

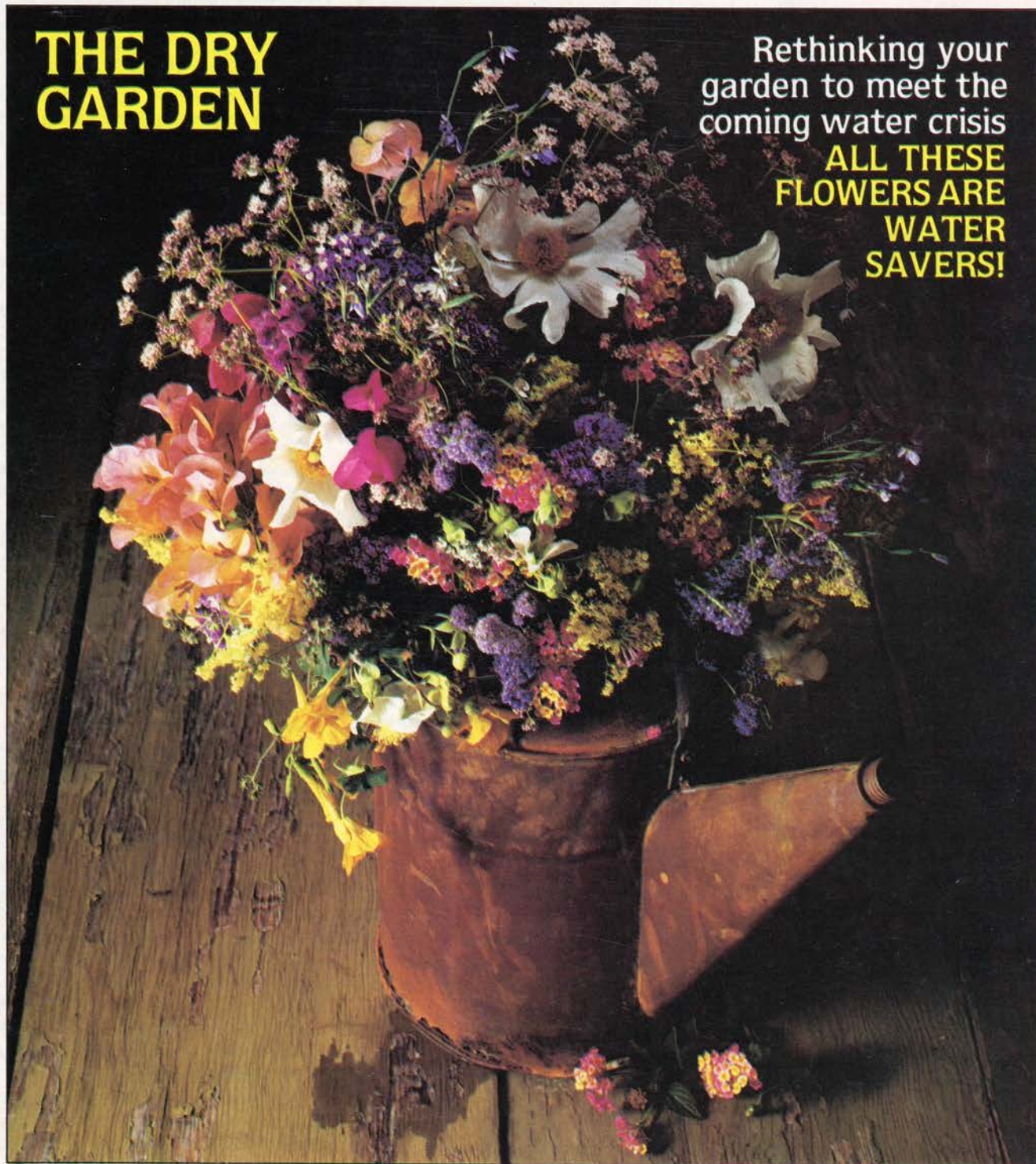
SAN DIEGO

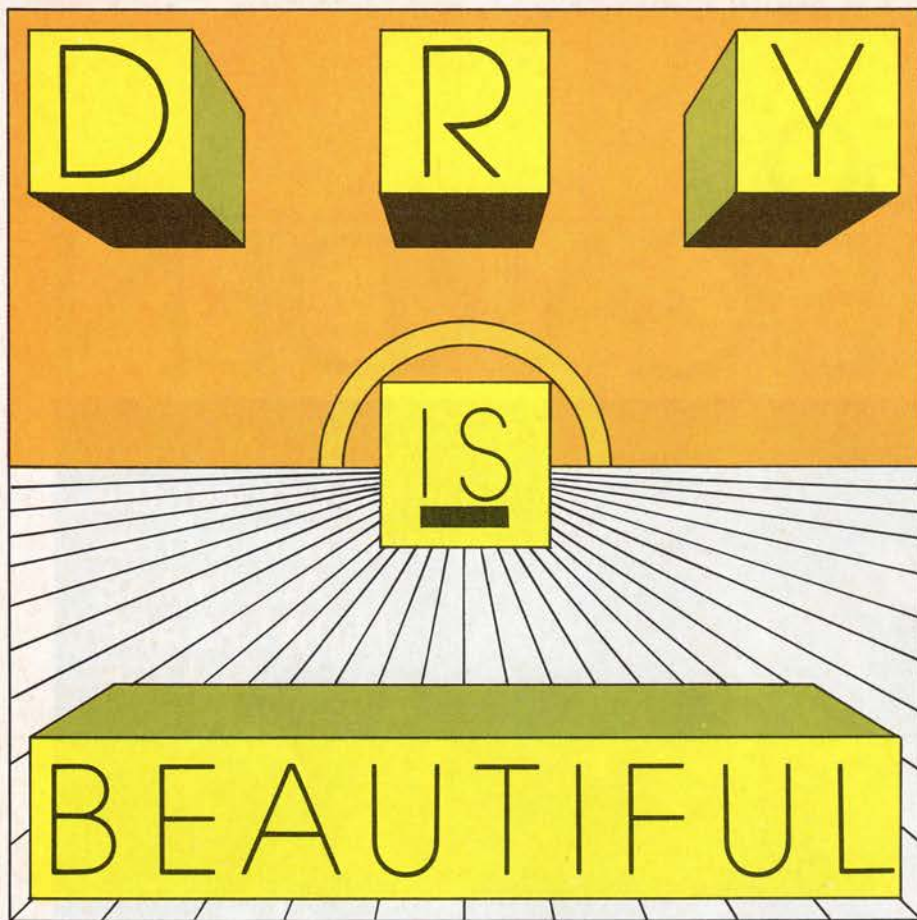
# HOME/GARDEN

## THE DRY GARDEN

Rethinking your garden to meet the coming water crisis

**ALL THESE  
FLOWERS ARE  
WATER  
SAVERS!**





**Can "dry" mean "beautiful"?** Anyone who has fallen in love with the West knows that it can. Perhaps you've had the experience of driving back and forth across America. The further east one goes the greener and more luxuriant the landscape becomes, until at last one reaches the rolling hills of the Eastern states covered with deciduous forests redolent of fallen leaves and frequent rain. It's so inviting.

Yet, one only has to drive home again to see the West with new eyes. Mountains rising abruptly from the plains, deserts, buttes and at last the low hills of the coastal range covered with golden grass and studded with live oaks. The dry West is open, vast and cheerful.

#### **Lush look with little water**

As in nature, so also in garden design. To the trained eye, a dry landscape can be just as lovely, perhaps more so, than one that depends on constant irrigation to maintain a verdant look. Besides, many plants that survive with very little water nevertheless stay green and remarkably lush-looking year round. Many of them are resistant to disease and pests. Not only rising water rates and fear of drought, but also busy schedules and a taste for the natural things in life are prompting an ever-increasing number of homeowners to plant their gardens with

This year could be your last to plant an unthirsty garden. Here is the ultimate background story on how to go dry... and love it!

BY PATRICIA WELSH  
PHOTOGRAPHS BY BILL ROSS

low-maintenance, drought-resistant plants.

#### **Changing styles**

In some ways it's a return to an earlier style of California gardening. The gardens of the Spanish haciendas and the missions utilized many native, drought-resistant and herbal plants in combination with walls, paths, rockery and even sea shells to create a pleasant atmosphere with a minimum of irrigation. Not until the early 20th century when abundant and inexpensive irrigation water coincided with the advent of the rubber hose did garden styles change.

The change was gradual. Southern California gardens of the '20s and '30s achieved a colorful "period look"

through concentration on such water-saving plants as bougainvillea, lantana, geranium, oleander, bird of paradise, aloes, agave, acacias, cup of gold, morning glory, wisteria and bulbs such as freesia, tritonia and naked ladies. Favorite trees were eucalyptus, tea trees (*Leptospermum laevigatum*), olives, pepper trees and undemanding palms. Citrus fruit trees were grown instead of deciduous fruit trees which use more water.

The '40s, '50s and '60s saw the rising popularity of the all-green Eastern and tropical jungle garden styles which were highly dependent on constant irrigation. During the 1970s, the importance of water conservation again became apparent and now in the '80s gardeners are faced with the need to change their thinking and habits when growing drought-resistant plants.

