

Oak Sustainability: A Challenge Through Public Education and Outreach Programs¹

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Abstract: Throughout California, public awareness on the role humans play in the decline of oak acreage is increasing. Public and private organizations, agencies, and individuals are instituting planting days, releasing articles on oaks to the media, and sponsoring lectures. Many of these activities are limited in scope and lack a strong educational component that promotes sustainability. Educational programs certainly need to address such issues as site selection and preparation, acorn selection and storage, nursery propagation, species identification, and audience identification. This paper discusses sustainability as it relates to stand restoration and landscape-wide ecosystems. Educational delivery methods are examined and potential audiences are defined.

Sustainability is a concept that has become very popular in recent years. Today we see this term attached to agriculture, forestry, fisheries, rangelands and nearly every other area of resource management. In this paper, we propose that sustainability concepts be applied to oak restoration, preservation, and management schemes.

A homeowner may perceive sustainability as the preservation of a single tree for 10 years, while a rancher, county planner, or landscape architect may define sustainability as the continuance of a stand of oaks over 100 years. Resource management professionals might apply the term to the perseverance of plant and animal species diversity and ecological community continuity within oak woodlands for perpetuity.

In all cases, individuals may be interested in preserving oaks but may view the trees in completely different terms. A common pitfall of homeowners and planners is the focus on preserving individual trees, concerning themselves with the retention of a "museum piece" that, in terms of sustainability, has little to do with maintaining genetic diversity, providing wildlife habitat, or even producing progeny that will ensure replacement over time.

The literature has many examples stressing the need for a systems approach to hardwoods management (Bolsinger 1988, Passof and others 1985, Plumb and Pillsbury 1987, Schmidt 1991). However, the vast majority of people who have direct

impacts on oaks in California have little knowledge or access to these documents. As our awareness of oak-related issues expands and grows, educators must analyze and present information in such a way that the concepts are understandable, attainable and, in terms of education, sustainable. This paper reviews our perceptions about successful approaches and potential pitfalls to oak-related educational projects.

AUDIENCE IDENTIFICATION

If the concept of sustainability is to be incorporated into educational programs, then audience needs must be analyzed. The audience for oak-related information must be identified, and the needs of the audience must be addressed.

Professional horticulturalists, gardeners, arborists, and landscape designers often are interested in oak-related issues. However, individuals representative of these groups often focus on the "sick tree" approach. Though what they do is important for landscape and aesthetic purposes, as a group they are often dealing with clientele whose focus is on single trees. In recent years, urban and wildland forest consultants, city and county planners, and resource management professionals have become more involved in oak-related issues as the interested public has demanded a broader expertise. These are the groups that are focused, through regulatory obligation or professional responsibility, on the concept of sustainability and how it may apply to a localized situation. Even within this group, however, there is a broad range of competence regarding sustainability. Oftentimes resource management professionals are limited in their perception of audience needs.

Another group often mentioned as an important audience component in relation to oaks is the "developers," since development-related pressures have been responsible for three-quarters of the oak woodland acreage lost over the past 15 years (Bolsinger 1988). However, when trying to define this group, it often becomes apparent that any person who purchases a parcel of land is a potential developer. It is extremely difficult to target educational programs toward any one person or group who may or may not some day be considered a developer. This lack of clear definition causes difficulties when trying to define the major players in oak sustainability programs. The misconception that developers are a well-defined group who can be reached through conventional approaches can impede an education program if the audience definition process is not comprehensive.

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Although this "developer" contingent is an important clientele group whose actions are obviously significant, they can be reached or affected through alternative channels. For example, commercial developers are often aware of trends and conditions via the appropriate planning department. Therefore, it is not always necessary to target the developer as a separate audience since it is local policy that will dictate what can and cannot be done with oaks. A key group when trying to promote sustainability to developers are the private, city, county, and state planners who are in the process of developing and enforcing relevant policies having a direct impact (general plans, codes, ordinances, and other types of regulations). We do not suggest that the developers as a whole be ignored when developing educational programs. We are stating that developers can receive information and educational material via alternate channels.

