

California Oaks and Environmental Education

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In 1990, California celebrated the "Year of the Oak," a statewide awareness campaign to arouse the public's concern for local and statewide oak issues. At that time, the State Board of Forestry adopted a non-regulatory resource management policy for native oaks that included both research and public education. Recognizing that in the long run, children are an important part of this strategy, many organizations such as the University of California Cooperative Extension and the Sacramento Tree Foundation, began to develop materials and programs for teachers and youth-group leaders focusing on California's oaks and their habitat. As a result, in many parts of the state where oaks are a part of the landscape, some youth have been involved with gathering acorns, planting oak seedlings, and learning about the stewardship issues of oak habitat conservation (Antunez de Mayolo, 1990).

During this past decade, some of these programs, especially those offering curriculum materials for educators and field trips for children, have continued to be used and have also helped educators meet important educational goals. Those that assist teachers comply with the current education reform efforts, such as programs that involve youth in "hands-on" educational experiences that help develop students' analytical and problem-solving skills, are welcomed by educators who are looking for ways to supplement textbook based teaching (California Department of Educa-

tion, 1995). But many of these programs have been "one-time events." Often they lack support, both the funding and leadership needed to promote them, and have not been sustained or reached the potential to educate enough of California's six million school-age youth. And, if children are considered to be part of the plan to educate the public in an overall non-regulatory resource management strategy that will effectively protect and sustain native oak populations, coordination of an educational outreach program needs to be taken more seriously. Without a systematic and coordinated approach to reach educators, one of the critical links in this conservation strategy — the recruitment of the next generation's concern for the care and protection of California's oaks — may be in jeopardy.

1997 Survey of Oak Education Programs

As a follow-up to a previous informal study of native oak educational programs for school-age youth, a new survey was conducted during 1997. Seventy educators and organizations known to have been involved for the past eight years in youth programs that included some information about oaks, were asked to complete a 2-page survey that requested information about their particular oak education program. A review of 28 of the 34 programs and educators that responded is summarized in Table 1. This sample demonstrates that there has been continuous interest to provide educational opportunities for students to learn about oaks and oak issues. Lessons learned from an evaluation of the responses are provided in this paper.

Educational Strategies

The types of oak education programs reported can be grouped into three categories: curriculum and project activity guides for teachers and youth group leaders; hands-on horticultural lessons; and field trip experiences for children.

Curriculum such as *Seed to Seedling* (Antunez de Mayolo, 1990), developed and currently distributed by the Sacramento Tree Foundation and the California Oak Foundation, continues to be used by teachers. This curriculum was evaluated by a team of environmental educators in 1995 and described in *Environmental Education: Compendium for Natural Communities* (California Department of Education, 1995). Inclusion in this document indicates that the materials meet certain educational criteria and are recommended for use in classrooms. In addition, the student pages for *Seed to Seedling* have been translated into Spanish, Russian, Vietnamese, and Lao languages.

Other examples of curriculum are *Youth Oak Project* (1992) and *Oak Woodland Wildlife and Habitat Project* (1992) sponsored by the University of California Cooperative Extension. Both programs are used within the 4-H Program. In Redding, the Carter House Museum's *Autumn Oaks* (1995) curriculum provides teachers with a regional focus on oak ecology and issues.

Acorn gathering and propagation, and oak seedling and tree planting are popular educational activities organized for students. A number of individual teachers and several organizations, such as the 4-H programs, continue to engage youth in propagating and planting oak trees. Many provide care for the trees planted, yet it is clear that without someone "championing" oaks, these projects often do not continue nor achieve the purpose of restoring oaks to an area. One teacher reported that after her retirement, the oak tree planting project she developed and sustained for seven years was eliminated by a school administrator who located portable classrooms on the oak restoration site. Other programs, such as the "New Oaks Project," developed and maintained by the San Juan Water District in Sacramento County, demonstrates that the longevity of a

text contd. on pg. 53

**Table 1- Summary of a 1997 survey of oak education strategies
used with school-age children.**

Program Objectives:

- 1. - General awareness and appreciation of California's oaks.
- 2. - Knowledge and understanding of oaks (botanical-historical)
- 3. - An understanding of oaks and oak habitats; environmental and resource management issues.
- 4. - Cultivating a stewardship ethic by providing opportunities for youth to plant trees, assist with oak woodland restoration, etc.

