

# *Saving and Handling Our Native Cactus and Other Succulents*





# XERISCAPE

Landscaping With Style In The Arizona Desert

*A step-by-step guide for planning,  
installing and caring for your landscape*

## **Natives Can “Blow You Away”**

**Robin Stinnett  
Human Productivity Center  
AZ Dept. of Water Resources**

# My Topics

- Basics
- Flowers
- Fruits
- Propagation/Growth Rates
- Safe Handling
- Food Source (people/animals)
- Special Forms

**NOT Covering:**

**Plant Care, Watering, Cold Hardiness,**

**Native Plant Laws, Soil needs, Landscape Designs**

# Before We Get Started . . .

## Cactus:

A Succulent that has Areoles, small bumps all over the plant. They can have spines, glochids, stems, flowers and roots.

## Succulent:

A plant that stores water so it can keep growing without getting any water for a long period of time.



## Arizona Native Plant Protection Laws

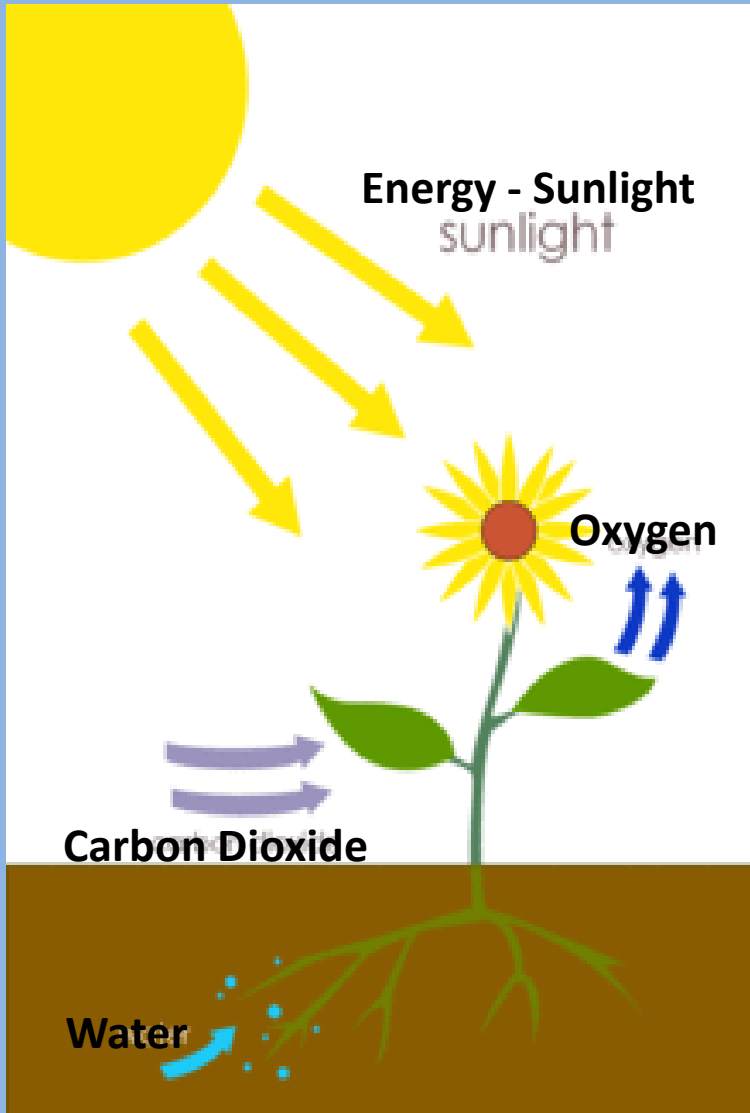
Applies to all Native Plants Growing in their “Original” Location

***“Don’t Mess With a Saguaro”*** (unless it is Yours and Only a few)

# CAM - Photosynthesis

## Crassulacean Acid Metabolism

**Used by Almost All Cactus  
and Many Succulents**



- Stomata (pores) Closed All Day
- Takes in Carbon Dioxide at Night
- Stores as Malic Acid
- Daytime Photosynthesis releasing Oxygen

**Evolved for Arid Conditions  
Greatly Reduces Water  
Evaporation - up to 66%**

# Cactus Handling Tools



**Tongs, Carpet, Cactus Gloves, Pitchfork and Sling**



Cactus "101" Postcard - Handout  
The Most Common C&S in Our Area

# Saguaro

- ❖ Majestic
- ❖ The Desert Giant
- ❖ Symbol of the Southwest
- ❖ Statuesque
- ❖ Bristles with Personality
- ❖ Human Trees
- ❖ Planted People
- ❖ Unique Individuals
- ❖ King of All Cactus
- ❖ Botanical & Cultural Icon
- ❖ Most Recognizable Cactus of World
- ❖ Amazing Shapes
- ❖ Spirits of the Desert
- ❖ Ancestors Who Talk to us
- ❖ Provider – wood, food, money

And many more . . .

