

March 10, 1970.

LANDSCAPE ARCHITECTURE ADVISORY SUBCOMMITTEE

Report of the Task Force on the Management of Ecological
Areas on the Berkeley Campus

The Task Force held three meetings - September 29, October 27 and November 5, 1969. Thereafter communication was by correspondence.

Nine questions (with subdivision) were considered: -

1. What should be the objects of management?
2. Do the differences of purpose between Strawberry Canyon and Lower Campus areas imply different management plans?
3. What should be the relations with the teaching departments, etc?
4. Who shall supervise the areas?
5. Who shall carry out necessary work?
6. Can these areas be managed without a budget?
7. How shall a dossier of information be built up for each area?
8. Should there be any labelling of material?
9. Should brochures be produced?

In the report which follows, the three areas on the Lower Campus are referred to as 'Nature Areas' (rather than 'Natural Areas') while the two sections of Strawberry Canyon are referred to as 'Ecological Study Areas.'

where are they?

1. OBJECTS OF MANAGEMENT

(i) Education

In the management of the areas, the mere making-available for study of organisms and their habitats is not enough. The management plan for each area must include a program for the re-education of the Campus-using public to appreciate nature areas as well as those which are more formally landscaped.

(ii) Realization of potentials of each area

It was decided that the areas would be less than optimally useful if only natural succession were allowed to take place than if a management program were instituted for each one. This should include, as a preliminary act, an inter-disciplinary study to assess potentials for: -

- a) Preservation of a portion of the area in roughly the existing condition.

- b) Management of a portion by holding back succession.
- c) Enrichment of a portion by the introduction (probably re-introduction) of desirable true native species.

Institution of the management programs would then follow after very careful consideration of the results of the study.

2. STRAWBERRY CANYON versus LOWER CAMPUS

LOWER CAMPUS

The Nature Areas of the Lower Campus are rather highly unnatural; therefore, there is little reason for objection to the creation in them of more than just a representation of an East Bay streamside flora. Thus, in the Goodspeed Area, ^{Fac.} while the oak grass and the streamside areas must be preserved, advantage might be taken of the existing Coast Redwood (Sequoia sempervirens) planting to enrich ^{Glade} the ground-flora with characteristic redwood associates. These are low-growing herbs and ferns and would not interfere with police surveillance of the area; their presence would encourage the build-up of animal populations. The installation of a sprinkler system (in the redwood sub-area only; not in the accompanying oak sub-area!) would be justifiable to encourage the establishment of the appropriate redwood associates.

Thoroughly unnatural shrubs and herbs should be replaced by the infiltration of more desirable material, followed, after an appropriate interval, by the cutting out of the exotics. Stripping would be avoided. Thus Cestrum and Pyracantha could be replaced by Creek Dogwood (Cornus stolonifera) or Ceanothus thyrsiflorus and ivy (Hedera spp.) by Gaultheria shallon. Rootstocks of many appropriate species are available at the University Botanical Garden (and the successes there could be copied with avoidance of their failures). Rock clusters should be considered as appropriate additions for the habitat-diversity that they can provide.

Strawberry Canyon

By contrast, the Strawberry Canyon Ecological Study Areas are still basically natural. Consequently, the effort should be to preserve or enrich plant communities natural to the area. Nevertheless, management is still urgently needed here. After extremely careful observational study on an interdisciplinary basis, it will be necessary to delimit small areas on which experiments can be carried out to provide factual data for practical manipulation of larger areas of the vegetation on a long-range basis. The recent Forestry Ph.D. thesis by Joseph McBride (on brushland and forest succession in the East Bay hills) may provide a useful starting point.

Meanwhile, replacement of elements of the herbaceous flora known from specimens present in the University Herbarium to have been present in Strawberry Canyon before being collected out of existence can take place (under the supervision of a suitably qualified scientist - and the Associate Director, Regional Facilities, of the Botanical Garden might be the appropriate person). Stocks of material suitable for the purpose are available in many cases, at the Botanical Garden.

The development of a more appropriate system of "Indian trails" in Strawberry Canyon should be considered although it must be approached with extreme caution. The lessons of the attempts to set up the Libby-Warnke trail must be learned.

