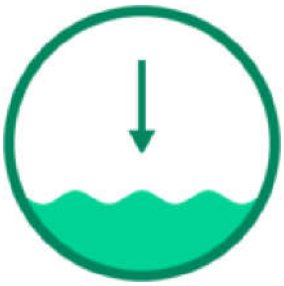
PLANTS

A resilient landscape is fire-wise, water wise and promotes biodiversity by using California native plants. These gardens use sustainable practices, plant selection, and maintenance to reduce the risk of fire in the defensible space zone. Resilient gardens save water, protect us from fire and promote biodiversity.

Water and Irrigation



Plants vary tremendously in their need for water, both in the amount of water and its timing throughout the year. Even California native plants have different needs, based on the distinct region in which they have evolved. There are many California natives that are well suited to your garden, that generally will have lower water needs than many popular non-native plants. You may search for your address in Calscape to find a list of plants native to your area, and are therefore likely to be well adapted.

Hydration

Before talking about irrigation (providing water for plants), let's ask ourselves what we can do to support hydration, the maintenance of healthy water levels in the plant. Many plants will require some irrigation, especially as they're becoming established, but there are many things we can do to minimize the need to irrigate. Remember that what's important is soil moisture at the root level. The soil surface may be dry even if the roots are properly moist. Check with your fingers or a moisture meter.

Water Conservation

1. Start with plants well adapted to your climate and site.

2. Mulches cover and shade the soil and reduce the loss of moisture to evaporation. Inorganic mulches such as
the soil and are appropriate in areas immediately adjacent to the house to protect from fire. However, in the s
the soil to heat up which may impact beneficial microorganisms. Where Defensible Space guidelines allow, a
wood chip mulch will keep the soil cool, conserve moisture, and increase organic matter in the soil, which acts
Review the section on mulches since wood chips are not appropriate everywhere in the firewise landscape.

3. Organic matter in the soil, which can be increased by additions of compost and the natural breakdown of lea
chips, will act as a sponge and store water for later use by plants. A specialized form of charcoal called biocha
burning woody waste generated by sustainable forest management practices. This material, typically mixed w
increases soil health and conserves soil nutrients and water. Learn more here.

4. Special landscape features can be created to match the needs of the plants . Creating a mound, or berm of so
drainage on the top and sides. At the base of the mound, more rainwater or irrigation water will accumulate.
depression in the soil (a "rain garden" or swale) can be created to hold rainwater and allow it to percolate into
retention basins may allow a moister environment for plants that prefer it.

photo by Jon Kanagy

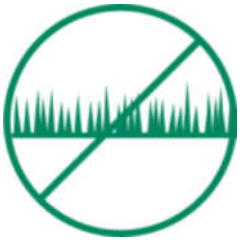
5. It may be possible to direct stormwater from your roof or other hard surfaces into one or more retention basi landscape. Similarly, it may be possible to collect rainwater in barrels or tanks for summertime irrigation use.

Rain garden, design and photo by April Owens

Rainwater tank at Sonoma Garden Park, photo by Jor

6. Many municipalities are supportive of greywater use in the landscape, particularly the wastewater from the cl
Check the resources at Daily Acts, and the requirements of your local municipality.

Turf Replacement



Turf grass is one of the most water-intensive plants in your landscape. By replacing your lawn with a native plant landscape, you could save on your water bill, maintenance costs, and show that you care about conserving water. Many cities in Sonoma County offer rebate programs for lawn replacement. Find more information at the Sonoma-Marin Saving Water Partnership.

Irrigation

New plants are best planted in the fall when temperatures are cooler and young plants can use

the coming rains to get their roots established. They'll be much better able to thrive during the coming summer months, but will still need supplemental irrigation to stay well hydrated, and so a minimal fire threat.. The water needs of newly planted native plants will depend on many things, among them: the plant species, what season was it planted (fall, winter, spring, summer), and the type of soil (clay vs. sandy loam, how much organic matter). As the plant becomes more established over a period of 2-3 years, both the interval between watering and the length of time of watering can be increased.

