2008 9:47:35 A.M. Pacific Standard Time
From: VBriggs@ci.berkeley.ca.us
To: JThomas621@aol.com
CC: LDHarris@ci.berkeley.ca.us

The Records Online service will be offline until Friday, January 4th.

-----Original Message-----
From: Harris, Leslie D.
Sent: Wednesday, January 02, 2008 8:32 AM
To: Briggs, Vernon
Subject: FW: BMC off-line

-----Original Message-----
From: JThomas621@aol.com [mailto:JThomas621@aol.com]
Sent: Saturday, December 29, 2007 5:00 PM
To: Clerk
Subject: BMC off-line

Greetings.

This is to let you know that the Berkeley Municipal Code on-line records are still off-line whereas the web-site notice states that the records will be on-line as of 12/26/07.

Janice Thomas

Search The Planet

THE BERKELEY DAILY PLANET
THE EAST BAY'S INDEPENDENT NEWSPAPER

Friday December 21, 2007

1/4/08
Save Strawberry Canyon:
Shirely Dean
Lesley Emmington Jones
Sylvia McLaughline
Phila Rogers
John Shively
Janice Thomas

Planning Commission Critiques LBNL Building

By Richard Brenneman (12-21-07)

The chair of the Berkeley Planning Commission offered a scathing critique of one of two major new laboratory buildings planned for Lawrence Berkeley National Laboratory (LBNL).

But it wasn't the Helios Building, the target of an unbroken string of criticism during a public hearing two nights earlier.

The critique dished out by architect James Samuels Wednesday night targeted the Computational Research and Theory (CRT) building, located next to the lab's Blackberry Gate.

"Unacceptable," was the verdict he pronounced to architect Allison Williams, the building's designer.

Calling the 11-story, metal-clad structure "an extremely large building ... that is going to have a large impact on the city," Samuels said he was concerned that the design wasn't respectful of its site.

He said a better design would have produced a design that stepped down the hillside and reoriented the main mass of the building by 90 degrees.

Williams disagreed, and said the design was driven by the need for a large clear space to house computers.

The structure will serve as a center for high-speed brute-force computing that will be used, among other things, to conduct research in climate change, energy efficiencies and the biosciences.

Williams was part of a team dispatched by LBNL to brief the city on the CRT building and the Helios building, a lower-rise structure at the other end of the lab complex that will house the $500 million BP-funded Energy Biosciences Institute and other energy research projects.

The presentations were made to solicit city comments on the building for inclusion in the environmental impact reports (EIRs) on the projects.

Bill Collins, a UC Berkeley professor who heads the lab's Earth

BOARDS & COMMISSIONS

City Clerk, 2180 Milvia Street, Berkeley, CA 94704
Tel: (510) 981-6900, TDD: (510) 981-6903
Office Hours: Monday - Friday, 8 a.m. to 5 p.m., E-mail: clerk@ci.berkeley.ca.us

NEW! **Note:** Some City buildings and services will be closed to the public on holidays and reduced services days. Access the City's Holiday and Reduced Service Days Schedule.

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Planning Commission

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Mission: Oversees and reviews the planning process and planning issues. Specific types of matters which come before the Planning Commission include revisions to the General Plan, Area Plans, Zoning Ordinance amendments, etc., including EIR and subdivision approvals. Council shall appoint one of its members as liaison.

Meetings: North Berkeley Senior Center
1901 Hearst Avenue
2nd/4th Wednesday, 7:00 p.m. Please check the community calendar to verify.

Contact: The Secretary of the commission is responsible for relaying all communications from the public to the members of the commission. The Secretary's contact information is listed below.

Communications received by noon the Wednesday before the meeting will be included in the packet of materials mailed to the Commission before their meeting.

Secretary: Jordan Harrison
Planning & Development
(510) 981-7416
E-mail: JHarrison@ci.berkeley.ca.us

1/4/08 Save Strawberry Canyon: Shirely Dean, Lesley Emmington Jones, Sylvia McLaughlin, Phila Rogers, John Shively, Janice Thomas

Enabling Legislation: BMC Chapter 3.28 (1947)

Additional Information:
- Commission Vacancies
- Fair Procedures (Ex Parte) in Land Use Quasi-Judicial Public Hearings - Resolution No. 62,571-N.S. (PDF, 417 KB)

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2007 Agendas and Minutes

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Month	Date	Agendas			Minutes		
December	12/19/07	Agenda:	html	pdf	Minutes:		
	12/12/07	Agenda:	html	pdf	Minutes:		
November	11/28/07	Agenda:	html	pdf	Minutes:	html	pdf

1/4/08 Save Strawberry Canyon:
Shirely Dean
Lesley Emmington Jones
Sylvia McLaughlin
Phila Rogers
John Shively
Janice Thomas

>> Close Window

Planning Commission

AGENDA

REGULAR MEETING OF THE PLANNING COMMISSION

This meeting is held in a wheelchair accessible location.

December 19, 2007 **North Berkeley Senior Center**
7:00 PM **1901 Hearst Avenue**

1. *Roll Call*

CONSENT CALENDAR ITEMS:

The Consent Calendar allows the Commission to take action with no discussion on projects to which no one objects. The Chair will announce items for the Consent Calendar at 7:05 p.m. The Commission may place action items on the Consent Calendar if no one present wishes to testify on an item. Anyone present who wishes to speak on an item should submit a speaker card or raise his or her hand and advise the Chairperson, and the item will be pulled from the consent calendar.

NONE

2. *Order of Agenda*
3. *Public Comment Period:* Speakers are customarily allotted up to three minutes each. Speakers are encouraged to submit more extensive comments in writing. To ensure adequate time for action items on the Agenda, the Planning Commission may limit the number of public speakers during the public comment period.
4. *Planning Staff Report:* Report on upcoming planning issues and recent Council actions. In addition to the items below, additional matters may be reported at the meeting.
5. *Chairperson's Report:* Report by Commission Chair.
6. *Committee Reports:* Reports by Commission committees or liaisons. In addition to the items below, additional matters may be reported at the meeting.
7. *Approval of Minutes:* Draft minutes of November 14 and final of October 24.
8. *Future Agenda Items and Other Planning-Related Events*

ACTION ITEMS: *Matters for discussion and possible action.*

9. **Lawrence Berkeley National Laboratory Presentations:** Helios Energy Research ("Helios") Facility and the Computational Research and Theory (CRT) Facility.
10. **Discussion: Implementation of State density bonus law and Berkeley's Inclusionary Ordinance.**

INFORMATION ITEMS: *Action may be taken on any information report at this meeting if any Commissioner requests its placement on the agenda as an action item.*

None.

COMMUNICATIONS: In compliance with Brown Act regulations, no action may be taken on

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1/4/08 Save Strawberry Canyon:
Shirely Dean
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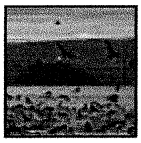
Sylvia McLaughlin
Phila Rogers
John Shively, Janice Thoma

50 Bay Area bird species placed on national watch list

Jane Kay, Chronicle Environment Writer
Thursday, November 29, 2007




Nearly one-third of the nation's bird species are in need of immediate help or they could disappear forever, according to two leading conservation organizations that for the first time have joined to produce a national "watch list" of winged wildlife.

Of the 217 bird species placed on the list by the National Audubon Society and the American Bird Conservancy, 50 are found in the Bay Area. That includes the California clapper rails nesting above tidal marshes, coastal sooty shearwaters and Western sandpipers that run on sandy beaches.

Also on the list are Clark's grebes, sanderlings, snowy plovers, black turnstones and rare marbled murrelets. Those species are among the nearly 2,700 birds that have been killed or injured by toxic fuel since a spill in San Francisco Bay three weeks ago.

"These imperiled birds are sending us a message that the environment we share with them is in trouble. When we improve habitat, the birds improve. If we damage habitat, they decline," said John Flicker, president of the 115-year-old National Audubon Society, which advocates for the roughly 700 breeding species found in the United States.

"For watch list birds, the clock is ticking. Many will slide into extinction if we don't take action," he said.

Some of the most serious threats to America's birds are the harmful effects of invasive species, such as cowbirds that take over nests; development and agricultural expansion that destroy feeding and breeding territory; and global warming, which raises sea levels and changes ocean conditions, according to bird scientists.

Of the 217 birds on the watch list, 98 are categorized as "red," indicating most at risk of extinction. The other 119 are categorized as "yellow," which means the species is "seriously declining or rare." The watch list was released Wednesday.

California had 73 species on the list and 22 in the red category. All of Hawaii's 39 imperiled species were put in the red category. Of the 50 Bay Area birds on the list, 14 were in the red category.

The list is a synthesis of the known science regarding population size, range, threats and population trends.

The groups that prepared the list want other organizations and government agencies to use it to decide which birds need better protection under the Endangered Species Act. They also want more money for recovery programs and better management of threats within the birds' ranges.

"We need to use every tool at our disposal, from private action to the Endangered Species Act," said George Fenwick, president of the American Bird Conservancy, which was founded to further protect declining bird populations. "The United States is going greener, and birds are nature's best ambassadors for this new environmental ethic."

Efforts should be made to eradicate invasive species, eliminate the worst pesticides, combat global warming and plan appropriate development, Fenwick said.

Recent measures taken to help birds include California's law that bans the use of lead shot in condor territory. New protections also have been passed to limit the threat that dogs and people pose to snowy plovers that nest on parts of the state's coastline.

Bird watching is a popular pastime in the United States - an estimated 60 million people show an interest in birds, a figure larger than the membership of AARP, according to the American Bird Conservancy.

Yet since the administration of President Ronald Reagan, the Endangered Species Act has been underfunded, and in recent years government officials have added only a few species to the protection list, said Greg Butcher, Audubon's director of bird conservation.

"San Francisco Bay has many important bird areas. We're encouraging people to go out and improve the habitats that are there. Plant natives, pull out invasive, improve your own backyard," Butcher said. "Even city dwellers share the need for clean air and clean water with birds. It turns out that what's good for birds is also good for people. When birds are out of kilter, nature is out of kilter."

Online resource:

Read about the watch list:

links.sfgate.com/ZBQU

Species status: declining or rare

Of the 217 bird species placed on the list by the National Audubon Society and the American Bird Conservancy, 36 of the 50 found in the Bay Area are on the list of seriously declining or rare species:

Common name	Scientific name
Allen's hummingbird	Selasphorus sasin
Ancient murrelet	Synthliboramphus antiquus
Black skimmer	Rynchops niger
Black turnstone	Arenaria melanocephala
Buller's shearwater	Puffinus bulleri
California thrasher	Toxostoma redivivum
Clapper rail	Rallus longirostris
Clark's grebe	Aechmophorus clarkii
Costa's hummingbird	Calypte costae
Elegant tern	Thalasseus elegans
Heermann's gull	Larus heermanni
Hermit warbler	Dendroica occidentalis
Lawrence's goldfinch	Carduelis lawrencei
Long-billed curlew	Numenius americanus
Marbled godwit	Limosa fedoa
Marbled murrelet	Brachyramphus marmoratus
Mountain quail	Oreortyx pictus
Nuttall's woodpecker	Picoides nuttallii
Oak titmouse	Baeolophus inornatus
Olive-sided flycatcher	Contopus cooperi
Red knot	Calidris canutus
Sage sparrow	Amphispiza belli
Sanderling	Calidris alba
Short-eared owl	Asio flammeus
Snowy plover	Charadrius alexandrinus
Sooty shearwater	Puffinus griseus
Surfbird	Aphriza virgata
Swainson's hawk	Buteo swainsoni
Thayer's gull	Larus thayeri
Varied thrush	Ixoreus naevius
Wandering tattler	Tringa incana

Western sandpiper	Calidris mauri
White-headed woodpecker	Picoides albolarvatus
Williamson's sapsucker	Sphyrapicus thyroideus
Wrentit	Chamaea fasciata
Yellow-billed magpie	Pica nuttalli

Source: National Audubon Society and American Bird Conservancy

E-mail Jane Kay at jkay@sfchronicle.com.

http://sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/11/29/MN3ETKKQ2.DTL

This article appeared on page **A - 1** of the San Francisco Chronicle

1/4/08 Save Strawberry Canyon: S. Dean, L.E. Jones, S. McLaughlin, P. Rogers, J. Shively, J. Thomas

Building Coordinator
Disaster Volunteer Training
Emergency Management Area
Fire Mitigation
News Articles & Press Releases

SEARCH

Go

LOCATION

1 Sproul Hall
Room 13
Berkeley
CA 94720-1199
U.S.A.

Fire Mitigation

Fire Mitigation Program

The campus Fire Mitigation Program is responsible for planning and directing the vegetation management efforts required to mitigate the threat of a wildland fire. The Office of Emergency Preparedness, a unit within the University Police Department, administers the program. In carrying out the program, the manager of OEP is guided by the campus Fire Mitigation Committee, Chaired by Professor Scott Stephens of the College of Natural Resources.

The Fire Mitigation Program develops and implements the annual fire management workplan and plans and executes large projects as set forth in the the 2020 Fire Plan (4077Kb). The annual workplan involves the clearing of light fuels (annual grasses and brush) from building perimeters, roadsides and turnouts. Both hand crews and goat herds are used to conduct this work. Additionally, prescribed fire is also available as a tool that may be used as conditions warrant.

In 2006, UC Berkeley opened the Center for Fire Research and Outreach, including the ongoing work of directors, faculty and researchers, collaborators and staff. The primary mission and goals of the Center are to:

- Become a focal point for science-based solutions to fire-related challenges.
- Encourage and facilitate collaboration on fire-related research questions among academics, practitioners, decision-makers, and government agencies.
- To provide the diffuse land-holding public with a centralized clearinghouse for information needs before, during and after wildfires.

For additional information on media coverage of the UC Berkeley Fire Mitigation Program and its projects, please refer to the News Section of this website.

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Annual workplan

Goat grazing Grazing Plan (805Kb) involves bringing a herd of up to 500 goats onto established areas and having the goats graze on the vegetation until the desired level of fuel removal is achieved. The goats are typically penned within a movable electric fence, and are supervised by both professional herders and herding dogs. Certain plants and trees can be protected from grazing by the installation of temporary fences around areas to be saved. The general objective for the grazed areas in to bring the vegetation down to a height of 2 to 4 inches from the ground. The work season for goat grazing is typically from late June to mid – August, depending upon weather, precipitation and the needs of adjacent large landholders.

Hand crews Hand Crew Workplan (5,166Kb) consist of contracted workers using gas powered weed whackers and light chain saws to remove grass, brush , limbs and small trees from prescribed areas. The crews move from site to site following a prioritized site map, and are typically active from mid- June to early August. The crews are able to be more selective than goats and can conduct more complex arbor work, herbicide application and selective removal than can the goats.

Project maintenance involves the ongoing management of the large-scale projects (557Kb) - typically the conversion of eucalyptus forests and maintenance of large scale fire breaks along the ridge line. Several times each year contracted crews, UC employees and volunteers visit past project sites to perform specific maintenance activities. The work includes the removal of eucalyptus re-sprouts and seedlings, as well as the reduction of brush, annual grasses, invasive exotics and toxic weeds.

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Large projects

Large projects are comprised of strategic fuel reduction efforts intended to create fire safety improvements over many years. Typically, large projects remove invasive eucalyptus trees, acacia trees and pine trees and decadent brush from locations necessary to fight or contain a wildfire. For campus lands, these locations area found along the upper canyons, roughly parallel to Grizzly Peak Blvd. Additional strategic sites include the ridgeline between Strawberry and Claremont Canyons, neighborhood interface zones near the Panoramic hill and North Berkeley neighborhoods, and the Hill Area management zone protecting the UC hill facilities and the Lawrence Berkeley National Laboratory. A map of projects (Map - strategic projects - 670 Kb) both underway and in planning shows the location of these strategic efforts.

"DURING THE AGE OF EXPLORATION, CURIOUS SPECIES from around the world captured the imagination, desire and
enterprising spirit of many different people. With fragrant oil and massive grandeur, eucalyptus trees were imported in great
numbers from Australia to the Americas, and California became home to many of them. Eucalyptus globulus, or Tasmanian blue gum, was first introduced to the San Francisco Bay Area in 1853 as an ornamental tree. Soon after, it was widely planted for timber production when domestic lumber sources were being depleted. Eucalyptus offered hope to the "Hardwood Famine", which the Bay Area was keenly aware of, after rebuilding from the 1906 earthquake." Taken from a 2006 informational brochure (1,831 Kb) on the issue of eucalyptus management, prepared by the Golden Gate National Recreation Area, a unit of the National Park Service.

Completed Projects

- FEMA Panoramic Hill (23Kb)
- Claremont Phase 1 (364Kb)
- Claremont Phase 2 (329Kb)
- Claremont Phase 3 (11Kb)
- Claremont Phase 4 (253Kb)
- Claremont Canyon Phase 5 (781Kb)
- Claremont Canyon Phase 6 (385 Kb)
- Frowning Ridge Phase 2 - PGE Transmission Line (440Kb)
- Frowning Ridge Phase 3 (320Kb)
- Frowning Ridge Phase 4 (1285Kb)
- Brontosaurus - Chaparral Hill (127Kb)
- Chaparral Hill Phase 1 Report (898Kb)
- Chaparral Hill - Phase 2A,B&C (977Kb)
- Claremont - Phase 6 (385 Kb)

In planning

- FEMA - PDM 2005 - Strawberry Canyon (1,048Kb)
- FEMA - PDM 2005 - Claremont Canyon (1,024Kb)
- FEMA - PDM 2006 - Frowning Ridge (883Kb)
- Lower Strawberry Canyon (424Kb)
- Clark Kerr Campus Track (384Kb)
- Chaparral Hill Phase 3 (841Kb)

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Fire Mitigation Committee:

The Fire Mitigation Committee (29Kb) is charged by the Vice Chancellor for Administration on behalf of the Chancellor to formulate and recommend policy that will support the management of fire hazards within the U.C. Berkeley Hill Campus. The Committee (21Kb) is composed of students, academics and administrative staff who have a professional concern for or interest in the Hill Campus and its wildlands. The Committee, chaired by Professor Scott Stephens, is charged with the following tasks:

- Recommend policy and strategies to manage fire hazards in the wildland/urban interface areas;

- Review campus compliance with existing and pending Federal, State, and Local laws and regulations relating to wildland fire issues, including but not limited to Clean Water Act, Migratory Bird Treaty Act, and Endangered Species Act codes;
- Provide the Vice Chancellor with recommendations on appropriate measures and costs to minimize fire hazards in the Hill Area;
- Review and recommend changes to activities that impact fire safety of wildland areas owned by the University that are adjacent to the Berkeley central campus; and,
- Verify that the Berkeley campus 2020 Hill Area Fire Fuel Management Program and any future or updated Fire Mitigation Programs are implemented and are effective

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Committee Reports

- 1999 Annual Report (98Kb)
- 2001-2002 Bi-Annual Report (84Kb)
- 2003-04 Bi-Annual Report (4,795Kb)
- 2005 Annual Report (6,108Kb)
- 2006 Annual Report (4,016Kb)
- 2020 Hill Area Fire Fuel Management Program (4,077Kb)
- Eucalyptus Brochure (648Kb)
- Claremont Canyon Erosion Study (1,766Kb)
- Fire Road Best Management Practices (1,350Kb)
- Alameda Whipsnake Recovery Plan (2,959Kb)
- Hill Area Plant Inventory (112Kb)

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Claremont Canyon Conservancy

The Claremont Canyon Conservancy (http://ccconservancy.homestead.com/home.html) is dedicated to reducing wildfire hazards in the canyon, improving public access, and understanding the ecosystem health of the entire watershed - then preserving or restoring it consistent with public safety. "

Background

In order to mitigate the risk of wildland/urban fires, the University is continually performing vegetation management projects on its land holdings in the East Bay hills. The vegetation management work in Claremont Canyon, overseen and conducted by the Campus in collaboration with members of the Hills Emergency Forum, seeks to transform the canyon into a more fire-safe condition. Past University projects have focused on removing re-sprouted eucalyptus trees along the upper reaches of the canyon. In order to complete the conversion of these sites to a sustainable and fire-safe vegetation type, ongoing maintenance -- including plantings of desirable species -- will be necessary. The Claremont Canyon Conservancy and the University have developed a memorandum of understanding to guide an ongoing collaboration in this stewardship. This MOU sets forth a process by which the University and the Conservancy will work together toward achieving the common objective of creating a sustainable, environmentally sound and fire-safe landscape. The evolution of this partnership was covered in a story by Andrea Pflaumer in The Monthly, October 2006.

Under this MOU, the Conservancy is authorized to conduct vegetation plantings and associated landscape maintenance on University lands. The University also conducts plantings and maintenance in the same locations; thus there is a joint stewardship of the canyon wildlands. The Claremont Conservancy carried out a Redwood Planting project and several Yellow Star Thistle Removal projects in 2005, with additional projects planned for 2006 and beyond. The Redwood reforestation effort, targeting a portion of the area cleared of eucalyptus, has been active for several years. Conservancy Vice President Joe Engbeck, redwood project manager, has composed an overview of the history of the reforestation project through 2007. For those interested in volunteering on a project, please contact the Conservancy and bring a signed release waiver before beginning your activities.

A written work plan is jointly developed by the University and the Conservancy, and serves as the guide to vegetation restoration and maintenance work. The work plan is expected to evolve and adapt over time and is subject to mutually determined revision on a periodic basis.

In 2004, the membership of the Claremont Canyon Conservancy generously supported the Claremont Canyon Phase 4 (253Kb) eucalyptus removal project by contributing funds derived through its membership. Through its contribution of $14,000, the Conservancy partnered with the University and Pacific, Gas and Electric Company in the removal of 1150 eucalyptus trees on the ridgeline of Claremont Canyon.

Complementing the Claremont Canyon Conservancy's stewardship effort is the web site: WILD LIFE in the NORTH HILLS - **Flora and Fauna of Claremont Canyon, Oakland, California** This website documents wildlife and wild plants found in the hills on the border between Oakland and Berkeley, California. The area covered is roughly bounded by Tunnel Road, Domingo Avenue, Claremont Canyon, and Grizzly Peak Blvd., with emphasis on Claremont Canyon and the surrounding hillsides. The website is a work in progress by dedicated webmaster **Kay Loughman.** The site includes pictures of birds, insects, mammals, reptiles, etc. Currently, new photographs documenting wild plants and pictures of fungi are being assembled.

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Hills Emergency Forum (HEF)

The Hills Emergency Forum exists to coordinate the collection, assessment and sharing of information on the East Bay Hills fire hazards and, further, to provide a forum for building interagency consensus on the development of fire safety standards and codes, incident response and management protocols, public education programs, multi-jurisdictional training, and fuel reduction strategies.

The HEF is comprised of the following members:

- University of California, Berkeley
- Lawrence Berkeley National Laboratory
- City of Berkeley
- City of Oakland
- City of El Cerrito
- East Bay Municipal Utility District
- East Bay Regional Park District
- California Department of Forestry and Fire Protection

The Manager of the Office of Emergency Preparedness represents UC on the Staff Liaison Committee (SLC), and the Vice Chancellor for Administration represents the campus on the executive board. The SLC is responsible for developing and monitoring progress on the Forum's annual work plan, maintaining liaison with agency executives on HEF issues, identifying issues for possible legislative support, and coordinating the HEF annual public meeting. The HEF SLC also serves as a forum for the development of collaborative work agreements and for the development of joint grant applications.

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Lower Strawberry Canyon Fuel Management Project

Project Description:

The project will clear up to 1000 immature blue gum, red gum and sugar gum eucalyptus trees (Eucalyptus spp.) and up to 50 Monterey pine trees (pinus radiata) from a 8 +/- acre parcel of University land East of Rim Way, and North of Centennial Drive, near the California Memorial Stadium. The trees proposed for removal are east of the stand of pine and oak trees commonly known as Tightwad Hill, and the Tightwad Hill stand is not proposed for management under this proposed project. All work shall be conducted in a manner consistent with best management practices and mitigation measures identified in the 2020 LRDP EIR (SCH#2003082131).

The project location is in a heavily vegetated canyon immediately adjacent to the cities of Oakland and Berkeley, and displaying similar fire risk conditions to the catastrophic 1991 Tunnel Fire. The eucalyptus reproduces vigorously from seeds and stump sprouts, increasing the fuel load and density over time. The area was subjected to several accidental fires in the 1980s, and many of the eucalyptus in the lower elevations of the stand show visible scarring and damage from those fires. Pile burning was conducted in the early 1990's to eliminate accumulated ground fuels. There is evidence of continued use of the area by illegal lodgers, increasing the risk from accidental ignitions.

The management strategy is to thin the grove of small, immature trees and to retain the larger eucalyptus and pine trees and as many native trees, forbs and grasses as practical. Approximately 60% of the eucalyptus trees in the stand are sprouts and immature trees less than 15 years of age, and are targeted for removal. Once the immature trees are removed, the stand may be managed as a shaded fuel break. All eucalyptus and pine stems less than 10 inches diameter at breast height (dbh) will be removed, and their stumps chemically treated to prevent resprouting. Additionally, in the lower portion of the stand, near Centennial Drive, approximately 20 mature stems will be removed, as these specimens are in declining health and/or threaten to topple onto adjacent Centennial Drive. Portions of an abandoned cyclone fence will also be removed to provide improved firefighter access and to address the aesthetic considerations. Felled trees will be chipped and retained on the project site.

Herbicides employed will be Garlon 4 (triclopyr), Roundup (glyphosate) and/or Stalker (imazapyr). The material will be applied as a cut stump treatment immediately after felling of each stem. The project duration is anticipated to be 4 weeks and is planned for completion prior to the first home football game in early September, 2007.

