

Oaks and Environmental Education¹

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Abstract: A number of educational projects which focus on youth awareness and involvement with California oaks have been developed during the last five years. Primarily used in urban areas where oak populations have declined, many of these programs promote seedling propagation, tree planting and help to develop student understanding of environmental issues involving oaks while also promoting acquisition of stewardship values. A review and discussion of programs which feature oak awareness and participatory opportunities are provided. These programs could serve as models for groups involving youth in oak education and resource enhancement.

Recognizing that in some areas of California, native oak populations are having difficulty regenerating naturally due to changes in land use such as urban development and agricultural practices, many individuals and organizations have initiated campaigns and programs to inform and involve the public about the value and importance of oaks and oak woodlands. The State legislature's declaration of 1990 as "Year of the Oak" has helped to focus attention and arouse public concern for local and statewide oak issues. Schools have become involved by planting native oaks; individuals and groups have spoken up about protecting watersheds dominated by oaks; and research on topics such as propagation and care of native oaks has been shared through a variety of informal publications such as those produced by California Oak Foundation. These projects and programs have reached a large and interested audience. Among the many types of educational efforts, programs which involve Children have special significance, since without a doubt, it will be the next generation of decision makers who will determine the fate of California's oaks. Therefore, individuals and groups concerned about California's oaks should recognize that oak educational programs involving children may have a significant and positive impact on the conservation of the oak resource.

The focus of this paper will be to summarize information on programs designed to include youth in learning about California's oak issues. Also presented is a discussion of how these projects can be considered to be important components of our state educational system's goal to provide children with environmental education lessons and experiences which prepare them to become effective advocates for the careful management and conservation of our state's natural resources.

ENVIRONMENTAL EDUCATION GOALS AND METHODS

During the past two decades, environmental educators have developed many kinds of books, curricula and programs covering a wide range of conservation and environmental education topics. Generally, these materials and programs endeavor to inform and involve students with the goal of strengthening their understanding and appreciation of the complex interrelationships of the natural and physical world. Programs are often designed to engage students in activities or a learning process which helps to focus their awareness, develop knowledge and encourage personal involvement in environmental issues (California Department of Education 1990). Typically students participate in discussions, investigations and hands-on experiences which not only help to develop their understanding of a specific topic or issue, but strengthen their use of communication and critical thinking skills. For example, students may examine how the human use of a natural resource effects the integrity of a natural system. In doing so, they may need to consider the reasons why the resource is used, and the pros and cons of human need for the resource. They may also need to evaluate the social, cultural, economic and ecological contexts of the topic or issue in question.

Another strategy used by environmental educators is to introduce environmental themes of a controversial nature. These topics can also provide valuable opportunities for increasing the quality of a student's ability to solve problems. Since in most cases such issues will have no clear-cut solutions, children can be challenged to consider differing viewpoints which can help them to clarify their own understanding of the problem and how personal values enter into their understanding (Comnes and Sly 1989).

Environmental studies of a complex and controversial nature usually take into consideration the age appropriateness of each learning activity. Children acquire specific thinking skills as they pass through cognitive stages which generally correspond to their ages (California Department of Education 1984). For example, hands-on activities such as planting trees and stream restoration efforts can be useful to early elementary age children in heightening their awareness of the role trees play in reducing soil erosion. This type of experiential education can provide children opportunities to use information processing skills such as making observations, comparisons, and relating information. In addition, they can gain insight and understanding concerning the ecological and societal values placed on

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stewardship projects such as tree planting and stream restoration. And with careful assessment of their intellectual abilities related to their age and the breadth of their knowledge and understanding of the issues, children can become effective advocates for a specific environmental issue.

Therefore, organizations developing informational programs and inviting children to share in the labor of a local tree planting can help children participate in learning about resource management and enhancement efforts, and give them many valuable environmental education lessons as well. Also, from an environmental educators point-of-view, these first hand experiences can enable students to construct both informed and reasoned decisions that will help them be able to make personal choices which benefit the environment such as the conservation of and wise use of natural resources. (Hines 1986).

