



Tohono Chul presents . . .



The Great Xeriscape™

Xeriscape™

... does not mean “zero”-scape

- from Greek word *xeros* (dry)
- refers to creative landscaping program designed to save water while retaining attractive and colorful yard
- gardening in Tucson not quite like gardening anywhere else
- 7 basic principles

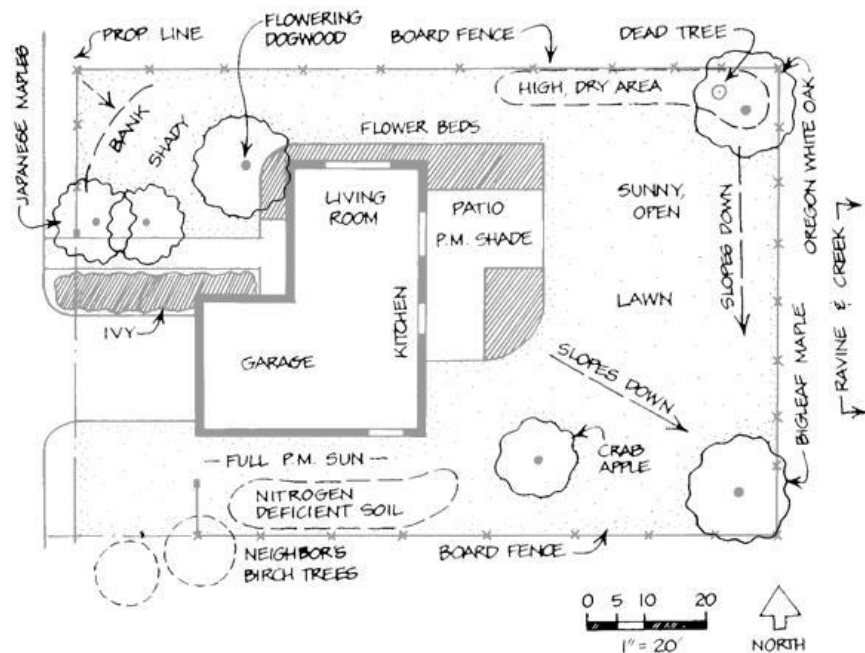


1. Planning and Design



begin by assessing what you have and what you want . . .

- reduce water use and/or site maintenance?
- create more shade to reduce cooling costs?
- expand existing patio/seating area?
- introduce/expand use of seasonal color?
- add a vegetable/herb garden?
- attract birds, butterflies or other wildlife?

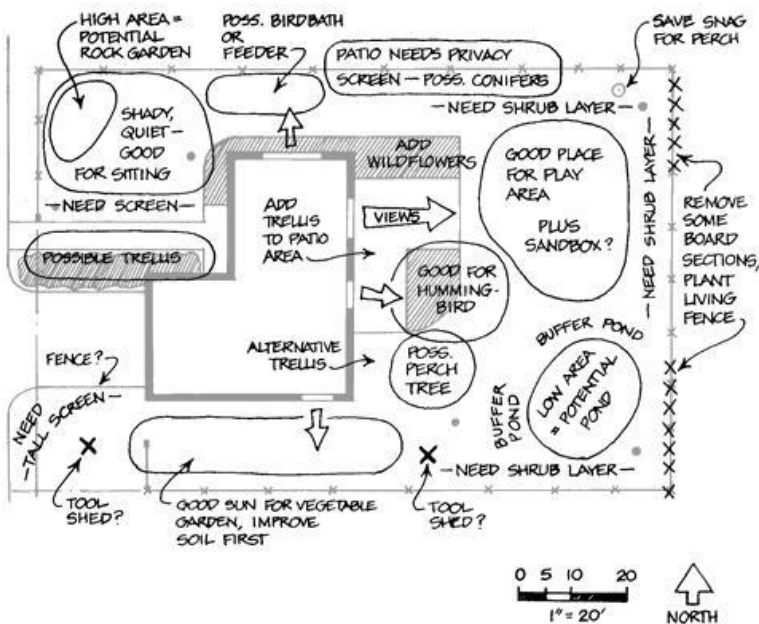


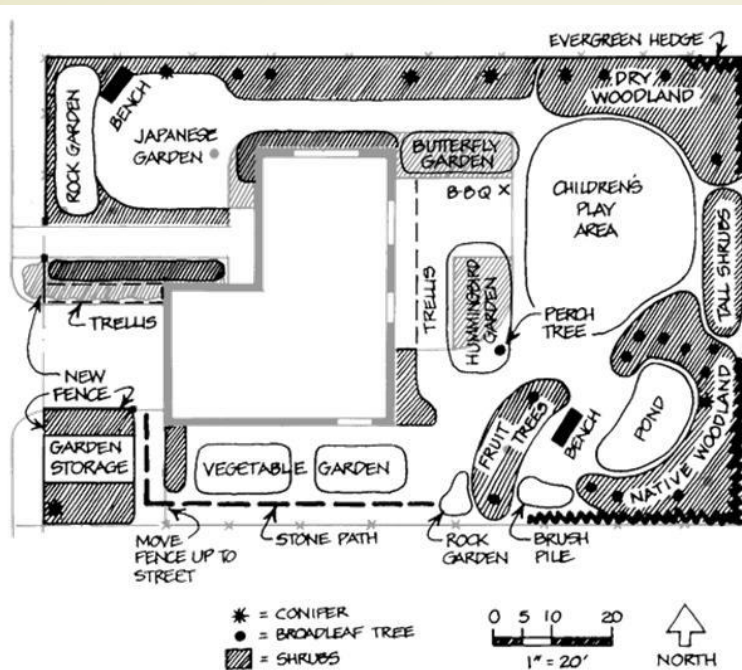
assess site and collect information:

- property lines - from monuments or survey
- easements – city or county rights-of-way for access (utilities, roads, etc.)
- utility lines - gas, sewer, water, telephone and electric lines
- orientation - which direction does property/house face; track sun/shade on living areas of house and patios
- existing landscape and irrigation
- contours of landscape - slopes, ditches, washes, high spots, other problem areas

make sketch of lot including:

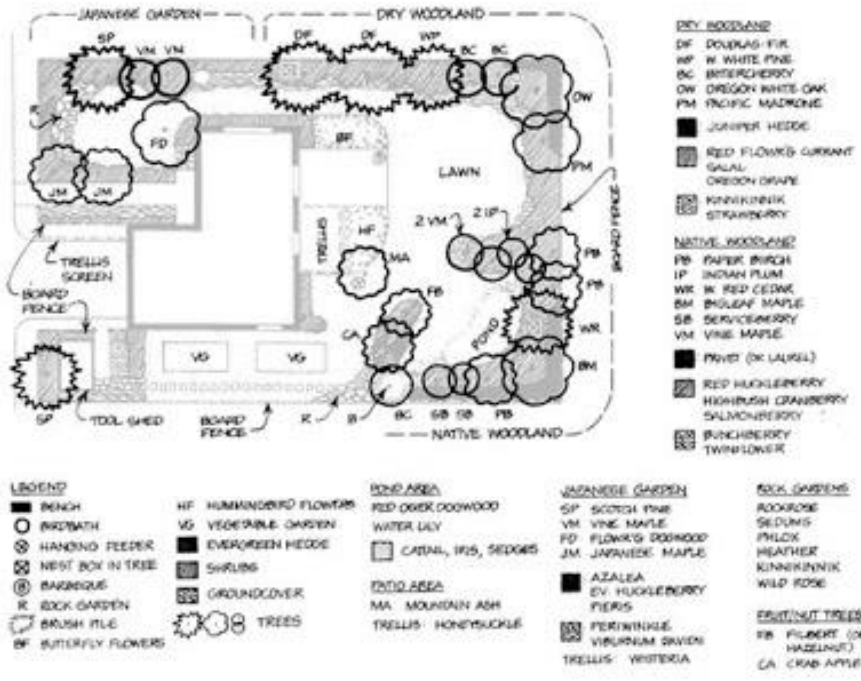
- location of residence, driveways, sidewalks, streets, neighbors
- property and setback lines; utilities
- existing vegetation
- contour lines/topography changes
- north arrow; scale (usually 1"=20')





identify what you want to change and what you want to add:

- lower water use/drip irrigation installation or improvements
- lower maintenance costs/time
- reduce cooling/heating costs
- create more living space (lawn, patios, vegetable gardens)
- more plants for color, shade, accent, wildlife habitat
- fix drainage problems
- when selecting plants, think about “water zones”





LANDSCAPE PLAN

SCALE: 1/16" = 1'-0"

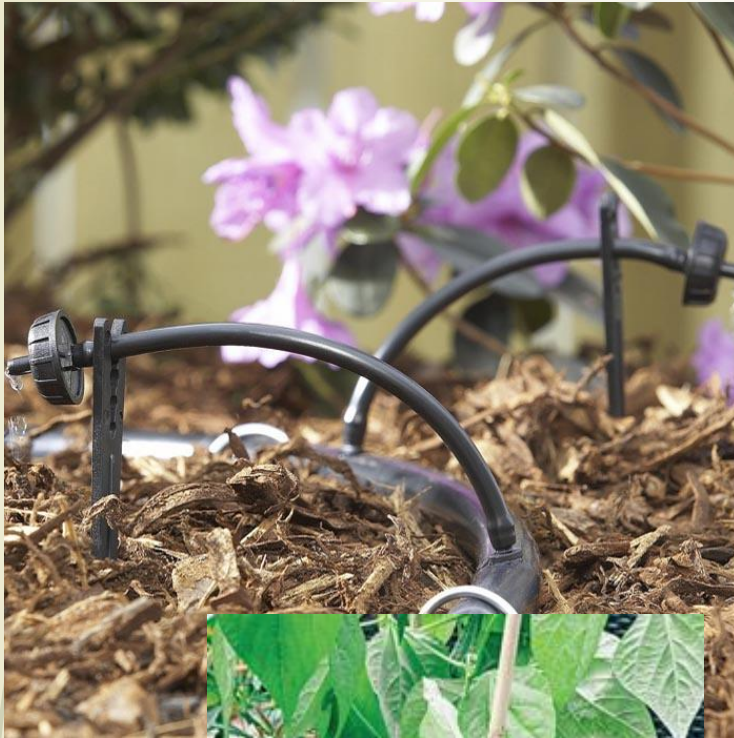


2. Appropriate Turf Areas

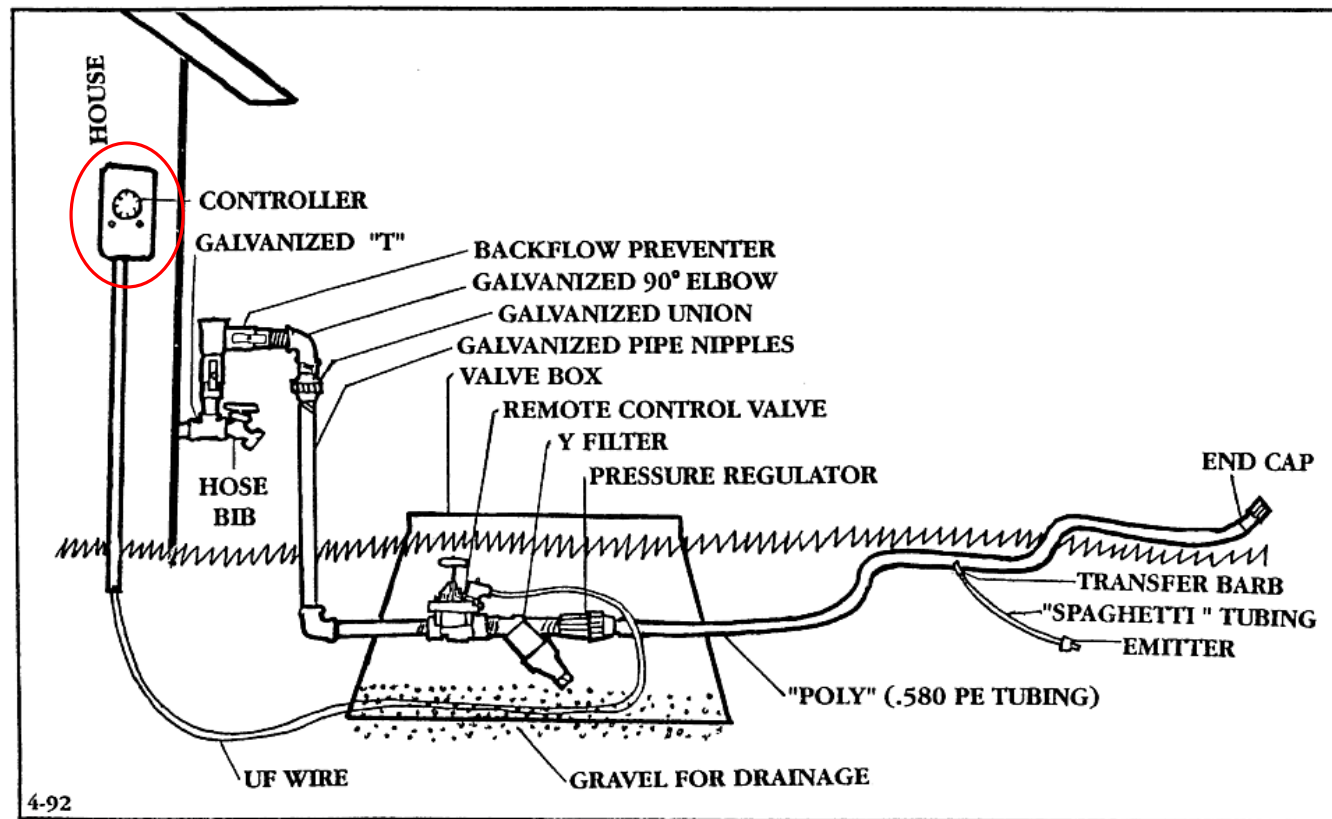


- locate in areas where it provides most benefit
- near house helps in cooling
- separate from other plantings so can be watered independently
- locate in functional area so will be used –
if you don't use it, lose it
- use as little as possible
- use an efficient grass; maintain it properly (cutting, watering, fertilizing)
- **KEEP IT SHORT**
- shorter equals less water
- shorter prevents seed heads from forming
- consider native clump grasses or groundcovers as an alternative

3. Efficient Drip Irrigation



- can be used to water variety of trees and shrubs, vegetable gardens or container plants
- key is design - start with a plan
- drawing to scale of space to be irrigated
- measure distances for rough estimate of amount of tubing, kinds of connectors and number and types of emitters
- determine water needs of individual plants
- put those with similar requirements on same valve
- always valve trees and shrubs separately from flowers and vegetables
- trees/shrubs will need longer and deeper watering than more shallow-rooted plants
- check with local water company for requirements regarding backflow prevention, filtering and pressure regulation



- **controls** to regulate system, adjust for seasonal changes and change in watering needs
- may be manual (turn water on and off) or automatic for greater efficiency
- plugged into AC outlet and wire run from timer to valve or valves
- timer is set to turn water on and off as desired
- select controller designed to handle system requirements for complexity and duration of watering schedules

DROP YOUR WATER USE!™



Very Low Water Use

*Water every 3 - 4 weeks during the growing season after establishment in 2 - 3 years
Native & Desert Adapted Plants - very little supplemental irrigation once established.