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Shirely Dean
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Phila Rogers
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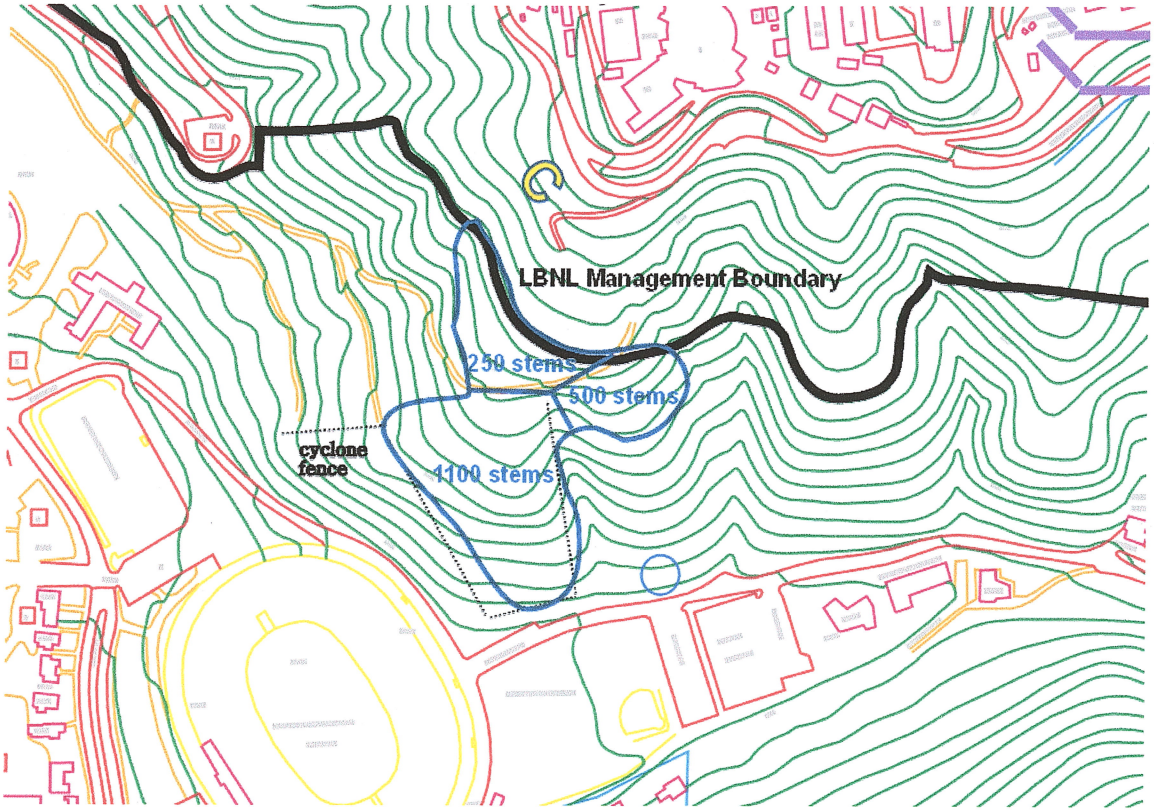
Janice Thomas

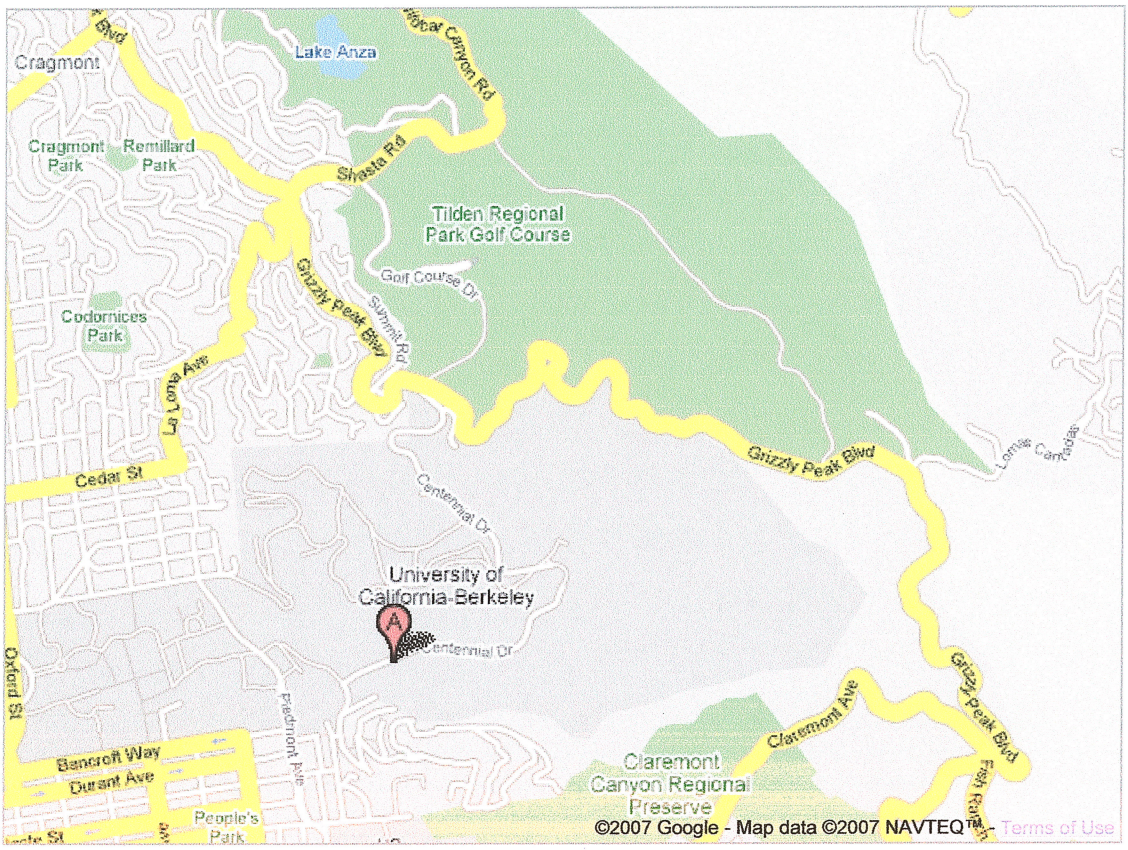


The stand is divided into 3 regions, containing an estimated 1850 stems. The project will remove all immature stems (those less than 10" diameter), and up to 20 mature trees at risk of falling onto Centennial Drive or adjacent trails.

Google Maps

Results **1-1** of about **1,643** for **strawberry canyon** near **Berkeley, CA**

A. University of California-Berkeley: **Strawberry Canyon** Recreational Area
Berkeley, CA
(510) 643-6720



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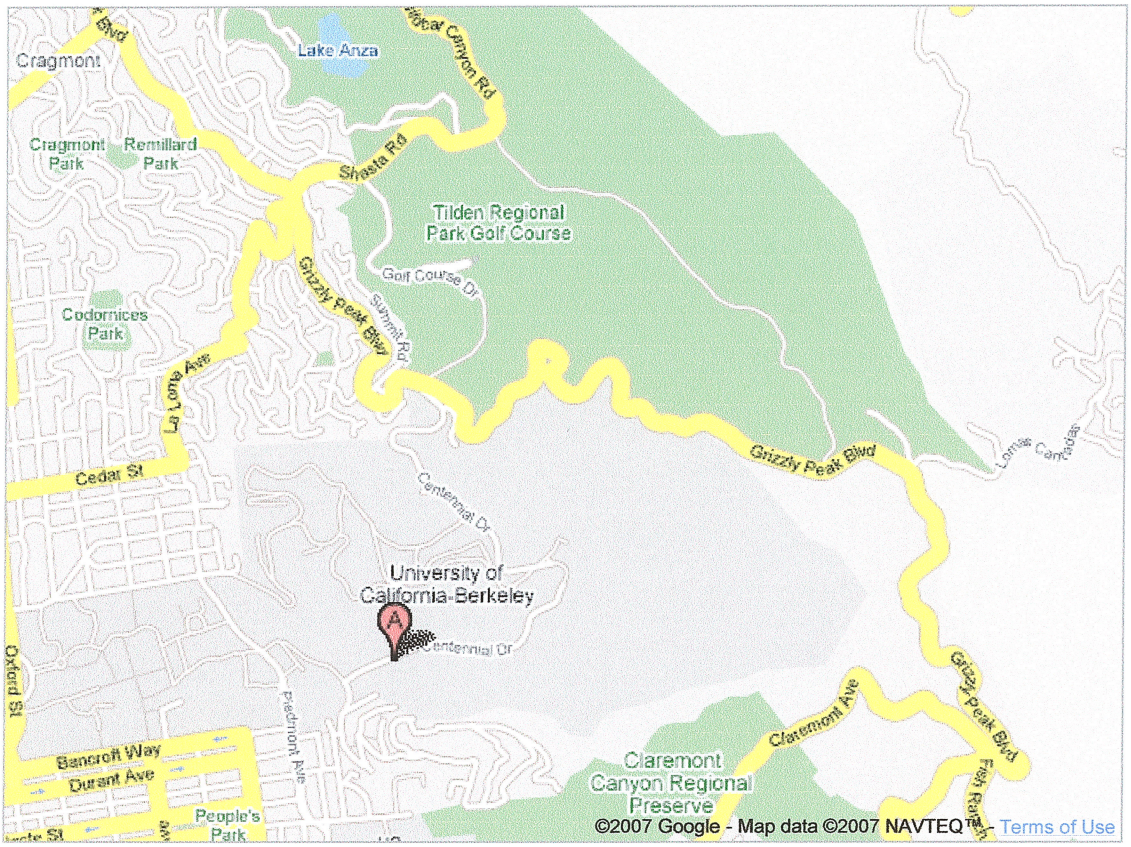

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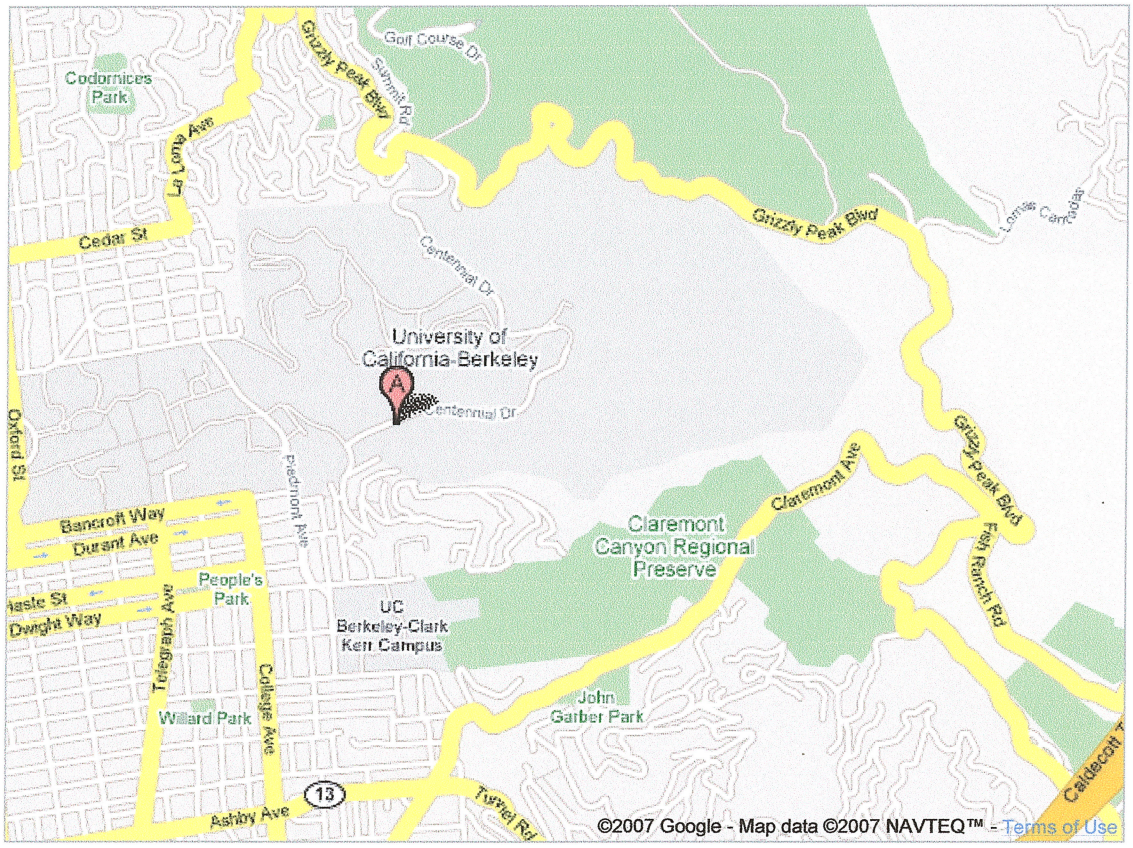

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Claremont Canyon Conservancy

Oakland/Berkeley, CA

"a citizen-based, non-profit organization for long-term stewardship of Claremont Canyon."

Wildlife Gallery

Bird Walk video

Buckeye trees in mid-canyon in winter. Photo by Marilyn Goldhaber

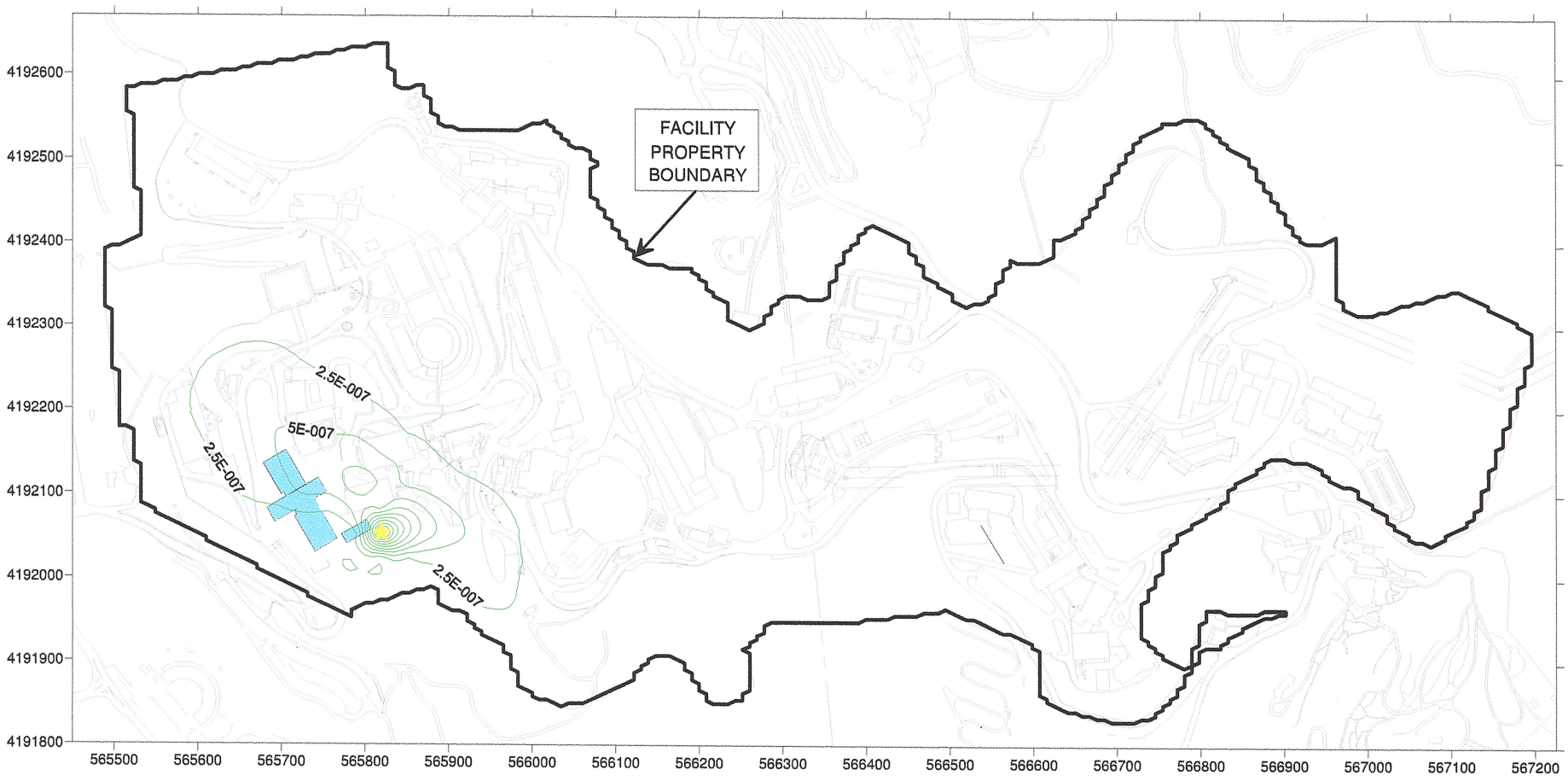
Claremont Canyon, just over the southern ridge of its better-known cousin, Strawberry Canyon, is the largest, relatively undeveloped canyon on the western slope of the Oakland/ Berkeley Hills.

The Claremont Canyon Conservancy promotes long-term stewardship of the entire watershed, coordinated among the stakeholders to reduce wildfire hazards, improve public access and preserve or restore a healthy native ecosystem.

Much of canyon's watershed is publicly owned by the East Bay Regional Park District, the University of California, East Bay Municipal Utility District and the City of Oakland, with about one fifth in private hands. Claremont Avenue traverses the length of the canyon, from its highest point at Grizzly Peak to its base at the grounds of the Claremont Hotel.

Call to CCC Members to contribute their knowledge and/or experise to the Conservancy. To give feedback on or provide information for the website, contact webmaster claremontcanyon@hotmail.com. To find out how to volunteer, please see the Volunteer page.

1/4/08 Save Strawberry Canyon: Shirely Dean, Lesley Emmington Jones, Sylvia McLaughlin, Phila Rogers, John Shively, Janice Thomas



Location of Highest Value (3E-006) ★
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PREPARED FOR:
LAWRENCE BERKELEY
NATIONAL LABORATORY
ONE CYCLOTRON ROAD
BERKELEY, CALIFORNIA

CRT PROJECT (CONFIGURATION 1)
ONSITE LIFETIME EXCESS
CANCER RISK ISOPLETHS

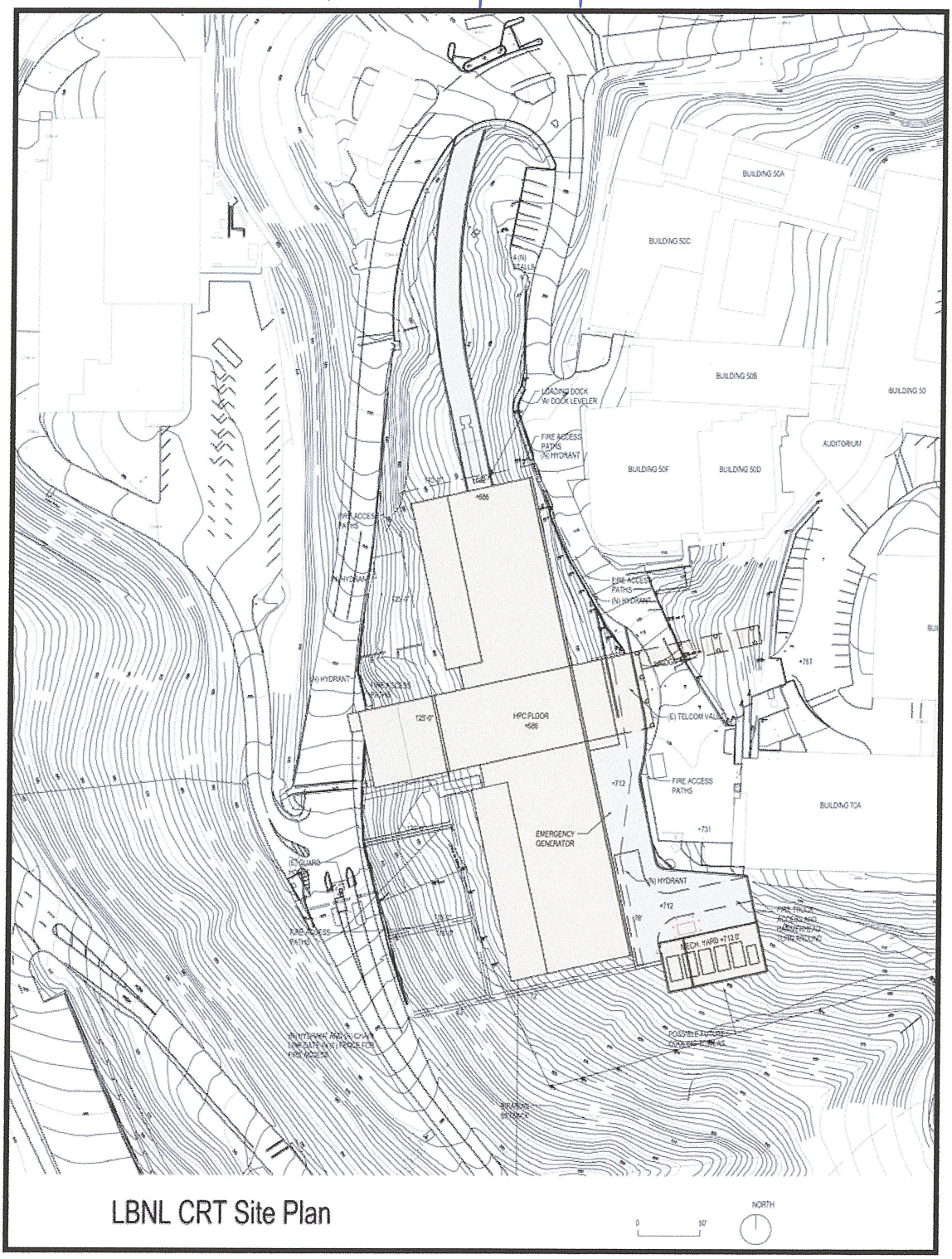
FIGURE: 4

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
073-9977201	GDS	BCP	BCP	November 2007

Figure4.srf

Figure 1. Plot Plan for CRT Building Project
Computational Research Theory Building Project

1/4/08 Save Strawberry Canyon



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STRAWBERRY CREEK

A Walking Tour of Campus Natural History

University of California, Berkeley

A TOUR OF STRAWBERRY CREEK ON THE UC BERKELEY CAMPUS

THIS WALKING TOUR is a guide to Strawberry Creek on the campus of the University of California, Berkeley. Strawberry Creek is a major landscape feature of the campus, with its headwaters above the UC Botanical Garden in Strawberry Canyon. This tour covers only the central campus and should last about an hour. It begins at Faculty Glade, follows the South Fork downstream, and ends at Giannini Hall along the North Fork. A map with indicated stops is located at the end of this booklet.

A BRIEF HISTORY

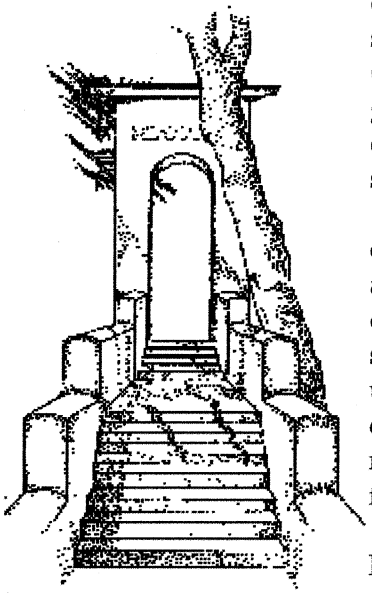
In 1860, the College of California moved from Oakland to the present campus site, purchasing the land from Orrin Simmons, a sea captain turned farmer. Strawberry Creek was one of the main reasons the founders chose Simmons' tract. "All the other striking advantages of this location could not make it a place fit to be chosen as the College Home without this water. With it every excellence is of double value." The creek was named for the wild strawberries that once lined its banks.

Redwood
Sequoia sempervirens

The central campus at that time was pastureland and grain fields. Coast live oaks, sycamores, bay laurel trees, and native shrubs lined the banks of Strawberry Creek. Three forks of the creek meandered through the campus. In 1882, the small middle fork draining the central glade was filled to build a cinder running track, now occupied by the Life Sciences Building Addition.

By the turn of the century, urbanization had already begun to affect the creek. Sewage and silt polluted the water. The creek's course was redirected and confined by retaining walls. In places, the creek was diverted into underground pipes called culverts. Development in

1
Faculty Glade



The tour begins at the 1910 Bridge near the Faculty Club. Stand above the arch of the bridge, which is dedicated to Phoebe Apperson Hearst. Look at the Latin inscription and note that the second letter is a stylized "U" carved over an original letter "A." The original word, selected by a classics professor, was "HANC" (for "this"). A student pointed out that the grammatically correct word is "HUNC." The correction was finally made after the professor retired!

Move down the stairs and listen to the sound of the water. This is one of the prettiest spots along the creek, but as you look upstream or downstream, the scenic view is disrupted by steam ducts crossing the stream. This type of urban encroachment will be present throughout the tour, so you will need to use your imagination to picture what the stream was like before the campus grew so large.

Walk upstream alongside the creek to the Faculty Club. You will see a 5-foot-diameter cement culvert opening, somewhat obscured by ivy. The South Fork emerges here after being carried some 4,300 feet underground from Strawberry Canyon to the campus. On its way, the water in this channel passes underneath the football stadium and across the Hayward Fault zone.

