



*Figure 1. Visitors gain an appreciation of both the value of plants in their daily lives and the complexity and beauty of the garden ecosystem*

## **Garden Site and Educational Program Development for the UC Davis Children's Garden Program at the Plant Science Teaching Center and Student Farm.**

*Gale McGranahan, Eric Zilbert, Carol Hillhouse and Mark Van Horn*

### **Introduction**

This project has improved two main components of the UC Davis Children's Garden Program at the Plant Science Teaching Center and Student Farm. Annually, the Children's Garden Program hosts 1500-2200 school children and their adult chaperones. Visitors gain an appreciation of both the value of plants in their daily lives and the complexity and beauty of the garden ecosystem (Figure 1). We also currently train 75-150 teachers here annually in various topics related to garden-based education.

The first component addressed is the enhancement of the Ecological Garden site where the programs for children take place. Site enhancement has involved

1) improvements in our outdoor classroom area, 2) developing plans for re-landscaping various garden features to fit with the new Bowley Plant Science Teaching Center and 3) constructing a better facility for our vermicompost system.

The second component is the further development of our educational offerings. These have been improved by 1) consolidating and rewriting activities designed by docents over the last several years into a Children's Garden Program Activities Manual and 2) by developing in-depth, single-topic tours for children.

### **Objectives and Goals Met**

#### ***Component 1. Ecological Garden Site Enhancement***

The developments we planned for the garden site were intended to accomplish three main objectives. These were first to enhance the educational and aesthetic value of the garden, second to provide appropriate landscape connections between the garden site, field house, Bowley Center and Core greenhouses and third, to move and upgrade garden components being displaced by the new buildings. Several changes in the Bowley Center site plan and the timing of its construction took place after the Slosson grant proposal was submitted and accepted. These have made a few modifications to our plans necessary. Below we discuss each development individually.

#### ***Outdoor Classroom.***

We have constructed 10 Douglas fir benches for seating in our outdoor classroom area. These can hold up to 50 children or 30-40 adults. These benches have already been used this year by over 2000 visitors to the Plant Science Teaching Center and Student Farm since they were completed in September, 1999 (Figure 2).

The ground in the Outdoor Classroom area has been re-leveled this summer. Once construction around the fieldhouse is completed, we will plant two shade trees in this area to replace a weak Hackberry (*Celtis occidentalis*) that is currently providing shade.

#### ***Fieldhouse Landscaping.***

We have improved the landscaping in front of the existing fieldhouse by building and planting two planter boxes at the front of the building on either side of the entryway. These are made of redwood and currently planted in a combination of annual and perennial flowers.

#### ***Landscaped Berm.***

We proposed to create a landscaped buffer be-



**Figure 2. Construction of Douglas fir benches at the Plant Science Teaching Center and Student Farm was completed in September, 1999.**

tween the garden site and the new greenhouses using a raised berm (15 feet wide and 150 feet long) planted with a variety of horticulturally-useful drought-tolerant native shrubs. Because of delays in the start of the construction, this area will not be available for berm construction or planting until spring or fall 2001. We have developed a plant list for this project through research, consultation with Warren Roberts of the UC Davis Arboretum, and our own staff experience. We have a planting design and irrigation system planned as well. Plants will be purchased or propagated when there is a clear indication that the site of the berm is safe for planting.

#### *Vermicompost.*

We proposed to both replace and relocate the existing vermicompost system. Relocation was not necessary because of changes in the construction site plans. Instead, we have redesigned and rebuilt the system in the same location. The new vermicompost system is designed so that the finished compost material moves through a screen as it is completed. This facilitates easier harvesting of the finished product. The original system consisted of two large vermicompost boxes. This new system consists of four smaller units. These are more manageable and provide an excellent model for schools in the process of designing their own worm composting systems (Figure 3).

The new system has been stocked with worms and

is currently fully functional. The system has been used in several workshops and training sessions for UC Davis students and teachers over the past six months. This system is also viewed by all participants in the Children's Garden tours. Over 1500 children and adults participated this past spring alone.

The finished product is very high in organic matter and nutrients. This will be used in our potting medium for starting annuals and maintaining perennials in the greenhouse.

#### *Chicken Coop Relocation and Chicken Tractor Construction.*

Enhancements to our chicken habitat have been made. We have installed an automatic watering and feeding system. We have designed and purchased materials for a moveable 4 ft. x 10 ft. chicken cage (also known as a "chicken tractor") to contain chickens temporarily on beds in the garden for insect and weed management and nutrient cycling. This structure will be made out of metal so that it is both durable and lightweight. It will house 6-8 chickens at one time. It includes a roosting area, a feeding station, a laying box, and shade. Construction is near completion on this project.

#### **Component 2. Children's Garden Educational Program Development**

The two significant developments made to our Educational Program were chosen to facilitate more efficient docent and teacher training and to expand our potential visitor base. We discuss each development below.

##### *Children's Garden Program Activity Manual.*

Over the last four years, the Children's Garden Program has generated over 60 student-written and 20 staff-written, field-tested, activities for children. These are all specifically tailored for use in the Ecological Garden. We have reformatted and thoroughly edited all of these activities to create the Children's Garden Program Activity Manual.

The primary use of this document is for instruction and training of future student docents. This manual will also be available to teachers interested in finding out more about our program, either because they want their children to visit the garden or they would like to get ideas about types of activities they might adapt to their own school gardens. This serves the role of the centerpiece document for the Children's Garden Program.

*In-Depth, Single-Topic Tours for Children in 4th-6th grades.*

Currently the Children's Garden Program tours are most appropriate for kindergarten through third grade classes. The educational content of each tour is quite broad. They are designed to address the role of plants in the daily lives of humans and give children an appreciation of the beauty and complexity of the garden ecosystem through a series of hands-on activities.

With Slosson funds we have developed three single-topic tours for older children. We involved three college students from the Davis Honors Challenge Program to help us accomplish this goal. A single tour was designed for each of the three grade levels. The fourth grade topic is "Nature's Food Web at work in the Garden and Farm". The fifth grade topic is "Gardens for Good Nutrition" and the sixth grade topic is "Understanding Market Gardens and Farming Systems". These tours will be piloted and revised as required in 2001 and 2002.

*Gale McGranahan is Pomologist and Lecturer for the Plant Science Teaching Center & Student Farm, Department of Pomology, UC Davis. Eric Zilbert is Assistant Research Agronomist and Lecturer for*



***Figure 3. The Center's vermicompost units provide models for schools in the process of designing their own worm composting systems.***

*the Ag Ed Credential Program, Department of Agronomy and Range Science, UC Davis. Carol Hillhouse is Staff Research Associate and Mark Van Horn is Academic Coordinator for the Plant Science Teaching Center and Student Farm, UC Davis.*