



Environmental Horticulture Notes

EHN 74

CALIFORNIA NATIVE PLANTS FOR PLANTING UNDER CENTRAL VALLEY NATIVE OAKS



Quercus kelloggii
California black oak

California native oaks such as the valley oak (*Quercus lobata*), blue oak (*Q. douglasii*), interior live oak (*Q. wislizeni*), and coast live oak (*Q. agrifolia*) are among the most significant natural components of our landscape. Many of our native oaks decline due to the impacts of construction and improper care (Note: construction impacts and mitigation will not be discussed here; see References for literature pertaining to this subject).

Our California native oaks have evolved under the cool, wet winters and hot, dry summers typical of our Mediterranean climate. Through adaptations such as the development of deep sinker roots, these trees are able to survive these conditions.

When California native oaks are incorporated into home or commercial landscapes, the environmental conditions are often changed by irrigation. Soil in the oak root zone (which extends 2-4 times the distance from trunk to branch tips) is often irrigated frequently through the summer to maintain landscape plants which are unable to survive with little or no summer irrigation.

Ideally, the soil in the root zone of the oaks should not be irrigated during the summer although in drought years, one or two summer irrigations may be beneficial. Keeping soil moist during the summer provides ideal conditions for various root pathogens such as *Armillaria mellea* or *Phytophthora* (which cause root rot). In addition, these actions may limit oxygen availability, which decreases the vigor of oak roots and also may predispose them to attack by these plant pathogens. Of particular concern are roots located within ten feet of the trunk; roots that support the tree and sinker roots (that extract water from deep in the soil) are located in this area. Avoid irrigation of soil in this area as these roots are particularly sensitive to root rot.

If plants are desired under the oaks, they should be kept at least ten feet away from the trunk. Only plants that require very little or no irrigation once established should be planted within the root zone of California native oaks. Plant during the fall to take advantage of rainfall for plant establishment. During establishment, irrigation should be limited to the root zone of installed plants. Drip or other micro-emitter systems may be employed. After the first year, irrigations of these plants should be limited to once monthly, or less. A four-to-six-inch coarse organic mulch spread over the oak root zone will benefit oaks and understory plants by conserving water, controlling weeds, moderating soil temperatures, improving soil structure, and reducing compaction.

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REFERENCES

- Brown, L.**, et. Al., 1979. "Oaks on the Home Grounds." Div. Of Ag. Sci., Univ. of Calif Leaflet 2783.
- Caprile, J.** "Guidelines for Landscaping Around Old Oaks." Univ. Calif. Coop. Ext., Contra Costa County Publication
- Caprile, J.** 1988. "Plants Suitable for Use Around Old Oaks in California's Central Valley." University of California Cooperative Extension, Contra Costa County Publication.
- Caprile, J.** "Guidelines for Development Around Old Oaks." Univ. Calif. Coop. Ext., Contra Costa County Publication
- Coate, B.** 1983. "Planting Under Old Oaks." *Fremontia* 11(3): 26-28.
- Hagen, B.** 1990. "Keeping Native California Oaks Healthy." Calif. Dept. For. And Fire Protect., Tree Notes.
- Hagen, B.** "Tree Roots - Major considerations for the Developer." Calif. Dept. For. And Fire Protect., Tree Notes, Number 2.
- Hagen, B.**, et. Al., 1991. "Compatible plants Under and Around Oaks." California Oak Foundation.
- Heritage Oaks Committee**, 1976. Native Oaks, Our Valley Heritage." Sacramento County Office of Education, Sacramento.
- Johnson, S.** "Living Among the Oaks." Univ. Calif. Coop. Ext., Berkeley Publication. (415)642-2360.
- Johnson, S.** (ed.), 1991. "Care of California's Native Oaks." California Oak Foundation Publication.
- Koehler, C.**, 1983. "Protecting Trees When Building on Forested Land." Div. Of Ag. Sci., Univ. of Calif. Leaflet 21334
- Newton, G.**, et. Al., 1990. "Nursery Sources for California Native Plants." Calif. Dept/Conservation Div. Of Mines and Geology, Open File Report 90-04.
- Sandborn, Sherburn**, 1989. "Protecting Trees From Construction Impacts." Calif. Dept. Forest. Fire Prot., Tree Notes, Number 1.



Quercus wislizenii
interior live oak

How to Use This List:

Sketch the area within the oak root zone to be planted. Indicate areas which are shaded all day, shaded during the afternoon and those which receive full sun. choose plants (Small trees, shrubs, etc.) from the list appropriate to the environmental conditions of the area to be planted. For more information on individual species of plants call your local University of California Cooperative Extension office, see a nurseryperson, or read about them (see references)

FULL SUN (south and west exposure)**Low Shrubs**

- Achillea millefolium*, Yarrow – Mow after bloom to remove flower stalks.
- Baccharis pilularis*, Dwarf coyote bush – 'Pigeon Point' or 'Twin Peaks' #2 are the best cultivars for the valley.
- Eriogonum fasciculatum*, California buckwheat – St. Catherine's lace
- Nolina* sp., Nolina - A grass-like accent plant with long narrow leaves.
- Salvia 'Dara's Choice'*, Hybrid sage – Evergreen perennial with purple-blue flowers.
- Salvia sonomensis*, creeping sage – Short-lived, water monthly, needs good drainage.
- Stipa pulchra*, purple needle grass – Native to our local grassland. Summer dormant.
- Zaschneria cana*, island California fuchsia – Fine, silver-gray foliage.
- Zaschneria californica*, California fuchsia – Many cultivars available, red, pink, and white.
- Yucca whipplei*, yucca – Succulent leaved accent plant.