Program	Objectives	Methods/Tools	Audience (age, no., status)
Adopt-a-Watershed Hayfork, other sites	1,2,3,4	Curriculum materials on-going restoration projects	Grades K-6 1250; on-going
Carter House Museum Redding	1,2,3	<i>Autumn Oaks</i> curriculum	100 teachers, 4-8 on-going
University of California, Integrated Hardwood Range Management Program, Brown's Valley	1,2,3,4	Field tours, slides shows acorn gathering, planting teacher workshops	hundreds, ages 6-18 on-going
Sacramento River Discovery Center Red Bluff	1,2,3,4	oak tree propagation and planting	new, 1997
Folsom Unified School District, Folsom	1,2,3,4	<i>Seed to Seedling</i>	150, grade 2 on-going
"New Oaks" Project Granite Bay, Sacramento	1,2,3,4,	Acorn gathering, seedling care, transplanting	1176, ages 3-18 on-going
Placer Nature Center Auburn	1,2,4	Thematic trail featuring oaks <i>Seed to Seedling</i>	7500, grades 1-4 on-going

Table 1- contd.

Program	Objectives	Methods/Tools	Audience (age, no., status)
American River Conservancy, Coloma	1,2,3,4	School programs featuring oaks acorn gathering, propagation, Planting	2000, grades K-6 on-going
Oak Hill Elementary Antelope, Sacramento Co.	1,2	<i>Seed to Seedling</i> ; gather and propagate acorns, plant seedlings	350, grades 4-6 on-going
Sacramento Tree Foundation	1,2,3,4	<i>Seed to Seedling</i> curriculum Educator workshops, classroom Presentations, oak tree planting	2000, grades 4-8 on-going
Cosumnes River Preserve Galt	1,2,4	School programs, students gather and propagate acorns Educator materials	3000, grades K-12 on-going
University of California Davis, Arboretum	1,2	School programs featuring oaks	40,000 grades K-6 on-going
Orchard Elementary School Vacaville	1,2,3,4	<i>Seed to Seedling</i> propagate acorns, care	90, grades K-1 on-going
Park Day School Oakland	1,2,3,4	<u>Seed to Seedling</u> propagate acorns to plant after Oakland fire	600, grades K-6 one-time event
California State University, Hayward	1,2,3,4	New teacher discussions about oaks, field trips	900 pre-service on-going
Ormondale School Portola Valley	1,2,3,4	Acorn gathering, propagation planting, native oak study	70, grade 1 discontinued

Table 1- contd.

Program	Objectives	Methods/Tools	Audience (age, no., status)
Return of the Native Restoration Project Seaside, Monterey Co.	4	Restoration of oak woodlands oak seedling planting	5,000, grades K-12 on-going, 50 schools
Cooperative Extension Calaveras County, 4-H San Andreas	1,4	<u>Youth Oak Tree Project</u> video and study materials	700, grades 7-12 on-going, occasional
Yosemite National Park	1,2,3,4	Oak tree planting	40, grades 4-8, One-time event
Orosi High School Sanger	1,2,3,4	Agricultural Education program, oak propagation Identification	400, grades 9-12 on-going
Tule River Parkway Association, Porterville	1,2,3,4	Oak propagation planting, inventory	150, grades 6-8 new, 1997
Cooperative Extension, 4-H San Luis Obispo	1,2,3,4	<i>Oak Woodland Wildlife Habitat Project</i>	100, grades 2-10 on-going
Cooperative Extension, 4-H Santa Barbara	1,2,3,4	<i>Oak Woodland Wildlife Habitat Project</i>	500, grades 3-12 on-going
Tehachapi Resource Cons. Dst. / Kern County	3,4	Oak tree planting in native gardens	50, grades K-6 one-time event
Riverside-Corona Resource Conservation District, Riverside	1	Oak tree planting at schools	3,600, grades K-6 occasional
Live Oak Park Coalition Fallbrook	1,2,3,4	Teacher and docent guide book, nature trail programs	300, grades 3-4 new 1997

