

Urban Oaks and Urban Oak Woodlands

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From November 1, 2002 to January 10, 2003, environmental educator John Quigley lived in an ancient oak tree in the rapidly growing northern portion of Los Angeles County. Perhaps you saw him share Thanksgiving with his girlfriend (she brought him dinner in his aerie); his story generated a great deal of media interest. This tree, hundreds of years old, found itself in the way of road expansion — in the great tradition of sprawling development, a two-lane road is to become a four-lane highway. This road “improvement” will accommodate traffic between extensive new residential construction, including the planned, but not yet approved, massive Newhall Ranch development, and a major freeway. Many people, some of whom had never considered themselves “environmentalists,” rallied in support of “Old Glory,” the name Quigley had given to the tree. The developer completing the road expansion had earlier agreed with local conservationists to build the road around the tree, but walked away from the agreement. In the end, Quigley was forcibly removed from the tree (though he remained cooperative and peaceful throughout the removal), and the compromise of relocating the tree and planting a small park of sapling oaks was settled upon by County officials as the solution to the tree-sit crisis, over the protests of Quigley and oak experts. The probability of success from transplantation for a tree this large is vanishingly small; and although the tree may live for a number of years, it will very likely suffer a slow and inexorable decline until its death. As this is written, its roots are being cut to prepare it for boxing and relocation.

The fate of a single valley oak, while important, is primarily only symbolic of the challenges facing the conservation of oaks in California’s urban and urbanizing landscapes. In the decade leading up to the showdown over Old Glory, *over five hundred* mature oaks had been chainsawed within a two-mile radius of this tree, all fallen to the “scorched earth” approach to residential and commercial development in California (that is, the land is always cleared to allow for uniformity, rather than designing development to fit in to the landscape). The threats to urban oaks do not end with construction itself — for those oaks that do survive, disease, poor care, and ignorance lead to decline of vigor and habitat values, and eventually death. This essay illustrates the value of oaks and oak woodlands within urban areas, and discusses the reasons for their decline. As surely as oak conservation requires protection of large swaths of oak woodlands in “the country,” urban oaks and remnant oak woodlands deserve attention and energy to preserve their aesthetic, wildlife, and ecosystem values.

The strong relationships between oaks and wildlife are well established. An oft-cited figure reports 320 species of vertebrates and 5,000 species of insects associated with oak woodlands. But numbers are inadequate to describe the sensory experience of an intact oak woodland — the calls and songs of unseen birds, the rustling of all manner of creatures, from lizards to small mammals, in the underbrush and leaf litter, the dappled light through leaves, the humming and buzzing of insects, the flashes of colored butterflies in a sunbeam. Many oaks are “keystone” species in their natural habitats, meaning that their importance to the ecosystem is far

greater than their numerical proportion in it, just as the keystone in a stone bridge is more important than all other stones. Many other species depend for their survival on oaks, and are lost when oaks are removed. For example, acorn woodpeckers (*Melanerpes formicivorus*) can persist in suburban and urban landscapes if oaks are still available to provide requisite acorns.

Other small vertebrates find habitat and refuge in oak trees, even in urban areas. Salamander species, such as the arboreal salamander (*Aneides lugubris*), live in and under oak trees, while insect-eating bat species may find roosts under loose bark. The dense foliage and associated insect life attract native birds, from foraging bushtits to nesting raptors. Some butterflies lay their eggs only on oaks, such as the rare Santa Monica Mountains hairstreak (*Satyrium auretorum fumosum*), the more common nut brown hairstreak (*Satyrium auretorum spadix*) and the California sister (*Adelpha bredowii californica*), and their larvae will eat only a diet of fresh oak leaves.

From a conservation perspective, oaks also may be considered “umbrella species.” By protecting oaks, other associated species may be protected as well, even if they do not depend directly on oaks for their survival. For example, California’s state butterfly, the California dogface (*Zerene eurydice*), feeds on a single plant species (false indigo, *Amorpha* spp.), which in turn grows in the understory of oak woodlands. If an oak woodland is protected, the butterfly is included under this protective “umbrella.” But this requires the preservation of understory species in addition to oak trees themselves. An oak tree alone is worthy of protection, but less so if it is left surrounded by concrete in a shopping mall parking lot. Meaningful conservation of oak woodlands requires consideration of associated species.

Many members of the public, and elected officials, take comfort in the notion that oaks are already somehow protected. This is largely a myth. Although many local jurisdictions (both cities and counties) have “oak tree ordinances,” and removal of native oak woodland customarily is considered under the California Environmental Quality Act (CEQA), most oak tree ordinances and even CEQA share a series of serious flaws that allow for the net loss and degradation of oak woodland habitat values. The first problem is that very few oak tree ordinances effectively prohibit the destruction of oak trees. More commonly, ordinances allow for oak removal under a substantial list of exceptions. For example, the City of Los Angeles bans the removal of oaks unless they impede the “reasonable” development of a property. In practice, this offers no protection to mature oak trees — the City has never determined that a development is not “reasonable.” While some developments are reduced in scope under pressure from the ordinance, projects are never denied outright to protect oaks.

The second problem leading to long-term degradation of California’s oak woodland habitat values is that various flawed mitigation schemes are accepted by both local ordinances and under CEQA. Local jurisdictions and consultants preparing Environmental Impact Reports perpetuate the myth that mature oaks can be transplanted effectively. Scientific evidence to the contrary abounds. A study of 593 coast live oak trees transplanted to make way for residential development in Orange County showed that 71% of the trees died within seven years. Another study of 25 coast live oak trees relocated for development in Calabasas (Los Angeles County)

showed that after five years, 32% were dead or dying, 44% were in decline, 24% were stable, and none were thriving. A major explanation for this is the root system loss that inevitably accompanies transplantation. As early as a statewide conference in 1993, assembled oak experts from the California Oak Foundation and the University of California Integrated Hardwood Range Management Program agreed that “*oak transplantation should not be considered a form of mitigation for land development impacts on woodlands.*” Nevertheless, transplantation is still accepted and even promoted by local jurisdictions.

Local jurisdictions also allow the removal of mature oaks in exchange for planting some greater number of smaller, sapling oaks. This contributes to the degradation of overall habitat values in three ways. First, the structural complexity of mature oaks will not be achieved by replacement specimens for decades. Second, mitigation plantings are often installed at sites that are not ecologically appropriate or in locations that will not be optimum for long-term viability. Monitoring of such mitigation plantings usually ceases after five years, far before replacement of the habitat values of the removed trees could even hope to be achieved. Third, mitigation plantings never include the associated understory species of an intact oak woodland.

Oaks that are allowed to remain in urban neighborhoods face a number of other threats. Ignorance of landowners, both residential and institutional, about the water needs of oak trees is a primary cause of decline and death. Summer watering can promote oak tree pathogens, in particular the oak root fungus, *Amarillaria mellea*, and other fungi. New property owners with no knowledge of oak ecology may unintentionally kill old trees by installing lawns and sprinklers under a tree’s dripline. Ornamental rhododendrons are commonly planted under oaks, but these may spread sudden oak death, caused by the pathogen *Phytophthora ramorum*. Public education is critical.

Oak woodlands still exist in urban areas, sometimes in unexpected places. They contribute significantly to biological diversity, but are not afforded the priority they deserve in the conservation planning process. They are threatened by relentless urban development — projects reined in only slightly by oak ordinances and environmental review — and remaining trees are degraded by poor tree care, understory removal, and careless landscape practices. These threats can be abated city by city and county by county, but it is time for a statewide program to ensure the viability of California’s oak woodlands.

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