Shrubs

- Adenostoma fasciculatum*, chamise – A low-growing form is available.
- Arctostaphylos manzanita*, manzanita
- Artemisia tridentate*, Basin sagebrush – Needs branches removed with age.
- Ceanothus*, 'Concha' and 'Dark Star' – Dense, dark flowered varieties.
- Ceanothus cuneatus*, buckbrush – White flowers.
- Ceanothus megacarpus*, bigpod buckbrush – Tree type ceanothus which is one of the earliest to bloom.
- Dendromecon rigida* ssp. *harfordii*, bush poppy – Showy, yellow flowers.
- Encelia californica*, encelia – Showy, yellow, daisy-type flowers.
- Ephedra* species, Mormon tea
- Eriogonum arborescens*, Santa Cruz Is. Buckwheat.
- Fallugia paradoxa*, Apache plume – Ornamental fruits.
- Fremontodendron* species and cultivars, fremontia – Large shrubs with golden, saucer-shaped flowers.
- Heteromeles arbutifolia*, toyon – Showy red berries around Christmas time.
- Isomeris arborea*, bladderpod – Yellow flowers year-round. Some object to the odor of the leaves.
- Lupinus albifrons*, silver bush lupine – Short-lived but self seeds.



Quercus douglasii
blue oak

Mahonia nevinii, San Fernando barberry – Spiny leaves, good barrier plant.
Pickeringia Montana, chaparral pea – Purple flowers in spring.
Prunus lyonii, Santa Catalina cherry.
Quercus durata, leather oak
Rhus ovata, sugarbush
Rhus trilobata, squawbush
Romneya coulteri, Matilija Poppy – Large “fried egg” flowers, spreads by underground runners.
Salvia leucophylla, coastal white sage – Summer dormant without irrigation.
Simmondsia chinensis, jojoba.

PARTIAL SHADE (east or north exposure)

Low Shrub/Perennials/Grasses

Ceanothus maritimus, maritime ceanothus – Low shrub.
Elymus glaucus, blue wild rye – Blue-leaved perennial grass. Monthly watering.
Festuca californica, California fescue – Bunch grass. Monthly watering.
Muhlenbergia rigens, deergrass – A large grass up to 6' tall. Monthly watering.
Viguiera deltoidea ssp. parishii – Killed to ground in cold winters.
Whipplea modesta, yerba de selva – Monthly watering.

Shrubs

Artostaphylos pajaroensis, pajaro manzanita – Best manzanita for our area.
Artostaphylos densiflora, Sonoma manzanita – Cultivars 'Harmony,' 'Howard McMinn,' 'Sentinel.'
Artostaphylos rudis, shagbark manzanita.
Carpenteria californica, bush anemone – Summer deciduous if not irrigated.
Ceanothus 'Joyce Coulter' and '*Ray Hartman*,' hybrid ceanothus – Medium blue flowers, good bloomers.
Cercis occidentalis, redbud.
Cercocarpus betuloides ssp. blanchae, mountain mahogany.
Comarostaphylos diversifolia, summer holly – Ornamental red fruits.
Diplacus aurantiacus, sticky monkeyflower – Pinch to encourage new, bushy growth. Water monthly.
Eriogonum umbellatum var. polyanthum, sulfur buckwheat – Useful as loose ground cover of subshrub.
Forestiera neo-mexicana, desert olive – Blue fruits are ornamental.
Garrya elliptica, coast silktassel – Ornamental tassels in winter.
Garrya fremontii, Fremont silktassel – Ornamental tassels in winter.
Mahonia pinnata, California holly grape – Monthly watering.
Prunus ilicifolia, hollyleaf cherry.
Rhamnus californica, California coffeeberry.
Rhamnus crocea, redberry.
Ribes malvaceum, chaparral currant – Summer dormant, winter flowering.
Ribes speciosum, fuchsia-flowered gooseberry – Summer dormant.
Rosa californica, wild rose – invasive if irrigated.
Symphoricarpos rivularis, common snowberry – White fruits on winter deciduous branches.

Vines

Aristolochia californica, Duchman's pipe – Winter deciduous, water monthly.
Vitis californica, California wild grape – Deciduous, autumn red color forms available.
Vitis girdiana, desert grape

FULL SHADE

Ribes Viburnifolium, evergreen currant – Best shrub for dry shade.
Dudleya sp., live-forever – Can be used as sparse ground cover. Gray colored.
Heuchera maxima, giant alum root
Monardella sp., deer mint, pennyroyal
Salvia spathacea, hummingbird sage – Large maroon and red flowers, water monthly.
Sisyrinchium bellum, blue-eyed grass – Summer dormant without summer water.
Mahonia aquifolium, Oregon grape – Monthly watering.



Quercus lobata
valley oak