Low Water Use

* Water every 2 - 3 weeks during the growing season after establishment in 2 - 3 years.



Moderate Water Use

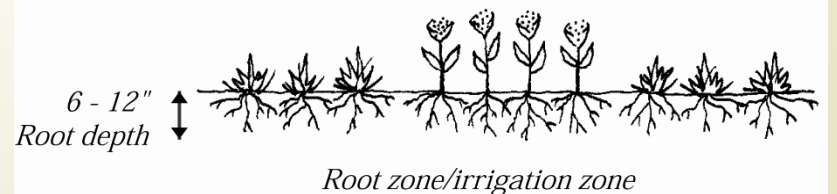
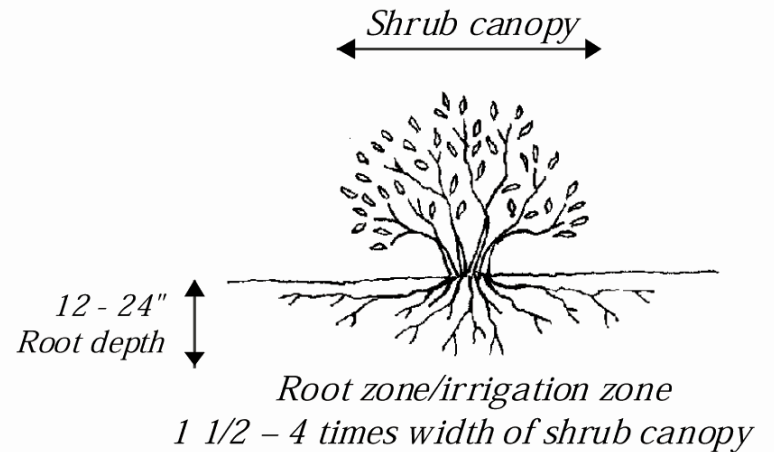
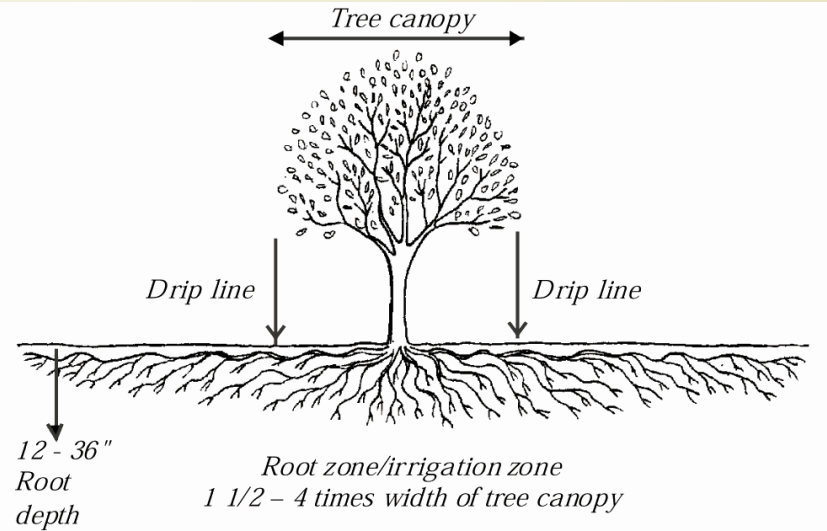
* Water weekly during the growing season after establishment in 2 - 3 years.

* Irrigation frequency and duration will vary depending on soil type and exposure. The frequency listed should be considered a guideline only!



Conserving water—more than a drop in the bucket!

Drop Your Water Use™ is a Program of the Arizona Department of Water Resources in cooperation with participating nurseries





LANDSCAPE WATERING GUIDELINES

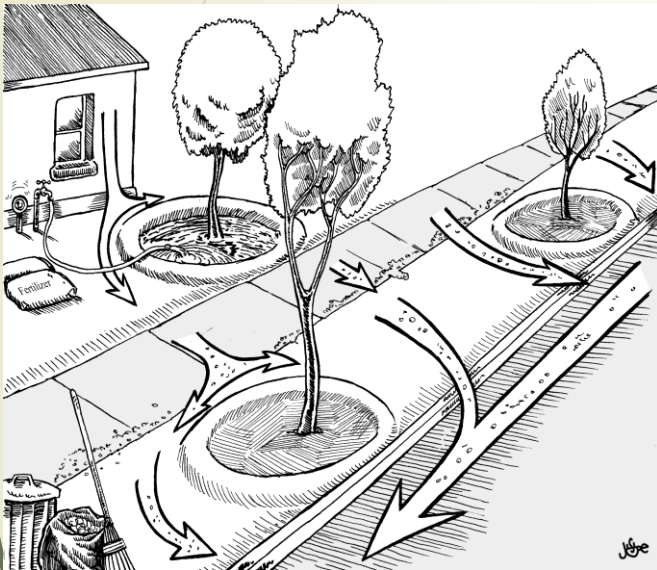
How Much & How Often Water to the outer edge of the plant's canopy and to the depth indicated. Watering frequency will vary depending on season, plant type, weather and soil.		Seasonal Frequency — Days Between Waterings				Water This Deeply (Typical Root Depth)
		Spring Mar - May	Summer May - Oct	Fall Oct - Dec	Winter Dec - Mar	
Trees	Desert adapted	14-30 days	7-21 days	14-30 days	30-60 days	24-36 inches
	High water use	7-12 days	7-10 days	7-12 days	14-30 days	24-36 inches
Shrubs	Desert adapted	14-30 days	7-21 days	14-30 days	30-45 days	18-24 inches
	High water use	7-10 days	5-7 days	7-10 days	10-14 days	18-24 inches
Groundcovers & Vines	Desert adapted	14-30 days	7-21 days	14-30 days	21-45 days	8-12 inches
	High water use	7-10 days	2-5 days	7-10 days	10-14 days	8-12 inches
Cacti and Succulents		21-45 days	14-30 days	21-45 days	if needed	8-12 inches
Annuals		3-7 days	2-5 days	3-7 days	5-10 days	8-12 inches
Warm Season Grass		4-14 days	3-6 days	6-21 days	15-30 days	6-10 inches
Cool Season Grass		3-7 days	none	3-10 days	7-14 days	6-10 inches