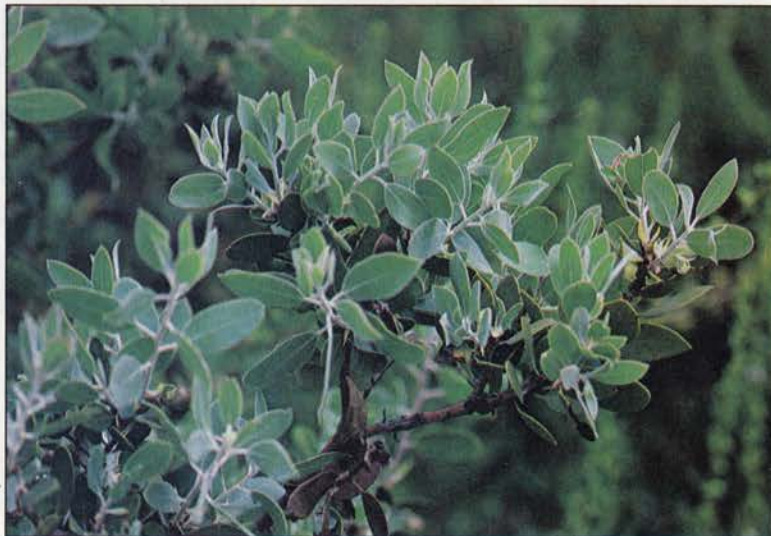
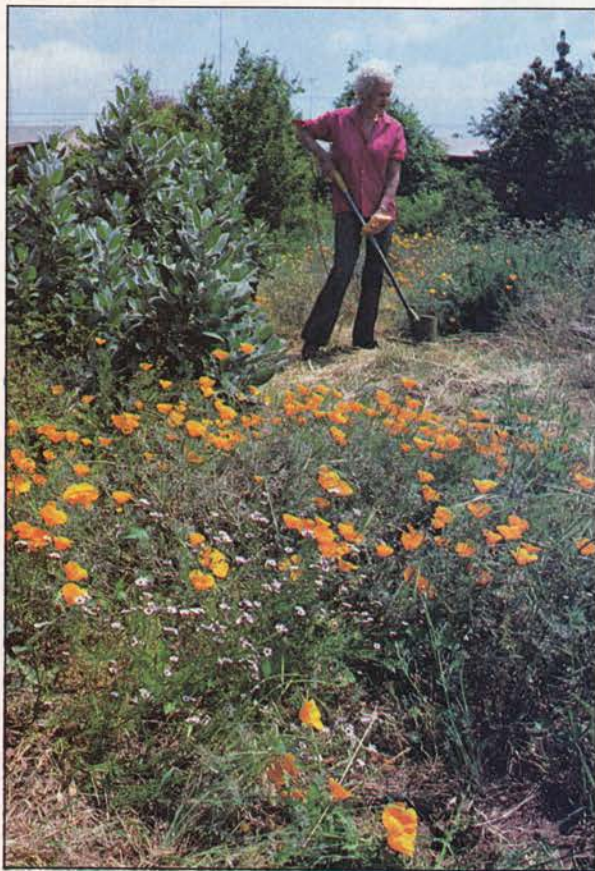
#### **Various requirements**

Frederick Lang, Laguna Beach landscape architect and native-plant expert who specializes in drought-resistant designs, says "drought-resistant plants are like thirst-resistant people. They've learned how to do without water because of the area in which they live. You have to deal with soils in which plants are planted and with the degree of drought resistance of various plants. There are categories. For example, native chaparral plants like gravel and rock and prefer little or no water during the summer months. Mediterranean plants like a larger range of soils though their needs are similar. South African and Australian plants can take some clay soils and some summer water, depending on the area the plants come from."

#### **Some need no water at all**

"Then there are some natural effects that don't like water at all. For instance, I just did a charming garden using a lot of lichens for a lady who lives up north near the sea. And she said, 'but there's no way to water.' We used all kinds of deep-rooting ground covers and we brought in rocks covered with colorful lichens which are a combination of fungi and algae living in symbiosis together in a way that's not fully understood. But one thing we do know is they don't like chlorinated water. Chlorine releases the fungi. Now she wants to water, but if she does the lichen will be killed."

"In another case, I gave a landscape as a gift to the Laguna School of Art and they spent \$13,500 on a sprinkler system. The students knocked the sprinklers down. Now the gardeners can't water and they're very upset. They

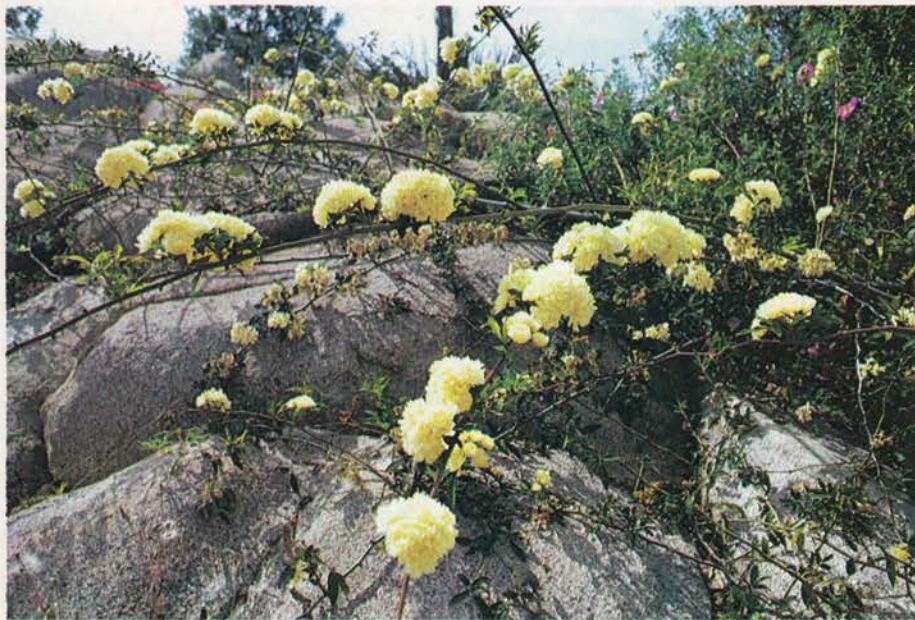


#### NATIVE GARDEN ABOVE MISSION VALLEY

Helen Chamlee's San Diego canyon garden is well known amongst native plant purists. In April, it's filled with bright poppies and gilia (top) and the frosty green of new growth on manzanita (above). She seldom waters, often weeds—but that's easy with a power string-trimmer. For the most part, her garden is naturalized—no formal plan

## A LA JOLLA HILLSIDE

Ed Karig's lot burned just two years ago. Today it bursts with unthirsty ice-plant color, purple ceanothus (behind), and a California classic: fremontia (right). This shrub grows to 12 feet or more, needs only sparse summer water



## RANCHO BERNARDO

Boulders on site were relocated, creating rocky niches for drought-tolerant plants. Lady Banks' rose (above) is sprawling, almost thornless. Design: Roger DeWeese & Associates



think it doesn't look right. But to me it looks beautiful."

### Drought evaders

What actually does look beautiful? Many people are changing their ideas. As always during such times, it's a creative era, a period of questioning and re-evaluation. "I'm not even happy with the term 'drought-resistant'" says San Diego Farm Advisor Jim Breece. "Do we mean plants that will go through an actual drought, that is, two years in a row with a third less rainfall than usual, or do we mean plants that will survive perfectly normal conditions in Southern California: our wet winters and dry summers? Some plants such as ocotillos or Cleveland sage are drought evaders, that is, they drop their leaves in dry weather, pull in their horns and survive. (Don't expect them to look like much while they're doing it.)"

### Water spenders and drought avoiders

"Other plants such as certain types of eucalyptus, *E. globulus* for example, are supposed to be water savers but they're actually water spenders. Their roots go down to where the water is and they'll take all they can get. Then there are the drought avoiders, like sand verbena. They throw out their seeds, but until a certain amount of water goes past that seed it simply refuses to germinate. Sometimes I think about the only truly drought-resistant plants I know are succulents and cactus."

### Mix and match

Cactus from the New World and other succulents such as the cactus-like euphorbias from Africa are among nature's best answers to desert conditions, but only a few gardeners want to specialize in these plants. A great number of other plants, by whatever name one calls them, can be mixed into a landscape that needs very little irrigation. Along with the old-time California favorites already mentioned are such easy and non-thirsty plants as the lavender-flowered statice *Limonium perezii*, a native of the Canary Islands that has escaped from gardens and naturalized on cliffs near the sea from Oceanside to the Mexican border.

*Euphorbia rigida* is an attractive yellow-flowered African plant that does well mixed with native plants under Torrey pines. The Mediterranean cistus, or rock rose, flowers profusely in spring and is fire-resistant, making it a good choice for foothill planting. (Doris Hibberson is a good pink variety. Cistus also



## START TO PLANT THIS YEAR

Is now the last chance for San Diego gardeners to put in a drought-resistant garden? Landscape architect Roger DeWeese of Sorrento Valley, a former associate of Fred Lang (see text) thinks perhaps it is.