Oak Education Survey

In order to assess the kinds of oak education programs that are available or in development, an informal survey was made between August 1989 to October 1990. Individuals and organizations known to involve youth in oak education and restoration efforts, were contacted and asked to describe their project. Program goals and objectives, delivery systems, use of tools and other methods were noted. Where available, information was noted on: the number of participants and their age grouping, and in the number of trees planted and acres involved.

A summary of information provided by the individuals and organizations active during this survey is presented in the table that follows (table 1).

Important Considerations

The survey brought out several issues which should be of concern to both oak educators and resource managers. These issues should be taken into consideration by groups who are currently involved or considering the development of oak education and restoration projects. Programs which fail to offer information on tree planting techniques or give consideration to the need for the long term care of trees planted by children, may do a disservice to both oak education and tree planting efforts. When trees planted by children die due to neglect or vandalism, children may conclude that their efforts to "make a difference in the world" has little significance. Tree planting projects need careful planning and long-term management strategies.

In addition, efforts to maintain native oak gene pools in urban and wildland tree plantings is of significant biological consideration. In the rush to provide children with hands-on opportunities, it may be a potential environmental disaster to plant trees of widely different genetic inheritance in oak restoration projects. Topics such as gene pool conservation, biological diversity and the process of species endangerment provide valuable environmental education lessons for children to con-

sider in their involvement in propagating and planting oaks. These issues need to be considered by adults planning and facilitating oak education programs.

CONCLUSION

Efforts to both educate children and involve them in conserving and extending the California oak resource have been developed by many groups. Learning about native oaks and planting oak trees has gained widespread popularity as demonstrated by the 29 projects and approximately 17,000 children and adults who have participated in many types of activities during the past year. Acorn planting, seedling propagation and tree planting in urban and wildland settings along with presentations to classroom and youth groups are among the most popular methods used to involve children in learning about oaks and oak issues. Some examples of these activities are illustrated in figures 1-3. These projects can provide useful models for additional groups seeking ways to develop oak education programs for children. An ongoing effort to monitor these programs can also provide additional ideas and useful information for future efforts.

Enabling children to learn about and appreciate California's oaks as well as inviting them to provide the labor needed to extend the oak woodland resources can present many meaningful environmental education lessons. In the long run, the opportunity to educate and prepare future decision-makers and to help them become well informed environmental stewards may prove to have a significant impact on the conservation and future of California's native oak resource.

REFERENCES

- Antunez de Mayolo, Kay. 1990. Notes on oak education programs involving children. California Department of Forestry and Fire Protection. Sacramento. Unpublished.
- California Department of Education. 1984. Science Framework Addendum. Sacramento. p. 1-5.
- California Department of Education. 1990. Point of View on Environmental Education. 5 pp.
- Comnes, L. and Sly C. 1989. Toxics: Taking Charge. The California State Environmental Education Guide. Alameda Co. Office of Education, Hayward, CA. p. ix-xi.
- Hines, J.; Hungerford, H; Tomera A. 1986 Analysis and synthesis of research on responsible environmental behavior: a meta-analysis. Journal of Environmental Education 18(2): 1-8.

Table 1—Survey of oak education programs involving children for different program objectives (Program objectives—1: Involvement of youth in urban and wildlands oak planting projects for resource enhancement; 2: Environmental education programs focusing on oaks; 3: General information: providing an awareness of oak resource issues.)