These guidelines are for established plants (1 year for shrubs, 3 years for trees). Additional water is needed for new plantings or unusually hot or dry weather. Less water is needed during cool or rainy weather. Drip run times are typically 2 hours or more for each watering.

slow and even application of water to the soil

A word about water harvesting

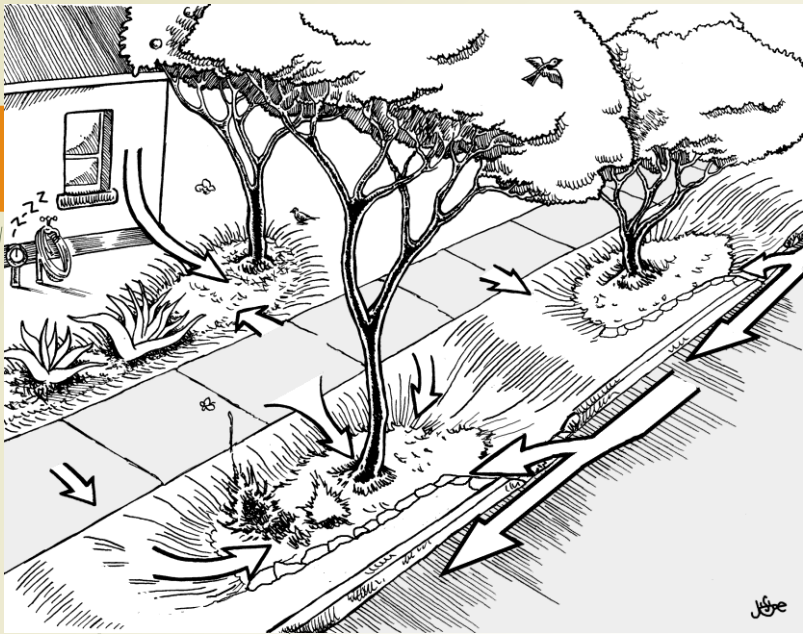
ancient technique in arid regions of world for utilizing stormwater, making use of water otherwise wasted, reducing runoff and decreasing soil erosion and downstream flooding



escaping rainfall on residential lot
courtesy of Brad Lancaster



- ~80,000 gallons falls from sky onto typical $\frac{1}{4}$ acre lot in average year
- 1/3 or more runs off, adding to street flooding and erosion
- rainwater harvesting captures rain and uses it close to where it falls, or stores it for future application
- cheapest place to collect rainwater is in landscape - slow flow of runoff to allow to soak into ground
- catchment is an area from which rainwater can be harvested (roof, driveway or landscape)
- runoff in urban areas ~4X what is in open desert – compare a 95% loss on pavement to 30-40% loss on bare soil, but only 15-20% where plants are growing

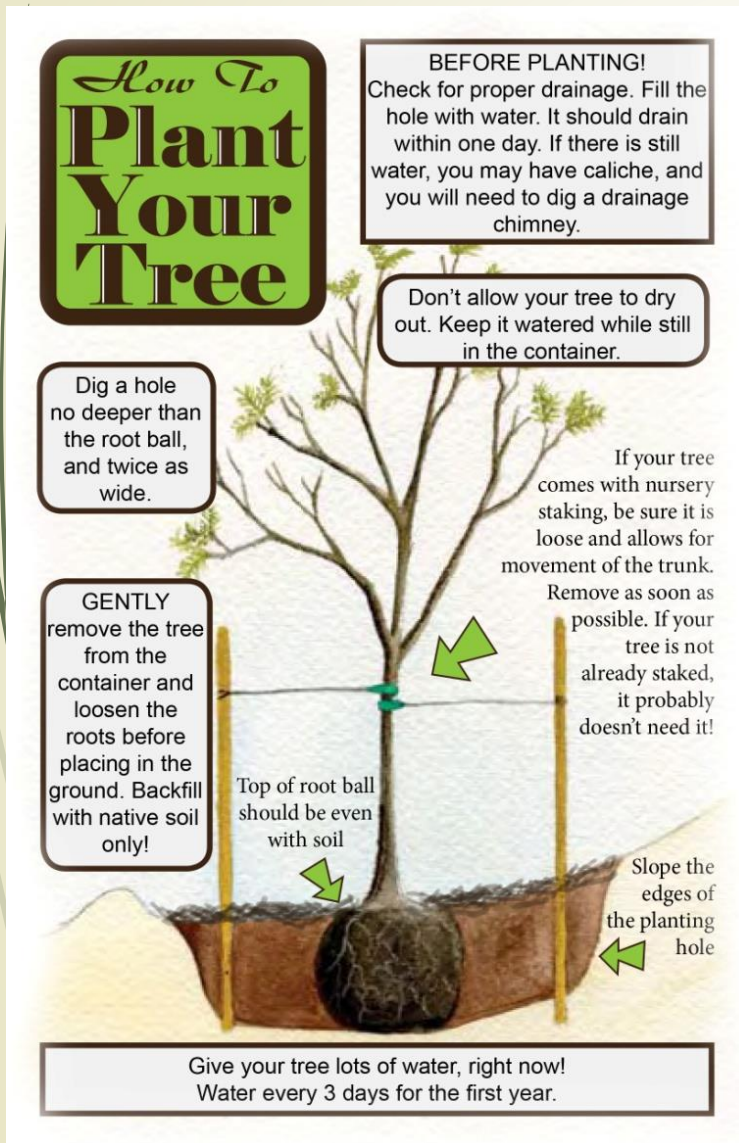


berms and catchment basins capture rainfall
courtesy of Brad Lancaster



- simplest method is to install plants under drip line of roof
- use porous pavement materials
- when installing gutters and downspouts include rain barrel to store runoff for future use
- perforated PVC pipes laid in gravel-filled trench can be used to direct water where it is needed
- if you plan to install a cistern, should be large enough to hold runoff from heaviest storm you can expect
- 50' x 50' roof equals 2,500 sq. ft.
- Tucson's annual rainfall ~12"
- 7.48 gallons in cubic foot of water = 18,700 gallons of runoff in a year (assuming 100% runoff)
- single monsoon storm can drop 2" of rain could result in 3,000 gallons of water!