"I think there's going to be a really serious water problem in the next two or three years," he says. (See "How to Prepare for our Coming Water Shortage" *SDH/G*: July 1980, page 81.) "It may be that water will become too expensive for many people to afford. But plant this year and your timing is perfect. Within two or three years when the water shortage really hits, as anticipated, then you can leave your plants and they will survive. All drought-tolerant plants need water to get established for the first year or two. Train them to get their roots down, then you can take it away."

"Luckily," he continues, "there's an amazing increase in the number of nurseries that specialize in drought-tolerant plants. Most are wholesale, but some are retail. Previously this was the missing link. We just couldn't get the plants we wanted. Now we can."

comes in white, lilac and purple.) *Kniphofia* or red-hot poker needs little water and makes a fine accent plant particularly, against the billowy green background of the drought-resistant native coyote bush (*Baccharis pilularis*).

### Palms, pines and flowering trees

A number of palms such as the Mexican and the Mediterranean fan palms can survive with little or no water. Among pines, the Aleppo pine is outstanding for desert or seaside use. The cultivar, 'Mondale' (*Pinus elderica*), an offshoot of Aleppo, is hardier and even more drought-resistant. It's dark green and grows up to 40 or 80 feet high in a natural Christmas tree shape, in contrast to the Aleppo that has a head like a cumulus cloud. Flowering trees include the pink-flowered silk tree (*Albizia julibrissin*) and the Chinese fringe tree (*Koelreuteria paniculata*).

### Ground covers

Plants such as capeweed, gazanias, prostrate rosemary as well as ice plants from South Africa can be used to cover the ground. And don't forget *Eucalyptus rhodantha*—a sprawling shrub to cover a



### SPRING COLOR IN POWAY

"Queen of California wildflowers," Matilija poppy's crepe-paper-like flowers are 6 inches across. Stems rise to height of 3 to 5 feet or more. You must prune almost to ground in winter. Mr. and Mrs. Hal Nourse's natural slope supports *echium fastuosum*, normally thought of as a coastal plant. Note fremontia (left of *echium*) past peak bloom

dry informal bank, it has huge flowers as big as tea cups almost year 'round. Unfortunately it's rare, but well worth hunting for. Try plant sales at the Los Angeles Arboretum. Seed is available through Clyde Robbins Seed Company, P.O. Box 2855, Castro Valley, CA 94546. The seed sprouts easily, but wait until February or March to plant it or you'll get weak plants.

These suggestions merely scratch the surface. For other ideas, consult the list of drought-resistant plants in *Sunset New Western Garden Book*.

### California natives

California native plants alone can be used to create an entire garden and can provide more than enough material for a lifetime of study. They are so unique that out of Jepson's list of 4,000 varieties, over 1,400 are found nowhere else in the world. Furthermore, due to our many climate zones and soil types, many of these plants are native only to a small locality. An example is the sea dahlia (*Coreopsis maritima*) whose yellow heads wave in the breeze at Torrey Pines Park every spring. It's found in the wild only on the bluffs above the sea from Oceanside south into northern Baja California and on San Martin and Coronado Islands.

### The queen of California natives

Another choice native, the Matilija poppy (*Romneya coulteri*), is considered by Europeans to be the finest flowering plant ever to have come out of California. It has attractive gray-green foliage and large floppy white flowers that look as though they were made of silk crepe with yellow pompom centers. It needs perfect drainage and plenty of room, and does well on dry banks, but in England it's used widely at the back of large flower



### DON'T EXPECT THEM TO LOOK GORGEOUS IN THE NURSERY CAN

Many drought-resistant materials don't look good in the nursery container and the public isn't used to that. "My plants look like nothing in the can," says Barbara Weber, owner of Weber Nursery, a wholesale dealer of drought-resistant plants. "I hate having to make excuses for them, but there's just no way around it. But put them out in the ground and what a difference! They green up right away."

beds. Plant or transplant divisions in November. (Find it at Nelson's Pine Patch in Chula Vista and other nurseries specializing in native and drought-resistant plants.)

Ceanothus or California lilac is a close second in popularity in English gardens and deserves much wider cultivation here in San Diego County, where it grows wild all over the hillsides. There are many varieties available. A much rarer plant is woolly blue curls (*Trichostema lanatum*), one of the most striking members of the mint family. Because of its long bloom season, and remarkable drought tolerance, it's one of the most popular garden plants among native plant growers. (Also available at Nelson's.)

### Some need water

Not all native plants are drought-resistant, even those that sometimes need some supplementary water during the summer months, depending on the individual plant and the soil. Most native plants do not take well to overhead watering, and if any irrigation is to be done, the trickle-drip system is best. Helen Chamlee, education associate of the San Diego Museum of Natural History and a fellow of the California Native Plant Society, has a home garden planted totally with native plants that in springtime resembles the Garden of Eden.

"I water some things once a month," she says, "because they have no soil in which to put down their roots. It's thick hardpan with cobblestones."

### Supplying the rain

"People who have good soil can water less or in some cases not at all. Some plants need water every six weeks or once a month. There are other plants which will persist without anything but natural rainfall. There's another factor to consider, too. Most gardeners come from areas where there's a great deal of natural rainfall. Here we have to supply the rain. It's fine out on the hills to have plants looking brown and neglected, but we don't want our home gardens to look like those hills."

### Some hate water in summer

"Of course, some native plants will not adapt to summer watering. Some of our choicest plants fall prey to root rot and water molds which are encouraged by warmth and moisture. In nature they get plenty of heat in summer, but it's not mixed with moisture. Fremontodendrons (flannel bushes) are an example. I've lost a lot of them because there's not enough soil to hold them through the dry



### DEL MAR

The Thomas McCarthys' yard has formal look, needs little water. Big Torrey pine drips dew. Catalina ironwood at right edge of photo. Design: John Hatch

### POWAY

Dry streambed, *acacia redolens* (far left in photo) keep Dr. Bruce Tarzy's water bill low. Design: John Hatch





summer, but if I water them they get root rot. Now at Rancho Santa Ana Botanic Garden, the soil is porous. They water in summer and they still have a fremontodendron that was planted in the '50s. It's as big as a tree."

### Some adapt well

"Live oaks do well in cultivation if you start them out that way. Plant them when they're small and water them and they'll grow from youth on up adapted to garden conditions. But plant a garden under a live oak that's been growing in the wild, start watering under it and you'll kill it. On the other hand, some native plants take to garden conditions extremely well. Torrey pines, toyons, lemonade berry (*Rbus integrifolia*), and wild cherries adapt magnificently. Wild cherries are so green and leafy people say 'why, that can't be a wild plant!' When we look at plants that grew up in the wild we have to remember they got their roots way down from the very beginning, but the ones we put in our garden grew up in a tin can. That's why we have to give some supplementary water, but it's a lot less than with a lawn surrounded by thirsty plants."

### Water to get established

Many drought-resistant plants from other parts of the world need water for the first year or two to get established. Pride of Madeira (*Echium fastuosum*) is a good example. Once established along the coast, it can survive and bloom dramatically without attention. Inland it will always need occasional summer watering. At the San Diego Wild Animal Park, which specializes in drought-resistant plant material, though other types of plants are also grown, some areas receive little or no water during the summer, but the areas that look best to the eyes of most gardeners are irrigated



### NORMAL HEIGHTS

Tree mallow (top left) grows to 15 feet. Owner Richard Miller tends it at left. Miller's front garden—all natives—is about two years old.

Cactus, above, is most obvious dry garden performer: the surprise is that it's great for color. Owner: Ruth Dietz

## DROUGHT-RESISTANT PLANTS

on a regular schedule, not only in the summer but also in the winter when rains aren't adequate. Part of the reason is the soil, which is fast-draining decomposed granite.

Bill Nelson, owner of Nelson's Pine Patch and a specialist in drought-resistant and native plants, says it's a great mistake to stick a plant in the ground and think it can survive. "The surrounding soil will suck a container dry," he says "so water 4 times the first week and 2 or 3 times a week for a week or two thereafter. All container-grown plants have to be helped over the hump of getting their roots out and growing in the ground."

### **Plant with care**

"Be careful when planting," he says. "Don't pull plants from cans, especially native plants. Cut the can and lift the roots out carefully. With plastic containers, knock on the side, turn it upside down, and the plant will slide out. Make sure you get a plant with a good root system, not one with the roots wound round and round. If in doubt, ask the nurseryman to slide the plant out of the container and let you take a look."

### **Use good design**

When planting natives or any drought-resistant plants, it's important to work out a good garden scheme with plants grouped and arranged according to their needs. By using plants from many parts of the world, color and greenery can be achieved year round. For the greatest success, try to simulate nature. "In a natural terrain, not all areas are equally dry," says Fred Lang. "You have slopes that are completely dry, some that are somewhat dry and river bottoms where plants can go down and find plenty of water year round."

### **Provide a natural environment**

One way to simulate nature is to change the contour of a flat lot to a terrain of rolling berms. Winding paths, dry riverbeds, gravel, ornamental rocks, pebbles, dry walls, raised beds and steps can create a charming appearance and also help create a habitat in which your plants can settle down and live happily. A layer of mulch will help to keep moisture in the ground as well as satisfying the eye of gardeners who don't like the look of bare earth.