PROGRAM	OBJECTIVE	METHODS/TOOLS	AUDIENCE (age, no.)
"Project Acorn" U.C. Cooperative Extension Browns Valley, Yuba Co.	1,3	Written materials and training hands-on event: acorn gathering & planting	300 youth & adults
"Project Oak" Mid-Peninsula ReLeaf Mt. View, Santa Clara Co	2,3	School assembly Slide show Hands-on event: acorn and tree planting	100 children
Yosemite National Park, Yosemite Elementary School	1,2,3	Oral instructions Hands-on oak seedling planting	80 children
Oak Restoration Projects TreePeople, Arroyo ReLeaf Los Angeles Co.	1,2,3	Written and oral instructions, School presentations, acorn gathering and planting	20,000 acorns collected and redistributed to children/ families to plant in Chatsworth and Pasadena area
Santa Monica Mountain Development Project Let Newman & Associates Los Angeles	1,3	Hands-on acorn collecting and planting (10,000 acorns propagated)	50 children;
California Nature Conservancy Cosumnes River Preserve	1,3	Hands-on acorn seedling oak tree plantings (150 acres, 22,000 trees)	250 adults/children
San Luis Obispo Outdoor School, California State Polytechnic Univ., Natural Resources Management Department, and Atascadero Elementary School.	1,2	Classroom presentation, Hands-on acorn propagation and seedling planting	112 children 25 adults
Tehama Co. Resource Conservation District	1,2,3	Information	100 children
Los Molinos High School Vocational Education Red Bluff		Hands-on acorn gathering, propagation, seedling distribution	30 children
School Tree Plantings Mann Conservation League, San Rafael	1,2,3	Educator workshops; school tree plantings	3,775 children
"Acorn Day" and "Oak Docents" California Oak Foundation California Native Plant Society Napa Co.	1,3	Information; Classroom presentations; Hands-on acorn gathering	700 children
Oak Tree Restoration and Education Project Tehachapi Resource Conservation District	3	Classroom presentations	200 children
Southwestern School Chula Vista McMillian Development People for Trees, San Diego Co.	1,2,3	Hands-on acorn and tree planting	90 children
Oak Planting Project, Girl Scouts, People for Trees, San Diego	1,3	Hands-on acorn and seedling planting (2000 acorns, 250 seedlings)	300 children
Valley Oak Elementary School Davis Senior High School, Davis	2,3	Classroom presentations; hands-on acorn planting and seedling propagation	70 children
4-H Oak Horticultural Project San Diego	1,2	Instructional workshop; hands-on acorn planting and seedling propagation	150 children
Oak Plantings, Sunol Regional Wilderness, Alameda Co.	1,3	Hands-on acorn planting children and adults	500 volunteers
Elkhorn Slough Preserve, Monterey Co.	1,3	Group presentation; hands-on acorn planting	60 children
"Acorn to Oak" Teacher Workshops, Sacramento Co.	2,3	Workshop presentation; Hands-on acorn planting; information	100 teachers
4-H Oak Tree Project Calaveras Co.	1,2	8-page activity guide "Oak Book"; 18 minute video; hands-on acorn gathering and planting	
"Seed to Seedling" Sacramento Tree Foundation Sacramento	2	40-page oak propagation; curriculum; docent program; hands-on acorn planting; seedling propagation; tree plantings	5000 children 300 teachers

(continued)

Table—1, *continued*

PROGRAM	OBJECTIVE	METHODS/TOOLS	AUDIENCE (age, no.)
1990 Earth Day Environmental Nature Center, Newport Beach	3	Informational Oak seedling distribution (150 seedlings)	
Big Tree Contest Yuba Co. Resource Conservation District	3	Informational	General public
Big Oak Contest, Tehama Co. California Department of Forestry and Fire Protection Red Bluff Garden Club	3	Information	General public
University of California, Davis Arboretum	3	Docent tours, information	General public, schools
University of California Berkeley Botanical Garden	3	Docent tours information	General public schools
Sonoma State University, Rohnert Park	3	Teacher materials; Nature Area Guide to Oak Woodland (in development)	local schools
U.C. Cooperative Extension, San Luis Obispo and Santa Barbara Co.	2	4-H Project Guide; "Oak Woodland Wildlife Project" (proposed)	
Irvine Ranch Water District, Irvine	3	"Annie Oak Tree" Oak awareness coloring book	5,000 children
Portola Valley School Oak Project Portola Valley, Santa Clara Co.	1,2	"Seed to Seedling" curriculum Hands-on acorn planting	100 children
1990 Arbor Day Riverside Corona Resource Conservation District, Riverside	3	School Assembly; Oak seedling distribution (500 seedlings)	20 schools
Kimbark Elementary School, San Bernardino	1,2	Hands-on and oak tree propagation; use of wide selection of environmental education materials	850 children



Figure 1—Planting acorns. Sacramento Tree Foundation's "Seed to Seedling" program, 1990.



Figure 2—Six-month old oak seedlings growing in a Sacramento classroom, 1990.



Figure 3—Sacramento area kindergartner showing off her six-month old blue oak seedling. Sacramento Tree Foundation, 1990.