**CAUTION: Hard Sharp Spines  
Use Carpet, Sling & Gloves**







- **White Flowers**  
**State Flower**  
(night bloomer)
- **Red Fruit**  
(coveted)



**White-winged  
Dove  
Waiting For  
Saguaro Fruits  
To Ripen**

# Large Birds Also Use Saguaros for Nesting



# Caracara



# Handling Small to Medium Saguaros



**With 12" Rain/Yr.  
6" about 15 Yrs.  
3' about 40 Yrs.  
8' about 55 yrs.  
78' max. recorded  
Growth is Non-Linear  
55 Years – Blooms  
50-100 Years – Arms  
(usually south side first)**



**Mark South to Replant with Same  
Orientation to Minimize Sunburn**

# Handling Large Saguaros - Professionals



1,500+ lbs.

## Weight

12" Diam./ Arm  
50 lbs./Ft.

18" Diam./ Arm  
110 lbs./Ft.



6,000+ Lbs.

# Handling Medium Saguaros – Cactus Rescue Crew



**Custom Dug Hole - Very Important  
Plant in "total" Pea Gravel  
Pack Gravel Tight to Hold Upright**

# Saguaro Moving Time-Lapse Photos

(Click Photo to Start)



By John Durham





**Woodpeckers/Flickers  
are Builders. Owls,  
Finches, Flycatchers,  
Martins can occupy.  
~~European Starlings~~**



**Saguaro Boot**

# “Hot & Fast” Fire due to Invasive Buffelgrass and Fountain Grasses

Buffelgrass burns at temperatures  
approaching 2,000 degrees,  
and gets stronger after it burns

Use Lots of  
Succulents  
within 30 feet  
of your home  
as a Fire Stop



*buffelgrass (Pennisetum ciliare)*



**Cristates – Most Cactus can Crest**



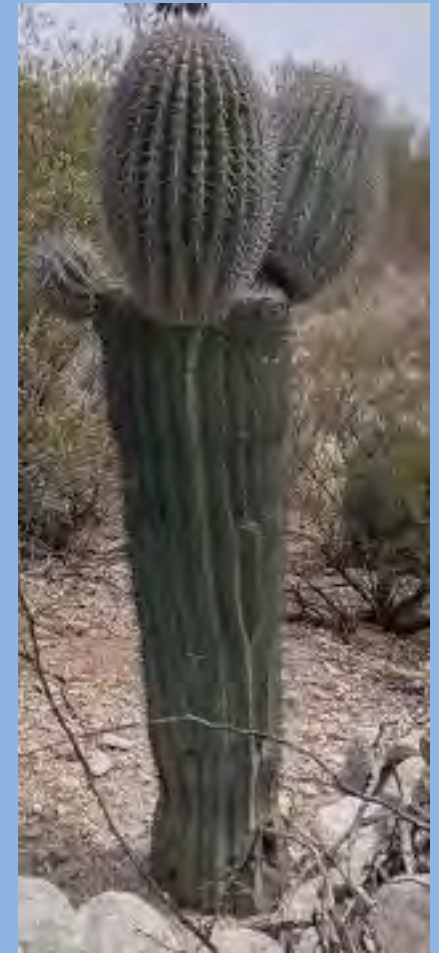
**Cut Out Disease  
notched area,  
grew new head**



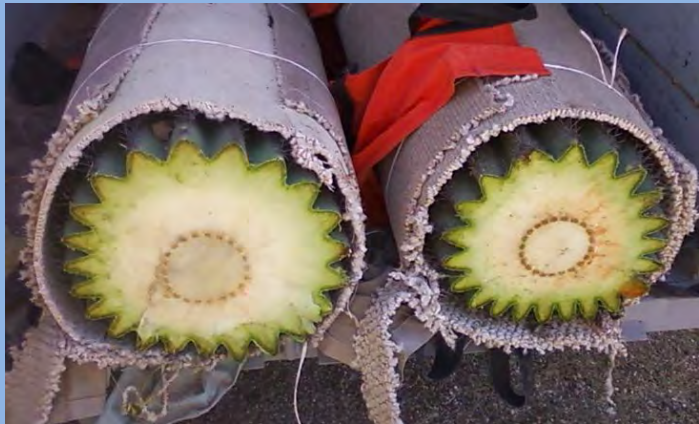
**Tapered Base  
Indicates Growing in  
Original Location**



