

***The Sustainable Research Area
University of California, Davis***

**Position Paper
January 1989**

**Student Inspired and Student Directed
Sustainable Research and Development Projects
Threatened by UCD Long Range Development Plan**

"In spite of all its frightening groans and rattles, the great world machine can still be made to work. But not unless it comes to be accepted that the long-term welfare of human beings cannot be secured by policies that promote the interests of mankind at the expense of other living things. The unity of nature is not a slogan but a principle to the truth of which all natural processes bear witness. The lesson has been learnt too late to save some creatures, but there may just be time to save the rest of us."

--P.B. Medawar, Nobel Laureate in Biology, 1977--

This document is intended to acquaint the reader with an important land use issue on the University of California, Davis campus. The UCD Long Range Development Plan proposes to construct high-rise, high-density housing projects, a sports complex and parking lots on an eighty acre area which has been the site of a Burrowing Owl Preserve, a sustainable agriculture program, an innovative housing community and community gardens. This complex issue is being addressed by Students for the Sustainable Research Area; a student organization which is spearheading a long range development plan of its own. Our objectives are: (I) saving the area in question from conventional capital intensive, high-impact development, and (II) further utilizing this area's potential for sustainable research and development with a Sustainable Resource Management Program.

The motivation behind developing these two objectives is based on the following observations. The worrisome consequences of man-made changes in the biosphere are becoming painfully evident to scientists, students and the general public. Oceans and lakes are being adversely impacted as they become sinks for human refuse. The earth's protective ozone layer is showing signs of deterioration as chlorofluorocarbons and other industrial pollutants migrate to the upper atmosphere. Urban sprawl, destructive land use practices, and soil erosion are depleting our agricultural resource base. Our current pattern of resource consumption and environmental degradation is clearly unsustainable. According to Our Common Future, the 1987 report of The World Commission on the Environment and Development:

...“hope for the future is conditional on decisive political action now to begin managing environmental resources to ensure both sustainable human progress and human survival. We are not forecasting a future; we are serving notice—an urgent notice based on the latest and best scientific evidence—that the time has come to make the decisions needed to secure the resources needed to sustain this and coming generations.”

Our two objectives are fundamentally a response to this worrisome state of the world and this call by the General Assembly of the United Nations for sustainable resource management.

I. SAVE THE S.R.A.

Our first aim is to guarantee that certain lands within the core of the UC Davis campus be preserved within their existing boundaries. Located on the western edge of the campus core, this area is known appropriately as the “Sustainable Research Area” (SRA). Besides being home to a diverse wildlife community which includes a Burrowing Owl Preserve, the SRA also contains a remarkable variety of outdoor environmental education opportunities which are student inspired, maintained and directed.

Burrowing Owl Preserve

The UC Davis campus is privileged to have one of the last remaining concentrations of burrowing owls in the Central Valley. Six of the twelve breeding pairs that have survived campus development reside within the Sustainable Research Area. This bird is our most infamous and special resident, especially deserving of our attention and protection. Observing and musing over its “quaint and beguiling” ways, its short, stout, and cute appearance, gives bird watchers no small pleasure. But, most significantly, it deserves special care by virtue of its endangered status. The California Department of Fish and Game considers burrowing owls a “Species of Special Concern” and the National Audubon Society has included the burrowing owl on its “Blue List” since 1971. Unfortunately, loss of habitat, poisoning, and control of fossorial animals (particularly squirrels on which the burrowing owls depend for digging out its burrows) has caused their drastic decline. The burrowing owl is also endangered on the UC Davis campus for these same reasons. Since 1980 their population has declined by one-half (from 23 to 12 pairs) due to “environmentally insensitive” campus development. Finally, these burrowing owls warrant special protection because of their location within the

SRA, where they serve a practical purpose. Because burrowing owl diet consists of insects and small rodents, they are considered one of the most economically beneficial owls in North America. Their presence is a real asset to sustainable farmers and organic gardeners who practice Integrated Pest Management (IPM) and depend on this predator to help control insect and rodent pests. For these reasons, the Burrowing Owl Preserve must be preserved!

