

# Cactus of Grand Staircase-Escalante

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Kanab Public Library  
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Photos by authors unless otherwise noted



# Recognizing Indigenous People and Knowledge

- Tribes with connection to this land include
  - Southern Paiute
  - Hopi
  - Zuni
  - Pueblo
  - Dine' (Navajo)
  - Ute
  - others
- Indigenous people lived off this land.
- Indigenous knowledge holders knew and know the many uses of plants.

# Flora of Grand Staircase-Escalante National Monument

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- 1,003 species
- 26% of plants of Utah are in GSENM
- At least 43 endemic plants (grow nowhere else)
- Past talks at Kanab Library (pdf's available)
  - Flora: Wildflowers, Grasses, Shrubs, Lichens
  - Cultural Site Stewardship, Wildlife
- Upcoming talks at Kanab Library
  - Flora: Riparian plants, Landscaping with native plants
  - Bighorn sheep, bumblebees, dinosaurs
  - ?



# Cactus sampler



# Cactus family: Cactaceae

## Where

- Americas, from Patagonia to Canada
- Dry places

## Characteristics

- No true leaves
- Spines, both large and small
- Stems (or pads or joints) photosynthesize
  - often ribbed or pleated
- Succulent, to conserve water, can expand or contract
  - some shrink to below ground surface!

## Cultural and economic importance

# Tallest Cactus

“Mexican giant cardon”  
(*Pachycereus pringlei*), with  
a maximum recorded height  
of 63 feet.

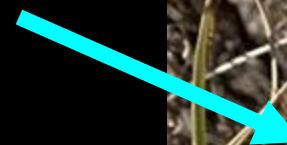


# Genera in Cactus Family

- Pricklypear (*Opuntia*)
- Cholla (*Cylindropuntia*)
- Hedgehog & Claretcup (*Echinocerus*)
- Fishhook (*Sclerocactus*)
- Pincushion (*Pelecyphora/Escobaria*)
- Snowball cactus (*Pediocactus*)

# Glochids

hair-like spines or short prickles, generally barbed, found at base of spine clusters in the pricklypears and cholla



# Pricklypear (*Opuntia*)

- Stems: “pads” that are jointed, flat and round; pads (leaves) fleshy and edible
- Glochids: small but very sharp, detachable and barbed
- Spines: 1 or more stout spines (a few are spineless)
- Flowers: various colors (yellow, pink, purple, red)
- Fruits: dry or fleshy prickly pears, sometimes with smaller spines
- Size: 3” to 4’ tall; occasionally can be much taller



So many hybrids!



7-foot tall prickly pear  
(*Opuntia chlorotica*)!

Mojave National  
Preserve (California)



# Cholla (*Cylindropuntia*)

- Stems: cylindrical, many branches
- Glochids: Yes in various arrangements
- Spines: typically present
- Flowers: yellow to red
- Fruits: various
- Size: 4-5 feet or to 7 feet tall



# Hedgehog (*Echinocereus*)

- Stems: 1 to many rounded to cylindrical stems; can form clump
- Glochids: none
- Spines: straight (not hooked)
- Flowers: red or pink (can be many)
- Fruits: have spines, seeds small ~1mm
- Size: 3-12" tall x 12" diameter clump



# Fishhook (*Sclerocactus*)

- Stems: mostly single, round to cylindrical, stout
- Glochids: none
- Spines: fishhook on end of central spines; lateral spines not hooked, can be different colors
- Flowers: rose pink to violet (can be yellow/white); born on apex
- Fruits: spineless, seeds several mm wide
- Size: usually to 10" tall and 5" wide



# Foxtail (*Pelecyphora/Escobaria*)

- Stems: single or clump, round
- Glochids: none
- Spines: straight (not hooked) and short (less than 1 inch long)
- Flowers: pink, yellow, white, green, or brown
- Fruits: red, green or brown
- Size: a few inches to a foot tall