4. Soil Amendments



- alkaline soils require iron sulfate or other acid-reacting fertilizers to balance pH
- organic compost adds nutrients and increase moisture retention
- sand can be added to heavy clay to improve water percolation
- *caliche* - layer of calcium carbonate acts like cement and prevents water and roots from penetrating to soil below
- must break up or use raised beds
- planting holes at least 2X root ball and a little deeper
- check drainage by filling hole with water – 6” should empty in 2-3
- to avoid salt buildup - long, deep, slow watering to encourage deep root growth and to wash salts past root zone
- native plants will do fine with native soils

5. Mulch



- organic or inorganic material used to cover soil
- organic - bark, wood chips and compost
- can improve soil structure balance between water, air, and nutrients
- inorganic - gravels, rock and decomposed granite
- if using a “weed mat,” select one that is permeable
- used around plants to retain moisture, maintain temperature and reduce weeds
- granite and rock mulches also create microclimates important in establishing wildflowers
- compost also contains macro and micro nutrients essential for plants to thrive
- Tucson Organic Gardeners at 798-6215

6. Use of Low Water Use Plants



- plant selection is major factor in any successful landscaping / water harvesting project
- native and arid-adapted plants tolerate prolonged drought, can take advantage of water when available
- riparian trees (desert willow, mesquite) do well in large, deep basins, tolerating standing in water for up to a day
- maximize groundcovers as they act as living sponges, increasing soil's ability to hold water
- group plants by similar water needs; space them so there will be enough water for all
- 500 sq. ft. planted with low water use plants requires ~5,000 gallons of water – same area with high water use plants and demand doubles!

curb appeal



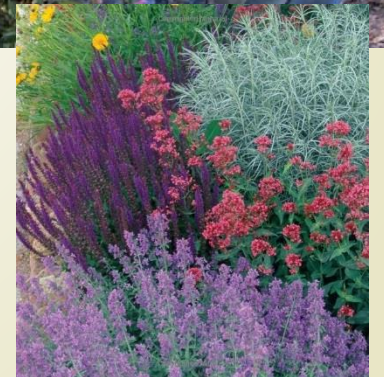


outdoor living





color





cacti and succulents



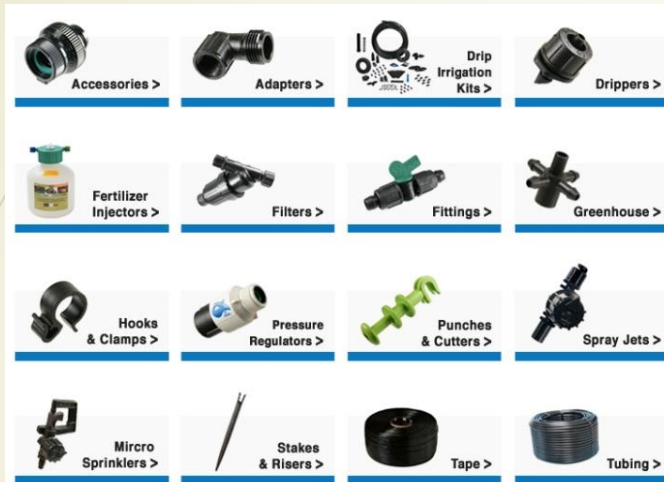


natural / wildlife



containers

7. Appropriate Maintenance



De-accessioning

- it's **OK** to part with an inappropriate or unhealthy plant
- if it isn't doing well you can ...
 - heal it
 - move it
 - toss it
- if first two fail, remove it and try something else
- or let what is there grow into the void



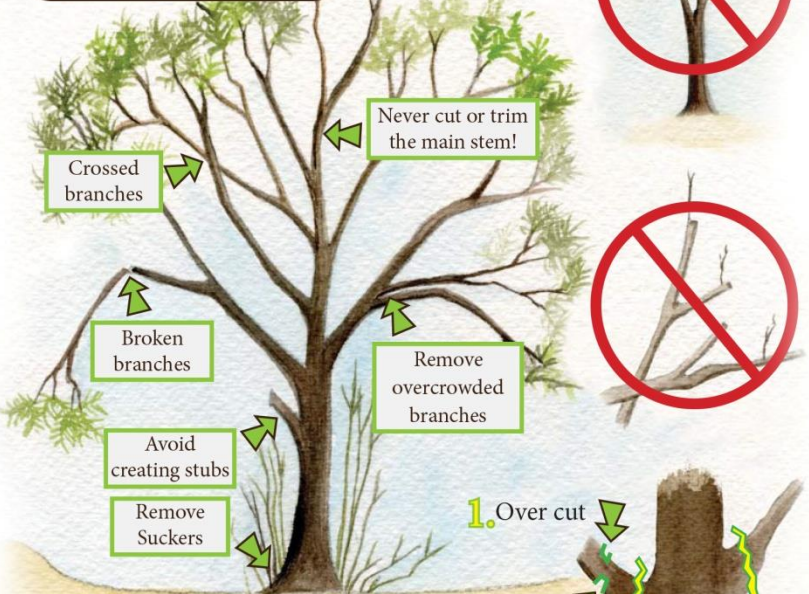
Drip Irrigation System

- not maintenance-free, so inspect regularly
- check for clogged emitters, tree roots in the lines, dirty filters, rodent damage
- leach soil periodically to get rid of salt buildup
- adjust placement and number of emitters as plants grow and roots spread
- annually assess amount of water versus size of plant
- check automatic timer and change amount of water at least twice a year - more when nighttime temperatures go consistently over 60°F and less when temperatures fall consistently below 60°F

How To Prune Your Tree

DO NOT prune for the first two years, especially lower branches which will help protect the trunk while it gains strength.

Never "top" or "tip" a tree. The appearance will be ruined, and the tree will not heal correctly.



- Pruning in the spring encourages growth.
- Pruning in the summer reduces size.
- Avoid pruning in the fall: plant is slow to heal and quick to decay.

Make cuts at the base of the branch, slightly above the branch collar. If the branch is large: do a small over cut (1), then an undercut (2), and finally remove the stub (3). This will avoid damage to the tree as the branch loosens.

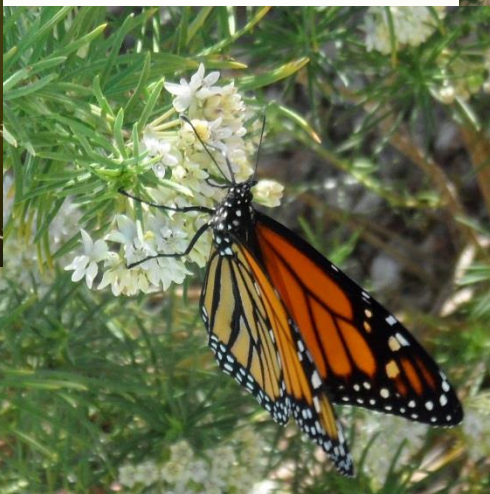
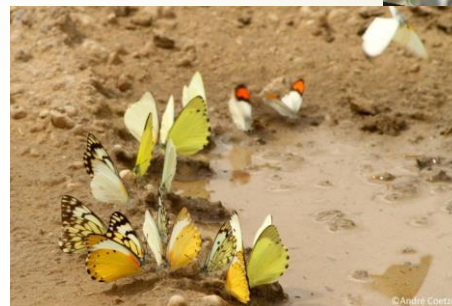
Pruning

- natural growth pattern far more attractive than that gardeners impose
- basic goal of pruning to maintain health, remove dead or broken branches, control or direct growth, display natural grace and shape
- "thin" to remove lateral branches to control size, yet retain natural form
- "heading back" not recommended other than for fruit trees or roses
- "shearing" is used in formal hedges or topiaries; can eliminate or reduce flowering
- never prune too much at one time, especially during summer months
- major pruning done from late winter to early spring
- do not remove more than 20% of tree's canopy during the summer

8. Wildlife Habitat



- food
- water
- shelter
- space



Desert trees



Family:
Fabaceae

desert willow

Texas ebony

kidneywood

palo blanco

ironwood

palo verde

mesquite

acacia



Desert willow

Chilopsis linearis



- despite long, narrow leaves and drooping branches, not a true willow
- rapid growth to 30'
- winter deciduous with seed pods remaining on tree
- large white to lavender-pink, orchid-like flowers April through August
- at higher elevations and eastward, the color deepens to maroon
- new color varieties available in the nursery trade ranging from pale lavender to burgundy