### **Improve the soil**

Soil improvement and the development of good drainage will mean more than any other factor to the survival of your

plants. Prepare the ground well, adding plenty of composted humus or nitrolized soil amendment. Though some drought-resistant plants can take clay soils, most prefer fast-draining soils such as gravelly and sandy soils, decomposed granite and river silt.

### **Provide good drainage**

What can be done if you can't provide it? You can make sure that the all-important ingredient of good drainage does exist. "Just because your ground slopes doesn't mean you have good drainage," says Bill



Nelson. "It's a good idea to fill all planting holes with water twice before planting. The first time doesn't count. If the second filling doesn't drain out in an hour or so, you're in trouble. We find hardpan is one of the worst problems. In some places it's many feet thick, but in others it's only one or two feet thick. If you can break through it into the sand below, your troubles are over."

### **Fertilize lightly**

How about fertilizer? It depends on the plant, on the soil and on your personal needs. "I never fertilize my plants, ever," says Helen Chamlee. "I want them to grow naturally. I don't want them to grow too big so I would have to be cutting back continually. There are some people who say a modest amount of fertilizer helps plants go through stress. If you want to fertilize native plants, a light feeding during the winter months while plants are growing is all that's necessary but I don't recommend it at all."

Using fertilizers lightly or not at all also applies to most other drought-tolerant plant material. Trees, bushes and ground covers can be given fertilizers when first planted to get them to grow more rapidly up to the size you want, but after plants are the right size and doing well, why con-

tinue? A lot depends on the soil and appearance of the plant, whether healthy or unhealthy. Some groundcovers such as osteospermum and gazania will do better in poor soils when given a light fertilizing in March with a balanced pellet-type lawn food. On the other hand, many colorful ice plants need no fertilizer and are better off without it.

### **Study individual requirements**

It's a good idea to ask your nursery person the requirements of every plant at time of purchase. Often one can benefit also from the advice of other gardeners. One way to meet them is at the Native Plant Society which meets on the fourth Wednesday of every month except August and December at 7:30 p.m. in the Casa del Prado in Balboa Park. It's always wise to look up one's plants in books. Some good ones are: *Easy Gardening with Drought-Resistant Plants* by Arno and Irene Nehrling (Dutton). (Not localized to the West.) *Growing California Native Plants* by Marjorie G. Schmidt (University of California Press) and *Native Plants for California Gardens* by Lee W. Lenz (Rancho Santa Ana Botanic Garden). *Color for the Landscape: Flowering Plants for Subtropical Climates* edited by Mildred E. Mathias (Los Angeles Beautiful) also covers many drought-resistant plants. A colorful free booklet called *How to Have a Green Garden in a Dry State* can be obtained from the Metropolitan Water District of Southern California, P.O. Box 54153, Los Angeles, CA 90054.

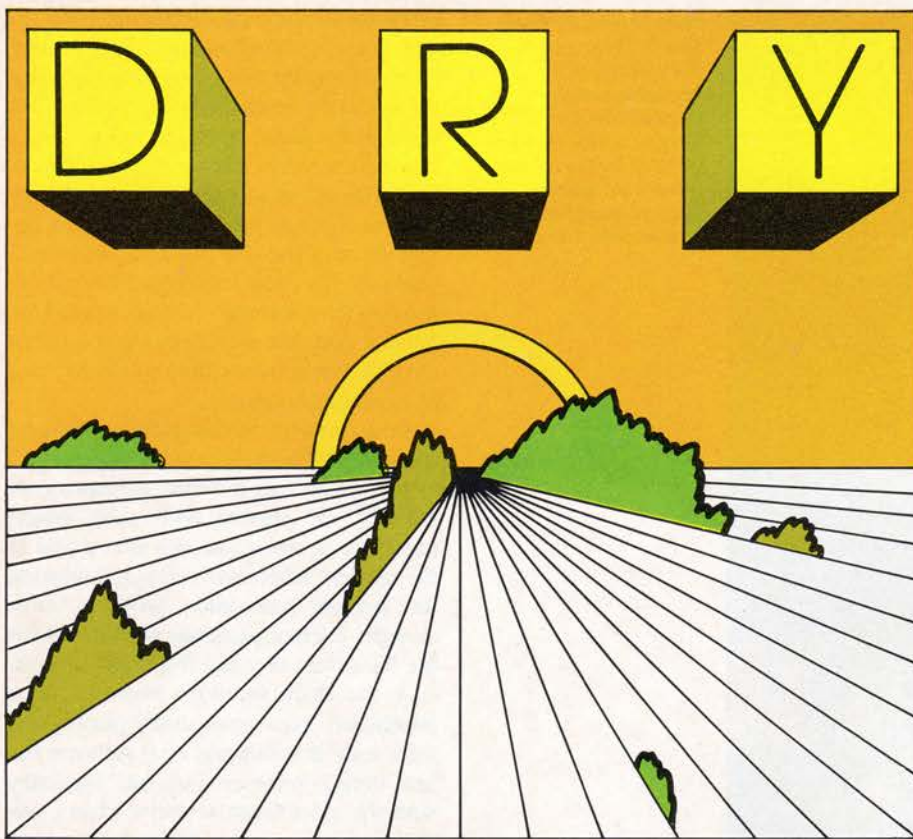
### **See them growing**

Places where you can view native and drought-resistant plants include the San Diego Wild Animal Park, Quail Bontanic Gardens, Torrey Pines Park, the Theodore Payne Society (which also sells native plants) in Sun Valley, the Rancho Santa Ana Botanic Garden in Claremont, Silverwood Wildlife Sanctuary, Wildcat Canyon Road, Lakeside, and Helen Chamlee's home garden which Mrs. Chamlee graciously opens to the public for one or two days up to a week in the spring. (Look for announcements in the newspapers or ask the Native Plant Society for the dates.)

### **Learn to love them**

Undeniably, there's something lovable about a plant that's self-sufficient, that isn't going to give up and die the minute you turn your back. But gardeners who start learning about and growing the many fascinating plants we call drought-resistant are inevitably going to discover there's more to be gained than ease of culture and water conservation. These plants pay off in beauty, too.





**If you're alarmed** by the cost and energy of watering your thirsty garden, consider this: using drought-tolerant plants for new or rejuvenated plantings is one of the best ways to save water.

Drought-tolerant plants are not necessarily dry-looking desert plants or natives; but simply plants whose roots, stems, and leaves have adapted to survival with less water than ordinary plants. Many commonly available landscape plants are relatively drought tolerant, and hundreds more imported and native plant varieties can be found, if you're willing to seek them out and provide some special conditions for their well-being. (See *San Diego Home/Garden* July 1980, "How to Prepare for Our Coming Water Shortage," for our first look at water-thirsty gardening.)

Our chart, "Fifty Drought-Tolerant Landscape Plants For San Diego Gardens," details the most readily available and useful plants in each category of landscape use, and names over 100 other unthirsty plant varieties. (Order plants through your local nursery, or purchase directly from specialty nurseries.)

The chart indicates relative drought tolerance of plant varieties and further suggests the minimum number of deep soakings per month each should receive, once fully established, to remain healthy and vigorous. Your garden's *actual* water need depends on its microenvironment of climate, exposure, and soil in which it is placed.

Even under ideal circumstances, *it takes one to two years of regular watering* for

## HOW TO CHOOSE, PLANT, AND MAINTAIN THE "UNTHIRSTY ONES"

BY STEVE CARLIN

Steve Carlin is Landscape Manager of Nurseryland Garden Centers

newly planted, drought-tolerant plants to fully develop their water-saving potential. Moreover, these plants do not automatically become drought tolerant. They must be encouraged to become more deep rooted and water efficient by proper planting and intentionally stressing them somewhat during their first two years in the garden. On the other hand, improper planting and maintenance during the first two critical years can turn a normally drought-tolerant plant into a shallow-rooted individual incapable of surviving drought. Thus, proper installation and initial care are vital to the success of your drought-tolerant plants.

Here, we examine how best to select, install, and maintain new plants now, in order to optimize your garden's future water efficiency.

### Choose vigor over size

Avoid plants that have outgrown their container, as they may be rootbound. Because small plants with a high proportion of

roots to foliage are generally easier to establish, use small plants for mass plantings and when cost is a major factor. Most of us are impatient, however, so go ahead and use larger container sizes in prominent areas and for slower-growing plant varieties.

### Plant in fall or early spring

This suggestion applies especially in hot inland areas. Fall is the best time of year to plant most drought-tolerant plants. Transplant shock is minimized then by cool air, while root growth is stimulated in soil still warm from summer. These factors, combined with winter rains, provide ideal conditions for establishing new plants.

### Digging the hole

Since proper planting is crucial to your success, we suggest you talk to a nursery expert to get detailed instructions before beginning to dig. In addition to forming a planting hole twice the depth and width of the new plant's container, you should:

Condition the soil with generous amounts of a high-quality planting mix; it holds moisture and keeps the soil structure loose enough to allow the proper balance of soil moisture and air needed for rapid root development. Where drainage is poor, install gravel chimneys through hardpan layers and use gypsum to help loosen up clay soils. This is especially important with native plants that require excellent drainage.