# Species of Cactus in Grand Staircase-Escalante

Pricklypear (*Opuntia*): 5 species

Cholla (*Cylindropuntia*): 1 species

Hedgehog/Claret Cup (*Echinocereus*): 2 species

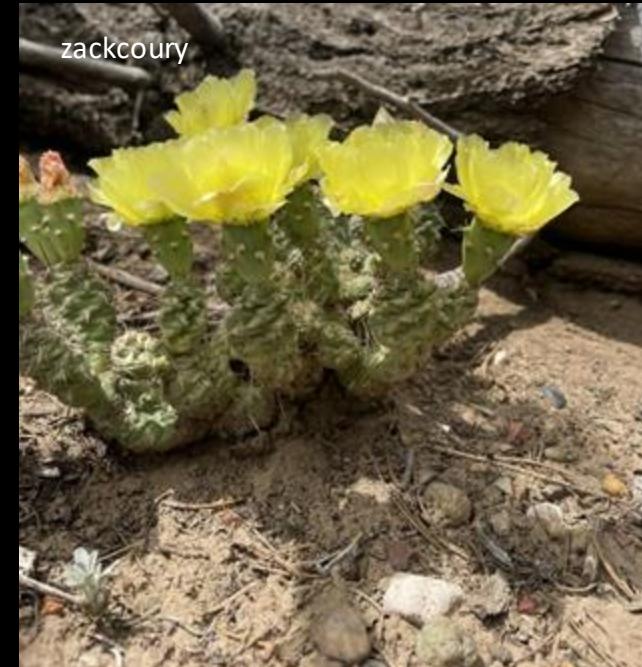
Fishhook (*Sclerocactus*): 1 species

Foxtail (*Pelecyphora*): 2 species

Ball cactus (*Pediocactus*): 1 species

# Pricklypear (*Opuntia*)

- golden pricklypear (*Opuntia aurea*): no spines, bluish color, green stigma
- brittle pricklypear (*Opuntia fragilis*): small round pads



steveleavitt

# golden pricklypear (*Opuntia aurea*)



brittle pricklypear  
(*Opuntia fragilis*)



# Pricklypear (*Opuntia*) *continued*

- twistspine pricklypear (*Opuntia macrorhiza*):  
medium sized pads, wet fruited, yellow  
flowers with red center, often somewhat  
flabby, widely spaced spine clusters
- Navajo Bridge pricklypear (*Opuntia nicholii*):  
dry fruited, small to medium sized pads,  
yellow, orange, pink, red flowers, closely  
spaced spine clusters



# twistspine pricklypear (*Opuntia macrorhiza*)



## Navajo Bridge pricklypear (Opuntia nicholii)



# Pricklypear (*Opuntia*) continued

- tulip pricklypear (*Opuntia phaeacantha*): large pads, wet fruited



suziesavoie

ladyliatris



zachcoury

# tulip pricklypear (Opuntia phaeacantha)



# Whipple cholla (*Cylindropuntia whipplei*)

- Stems: cylindrical, cigar shaped
- Flowers: yellow
- Fruits: fleshy and drying after two years
- Size: 1-7 feet tall



# Engelmann's hedgehog cactus (*Echinocereus engelmannii*)

- Stems: 1 to a few, loosely clustered, ribs 10-13
- Spines: of different thicknesses
- Flowers: pink
- Fruits: with spines, seeds small ~1mm
- Size: 3-12" tall and 2-4" thick



# Mojave claret cup cactus (*Echinocereus mojavensis*)

- Stems: 1 to many, rounded to cylindrical, often with many stems forming a mound, ribs 9-10
- Spines: of same thickness
- Flowers: red
- Fruits: with spines, seeds small ~1mm
- Size: mostly 3-10" tall and 12" wide



# Smallflower fishhook cactus (*Sclerocactus parviflorus*)

- Stems: round to cylindrical, stout, ribs 13
- Spines: typically with a fishhook on the end of the central spines, 8-17 radial spines, 4-6 central spines
- Flowers: rose pink to violet to yellow/white; born on apex
- Fruits: spineless, seeds several mm wide
- Size: usually to 10" tall and 5" wide



# Smallflower fishhook cactus (*Sclerocactus parviflorus*)



photos of Andrey Zharkikh

# Spiny star (*Pelecyphora vivipara*)

- Stems: 1 to many, projection holding spine cluster with groove on one side (use a stick)
- Spines: 3-12 central spines, 12-20 radial
- Flowers: pink with very pointed petals
- Fruits: olive sized, green to reddish
- Size: a few inches to 1 foot tall



# Missouri foxtail cactus (*Pelecyphora missouriensis*)

- Stems: round and flattened, usually solitary
- Spines: not obscuring the stem
- Flowers: yellow-ish
- Fruits: bright red, pea sized
- Size: 1-3 inches wide