When and how much to water

Native plants are adapted to a climate of winter rain and a dry summer. Many California natives will succumb to disease if overwatered. Do not water in the summer if the soil is already moist at root level. An inexpensive soil moisture meter can tell you the soil moisture up to 10" deep.

Soil moisture meter

When summer irrigation is needed, water infrequently but deeply. Newly planted natives will likely require irrigations of about 1 gallon of water per plant once or twice weekly during the first summer if planted from a 1 gallon container. In the second summer, 2 gallons per plant twice per month may be a good goal. For many established natives after two years of growing in their garden site, an interval between deep watering of 2-4 weeks is appropriate. Deep watering allows penetration of moisture to around 6-12" of depth. Sometimes, winter rainfall needs to be supplemented with some irrigation if the winter is particularly dry. This will allow the California native to survive the long, dry season ahead.

Soil Conditions

Clay soils have little air space between soil particles. Water that is applied will spread laterally in the soil, and be held longer. Water that is supplied too quickly, as from a garden hose, may run off the surface before penetrating. Sandy soils, on the other hand, have much larger spaces between particles, and water will quickly penetrate without much lateral spread. Sandy soils

will also dry more quickly. Generally speaking, sandier soils will need emitters placed more closely to the plant (about 4" from the stem), and will require shorter but more frequent watering.

How to Water

Grouping plants together that have similar water needs on a separate irrigation valve is called "hydrozoning", and will make irrigation much easier. You can check the relative water needs by searching the Water Use Classification of Landscape Species (WUCOLS) database.

Each irrigation system has its advantages and disadvantages.

- Using a hose can be very effective and enjoyable, although in heavier soils the water may run off the surface without penetrating into the root zone. Pulling a hose through the landscape can damage plants, and the system is difficult to automate.
- Drip irrigation is highly efficient, placing the water at distinct locations around the plant. Runoff, evaporation, and weed growth are minimized, but it does restrict the plant to growing roots only where the drip emitters supply water. Although the system is generally reliable, it is difficult to know when a problem develops.
- Micro irrigation uses the same low pressure water lines as a drip system, but has small sprinklers that spray water over a limited area. Some evaporative loss will occur, and the spray pattern is easily disrupted by wind, or the plant itself as it grows into the area of the spray pattern. Many plants do appreciate an occasional overhead sprinkling to wash off dust and help hydrate leaves. Micro irrigation and drip systems are easily automated with timers.

photo by Jon Kanagy

- Sprinkler irrigation. Conventional high pressure sprinklers have the advantage of uniformly wetting the soil, but often waste lots of water to evaporation and overspray onto impermeable surfaces. Since all of the soil surface is watered, weeds are given lots of opportunity to grow. This is generally the least preferred system.

Smart Irrigation Systems

Weather-based irrigation controllers allow for accurate, customized irrigation by automatically adjusting the schedule and amount of water in response to changing weather conditions. Similarly, a soil moisture sensor measures soil moisture content in the active root zone on your property and will adjust irrigation amounts accordingly.

/e appreciate the contributors to this section:

alifornia Flora Nursery

alscape.org

ources:

C Master Gardener Program of Sonoma County, California Natives

arin Chapter, California Native Plant Society Plant Replacement List

alifornia Flora Nursery

alscape, a native plant database from the California Native Plant Society

SONOMA ECOLOGY CENTER

Sonoma Ecology Center works to address challenges related to water supply and quality, open space, rural character, biodiversity, energy, climate change, and a better quality of life for all residents.

https://sonomaecologycenter.org/

The UC Master Gardener Program of Sonoma County has been extending educational outreach and providing technical assistance to home gardeners since 1981.

https://sonomamg.ucanr.edu/

The mission of the Habitat Corridor Project is to create and promote California native plant restoration gardens in the urban environment.

http://habitatcorridorproject.org/

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