UCD administration avows publicly to be "quite concerned about its campus environments, about organisms on its lands, and specifically about burrowing owls." In a May 20, 1988 press release, the creation of the Burrowing Owl Preserve was offered as evidence of this concern. Privately, administrators resisted every effort to create the preserve. On one occasion they planned to construct a three acre telecommunications facility on the site. Vocal protest from students, faculty and the local chapter of The Audubon Society stopped this ill-conceived plan. Shortly thereafter, the UCD administration proposed instead to extend Parking Lot 30 into burrowing owl foraging area. Public outcry forced the administration to temporarily delay these plans. The same project was again slated for construction as soon as weather permitted this year, but demonstrations and adverse publicity again forced the administration to delay their plans. Sooner or later, the administration intends to "relocate" the entire burrowing owl population elsewhere, even though wildlife experts caution that there is little known about this procedure and, therefore, it is a dubious undertaking.

The Student Experimental Farm

The Sustainable Research Area is also home to the Student Experimental Farm. Its roots go back to 1975 when undergraduate and graduate students started the Agricultural Alternatives Research Group; in 1977 they established the Student Experimental Farm on approximately 20 acres. Their concerns and motivation for doing so were that modern industrialized agricultural practices are seriously flawed and unsustainable, and that formal education within the university system did not provide students with alternative theory and practice. The purpose of the Student Experimental Farm then, as now, is to provide alternative educational environment where students can gain awareness and practical experience applying farming methods which are ecologically sound and economically viable.

The Student Farm emphasizes small-scale and organic farming. Slightly less than half of the acreage has always been managed without the use of synthetic chemicals. These eight acres represent the only organic soil on the entire Davis campus, providing researchers with a unique facility for comparing and contrasting farming practices.

An impressive variety of formal and informal educational opportunities are also available through the Student Experimental Farm. "Alternatives in Agriculture", offered since 1976, examines the critical issues and alternative solutions to problems associated with conventional agriculture. "Introduction to Sustainable Agriculture Systems", an intensive ten week summer program, consists of lectures, laboratories and discussions combined with field work and field trips. This class provides an excellent introduction to the principles and practices of sustainable agriculture. Other courses cover such topics as composting, organic gardening, wind breaks and hedges, and agricultural Spanish. The Student Farm also offers students a variety of informal learning experiences. Students may participate in any of the ongoing projects at the Student Farm through internships, work-study positions or by attending workshops offered by project personnel. The Demonstration Garden promotes ecological gardening practices by displaying biological techniques for controlling insects and diseases, composting, and soil fertility management. The Seed Saving Project actively promotes the preservation of endangered varieties of vegetables and flowers by maintaining a demonstration garden of heirloom vegetable varieties, coordinating a national seed saving network of over one hundred gardeners and farmers, and offering workshops on the practical aspects of seed saving. The Market Garden is a two acre organically managed section of the Student Farm. Here, students test and apply the principles presented in their courses on a grand scale and under realistic conditions, including marketing and distributing their produce to campus food services and the local farmer's market. The Early Harvest Garden is for children between ages five to twelve. Each year over 1000 school children receive this hands-on opportunity to experience every phase of gardening.

Down-to-earth realities call for sustainable programs. In the past, dramatic increases in crop yields were achieved because increasing amounts of supplementary energy and resources were readily available. These intensive farming practices cannot continue much longer. Examples of environmental degradation attributable to modern farming include desertification, pesticide pollution, salination, contamination and reduction in the ground water supply. For example, in Iowa a bushel of corn now "costs" five or six bushels of topsoil. At this rate, Iowa will be depleted of topsoil by 2050. Water problems are equally ominous. Irrigated farming will dry up the Great Plains Aquifer, "once the largest natural storage system of its kind anywhere", in about 40 years. Modern farming also heavily depends on fossil fuel for machines and for manufacturing pesticides and fertilizers. If the cost of

energy does not bring about the decline of intensive farming, then the depletion of petroleum reserves will. Unsustainable social costs also attributable to intensive farming practices are: elimination of the family farm, concentration of land, resources and production, rural to urban migration patterns. In other words, if we want an agriculture that will last, agricultural practices must change, and fast! Our future depends on adopting as quickly as possible less-intensive, self-sustaining, resource-conserving, energy-efficient, economically viable and socially responsible forms of alternative agriculture. This is precisely what UC Davis students foresaw in 1975 and began researching and developing. Ever since, the Student Experimental Farm, has investigated ecologically sound and economically viable farming methods.