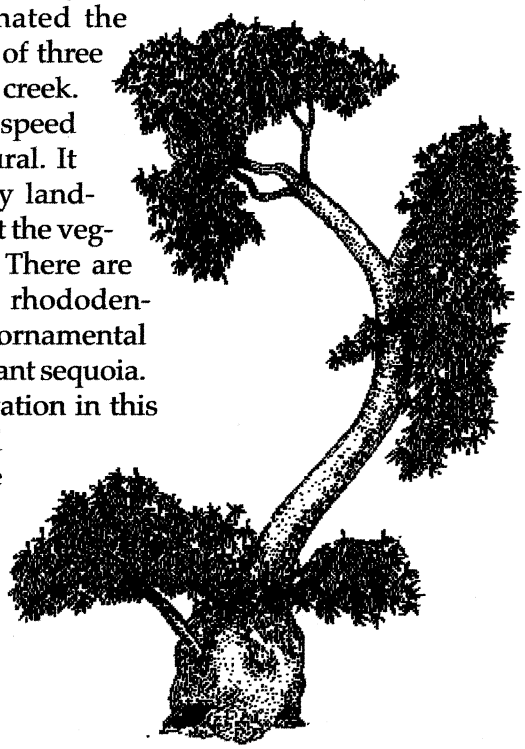
Uplifting along the fault zone created the beautiful and precipitous Berkeley Hills just to the east.

Over many years, movement along the fault damaged the stadium's sanitary sewer line. When toilets were flushed thousands of times during and after football games, sewage spewed into the creek via storm drains. The guilty sewer was repaired in 1988. What impact do you think raw sewage could have on the creek and the aquatic organisms that live in it?

Walk back towards the bridge along the edge of Faculty Glade, one of the most popular open spaces on campus. The natural amphitheater of the glade has been used for a variety of musical and theatrical performances over the years. Note that Strawberry Creek forms the backdrop for Faculty Glade, once called "Co-Ed Canyon." There is archeological evidence that this area was once the site of an Ohlone Native American settlement that relied on the supply of fresh water and fish in the creek.

The coast redwoods found here and throughout the campus were transplanted from Mendocino in 1905. Redwoods are not native to Strawberry Creek, although they grow naturally in the nearby Oakland hills to the south.

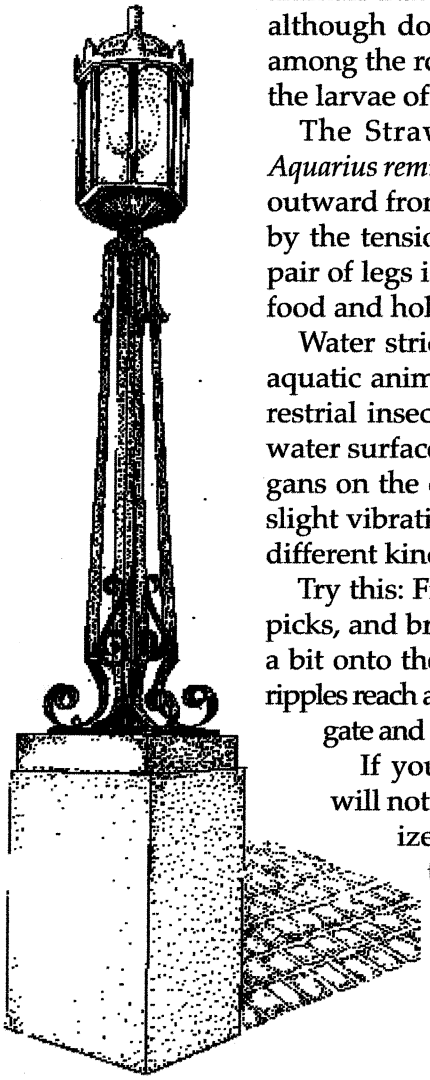
The creek area between the Faculty Club and Stephens Hall is designated the Goodspeed Nature Area, one of three campus nature areas along the creek. It should be noted that Goodspeed Nature Area is not at all natural. It lies in the heart of a formally landscaped English garden! Look at the vegetation along the creek here. There are many pittosporums, azaleas, rhododendrons, and other non-native ornamental plants. There is even a single giant sequoia. Do you think the exotic vegetation in this nature area should be phased out and replaced with native plants?



The old buckeye in the northern corner of Faculty Glade was planted in 1882 and hangs on with great tenacity.

2
Water Striders

Follow the creek downstream around Faculty Glade. Walk past the brick bridge (the formal entrance to the old Student Union) and behind the statue of former football coach Pappy Waldorf. Stand on the small wooden bridge below and look on the surface of still pools for fascinating insects called water striders. They are probably the most obvious animals that you will see in Strawberry Creek, although dozens of other insect species live among the rocks and in the sediment (such as the larvae of midges and damselflies).



The Strawberry Creek water strider is *Aquarius remigis*. The four long legs that extend outward from the narrow body are supported by the tension of the water surface. The first pair of legs is raptorial; they are used to seize food and hold it while eating.

Water striders occasionally eat other small aquatic animals, but mostly they feed on terrestrial insects such as flies that fall onto the water surface. Water striders have sensory organs on the ends of their legs that can detect slight vibrations and even distinguish among different kinds of prey.

Try this: Find some twigs the size of toothpicks, and break them into fly-sized bits. Toss a bit onto the smooth surface of a pool. If the ripples reach a hungry water strider, it will investigate and taste the morsel before rejecting it.

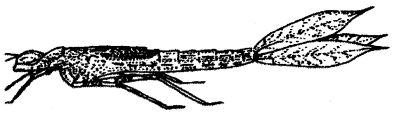
If you watch them long enough, you will notice how often they mate and realize why entomologists consider water striders the great "lovers" of the insect world!

If you're lucky, you may see a bright yellow banana slug, a relative of the snail, slithering along the ground in this grove.

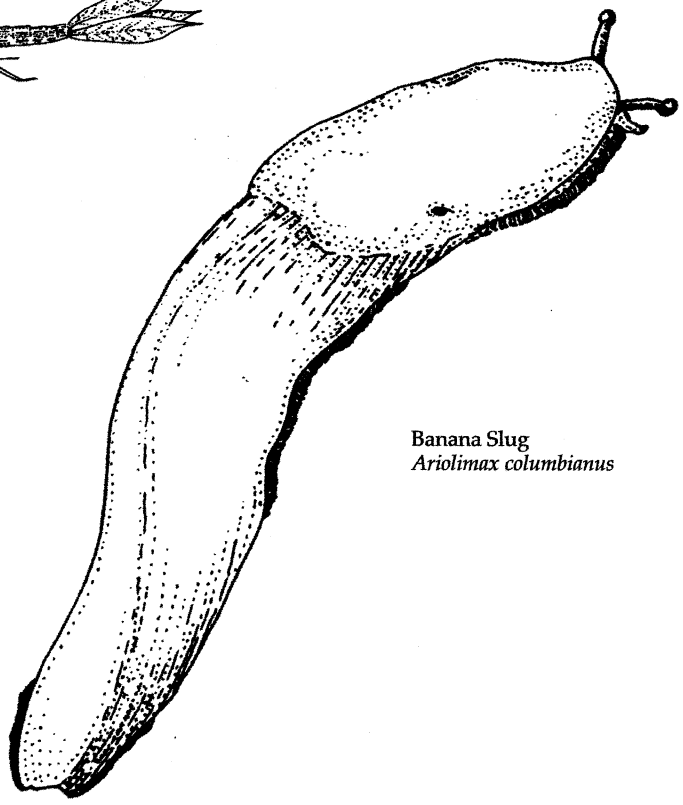
Look upstream at the rock and concrete retaining walls built to prevent bank erosion. High storm flows undercut the soft banks. You will see an innovative approach to bank stabilization at the next stop.

Now walk back up the stairs, turn to the right, and follow the path along the creek downstream. Notice the small shoots at the base of the redwoods around you; this is an example of regeneration by stump-sprouting.

Water Strider
Aquarius remigis



Damselfly
Ishnura gemina



Banana Slug
Ariolimax columbianus

3 Redwood Cribwall

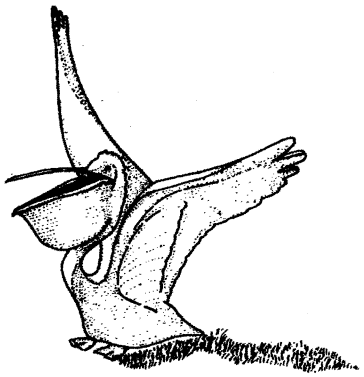
Turn right onto the wide Stephens Bridge (1931), and look upstream. Hidden beneath lush vegetation are rows of redwood logs built into the south stream bank. This was once the site of a nearly vertical bank that was eroding the lawn and undercutting the bridge supports. The conventional solution to this problem would be to install a concrete retaining wall to stabilize the bank (as you saw just upstream). Instead, a novel alternative–a redwood cribwall–was installed.

This cribwall is one of a number of "biotechnical" bank stabilization techniques that combine vegetation with indigenous materials such as wood or stone. These methods allow plants and structures to function together in an integrated and complementary manner. They are more durable, cost-effective, and environmentally compatible than concrete walls.

The cribwall slopes back into the bank in log cabin fashion. The tie-back logs (perpendicular to the creek) extend 12 to 15 feet into the bank. The spaces between the logs are backfilled with soil to provide strength, weight, and a place for plants to grow. Students planted alders, ceanothus, wild currant, Dutchmen's pipe vine, ferns, and other native vegetation on the cribwall. Additional plant species have colonized as "volunteers." By the time the logs rot out (about 50 years), the plant roots will have taken over the structural function of bank stabilization.

Look down below the bridge and you'll see a notched redwood log lying on the streambed perpendicular to the water flow. This check dam reduces stream scour during winter storms by breaking up the heavy flow, thereby enhancing pool habitat and creating refugia for fish and aquatic insects.

4
Sather Gate



Continue west down the path past the bronze pelican statue and the old Art Gallery building with its beautiful WPA mosaics. Walk to the end of the parking lot and turn right. Enter the 1935 Student Glade just upstream of Sather Gate; this small amphitheater, surrounded by coastal redwoods, is a great place for lunch.

Looking upstream, you can see that part of the stream is in a concrete bypass structure that allows high winter flows to pass quickly downstream to prevent localized flooding. To the right is a small meander of the original channel that was restored in 1989.

Return to the parking lot and turn right onto Sproul Plaza. Walk past Sather Gate, the original south campus entrance. The plaza is lined with traditionally pollarded plane-trees (sycamore hybrids). This bustling campus hub was the site of the 1960s demonstrations and contains Berkeley landmarks such as Ludwig's Fountain (named after a local dog) and the nearby Free Speech Movement "monument."

5
Fish Pools

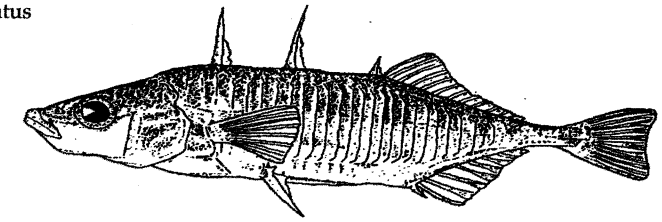
Follow the creek downstream and stop on the first wooden footbridge crossing the stream. By 1989, water quality had improved so much that native fish were reintroduced into Strawberry Creek after a century's absence! Fish disappeared in the late 1800s partly because there was little water in it. (The creek was diverted and used as the campus water supply!) Barriers (check dams and culverts) were installed along the creek. Water quality was degraded by sewage disposal directly into the creek until the early 1900s.

Three-spined sticklebacks were originally stocked but were displaced by two species of native minnows (California roach and hitch), stocked later. These minnows proved to be better adapted to living in the creek. The sticklebacks were flushed downstream and are now abundant at the Berkeley marina near the mouth of Strawberry Creek in the Bay.

You may catch glimpses of the small minnows in this series of deep pools. Find a sunny pool and look down below the water's surface. Minnows usually swim in schools and are often revealed by their shadows on the gravelly stream bottom.

Fish populations depend upon several factors: food supply; water quality and temperature; suitable pool habitat for feeding and

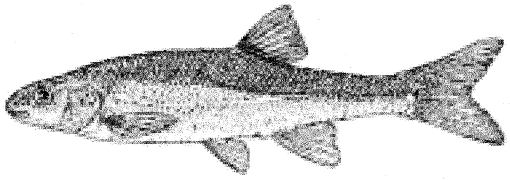
Three-spined Sticklebac
Gasterosteus aculeatus



breeding; and cover from scouring winter flows. So far, the fish have done well. Spawning usually begins in May and continues through the summer. If you look closely around the edges of pools, you may spot the tiny fry. Look for fish in other sunlit pools as you travel downstream from here. Misguided fish lovers periodically dump non-native pet goldfish and mosquito fish into the creek, but they are eventually flushed downstream during winter storms.

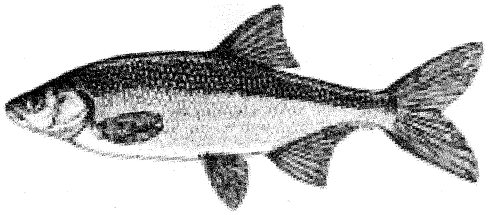
Follow the path downstream past the stone bridge and then across the lawn down to the creek. The streambed here is an extensive example of an old stabilization technique known as "hardbed." This aggregate mix of concrete and rocks was poured in the streambed to prevent downcutting of the channel bottom. Hardbed is a poor habitat for aquatic organisms because it offers no refuge from scouring winter flows.

Note the sun-loving green algae growing on the hardbed. This particular species, *Cladophora glomerata,* grows under high nutrient (eutrophic) conditions.



California roach
Hesperoleucus symmetricus

Actual Size



Hitch
Lavinia exilicauda

6
Bay Tree Bridge

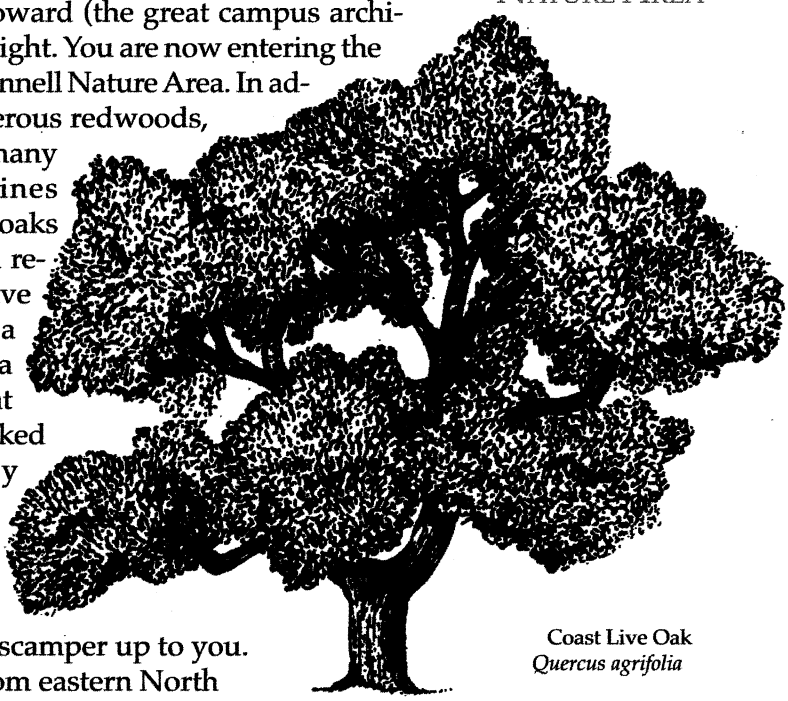
Continue down the path until you reach the Bay Tree Bridge. Pause for a moment to relax and listen to the melodies of the stream. Look upstream and imagine the changing seasons from rainy winters to dry summers in our mediterranean climate. Picture the raging creek scouring the banks in the midst of a winter storm, or the flow dwindled to a trickle during a severe drought.

What is it about the sound of water that many people find so soothing? The Greek philosopher Heraclitus said, "You cannot step twice into the same river." What literal and figurative images does this raise in your mind?

Bricks commonly found in the streambed and banks downstream of this bridge were once part of student cottages that lined the south side of the creek over a century ago.

7 GRINNELL NATURE AREA

Leave the Bay Tree Bridge, cross the roadway, and follow the flagstone path past the football statue. Cross the bridge designed by John Galen Howard (the great campus architect) and bear right. You are now entering the heart of the Grinnell Nature Area. In addition to numerous redwoods, you will find many Monterey pines and coast live oaks here. This area resembles a native oak savanna and provides a glimpse of what the campus looked like a century ago.



Coast Live Oak
Quercus agrifolia

Hungry fox squirrels, often fed by students, may scamper up to you. This import from eastern North America filled an empty niche in the urban San Francisco Bay area because the native gray squirrel never adapted to urban conditions.

Continue down what was called "lover's lane" and cross the wooden footbridge over the main branch of Strawberry Creek. You are now about 250 feet upstream of the entrance to the city culvert, the point where the stream leaves the campus. Under the redwood trees to the left is a plaque marking the site where the 1772 Spanish expedition stopped and described the beauty of the dry grassy headlands later named the Golden Gate. The tall buildings of downtown Berkeley now obscure the view.

8 Eucalyptus Grove

Retrace your steps up the path, turn left on the bicycle path, and cross the wooden footbridge into the Eucalyptus Grove. In 1882, this grove of Tasmanian blue gums *(Eucalyptus globulus)* was planted as a windbreak for the old cinder running track. It is the tallest stand of hardwood trees in North America and the tallest stand of this type of eucalyptus in the world.

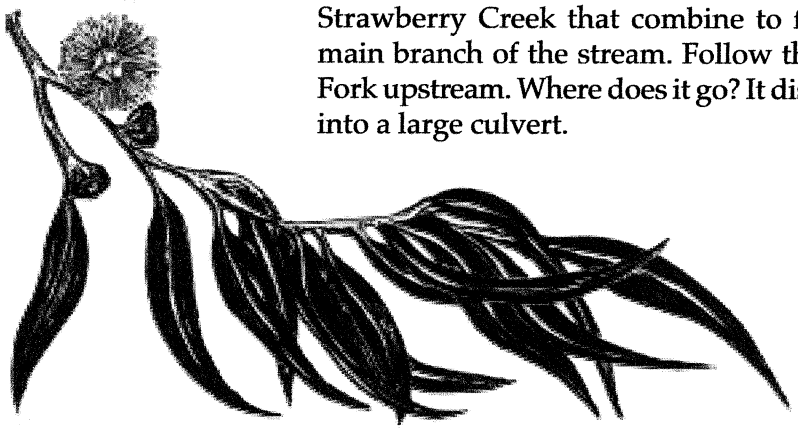
Why is there a lack of undergrowth in the grove? Do eucalyptus take up the soil water that other plants need? Does the canopy create shady conditions too dark for other plants? Is it because they have compounds in their leaves that prevent other plants from growing (allelopathy)? Or is it from people trampling the undergrowth?

Eucalyptus were introduced to California; they have few natural herbivores, such as the koala bear, here. As a result, they look much healthier than in their native Australia.

Notice how the eucalyptus trees shed their shaggy bark. By regularly doing this, the trees also shed bark-burrowing insects that cause disease.

Wander through the grove and find the confluence of the South and North Forks of Strawberry Creek that combine to form the main branch of the stream. Follow the North Fork upstream. Where does it go? It disappears into a large culvert.

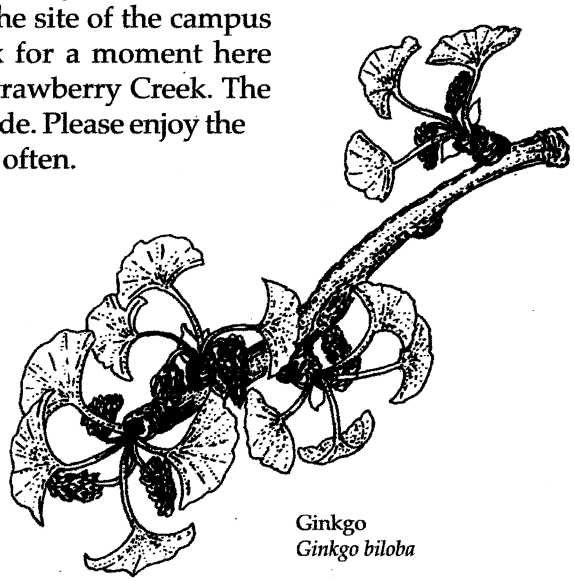
Eucalyptus
Eucalyptus globulus



9
North Fork

To find the creek again, head straight toward the hills as if the stream were still open and leave the Eucalyptus Grove. Look for riparian (streamside) vegetation on the other side of the traffic circle that has the large eucalyptus in the center. Follow the stream along the south (left) bank noting the beautiful vegetation including horsetails, bay trees, and many types of exotic plants. People have been waiting for the eucalyptus tree leaning over the walkway to fall for the last 40 years.

Cross the footbridge toward Giannini Hall and admire the Beaux-Arts style of Wellman Hall with the olive trees in front. Go past Giannini Hall, and you'll enter the Wickson Nature Area, the last of the three campus nature areas. Be sure to see the ginkgo tree between Giannini Hall and the creek. Planted in 1881, it is one of the most treasured trees on the campus, and it is especially exquisite with its yellow autumn foliage. One of the reasons that this area contains so many beautiful trees is that it was originally the site of the campus Botanical Garden. Relax for a moment here among the trees along Strawberry Creek. The tour ends in this quiet glade. Please enjoy the creek, and return to visit often.



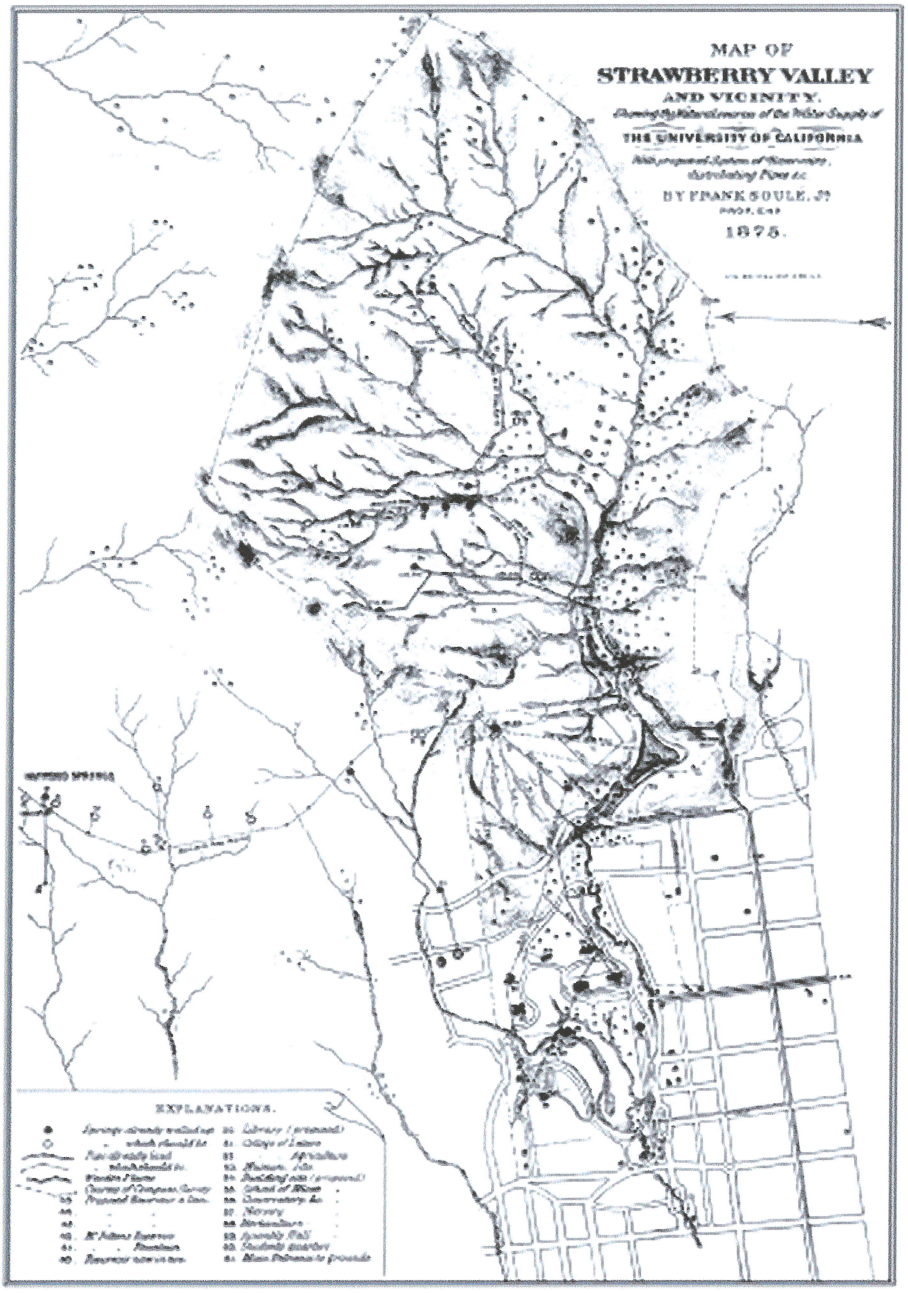
Ginkgo
Ginkgo biloba

10 Botanical Garden

You can see the headwaters of Strawberry Creek by visiting the UC Botanical Garden in Strawberry Canyon above Memorial Stadium. The creek runs through the heart of the 34-acre garden, surrounded by an impressive collection of more than 13,000 types of plants. The upper portion of the creek is landscaped with rhododendrons from China, Nepal, and Bhutan and includes the serene Japanese Pool. Dawn redwoods, Chinese peonies, and other Asian plants thrive in the moist microclimate along the stream.

The creek also flows through the California native section past oaks, bays, and buckeye trees. This area has been restored to represent the native flora along central California coast range creeks. A wooden walkway brings you close to many of the plants and down to a small pool and waterfall. Above the creek on the hillside is a deck with interpretive displays that overlooks the Strawberry Canyon watershed. The garden offers a quiet setting for spending time by the creek. Shuttle buses run from Hearst Mining Circle to the garden at quarter-past and quarter-before the hour on weekdays. The garden is open every day from 9 a.m. to 4:45 p.m. From Memorial Day to Labor Day, the garden is open until 7 p.m.

A collection of studies on Strawberry Creek is maintained in the Water Resources Center Archives on the 4th floor of O'Brien Hall.



