

Low water use plant buyers guide for Central and Southern Arizona

By Bill Thornton

Foreword

By David Yetman

If you had visited urban areas Arizona south of the Gila River 40 years ago, you would have found most homes with flourishing lawns of Bermuda Grass in summer, Rye Grass in winter, broad-leafed deciduous trees such as Fruitless Mulberries, monocots such as palms, and hedges of verdant shrubs such as privets and oleanders. The urban landscapes would have resembled, after a fashion, those found in the Southern and Midwestern United States. Indeed, most residents at that time were transplants from the East or Midwest, who brought with them their notions of how their communities should look. And that theme was: as green as possible, with a smattering of palms and citrus trees thrown in to prove they lived in a subtropical climate.

Since those days of lavish irrigation of the urban landscape, notions of which plants should represent our cities and neighborhoods have altered dramatically. Expansive grass lawns are now scarce. Mulberry trees have mostly vanished (much of that due to the vast dustings of pollen they inflicted upon allergy sufferers). Palms are rapidly decreasing in number as our ongoing drought slowly kills them off. Roadway medians are planted with cacti, yuccas, agaves, and mesquites. In general, dark green has given way to light green and brown. It is as it should be.

This dramatic change is far more noticeable in Tucson, which mostly relies on an underground water supply, than in metropolitan Phoenix, which still provides inexpensive reservoir water for many residents. The transformation is largely a function of the rapidly rising cost of water, as our climate changes and regional water supplies continue to dwindle. The new patterns of landscaping present a challenge to providers, planners, and homeowners, and a gift to those who cherish the Sonoran Desert and its place in the world of nature.

In this booklet, Bill Thornton presents a straightforward primer for landscaping with desert plants, drought-tolerant species that need little or no supplemental water, and at the same time reinforce the beauty

and resilience of our Sonoran Desert. This guide is not intended as a comprehensive document for arid lands landscaping, but rather as an introduction to the realities of planting for our urban and domestic open spaces in the desert Southwest. Read it, and get started on making our yards, neighborhoods, and cities a recognition of our desert environment, not a denial of it.

David Yetman is a research social scientist at the Southwest Center of the University of Arizona. He is author of numerous books and articles on deserts and their peoples. He hosted the award-winning PBS series "The Desert Speaks" and is the current host of the PBS travel/adventure television series, "In the Americas with David Yetman".

Introduction

By Bill Thornton

As our most precious resource becomes ever more scarce and costly, many Arizonans are looking to save water. Those of us who grew up with green lawns may be reluctant to give them up. While low-water use landscaping incentives for homeowners programs are not available in Arizona, a landscape of carefully selected desert plants makes sense. You'll save time, money, and a lot of water. Best of all, you can contribute to a sustainable future.

The good news is that our Sonoran Desert provides a treasure trove of plants to choose from. You can't go wrong with plants that have grown here for centuries and thrive in our scorching hot summers, and mostly mild winters with the occasional (2011 and 2013) hard freeze.

Hundreds of varieties of fascinating and colorful cacti and succulents come in an infinite variety of sizes and shapes. Many will reward you with large, showy blossoms that are among the most attractive in the plant kingdom. Desert trees can provide shade, help cool your home and lower utility bills. Desert shrubs can provide additional color and variety.

Tips to make your selection:

- **Salvaged Plants**

Salvaged desert plants can make an important contribution to the water conservation effort. Since its inception in 1999, the Tucson Cactus and Succulent Society's "Cactus Rescue Program" has saved more than 76,000 cacti, agaves, ocotillos and yuccas from sites slated for development. Salvaged plants are offered for low water use landscaping at reasonable prices. Sales are scheduled as plants become available. Proceeds support the club's conservation and educational programs.

Experienced cactus rescue crew members take special care to enhance chances for successful transplants. Rescue plant buyers are provided with valuable information on how to care for their new plants. Cactus rescues are conducted in strict compliance with the Arizona Native Plant Law and each plant bears the appropriate permit tag. (See illustration below.)