Texas mountain laurel

Dermatophyllum secundiflora



- aka Mescal bean
- multi-trunked, large shrub that can be trained into attractive tree
- glossy, evergreen leaves
- clusters of purple flowers smell like grape “Kool-Aid”
- attracts carpenter bees
- drought and cold tolerant but can be damaged by moth caterpillars in spring
- chunky, tan-gray seed pods with red seeds, poisonous but so hard are little real risk



Texas ebony

Ebenopsis ebano



- thorny shrub/tree (to 20'+) with zigzag branches and glossy, dark green foliage forming dense crown
- mostly evergreen
- light yellow catkin flowers June to August followed by dark, flattened, hairy seed pod 4"-6" long which remain on tree until after next flowering season
- Chihuahuan Desert native
- host plant for Large Orange Sulphur



Kidneywood

Eysenhardtia orthocarpa



- small, airy, spineless tree (to 20') with grayish “shredded” bark and fine, compound leaves
- spiky white flowers followed by abundant, leaf-like seed pods
- deciduous
- distinctive fragrance due to sunken glands on stems, leaves and flowers
- name derived from diuretic properties of the wood used in Mexico for kidney and bladder diseases
- beloved of bees and butterflies
- nectar plant for Marine Blue



Palo blanco

Mariosousa willardiana



- slender tree with limited branching and narrow spread, growing to 10'-20'
- can be planted close to structures because of slow and narrow growth
- leaves are few, long and wispy; catkin-like flowers in spring whitish to pale yellow
- distinctive, peeling bark is cream, exposing green of trunk underneath
- endemic to Sonora
- frost tender so in colder areas (below 20°) requires sheltered spot



Desert ironwood

Olneya tesota

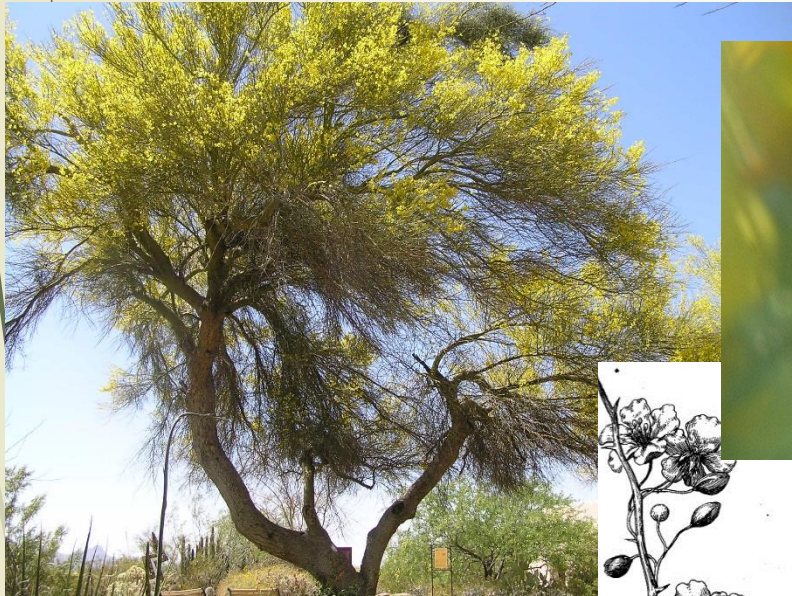


- very slow-growing to 35'
- longest-lived of desert trees
- very hard, dense wood
- drops leaves shortly before lavender flowers appear in May and June
- Seri Indians of western Sonora use for wood carvings, previously used for arrow heads and tools
- found lower Sonoran Desert to 2,500'; SW Arizona, Sonora and Baja California; cold limits northern range (min. temp. 20°)



Blue palo verde

Parkinsonia florida



- Arizona state tree
- bluish-green trunk, turns gray as ages; to 35' or more
- short thorns
- spreading crown
- blooms first in spring; bright yellow flowers with orange spots on banner petal; flattened, wide seed pods
- found at 1,000' - 4,000' along sandy washes with sufficient water from central Arizona and SE California to south central Sinaloa
- among most drought-tolerant
- pollen/nectar source for honey and native bees
- bird nesting tree



Foothill palo verde

Parkinsonia microphylla



- the “other” Arizona state tree
- signature tree in Arizona Upland
- dense, multi-trunked, each branch ending in sharp thorn; to 25’
- tiny, bi-pinnate leaves
- mid-spring pale yellow flowers with cream banner petal; constricted seed pods (immature seeds edible)
- found on alluvial fans of desert mountains from 500’ - 3,500’ in central and SW Arizona, Baja California and Sonora
- food source for bees



Honey mesquite

Prosopis glandulosa



- small tree or large shrub; 10'-30' tall
- generally winter deciduous; leaves appearing in April
- secondary leaflets larger, greener than velvet mesquite, up to 2½"
- branches armed with heavy, straight spines
- yellow catkins appear spring to early summer (April/June)
- range throughout Sonoran Desert below 5,000 feet
- host and nectar plant for Palmer's Metalmark

Velvet mesquite

Prosopis velutina



- name comes from fine hairs on small, compound leaves
- seed pods primary food source for early native peoples, naturally sweet and high in protein
- common on slopes and mesas from 1,000' - 4,000' in central and southern Arizona
- highly drought-tolerant, subsisting on rainfall alone once established
- many bird species forage for insects or eat young leaves/flowers
- host plant for Tailed Orange, Ceraunus Blue



Whitethorn acacia

Vachellia constricta



- more shrub-like than Sweet acacia, but growing to 18'
- can be pruned as multi-trunked tree
- noted for up 1½" paired white stipules (spines)
- same fragrant, bright yellow, fuzzy flowers
- winter deciduous
- cold and drought tolerant
- somewhat deciduous
- host plant for Mexican Yellow Sulphur



Sweet acacia

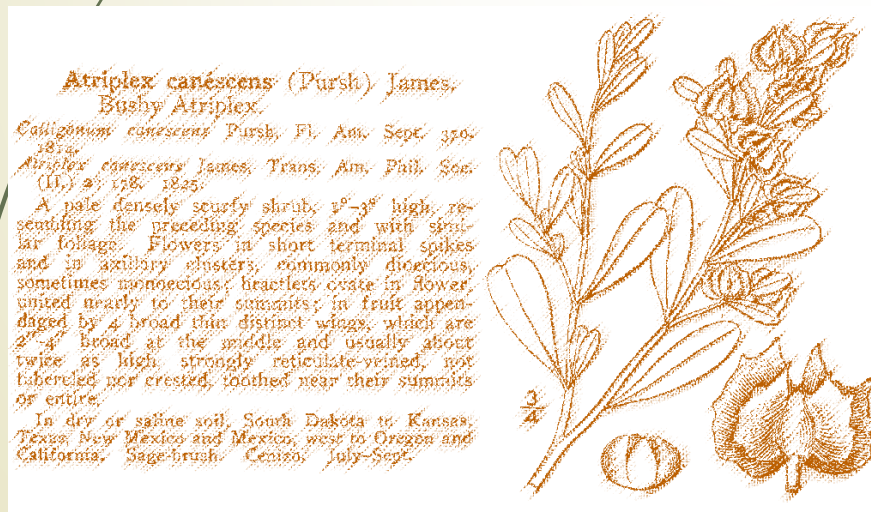
Vachellia farnesiana



- umbrella-shaped, semi-evergreen growing to 30'
- young branches armed with paired, straight spines
- early spring bright yellow, fuzzy, ball-like flowers; very fragrant
- in southern Europe cultivated for flowers used in manufacture of perfume
- found in grasslands and oak woodland from 3,500' - 5,000' feet in Arizona, southern California, southern and SE Texas, throughout Mexico and New World tropics to Chile