**Damaged at Base  
causing new arm  
near bottom**



**Growth of 3 New  
Arms after 7 Years  
Note Base is not  
Tapered Indicating  
it was Transplanted**



**Saved 2 Large Saguaros – Had to  
discard tops due to tight space  
to remove - Note the Small Ribs**



**3 New Heads Started**



**“Pin Heads”  
New Growth  
After  
Re-Location,  
Eventually Fills  
in and  
Becomes a  
“Waist”**



**“Waists” are Stress  
Marks from Drought,  
Temp., Re-Location,  
Damage, etc.**



# Weird Happenings. . .

- Damage
- Cold/Heat
- Water
- Seasonal  
Cycles

# Hedgehog

**Our First Beautiful Spring Bloomer**



**Use Cactus Gloves, Tongs**



**Joint Tape to Band, Holding them Together, Boxes to Carry, use Gloves**





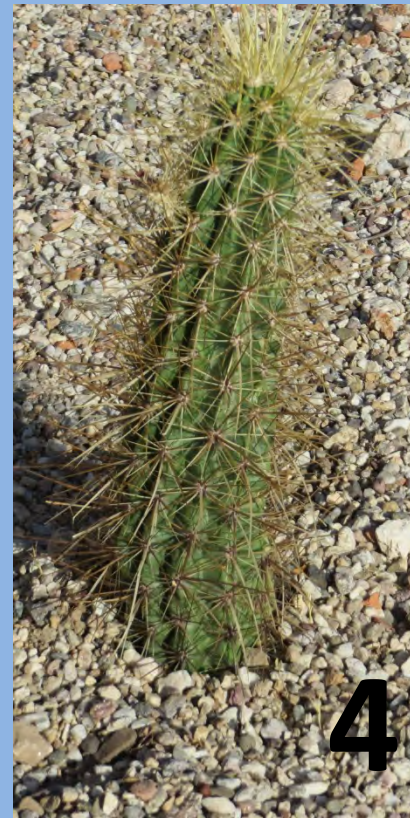
**1**



**2**



**3**



**4**

## Golden Hedgehog Cutting

- 1 Harvest**
- 2 Cut flat**
- 3 Raw Flesh to heal**
- 4 Set on gravel**

# Cuttings or Transplanting . . .

**IF Raw Flesh**

**Let Heal Over or**

**Will Rot When Planted**

**(about a week or two in the Shade)**



**IF Plant Has Roots**

**Plant as Soon as Possible**

**(so roots do not dry out)**

# Pima Pineapple

An Endangered and Federally Protected Cactus



# Ocotillo

**Barely a Succulent  
Difficult to Re-establish  
Larger Ocotillos**



**A “Living” Fence**

**Handle with Cactus Gloves**





**Ocotillo Seeds**



**Ocotillo Blooms are the Primary Food Source for Migration across Texas**



**Can Be Very Heavy**

**Larger bare Rooted Ocotillo (over 5 ft.) Should ONLY be Purchased from Fresh Local Stock to Increase the Chance of Relocation, requires lots of special care**

