

Management of Oaks Within the Pacific Southwest Region¹

G. Lynn Sprague²

The Pacific Southwest Region of the USDA Forest Service manages 20.3 million acres of National Forests lands, primarily within the State of California, 16.5 million of which, or 81 percent, are forested. The hardwood forest types are limited to 1.4 million acres, or 7 percent of the land base. Although this is only a small portion of the forested land base that we manage, oak management represents a number of complex issues involving the balancing of environmental, cultural, and economic concerns.

The major hardwood forest types found on National Forest lands in California consist of Canyon Live Oak, Black Oak, Blue Oak, Tanoak/Madrone, and Coast Live Oak. Other types also are found but represent small percentages.

Forest type	Acres	Pct of total hardwood acres
Canyon Live Oak	555,000	40
Black Oak	420,000	30
Blue Oak	145,000	10
Tanoak/Madrone	107,000	8
Coast Live Oak	50,000	4
Quaking Aspen	37,000	3
Interior Live Oak	30,000	2
Willow/Alder/Cottonwood	22,000	2
Other Hardwood	6,000	<1
All types	1,372,000	

Oaks are also found as a stand component in many of the conifer forest types as well. Westside Ponderosa Pine, Sierran Mixed Conifer, Klamath Mixed Conifer, and Douglas-fir forest all contain important hardwood resources and add to the diversity of the National Forests.

In our Region, information on hardwood resources is available from two major sources: the Forest and Resource Database and a new integrated resource vegetation survey. Existing vegetation maps have been completed for all National Forest lands in California. These maps reside as digital information in our Forest and Resource Database and Geographic Information System. The existing vegetation maps describe the distribution and extent of vegetation using the CALVEG classification system, and are easily cross-walked to the Wildlife Habitat Relationship (WHR) classification system. The integrated resource vegetation inventories are part of the national program for forest monitoring and assessment. Permanent plots are being established in all vegetation types using a common 3.4-mile-grid sampling design. This program is approximately 50 percent completed in California on National Forest lands. This grid system can be (and has been) intensified to meet specific information needs of our National Forest. We have recently completed the mapping of all vegetation on the four National Forests in southern California using this inventory method.

¹ This was an invited, plenary paper presented at the Symposium on Oak Woodlands: Ecology, Management, and Urban Interface Issues, 19-22 March, 1996, San Luis Obispo, Calif. None of the plenary papers at this symposium was subjected to technical peer review; they were the views of the presenters, in behalf of the organizations they represented.

² Regional Forester, Pacific Southwest Region, USDA Forest Service, 630 Sansome Street, San Francisco, CA 94111

Historical inventory information is also available for the productive timberlands, which sampled California black oak and Tanoak/Madrone types along with the conifer forests on each National Forest. These ground-based sample plots from old and newly established inventories allow assessment of hardwood species, trees per acre, standing wood volume and growth, mortality, general forest health, fuel loading, and wildlife habitat elements.

Our forest pest management specialists also monitor the health of our oak resource and report the results of various surveys in conditions reports published in cooperation with California Forest Pest Control. These reports show that black oaks in the Northern California coast range and along many drainages of the Klamath Mountains were defoliated by *Septoria* leaf blight. The defoliation was quite evident, but damage to the trees was minimal. This indicates that the drought did not affect the oaks as it has the fir and pine in California. However, although occurrence of this type of defoliation may not significantly affect forest health, it can influence public perceptions because of its visibility.

Although oaks and other hardwoods represent a relatively small portion of the forest lands we manage, our goal is to manage this resource for a range of social, environmental, cultural, and economic benefits. All of our forest plans contain standards and guides that dictate the management of the hardwood species. In most cases our hardwood woodlands are maintained to maximize watershed protection benefits. However, there is also an underlying goal of retaining larger oaks for mast production to meet wildlife and cultural resource needs.

Through our relationship with tribal governments, we have reinforced our knowledge that oaks are a vital part of California's cultural landscape, particularly for Native Californians. Acorns are undeniably the most important and most "characteristic" California Indian basic food. While other tribes may have relied more on various cultivated grains, California tribes managed the California oak that provided their daily bread. Acorns were processed into meal, combined into a mush, or baked into a bread.

We are working with tribal communities to help our line officers understand that one of the strongest traditions shared by members of a cultural group is the food they eat. The preparation and sharing of traditional food is an important way for a culture to literally and figuratively sustain itself. Today, acorns may still be processed in a blender as well as a stone mortar, but either way they are an important food tradition. The gathering, drying, shelling, grinding, cooking, and enjoyment of acorn bread or mush is an important part of California Indians' ceremonies and festivals. Many tribes celebrate the fall acorn festival which marks the harvest.

The perpetuation of California's oaks is a great concern for many tribes. Tribal governments, communities, and native plant nurseries are attempting to ensure that this cultural staple is maintained. The Forest Service is working with tribal communities to identify and protect key oak stands and other important plant resources that are so basic to their traditional lifestyles.

Population growth in the urban/wildland interface is an issue being addressed at this symposium. We are also concerned with this population growth, especially when it occurs adjacent to National Forest lands. This issue encompasses differing social, economic, scenic, and recreational values as well as presenting fire suppression agencies with the complex challenge of providing cost-effective fire protection. We share their concern about the direct loss of oak woodlands caused by this development, but we are also concerned about the increased threat of fire in this urban/wildland interface. Fire suppression agencies continue to expend firefighting resources to protect life and property at the expense of letting fires burn larger areas of wildland vegetation. We are also concerned about the increased risk to the safety of our firefighters who must fight those structural fires.

Our support for sound ecological management of oaks extends beyond the National Forest boundaries through the many programs administered by our State and Private Forestry program in partnership with California Department of Forestry and Fire Protection and a number of forestry-dependent communities. The Forest Stewardship Program can provide a non-industrial private forest landowner with financial assistance to improve oak woodlands or to regenerate stands to meet wildlife habitat or other ecological objectives. These objectives must be described in a forest stewardship plan that is approved by the State Forester. The Urban and Community Forestry Program also provides technical and financial assistance to our urban communities to support oak woodland restoration.

The Rural Community Assistance Program has supported a number of studies and examinations of the feasibility of developing small businesses based on the management and utilization of hardwoods, including oaks, in California. One such study has recently been completed for the Hoopa Tribal Council. It reviewed their hardwood inventory, growth, and yield potential, and examined market opportunities and the economics of workforce development as well as cultural issues associated with acorn production and other uses of the resource. The study found that it was feasible to establish a hardwood industry, but the tribal leaders are now struggling with the issues of balancing the cultural and economic interests of their tribal members.

The Rural Community Assistance Program is currently supporting a review of the hardwood industry in California. This assessment will provide us with recommendations on the focusing of financial and technical assistance and whether it is needed to facilitate the development of an ecologically sound hardwood industry for California. This review found that, on the basis of the latest (1988) Forest Inventory and Assessment data, harvest of hardwoods is a small fraction of the net annual growth. This indicates that surplus hardwood inventory exists to support hardwood industries in California, but whether it is economically available or convertible to wood products still must be determined.

In summary, although most oak woodlands are found on private lands, our involvement with the management of oaks is directed at providing a broad range of social, environmental, cultural, and economic resources and benefits. This management often requires the balancing of complex and sometimes competitive issues. We have new, integrated resource vegetation inventories, and when these inventories are completed, we will assess whether our oak resource is at its desired sustained condition. If it is not, we will take advantage of opportunities to move in that direction.