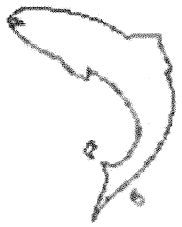
This 1875 map of the Strawberry Creek watershed shows the original waterworks that supplied the campus. Note the middle fork of the creek on the central campus below North and South Halls, which was filled in 1882.

THOUGHTS TO TAKE AWAY FROM THE TOUR

THINK ABOUT HOW STRAWBERRY CREEK fits into the campus environment. Try to imagine what the creek looked like a century ago when salmon still spawned in it, or even earlier when native peoples used the creek or the Spanish explorers looked out at the beautiful vistas of the yet unbridged Golden Gate. Do you think it would be a good idea to try to rehabilitate other urban creeks?

Strawberry Creek is an irreplaceable natural resource for both the university and the Berkeley community. The benefits of preserving and enhancing the creek and its surrounding areas are far-reaching. The creek is the major focus of campus open space and therefore establishes both the form and character of its landscape. The natural areas along Strawberry Creek offer pleasing contrast to the urban hardscape, acting as a buffer zone that provides visual amenity and variety.

Preservation of the creek corridor is essential if the unique qualities of the campus landscape are to be sustained. This requires community cooperation as well, because the waters that flow through campus are affected by what happens upstream. For many alumni, Strawberry Creek provides some of their most memorable recollections of the Berkeley campus. As long as Strawberry Creek remains healthy, it can be a source of inspiration and joy for those who study, work, or live within its watershed.

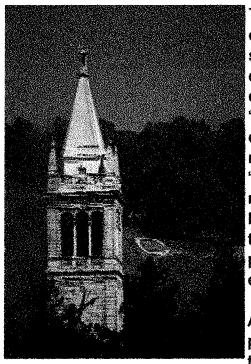


You may see this symbol around Berkeley, representing the underground course of Strawberry Creek. Quails, water striders, turtles, and other symbols represent different Berkeley creeks.

1/4/08 Save Strawberry Canyon:
Shirely Dean
Lesley Emmington Jones
Sylvia McLaughlin
Phila Rogers
John Shively
Janice Thomas

Building the Big C

The battle that broke out in Berkeley in 1905 over carving the Big C into the side of Charter Hill never made its way into the history books. But the tempest that erupted over the University's plan to build a 60-foot long, 26-foot wide cement "C" on the sloping hillside above town was a watershed event. The disagreement within the campus and between town and gown was perhaps the first occasion that strong objections were raised on environmental grounds to a planned project on the Berkeley campus. The dispute foreshadowed the 1920s battle over the siting of Memorial Stadium in the mouth of Strawberry Canyon and later disputes over the preservation of open spaces on campus and in the hills.



The origin of the Big C controversy occurred late in the 19th century, when male-oriented class activities included spirited, and sometimes violent, competitions, rivalries, and fights between classes, particularly the freshmen and the sophomores. The two classes did battle each year on Charter Day—March 23, the "birthday" of the University—on the hill where the Big C now is enshrined. Freshmen, miffed at being denied a student representative at Charter Day festivities, began the tradition of "taking" Charter Hill each Charter Day and marking their class numerals on the slope. The sophomores responded by rushing the hill. The hill became an annual battlefield, with one class climbing to the high ground and daring the other to drive it off. In addition to physical injuries to participants, the University received a black eye from the publicity about boisterous student behavior.

After one particularly bloody year, students and administrators proposed that the two classes abandon their rivalry and work together, on Charter Day, to build the Big C, a concrete initial, on their former battleground. Since students were already familiar with the tradition of Student Labor Day—celebrated with volunteer work on the campus grounds every four years, on February 29—the same approach was adopted for construction of the "C." Men of the freshman and sophomore classes would labor together to build the "C," then descend to the campus proper to enjoy lunch prepared by the cooperative efforts of their female classmates. The men would pay for the building materials; the women would buy the food.

The proposal received official blessing from a presumably relieved President Benjamin Ide Wheeler, who vigorously preached the virtues of a unified "University family" and deplored violent and destructive class confrontations, as well as from University architect John Galen Howard. The fight to redirect the students' energies was won. But when the town, and some faculty members, heard of the plan, the real battle began.

In 1905, the Berkeley hills, although grazed by cattle and planted here and there with eucalyptus and conifers, were in a largely undeveloped state, their natural contours and character clearly visible, their upper slopes free of streets, houses, transmission wires and towers, and other development. In those pre-Campanile days, the proposed "C" would be by far the most prominent and distantly visible emblem of not only the campus, but also the town. Today, the "C" is bordered on three sides by obscuring trees; but in 1905 the slope around it was largely grassland, making the site highly visible from several angles and for several miles. Perhaps, assistant professor Walter Morris Hart suggested, "the protests of the citizens of Berkeley ought to be at least considered" before constructing so conspicuous a symbol.

On March 13, five days before construction was to begin, another assistant professor raised a voice of protest. In a letter to the Daily Californian, Albert Whitney called the project an example of "vulgarity and Philistinism" and wrote: "All the hills above the bay are the common heritage of the people of California. It is our birthright to look upon them, to watch their passing shadows, to note their response to the fall showers, and to follow their gradual changes from delicate green through the luxuriant color of spring into the russet hue of summer. That is one of the privileges of being a Californian; to desecrate this scene . . . is a blow to the moral rights of the people of California."

Whitney continued by contrasting the rights of some 3,000 students with "a community of a hundred thousand people within easy sight of the hills to whom this desecration is an affront, and not for a day, but for twenty years of days." He concluded: "Let 3,000 young people for four years live in the contemplation of this kind of vulgarity and the state need not be surprised to find them painting 'C's upon El Capitan."

Many individuals who opposed the Big C construction lived near the campus where the Hillside Club movement was in full flower. The Hillside Club philosophy advocated streets that conformed to the contours of the land, the use of natural materials (such as unpainted redwood shingles) in construction, and a reverence and respect for the landscape. Out of this turn-of-the-century movement in Berkeley arose not only proponents of regional architecture like Bernard Maybeck but leaders of the early conservation movement and its seminal organizations—many of the founders of

the national conservation movement lived in or had connections to Berkeley, and found a large and sympathetic audience there. It was an era when Phoebe Hearst lent her support to save California's redwoods, and the Sierra Club was founded by a group mainly composed of Berkeley and Stanford professors. Undoubtedly many of these people and groups would have seen the construction of a large concrete letter on the hillside as a direct affront to the harmony they were seeking to promote.

Opponents of the "C" offered various kinder and gentler alternatives. Charles Keeler, spiritual father of the Hillside Club movement and a central figure in Berkeley's cultural community, suggested that the concrete already gathered for the "C" be used instead to construct a bridge, fountain, or bench lower on the campus. One professor suggested a tug of war between the two classes, after which the rope would be cut into 2-inch segments and distributed as souvenirs. Professor Charles Mills Gayley, author of "The Golden Bear" and faculty sponsor of the Order of the Golden Bear, suggested that the students consider "a great C of acacia trees" or a "C" made of "that golden broom that bursts into blossom early in March, or something else; anything else, for that matter. "

Nevertheless, the project was approved. John Galen Howard lent crucial support to the project by stating that the placement of the "C" would not interferer with the construction plans for the "Greater University," then expected to climb in triumphant terraces to the summit. On the planned day of construction, March 18, man could no longer intercede, but Nature acted on her own behalf. Rain drizzled down over the 200 students who turned out to work on the project, and only eight tons of material, primarily gravel, were successfully passed from man to man in a chain up the steep slope. Several tons of sand and cement remained at the bottom of the hill. The day was further marred when the freshmen and sophomores happily threw empty sacks at each other and the eye of one participant was injured.

But work continued the following week, and on Charter Day, March 23, the concrete construction was finished. Days later, a crew of freshmen painted the concrete "C" yellow to complete the official project—the first paint job of hundreds the "C" would receive.

Over the years the memory of the controversy faded, and the Big C became a fixture of the landscape and one of the central symbols of the spirit of the Berkeley campus. In large part, it fulfilled the sentiment expressed by a Daily Californian writer in 1905: "Undergraduate sentiment is always illogical, and to one who is not in sympathy with it, seems trivial and not worthwhile. Such a one cannot realize that to us the 'C' will be an ever-visible inspiration, typical of love of the University, which must inevitably force class antagonism into the background."

So it proved to be. Today, the era of class rivalry is almost forgotten, and students from various class years join together to guard the "C" against Stanford students who try to paint it red. And, from time to time, other miscreants attempt to paint the letter green—an unwitting homage, perhaps, to those early conservationists who campaigned to prevent the symbol from being built at all. Steven Finacom works in the Office of Planning on the Berkeley campus. His article was adapted from the Chronicle of the University of California, issue number 3, "West of Eden: The University and the Environment."

For more information about the Chronicle, contact Carroll Brentano, Center for Studies in Higher Education, UC Berkeley, 94720-4650.

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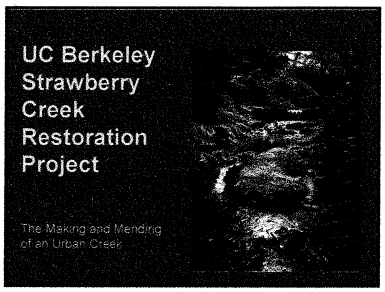
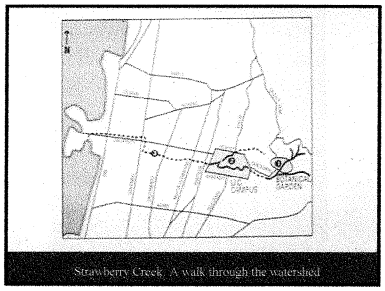
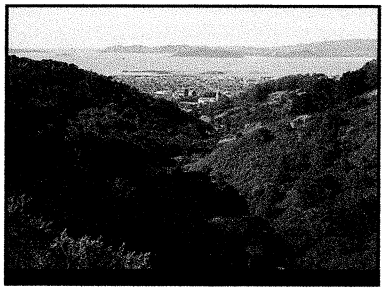
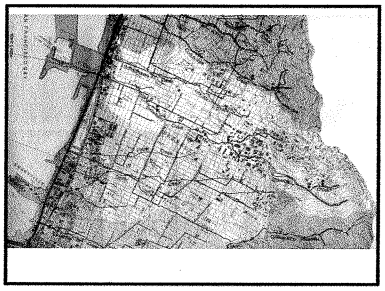
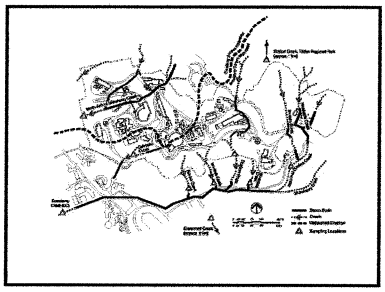
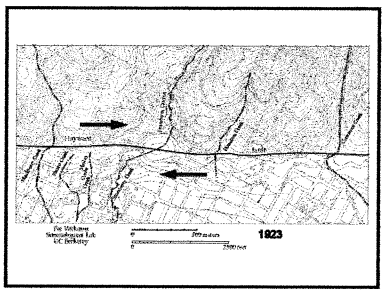


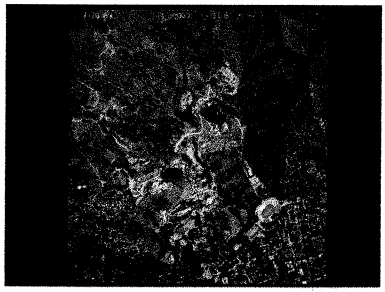


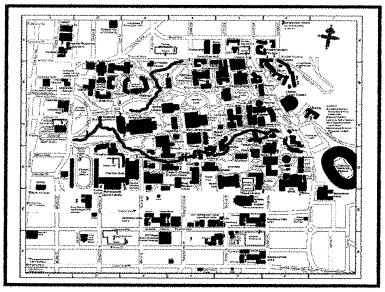


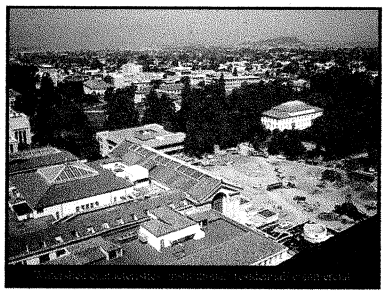




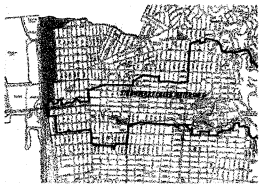


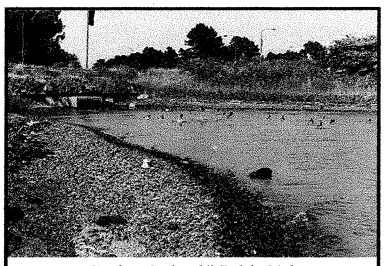






Strawberry Creek Watershed

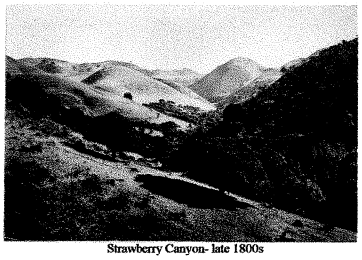




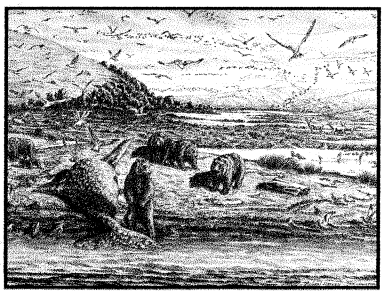
Strawberry Creek outfall- Berkeley Marina

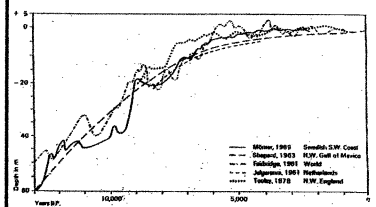
Strawberry Creek History: The making of an urban creek

B. Howard. Perspective View of the Proposed University of California. 1927 (25½ by 38¼, ink, colored wash).



Strawberry Canyon- late 1800s

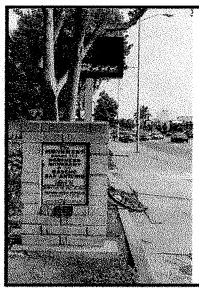




Sea-level curves for the Holocene.

Strawberry Creek to 1700s

7,000-12,000 years ago- Huchiun indians
1772- Spanish expedition of Fages
1776- De Anza & settlement
1790- Huchiun to Mission Delores
1776-1820- Cattle and horse grazing



Strawberry Creek in the 1800s

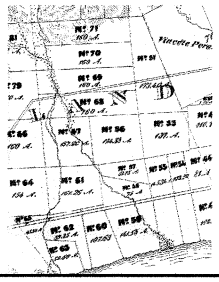
- 1821- 1846 Mexican Ranchos Period
- Boundary of land tracts delineated by streams. 1842 creation of Berkeley- Albany tract from Rancho San Antonio.

Strawberry Creek in the 1800s

- 1846 California Statehood
- Gold Rush of 1849, squatters settle on Peralta land.
- 1853- 7 Orrin Simmons acquires 700 acres pastureland and grain.
- College needs a reliable, potable water supply- Strawberry Creek land considered in 1856.

Strawberry Creek
Berkeley
1850s-

Note Potter Creek branch

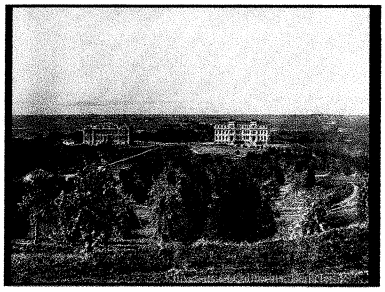


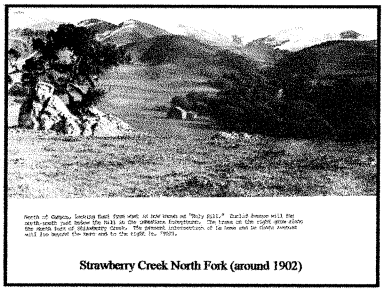
the creek near Oxford Street, 1895
University Archives (UARC PIC 2003:2)

Strawberry Creek History

"All the other striking advantages of this location could not make it a place fit to be chosen as the College Home without this water. With it every excellence is of double value."

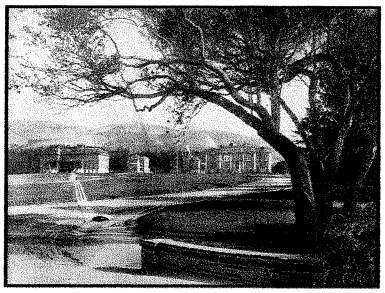
-1887





North of Oxford, looking East from what is now known as "Holy Hill." Euclid Avenue will run north-south just below the hill in the immediate foreground. The trees at the right show where the north bank of Strawberry Creek. The present intersection of La Loma and La Vista Avenues will run beyond the tree and to the right (to 1900).

Strawberry Creek North Fork (around 1902)

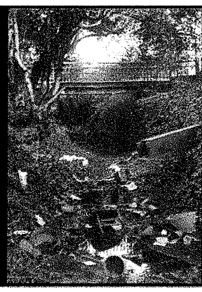


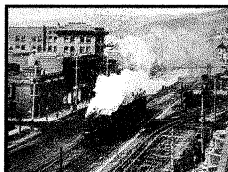
Strawberry Creek - Allston and Oxford (1889)

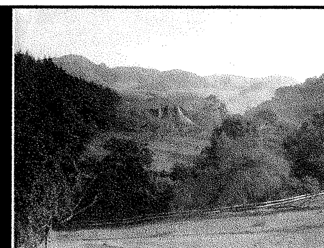
Strawberry Creek History

"... unsightly appearance of sewer-begrimed water and filthily discolored banks:

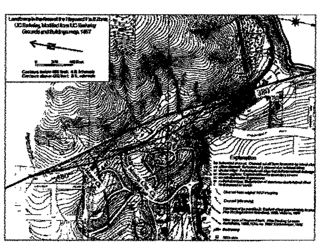
-1895



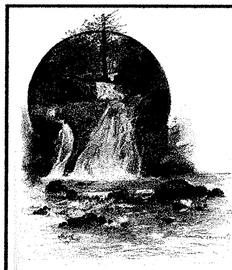




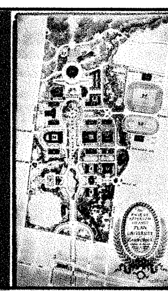
Original site of Memorial Stadium, circa 1914. University Archives

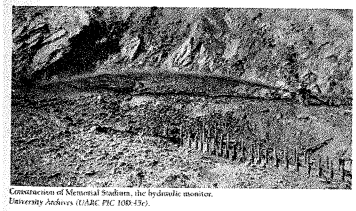


UC Berkeley- Hayward Fault Zone 1897

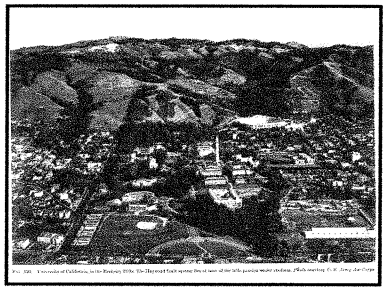


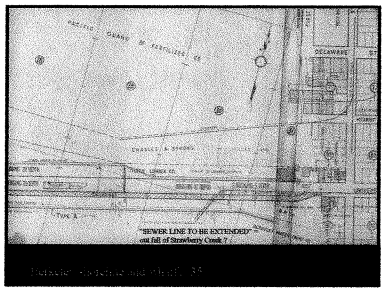
Strawberry Canyon (Nel and Blanche Morse, From Berkeley 1900)





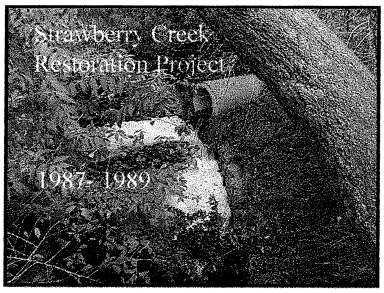
Construction of Memorial Stadium, the hydraulic monitor.
University Archives (UARC PIC 10D-43c).





Strawberry Creek History

- 1960s-- Loss of 0.5 km of habitat from creation of a bypass culvert.
- 1980s-- City of Berkeley advises against direct contact because of sewage and chemical contamination.
  - Coliform spikes >500,00/100ml



By 1980 Strawberry Creek was a neglected creek-

- aquatic organisms gone
- polluted with street runoff, sewage & chemicals
- cement banks and dams

In 1987 campus allocates $15,000 to work on creek-

Outcome is the Strawberry Creek Management Plan (Charbonneau)

Strawberry Creek Management Plan

- (1) Evaluate the creek's water quality and identify both point and non-point sources of pollution
- (2) Describe soils and geology, land use, storm drainage system, and hydraulic regime
- (3) Develop creek- and catchment-management strategies

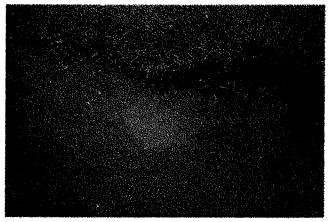
Implementation of the Restoration Project

- Creation of the Chancellor's advisory committee (Strawberry Creek Environmental Quality Committee)
- Included representatives of all appropriate departments
- Goals included promoting teaching and research value of the creek

Point sources evaluated and campus sewers mapped

Cross-connections were rerouted.

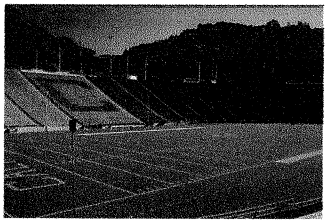
Discharges to creek were investigated.



Hydrology, erosion control and bank stabilization evaluated.

Gullies were repaired to reduce siltation of the creek.

Broken sewer lines repaired.



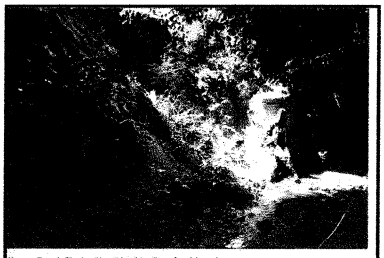
Illicit connections removed.

Best management practices for construction developed.

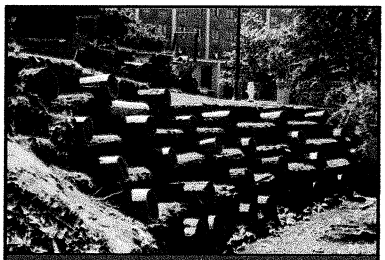
Check dams were repaired.

A conventional concrete retaining wall such as this...

..that had been undercut and was eroding...



South Fork: 31+04 - 31+50. Looking downstream.
Bank erosion above Stevens Hall Bridge, prior to construction of redwood



was replaced with a redwood cribwall at Stephens Hall

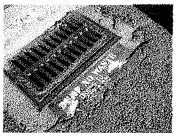
The spaces between the logs interplanted with native plants.

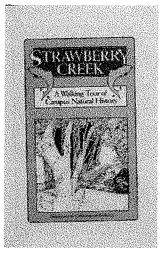
Plantings in cribwall. *Courtesy of Vincent Resh.*

Efforts were made
to reduce pollutants
associated with
urban runoff-

Soap, pesticides,
animal waste, road runoff.

Education and outreach. Stencils, letters to residents.



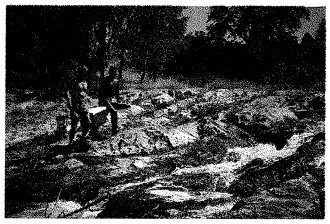


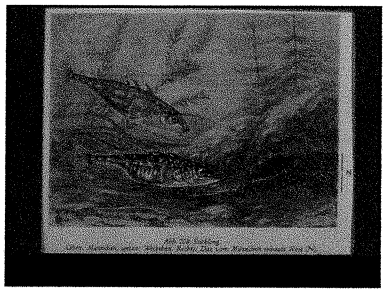
Creek macroinvertebrates and water quality was monitored.

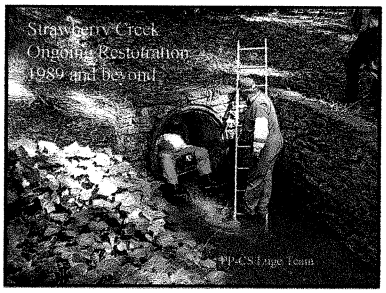
Habitat quality improved-

Organisms returned, others were re-introduced.

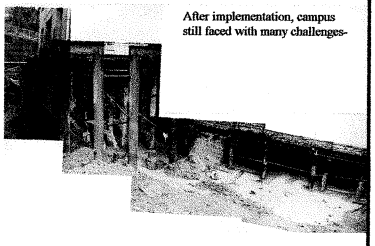
First fish in over a century reintroduced in 1988.





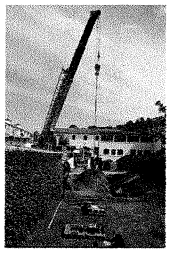


After implementation, campus still faced with many challenges-

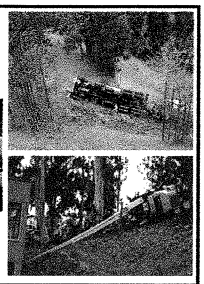


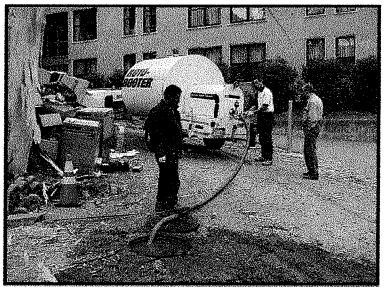
Efforts to continuously improve water and habitat quality have continued over the years.