Larger plants (saguaros and desert trees) requiring heavy equipment can be salvaged by experienced contractors.

• Nursery Grown Plants

Not only are we blessed with an amazing variety of fascinating water-saving plants, but we're equally fortunate to have many reputable growers who can help you select what will work best for you. The commercial nurseryman must produce a product that will sell in a competitive market. Plants are grown in controlled conditions and provided with the right amount of water and nutrient at the right time.

Nursery grown plants may be sold bare root or in pots. Knowledgeable growers will inform you about transplant care, soil, and watering needs. See below to locate commercial growers in your area.

Arizona native plant tags



- **Selecting plants for your area**

The following lists are developed using the “Sunset Western Garden Book” climate zones 12 and 13, that include metro Phoenix and Tucson. View them online at [Sunset Climate Zone Maps](#). Zone 13 is hotter and drier than zone 12, and experiences fewer nights of below freezing winter temperatures. In a “normal” winter, Tucson can expect 10 to 20 nights of freezing temperatures, Phoenix about half as many. Caveat: Garden climate zones provide generalized guidelines. At any given place, localized conditions (i.e. cold air drainage) can be critical. For example a valley bottom in zone 13 could be colder than a hilltop in zone 12. In metro Phoenix and Tucson, nighttime temperatures tend to be warmer toward the city center and colder by five to 10 degrees in outlying areas.

Included are a few of the hundreds of varieties of low water use plants suited for our desert. Except as noted, listed plants are suitable for zones 12 and 13, and, when properly acclimatized, will grow in full sun. More cold tolerant plants suitable for climate zone 10, will be indicated CZ 10. Most listed plants are available from local nurseries.

Find Phoenix area cactus and succulent nurseries online, also refer to Desert Botanical Garden and Arizona Cactus Sales. In the Tucson area, visit Tucson Cactus and Succulent Society at tucsoncactus.org to find member nurseries and Rescue Plant Sales. For desert shrubs and trees in the Phoenix and Tucson areas check out Mountain States Wholesale Nursery at mswn.com. Plants were selected for low water use, low maintenance, and availability. All will benefit from an occasional watering. In climate zone 12, well established plants will survive on natural rainfall except during prolonged drought. Supplemental water is recommended in climate zone 13, especially in areas receiving less than five inches average annual rainfall.

Cacti



Saguaro

*Rescue Saguaro with
AZ Native Plant Tag*

Saguaro (*Carnegieia gigantea*).
Signature plant of the Sonoran
Desert. Available as nursery
grown or occasionally as salvage
plants (at TCSS plant sales).

Height: To 30 ft.

Spread: To 10-12 ft.



Organ Pipe



Organ Pipe (*Stenocereus thurberi*) Multi stemmed columnar cactus. Stem tips are subject to frost damage. Can be grown in zones 12 and 13 but will require more frequent protection from cold in zone 12. **Height:** To 20 ft. **Spread:** To 20 ft.

Senita



Senita (*Lophocereus schottii*). Another multi-stemmed columnar cactus suitable as an accent plant. Long gray spine whiskers on tops of mature stems give the plant its name, Senita or “old one.” Also subject to stem tip damage from frost. (See Organ Pipe) **Height:** To 15 ft. **Spread:** To 20 ft.

Compass Barrel



Golden Spined Compass Barrel

Compass Barrel (*Ferocactus wislizeni*). Common barrel in the vicinity of Tucson. A golden spined variety, developed by cactus rescue program co-founder, Chris Monrad is available at several area nurseries.

Height: To 6 ft. **Spread:** 2-3 ft.

California or Fire Barrel



California or Fire Barrel (*Ferocactus acanthodes*).

Common barrel in the vicinity of Phoenix. Beautiful plant with red to golden spines.

Height: To 6 ft. **Spread:** 2-3 ft.

Hedgehog cacti *



Hedgehog (*Echinocereus fasciculatus* and *E. engelmannii*)
One of the first spring bloomers with beautiful deep magenta to purple flowers.

Height: To 1 ft. **Spread:** To 5-6 ft.