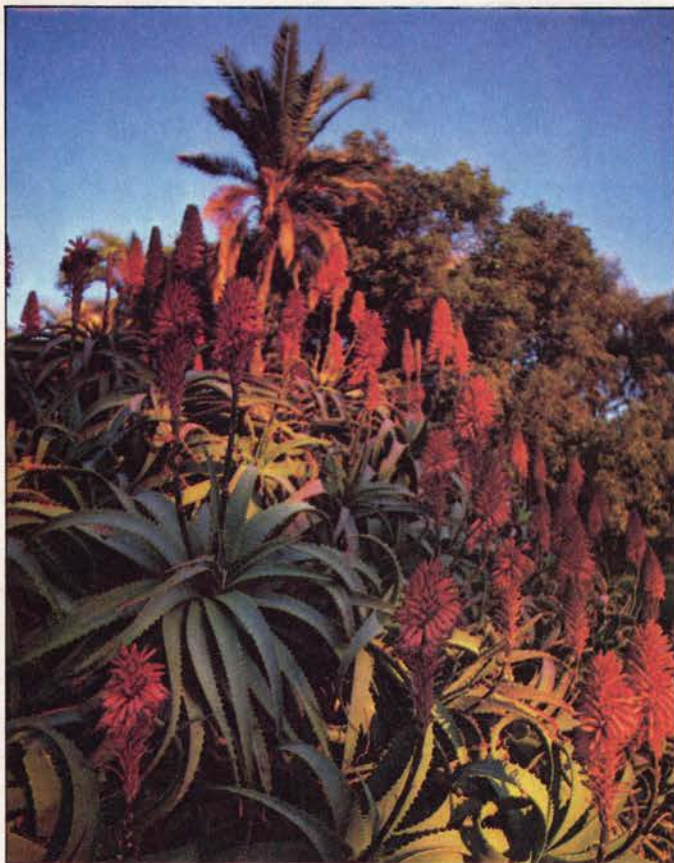
When planting a tree or shrub, set the root ball slightly higher than grade level to allow for settling. Use slow-release fertilizer tablets in the root zone. A watering basin formed around each plant will facilitate watering, and mulching the soil surface will help keep the root ball moist. Finally, use a liquid root stimulator to prevent transplant shock.

Stake trees for support, and where surface roots pose potential problems, avoid them by planting trees in subgrade, deep-root barrier planters (available from Deep Root Corp., 509 South Beverly Dr., Beverly Hills, CA 90212).

### Drip irrigation aids new plantings

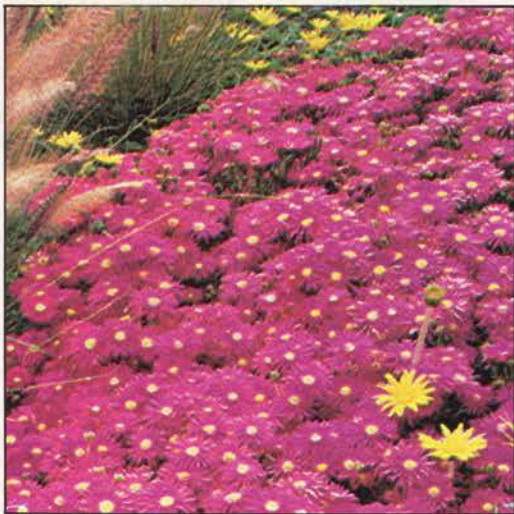
Easy-to-install drip or trickle irrigation systems save water by using emitters that apply small amounts of water directly to individual plants without wetting the spaces between them. To minimize clogging problems, choose a system that has self-flushing emitters. Using multiple-outlet emitters for trees and large shrubs makes it easy to add emission points later, as the plants mature.

A drip system installed at the same time plants are put in encourages the plants to develop a compact and deep root system, because it confines root growth to the sub-surface area wetted by the emitters.



Most aloes are from South Africa, and they bring this drought-tough heritage to San Diego. Spiky flowers of *Aloe arborescens* bloom in winter; here photographed in Presidio Park

Iceplants bloom their heads off in April, painting many of San Diego's slopes. They look best with some summer water (especially inland), need full sun, don't like trampling



### Separate valves control differing water needs

For lawn and ground-cover areas where overall watering is required, use low-precipitation sprinkler heads. These apply water slowly and evenly so that it soaks in, rather than running off.

If you decide to automate your sprinklers with a timer, choose a dual-program controller that will allow you to water shrubs less often than lawns. For maximum water efficiency, consider installing feedback moisture sensors that monitor the actual moisture conditions in the soil: they can save up to 60 percent on water use by preventing unnecessary clock-programmed irrigation cycles. These sensors, called

*tensiometers*, are usually installed in pairs; one shallow and one deep in the root zone. The shallow tensiometer regulates the frequency, while the deep one regulates the depth of watering. A typical residential landscape needs two sets of tensiometers—one for lawn areas and the other for shrub areas—but the water savings they provide soon repays their initial cost (approximately \$50 to \$60 each).

### Decrease frequency, increase depth of watering

Newly planted trees and shrubs need water once or twice a week for one to three months because their root balls dry out quickly. Once your plants' roots have pen-

etrated into the surrounding soil, they will be better able to withstand water stress. In fact, you should encourage deeper rooting by intentionally subjecting new plantings to moderate water stress in spring. Let some of the plants reach the wilting point, but then deeply water them all immediately. If you use tensiometers, they will subject the roots to moderate root stress before allowing the next irrigation, and if you gradually place the tensiometers deeper in the soil, they will automatically extend the interval between waterings. As the plants develop deeper roots, they will show signs of stress less frequently.

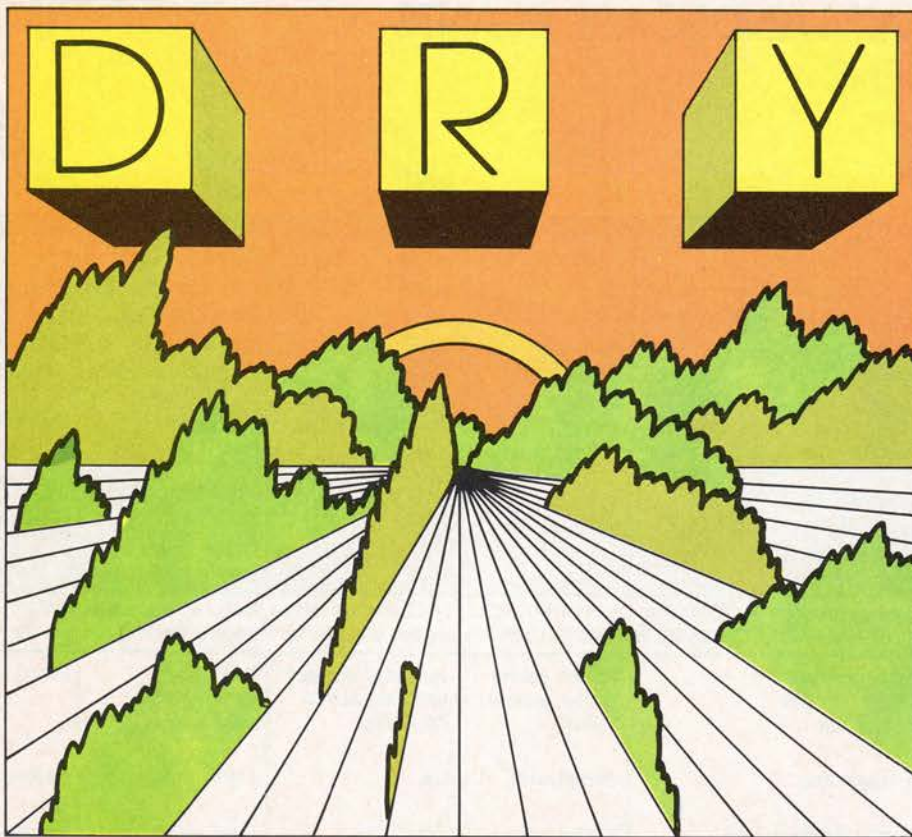
Most drought-tolerant plants should be able to thrive with deep waterings every 10 to 14 days after six months, and many (but not all) will survive with deep waterings once or twice a month after a year in the garden. After two years of following this gradual acclimation program, most drought-tolerant plantings should achieve the full extent of water thriftiness presented in the chart. Be aware, however; once established, most water-thrifty plants grow vigorously in spring and early summer, but rest during summer and fall. Especially with the more sensitive native plants, watering too often during this rest period can lead to spindly growth, susceptibility to disease, and premature death. On the other hand, stressing plants too far can make them more susceptible to insect attack; this is especially true with pines and junipers that are often attacked by bark beetles, mites, and twig-boring insects.

### New lawn and ground-cover care

Water these plantings frequently at first, acclimating them to deeper and less frequent irrigations. Never let the soil dry out completely. In warm weather, this may mean watering three to five times per day for the first 10 to 20 days, but the need will taper off to once a day by 30 days, two or three times a week by 45 days, and once or twice a week by 60 days. The exact schedule depends, of course, on the variety of lawn or ground cover and your climate and exposure.