Environmental Education . . .

text contd. from pg. 49

program often depends on continuous commitment and leadership. In this case, a board member continues to oversee that an annual event, involving hundreds of scouts in the propagation and planting of oak seedlings, that is supported by the agency's staff, with the help of community volunteers.

Interpretative tours and field trips to view oaks and oak woodlands continue to be provided by nature centers and arboreta. These often include acorn gathering and propagation, tree planting activities, discussions of the natural history of native oaks, Indian uses of acorns, and oak folklore. For many years, the arboretum at the University of California, Davis, which has many old oaks, has offered these types of tours and programs for school groups.

Educational Considerations

For several decades, proponents of conservation and environmental education have seriously debated how to educate the public to value the environment in order to conserve and protect natural resources (Hungerford and Volk, 1990.). After the 1992 "Earth Summit" in Rio de Janeiro, an additional emphasis was placed on managing resources to achieve environmental "sustainability". (President's Council on Sustainable Development, 1994). Currently, the California Department of Education is developing and plans to publish a document titled, "California Guide to Environmental Literacy", a blueprint to help schools integrate environmental education into all areas of study, to insure that students arrive at graduation with a comprehensive understanding of ecological principles (California Department of Education, draft).

To accomplish these goals, teachers and their students are encouraged to study ecological principles and help nurture interest in "earth stewardship" values. Yet, in California, with over 6-million students and 200,000 teachers in public schools alone, there is little effort to coordinate environmental education programs or provide adequate funding to help accomplish these goals. It is no mystery why oak education has been limited and difficult to sustain!

Yet despite these hurdles, there are ways to continue to impact California's educators and youth and involve them in learning and caring about native oaks. For example, many teachers have begun to look for ways to involve students in educational activities that may also offer oak educators new opportunities. "Service-learning" programs that combine classroom lessons with community service projects or other types of project-based learning experiences, can easily be centered on oak issues. Teaching issue analysis by using "case studies" that investigate land-use and natural resource issues are popular with middle and high school teachers. Field work to inventory and monitor sample plots within stands of native oaks, habitat restoration and other types of stewardship projects can offer students valuable first-hand information and understanding about oaks. Community organizations and educators interested in supporting these types of educational efforts should consider adapting their programs to complement these types of changes in the classroom curriculum. In doing so, they will educate about oaks and contribute to many of the goals of education reforms (Goals 2000).

contd. on pg. 54

Environmental Education . . .

contd. from pg. 53

Conclusion

During the last decade, a number of oak education programs have been developed and used by California educators and organizations. To some degree, these efforts continue to help foster the development of children's knowledge and understanding of native oak conservation. Yet, as noted by this survey, there is little effort to coordinate or support these programs, and as a result, many have been discontinued or are "one-time efforts."

Challenged by the state's non-regulatory policy to conserve native oak populations, resource managers and environmental educators should make a serious effort to prepare the state's future decision-makers. It would make sense to expand the support and coordination of oak education within California's schools and in informal educational programs. Organizations and agencies such as the California Oak Foundation, the University of California Integrated Hardwood Range Management Program, the California Department of Forestry and Fire Protection and others could work more closely together, and with educators, to support and sustain these programs. With millions of school-age youth, many living within or nearby regions that are rapidly urbanizing and engulfing oak woodlands, the potential for educating future voters has been significantly under-utilized. To sustain oak education efforts, every year should be the "Year of the Oak". Leadership and coordination of youth involvement should become an important priority and component of the statewide strategy to conserve this precious part of California's natural landscape and valuable natural resource.

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