Golden hedgehog



Golden hedgehog (*Echinocereus nicholii*).

A beautiful accent plant.

Small pinkish flowers.

Height: To 1.5 ft. **Spread:** To 7 ft.

Claret cup hedgehog *



Claret cup hedgehog

(*Echinocereus triglochidiatus* varieties). Beautiful red to orange flowers. CZ 10

Height: To 1 ft. plus.

Spread: To 6 ft.

Fishhook pincushion



Fishhook pincushion

(*Mammillaria grahamii*). Thrives in dappled sunlight e.g. under mesquite, palo verde, or ironwood. Ringed with pink flowers after summer rains.

Height: To 4-5 inches.

Spread: To 1 ft.

Pencil cholla



Pencil cholla (*Cylindropuntia arbuscula*). Easily propagated from cuttings. With supplemental water can grow to a large shrub.

Height: To 5-6 ft.

Spread: To 5-6 ft.

Beaver Tail prickly pear *



Beaver Tail prickly pear: (*Opuntia basilaris x santa rita hybrid*). Resembles our common Santa Rita prickly pear, but with beaver tail shaped pads and pink flowers. Also easy to grow from cuttings.

Height: To 3 ft. plus.

Spread: To 5-6 ft.

Purple Prickly Pear *



Purple Prickly pear (*Opuntia violacea*) Smaller greenish purple pads with long spines and glochids. Yellow flower with red center. Easy to grow from cuttings.

Height: To 1-2 ft.

Spread: To 5-6 ft.

Favorite non natives

The focus here is on natives but there are many more varieties well suited to our climate. Following are a few of our favorites. Our many knowledgeable local growers can help you choose what's best for your garden.

Golden barrel



Golden barrel (*Echinocactus grusonii*). Beautiful golden spines, hardiness, and easy availability make this the most popular cactus for landscape use.

Height: To 3-4 ft.

Spread: To 5-6 ft.

Argentinian Saguaro



Argentinian Saguaro

(Trichocereus terscheckii)

Resembles a saguaro but grows faster and can tolerate colder winter temps. CZ 10.

Height: To 20 ft. plus.

Spread: To 6 ft. plus.

Totem Pole



Totem Pole

(Lophocereus schottii monstrosus).

Spine free knobby stems give this multi-branched columnar cactus its name. As with Organ Pipe and Senita, subject to stem tip damage from frost.

Height: To 15 ft.

Spread: To 6-7 ft.

Octopus cactus



Octopus cactus

(*Echinocereus pentaloophus*)

Hardy, easy to grow and propagate from cuttings.

Thrives in dappled sunlight.

Flowers profusely with beautiful pink flowers in April or May.

Height: 2-3 inches.

Spread: To 10 ft. plus.

Echinopsis hybrids



Easter Lillies (*Echinopsis hybrids*)

Large showy flowers in a wide range of colors. Do best in dappled sunlight and with

supplemental water. Need protection from freezing temps.

Height: To 6-7 inches.

Spread: To 1-2 ft.

Non cacti

Ocotillo



Ocotillo (*Fouquieria splendens*). Found from near sea level to 5,000 feet. CZ 10. Will leaf out overnight with first monsoon rains but quick to drop its leaves when dry conditions return. Can absorb moisture through its outer skin. Transplant success improves with frequent misting. Individual canes can be planted in a row to make a living fence.

Height: To 15-20 ft.

Spread: To 8-10 ft.

Soap tree yucca *



Soap tree yucca (*Yucca elata*). Common yucca in southeast AZ. Flower stalks appear in mid-to-late summer. Bell shaped white flowers are pollinated by moths. CZ 10

Height: To 15-20 ft.

Spread: To 7-8 ft.

Huachuca agave



Huachuca agave (*Agave parryi* var. *huachucensis*). A *parryi* and its various sub species (*truncata* and *couesii*) are all attractive plants in desert garden settings. CZ 10
Height: To 3 ft.
Spread: To 5-6 ft.

Many other yuccas and agaves are well suited for zones 12 and 13.