- spill prevention
- utility upgrades
- continued monitoring



EMERGENCY RESPONSE TEAM





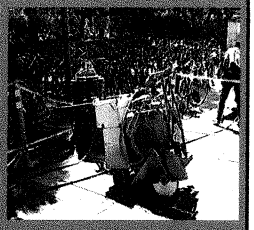
Storm Water Pollution Prevention

- Paint rinse water
- Mop water
- Soapy water
- Sediment

Best Management Practices

Pavement sawcutting

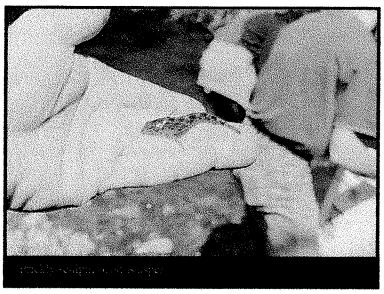
Wet/dry vac

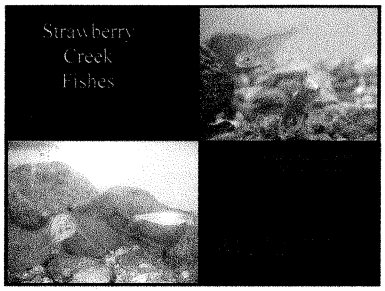


Best Management Practices

- Street sweeping
  - Reduces the availability of pollutants on streets

BMP: STREET CLEANING

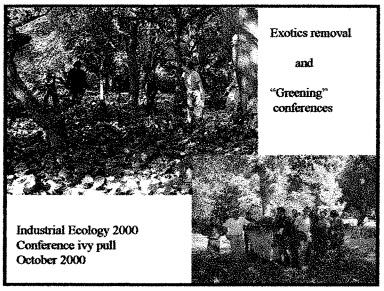




Educational programs-

Creek is used by 2-3000 students each year as an outdoor laboratory-

-including graduate and undergraduate programs in science and the arts.



Exotics removal

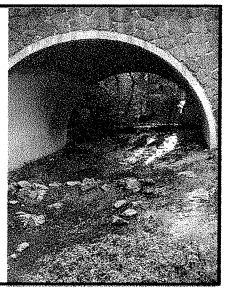
and

"Greening" conferences

Industrial Ecology 2000
Conference ivy pull
October 2000

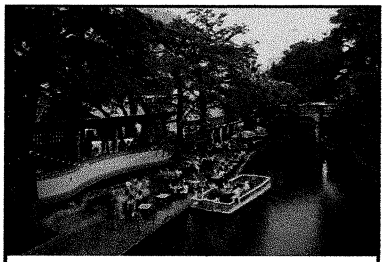
Current features

- ~ 40% of the catchment is urban.
- Lagtime between rainfall and peak flow is ~ 15 minutes.
- Peak storm flows higher and dry baseflows lower than natural systems.
- Accelerated downcutting and streambank erosion.
- Destruction of natural pool- riffle sequence.

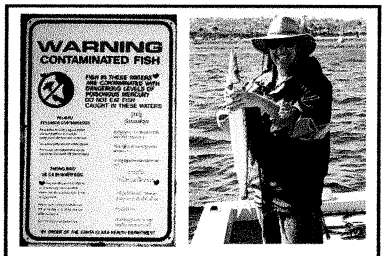


Ongoing challenges
City of Berkeley culverts
Urban pollutants
Hydrology
Spills, accidents
Non-native species

Keys to Success
Administrative support
Commitment to project
Funding
Heightened public awareness
Volunteerism
Stewardship



Economic enhancements



Public Health Concerns- Water Quality

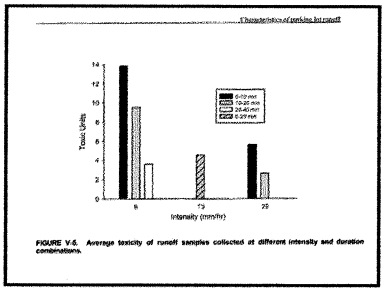
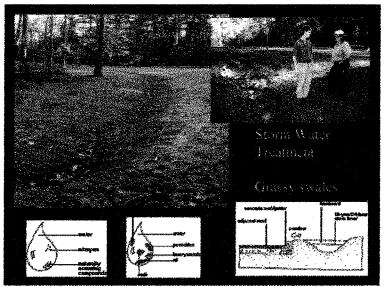
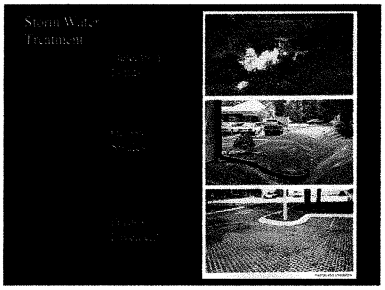
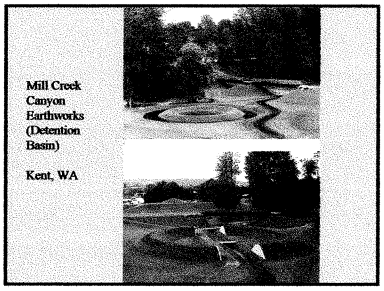


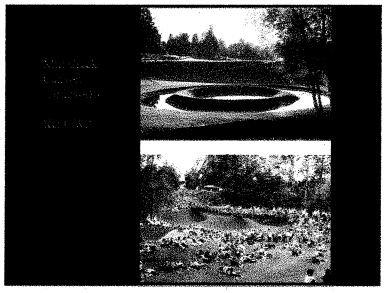
FIGURE V-6. Average toxicity of runoff samples collected at different intensity and duration combinations.

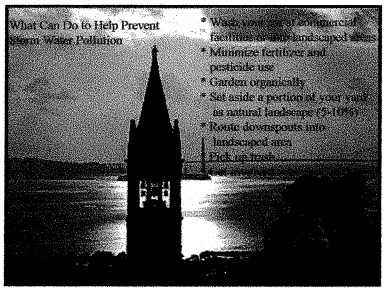
Parameter	6 mm/hr (0.25 in/hr) 0-10 min Mean (SD)	6 mm/hr (0.25 in/hr) 10-20 min Mean (SD)	6 mm/hr (0.25 in/hr) 20-40 min Mean (SD)	12 mm/hr (0.5 in/hr) 0-20 min Mean (SD)	25 mm/hr (1 in/hr) 0-10 min Mean (SD)	25 mm/hr (1 in/hr) 10-20 min Mean (SD)
Suspended Solids (mg/L)	72.7 (95.1)	20.5 (6.5)	13.7 (5.2)	28.7 (14.6)	41 (13.5)	12 (5.3)
Metals (Total)						
Aluminum (ug/L)	1056.7 (332.7)	253.3 (177.5)	189 (53.9)	316.7 (73.5)	540 (134.7)	143.3 (26.5)
Cadmium (ug/L)	2.4 (0.6)	1 (0.0)	0 (0)	0.9 (0.6)	0.3 (0.6)	0 (0)
Chromium (ug/L)	7.7 (0.7)	4.1 (0.3)	2.2 (0.2)	2.6 (0.4)	4 (1.2)	1.6 (0.2)
Copper (ug/L)	54.3 (6.1)	27.3 (4.2)	10.2 (0.3)	19.7 (1.3)	29.7 (7.6)	10.3 (2.2)
Iron (ug/L)	2067 (350.9)	646.7 (27.4)	216.7 (71.5)	560 (115.4)	606 (195.4)	206.7 (35.7)
Lead (ug/L)	166.7 (84.7)	50 (50)	27.7 (14.2)	66.3 (29.6)	40.7 (18.4)	18.7 (6.6)
Mercury (ug/L)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Nickel (ug/L)	44.7 (7.4)	21.7 (4.7)	6.5 (0.9)	14 (2.5)	23.7 (6.9)	6.6 (1.3)
Silver (ug/L)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Zinc (ug/L)	450 (47.5)	213.3 (55.5)	76.7 (12.2)	160 (8.2)	216.7 (20.3)	60.3 (10.6)
Total PAHs (ug/L)	8.5 (6.2)	4.3 (2.9)	2.7 (2.1)	5.5 (2.4)	2.3 (1)	1.6 (0.7)
Metals (Dissolved)						
Aluminum (ug/L)	78.7 (12.4)	92.7 (97.2)	9 (0)	0 (0)	9 (0)	25.7 (37.9)
Cadmium (ug/L)	2.7 (0.6)	0.6 (0.7)	0 (0)	0 (0)	0.3 (0.7)	0 (0)
Chromium (ug/L)	4.3 (0.4)	2.2 (0.2)	0.5 (0.7)	1.6 (0)	1.9 (0.6)	0.6 (0.2)
Copper (ug/L)	47.3 (7.2)	24.7 (4.9)	8.2 (0.5)	15.3 (1.8)	23.3 (4.4)	8 (2)
Iron (ug/L)	260 (64.4)	280.3 (60.2)	46.7 (55.7)	153.3 (28.3)	190 (50.7)	33.3 (39.6)
Lead (ug/L)	123.3 (77.4)	85.3 (65.1)	23.9 (16.4)	45.1 (20.7)	34 (12.5)	14.1 (7.2)
Mercury (ug/L)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Nickel (ug/L)	31.7 (9.9)	19.3 (4.7)	6.4 (1.7)	12 (1.7)	21 (1.4)	5.9 (1.2)
Silver (ug/L)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Zinc (ug/L)	336.7 (52.3)	170 (47.5)	56 (17.2)	104.7 (32.6)	156.7 (54.5)	39.7 (13.9)

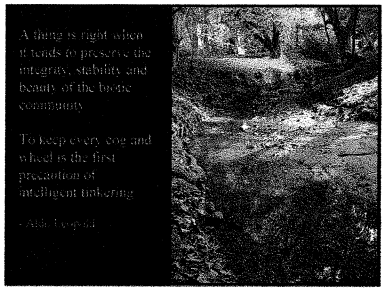

Storm Water Treatment
Grass swales


Storm Water Treatment


Mill Creek Canyon Earthworks (Detention Basin)
Kent, WA

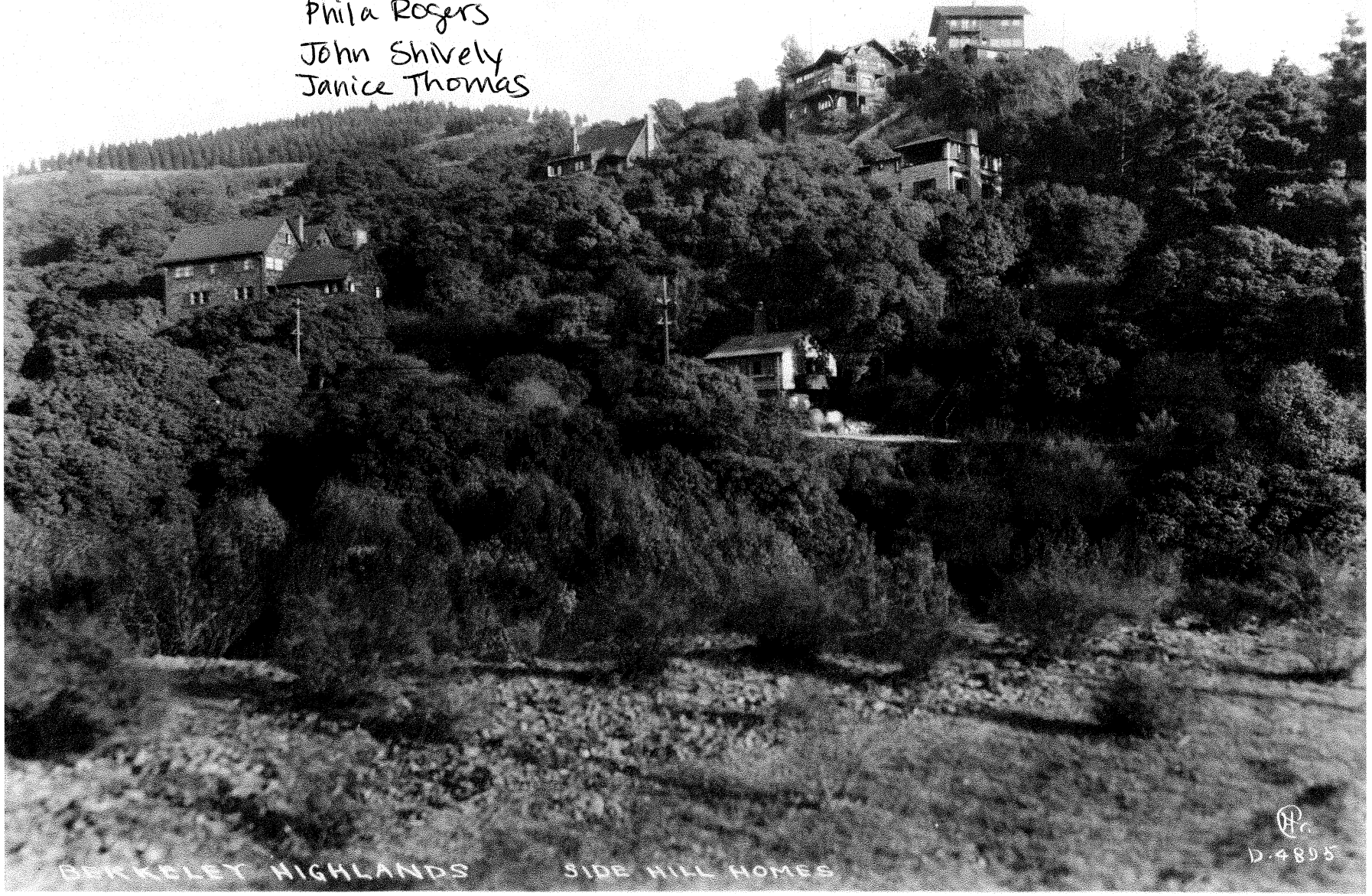



What Can Do to Help Prevent Storm Water Pollution
* Minimize fertilizer and pesticide use
* Garden organically
* Set aside a portion of your yard as natural landscape (5-10%)
* Route downspouts into landscaped area
* Pick up trash


A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community.
To keep every cog and wheel is the first precaution of intelligent tinkering.

1/4/08 Save Strawberry Canyon:

Shirely Dean
Lesley Emmington Jones
Sylvia McLaughlin
Phila Rogers
John Shively
Janice Thomas

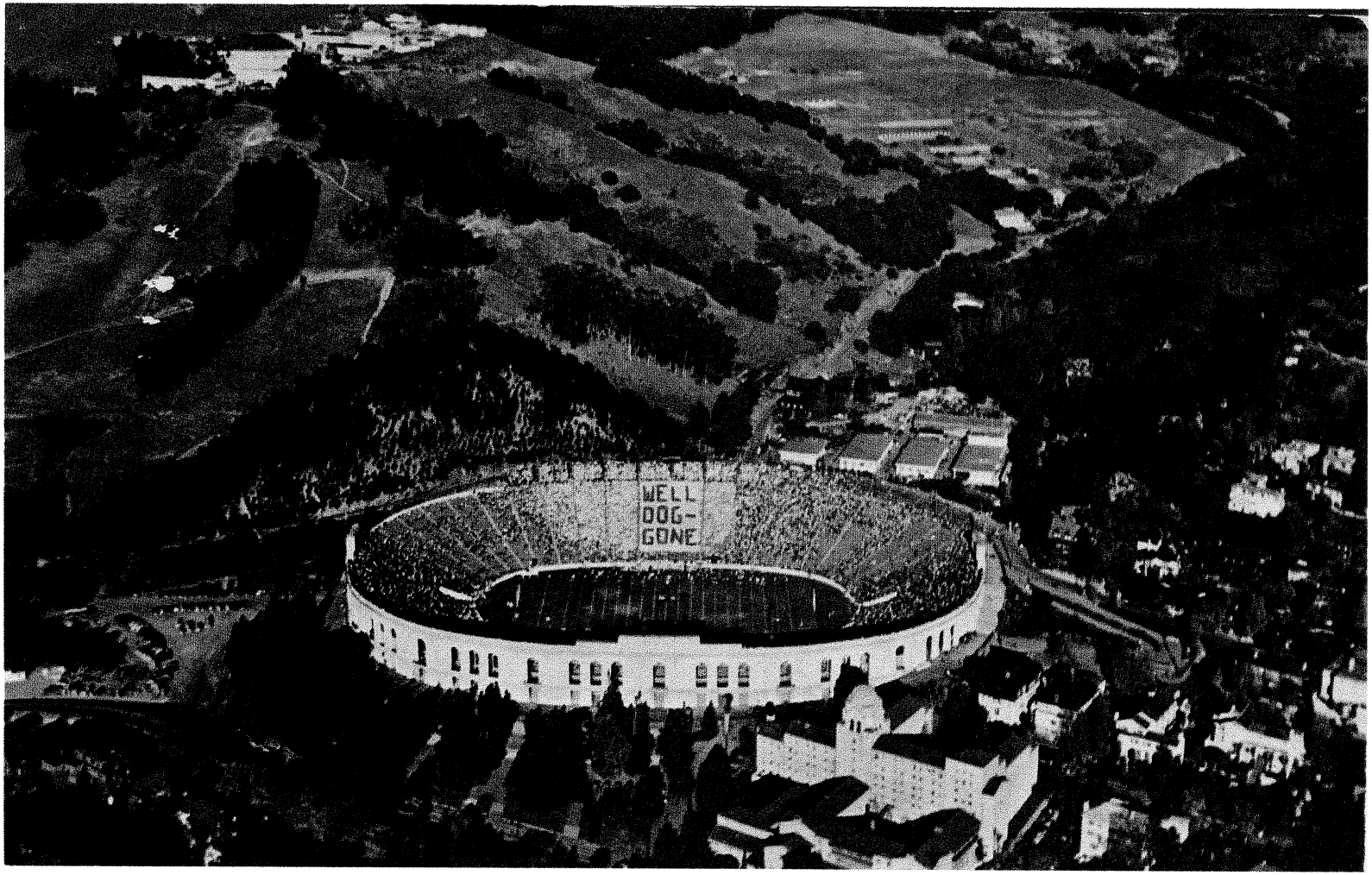


1/4/08 Save Strawberry Canyon:

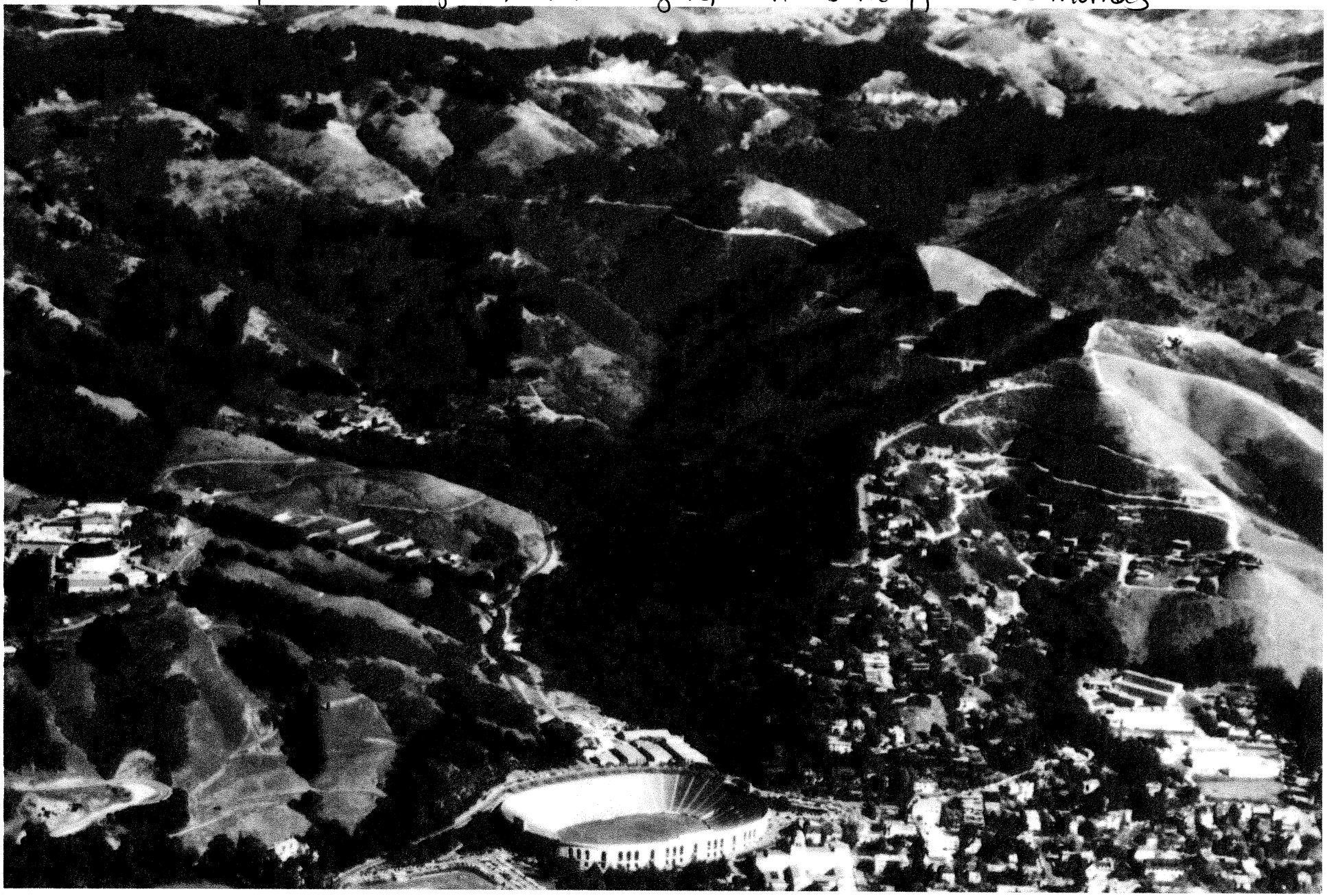
Shirely Dean — Phila Rogers

Lesley Emmington Jones, John Shively

Sylvia McLaughlin — Janice Thomas



1/4/08 Save Strawberry Canyon: Shirely Dean, Lesley Emmington Jones,
Sylvia McLaughlin, Phila Rogers, John Shively, Janice Thomas



Strawberry Creek outfall- Berkeley Marina

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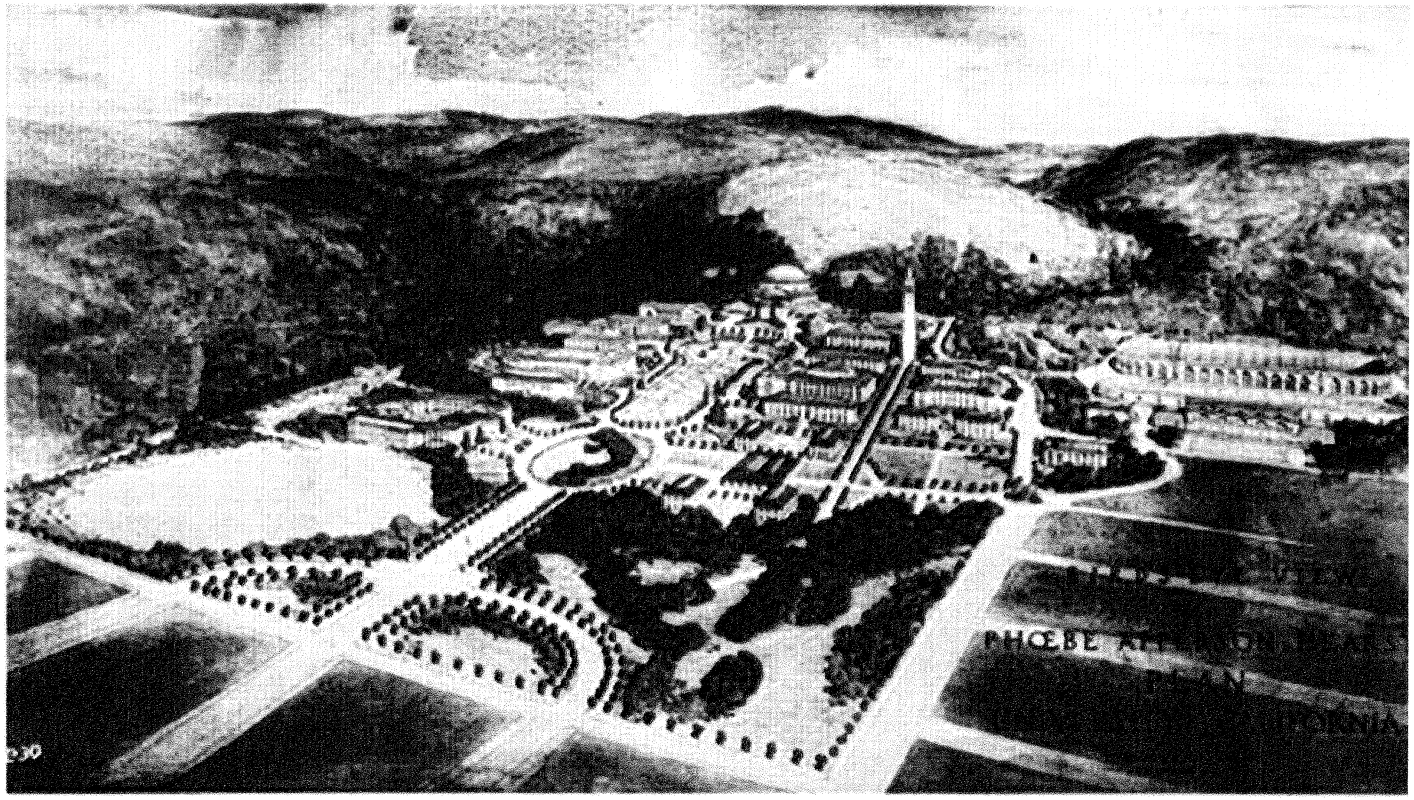
Strawberry Creek History: The making of an urban creek



8. Howard, Perspective View of the Proposed University of California, 1917 (25½ by 38¼, ink, colored wash).

1/4/08 Save Strawberry Canyon:
So Dean, L.E. Jones, S. McLaughlin,
P. Rogers, J. Shively, J. Thomas

Strawberry Creek in the 1800s

- 1846 California Statehood

- Gold Rush of 1849, squatters settle on Peralta land.