As with trees and shrubs, gradually subject new lawn and ground-cover plantings to moderate water stress to encourage deep rooting. Here again, tensiometers can be invaluable for adjusting frequency and depth of irrigation cycles. Whether you use tensiometers or let stress-indicator plants reach the wilting point, the time to act is now, while water is still relatively cheap and available.

Though nurseries are gearing up to meet the increased demand for drought-tolerant plants, if water rates rise markedly growers may not be able to meet immediate demand. Besides, you need a good two years to get plants going. So get going! ■



**1. Use in the landscape.** Since trees often dominate the mature landscape, they should be chosen first. Base your choice on the role you want them to serve in your master plan. Are you looking for shade, a vertical accent, or an impressive source of seasonal color? Having decided on the right tree for your project, choose the proper mix of accent and flowering shrubs. Where appropriate, choose bushy shrubs suitable for hedges and informal screens, or vining shrubs suitable for espaliering on a wall or other special effects.

You want to choose a ground cover to blend with the established theme. Unless you have slopes that need living ground covers to provide erosion control, you might decide on a decorative mulch. If you are planning to install a drip irrigation system, use low, shrubby ground covers that can be spaced four to five feet apart, rather than the traditional trailing types that must be planted 12 to 18 inches on center.

**2. Botanical and common names.** Ask for plants by their proper names, since different plant species sometimes have similar or identical common names. For example, two different trees (*Agonis flexuosa* and *Geijera parviflora*) might be sold as Australian willows.

**3. Flower color and blooming season.** For year-round color, choose plants with flowers that harmonize or contrast in color, and that bloom in different seasons.

**4. Foliage color and winter dormancy.** Some drought-tolerant plants have silvery blue or bronze foliage that can

## HOW TO USE THE CHART ON THE FOLLOWING PAGES

BY STEVE CARLIN

be used to achieve striking year-round color contrasts; others lose their leaves in winter, providing fall foliage color, as well as interesting winter branch patterns. Consider using deciduous shade trees where you might want more light in winter.

**5. Climate adaptation.** Some plants prefer cool coastal areas, others hot inland ones, but many of the plants in the chart will do well throughout the San Diego area.

**6. Mature size and growth rate.** Use plants whose ultimate size will be proportionate to the area size. Choose fast-growing plants for quick effects, but use slower-growing dwarf varieties where you want to avoid frequent pruning.

**7. Recommended minimum spacing.** This is based on the combined factors of size, growth rate, and landscape use. Spacing your plants farther apart to achieve a more open look is fine, but closer planting may necessitate pruning or thinning to prevent overgrowth later.

**8. Relative life span.** Typical land-

scape plants have a useful life span of 20 to 40 years, but some drought-tolerant plants live only 5 to 10 years. It is fine to use short-lived plants, such as acacias and ceanothus, for quick effects, but consider interplanting them with slower-growing and longer-lived plants to take over when their useful life is exhausted.

**9. Relative fire retardance.** This quality is especially important if you live next to a highly flammable, brush-covered hillside. Succulent plants, such as iceplants, are *excellent* for fire retarding green belts. Some low herbaceous perennials, such as gazanias, and shrubs with leathery leaves, such as coyote brush and ceanothus, are *very good to good*. Ordinary garden plants kept reasonably well watered have *fair* resistance to the spread of fire, but highly resinous and flammable plants, such as pines, junipers, and eucalyptus, are *poor* risks even when kept well watered.

**10. Relative drought tolerance and water requirements.** Combine plants with similar abilities to survive water rationing. Plants with *excellent* drought tolerance often survive with no supplemental water once fully established, but may be healthier and more vigorous if given monthly summer watering. Depending on your climate, sun and wind exposure, and soil, plants with *good* drought tolerance do best with deep soakings once or twice a month during the dry season, whereas plants with *fair* drought tolerance need watering two to three times a month (every 10 to 14 days).

**11. Required deep soakings per month.** The chart tells you how often to water, but what constitutes a deep soaking depends on how you water. If you use a hose, fill each plant's watering basin with at least 1½ inches of water. If you drip irrigate, apply a gallon of water for each square foot the plant occupies. With sprinklers, use several spaced cycles to apply a total of 1½ inches of water (measured with rain gauge) to an entire area.

**12. Chief advantages and disadvantages.** Use these chart descriptions to make your final choice of the best plant for each landscape situation. For each category of landscape use, the chart lists additional plants that may be harder to find or less versatile for typical landscape situations, but that may be just what you need for your particular landscape. Garden enthusiasts willing to search for these plants and give them the special setting they require will be rewarded with a wealth of unthirsty plants to add interest to their gardens. Some uncommon species of acacias and eucalyptus grow easily from seed, as do some ground covers, such as O'Conner's legume and saltbrush (*Atriplex*), and some flowering shrubs, such as rockroses (*Cistus*) and brittlebushes (*Encelia*).

CLIMATE ADAPTATION	MATURE HEIGHT X SPREAD (IN FT.)	MIN SPACING (IN FT.)	GROWTH RATE (FT. PER YR.)	LIFE SPAN (IN YRS.)	FIRE RETARDANCE	DROUGHT TOLERANCE	REQUIRED DEEP SOAKINGS PER MO.	CHIEF ADVANTAGES	CHIEF DISADVANTAGES
Coast & inland	20 x 20	15	2-3	Average	Fair	Fair	2-3	Colorful foliage Lush foliage, edible fruit	Best with ample water; subject to fireblight
Coast & inland	15 x 10 20 x 10	8	1-2	Average	Poor	Good	1-2	Dramatic twisting habit Foliage color	Subject to twig borers & spider mites (esp. inland)
Best near coast Best inland	40 x 20 30 x 20	8 10	2-3 2-3	Average Average	Fair	Good	1-2	Good for grouping; white spongy bark	Former frost-sensitive, latter willowly when young
Coast & inland	20 x 20 30 x 8	10 10	½-1 ½-1½	Average-long Long	Fair	Good	1-2	Dramatic clustering stems Good color & not too big	Very slow growing Fairly slow growing
Coast & inland	100 x 15 60 x 20 60 x 30 40 x 40	40:8 10 15 30	2-3 2-3 2-3 1-2	Average Average Average Long	Poor	Good	1-2	Fast-growing large palms Tall & good for grouping Tough and versatile Umbrella-shaped crown	Large & hard to manicure Spindly when young Bark beetles a problem Relatively slow growing

looks good in groves, but only thrives near coast

Coast & inland	25 x 30 25 x 20 25 x 15	30 20 10	2-4 3-6 1-2	Short (20-30) Very Short (15-20)	Poor	Good	1-2	Ferny foliage, profuse bloom Fast growth, profuse bloom Weeping habit, gray foliage	Short-lived, flowers messy
Best in warm foothills	50 x 30	20	3-5 at first	Average	Fair	Good	1	Large showy flowers, Green thorny trunk	May go dormant prematurely from severe drought
Best near coast Best near coast Coast & inland	20 x 10 40 x 40 20 x 10	5 30 5	1-3 1-3 2-3	Long	Poor Excellent Excellent	Good Excellent Excellent	1-2 0-1 0-1	Yellow flowers, red caps Showy flowers, provides shade Profuse bloom, small size	E. ficifolia messy; others cleaner, harder to find
Coast & inland	60 x 30	20	2-4	Average	Poor	Excellent	0-1	Lush ferny foliage, fast growth	Very messy, wood brittle
Coast & inland Best inland	30 x 30	30	1-3	Average	Poor	Good	1-2	Colorful seed capsules Gives open shade & blooms	Requires regular watering when young
Best inland	20 x 15	10	1-2	Average	Fair	Good	1-2	Showy flowers, small size	Mildews near coast

thriving only in hot inland valleys

Coast & inland	40 x 40	30	2-3	Long	Good	Excellent	0-1	Gives dense shade; pods source of carob powder	Surface roots, messy seed pods
Best near coast Best near coast Coast & inland	50 x 40 25 x 25 50 x 35	20 15 10	2-4 3-5 3-6	Long Long Long	Poor	Good	1 1-2 1	Good shade tree Fast shade or screening Round gray leaves	Silver Dollar messy, others harder to find but cleaner
Coast & inland Best near coast	30 x 20 25 x 25	10	1-2 2-3	Average Average	Fair	Excellent Good	0-1 1-2	Both have graceful weeping habit	Former hard to find, latter frost-sensitive
Coast & inland	30 x 30	30	1-3	Long	Fair	Excellent	0-1	Picturesque form	Messy fruit drop
Coast & inland	40 x 40	30	2-4	Long	Good	Excellent	0-1	Open willowly form, fast growth, toughness	Surface roots, messy red berries

UMBRELLA TREE); Pistachia chinensis (CHINESE PISTACHE); Quercus agrifolia, Q. suber (CALIFORNIA LIVE & CORK OAKS)