Red Aloe *



Red Aloe (*Hesperaloe parviflora*)
Tubular red to pink flowers are favored by hummingbirds.
Height: To 4-5 ft.
Spread: To 4 ft.

Shrubs

Creosote bush *



Creosote bush (*Larrea tridentata*) The fragrance of creosote bush after a summer rain is a special treat reserved for those of us who don't head north when the mercury tickles 90 degrees. Thrives in hottest driest deserts where nothing else will grow and responds beautifully to a little extra water.

Height: To 8-10 ft.

Spread: To 10-15 ft.

Jojoba



Jojoba (*Simmondsia chinensis*) Attractive shrub with gray green leaves. Nuts produced by female plants can be pressed into a high grade lubricating oil. Commercial production floundered when a low cost synthetic substitute was developed.

Height: To 5-6 ft.

Spread: To 5-6 ft.

Yellow bells



Yellow bells (*Tecoma stans*)
Found along desert washes in higher elevations of CZ 12. Requires supplemental water. Beautiful yellow flowers. Can freeze to ground in our occasional hard freezes. Quickly recovers when dead wood is pruned in spring. CZ 12
Height: To 7-8 ft.
Spread: To 4-5 ft.

Brittle Bush



Brittle bush (*Encelia farinosa*)
Low growing shrub with gray green leaves. Reliable spring bloomer with or without winter and spring rains. Do not over water.
Height: To 3 ft.

Fairy Duster



Fairy duster (*Calliandra eriophylla*) Low growing 1-3 ft. shrub with large (1.5 - 2 inches) showy red to pink flowers. **Height:** To 2-3 ft. **Spread:** To 3 ft.

Trees

Velvet Mesquite *



Velvet Mesquite (*Prosopis juliflora var velutina*) Widely spread throughout the Sonoran desert. Plays a critical role in desert ecology; serving as a nurse plant for young saguaros, and other cacti and a major source of pollen for bees.

Mesquite beans are nutritious and eaten by cattle and many desert animals.

Height: To 15-20 ft.

Spread: To 20 ft. plus.

Ironwood *



Ironwood (*Olneya tesota*).

Appropriately named for its dense hard wood, the Ironwood also plays a critical role in desert ecology. The largest known stand is protected in Ironwood Forest National Monument west of Tucson.

Height: To 15-20 ft.

Spread: To 10-12 ft.

Desert Hackberry



Desert Hackberry (*Celtis tala*

var pallida) Dense green foliage. Also found along desert washes in higher elevations of CZ 12 and requires supplemental water.

Height: To 20 ft. plus.

Spread: To 10-12 ft.

Whitethorn Acacia *



Whitethorn Acacia (*Acacia constricta var constricta*) Like the mesquite and ironwood, the white thorn acacia can also serve as a nurse plant and major pollen source. Bright yellow spherical flower clusters in spring.

Height: To 15-20 ft.

Spread: To 10- 5 ft.

Why go native?

California's historic drought should send a clear message throughout the desert Southwest. We live in a desert and have been overdrawing our water "bank account" for decades. Will we be proactive or will it be business as usual until circumstances severely limit our options? Per capita water consumption is declining and mandatory reductions in CAP deliveries have been delayed to 2017 or later. As of January, 2016 we are experiencing a wet El Nino weather pattern that may buy us a little more time. We must not become complacent and allow short term relief to delay water conservation efforts. The choice is ours, but time is not on our side.

Recommended reading: "Cadillac Desert, The American West and its Disappearing Water" by Marc Reisner

Special thanks to: David Yetman, Joe and Patsy Frannea, Tucson Cactus and Succulent Society, Shannon Conner, my old friend Dan Bach for input and encouragement, my friend and colleague Laura Anderson who put it together. Photos with * are not copyrighted, others by author, Bill Thornton.



Cactus patch in midtown Tucson was formerly covered with water guzzling Bermuda grass. Prickly pear, shown above, provides habitat for rabbits, chollas provide nesting sites for birds and discourages climbing the patio wall.