

Oak Woodland Conservation Management Planning in Southern CA – Lessons Learned¹

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Abstract

The California Oak Woodlands Conservation Act (AB 242 2001) established requirements for the preservation and protection of oak woodlands and trees, and allocated funding managed by the Wildlife Conservation Board. In order to qualify to use these funds, counties and cities need to adopt an oak conservation management plan. Between 2008 and 2011, a team of concerned arborists, biologists, county foresters, planners, and other stakeholders wrestled with questions such as how to define an oak woodland in southern California, how much oak woodlands are worth, and examined the costs associated with a) losing existing oak woodlands; b) preserving existing oak woodlands; and c) expanding oak woodland habitat to suitable areas in the county. These efforts resulted in adoption of the Los Angeles County Oak Woodland Conservation Management Plan in 2011. However, it took until 2014 to work out the associated implementation plans for regional planning and public work staffs. The pitfalls and successes of developing this plan will be discussed in hopes of sharing the lessons learned with others.

Key words: conservation planning, oak woodlands

Introduction

Many counties and cities throughout California have long protected individual oak trees, and Los Angeles County led the way with the enactment of their Oak Tree Ordinance in 1982. However, these local regulations have had limited scope and success in protecting oak resources. Recognizing that loss of oak woodlands was increasing throughout the state, the legislature enacted the California Oak Woodlands Conservation Act (AB 242 2001), which established requirements for the preservation and protection of oak woodlands and trees, and allocated funding to be managed by the Wildlife Conservation Board that would support a variety of ways to preserve oak woodlands throughout the state. In order to qualify to use these funds, counties were required to adopt an oak woodland conservation management plan. As of 2010, only 21 of 54 counties in the state had adopted such plans (CWCB 2010).

In 2004, SB 1334 (Public Resources Code Section 21083.4) expanded this preservation effort by requiring that a county, “in determining whether CEQA requires an environmental impact report, negative declaration, or mitigated negative declaration, to determine whether a project in its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment, and would require the county, if it determines there may be a significant effect to oak woodlands, to require one or more of specified mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands.” In order to comply with this

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state law, counties and cities need to identify clear criteria for determining thresholds for impacts and develop implementation tools to encourage conservation through the use of easements, replacement plantings, other mitigation efforts.

In 2006, the Global Warming Solutions Act (AB 32, 2006) required that the state reduce greenhouse gas (GHG) emissions to the 1990 level by 2020. In order to accomplish this goal, the Natural Resources Agency and California Air Resources Board expanded the analysis of GHG emissions to include evaluation of any impacts resulting from the conversion of oak woodlands to other uses. Oaks are an important tool for sequestering carbon dioxide, with each mature tree capable of sequestering 9 metric tons of carbon in a 50 year lifespan (Sacramento Municipal Utility District Tree Benefits Estimator 2015), with the current extent of oak woodlands throughout the state sequestering approximately 325 million metric tons) of above and below ground carbon (Gaman 2008). Conversion of oak woodlands can result in both direct GHG emissions as well as reduce the potential for sequestration, which has been identified as a key mitigation strategy for reducing emissions. The effort to incorporate biogenic GHG is underway with the development of local Climate Action Plans and through the implementation of the voluntary Urban Forest Project Protocol.

Los Angeles County was in the process of responding to these new requirements by developing their Climate Action Plan concurrently with the revision and update of the county General Plan. This provided an opportunity to incorporate the values, benefits and protection of oak woodlands into the county vision in a variety of important ways.

Between 2008 and 2011, a team of concerned arborists, biologists, county foresters, planners, and other stakeholders including building industry representatives, wrestled with questions such as: what will the oak woodlands of Los Angeles County look like in 50 years, how to define an oak woodland in southern California, how much oak woodlands are worth, and examined the costs associated with a) losing existing oak woodlands; b) preserving existing oak woodlands; and c) expanding oak woodland habitat to suitable areas in the county. These efforts resulted in adoption of the Los Angeles County Oak Woodland Conservation Management Plan (LACOWCMP) in 2011. However, it took until 2014 to work out the associated implementation plans for regional planning and public work divisions, and a few recommended actions remain to be accomplished.

Getting started

The three critical ingredients for developing an oak woodlands conservation management plan in Los Angeles county included: 1) a dedicated team, 2) political support, and 3) funding. The LACOWCMP was made possible due to the alignment of all these elements at a critical time in county planning efforts.