Best near coast	15 x 10 1 x 3 1 x 1	10 2 1	1-2 1 1	Average Average Average	Excellent	Excellent	0-2	Showy flower spikes, clustering succulent rosettes	Frost-sensitive inland
Best near coast Best near coast Coast & inland	4 x 4 1 x 2 8 x 5	3 2 4	1-3 1 1-3	Short Short, but reseed Average	Fair Good Good	Good Good Good	1-2 1-2 1-2	Dramatic flower spikes Long-lasting flower spikes Sword-like vertical foliage	Frost-sensitive, gets woody Frost-sensitive inland Gets large fast, needs manicuring
Coast & inland	1 x 1 2 x 2	1½ 1	1	Short	Good	Good	1-2	Foliage color, small size	Short-lived perennials
Coast & inland Best inland	20 x 10 4 x 3	10 4	2-3 1-2	Average	Very good	Fair	2-3	Tropical foliage Dramatic flowers, foliage	Tender to frost inland
Coast & inland	15 x 10	10	1-3	Average	Good	Good	1-2	Forms dramatic clusters	Buttressed trunks require ample space

LY PEARS & CHOLLAS); Cereus peruvianus (NIGHT BLOOMING CERES); Echinocactus & Ferocactus spp. (BARREL CACTUS); Crassula argentea (JADE PLANT); Portulacaria afra (ELEPHANT'S FOOD)

	COMMON NAME	BOTANICAL NAME	FLOWER COLOR	BLOOMING SEASON	FOLIAGE COLOR	EVERGREEN OR DECIDUOUS
SHRUBS	LEMON BOTTLEBRUSH	Callistemon citrinus	Red	Most of year	Green	Evergreen
	CALIFORNIA LILAC	Ceanothus 'Blue Jeans,' C. 'Concha' Ceanothus 'Frosty Blue' C. 'Julia Phelps,' C. 'Mountain Haze'	Dark blue Blue / white tips Dark, med. blue	March-April	Dark green	Evergreen
	BUSH MORNING GLORY	Convolvulus cneorum	White	May-September	Silvery gray	Evergreen
	PINK ESCALLONIA	Escallonia 'Fradesi'	Rose pink	Nearly year round	Dark green	Evergreen
	NEWPORT DWARF PINK ESCALLONIA	Escallonia 'Newport Dwarf'				
	YELLOW EURYOPS DAISY	Euryops pectinus	Bright yellow	Nearly year round	Silvery gray	Evergreen
	YELLOW GAMOLEPIS DAISY	Gamolepis chrysanthemoides			Light green	Evergreen
	HUMMINGBIRD BUSH	Grevillea 'Noelli'	Rose red	Spring	Bright green	Evergreen
	OLEANDER	Nerium oleander	White, pink, rose, Salmon, red	Late spring-fall	Dark green	Evergreen
	FLOWERING SHRUBS	YELLOW OLEANDER	Thevetia peruviana	Yellow	Summer	
	PINK INDIA HAWTHORNE	Raphiolepis indica 'Pink Lady'	Light pink	Spring	Dark green	Evergreen
	DWARF PINK INDIA HAWTHORNE	R. i. 'Ballerina,' R. i. 'Pinkie'				
<b>OTHERS OF MERIT:</b> Cassia artemisoides (FEATHERY CASSIA); Cistus spp. (ROCKROSES); Cytisus racemosus (SWEET BROOM); Encelia californica, E. farinosa (CALIFORNIA & DESERT BRITTLEBUSHES; usually hydroseeded); Fremontodendron X 'Pacific Sunset,' 'California Glory'						
HEDGE & SCREENING SHRUBS	KNIFE ACACIA	Acacia cultriformis	Bright yellow	Spring	Silvery gray	Evergreen
	SYDNEY GOLDEN WATTLE	Acacia longifolia			Green	
	PURPLE HOPSEED BUSH	Dodenea viscosa 'Purpurea'	Insignificant	summer	Bronze-purple	Evergreen
	ARMSTRONG JUNIPER	Juniperus chinensis 'Armstrongii'	None	—	Medium green	Evergreen
	OLD GOLD JUNIPER	Juniperus c. 'Old Gold'			Gold & green	
	BLUE PFITZER JUNIPER	Juniperus c. 'Pfitzerana Glauca'			Silver blue	
	SEA GREEN JUNIPER	Juniperus c. 'Sea Green' ('Mint Julep')			Grass green	
	MOCK ORANGE	Pittosporum tobira	Cream white	Early spring	Dark green	Evergreen
	DWARF MOCK ORANGE	Pittosporum t. 'Wheeler's Dwarf'				
	VICTORIAN BOX	Pittosporum undulatum				
SHINY-LEAF XYLOSMA	Xylosma congestum	Insignificant	—	Light green	Evergreen	
<b>OTHERS OF MERIT:</b> Arbutus unedo (STRAWBERRY TREE); Baccharis sarothroides (DESERT BROOM); Buxus japonica (JAPANESE BOXWOOD); Cupressus glabra (ARIZONA CYPRESS); Eleagnus pungens (SILVERBERRY); Hakea suaveolens (SWEET HAKEA); Melaleuca nesophila (PINK ME-						
VINEY SHRUBS	BUSH BOUGAINVILLEA	Bougainvillea 'La Jolla'	Red	Most of year	Green	Evergreen
	CAPE PLUMBAGO	Plumbago auriculata	Light blue	Most of year	Light green	Evergreen
	BUSH SOLANUM	Solanum rantonnetii	Violet blue	Most of year	Green	Evergreen
	CAPE HONEYSUCKLE	Tecomaria capensis	Orange	Fall-winter	Dark green	Evergreen
	<b>OTHERS OF MERIT:</b> Solandra maxima (CUP OF GOLD VINE); Wisteria sinensis (WISTERIA)					
GROUND COVERS	PROSTRATE ACACIA	Acacia redolens	Yellow	Spring	Gray green	Evergreen
	DWARF COYOTE BRUSH	Baccharis pilularis 'Twin Peaks'	Insignificant	Summer	Bright green	Evergreen
	ANCHOR BAY CEANOTHUS	Ceanothus gloriosus 'Anchor Bay'	Dark blue	Spring	Dark green	Evergreen
	EMILY BROWN CEANOTHUS	C. g. exaltatus 'Emily Brown'	Violet blue			
	CARMEL CREEPER	Ceanothus griseus horizontalis	Light blue			
	BEARBERRY, LOWFAST	Cotoneaster damneri, C. 'Lowfast'	Red berries	Berries: fall-winter	Dark green	Evergreen
	COTONEASTERS					
	ROCK COTONEASTER	Cotoneaster horizontalis				Deciduous
	JAPANESE GARDEN JUNIPER	Juniperus procumbens 'Nana'	None	—	Blue green	Evergreen
	TAM JUNIPER	Juniperus sabina 'Tamariscifolia'			Blue green	
PROSTRATE FIRETHORN	Pyracantha 'Santa Cruz'	Red berries	Berries: fall	Dark green	Evergreen	
DWARF ROSEMARY	Pyracantha 'Walderi'					
	DWARF ROSEMARY	Rosmarinus officinalis 'Prostratus'	Light blue	Spring	Dark green	Evergreen
<b>OTHERS OF MERIT:</b> Arctostaphylos edmundsii 'Carmel Sur,' A. 'Emerald Carpet,' A. uva-ursi (PROSTRATE MANZANITAS); Atriplex semibaccata (AUSTRALIAN SALTBRUSH; usually hydroseeded); Carissa grandiflora 'Green Carpet,' 'Prostrata,' 'Tuttlei' (PROSTRATE NATAL PLUMS);						
PERENNIAL FLOWERING COVERS	TRAILING GAZANIA DAISY	Gazania X 'Sunrise Yellow' Gazania rigens leucolaena	Yellow Yellow, orange	Intermittent/ peak spring	Dark green Silvery gray	Evergreen
	SEA FIG (FREEWAY) ICEPLANT	Carpobrotus edulis	Yellow, purple	Most peak in spring	Dark green	Evergreen
	DISNEYLAND WHITE ICEPLANT	Delosperma alba	White		Light green	
	ROSEA ICEPLANT	Drosanthemum floribundum	Lavender-pink		Dull green	
	TRAILING & BUSH ICEPLANTS	Lampranthus spp., Malephora spp.	Red, pink, purple yellow & orange		Gray-green / green	
PURPLE TRAILING LANTANA	Lantana montevidensis	Rosy lilac	All year	Green	Evergreen	
<b>OTHERS OF MERIT:</b> Arctotheca calendula (CAPE WEED); Artemisia caucasica (SILVER SPREADER); Cerastium tomentosum (SNOW IN SUMMER); Lippia canescens repens (LIPPIA); Osteospermum fruticosum (TRAILING AFRICAN DAISY); Santolina chamaecyparissus (LAVENDER COT-						