# Mountain ball cactus (*Pediocactus simpsonii*)

- Stems: 1 to several, spherical with the flattened top, projection holding spine cluster with no groove
- Spines: 4-10 central spines, 10-25 radials
- Flowers: white, pink, yellow
- Fruits: small
- Size: 1-6" tall, 1-8" wide



# Test time!



1



2



3



4



5



6

# Answers



Mojave claret cup  
(*Echinocereus mojavensis*)



Smallflower fishhook  
(*Sclerocactus parviflorus*)



Pricklypear (*Opuntia*)



Pricklypear (*Opuntia*)



Whipple cholla  
(*Cylindropuntia whipplei*)



Pricklypear (*Opuntia*)

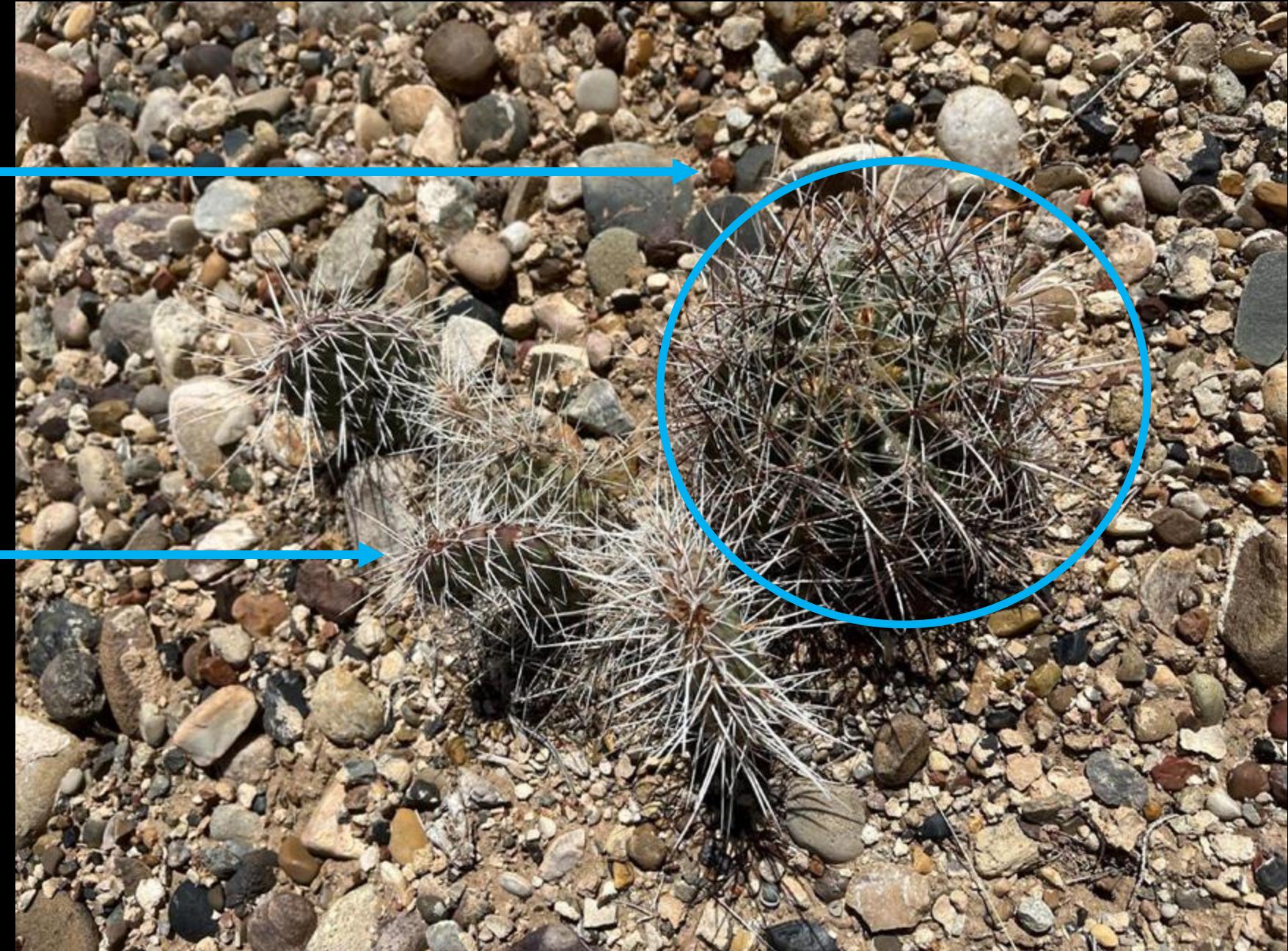
# Anything familiar?