Desert shrubs plus...

chuparosa
milkweeds
fairy duster
desert hackberry
trailing indigo
brittlebush
penstemon
desert mistletoe
salvia



Chuparosa / Mexican Honeysuckle



Justicia californica / *Justicia spicigera*



- perennial shrubs 3'-5' high and wide
- *J. californica* has tubular reddish flowers appearing in winter months
- takes full sun
- native to Sonoran Desert
- *J. spicigera* thrives in filtered shade and also takes the heat of summer
- orange flowers appear almost year-round
- does best with some supplemental water
- native to Mexico and Central America
- both attract hummingbirds



Milkweeds – Pineleaf / Desert

Asclepias linaria / *Asclepias subulata*



- *A. linaria* does best with some afternoon shade; evergreen
- host for Monarch and Queen
- nectar for Queen, Painted Lady and others
- *A. subulata* thrives in full sun; deciduous
- host for Monarch
- nectar for Queen and Tarantula Hawk
- both bloom spring to fall, average 3' to 4' tall and wide and are low water users

Fairy duster / Baja fairy duster

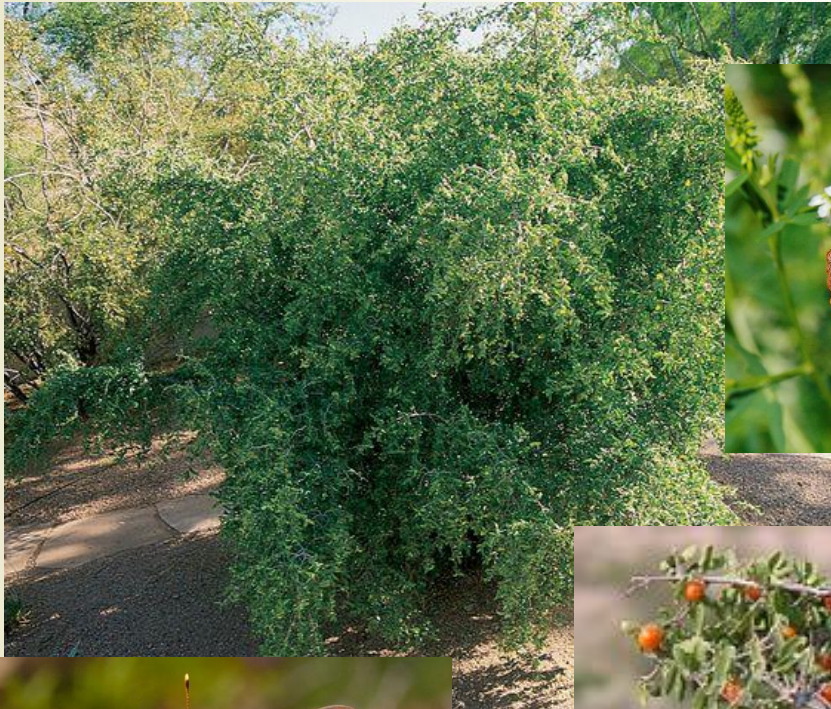
Calliandra eriophylla / *Calliandra californica*



- showy, loose-branched shrubs – 2'-3' or 4'-5' tall and as wide
- 2" pinkish blooms February-March or bright red flowers year-round
- exotic flower puffs are all spiky stamens
- summer deciduous or evergreen most of year
- can freeze to ground
- nectar plant for Swallowtails and larval/nectar plant for variety of Blues
- irresistible to hummingbirds and bees

Desert hackberry

Celtis pallida



- dense, thorny, sprawling shrub
- 10' to 15' high and as wide
- extremely drought tolerant
- noted for zigzag branch structure
- nondescript yellow-green flowers in spring followed in fall by sweet, orange berries
- extremely valuable to wildlife for cover and food
- native to South Texas and the Chihuahuan desert
- host plant for Empress Leilia and American Snout



Trailing Indigo

Dalea greggii



- long-lived, durable, evergreen ground cover requiring almost no maintenance
- full sun and/or reflected heat
- good erosion control
- dense silvery mound of foliage
- blooms spring and early summer with fuzzy, purple balls
- do not over-water
- attracts bees, butterfly nectar plant and host for Southern Dogface



Brittlebush

Encelia farinosa



- low, rounded evergreen shrub growing 1'-3' tall and 4' or more side
- gray-green, silvery leaves covered with soft hairs
- daisy-like yellow flowers in spring and sometimes late summer through winter with sufficient rain
- broken stems secrete gum that can be chewed or used for incense
- takes full sun, little water and thrives on neglect
- host plant for Fatal Metalmark
- when not much else in bloom, butterflies will visit for nectar



Parry's Penstemon

Penstemon parryi



- most well-known and popular native penstemon
- low rosette of gray-green leaves with flower stalks to 3'
- hot pink flowers bloom late February to early April
- drought tolerant once established, takes full sun
- attracts hummingbirds and butterflies
- found from southern Arizona to northern Mexico, at elevations of 1500'-5000'
- also *P. eatonii*, *P. palmeri*, *P. subulatus*



Desert mistletoe

Phoradendron californicum



- dioecious, hemi-parasitic plant with brittle, jointed stems
- dull green with small, scale-like leaves and tiny flowers in clusters
- female plant produces small red berries in fall contains chlorophyll and carries out photosynthesis, relying on host plant for water and nutrients
- berries source of food for many birds
- found below 4,000' coinciding with host plants like mesquite, ironwood, palo verde, acacias
- host plant for Great Purple Hairstreak



Autumn Sage

Salvia greggii



- small evergreen shrub
- prolific, magenta-red flowers summer through fall
- deer resistant
- once established needs occasional water
- attracts hummingbirds
- multiple color varieties now available in nursery trade
- also *S. clevelandii*, *S. leucantha*

Cacti



saguaro
organ pipe
barrel
cholla
prickly pear
hedgehog
pincushion

Saguaro

Carnegiea gigantea



- indicator plant of Sonoran Desert
- in April-May, night-blooming flowers pollinated primarily by nectar-feeding bats and white-winged doves
- in June, ripe fruits harvested by people and enjoyed by desert critters
- prized nesting place for desert-dwelling birds
- found on desert mountain slopes, foothills, and outwash plains with rocky, gravelly, well-drained soil
- grows from sea level to ~4,000'

commonly 20'-
35' tall but can
grow to 40'
and more

weighs
6-8 tons and
90% is water

first arm may
appear when
10'-15' tall



shallow roots spread as wide as height



tiny seeds
germinate with
summer rains — °



first blooms at
40-55 years
of age

saguaros that
survive early
stages can live
175-200 years



Arizona (Fishhook) barrel

Ferocactus wislizeni



- “barrel”-shaped, single column cactus averaging 2’-4’, sometimes to 8’
- leans to south and west; often called “compass cactus”
- broad, flat ridged and hooked central spine
- vivid flowers August-September ranging from orange-red to yellow
- fleshy, edible, lemon-yellow fruit follow
- attracts bees and small mammals
- most common barrel in southeastern Arizona, abundant on bajadas