Despite the timely, responsible, and inspirational example set by the Student Farm, it too is endangered by UCD administration's Long Range Development Plan. The Summer 1986 First Draft, pictured a sports stadium atop the Marketing Garden. A map in the March 1987 Area Description relocated the stadium atop the Demonstration Garden, historic Farm House, and other principal support facilities. The text of this document both denied and confirmed this threat. One key sentence read: "While the currently planned facilities do not show great incursion into the sites of the Student Experimental Farm and the burrowing owl sites, planning for removal of both should begin now." The subsequent August 1988 Administrative Draft, moved the stadium site yet again, this time across State Highway 113. But this relocation made neither the future of the Student Farm or the Burrowing Owl Preserve any more secure. This time the proposal was to construct atop the main garden area a vast Physical Education/ Intercollegiate Athletics Facility consisting of an indoor sports complex, natatorium, 3 outdoor practice fields, a track and 12 acres of intramural fields. The outcry over these ill-conceived, arbitrary and wildly vacillating plans were so vociferous that the current administration has ostensibly altered its plans again for the Student Farm. The latest October 1988 Administrative Draft, while eliminating 50 percent of the Student Farm's support facilities by removing the Plant Science Teaching Facility states that "the Student Farm will remain on its present site for the foreseeable future." It then qualifies this in the following disconcerting terms:

"This land is designated to provide an 'open space' reserve flexibility for future campus planners who may need the student farm site to respond to land use needs not now known. To assure that the present student farm site could be used for some other purpose should such be necessary, an alternative land area that is as free of pesticides as possible will be identified on the West or

South campus and reserved for the Student Farm... Such a new site will be identified and made available within the next year..."

Secure in the "foreseeable future" means in administrative bureaucratise that what little they plan to leave intact of the Student Farm may be moved elsewhere, possibly as soon as "within the next year."

Baggins End Innovative Housing

For nearly all of us a home has always meant four walls and a roof over our heads. Not so, however, for UCD students who reside in Baggins End Innovative Housing. Here home means a "dome."

Located along the northern edge of the Sustainable Research Area, Baggins End consists of 14 two-person fiberglass and polyurethane foam dwellings. The domes were designed in 1971 by students and engineering staff who were interested in innovative housing that would be resident designed, constructed and maintained. The group focused on features such as privacy, environmental awareness, low cost and individuality of design. After much research and refinement, a plan was approved and students were enrolled in an engineering class to gain the requisite construction skills which enabled them to actually assist in building the dome structures. Construction was completed during the summer and fall of 1972. The price tag was a modest \$130,000 or slightly over \$8,000 per dome.

Although built seventeen years ago, Baggins End Community continues to evolve both physically and ideologically. Inside, students combine their own personal taste, creativity and labor to give their personal touch to the malleable interiors. Dome residents have expanded lofts, tiled floors, built shelving and painted attractive murals, creating and discovering their own personal sense of space. Outside, "domies" as they are called, take advantage of the fertile soil and plant organic gardens. The food they learn how to plant and cultivate nurtures them; their food scraps feed the chickens; the chickens produce eggs to be eaten and droppings to be composted; the compost fertilizes future harvests, completing the cycle. Aluminum, glass, plastic, cardboard and paper products are recycled by the community and scrap wood is burned in the fire pit during weekly potluck and biweekly community meetings. On these occasions, this self-regulating and sustainable community resolves its problems through consensus decisionmaking. A natural agrarian life-style, an environmentally sensitive spirit of place, open spaces to find and be yourself in, and more group spirit than you find any place: all centrally located near the core of the campus.

Ecotopia or not, Baggins End may not survive much longer. UCD administration plans to demolish Baggins End as soon as autumn of 1989.

ASUCD Experimental College and Orchard Park Community Gardens

Less than one percent of the nation knows how to grow its own food. And almost no one knows any longer how to do this naturally. Community gardens all across the country are helping change this. They make small plots of land readily available to gardeners even within city limits, and organic gardening expertise easy to acquire in these friendly and supportive settings. The Sustainable Research Area is also fortunate to be home to not just one, but two community gardens.

The ASUCD Experimental College Community Garden is located just south of the Domes on five acres of land. This area is split up into 10' x 20' and 10' x 40' garden plots. Currently over 120 gardeners work this organic soil to raise their own "healthy" food. Anyone who has ever been a poor student knows that every little bit helps. It is astonishing how much nutritious food a poor student can learn to grow on a garden plot to supplement their diet and stretch their budget. Gardening is also "healthy" in other less concrete and more difficult ways to define. It fulfills an unfathomable spiritual need to

meditate and contemplate our natural surroundings and to escape the stressful "hustle and bustle" of city and academic life.