# Sotol (or Desert Spoon)

**A Great Landscape Plant – Often in Medians**



**Shallow Roots. Larger Sotol more  
Difficult to Relocate Successfully**



**Taller Form – sometimes bases are trimmed**

**Use Cactus Gloves. Band Larger Sotol to Dig & Move**

# Cholla

**A Very Necessary Bird Habitat**



**Cactus Wren (State Bird)**

**ONLY Use Metal Tongs and/or Pitchfork - NO Gloves**

# Looking for Eggs – Gopher Snake







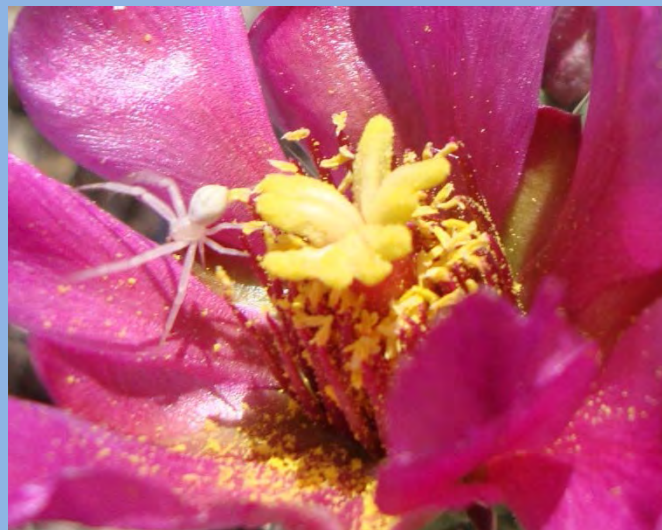
**Cholla Buds**



photos by Kevin Barber



**Teddy Bear Cholla**



**Spider on Bloom**





**A Cholla "Clothesline"**



**Pitchfork to Hold While Planting**



**Cholla Wood – Skeleton**

**Easy to Relocate – Very High Success Rates, Small Root Ball**



**Planting a Cholla – Use Tongs – Fast Growers**

# Queen of the Night

A “Dead Stick” but a Fantastic Bloomer



4 hours of Digging



Careful Excavation Required



**It's All About the Bloom!**



**and Bright Red Fruit**

**Note: There are Many Plants Called Night Blooming Cereus**



**Queens all  
Bloom on  
same Night  
(almost)**

**Tohono Chul  
has a Big Collection  
and Posts  
Bloom Night**

**Pima County  
Nursery and  
Pima Prickly  
Park have  
many as well**

**White Blooms – Night Pollinators – Sphinx Moth (long tongue, 14”)**

# Fishhook Barrel

**Great Orange Flowers (some are red or yellow) and Plentiful Fruit**



**Use Cactus Gloves and Sling (No Carpet)**

# Gold Spines and Yellow Flower Field Collected and Propagated



**5 Year Old Nursery Seedlings**



**Holding Area – Planted in Total Pea Gravel**





**A Crested Barrel  
Was at Pima Prickly Park but  
died after a few years**



**About 500 Pounds to Relocate**



**Unusual Growth due to a Damaged Head**

# Pincushion

**A Prolific Bloomer with Great Fruit to Eat – Likes Shade**



**Handle with Any Type Gloves and Tongs**



**A Great Cactus Rescue Crew Find!**

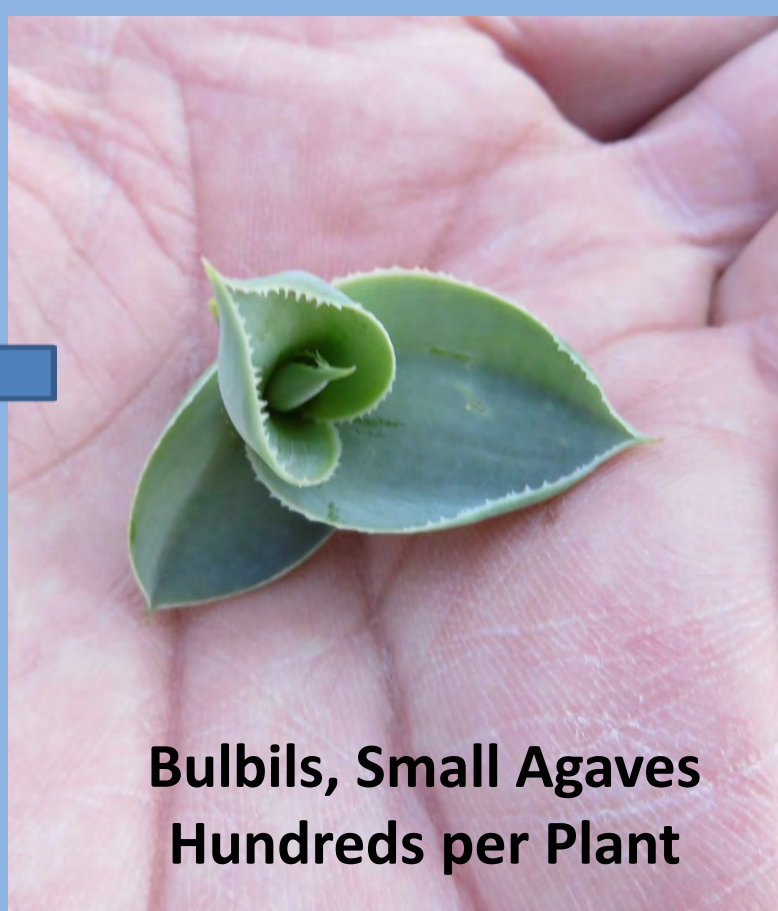
# Agave

**They Propagate By 1, 2 or All 3 Ways:  
Seeds, Pups, Bulbils**

**A Great Landscape Plant but Most Die After they Bloom**



**Use Cactus Gloves - End Points are very Sharp, Teeth Sharp Too**



**Bulbils, Small Agaves  
Hundreds per Plant**