- 1853- 7 Orrin Simmons acquires 700 acres pastureland and grain.

- College needs a reliable, potable water supply- Strawberry Creek land considered in 1856.

1/4/08 Save Strawberry Canyon:

Shirely Dean
Lesley Emmington Jones
Sylvia Jones
Phila Rogers
John Shively
Janice Thomas

Strawberry Creek History

"All the other striking advantages of this location could not make it a place fit to be chosen as the College Home without this water. With it every excellence is of double value."

-1887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Canyon
~ 1900

1/4/08 Save Strawberry Canyon

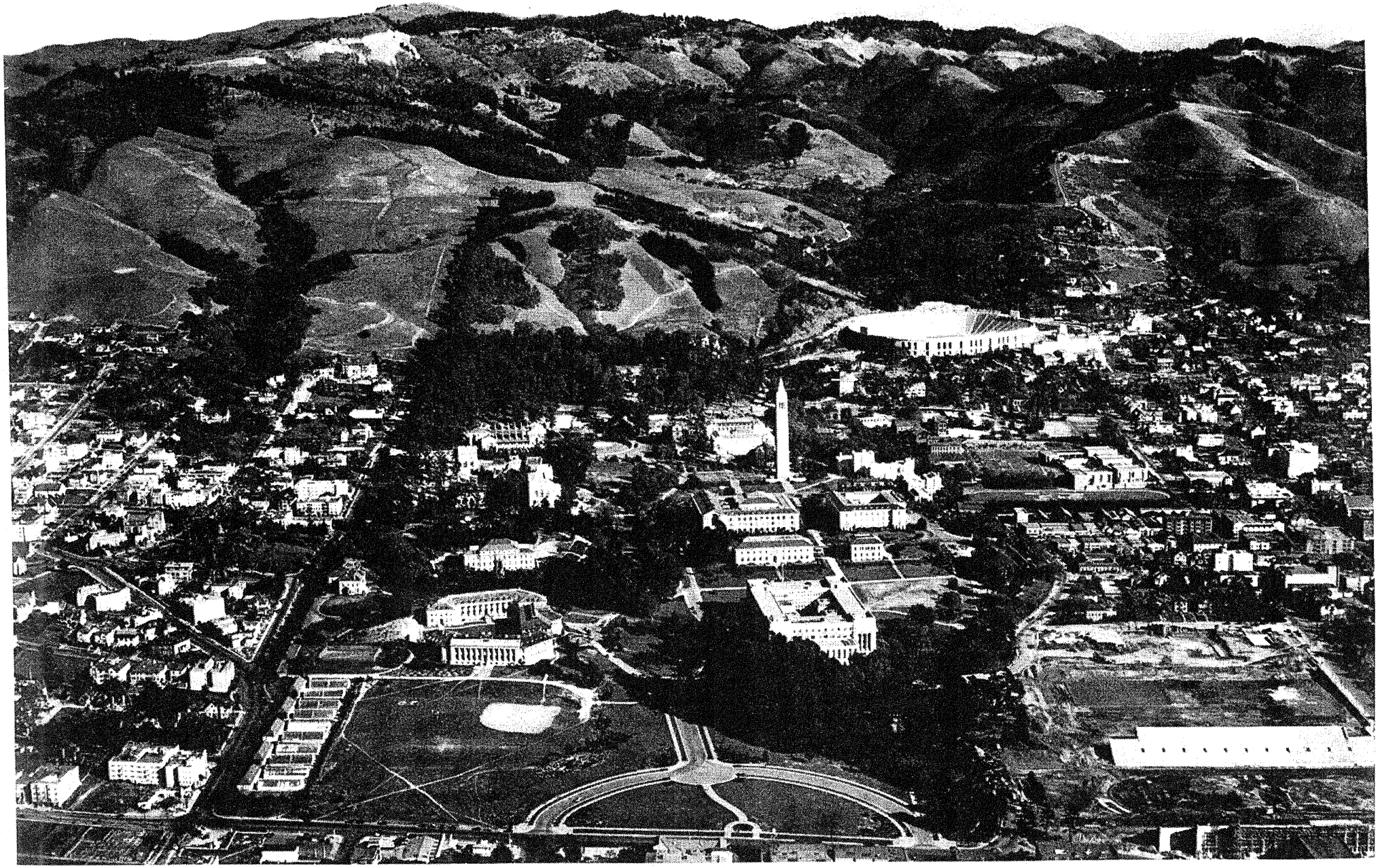


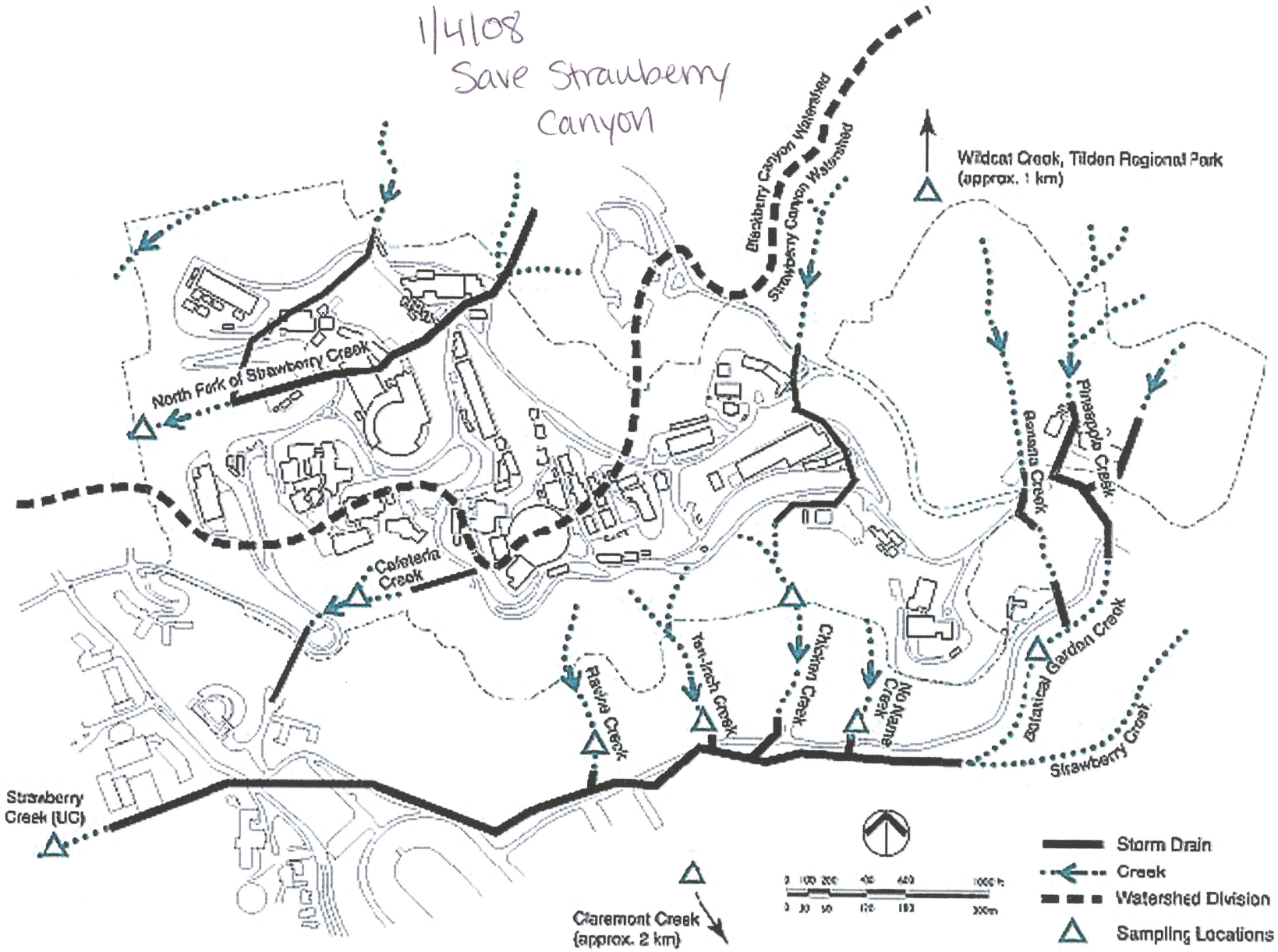
FIG. 126. University of California, in the Berkeley Hills. The Hayward fault system lies at base of the hills passing under stadium. *Photo courtesy U. S. Army Air Corps.*

	Intensity and Duration					
	6 mm/hr (0.25 in/hr)			13 mm/hr (0.5 in/hr)	25 mm/hr (1 in/hr)	
	0-10 min	10-20 min	20-40 (min)	0-20 min	0-10 min	10-20 min
Parameter	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Suspended Solids (mg/L)	72.7 (18.1)	20.3 (6.5)	11.7 (5.2)	28.7 (14.6)	41 (13.3)	12 (3.1)
Metals (Total)						
Aluminum (µg/L)	1036.7 (172.7)	233.3 (177.5)	180 (55.9)	316.7 (73.5)	540 (114.7)	143.3 (26.1)
Cadmium (µg/L)	2.4 (0.6)	1 (0.8)	0 (0)	0.8 (0.6)	0.5 (0.8)	0 (0)
Chromium (µg/L)	7.7 (0.7)	4.1 (0.3)	2.2 (0.2)	2.6 (0.4)	4 (1.2)	1.8 (0.3)
Copper (µg/L)	54.3 (6.4)	27.3 (4.2)	10.3 (0.5)	19.7 (1.3)	29.7 (7.6)	10.3 (2.2)
Iron (µg/L)	556.7 (56.8)	446.7 (27.4)	216.7 (71.5)	560 (115.4)	610 (195.4)	266.7 (35.5)
Lead (µg/L)	168.7 (84.2)	93 (58)	27.7 (14.5)	61.7 (28.6)	48.7 (18.4)	18.7 (6.6)
Mercury (µg/L)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Nickel (µg/L)	44.7 (7.4)	21.3 (4.7)	6.8 (0.9)	14 (2.3)	23.7 (6.9)	6.6 (1.3)
Silver (µg/L)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Zinc (µg/L)	430 (47.5)	213.3 (35.5)	76.7 (3.2)	160 (8.5)	216.7 (26.1)	69.3 (10.6)
Total PAHs (µg/L)	8.5 (6.2)	4.3 (2.8)	2.7 (2.1)	5.5 (2.9)	3.3 (1)	1.6 (0.7)
		[1/4/08 Save Strawberry Canyon]				
Metals (Dissolved)						
Aluminum (µg/L)	78.7 (12.4)	92.7 (97.2)	0 (0)	0 (0)	0 (0)	25.7 (37.9)
Cadmium (µg/L)	2.1 (0.6)	0.9 (0.7)	0 (0)	0 (0)	0.5 (0.7)	0 (0)
Chromium (µg/L)	4.1 (0.4)	2.5 (0.2)	0.8 (0.7)	1.6 (0)	1.9 (0.6)	0.4 (0.5)
Copper (µg/L)	47.3 (5.2)	24.7 (4.8)	8.5 (0.9)	15.3 (1.8)	24.3 (9.4)	8 (2)
Iron (µg/L)	360 (64.4)	203.3 (40.3)	46.7 (35.5)	133.3 (26.1)	190 (30.7)	53.3 (39.4)
Lead (µg/L)	133.3 (77.4)	85.3 (63.1)	23.9 (16.4)	45.1 (28.7)	34 (12.6)	14.1 (7.2)
Mercury (µg/L)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Nickel (µg/L)	41.3 (6.9)	19.3 (4.7)	6.4 (1.1)	12 (1.5)	21 (7.4)	5.8 (1.2)
Silver (µg/L)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Zinc (µg/L)	336.7 (52.1)	170 (47.5)	56 (11.2)	104.7 (22.6)	156.7 (34.5)	50.7 (13.9)

1/4/08 Save Strawberry Canyon

1/4/08
save
Strawberry
Canyon

1/4/08
Save Strawberry Canyon



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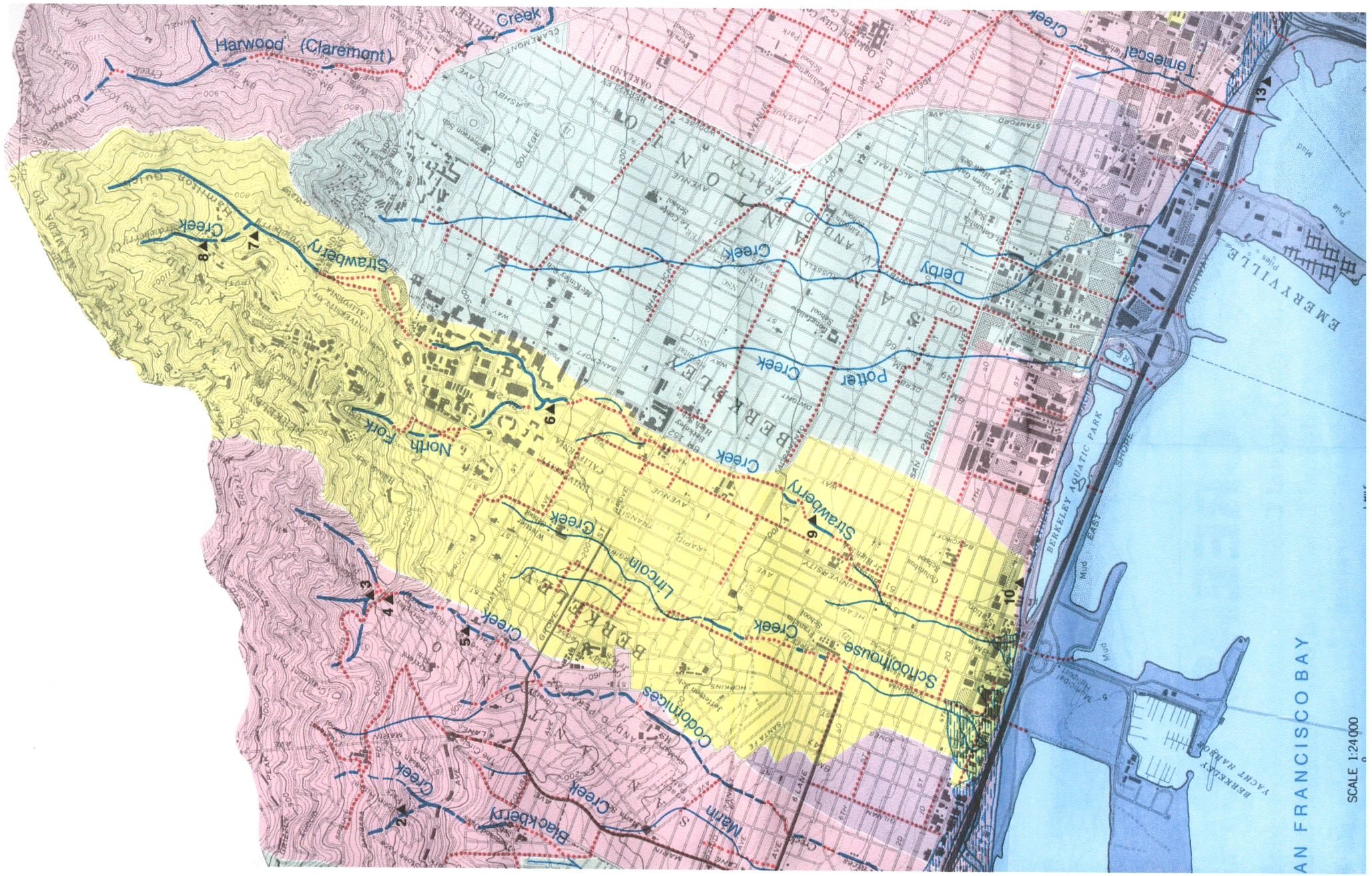
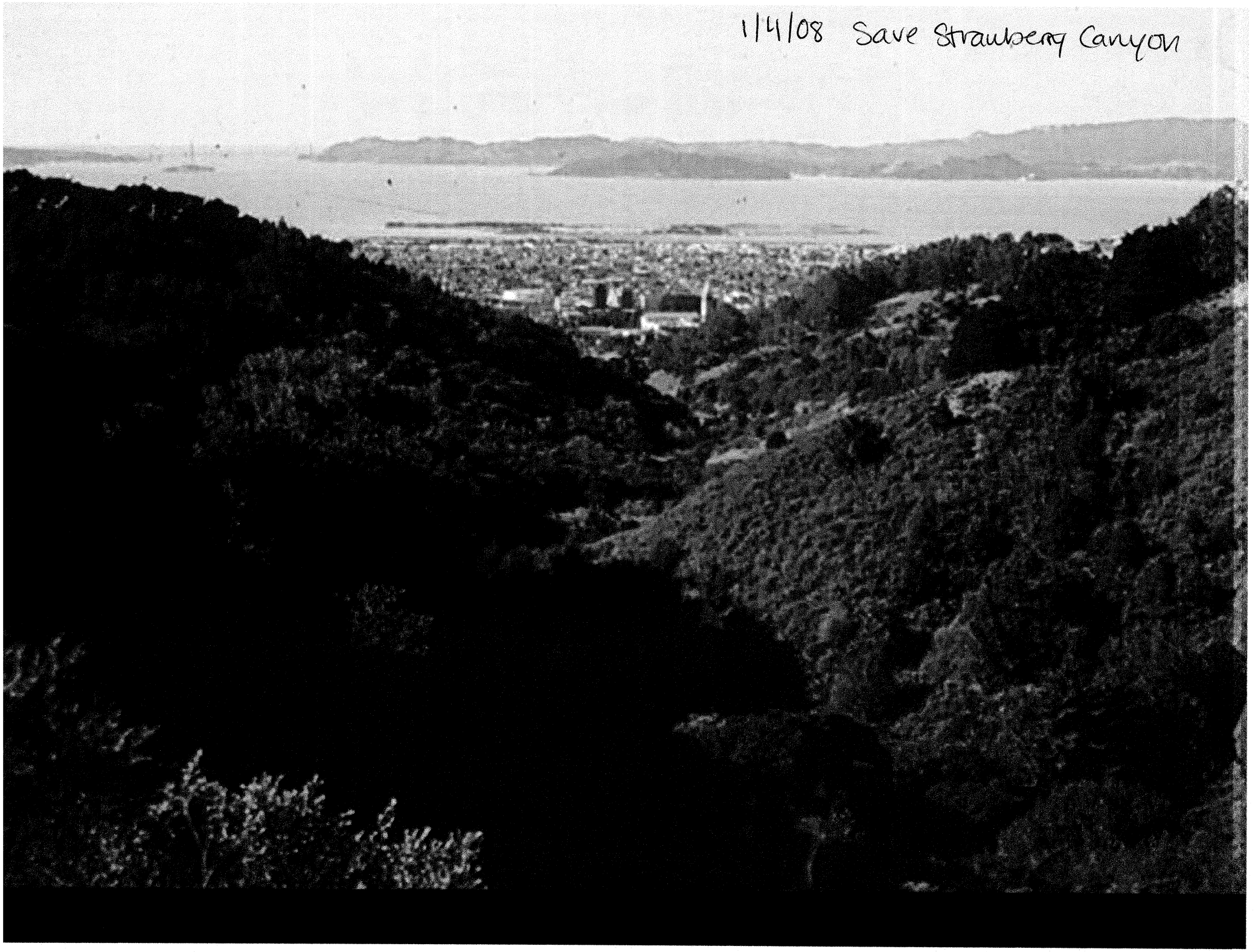
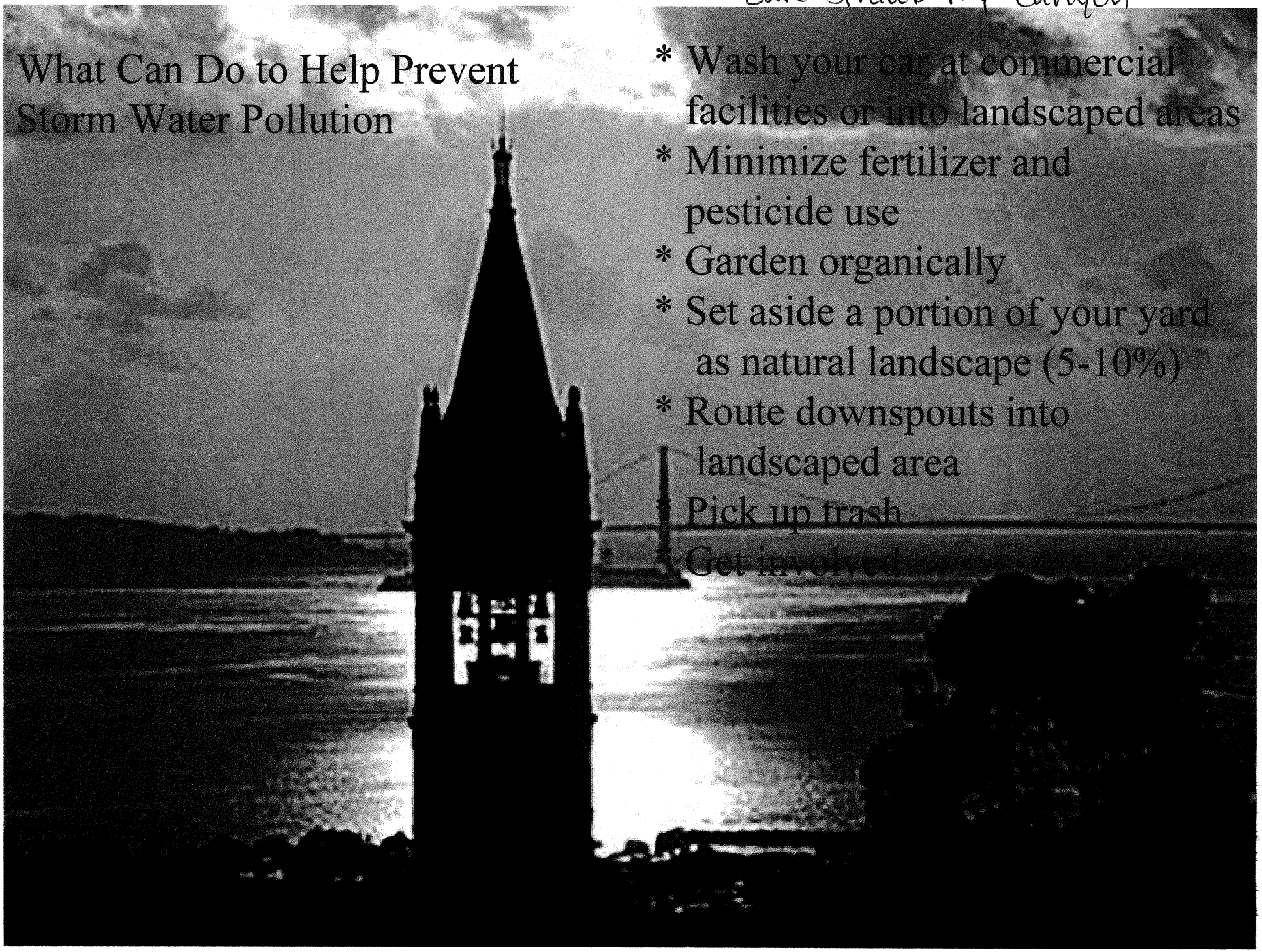



1/4/08 Save Strawberry Canyon

1/4/08 Save Strawberry Canyon



What Can Do to Help Prevent Storm Water Pollution

* Wash your car at commercial facilities or into landscaped areas
* Minimize fertilizer and pesticide use
* Garden organically
* Set aside a portion of your yard as natural landscape (5-10%)
* Route downspouts into landscaped area
* Pick up trash
* Get involved

1/4/08 Save Strawberry Canyon

A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community.

To keep every cog and wheel is the first precaution of intelligent tinkering.

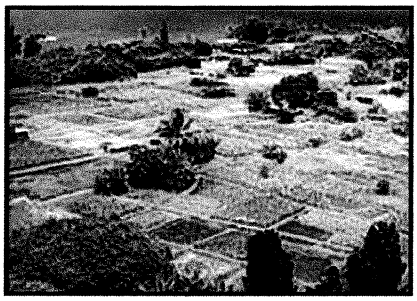
- Aldo Leopold

1/4/08 Save Strawberry Canyon: Shirely Dean, Janice Thomas, Lesley Emmington Jones, Sylvia McLaughlin, Phila Rogers, John Shively

36 Preservation Briefs

Technical Preservation Services
National Park Service
U.S. Department of the Interior

Protecting Cultural Landscapes
Planning, Treatment and Management of Historic Landscapes



Charles A. Birnbaum, ASLA

A NOTE TO OUR USERS: The web versions of the **Preservation Briefs** differ somewhat from the printed versions. Many illustrations are new, captions are simplified, illustrations are typically in color rather than black and white, and some complex charts have been omitted.

Cultural landscapes can range from thousands of acres of rural tracts of land to a small homestead with a front yard of less than one acre. Like historic buildings and districts, these special places reveal aspects of our country's origins and development through their form and features and the ways they were used. Cultural landscapes also reveal much about our evolving relationship withthe natural world.

Patterns on the land have been preserved through the continuation of traditional uses, such as the grape fields at the Sterling Vineyards in Calistoga, California. Photo: NPS files.

A ***cultural landscape*** is defined as "a geographic area,including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values." There are four general types of cultural landscapes, not mutually exclusive*: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes.* These are defined below.

Historic landscapes include residential gardens and community parks, scenic highways, rural communities, institutional grounds, cemeteries, battlefields and zoological gardens. They are composed of a number of character-defining features which, individually or collectively contribute to the landscape's physical appearance as they have evolved over time. In addition to vegetation and topography, cultural landscapes may include water features, such as ponds, streams, and fountains; circulation features, such as roads,

paths, steps, and walls; buildings; and furnishings, including fences, benches, lights and sculptural objects.