1. Dedicated team

Spearheaded by the Resource Conservation District of the Santa Monica Mountains (RCDSMM), and the Los Angeles County Department of Fire Department Forestry Division (Forestry), the Los Angeles County Oak Woodlands Habitat Conservation Strategic Alliance (Alliance) was formed in 2008. Over 30 people representing arborists, biologists, foresters, city and county planners, UC Cooperative Extension as well as agriculture and natural resources staff, building industry representatives, landscape architects, members of the California Native Plant Society, Audubon, California Oak Foundation, environmental consultants, as well as National Park Service, California Department of Fish and Wildlife and U.S. Fish and Wildlife

Service staff contributed over 6,000 volunteer hours of time, meeting monthly for almost 2 years. Many of these Alliance members contributed text or edits to the document as it evolved.

In order to obtain consensus on definitions of oak woodlands in Los Angeles County, the Western Chapter of the International Society of Arboriculture hosted several workshops on oak woodland conservation, attracting over 150 concerned stakeholders who helped shape the conversation and assist in identifying goals, needs and possible solutions. For these we relied upon a variety of oak planning documents that provided a framework for fine tuning our definitions (Guisti and others 2005, Guisti and others 2008).

We also coordinated a series of workshops on the economic elements of oak woodland conservation, inviting three economists (Dr. Kenneth Baerklaau from UC Riverside, Dr. David Sunding from UC Berkeley, Dr. Bowman Cutter from Pomona College) to assist us in identifying possible incentives for oak woodland conservation as well as to develop a formula for calculating oak woodland values, especially ecosystem service values, that would be clear, fair and consistent.

Public stakeholder meetings were held at various locations throughout the county in order to get input on the proposed plan from over 150 community members. It was through these meetings that we were able to hear from local homeowner associations, private landowners and most interestingly, the local landfills. This input allowed us to revise and edit the document to incorporate the ideas for incentives from the public, as well as from the planners and economists. Collectively, over 500 people took the opportunity to help us shape an oak woodland conservation plan that was tailored to the needs of Los Angeles County.

2) Political support

The support of our local county supervisors, Zev Yaroslavsky and Michael Antonovich, was critical to the success of this effort. Without the input and guidance of their field deputies, as well as their direction to county staff to participate in this effort, we would not have been able to integrate this planning effort into the wider county planning process. It was fortuitous that the county General Plan and Climate Action plans were also being developed during the same time frame. This provided a rare opportunity to have the ideas of the oak woodland conservation plan be represented in the larger planning frameworks as well. Finally, it was only through the support of these supervisors that the plan was eventually adopted and county staff directed to develop the implementation tools needed to incorporate the recommendations of the LACOWCMP into county planning processes.

3) Funding

Initial funding was provided by contributions from both supervisors of \$25,000 each. We submitted a grant proposal to the Wildlife Conservation Board in 2008, but due to the grant freeze that occurred at that time, we were not successful in obtaining any additional funding. Thus it was only thanks to the contribution of volunteer time that we were able to complete this effort. Although it would have helped our independent consultants to have additional funding, their tax deductible contributions worth over \$50,000, as well as the county staff time, and our initial \$50,000, was all we had, and so we made it work.

Plan development process

Once we formed the core Alliance planning group, the next challenge was to learn how other counties had approached this effort, to see what might work for us, and to begin articulating our goals and objectives. By inviting a large variety of stakeholders to contribute, the process may have taken a bit longer, but resulted in widespread support from those who felt that their concerns had been heard and addressed. This was particularly important for the Building Industry Association members, who were most concerned that the plan would increase the regulatory burden but who were interested in the possibility of developing a clear road map for developers that would provide more guidance and certainty in the development process.

Identify goals

What do we want oak woodlands to look like in Los Angeles County in 50 years? This question formed the basis of our planning effort. Using consensus based decision-making, the many stakeholders involved in this process were unanimous in agreeing that there should be no further net loss of oak woodland resources in Los Angeles County. A secondary goal was to meet the requirements of all the applicable state laws, particularly the Oak Woodlands Conservation Act (AB 242), so that the county would be eligible for funding to help protect and preserve their oak woodland resources by fee title acquisition. Finally, it was recognized that recovery of degraded or lost woodlands was also an important part of the process for preserving and expanding oak woodlands into the future.

Eventually we determined that the main goal of the LACOWCMP was to articulate a long-term vision for protecting, managing and restoring oak woodlands. Integrating this effort into the concurrent broad scale planning effort provided the opportunity to identify ways to:

- Encourage voluntary conservation of oak woodlands on private property.
- Properly identify the costs to the community when existing oak woodlands are lost to development or conversion to other activities.
- Link mitigation at the project level to the long term conservation plan goals.
- More accurately identify cumulative impacts.
- Attempt to prevent any further loss of oak woodlands in Los Angeles County (no net loss).