**Octopus Agave  
Bloom Stalk,  
Bottom cleaned off  
by Woodpeckers**



**Long Nose Lesser Bat – Agave is Food Source  
Great Pollinator for Cactus**

# Yucca

Beautiful Tall Landscape Plants





**Some Species are Difficult to Hand Dig Due to Deep Roots, then requires a Big Hole to Re-Plant**



# Prickly Pear

**Very Plentiful and a Much Needed Cactus for Food & Dye**



**ONLY Use Metal Tongs or Pitchfork - NO Gloves**



**Areoles – Some are New Pads, Some Flowers/Fruits  
Each Areole will Serve One Purpose, One Time - DNA**



**Fantastic Prickly Pear Fruit,  
Picking and Processing  
Instructions on our  
[TucsonCactus.org](http://TucsonCactus.org) web site**



**Javelina Love Anything Succulent**



**Prickly Pear Make Nice Backdrops for Other Plants**



**Tarantula Eating Insects  
on the Fruit?**



**Containers Easy to Water  
(bunch in one place)**



**Great Roots in One Year**

**Propagating Prickly Pear**



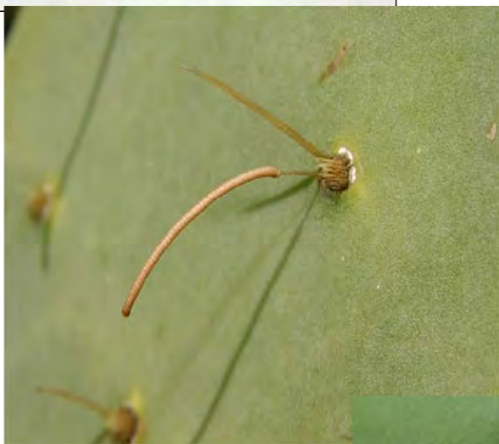
**Prickly Pear & Cholla Do Not Attract Pack Rats**  
**They use them to Defend their Middens**  
**Mostly use Sticks and Twigs**

# A Real Threat to Prickly Pear – Especially for Mexico

## **Cactoblastis**



**Adult  
Cactus  
Moth**



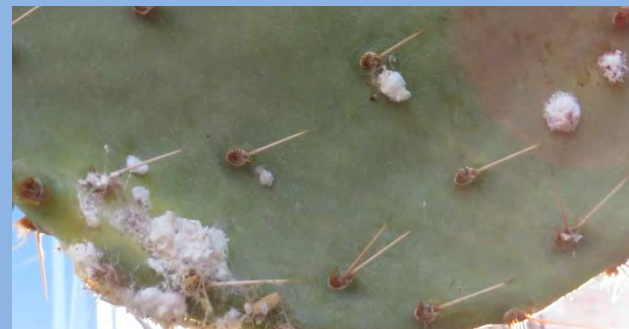
**Egg  
Stick**

**Larvae**

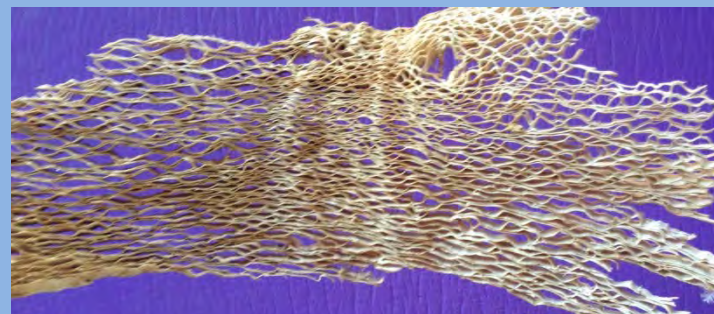


## Prickly Pear Products:

- ✓ Fruit – Most Animals Eat
- ✓ Fruit – Humans, Juice
- ✓ Pads – Animals Eat
- ✓ Pads – Nopalitos
- ✓ Cochineal – Red Dye



**Cochineal Scale Insects**



**Prickly Pear Structure**



# Suggestions - Tips

- **Manage Your Cactus to Fit Your Desires/Space**
- **You Can Trim Most All Cactus & Succulents**
- **Use Proper Tools/Techniques to Handle Cactus**
- **Most Cactus are Easy to Propagate**
- **Don't Overwater, Good Drainage is Critical or Rots**
- **Use Local Grown Native Plants (hardy)**
- **Verify Cold Hardiness, Each Plant for Your Area**
- **Don't Over Populate Without Supplemental Water**
- **Transplants Need Water for First Several Years**
- **Water Harvest (Rain is Best Water for Your Plants)**
- **Cactus Soil Normally Used for Potted Plants**

*Thanks . . .*



**Always Have Your Cactus Gloves Handy!**