Most historic properties have a cultural landscape component that is integral to the significance of the resource. Imagine a residential district without sidewalks, lawns and trees or a plantation with buildings but no adjacent lands. A historic property consistsof all its cultural resources--landscapes, buildings, archeological sites and collections. In some cultural landscapes, there may be a total absence of buildings.

This Preservation Brief provides preservation professionals, cultural resource managers, and historic property owners a step-by-step process for preserving **historic designed** and **vernacular landscapes**, two types of cultural landscapes. While this process is ideally applied to an entire landscape, it can address a single feature, such as a perennial garden, family burial plot, or a sentinel oak in an open meadow. This Brief provides a framework and guidance for undertaking projects to ensure a successful balance between historic preservation and change.

DEFINITIONS

Historic Designed Landscape--a landscape that was consciously designed or laid out by a landscape architect, master gardener, architect, or horticulturist according to design principles,or an amateur gardener working in a recognized style or tradition. The landscape may be associated with a significant person(s), trend, or event in landscape architecture; or illustrate an important development in the theory and practice of landscape architecture. Aesthetic values play a significant role in designed landscapes. Examples include parks, campuses, and estates.

Historic Vernacular Landscape--a landscape that evolved through use by the people whose activities or occupancy shaped that landscape. Through social or cultural attitudes ofan individual, family or a community, the landscape reflects the physical, biological, and cultural character of those everyday lives. Function plays a significant role in vernacular landscapes. They can be a single property such as a farm or a collection of properties such as a district of historic farms along a river valley. Examples include rural villages, industrial complexes, and agricultural landscapes.

Historic Site--a landscape significant for its association with a historic event, activity, or person. Examples include battlefields and president's house properties.

Ethnographic Landscape--a landscape containing a variety of natural and cultural resources that associated people define as heritage resources. Examples are contemporary settlements, religious sacred sites and massive geological structures. Small plant communities, animals, subsistence and ceremonial grounds are often components.

Developing a Strategy and Seeking Assistance

Nearly all designed and vernacular landscapes evolve from, or are often dependent on, natural resources. It is these interconnected systems of land, air and water, vegetation and wildlife which have dynamic qualities that differentiate cultural landscapes from

other cultural resources, such as historic structures. Thus, their documentation, treatment, and ongoing management require a comprehensive, multi-disciplinary approach.

The "Boot Fence," near D.H. Lawrence Ranch, Questa, California, is an example of a character-defining landscape feature. Photo: Courtesy, Cheryl Wagner.

Today, those involved in preservation planning and management of cultural landscapes represent a broad array of academic backgrounds,training, and related project experience. Professionals may have expertise in landscape architecture, history, landscape archeology, forestry, agriculture, horticulture, pomology, pollen analysis, planning, architecture, engineering (civil, structural, mechanical, traffic), cultural geography, wildlife, ecology, ethnography, interpretation, material and object conservation, landscape maintenanceand management. Historians and historic preservation professionals can bring expertise in the history of the landscape, architecture, art, industry, agriculture, society and other subjects. Landscape preservation teams, including on-site management teams and independent consultants, are often directed by a landscape architect with specific expertise in landscape preservation. It is highly recommended that disciplines relevant to the landscapes' inherent features be represented as well.

Another example of a very different landscape feature is this tree planting detail for Jefferson Memorial Park, St. Louis, Missouri. Photo: Courtesy, Dan Kiley.

Additional guidance may be obtained from State Historic Preservation Offices, local preservation commissions, the National Park Service, local and state park agencies, national and state chapters ofthe American Society of Landscape Architects, the Alliance for Historic Landscape Preservation, the National Association of Olmsted Parks, and the Catalog of Landscape Records in the United States at Wave Hill, among others.

A range of issues may need to be addressed when considering how a particular cultural landscape should be treated. This may include the in-kind replacement of declining vegetation, reproduction of furnishings, rehabilitation of structures, accessibility provisions for people with disabilities, or the treatment of industrial properties that are rehabilitated for new uses.

Preservation Planning for Cultural Landscapes

Careful planning prior to undertaking work can help prevent irrevocable damage to a cultural landscape. Professional techniques for identifying, documenting, evaluating and preserving cultural landscapes have advanced during the past 25 years and are continually being refined. Preservation planning generally involves the following steps: historical research; inventory and documentation of existing conditions; site analysis and evaluation of integrity and significance; development of a cultural landscape preservation approach and treatment plan; development of a cultural landscape

management plan and management philosophy; the development of a strategy for ongoing maintenance; and preparation of a record of treatment and future research recommendations.

The steps in this process are not independent of each other, nor are they always sequential. In fact, information gathered in one step may lead to a re-examination or refinement of previous steps. For example, field inventory and historical research are likely to occur simultaneously, and may reveal unnoticed cultural resources that should be protected.

The treatment and management of cultural landscape should also be considered in concert with the management of an entire historic property. As a result, many other studies may be relevant. They include management plans, interpretive plans, exhibit design, historic structures reports, and other.

These steps can result in several products including a Cultural Landscape Report (also known as a Historic Landscape Report), statements for management, interpretive guide, maintenance guideand maintenance records.

CULTURAL LANDSCAPE REPORTS

A Cultural Landscape Report (CLR) is the primary report that documents the history, significance and treatment of a cultural landscape. A CLR evaluates the history and integrity of the landscape including any changes to its geographical context, features, materials,and use.

CLWs are often prepared when a change (e.g. a new visitor's center or parking area to a landscape) is proposed. In such instances, a CLR can be a useful tool to protect the landscape's character-defining features from undue wear, alteration or loss. A CLR can provide managers, curators and others with information needed to make management decisions.

A CLR will often yield new information about a landscape's historic significance and integrity, even for those already listed on theNational Register. Where appropriate, National Register files should be amended to reflect the new findings.

Historical Research

Research is essential before undertaking any treatment. Findings will help identify a landscape's historic period(s) of ownership, occupancy and development, and bring greater understanding of the associations and characteristics that make the landscape or history significant. Research findings provide a foundation to make educated decisions for work, and can also facilitate ongoing maintenance and management operations, interpretation and eventual compliance requirements.

A variety of primary and secondary sources may be consulted. Primary archival sources can include historic plans, surveys, plats, tax maps, atlases, U. S. Geological Survey maps, soil profiles, aerial photographs, photographs, stereoscopic views, glass lantern slides, postcards, engravings, paintings, newspapers, journals, construction drawings,

specifications, plant lists, nursery catalogs, household records, account books and personal correspondence. Secondary sources include monographs, published histories, theses, National Register forms, survey data, local preservation plans, state contexts and scholarly articles.

Contemporary documentary resources should also be consulted. This may include recent studies, plans, surveys, aerial and infrared photographs, Soil Conservation Service soil maps, inventories, investigations and interviews. Oral histories of residents, managers,and maintenance personnel with a long tenure or historical association can be valuable sources of information about changes to a landscape over many years. For properties listed in the National Register, nomination forms should be consulted.

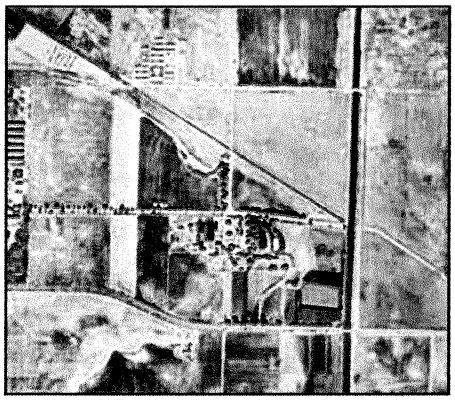
Preparing Period Plans

In the case of designed landscapes, even though a historic design plan exists, it does not necessarily mean that it was realized fully, or even in part. Based on a review of the archival resources outlined above, and the extant landscape today, an *as-built period plan* may be delineated. For all successive tenures of ownership, occupancy and landscape change, *period plans* should be generated. Period plans can document to the greatest extent possible the historic appearance during a particular period of ownership, occupancy, or development. Period plans should be based on primary archival sources and should avoid conjecture. Features that are based on secondary or less accurate sources should be graphically differentiated. Ideally, all referenced archival sources should be annotated and footnoted directly on *period plans.*

Where historical data is missing, period plans should reflect any gaps in the CLR narrative text and these limitations consideredin future treatment decisions.

Inventorying and Documenting Existing Conditions

Both physical evidence in the landscape and historic documentation guide the historic preservation plan and treatments. To document existing conditions, intensive field investigation and reconnaissance should be conducted at the same time that documentary researchis being gathered. Information should be exchanged among preservation professionals, historians, technicians, local residents, managers and visitors.

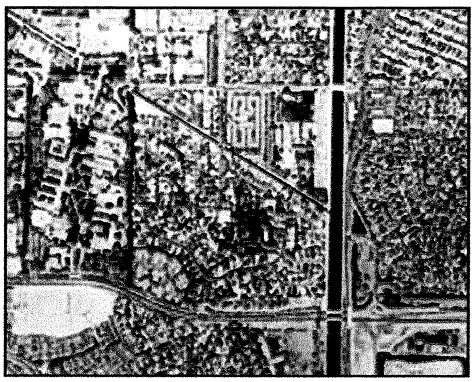


Understanding the geographic context should be part of the inventory process. This aerial photograph at Rancho Los Alamitos, Long Beach, CA, was taken in 1936. (See, below.) Photo: Rancho Los Alamitos

To assist in the survey process, National Register Bulletins have been published by the National Park Service to aid in identifying,nominating and evaluating designed and rural historic landscapes. Additionally, Bulletins are available for specific landscape types such as battlefields, mining sites, and cemeteries.

Although there are several ways to inventory and document a landscape,the goal is to create a baseline from a detailed record of the landscape and its features as they exist at the present (considering seasonal variations). Each landscape inventory should address issues of boundary delineation, documentation methodologies and techniques, the limitations of the inventory, and the scope of inventory efforts.

Foundation.



This present-day view of Rancho Los Alamitos shows present-day encroachments and adjacent developments that will affect the future treatment of visual and spatial relationships. Photo: Rancho Los Alamitos Foundation.

These are most often influenced by the timetable, budget, project scope, and the purpose of the inventory and, depending on the physical qualities of the property, its scale, detail, and the inter-relationship between natural and cultural resources. For example, inventory objectives to develop a treatment plan may differ considerably compared to those needed to develop an ongoing maintenance plan. Once the criteria for a landscape inventory are developed and tested, the methodology should be explained.

Preparing Existing Condition Plans

Inventory and documentation may be recorded in plans, sections, photographs, aerial photographs, axonometric perspectives, narratives, video-or any combination of techniques. Existing conditions should generally be documented to scale, drawn by hand or generated by computer. The scale of the drawings is often determined by the size and complexity of the landscape. Some landscapes may require documentation at more than one scale. For example, a large estate may be documented at a small scale to depict its spatial and visual relationships, while the discrete area around an estate mansionmay require a larger scale to illustrate individual plant materials, pavement patterns and other details. The same may apply to an entire rural historic district and a fenced vegetable garden contained within.

When landscapes are documented in photographs, *registration points* can be set to indicate the precise location and orientation of features. Registration points should correspond to significant forms, features and spatial relationships within the landscape and its surrounds. The points may also correspond to historic views to illustrate the change in the landscape todate. These locations may also be used as a management tool todocument the landscape's evolution, and to ensure that its character-defining features are preserved over time through informed maintenance operations and later treatment and management decisions.

All features that contribute to the landscape's historic character should be recorded. These include the physical features described above (e.g. topography, circulation), and the visual and spatial relationships that are character defining. The identification of existing plants, should be specific, including genus, species, common name, age (if known) and size. The woody, and if appropriate, herbaceous plant material should be accurately located on the existing conditions map. To ensure full representation of successional herbaceous plants, care should be taken to document the landscape in different seasons, if possible.

Treating living plant materials as a curatorial collection has also been undertaken at some cultural landscapes. This process, either done manually or by computer, can track the condition and maintenance operations on individual plants. Some sites, suchas the Frederick Law Olmsted National Historic Site, in Brookline, Massachusetts have developed a field investigation numbering system to track all woody plants. Due to concern for the preservation of genetic diversity and the need to replace significant plant materials, a number of properties are beginning to propagate historically important rare plants that are no longer commercially available, unique, or possess significant historic associations. Such herbarium collections become a part of a site's natural history collection.

Once the research and the documentation of existing conditions have been completed, a foundation is in place to analyze the landscape's continuity and change, determine its significance, assess its integrity, and place it within the historic context of similar landscapes.

READING THE LANDSCAPE

A noted geographer, Pierce Lewis, stated, "The attempt to derive meaning from landscapes possesses overwhelming virtue. It keeps us constantly alert to the world around us, demanding that we pay attention not just to some of the things around us but to all of them--the whole visible world in all of its rich, glorious, messy, confusing, ugly, and beautiful complexity."

Landscapes can be read on many levels--landscape as nature, habitat, artifact, system, problem, wealth, ideology, history, place and aesthetic. When developing a strategy to document a cultural landscape, it is important to attempt to read the landscape in its context of place and time.

Reading the landscape, like engaging in archival research, requires a knowledge of the resource and subject area as well as a willingness to be skeptical. As with archival research, it may involve serendipitous discoveries. Evidence gained from reading the landscape may confirm or contradict other findings and may encourage the observer and the historian to re-visit both primary and secondary sources with a fresh outlook. Landscape investigation may also stimulate other forms of research and survey, such as oral histories or archeological investigations, to supplement what appeared on-site.

There are many ways to read a landscape-whatever approach is taken should provide a broad overview. This may be achieved by combining on-the-ground observations with a bird's-eye perspective. To begin this process, aerial photographs should be reviewed to gain an orientation to the landscape and its setting. Aerial photographs come in different sizes and scales, and can thus portray different levels of detail in the landscape. Aerial photographs taken at a high altitude, for example, may help to reveal remnant field patterns or traces of an abandoned circulation system; or, portions of axial relationships that were part of the original design, since obscured by encroaching woodland areas. Low altitude aerial photographs can point out individual features such as the arrangement of shrub and herbaceous borders, and the exact locations of furnishings, lighting, and fence alignments. This knowledge can prove beneficial before an on-site visit.

Aerial photographs provide clues that can help orient the viewer to the landscape. The next step may be to view the landscape from a high point such as a knoll or an upper

floor window. Such a vantage point may provide an excellent transition before physically entering the cultural landscape.

On ground, evidence should then be studied, including character-defining features, visual and spatial relationships. By reviewing supporting materials from historic research, individual features can be understood in a systematic fashion that show the continuum that exists on the ground today. By classifying these features and relationships, the landscape can be understood as an artifact, possessing evidence of evolving natural systems and human interventions over time.

For example, the on-site investigation of an abandoned turn-of-the-century farm complex reveals the remnant of a native oak and pine forest which was cut and burned in the mid-nineteenth century. This previous use is confirmed by a small stand of mature oaks and the presence of these plants in the emerging secondary woodland growth that is overtaking this farm complex in decline. A ring count of the trees can establish a more accurate age. By *reading* other character-defining features, such as the traces of old roads, remnant hedgerows, ornamental trees along boundary roads, foundation plantings, the terracing of grades and remnant fences--the visual, spatial and contextual relationships of the property as it existed a century ago may be understood and its present condition and integrity evaluated.

The findings of on-site reconnaissance, such as materials uncovered during archival research, may be considered primary data. These findings make it possible to inventory and evaluate the landscape's features in the context of the property's current condition. Character-defining features are located *in situ*, in relationship to each other and the greater cultural and geographic contexts.

Historic Plant Inventory

Within cultural landscapes, plants may have historical or botanical significance. A plant may have been associated with a historic figure or event or be part of a notable landscape design. A plant may be an uncommon cultivar, exceptional in size, age, rare and commercially/unavailable. If such plants are lost, there would be a loss of historic integrity and biological diversity of the cultural landscape. To ensure that significant plants are preserved, an inventory of historic plants is being conducted at the North Atlantic Region of the National Park Service. Historical landscape architects work with landscape managers and historians to gather oral and documented history on the plant's origin and potential significance. Each plant is then examined in the field by an expert horticulturist who records its name, condition, age, size, distribution, and any notable botanic characteristics.

Plants that are difficult to identify or are of potential historical significance are further examined in the laboratory by a plant taxonomist who compares leaf, fruit, and flower characteristics with herbarium specimens for named species, cultivars and varieties. For plants species with many cultivars, such as apples, roses, and grapes, specimens may be sent to specialists for identification.

If a plant cannot be identified, is dying or in decline, and unavailable from commercial nurseries, it may be propagated. Propagation ensures that when rare and significant plants decline, they can be replaced with genetically-identical plants. Cuttings are propagated and grown to replacement size in a North Atlantic Region Historic Plant Nursery.

Site Analysis: Evaluating Integrity and Significance

By analyzing the landscape, its change over time can be understood. This may be accomplished by overlaying the various period plans with the existing conditions plan. Based on these findings, individual features may be attributed to the particular period when they were introduced, and the various periods when they were present.

It is during this step that the *historic significance* of the landscape component of a historic property and its integrity are determined. Historic significance is the recognized importance a property displays when it has been evaluated, including when it has been found to meet National Register Criteria. A landscape may have several areas of historical significance. An understanding of the landscape as a continuum through history is critical in assessing its cultural and historic value. In order for the landscape to have integrity, these character-defining features or qualities that contribute to its significance must be present.

The landscape of Lyndhurst, Tarrytown, New York, is significant in American culture and work of a master gardener, Ferdinand Mangold. Photo: National Trust for Historic Preservation.

While National Register nominations document the significance and integrity of historic properties, in general, they may not acknowledge the significance of the landscape's design or historic land uses, and may not contain an inventory of landscape features or characteristics. Additional research is often necessary to provide the detailed information about a landscape's evolution and significance useful in making decision for the treatment and maintenance of a historic landscape. Existing National Register forms may be amended to recognize additional areas of significance and to include more complete descriptions of historic properties that have significant land areas and landscape features.

Integrity is a property's historic identity evidenced by the survival of physical characteristics from the property's historic or pre-historic period. The seven qualities of integrity are location, setting, feeling, association, design, workmanship and materials. When evaluating these qualities, care should be taken to consider change itself. For example, when a second-generation woodland overtakes an open pasture in a battlefield landscape, or a woodland edge encloses a scenic vista. For situations such as these, the reversibility and/or compatibility of those features should be considered, both individually, and in the context of the overall landscape. Together, evaluations of significance and integrity, when combined with historic research, documentation of existing conditions, and analysis findings, influence later treatment and interpretation decisions.

Developing a Historic Preservation Approach and Treatment Plan

Treatment may be defined as work carried out to achieve a historic preservation goal--it cannot be considered in a vacuum. There are many practical and philosophical factors that may influence the selection of a treatment for a landscape. These include the

relative historic value of the property, the level of historic documentation, existing physical conditions, its historic significance and integrity, historic and proposed use (e.g. educational, interpretive, passive, active public, institutional or private), long-and short-term objectives, operational and code requirements (e.g. accessibility, fire, security) and costs for anticipated capital improvement, staffing and maintenance. The value of any significant archeological and natural resources should also be considered in the decision-making process. Therefore, a cultural landscape's preservation plan and the treatment selected will consider a broad array of dynamic and inter-related considerations. It will often take the form of a plan with detailed guidelines or specifications.

TREATMENTS FOR CULTURAL LANDSCAPES

Prior to undertaking work on a landscape, a treatment plan or similar document should be developed. The four primary treatments identified in the Secretary of the Interior's Standards for the Treatment of Historic Properties, are:

Preservation *is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.*

Rehabilitation *is defined as the act or process of making possible a compatible use for a property through repair, alterations,and additions while preserving those portions or features which convey its historical or cultural values.*

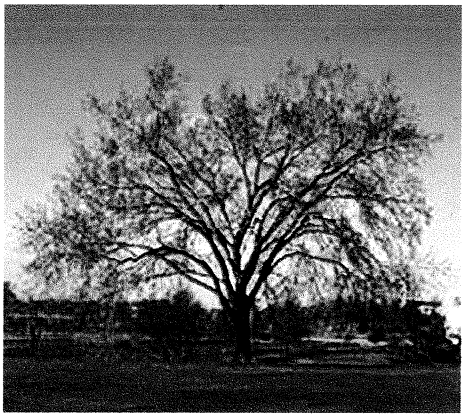
Restoration *is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.*

Reconstruction *is defined as the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.*

Adopting such a plan, in concert with a preservation maintenance plan, acknowledges a cultural landscape's ever-changing existence and the inter-relationship of treatment and ongoing maintenance. Performance standards, scheduling and record keeping of maintenance activities on a day-to-day or month-to-month basis, may then be planned for. Treatment, management, and maintenance proposals can be developed by a broad range of professionals and with expertise in such fields as landscape preservation, horticulture, ecology, and landscape maintenance.

The selection of a primary treatment for the

landscape, utilizing the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, establishes an overall historic preservation approach, as well as a philosophical framework from which to operate. Selecting a treatment is based on many factors. They include management and interpretation objectives for the property as a whole, the period(s) of significance, integrity, and condition of individual landscape features.



When the American Elm was plagued with Dutch Elm Disease, many historic properties relied on the Japanese Zelkova as a substitute plant (see below). Photo: NPS files.

For all treatments, the landscape's existing conditions and its ability to convey historic significance should be carefully considered. For example, the life work, design philosophy and extant legacy of an individual designer should all be understood for a designed landscape, such as an estate, prior to treatment selection. For a vernacular landscape, such as a battlefield containing a largely intact mid-nineteenth century family farm, the uniqueness of that agrarian complex within a local, regional, state, and national context should be considered in selecting a treatment.

The overall historic preservation approach and treatment approach can ensure the proper retention, care, and repair of landscapes and their inherent features. In short, the Standards act as a preservation and management tool for cultural landscapes. The four potential treatments are described above.

Compared to the American Elm (above right), it is readily apparent that the form and scale of this tree is really quite different, and would be an inappropriate substitute plant material within a restoration or reconstruction project. Photo: NPS files.

Landscape treatments can range from simple, inexpensive preservation actions, to complex major restoration or reconstruction projects. The progressive framework is inverse in proportion to the retention of historic features and materials. Generally, preservation involves the least change, and is the most respectful of historic materials. It maintains the form and material of the existing landscape. Rehabilitation usually accommodates contemporary alterations or additions without altering significant historic features or materials, with successful projects involving minor to major change. Restoration or reconstruction attempts to recapture the appearance of a property,or an individual feature at a particular point in time, as confirmed by detailed historic documentation. These last two treatments most often require the greatest degree of intervention and thus,the highest level of documentation.

In all cases, treatment should be executed at the appropriate level, reflecting the condition of the landscape, with repair work identifiable upon close inspection and/or indicated in supplemental interpretative information. When repairing or replacing a feature, every effort should be made to achieve visual and physical compatibility. Historic materials should be matched in design, scale, color and texture.

A landscape with a high level of integrity and authenticity may suggest preservation as the primary treatment. Such a treatment may emphasize protection, stabilization, cyclical maintenance,and repair of character-defining landscape features. Changes over time that are part of the landscape's continuum and are significant in their own right

may be retained, while changes that are not significant, yet do not encroach upon or erode character may also be maintained. Preservation entails the essential operations to safeguard existing resources.

Rehabilitation is often selected in response to a contemporary use or need--ideally such an approach is compatible with the landscape's historic character and historic use. Rehabilitation may preserve existing fabric along with introducing some compatible changes, new additions and alterations. Rehabilitation may be desirable at a private residence in a historic district where the homeowner's goal is to develop an appropriate landscape treatment for a front yard, or in a public park where a support area is needed for its maintenance operations.

The historic birch allee at Stan Hywet Hall, Akron, Ohio, which had suffered from borer infestation and leaf miner, was preserved through a series of carefully executed steps that took 15 years to realize. Photo: Child Associates.

When the most important goal is to portray a landscape at an exact period of time, restoration is selected as the primary treatment. Unlike preservation and rehabilitation, interpreting the landscape's continuum or evolution is not the objective. Restoration may include the removal of features from other periods and/or the construction of missing or lost features and materials from the reconstruction period. In all cases, treatment should be substantiated by the historic research findings and existing conditions documentation. Restoration and re-construction treatment work should avoid the creation of a landscape whose features did not exist historically. For example, if features from an earlier period did not co-exist with extant features from a later period that are being retained, their restoration would not be appropriate.

In rare cases, when evidence is sufficient to avoid conjecture, and no other property exists that can adequately explain a certain period of history, reconstruction may be utilized to depict a vanished landscape. The accuracy of this work is critical. In cases where topography and the sub-surface of soil have not been disturbed, research and existing conditions findings may be confirmed by thorough archeological investigations. Here too, those features that are intact should be repaired as necessary, retaining the original historic features to the greatest extent possible. The greatest danger in reconstruction is creating a false picture of history.

False historicism in every treatment should be avoided. This applies to individual features as well as the entire landscape. Examples of inappropriate work include the introduction of historic-looking benches that are actually a new design, a fanciful gazebo placed in what was once an open meadow, executing an unrealized historic design, or designing a historic-looking landscape for a relocated historic structure within "restoration."