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	CALIFORNIA LILAC	Ceanothus 'Blue Jeans,' C. 'Concha' Ceanothus 'Frosty Blue' C. 'Julia Phelps,' C. 'Mountain Haze'	Dark blue Blue/white tips Dark, med. blue	March-April	Dark green	Evergreen
	BUSH MORNING GLORY	Convolvulus cneorum	White	May-September	Silvery gray	Evergreen
	PINK ESCALLONIA	Escallonia 'Fradesi'	Rose pink	Nearly year round	Dark green	Evergreen
	NEWPORT DWARF PINK ESCALLONIA	Escallonia 'Newport Dwarf'				
	YELLOW EURYOPS DAISY	Euryops pectinus	Bright yellow	Nearly year round	Silvery gray	Evergreen
	YELLOW GAMOLEPIS DAISY	Gamolepis chrysanthemoides			Light green	Evergreen
	HUMMINGBIRD BUSH	Grevillea 'Noelli'	Rose red	Spring	Bright green	Evergreen
	OLEANDER	Nerium oleander	White, pink, rose, Salmon, red	Late spring-fall	Dark green	Evergreen
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	SYDNEY GOLDEN WATTLE	Acacia longifolia			Green	
	PURPLE HOPSEED BUSH	Dodonea viscosa 'Purpurea'	Insignificant	summer	Bronze-purple	Evergreen
	ARMSTRONG JUNIPER	Juniperus chinensis 'Armstrongii'	None	—	Medium green	Evergreen
	OLD GOLD JUNIPER	Juniperus c. 'Old Gold'			Gold & green	
	BLUE PFITZER JUNIPER	Juniperus c. 'Pfitzerana Glauca'			Silver blue	
	SEA GREEN JUNIPER	Juniperus c. 'Sea Green' ('Mint Julep')			Grass green	
	MOCK ORANGE	Pittosporum tobira	Cream white	Early spring	Dark green	Evergreen
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CLIMATE ADAPTATION	MATURE HEIGHT X SPREAD (IN FT.)	MIN SPACING (IN FT.)	GROWTH RATE (FT. PER YR.)	LIFE SPAN (IN YEARS)	FIRE RETARDANCE	DROUGHT TOLERANCE	REQUIRED DEEP SOAKINGS PER MONTH	CHIEF ADVANTAGES	CHIEF DISADVANTAGES
Coast & inland	15 x 10	6	1-3	Average	Fair	Excellent	0-2	Showy flowers, tough	Messy
Coast & inland	6 x 8	4	1-3	Short (5-10)	Good	Excellent	0-2	Showy flowers, dense foliage	Short-lived
Coast & inland	3 x 3	2	1-2	Short	Good	Excellent	0-1	Silver foliage, constant bloom	Short-lived
Coast & inland	6 x 4	3	2-3	Average	Fair	Good	1-2	Constant bloom, fast growth	Faded bloom clusters turn brown, need trimming
	2½ x 2½	2	1-2						
Coast & inland	3 x 3	3	1-2	Short (10-20)	Fair	Good	1-2	Constant bloom, ferny foliage	Gets woody, but responds to pruning
	5 x 4		2-3						
Coast & inland	4 x 4	4	1-3	Average	Fair	Good	1-2	Billowy needle-like foliage	Not for manicured gardens
Best inland	10 x 8	6	2-3	Average	Fair	Excellent	0-2	Showy flowers, versatile	Entire plant POISONOUS; don't plant in tot play areas!
Coast & inland	8 x 6	5	1-3			Good	1-2		
Coast & inland	5 x 4	3	1-2	Average	Fair	Fair	2-3	Showy flowers, neat foliage	Best with regular watering
	2 x 4								

(FLANNEL BUSH): *Lavandula* spp. (LAVENDER); *Leptospermum scoparium* 'Ruby Glow' (NEW ZEALAND TEA TREE); *Ochna serrulata* (MICKEY MOUSE PLANT); *Poinciana gilliesii* (BIRD OF PARADISE BUSH); *Romneya coulteri* (MATILJA POPPY); *Teucrium fruticans* (BUSH GERMANDER)

Coast & inland	10 x 10	5	1-2	Short (15-20)	Poor	Good	1-2	Silvery foliage	Short-lived
	20 x 20	10	4-6			Fair	2-3	Very fast growth	Brittle, gets chlorotic
Coast & inland	15 x 12	6	2-3	Relatively short	Fair	Excellent	0-2	Purple foliage, fast growth	Messy when large
Coast & inland	4 x 4	4	1-2	Average	Poor	Good	1-2	Foliage color & form	Subject to twig borers & spider mites (esp. inland)
	4 x 4	4	1-2						
	6 x 12	6	2-3						
	5 x 6	5	2-3						
Coast & inland	6 x 6	4	1-3	Average	Poor	Fair	2-3	Dense foliage, fragrant blooms	Messy, sticky orange seeds
	2 x 4	4	1-2						
	30 x 20	8	1-3						
Coast & inland	8 x 8	6	1-3	Average	Fair	Good	1-2	Graceful foliage	Can become chlorotic

LALEUCA): *Photinia fraseri* (RED-LEAF PHOTINIA); *Prunus caroliniana*, *P. ilicifolia*, *P. lyonii* (CAROLINA, HOLLYLEAF, & CATALINA CHERRIES); *Rhamnus alaternus* (ITALIAN BUCKTHORN); *Rhus integrifolia*, *R. ovata* (LEMONADE BERRY, SUGAR BUSH)

Coast & inland	4 x 6	4	1-2	Average	Poor	Good	1-2	Big billowy mass of color	Frost-sensitive inland
Coast & inland	6 x 8	4	1-3	Average	Poor	Good	1-2	Good for background, slopes	Not for manicured gardens
Coast & inland	6 x 4	4	1-3	Average	Fair	Good	1-2	Colorful flowers, versatile	Requires regular manicuring
Coast & inland	6 x 4	4	2-3	Long	Fair	Good	1-2	Colorful flowers, versatile	Requires regular manicuring

Coast & inland	2 x 15	5	2-4	Short (15-20)	Poor	Good	1-2	Woody look, fast coverage	Coarse-looking, short-lived
Coast & inland	2 x 6	2	1-2	Average	Good	Excellent	0-1	Controls erosion, fire retardant	Mounds up, needs pruning
Coast & inland	1½ x 6	4	1-3	Short (5-10)	Good	Excellent	0-1	Colorful bloom, controls erosion & fire retardant	Short-lived
	2½ x 10	4							
	2 x 10	4							
Coast & inland	½-1 x 10	4	1-2	Average	Fair	Excellent	0-1	Colorful berries, controls erosion	Subject to fireblight diseases
	2½ x 15	4	1-2						
Coast & inland	1 x 4	3	1-2	Average	Poor	Good	1-2	Tough and versatile	Subject to twig borers & spider mites (esp. inland)
	1½ x 6								
Coast & inland	3 x 6	4	2-3	Average	Fair	Good	1-2	Colorful berries, traffic barrier	Subject to fireblight diseases
	1½ x 6								
Coast & inland	2 x 6	3	1-3	Average	Fair-good	Excellent	0-1	Controls erosion, bonus flowers	Can get woody

*Eucalyptus macrocarpa*, *E. rhodantha* (PROSTRATE RED-FLOWERING EUCALYPTUS); *Hypericum calycinum* (CREEPING ST. JOHNSWORT); *Myoporum parvifolium* (PROSTRATE MYOPORUM)

Coast & inland	1 x 3	1	1-2	Short (5-10)	Very good	Good	1-2	Prolific bloom, fast coverage	Relatively short-lived
Coast & inland	1 x 4	1	1-3	Average	Excellent	Good	1-2	Many bloom prolifically & all highly fire retardant	None has both showy flowers & lush foliage; 'Sea Fig' can cause bank slippage
	½ x 3		1-1½						
	½ x 3		1-1½						
	1 x 3		1-1½						
Best inland	2 x 4	1½	1-2	Average	Fair	Good	1-2	Constant bloom, controls erosion, cascades well	May mildew along coast, freeze inland

TON): *S. virens* (GREEN SANTOLINA); *Sedum brevifolium*, *S. confusum* (STONECROPS); *Trifolium fragiferum* 'O'Conner's' (O'CONNOR'S STRAWBERRY CLOVER; usually hydroseeded); *Verbena peruviana* (PERUVIAN RED VERBENA); *Vinca major*, *V. minor* (PERIWINKLES, RUNNING MYRTLES)

**San Diego Home/Garden** magazine is a monthly publication featuring the beautiful homes and gardens of San Diego. In addition to stories on garden and home design, it offers useful information on travel, fashion, and food.

**San Diego Home/Garden,**  
Box 1471, San Diego 92112; (714) 233-4567.



## San Diego County Water Authority

2750 Fourth Avenue, San Diego, California 92103 (714) 297-3218

### MEMBER AGENCIES

#### CITIES

- Del Mar
- Escondido
- National City
- Oceanside
- Poway
- San Diego

#### WATER DISTRICTS

- Helix
- Otay
- San Dieguito

#### IRRIGATION DISTRICTS

- Santa Fe
- South Bay

#### COUNTY WATER DISTRICT

- San Marcos

#### PUBLIC UTILITY DISTRICT

- Fallbrook

#### MILITARY RESERVATION

- Camp Pendleton

#### MUNICIPAL WATER DISTRICTS

- Bueno Colorado
- Costa Real
- De Luz Heights
- Olivenhain
- Padre Dam
- Rainbow
- Ramona
- Rincon del Diablo
- Valley Center
- Yuma