It is possible that the use of the Canyon by cross-country runners, the ROTC and, to a slight extent at the upper end by the East Bay Regional Parks District may be expected to continue but no new activities of a non-biological nature should be encouraged. The Botanical Garden should not be permitted to take any more potting soil from the Ecological Study Area. It is possible that night as well as day-time use of the Canyon areas might be permitted with appropriate supervision. Nevertheless, the Task Force does not believe that any overnight accommodation should be provided.

Ultimately, the development of a pond in Strawberry Canyon might be considered, although existing ponds in the Botanical Garden, remove the immediacy ~~from~~^{of} this need.

3. RELATIONS WITH TEACHING DEPARTMENTS, ETC.

Whereas these areas are intended for teaching as well as research and enjoyment by individuals, it must be recognized that some aspects of class use are potentially destructive. It is probable that the herbaceous flora would have lasted better than it has in Strawberry Canyon were it not for generations of botany students who have used it to provide a substantial part of the "100 species from at least 25 families" type of class requirement - especially as the perfect herbarium specimen consists of underground as well as overground parts of the plant. Over-collecting of the animal life could be at least as disastrous.

Consequently, all class use or research use that involves removal of plant material, the capture of animals or the procurement of soil or rocks from the Ecological Study Areas should not take place without the approval of an appropriate committee. It is notable that a corresponding rule is applied at the University of Wisconsin where, within the bounds of the Arboretum, a very successful, large ecological study area is maintained.

Research which requires manipulation of the vegetation or of animal populations should only be permitted after the closest scrutiny of full plans and very careful consideration of their probable impact on the areas involved. In deciding what is permissible, the committee should take into account the needs and aspirations of the other users of the Canyon - the Lawrence Hall of Science, the Lawrence Radiation Laboratory, the Botanical Garden, the recreational facilities, and so on.

4. SUPERVISION

Continuing policy making

Much discussion was given to the subject of the most appropriate policy-making body for the Nature and Ecological Study Areas. Ideally, all potential users should have the opportunity for input and it is certainly desirable that the scientific teaching and research departments, the landscape designers, the administrators of the Campus (including the engineers, architects and landscape architects), the students and their volunteer organizations should have opportunities to make their views known and to share to some extent in decision-making

for the areas. In the judgement of the Task Force; the best means of accomplishing this is for the Landscape Architecture Advisory Subcommittee (LAASC) itself to be in charge. Many relevant departments are represented upon it, it has student and non-academic members and it has a direct line of communication with a most important body, its parent, the Buildings and Campus Development Committee.

When problems of particular concern to certain departments or groups come to light, or where it would seem especially desirable to assure expert advice, the Sub-Committee has the power to co-opt temporary members and we believe that it should avail itself freely of these services in making the detailed management plans for each of the areas.

The information acquired by the Daly-Stebbins Task Force by way of their questionnaire on the use of Strawberry Canyon and publications resulting from research there should be most useful in showing where the concern and the expertise are to be found.

A task force especially concerned with the development of a map and inventory for Strawberry Canyon should be appointed. For the Lower Campus another task force could be appropriately concerned with the surveying and developing of plans for enrichment of the three Nature Areas. This task force might appropriately contain representatives of Entomology, Botany (and Botanical Garden), Zoology, Forestry and the Physical Plant. The Goodspeed Area will probably require most attention and we suggest that it might be developed to provide (a) The Eucalyptus Grove (b) A riparian subarea (c) and Oak-Bay subarea (d) a redwood area (e) a grassy glade. Suggestions for the redwood portion might be obtained from the developers of the Muir Woods National Monument.

Grenwell

The management of the Ecological Areas by the LAASC is recommended in preference to other possibilities which include: -

- a) Setting up a special subcommittee of the LAASC
- b) Giving responsibility for the Strawberry Canyon areas to the Botanical Garden (to be advised by a committee representing the relevant departments). This is the manner in which the University of Wisconsin natural areas are run.

Continuing policy enforcement

Setting up policy for these areas will only be the easiest part of running them for the benefit of all concerned. Effective continuing policy enforcement is required. This is almost completely lacking at present.

The same location of responsibility - with the Landscape Architecture Advisory Subcommittee - is suggested but, in addition, an executive officer will be needed. Such a supervisor of the Ecological Study Areas would have responsibility for coordinating the ambitions of the LAASC with the practicalities of the horticultural operations. He would also keep contact with each of the research workers, and teaching departments making use of the areas, and would be charged with seeing that all of the rules are obeyed. He would also assemble information about the areas as this becomes available and would take a leading part in the production of informational literature.