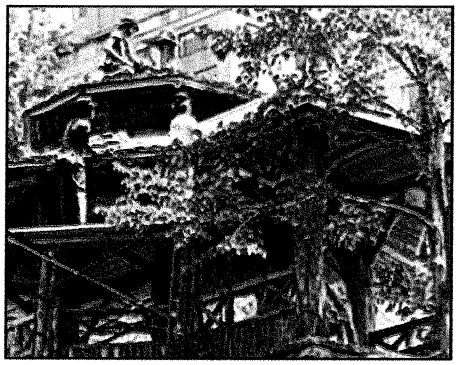
LANDSCAPE INTERPRETATION

Landscape interpretation is the process of providing the visitor with tools to experience the landscape as it existed during its period of significance, or as it evolved to its present state. These tools may vary widely, from a focus on existing features to the addition of interpretive elements. These could include exhibits, self-guided brochures, or

a new representation of a lost feature. The nature of the cultural landscape, especially its level of significance, integrity, and the type of visitation anticipated may frame the interpretive approach. Landscape interpretation may be closely linked to the integrity and condition of the landscape, and therefore, its ability to convey the historic character and character-defining features of the past. If a landscape has high integrity, the interpretive approach may be to direct visitors to surviving historic features without introducing obtrusive interpretive devices, such as free-standing signs. For landscapes with a diminished integrity, where limited or no fabric remains, the interpretive emphasis may be on using extant features and visual aids (e.g., markers, photographs, etc.) to help visitors visualize the resourceas it existed in the past. The primary goal in these situations is to educate the visitor about the landscape's historic themes, associations and lost character-defining features or broader historical, social and physical landscape contexts.

Developing a Preservation Maintenance Plan and Implementation Strategy

Throughout the preservation planning process, it is important to ensure that existing landscape features are retained. Preservation maintenance is the practice of monitoring and controlling change in the landscape to ensure that its historic integrity is not altered and features are not lost. This is particularly important during the research and long-term treatment planning process. To be effective, the maintenance program must have a guiding philosophy, approach or strategy; an understanding of preservation maintenance techniques; and a system for documenting changes in the landscape.



Central Park has developed an in-house historic preservation crew to undertake small projects. A specialized crew has been trained to repair and rebuild rustic furnishings. Photo: Central Park Conservancy.

The philosophical approach to maintenance should coincide with the landscape's current stage in the preservation planning process. A Cultural Landscape Report and Treatment Plan can take several years to complete, yet during this time managers and property owners will likely need to address immediate issues related to the decline, wear, decay, or damage of landscape features. Therefore, initial maintenance operations may focus on the stabilization and protection of all landscape features to provide temporary, often emergency measures to prevent deterioration, failure, or loss, without altering the site's existing character.

After a Treatment Plan is implemented, the approach to preservation maintenance may be modified to reflect the objectives defined by this plan. The detailed specifications prepared in the Treatment Plan relating to the retention, repair, removal, or replacement of features in the landscape should guide and inform a comprehensive preservation maintenance program. This would include schedules for monitoring and routine maintenance, appropriate preservation maintenance procedures, as well as ongoing record keeping of work performed. For vegetation, the preservation maintenance program would also include thresholds for growth or change in character, appropriate pruning methods, propagation and replacement procedures.

To facilitate operations, a property may be divided into discrete management zones.

These zones are sometimes defined during the Cultural Landscape Report process and are typically based on historically defined areas. Alternatively, zones created for maintenance practices and priorities could be used. Examples of maintenance zones would include woodlands, lawns, meadow, specimen trees, and hedges.

Training of maintenance staff in preservation maintenance skills is essential. Preservation maintenance practices differ from standard maintenance practices because of the focus on perpetuating the historic character or use of the landscape rather than beautification. For example, introducing new varieties of turf, roses or trees is likely to be inappropriate. Substantial earth moving (or movement of soil) may be inappropriate where there are potential archeological resources. An old hedge or shrub should be rejuvenated, or propagated, rather than removed and replaced. A mature specimen tree may require cabling and careful monitoring to ensure that it is not a threat to visitor safety. Through training programs and with the assistance of preservation maintenance specialists, each property could develop maintenance specifications for the care of landscape features.

Because landscapes change through the seasons, specifications for ongoing preservation maintenance should be organized in a calendar format. During each season or month, the calendar can be referenced to determine when, where, and how preservation maintenance is needed. For example, for some trees structural pruning is best done in the late winter while other trees are best pruned in the late summer. Serious pests are monitored at specific times of the year, in certain stages of their life cycle. This detailed calendar will, in turn, identify staff needs and work priorities.

Depending on the level of sophistication desired, one approach to documenting maintenance data and recording change over time is to use a computerized geographical or visual information system. Such a system would have the capability to include plans and photographs that would focus on a site's landscape features.

If a computer is not available, a manual or notebook can be developed to organize and store important information. This approach allows managers to start at any level of detail and to begin to collect and organize information about landscape features. The value of these maintenance records cannot be overstated. These records will be used in the future by historians to understand how the landscape has evolved with the ongoing care of the maintenance staff.

Recording Treatment Work and Future Research Recommendations

The last and ongoing step in the preservation planning process records the treatment work as carried out. It may include a series of as-built drawings, supporting photographic materials, specifications and a summary assessment. New technologies that have been successfully used should be highlighted. Ideally, this information should be shared with interested national organizations for further dissemination and evaluation.

The need for further research or additional activities should also be documented. This may include site-specific or contextual historical research, archeological investigations, pollen analysis, search for rare or unusual plant materials, or, material testing for future applications.

Finally, in consultation with a conservator or archivist-to maximize the benefit of project work and to minimize the potential of data loss--all primary documents should be organized and preserved as archival materials. This may include field notes, maps, drawings, photographs, material samples, oral histories and other relevant information.

DEVELOPING A PRESERVATION MAINTENANCE GUIDE

In the past, there was rarely adequate record-keeping to fully understand the ways a landscape was maintained. This creates gaps in our research findings. Today, we recognize that planning for ongoing maintenance and onsite applications should be documented--both routinely and comprehensively. An annual work program or calendar records the frequency of maintenance work on built or natural landscape features. It can also monitor the age, health and vigor of vegetation. For example, onsite assessments may document the presence of weeds, pests, dead leaves, pale color, wilting, soil compaction--all of which signal particular maintenance needs. For built elements, the deterioration of paving or drainage systems may be noted and the need for repair or replacement indicated before hazards develop. An overall maintenance program can assist in routine and cyclic maintenance of the landscape and can also guide long term treatment projects.

To help structure a comprehensive maintenance operation that is responsive to staff, budget, and maintenance priorities, the National Park Service has developed two computer-driven programs for its own landscape resources. A Maintenance Management Program (MM)is designed to assist maintenance managers in their efforts toplan, organize, and direct the park maintenance system. An Inventory and Condition Assessment Program (ICAP) is designed to complement MM by providing a system for inventorying, assessing conditions, and for providing corrective work recommendations for all site features.

Another approach to documenting maintenance and recording changes over time is to develop a manual or computerized graphic information system. Such a system should have the capability to include plans and photographs that would record a site's living collection of plant materials. (Also see discussion of the use of photography under Preparing Existing Conditions Plans) This may be achieved using a computer-aided drafting program along with an integrated database management system.

To guide immediate and ongoing maintenance, a systematic and flexible approach has been developed by the Olmsted Center for Landscape Preservation. Working with National Park Service landscape managers and maintenance specialists, staff assemble information and make recommendations for the care of individual landscape features.

Each landscape feature is inspected in the field to document existing conditions and identify field work needed. Recommendations include maintenance procedures that are sensitive to the integrity of the landscape.

Summary

The planning, treatment, and maintenance of cultural landscapes requires a multi-disciplinary approach. In landscapes, such as parks and playgrounds, battlefields,

cemeteries, village greens, and agricultural land preserves more than any other type of historic resource--communities rightly presume a sense of stewardship. It is often this grass roots commitment that has been a catalyst for current research and planning initiatives. Individual residential properties often do not require the same level of public outreach, yet a systematic planning process will assist in making educated treatment, management and maintenance decisions.

Wise stewardship protects the character, and or spirit of a place by recognizing history as change over time. Often, this also involves our own respectful changes through treatment. The potential benefits from the preservation of cultural landscapes are enormous. Landscapes provide scenic, economic, ecological, social, recreational and educational opportunities that help us understand ourselves as individuals, communities and as a nation. Their ongoing preservation can yield an improved quality of life for all, and, above all, a sense of place or identity for future generations.

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Acknowledgements

The author, Charles A. Birnbaum, Coordinator, Historic Landscape Initiative, Preservation Assistance Division,

National Park Service would like to acknowledge the assistance of H. Ward Jandl and Kay Weeks. The Olmsted Center for Landscape Preservation at the Frederick Law Olmsted National Historic Site including Margie Coffin, Lauren Meier, Nora Mitchell, and Charlie Pepper provided invaluable support. In particular, the proposed rewrite on Preservation Maintenance and historic plant materials was written by Margie Coffin. Significant contributions were also made by Patricia M. O'Donnell, Linda McClelland, Ellen Lipsey, Christine Capella Peters, Robert Page, Ian Firth and Robert Melnick. Useful comments and technical assistance were provided by regional NPS staff (Mary Hughes, Lucy Lawliss, Jill Cowley, Sherda Williams, Michael Crowe, Robbyn Jackson) and staff at the Preservation Assistance Division (Cheryl Wagner, Michael Auer and Anne Grimmer).

Washington, D.C. September, 1994

Home page logo: Taro fields in Hanalei, Hawaii. Photo: NPS files.

This publication has been prepared pursuant to the National Historic Preservation Act of 1966, as amended, which directs the Secretary of the Interior to develop and make available information concerning historic properties. Technical Preservation Services (TPS), Heritage Preservation Services Division, National Park Service prepares standards, guidelines, and other educational materials on responsible historic preservation treatments for a broad public.

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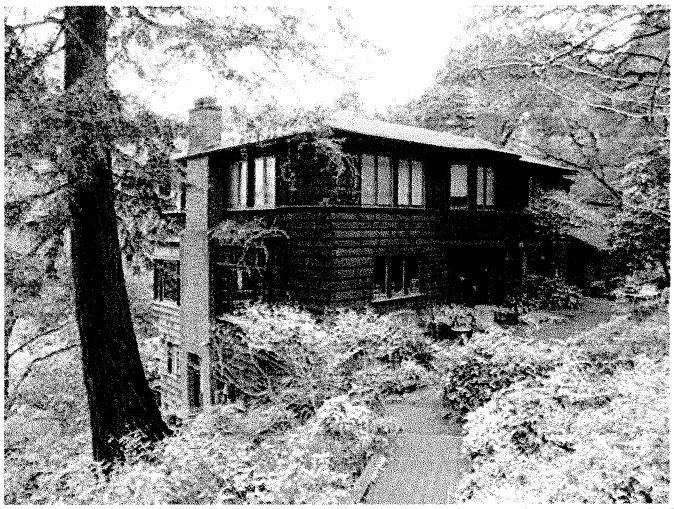
BAHA EAST BAY: THEN AND NOW

1/4/08
Save Strawberry Canyon:
Shirely Dean
Lesley Emmington Jones
Sylvia McLaughlin
Phila Rogers
John Shively
Janice Thomas

Sierra Club pioneers lived near pre-stadium Strawberry Canyon

Daniella Thompson



Walter T. Steilberg designed this house in 1921 for Sierra Club director and editor Marion Randall Parsons. (photo: Daniella Thompson, 2005)

23 January 2007

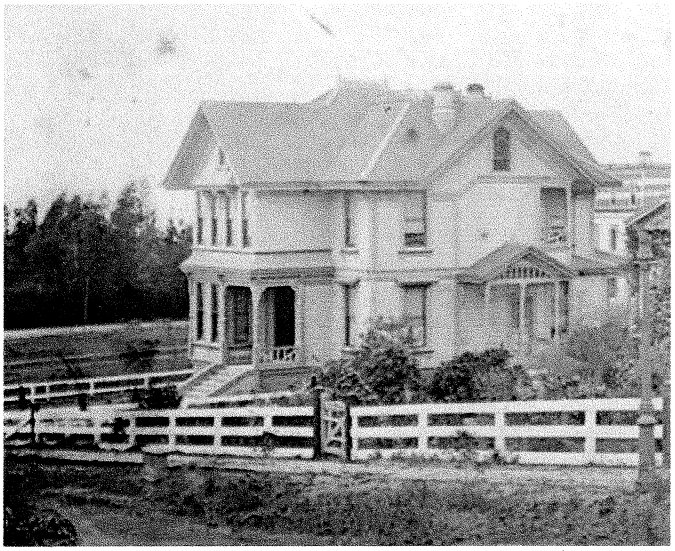
The Save the Memorial Oak Grove tree sit-in is about to complete its second month. Among the campaign's environmental supporters, which include the California Native Plant Society and the California Oak Foundation, the Sierra Club is the most powerful if not the most active.

Many Sierra Club members are probably unaware that their organization's ties to the area around Memorial Stadium are deep and old—as old as the club itself.

Within a football's throw from the stadium, in the late 19th and early 20th centuries, several founders and early leaders of the Sierra Club built their homes.

Of course, there was no stadium then. There was only the bucolic Strawberry Canyon with its waterfall, grasslands, and native oaks.

Just around the corner from the stadium oak grove lived the eminent geologist Joseph Le Conte (1823–1901). His house, designed by the renowned Victorian architect Clinton Day, stood at 2739 Bancroft Way, current site of Boalt Hall School of Law.



Professor Joseph Le Conte's house at 2739 Bancroft Way was designed by Clinton Day. The architect lived next door, on the corner of Piedmont Avenue. (Clinton Day Collection, BAHA archives)

Professor Le Conte first visited Yosemite Valley in 1870 on a 5-week Sierra camping trip with ten of his students, members of the first class of the University of California. On that trip Le Conte met John Muir, then living in the Valley.

Le Conte invited Muir to join the party. Muir later described their ten-day ramble as "a most glorious season of terrestrial grace." Thus began a friendship that was to last until Le Conte's death. Le Conte's account of the 1870 trip, *A Journal of Ramblings Through the High Sierras*, would serve as the inspiration for the Sierra Club's High Trips.

A charter member of the Sierra Club, Le Conte served on its board of directors from 1892 to 1898. He died in Yosemite Valley on the eve of the club's first High Trip. As a tribute to his leadership, the Sierra Club built Le Conte Memorial Lodge (1904) in Yosemite Valley. Designed by Maybeck's brother-in-law John White, the lodge is a National Historic Landmark.

Joseph Nisbet Le Conte's house was built by Julia Morgan in 1908. (photo: Daniella Thompson, 2006)

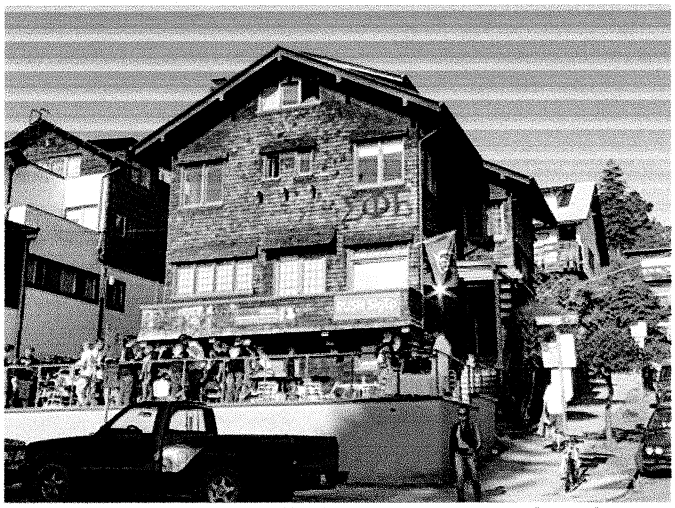
Professor Le Conte's son, Joseph Nisbet Le Conte (1870–1950), known as "Little Joe," was another Sierra Club charter member. A director from 1898 to 1940, he was the club's second president, serving from 1915 to 1917—after John Muir and before William E. Colby. A professor of mechanical and hydraulic engineering at U.C., the younger Le Conte built in 1908 a brown-shingle house at 19 Hillside Court, designed by Julia Morgan. The house is now the Berkeley Bayit, a student center for cooperative Jewish living.

The two Le Contes have been honored with various names in the Sierra Nevada. Mount Le Conte, over 13,900 feet in the Mount Whitney region, was named for the father in 1895. Le Conte Canyon south of Muir Pass and Le Conte Point above Hetch Hetchy are named after the son.

A hop, skip, and jump from the Joseph N. Le Conte house is the William Colby house, another brown-shingle creation of Julia Morgan's. Attorney William E. Colby (1875–1964) joined the Sierra Club in 1898 and served as its secretary from 1900 until 1946, taking two years off to assume the club's presidency. In 1901, Colby initiated the club's outings program and led the annual High Trips until 1929.

The William E. Colby house (Julia Morgan, 1905), a designated landmark at 2901 Channing Way, as it appeared before the façade was disfigured without a permit review.
(photo: Daniella Thompson, 2004)

In 1905, Colby built his house at 2901 Channing Way, on the corner of Warring Street. A designated City of Berkeley Landmark, the house has recently fallen into the hands of the Sigma Phi Epsilon fraternity, which replaced the front garden with an elevated concrete "play yard" without permit review by the Landmarks Preservation Commission.



Fraternity rush on the Colby house's new, permitless playpen. *(photo: Daniella Thompson, 2005)*

Just across the street from the Memorial Stadium site, at 9 Canyon Road, Julia Morgan built in 1908 a house for U.C. Economics professor Lincoln Hutchinson (1866–1940). Hutchinson's attorney brother James (1867–1959) would settle at 14 Mosswood Road in 1935. Both brothers were Sierra Club stalwarts. James was a charter member, a director from 1903 to 1907, and twice editor of the *Bulletin*. He was elected honorary vice-president in 1958.

Lincoln Hutchinson's house (Julia Morgan, 1908) in 1910. Above it to the right is the Mouser house and its almond orchard. *(BAHA archives)*

In the early 1920s, the Hutchinson brothers gathered a group of friends for winter outings on skis or snowshoes, founding the Sierra Ski Club. Lincoln purchased property at Norden, near Donner Summit, where the club built a lodge. The architect was

Walter H. Ratcliff, Jr., a member of the group. The lodge was constructed by the members themselves in the summers of 1924 and 1925. The Sierra Club named the lodge after the Hutchinsons.

Built in 1888, Dr. Silas Mouser's country house faced west before it was moved by the Parsons to its present location. He it is shown in its early days, before the almond trees had been planted. (BAHA archives)

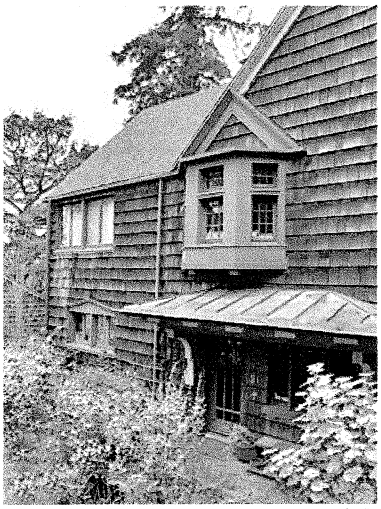
A little farther up on Panoramic Hill, Sierra Club leaders Edward Taylor Parsons (1861–1914) and his wife Marion Randall Parsons (1878–1953) bought the country house of San Francisco physician Silas Mercer Mouser. Built in 1888, this gable-roofed, white clapboard farmhouse faced the bay and was surrounded by almond orchards.

Parsons was one of the first salesmen for the Sherwin-Williams paint company. An avid mountaineer and photographer, he settled in San Francisco about 1900 and joined the Sierra Club the same year, assisting William Colby in establishing the club's outings program. Parsons served as a director of the Sierra Club from 1904 until his death. In his eulogy of Parsons, John Muir recalled:

> In 1907 he married Marion Randall, as able and enthusiastic a mountaineer as himself, whom he first met on the Sierra Club Outing of 1903, and three years later, in 1910, established his first home high up on the Berkeley hills overlooking the Golden Gate...

Parsons moved the Mouser house from 11 Mosswood Road to 21 Mosswood, overlooking Strawberry Canyon, and retained John Hudson Thomas to remodel it in the Arts and Crafts style. On the new site, the house was turned around so the previous façade now faced the rear. Thomas added interest to the new façade by placing a substantial bay window surmounted by a false pediment above the entrance

door, which shelters beneath a copper-sheathed awning supported by heavy wooden brackets. The exterior was clad in redwood barn shakes.



John Hudson Thomas converted the Mouser house in 1910 for Sierra Club leaders Edward and Marion Parsons. *(photo: Daniella Thompson, 2005)*

It was at the Parsons home that John Muir began transcribing his Alaska journals in November 1912. Marion assisted Muir with the manuscript of *Travels in Alaska* in his final months and edited it for publication after his death in 1914.

Edward Parsons died the same year. Parsons Memorial Lodge in Tuolumne Meadows at Yosemite National Park was built in his memory, and Parsons Peak in the Cathedral Range was named after him. Marion Parsons became the first woman elected to the board of directors of the Sierra Club and served in that capacity for 22 years, having a hand in the establishment of the National Park Service in 1916. She was also an amateur painter.

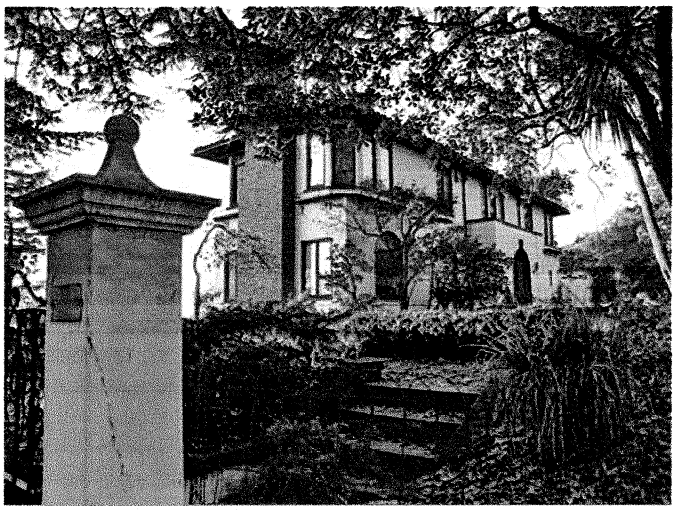
Following Edward's death, Marion Parsons went on living at 21 Mosswood Road for another seven years. Her home continued to be a salon for leading nature enthusiasts and artists, where the Muir family, William Keith, Stephen Mather, William Colby, Ansel Adams, and others gathered.

In 1921, Marion decided to build a new house on an adjacent double lot east of 21 Mosswood Road. Was she preparing to flee the stadium about to be built directly below her home?

Designed by neighbor Walter T. Steilberg, the new house—also clad in redwood shingles—was sited away from the street and set in a rustic garden amidst seven mature Coast Live Oaks and a *Sequoia gigantea*, the latter planted by the Parsons. In this house, Marion Parsons continued to receive social gatherings—Ansel Adams is said to have played the piano here.

Meanwhile, the former site of the Mouser house was settled by another charter member of the Sierra Club. World-renowned botanist Willis Linn Jepson (1867–1946), author of *A Flora of California* (1909) and *Manual of the Flowering Plants of California* (1925), founder of the California Botanical Society (1913) and the Save-the-Redwoods League (1919), was among the individuals who signed the Sierra Club's articles of incorporation on 4 June 1892.

Professor Jepson lived for many years on Berkeley's Southside. (One of his addresses was 2714 Benvenue Ave., a block away from another Sierra Club co-founder, biblical archeologist and dean of the Pacific School of Religion William Frederic Badè (1871–1936), who resided at 2616 College Avenue, in a house designed by his brother-in-law Walter H. Ratcliff, Jr.) Then he, too, turned to Julia Morgan, who built him an elegant stucco-clad villa at 11 Mosswood Road.



Professor Willis L. Jepson's Mediterranean villa (photo: Daniella Thompson, 2005)

In his biography of Jepson, naturalist Richard G. Beidleman described the new house:

> It was in September of 1925 that Jepson finally moved into a home of his desire, at 11 Mosswood, a several-storied Mediterranean style mansion with red tile roof, on a prominence looking down into the lower end of Strawberry Canyon and the university stadium, well beyond the academic campus. Largely designed by Berkeley's famous architect Julia Morgan and beautifully landscaped, with several attractive gateways into its walled enclosure, the home was embellished by Jepson inside and out with ornamentation both floral and faunal. In the downsloping first floor, paneled in redwood, was the fine large library and herbarium drawers. The key to the cabinet which held his type specimens was labeled "Holy of Holies."

In January 1926, Jepson joined Badè on an expedition to the Middle East, where he planned to observe the wild ancestors of old cultivated species such as wheat, barley, figs, olives, peaches, and apricots. Badè would dig in Tell en-Nasbeh (the biblical Mitzpah) and in Petra.

After returning from his voyage, Professor Jepson joined a committee of U.C. alumni and faculty members to save the Monterey cypress trees at Point Lobos, which a Monterey real-estate company was seeking to cut down for a subdivision. On 15 December 1926, the *Oakland Tribune* quoted Jepson:

> The only other grove of Monterey cypress in

existence was recently destroyed by a real estate firm, and we want to save this one from the same fate. This grove is unique among the trees of the world. Dashed by the salt spray of the ocean and whipped by trade winds, they have developed a singularity of appearance not to be found anywhere else. They are superior in beauty to even the famed Cedars of Lebanon.

BODY WILL SEEK TO SAVE TREES

BERKELEY, Dec. 15.—"Spare that tree," was the cry set up today by a committee of University of California alumni and faculty members, who have banded together to prevent the destruction of the famous Monterey cypress trees at Point Lobos.

The little grove of trees, the only one of its kind in the world, faces destruction at the hands of a Monterey real estate company, which seeks to subdivide the property.

The university committee, headed by Duncan McDuffie, will meet next week and see what steps can be taken towards the preservation of the trees.

"The only other grove of Monterey cypress in existence was recently destroyed by a real estate firm, and we want to save this one from the same fate," declares Dr. Willis Jepson, professor of botany and councillor of the committee. "This grove is unique among the trees of the world. Dashed by the salt spray of the ocean and whipped by trade winds, they have developed a singularity of appearance not to be found anywhere else. They are superior in beauty to even the famed Cedars of Lebanon."

Oakland Tribune, 15 December 1926

A shorter version of this article was published in the Berkeley Daily Planet on 26 January 2007.

BAHA EAST BAY: THEN AND NOW