From this start, we further refined the plan to include several additional goals:

- Protect existing oak woodland ecosystems.
- Recover degraded or lost oak woodland ecosystems.
- Maintain the benefits provided by oak woodland ecosystems.
- Develop land use regulations and procedures that conserve oak woodland ecosystems.
- Coordinate conservation planning and restoration efforts.
- Comply with the requirements of the California Oak Woodlands Conservation Act.

Establish definitions

The next important step was to agree on the definitions of what constituted an oak woodland, oak stand, and various states of woodland condition (intact, moderately degraded, severely degraded). Given the diversity of 17 oak species and a larger number of community assemblages in Los Angeles County, the definitions had to be

applicable to scrub oaks, as well as scattered valley oak savannah systems. In this effort we relied heavily upon Guisti and others (2005, 2008), the Yolo County Oak Woodland Conservation and Enhancement Plan (2007), as well as input from California Department of Fish and Wildlife staff and documents (CDFG 2007).

We struggled with how to handle the variety of spatial relationships between oak species and woodland types, as well as the complexity of fragmented habitats associated with different stand sizes and integrity. Perhaps the most difficult process was to develop a tool planners could use to consistently map the extent of canopy, and to determine if the property was part of an oak woodland or not. Oak woodlands rarely coincide with property boundaries, but rather extend beyond individual parcels. Since planners are restricted to analyzing a proposed project on a specific parcel, overlaying and examining a landscape level scale can be really challenging. After extensive stakeholder input and discussion, the following definitions were developed (LACOWCMP 2011).

III.1.1 Definition of an oak tree

All native trees of the genus *Quercus* that meet size and location requirements are protected by the Los Angeles County Oak Tree Ordinance. This includes small shrubby oaks typically clustered on slopes, as well as individual large oaks that are naturally widely distributed across the landscape. Under California state law, oaks greater than 12.6 cm (5 inches) diameter at breast height (DBH) are also protected (PRC 21083.4(a)).

III.1.2 Definition of an oak woodland

According to the California Department of Fish and Game (Section 1361), “Oak woodlands” are defined as an oak stand with greater than 10 percent canopy cover, or that may have historically supported greater than 10 percent canopy cover.” Currently the county uses this definition when evaluating planning impacts in most areas (with the exception of within the Local Coastal Plan zone) and this definition is also used for, and by, this OWCMP.

Separately, an oak stand was defined in this document as a group of similar trees growing in a contiguous pattern, having sufficiently diverse age-class distribution, composition and structure, and growing on a site of sufficiently uniform quality that it is distinguishable as a unit. Stands are a basic physical unit of vegetation in the landscape and do not have a set size (Keeler-Wolf and Evans 2006).”

Map historic and existing extent of oak woodlands

With definitions in hand, the next challenge was to map the existing oak woodland resources throughout Los Angeles County, and develop criteria for prioritizing protection, restoration and acquisition. The county extends from the coast to mountains over 3048 m (10,000 ft), and contains representation of all the biomes found in the continental United States within its 12 302 km² (4,750 mile²) boundary. A consequence of this physical diversity is a high biologic diversity of oak alliances and associations.

Determining the historic extent of oak woodlands required examining the original land grant maps (UC Berkeley library) for the county, as well as geo-referencing and digitizing the 1886 Map of Timber and Forests of Los Angeles County (California Department of Forestry Annual Report) and comparing this to the 1935 Wieslander Vegetation Map for Los Angeles County. Although forester A.E. Wieslander did not

complete his goal of mapping all the vegetation throughout the state of California for the U.S. Forest survey, his plot data for Los Angeles provided an important reference point. By mapping 16 ha plots defined on U.S. Geological Survey topographic quadrants and collecting extensive information on the vegetation within those plots, it was possible to return to those locations and compare current conditions.

Existing maps of oak distribution (CALVEG, Gaman and Firman 2006) were broad scale, which made it difficult to definitively create boundaries that accurately included all oak woodlands areas. One of the major limitations of these data sets was that small areas of oak woodlands existing within developed areas might not be included. With that limitation in mind, we developed GIS overlays of the oak vegetation types and added a 61 m (200 ft) buffer around them to include potential oak zones. This was overlaid on the county parcel map data to create a Potential Oak Woodland Conservation Map, which is now available to planners on the county website. Higher resolution versions of these maps were prepared for several high-density oak woodland areas within the county as well. There is still work to be done to refine these maps to incorporate more recent LiDAR data and establish a baseline of oak woodlands coverage throughout the county, but as a start it allows a property owner to identify if their parcel lies within a mapped oak woodland. This is also a helpful tool for planners at the initial study phase of a project to help identify any ecological constraints associated with oaks for a given parcel.