This executive officer or Coordinator (as he might be called) would need some secretarial assistance or, at least, assistance by a "leg-man" (who might be a graduate student). It is possible that the duties could be performed by a faculty member (perhaps with an extension of a 9-month contract to an 11-month one, as compensation).

5. WHO SHALL ACTUALLY CARRY OUT THE WORK?

Until a budgetary allocation is obtained it will be necessary to rely upon the good offices of the existing staff of the Physical Plant Department of horticultural work - assisted by volunteer efforts by individual members of the University (possibly through the help of such organizations as Active Conservation Tactics).

In future, we believe that at least one more F.T.E. must be added to the staff of the Physical Plant Department to handle the enrichment and maintenance of the areas. In fact, one man might not be used continually, rather several men might be employed sporadically. A chain of command such as the following would then be possible: -

LAASC → Coordinator → Senior Landscape Architect Physical Plant Department
↔ Physical Plant Staff.

Propagation of necessary plant materials can be carried out in the Nursery on Campus as well as in the Botanical Garden. It would also be possible for material to be purchased from local suppliers of native plants. Introduction of replacement animals would have to be the responsibility of appropriate experts from Zoology and from Wildlife Management.

6. BUDGET

Obviously the areas cannot be improved and maintained without the expenditure of money. The following items are starters for a budget: -

	<u>Guesstimate</u> (annual basis)
(Extra) Salary of Coordinator	\$2000
Salary of "legman" or Secretarial Assistance	\$4000
1 F.T.E. Gardener (to be transferred to the Department of Physical Plant)	\$7000 (?)
Rocks, plant materials, etc.	\$1000
Manipulation in Strawberry Canyon	\$2000
Office expenses	\$500
Brochure production	\$500

Occasional consultation with experts should be provided for. At an early stage we suggest that one of the staff members of the University of Wisconsin Arboretum to be brought for a (2-day?) visit to advise upon planning and maintenance methods.

7. BUILDING UP DOSSIERS OF INFORMATION ON EACH AREA

It is very important for the maintenance of each area and for its most effective use that a dossier of information on the physical and biological features be built up. Added to this should be a full record of all operations carried out in (or affecting it). This should extend to the supply by research workers of

(at least) a reprint of published data and a summary by any teaching department using the area of relevant findings. It should be obvious to all users that they will get more value from the areas as more is known about them and it should be the responsibility of the Coordinator to make it available to those who have need of it.

8. LABELLING OF MATERIAL

On the Lower Campus there should be labelling of representative trees in the Nature Areas by means of laminated plastic labels on spring-mounted attachments to the trunk. These should be placed high enough to be away from easy reach by vandals. Shrubs and herbs would need labels stuck in the ground and these may be out of the question on the Lower Campus. Identification of such materials (as well as the animals and the conveyance of general information about the areas) will have to depend upon the erection of stoutly mounted demonstration boards comparable with those presently in use for the display of campus maps.

In Strawberry Canyon labelling may not be feasible and certainly cannot be undertaken until the final disposition of trails, location of manipulation areas, and so on, are finally decided upon. Then, a minimum of labels, firmly attached to iron pipe which is set in concrete in the ground may be needed. Probably, carefully prepared literature may be needed rather than labels in the ground or on trees.

9. BROCHURES

The preparation of illustrated literature descriptive of the areas and inspirational in effect is a matter of first importance. Documents in this category should convey the dynamism of events in the areas rather than simply parade a static list of plantings and inhabitants. To begin with, they should concentrate on the Lower Campus Nature Areas and might follow the example of the UCLA in their treatment of a walk through the campus in "The University Gardens" by E. Y. Pixley et al. The Strawberry Canyon Ecological Study Areas can be treated later; the immediate need is to advertise the areas which will be seen by a very large number of people - those on the Lower Campus.

Because brochures of this sort are a fine advertisement for the Campus, as well as having instructional value, they stand a good chance of appealing to the Chancellor's Office and the Department of Public Information (This was the case in UCLA). Consequently, there is hope that they can be produced even before a budgetary arrangement for the areas is established.