West of the E.C. Community Gardens, and just across the street from married student housing, is the site of Orchard Park Community Gardens. Here on approximately two acres an additional 63 gardeners cultivate land subdivided into much larger 12' x 80' plots. Any number of nationalities can be found here working side-by-side, applying different gardening techniques unique to their cultural backgrounds. Foreign students especially seem to need this outdoor, agrarian outlet, and appreciate the international spirit so typical of both community gardens and so rare elsewhere on campus. Moreover, the close proximity of these gardens and open spaces to married student housing makes living in these high-density housing complexes more bearable. Not only the gardeners who cultivate food here benefit but families who stroll, children who play, and people who jog in these uncongested, natural, and peaceful environs also appreciate using this area. Wildlife also benefits from the community gardens; gardeners provide cover and "healthy" food for a diversity of wildlife.

Despite the fact that so many people and other creatures benefit from the community gardens, neither is mentioned in any UCD Long Range Development Plan. The area in question is slated to be the site of parking lots and conventional student housing. In three years, the wonderful soil and spirit of place here may be covered by asphalt and concrete.

Each component of the Sustainable Research Area deserves to be saved. The Burrowing Owl Preserve, the Student Experimental Farm, Baggins End Innovative Housing, and the community gardens fulfill a variety of quintessential personal, social, educational and environmental needs. Each is an inspiring example of student innovation, leadership, farsightedness and sustainability. Each is an inspirational role model of students rising to meet the challenges posed by the environmental crisis; answering the call of the scientific community and world organizations for higher environmental consciousness, sustainable research and ecodevelopment. Each student project deserves to be preserved for the important services it performs, and as a historical record and testament to inspire future generations of students at UC Davis to continue this well-established sustainable tradition.

The Sustainable Research Area represents, however, considerably more than one, or even the sum of its parts. A synergistic relationship exists here between wildlife, environmentally sensitive designed housing, sustainable agriculture, and organic gardens. Conservation of indigenous wildlife habitat interspersed with sustainable agriculture makes biological or organic pest control viable. For community gardeners and residents of Baggins End, gardening expertise is readily available from the nearby Student Farm, as well as occasional seedlings and fresh organic produce. In turn, the Student Farm benefits from the support (i.e. volunteers, students, social and political support) from other like-minded and sustainable souls who inhabit the Domes and who garden in the community gardens. All component parts of the Sustainable Research Area are mutually beneficial and interdependent. Hence, the Burrowing Owl Preserve, the Student Experimental Farm, Baggins End Innovative Housing, and the community gardens all must be maintained interconnected synergistically in spirit, purpose and place in the Sustainable Research Area.

II. SUSTAINABLE RESOURCE MANAGEMENT PROGRAM

As impressive and deserving of preservation as the Sustainable Research Area is, there is a much greater untapped potential here for interactive environmental education. We recognize this and propose that the most appropriate plan is to utilize this area as an outdoor laboratory for a Sustainable Resource Management Program. A program proposal and a grant proposal are being written at this time. Both proposals will be completed by late spring and, hopefully, a source of funding will be found by late summer.

The Sustainable Resource Management Program is based on the premise that human changes in the biosphere threaten the integrity of global life support systems. Before it is too late, sustainable alternatives for growth and development must be discovered and implemented to restore the integrity of our natural resource base. From these general principles, the following five curriculum tracks have been tentatively identified:

- An Academic Literacy and Interpersonal Communication Skills track will ensure students learn at the outset the basic literacy skills necessary to excel in school.

Subsequently, interpersonal communication skills they learn will make them successful managers of their social interactions as well.

- A Liberal Arts, Self-Actualization and Citizenship track will provide students with a well-rounded education in natural history, literature, sociology, political science, psychology and philosophy. Themes of study will contribute to understanding and appreciation of natural history and conservation ethics, promote intellectual and spiritual growth, and create well-informed and assertive citizens.

- An Earth Systems Science and Social Systems Science track will provide students with the extended and integrated scientific knowledge base available through General Systems Science that is needed to understand and appreciate the unity of nature. Such a unified framework of analysis is essential for dealing successfully with the generally grandiose scale, and typically complex and transdisciplinary character of environmental problem solving.