Planners, often well represented at conferences and symposia on oak-related topics, have shown a great deal of interest in the issue of sustainability. As a whole, this group represents the "troops on the front line." They must have access to information that allows them to outline and protect the direction that the city or county will take in the present and the future. Though many planners would like to incorporate the concept of sustainability into their decision-making process, they are often working with divergent groups with variable knowledge levels, a variety of political concerns, and widely opposing goals. They need to be given applicable information that is useful in day-to-day decisions.

An important group often absent from oak-related workshops is the ranchers. Ranchers, as livestock producers, are both the primary owners and managers of hardwood range (Bolsinger 1988). However, on an individual basis, many ranchers see the current interest in oaks as a "non-issue" to their daily operations. This is not true at the state level, where representatives of the various livestock associations are keenly aware of the issues and how future trends may impact their groups. As a group, livestock operators have difficulty understanding the range and depth of political and social pressures on them in regards to the conservation of hardwood resources, including oaks. This is especially true of individuals who have had their land in the family for multiple generations. They perceive an increasingly urban society trying to regulate a resource that they consider to be abundant. We have not found this group to be ignorant of oak values. We have found differences of opinion as to the importance of oak-related issues as compared to other issues which affect their livelihood.

Finally, school-age children of all ages and backgrounds must be considered an important clientele group. Regardless of the cliché, today's children *are* tomorrow's leaders (and resource users). Minority groups in particular need to be targeted with educational programs which impress upon the children that they can impact their environment.

EDUCATING THE PUBLIC

We have all heard individuals stand before a group of people and expound on the need to "educate the public" on a wide spectrum of subjects. With the current political climate in California and the turmoil surrounding natural resource policies and management, ranging from water allocations to mountain lion (*Felis concolor*) hunting to forest harvest practices, coupled with the fact that every special interest group is trying to "educate the public" to their particular viewpoint, it is easy to imagine that the public is being overrun with "education". Giusti and Schmidt (1988) discussed the need to bring all groups together in order to facilitate communication between people with strongly divergent views. In the case of oaks, most people are in agreement that oaks are worthy of *some* attention, and the problem is one of a lack of understanding and agreement rather than completely polarized views. In this regard, with our efforts to try and "educate the public," at least the current climate is not one of pro versus con but rather one of focus and educational delivery. We need to tailor educational and extension strategies which exploit this consensus. It is important not only for all impacted clientele groups to learn more about oak sustainability, but it is equally important that all groups understand the concerns carried by all *other* groups. Consensus building and negotiation never work unless all affected groups recognize that they each have something to lose (and hopefully something to gain). Education is a critical part of that process.

EDUCATIONAL APPROACHES

In 1985, the California Department of Forestry and Fire Protection, the California Department of Fish and Game, and the University of California established the Integrated Hardwood Range Management Program (IHRMP) in order to address concerns regarding the lack of natural regeneration of some species of native oaks combined with a statewide decline in acreage of these trees. This educational approach was taken in lieu of strict regulations threatened by the Board of Forestry. Passof (1987) and Tietje and Schmidt (1988) gave a descriptive overview of the process and outlined the goals and objectives of IHRMP. They further described the needs and methods for developing an educational program and the need to convey information to landowners, special interest groups, and the general public. Since 1985, a great deal of effort has gone into research and education. Evaluation programs aimed at determining the effectiveness of these programs are now underway. The general public is more aware of oak issues. In addition, predictions of under-utilized hardwoods such as tan oak

(*Lithocarpus densiflorus*) and exotics (*Eucalyptus* spp.) fording a greater share of the market are now being realized (Passof 1987). However, the issue of sustainability is still with us.

We have been responsible for a variety of educational programs related to oaks and directed to a wide range of clientele groups. These activities have included oak planting schools, 4-H projects, publications and newsletters, meetings with planners, classroom teaching at community colleges, newspaper and radio interviews, lectures to service clubs, tree ordinance committees, research symposia, testimony to local government bodies, field tours of research and demonstration plots, and organized educational forums. Two full day educational forums in Sonoma County alone, entitled "Construction Among the Oaks" and "A Day for Oaks," had 200 and 270 registrants, respectively. We literally have reached tens of thousands of people. Have we really promoted and emphasized the issue of sustainability?