Staghorn cholla

Cylindropuntia versicolor



- related to prickly pears, but cylindrical stems rather than flattened
- many-branched cactus with short trunk; red or purple tinge deepens with cold or drought
- grows 3'-8' tall, sometimes to 15'
- flower color varies: yellow, green, bronze, orange, magenta – attracts bees
- fruit is usually spineless
- found in Pinal, Santa Cruz and eastern Pima counties in Arizona and in northern Sonora from 2,000'-3,000'



Jumping cholla

Opuntia fulgida



- aka chainfruit cholla
- tree-like form averages 7'-8', even 12' tall
- jointed segments detach to take root, as can fallen fruit, hence clonal colonies
- sharp spines are sheathed and barbed
- small pink flowers bloom in late afternoon to night from June-August
- provides protected nesting sites for cactus wrens and curve-billed thrashers
- found from central Arizona south through Sonora, from sea level to 4,000'



Engelmann's prickly pear

Opuntia engelmannii



- stems are thick, flat pads up to 12"; grow from one another to form upright, trunk-less cactus
- clusters of downward pointing spines and glochids
- in spring, flowers yellow to red
- in summer, edible, purple-red, fruit
- bees and birds attracted to flowers; birds, mammals and reptiles favor the fruit
- found on lower mountain slopes and desert floor from 1,500'-6,200' in throughout Southwest

Santa Rita prickly pear

Opuntia santa-rita



- distinguished by bluish-purple somewhat circular pads; color deepens in response to cold or drought
- grows to 6' tall
- pads relatively spineless
- late spring to early summer, flowers bright, lemon yellow
- tolerates temps to 15°
- prefers sandy/gravelly soils of plains and canyons at 3,000'-5,000' in southeastern Arizona, southwestern New Mexico, west Texas and northern Sonora

Arizona fishhook pincushion

Mammillaria grahamii



- small, inconspicuous cylindrical cactus 2"-8" tall, occasionally forming clumps
- one of central spines hooked
- delicate pink flowers circle crown; appear sporadically throughout summer
- visited by cactus bee specialists collecting pollen
- 1" long red fruits favored by small mammals
- abundant in debris under desert shrubs
- found in central and southern Arizona and northern Sonora to 4,500'



Hedgehog

Echinocereus fasciculatus var. *fasciculatus*



- aka robust hedgehog
- grows in clumps of up to 30 cylindrical, ribbed stems, 12"-18" tall
- spines numerous and uneven
- one of first cacti to bloom in spring; 2" flowers violet to magenta
- only hedgehog common around Tucson
- attracts bees and small mammals who will munch flowers
- found from central Arizona to northern Sonora from 1,000'-6,000'

Agaves & Yuccas & more...



Parry's agave

Murphey agave

Partridge breast aloe

Ocotillo

red yucca

sotol

soaptree yucca

banana yucca

Aloe vs. Agave

- Old World vs. New World
- similar climatic conditions/environments
- parallel adaptation
- example of Convergent Evolution



VS.





Parry's agave

Agave parryi



- compact, 3' foot rosette; broad, blue-green, toothed leaves
- good for small spaces
- takes full sun; hardy to -5°
- at maturity, lemon yellow flowers in mid-summer
- visited by migrating, nectar-feeding bats as well as bees and hummingbirds
- offsets by pupping
- found on rocky slopes throughout Arizona, New Mexico, and mountain ranges in western Mexico

Murphey agave

Agave murpheyi



- aka Hohokam agave
- cultivated for food and fiber
- rosette about 3' in diameter
- narrow, blue-green to gray, toothed leaves with pale banding and bold leaf imprints
- after flowering (pale green) produces bulbils, seldom viable seed
- native to central Arizona and northern Mexico from 1,500'-3,000'



Partridge breast aloe

Aloe parviflora



- aka Tiger aloe, grows 10"-12" tall and 9" wide, solitary or clustered rosettes
- dark green leaves covered with lines of white spots
- white leaf margins have tiny, blunt white teeth
- when drought stressed, leaves turn more reddish-brown
- in winter, pink to pale red flowers on short, stout, and sometimes branched stalk
- attracts hummingbirds
- less is more when it comes to water
- hardy to 20°



Blue grama grass

Bouteloua gracilis



- makes up 75% or more of grasses in tallgrass prairies
- forms dense mounds with foliage growing only 4"-6" tall
- works well at the front edge of other grasses or in front of dark-colored perennials
- blooms July to October
- interesting seed heads (15" tall) resemble eyelashes
- most drought-tolerant of all native grasses
- host plant for variety of skipper species; provides seed for birds



Ocotillo

Fouquieria splendens



- woody shrub of spreading, elongated branches 10'-12' tall
- NOT a cactus!
- drought deciduous; may grow and drop leaves several times a year; sometimes within 48 hours
- excellent accent plant in landscape
- red-orange flower spikes at tips of stems in April-May
- migrating nectar-feeding hummingbirds main pollinators

Sotol

Dasyilirion wheeleri



- aka “desert spoon” after cup-shaped leaf base
- slender, gray-green leaves with sharp, curved prickles
- dense rosette 4’-6’ wide; flower stalk 10’-15’ high
- early summer bloom; creamy white flowers
- does not die after flowering
- pollinators, particularly bees and hummingbirds, attracted to rich nectar
- found on rocky hillsides from 3,000’-6,000’ in SE Arizona, SW New Mexico, north and eastern Sonora, west Texas



Red yucca

Hesperaloe parviflora



- not a yucca
- long, thin, dark green leaves with curling fibers along edges
- grows 3'-4' tall and as wide
- long spikes of pink to red to coral, bell-shaped flowers from May through October
- extremely tough, being drought, heat and cold tolerant
- attracts hummingbirds
- Chihuahuan Desert native
- yellow-flowered form available
- larger, white-flowered *H. funifera* native to Mexico

Soaptree yucca

Yucca elata



- semi-succulent small tree 6'-16' tall 4'-6' wide, usually branching
- 1'-2' flexible, narrow leaves have fine fibers on margins
- nocturnal creamy white flowers (May and June)
- pollinated by *Pronuba* moth in symbiotic relationship
- can bloom multiple times
- important fiber plant
- found from 2,000'-6,000' in central and SE Arizona and Sonora; also common in New Mexico, west Texas and Chihuahua

Banana yucca

Yucca baccata



- sprawling, semi-succulent; solitary or forming colonies
- rigid, narrow blue-green leaves to 30" with sharp spine at tip
- clusters of creamy flowers appear early summer
- fleshy fruit is edible
- fiber and roots used in basketry
- found throughout northern Arizona, south to Cochise County; southern Utah and Nevada; eastern California and New Mexico to west Texas, from 2,000'-7,000'





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