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California's climate includes long dry summers and the periodic failure of winter rains – water is a precious and often scarce resource. And, with projected population growth, it is estimated that by 2020 the state will face annual water shortages, even during years of regular rainfall.

Yet irrigation of residential landscape accounts for more than one-fourth of all urban water use. What's more, much of this water is used in excess or at the wrong time of year: residential properties are regularly over-watered by 30-40%.

Water-wise landscaping is, however, more than just controlling irrigation and planting xeriscapes to reduce your clients' water bills. Water-wise landscaping also means increasing the water holding capacity of the soil, fostering healthier plants that thrive with less water and planning for the use of alternatives to potable water such as graywater, and recycled or captured stormwater. The professional landscaper can offer the following critical expertise in conserving water:

1. Create drought resistant soils with compost & mulch

Description

A robust, living soil, with sufficient organic content, is the foundation of a water conserving landscape: 1 cubic foot of soil holds roughly 1.5 quarts of water for each 1% of organic matter. The amount of irrigation water required for a healthy landscape thus varies significantly with soil quality.

Applications

- Know the soil texture.
- Incorporate 2-4 inches of compost into the top 6-12 inches of soil.
- Topdress with compost around shrubs and trees, and on turf.
- Regularly apply mulch to all exposed surfaces to encourage living soils and reduce evaporation.
- For additional practices see *Nurture the Soil* in these guidelines.
- Finally, consider applying high quality mycorrhizal innoculants, available as root dips, mixes, tablets and solutions.

Benefits

Compost can increase permeability and water-holding capacity, thereby reducing the need for irrigation and lowering water bills.

It is estimated that overwatering causes 85% of all landscape problems.

SOURCE: *A CONSUMER'S GUIDE TO WATER CONSERVATION*, AMERICAN WATER WORKS ASSOCIATION

2. Grow California natives or Mediterranean plants

Description

California native plants have evolved with local ecosystem and adapted to our soils, wildlife and climate – including no rain for 6 months of the year. Many natives, as well as many Mediterranean species, tolerate dry summers without watering once they are established.

Applications

- Keep in mind that California's climate and soil can vary significantly, as can native plant species. Not every native is drought tolerant: some, like *Salix* spp. (Willows) and *Populus fremontii* (Cottonwood), need moist soil. Select the native species that match the site soil and microclimate and if possible, choose local ecotypes.
- Or select plants from Mediterranean climates that also thrive with little irrigation.
- Plant in fall so the plants can establish their root system during the rainy season and require less water their first dry season.
- Water drought tolerant species for their first one or two summers, until they are established.
- Minimize high water use ornamentals.

Benefits

Appropriately sited native or Mediterranean type plants often require less soil preparation, watering, mowing, fertilizing and spraying, which can reduce your operating costs. CA native species are relatively easy and inexpensive to implement on a trial basis. Using local natives reduces the risk of spreading non-local plant species.

PHOTO: MICHAEL THILGEN
FOUR DIMENSION LANDSCAPE CO.

Landscaping with natives and Mediterranean plants require little or no irrigation once established and provide a sense of the seasons.

3. Minimize the lawn

Description

Lawns are useful for recreation or places where family members and employees can relax. But turf requires frequent watering to stay green during our long dry season.

Applications

- Recommend to your clients that they replace decorative lawns with water conserving California native groundcovers or perennial grasses, shrubs and trees.
- If lawns are desired, plant small, practical lawns. For residential clients, perhaps the lawn can be limited to the backyard where it is more likely to be used for play and relaxation.
- Avoid planting turf on slopes, narrow strips or on irregular shapes.
- Where appropriate, specify grasses that can go summer dormant and require minimal mowing. Visit California Native Grasslands Association website at www.cnga.org.

Benefits

Water and energy can be conserved. For example, reducing a 1,000 square foot lawn that gets 1 inch of water per week to 500 square feet can save approximately 10,000 gallons of water per dry season. Your clients' water bills and your labor for mowing may also be reduced. Chemical use may be decreased and water quality protected.

4. Implement hydrozoning - group plants by water needs

Description

Different plants have different water requirements. Dividing the landscape into low, medium and high water use zones prevents over-watering.

Applications

- Group plants by water needs (including container plants, which will shade each other).
- Place thirstier plants in relatively small, highly visible areas and if possible, in spots that naturally collect water.
- Plant a large perimeter area with drought adapted species.
- Plan to discontinue irrigating those California natives that do not tolerate water in the summer after they are established – and be sure to separate them from plants that will need ongoing irrigation.
- Create irrigation zones based on the plants' water requirements and their exposure.
- Install separate irrigation valves for different zones (e.g. sunny vs shady areas or heavy vs light soils).

Benefits

Water use can be more easily matched to the plant requirements. This fosters resistance to pests as well as conserves water. Plant mortality is reduced, saving time and money.

5. Design for on-site rainwater collection and recycled or graywater use

Description

Rainwater can be channeled through gutters and downspouts to a storage unit. During a 1-inch rain, 625 gallons of water can be collected from 1,000 square feet of roof. Stored water can then be used for irrigation.

Recycled water refers to treated wastewater of a quality suitable for landscape irrigation but not human consumption. It is becoming increasingly common in California. Graywater is wastewater from sinks, showers, bathtubs and washing machines that is not contaminated by human waste. Not suitable for drinking, it is an intelligient resource when used for subsurface irrigation of the roots of trees and shrubs.

Applications

- Encourage the building architect, if possible, to channel rainwater from the roof to tanks or ponds or to pre-plumb for graywater conversion.
- Conserve rainfall by carefully constructing swales or ponds.
- Another option is to dig trenches 18 inches deep, layer in woody debris, then backfill with all the soil. Many plants will grow well on these buried wood swales, which hold a large amount of water as the wood decomposes.
- Design, install and operate recycled water irrigation systems (dual distribution systems) to allow for the current and future use of recycled water.
- Learn to use recycled water appropriately: poor drainage and incorrect watering can cause problems, just as is true for non-recycled water.
- Check with local building code for graywater policies and requirements.
- Use graywater for subsurface irrigation only. Educate your clients to use biodegradable soaps.

Benefits

The use of treated, drinkable water to irrigate lawns and gardens can be reduced. Groundwater is recharged.

PHOTOS: THE MUNICIPAL WATER DISTRICT OF ORANGE COUNTY, *LANDSCAPE MANAGEMENT FOR WATER SAVINGS* BY TOM ASH

Landscape before and after an upgrade that reduced lawn size, increased diversity, improved property values, cut water bills by 50% and reduced maintenance costs by 20%.