We now find ourselves at a crossroads needing to choose between information, education delivery systems, and audience needs and values. Many people have now accepted the fact that oaks are a resource needing special attention. With this realization often comes the zealous approach inspired by this new found cause. We must insure that all clientele groups be concerned about sustainability. We must make sure that the "museum piece" mentality is de-emphasized and that landscape processes are emphasized. The sustainability of thousands of acres, if not hundreds of thousands of acres, of oak woodlands lie in the balance.

SUSTAINING OAK WOODLANDS THROUGH EDUCATION

Incorporating the concept of sustainability into education as it relates to hardwoods will be most successful when the message can reach a defined audience in such a method and manner that the long term retention of the information that is being conveyed will be insured. In order for this approach to be feasible, audience identification is crucial to the process and an educator must know the audience's needs and perceptions prior to delivery of information. The educator must also understand sustainability.

Brochures, pamphlets, and handouts are all tools that can be used as part of an educational program. One of the more attractive brochures, *Living Among the Oaks* (Johnson no date), is a useful and helpful source for people who have specific questions regarding their oaks on home grounds. Once again, this material focuses on single tree issues that can easily be addressed in a short pamphlet. However, sustainability issues should have been addressed. We must utilize every opportunity to get the message across. If a homeowner wants to find out about watering oak trees, he or she can learn about watering while at the same time learning about the regeneration concerns, biodiversity, and the impacts of habitat fragmentation.

Churches' (1989) publication on oak tree planting presents the 4-H student with basic identification of oaks, the collecting and storing of acorns, planting techniques, transplanting and care of seedlings, and control of oak pests. The project is designed to be taught over several weeks in order to ensure that the students will absorb the information. The booklet is also designed so that a teacher in the primary or secondary level could easily adjust it to meet their needs. This type of "step-by-step" approach begins by explaining to students that oaks are not merely a stately tree outside the local shopping mall, but rather they are a living organism that goes through several stages during its life span. This multi-staged approach to education can now be included within the natural resources curriculum that a teacher may have already established.

Students, being a captive audience, are sometimes the easiest group to reach. The difficult audience may be the teachers. Many local communities already have programs aimed at involving teachers and providing them with information that they can use in their classrooms.

Examples of existing and credible programs include the California Farm Bureau's program "Ag in the Classroom" and the California Department of Fish and Game's "Project Wild." Both of these programs are aimed at teachers, and are presented in such a way that they can be adapted to meet an individual's needs and have credible standing within the teaching community. These two programs could easily encompass materials and information on oak trees and are designed to present the material over an extended period of time. Issues of sustainability should be incorporated into these programs.

It is not always necessary to "re-invent the wheel" when trying to secure a mechanism to deliver the concept of sustainability. Already existing programs and a population of enthusiastic primary and secondary teachers, eager to present their students with materials about natural resources, are sound and credible starting points.

Other avenues include the formation of inter-agency forums that include public input. On a local level these have proven successful in delivering sound information over an extended period of time. The key to this approach is to allow people to hear various viewpoints and let them have input into the learning process, allowing them to absorb what is being presented. One consequence to this approach is the increased amount of time that is needed to deliver this information.

Public education and outreach programs are very popular today. Various individuals, groups and organizations are all trying to deliver information that they feel is important regarding oaks. If we are going to promote the idea of sustainability of California's oak resource we must also begin to include sustainability in our messages. The mechanisms are in place; we as educators now need to encourage people to stop looking at the trees as individuals but rather as part of a larger system.

Additional programs need to be developed to address the needs and concerns of all the affected clientele groups discussed above. Continuous evaluation programs are also necessary in order to track the effectiveness of educational programs and materials. This feedback loop would allow for modifications as needed to maximize program effectiveness.

THE FUTURE OF SUSTAINABILITY

The effectiveness of today's programs will be measured decades or centuries from now. This time lag differential demonstrates the importance of incorporating sustainability into educational programs immediately. Oak woodland environments throughout California have been impacted tremendously by humans over the past 200 years. We have modified plant and animal species diversity and population numbers. California leads the continental United States in numbers of threatened and endangered species. California will have over 30,000,000 inhabitants by the year 2000. Human impacts on oaks will expand at an increasing rate. The best that we can do is blunt the impact of the coming years on oak woodland ecosystems. By striving for sustainability of our remaining stands, whether they occur in urban, rural, or wildland settings, we hope to preserve functional, sustaining, and diverse oak woodlands.

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