Fishhook cactus  
(*Sclerocactus*)

&

Pricklypear (*Opuntia*)



# Growing Cactus- Propagation

Cuttings- Opuntia, Cylindropuntia

Seeds- Echinocereus (easy), Sclerocactus (hard), Pediocactus (medium)

- *Mesa Garden*- huge variety of seeds including rare and endangered species

Plants- just buy a plant? They do much better!

- Geoscape Nursery (Idaho)- ethical collection of many Opuntia, Cylindropuntia, Echinocereus, etc.
- Cold Hardy Cactus (Colorado)- most popular but expensive cactus nursery
- Cistus Nursery (Oregon)- variety of interesting collections of Opuntia and Cylindropuntia.
- Intermountain Cactus (Utah)- Local and nice.

# Growing Cactus- Cultivation

- \*\*\*\*Why would you grow something from thousands of miles away when we have amazing plants in our backyards!\*\*\*\*
- Mimicking the habitat of the plant not always a 1:1
- General cactus mix should be well draining (plenty of gritty material).
  - Sclerocactus, Echinocereus englemanii, Pediocactus- Use **Ralph Peters mix of 25% ¼" red lava rock/pumice, 25% sandy loam, 50% builders sand**
  - Opuntia, Cylindropuntia, Echinocereus mojavensis, Escobaria vivipara- Use R.P.'s mix or if in an area with less than 12" rain/year can add more organics to retain more moisture.

