

# Oak Tree Care

Young native oak trees are very tolerant of their environment and make excellent, adaptable, landscape assets. The mature native oak is an invaluable part of our environment but does not tolerate many changes once established. Architects, builders, homeowners, and others should be very careful in fitting their plans with these magnificent giants. Any substantial change in the mature oak's environment can weaken or kill an oak, even a healthy specimen.

A good rule of thumb is to leave the tree's root protection zone (RPZ) undisturbed. This area, which is half again as large as the area from the trunk to the drip line, is the most critical to the oak. Many problems for oaks are initiated by disturbing the roots within this zone.

## **ROOT SYSTEM**

Our native oaks have developed survival adaptations to the long, dry summers. Primary to this survival is the development and characteristics of its root system. When an acorn first sprouts, there is rapid root development and very little growth above ground. This initial root is a taproot extending deep underground for dependable moisture. In fact, the tree's first few years are focused on establishing a deep sustaining root system. Once this has happened, greater foliage and aboveground growth takes place. As the oak grows, the tap root is outgrown by an extensive lateral root system that spreads horizontally out from the trunk to and well beyond the drip line, sometimes as much as 90 feet. For a mature oak, this horizontal root system is the primary supporter of the tree for the rest of its life. It includes the important fine roots, which absorb moisture and nutrients. Most of the root system occurs within the top three feet of soil. In shallower soil, the root system is concentrated in an even shallower zone, typically one to two feet below the surface. As the oak matures, particularly in areas naturally dry in summer, deep-growing vertical roots form off the laterals, usually within ten feet of the trunk. These sinker roots exploit deeper soil moisture and add stability to an increasingly massive tree. By the time a mature oak has established its elaborate root system - so well designed for its environment and particular site conditions - it has lost the vigor of youth. It is less tolerant of change and can less easily recover to support a fully developed living structure. To protect a mature oak, pay particular attention to drainage, and avoid filling, trenching, or paving near its root zone.

## **IRRIGATION**

Native oaks require little or no supplemental irrigation and generally remain healthiest in non-irrigated soils.

## **MULCHING**

Soil and other materials placed on top of the natural soil level, called fill, are usually compacted. They make the soil less permeable, thereby restricting or prohibiting the exchange of gases and movement of water. Excessive moisture trapped by fill can also cause root and crown rot. Because there is no guarantee that fills can be safely added around an oak tree, it is best to avoid tampering with the natural grade, or to leave the natural grade within the root zone alone and use retaining walls.

An optimum treatment below the tree canopy is to place a 4-inch layer of chipped bark mulch over the soil surface. The ideal, and least expensive, chipped bark contains a wide range of particle sizes from sawdust up to 2-3 inch pieces. Less effective, and more expensive, bark mulches have been screened for a uniform size, may come from chipped recycled lumber, or are made from shredded redwood bark, and these are not generally recommended. Do not place more than 4- inches and do not place it immediately against the trunk.

## **LANDSCAPING**

If landscaping beneath your oaks is desired it must be kept to a minimum to prevent a negative impact on tree health. Avoid extensive landscaping, especially turf, herbaceous groundcovers, and annuals or perennial flowers which require heavy irrigation. Select instead plants that tolerate shade and dry soil conditions. Many beautiful native plant species, as well as species from other Mediterranean parts of the world, will thrive under these conditions. Do not plant or irrigate within 10 feet of the trunk under any circumstances. Between 10-feet and the edge of the canopy drip line use plants as accents rather than groundcovers. Drip-irrigate only to get new plants established, and then only periodically through the warmest summer months. An ideal establishment scenario includes installing plants in the late fall and allowing root systems to establish over the winter months. During the first growing season use the drip irrigation system to minimally irrigate, possibly three times per month or less. In subsequent years a monthly irrigation, or less, during the hottest months will keep plants healthy, attractive, and vigorous if they have been carefully selected.

Paving and soil compaction over the root system can be extremely damaging and may cause distress and decline. Decks are an excellent way to create usable outdoor space beneath native trees.

## **FERTILIZATION**

Native oaks seldom require fertilization, especially if they have been mulched. If foliage is mottled, or lacks a deep green coloration, light fertilization with nitrogen fertilizer may be beneficial. Soil testing by a local soil-testing laboratory is the best way to determine soil fertility.

## **PRUNING**

Pruning is not generally necessary on native oaks except to correct structural problems or to remove dead wood. Removal of more than 10% of live foliage at any one time can be harmful to the tree. Excessive pruning or thinning of limbs may expose interior branches to sun damage, may stimulate the tree to produce succulent new growth that is subject to mildew, and in some cases; may cause a decline in vigor or may kill a tree. Only dead, weakened, diseased, or dangerous branches should be removed. Necessary pruning should be done during the winter dormant period. Have oaks pruned by a qualified and certified arborist to maintain their health and structural integrity.

## **SIGNS OF PROBLEMS**

Any of the following symptoms may be indicators of a serious problem.

If you observe any of the following symptoms contact a reputable arborist to determine a course of action:

- Thin or open canopy; sparse foliage; foliage drop
- Mottled, yellow, or small foliage
- Dead or dying branches or foliage
- Dense, short shoots on branches and/or trunk
- Decay or cavities in the trunk or large limbs
- Fungal conks, shelf mushrooms on the trunk or root collar
- Wet, oozing, or slimy patches on the trunk or limbs