Finally, a mapping exercise completed by Lyle and Safford (1997) examined historic locations of oak woodlands and using a GIS model incorporating soils, slope aspect, elevation and other variables, developed the Oak Woodland Restoration Potential Model. Their maps identify areas within the county that most replicate previous conditions that had supported oak woodlands, and provide a strategy and road map for prioritizing locations for restoring oak woodlands within the developed landscape.

Identify tools for economic valuation of oak woodlands

Developing a cost benefit analysis tool for planners and decision makers was by far the most challenging part of the development of the LACOWCMP. Our goal was to not only identify ecosystem services costs and benefits, but provide guidelines on how to develop a baseline that would provide planners and decision makers with a better understanding cumulative impacts and long term costs. The multiple economic benefits provided by existing oak woodlands would have to be calculated, and then compared to the costs associated with avoided permitting and mitigation costs, building and maintaining necessary infrastructure (storm water conveyance, air and water pollution controls, carbon sequestration, and so forth) of equal value. We hoped that by identifying and quantifying these costs, decisions to preserve and avoid impacts, as well as encourage voluntary conservation would be more easily identified and implemented.

What worked?

The most significant accomplishment of the Alliance was the extensive effort to build a solid, consensus-based planning process that ultimately allowed all participants to support the final plan. Also, by organizing the plan into two sections, we were able to provide a way for our supervisors to successfully adopt the plan. Part I outlined the voluntary conservation efforts that makes the county eligible for Wildlife Conservation Board funding and was enthusiastically embraced by all stakeholders.

The more technical and potentially controversial recommendations to implement oak woodland conservation were included in Part II. Political support was critical, as it was only by direction of the county supervisors that county staff could undertake the administrative and regulatory changes recommended in Part II. It also provided time for the plan to evolve within the planning and public works department so that it could most effectively influence changes.

The second most significant accomplishment of the LACOWCMP was that the goals and objectives were able to influence the vision and goals for county general plan, climate action plan and local coastal plan. Our timing could not have been better!

Last but not least, the LACOWCMP has resulted in the development of guidance documents that are now on the regional planning web page and in process of being made part of the public works internal guidance efforts. By compiling all the relevant information into one document that is now available on the county web site, property owners can learn how to avoid impacts and develop designs that protect their oak woodlands so that they can move more smoothly and swiftly through the development process. Increasing coordination between county departments, transparency, clarifying the goals and processes, and allowing public works to demonstrate the best management practices in their projects are all major steps towards preserving and expanding the oak woodland resource into the future.

Challenges remaining

While we made a significant amount of progress since 2008, there is still much work to be done. We need to update and increase accuracy of oak woodland protected areas maps, and make those maps easily available on the internet, so that landowners can identify the extent of oak woodlands on their properties. There is need for a systematic tracking and reporting of effectiveness that has not yet been fully organized and tested. We need to work with county staff to clarify metrics to be tracked (number of acres preserved, restored, and so forth), funding for the county Oak Mitigation fund, as well as long term monitoring of oak restoration and preservation acres. Working with local partners such as universities and land use consultants, the county could establish a standard protocol for monitoring oak woodland conservation easements, develop and evaluate adaptive management strategies, and identify additional methods to monitor and evaluate the short and long – term success of oak woodland conservation and enhancement projects. Using county GIS information, it should be possible to track changes in oak woodland coverage over time. We also continue to encourage the county to contribute oak woodland data to the Natural Resources Projects Inventory, which is managed by the UC Davis Information Center for the Environment (ICE) and the California Biodiversity Council (CBC). This database tracks restoration project effectiveness throughout the state and could provide a broader perspective to evaluate the effectiveness of the LACOWCMP implementation.

Another challenge is to continue to participate in the development and implementation of the biogenic GHG emissions cap and trade strategies on both the county and state level. The opportunity to preserve and restore oak woodlands through these efforts could be substantial.

We also need to continue to publicize the opportunity and institutionalize the process for documenting voluntary expansion or planting of oak woodlands so that landowners are encouraged to plant oaks or dedicate conservation easements. This is an important element of a larger public outreach effort to encourage long term

stewardship partnerships to recognize and reward landowners who voluntarily conserve and restore their oak woodlands.

Summary

The collaborative effort of many stakeholders from 2008 to 2014 resulted in the development and implementation of the LACOWCMP (Los Angeles County Oak Woodlands Conservation Management Plan 2011), as well as implementation of a revised initial study checklist, standardized mapping of oak canopy extent and outlined strategies for comparing the cost-benefit analysis associated with proposed development/conversion of oak woodlands. It was designed to be a living document, able to accommodate new information and evolve as needed. While much progress was made, several tasks remain to be accomplished in order to protect and preserve oak woodlands in Los Angeles County for the future.

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