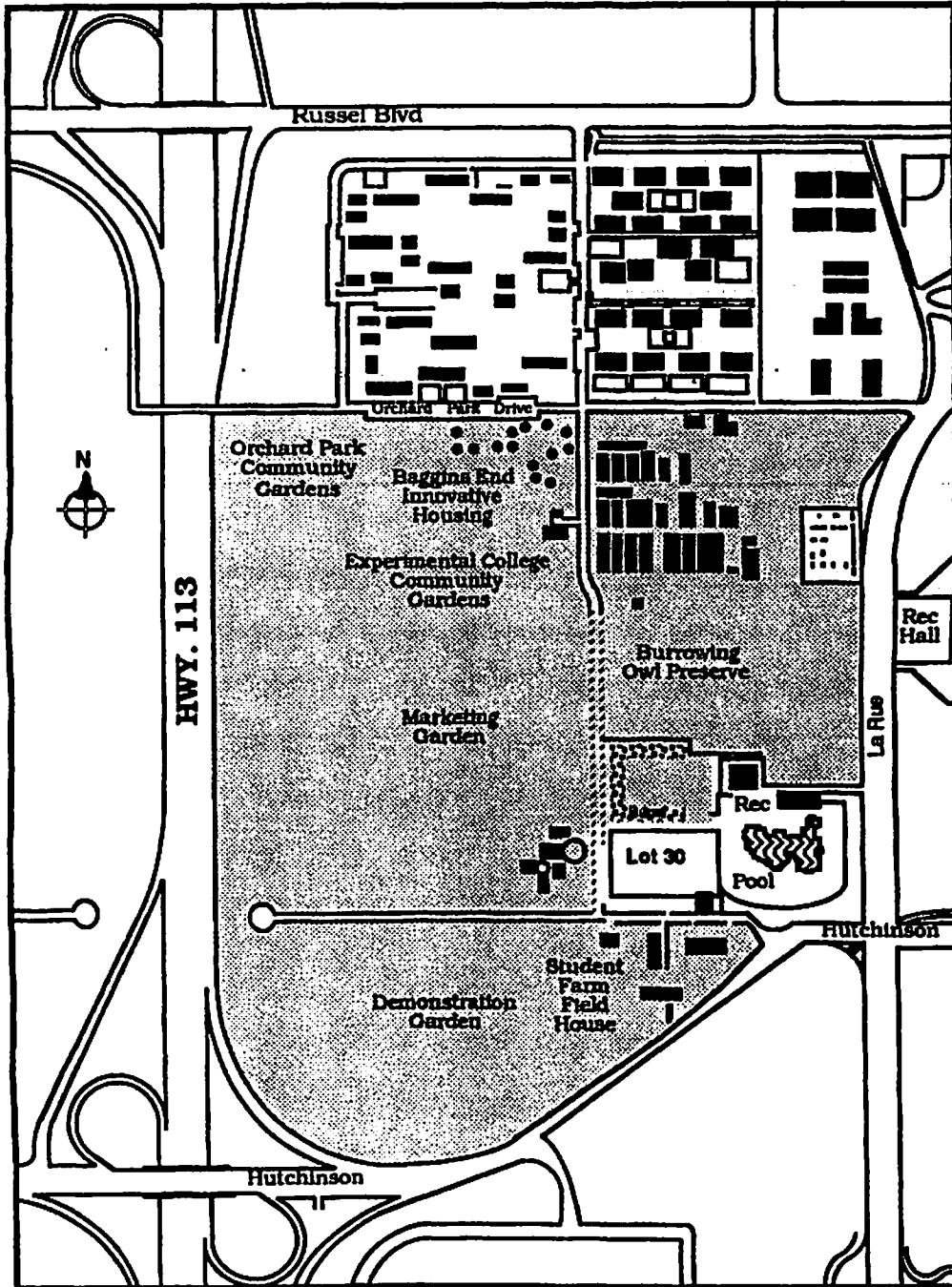
- A Sustainable Resource Management track will involve fields of specialization such as energy systems, waste management, city and rural planning, agriculture, architecture, landscaping, wildlife management, public administration and policy planning, etc. Less-intensive, low-cost, self-sustaining, resource-conserving, energy-efficient, economically viable and socially responsible alternatives to conventional practices will be the guiding ideas. Subdivisions of curriculum will also be necessary for students who wish to specialize in particular geographical areas, post-industrial states, or developing and undeveloped countries.

- The Career Planning and Job Placement track will teach students advanced literacy skills appropriate to their chosen professional career. It will also locate and supervise their progress in internship programs in preparation for job placement during their senior year.

The end product of this training program should be a very mature, extended and integrated human being; sensitive to and knowledgeable about the environment; highly motivated and empowered to restore and sustain our natural resource base.

We are bound and determined to achieve both our aims. But to save the Sustainable Research Area and to develop its great potential with a Sustainable Resource Management Program, we must inform, mobilize and coordinate the support of people and organizations like yourselves. Won't you please come to our assistance? Help us preserve this unique area as we redirect university resources along this more responsible sustainable path of research and ecodevelopment.

The Sustainable Research Area



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