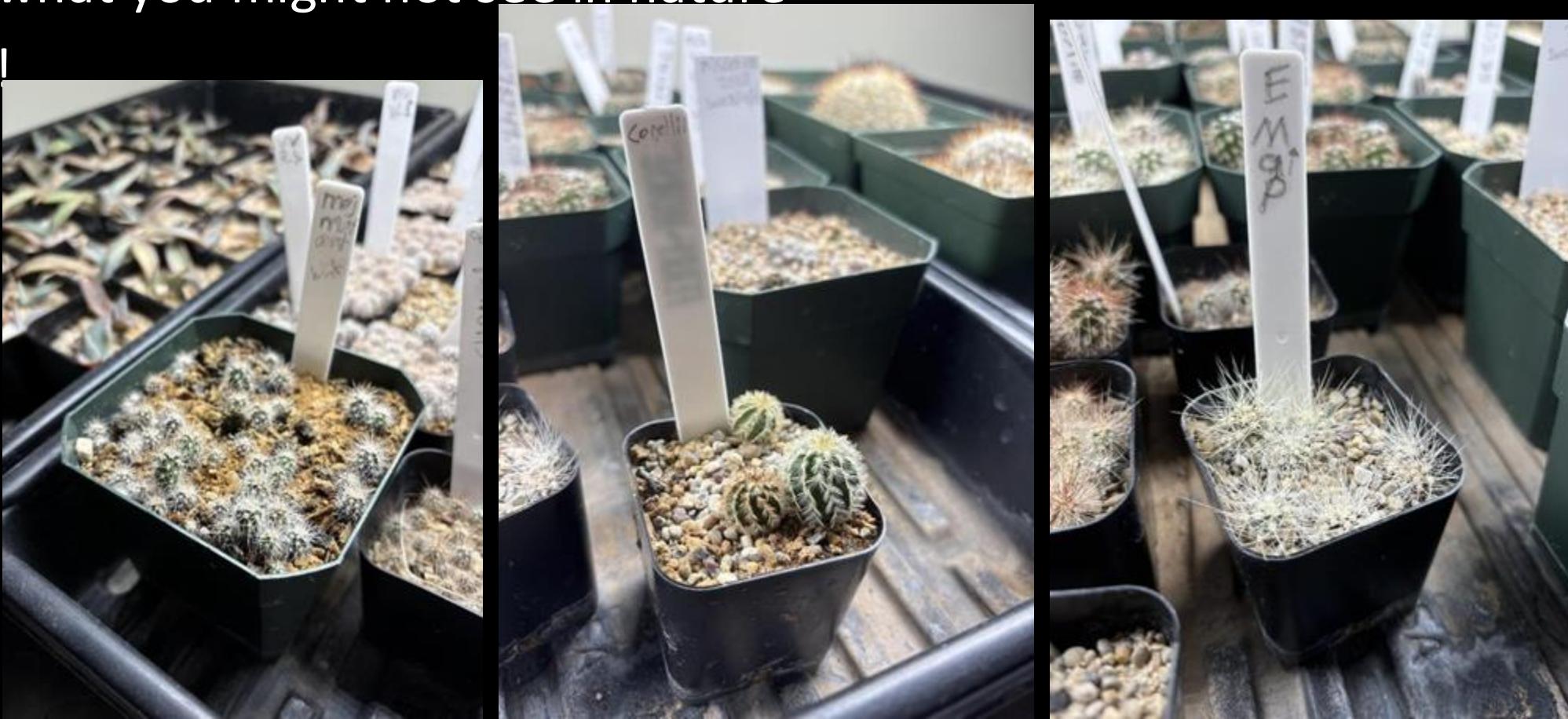
# Growing Cactus- Cultivation from Seed

Very rewarding and informative

Chance to see what you might not see in nature

Easy easy easy!

Collecting???





# Ethics of Cactus Growing

Poaching is a big problem.... International trade... Ignorance....

Question: How do I know if collected ethically?

- Hard to know with many species
- Best way to know is to go to good sources!!!!

Question: Can I take cuttings of cactus for myself in the wild?

- In some cases but..... land ownership? Permits? Ethical? Someone already legally collected a plant that is better, easy to obtain.

Question: Should I dig this up?



- Never!!!



Mesa Garden sells seeds and plants of common, rare, and endangered species.



Sclerocactus  
wetlandicus (SB1324)  
#1244.57

*Catalog #1244.57*  
\$3.00 – \$18.00

[Quick View](#)



Sclerocactus  
wetlandicus  
'brevispinus' #1244.573

*Catalog #1244.573*  
\$2.00

[Quick View](#)



OUT OF  
STOCK



Sclerocactus  
wetlandicus  
'brevispinus' (RP25)  
#1244.58

*Catalog #1244.58*  
\$2.50 – \$54.00

[Quick View](#)



Sclerocactus  
wetlandicus 'glaucus'  
(SB1323) #1244.56

*Catalog #1244.56*  
\$2.00 – \$12.00



With so many options available the best way to enjoy wild plants is in the wild.



OP105: *Opuntia aurea* 'Coombe's Winter Glow' (Winter Glow Beavertail Cactus) COLD HARDY CACTUS  
\$18.00 USD



OP097: *Opuntia* hybrid WALK IN BEAUTY™ Solar Flair COLD HARDY CACTUS  
\$21.00 USD



OT006: *Echinocactus texensis* 'The Horse Crippler Cactus' COLD HARDY CACTUS  
\$24.00 USD



EC023: *Echinocereus triglochidiatus* v. *gonacanthus* forma *inermis* COLD HARDY CACTUS  
\$30.00 USD



EC009: *Echinocereus engelmannii* COLD HARDY CACTUS  
\$20.00 USD



OP096: *Opuntia* hybrid WALK IN BEAUTY™ Garnet Glow COLD HARDY CACTUS  
\$21.00 USD



OP129: *Opuntia basilaris* v. *brachyclada* 'Baby Blue' COLD HARDY CACTUS  
\$20.00 USD



OP100: *Opuntia* hybrid WALK IN BEAUTY™ Ruffled Papaya COLD HARDY CACTUS  
\$21.00 USD



OP101: *Opuntia* hybrid WALK IN BEAUTY™ Apricot Glory COLD HARDY CACTUS  
\$21.00 USD



OP099: *Opuntia* hybrid Walk In Beauty™ Watermelon Man COLD HARDY CACTUS  
\$21.00 USD



ES003: *Pelecyphora* (*Escobaria*) *missouriensis* COLD HARDY CACTUS  
\$20.00 USD

# X-Situ Conservation

Some species already gone

- climate change
- poaching, development, etc.



Some species losing ground quickly

Protect genetics and the species

- Educate!!!
- Share plants with friends



# Resources for growing cactus

[Growing Pediocactus, Sclerocactus, and Toumeya](#) by Ralph Peters (PDF)

[Soil update and Sowing Seeds](#) by Mesa Garden (YouTube)

[How to Grow Cactus from Seed \(A beginners guide\)](#) by Cactus Caffeine (YouTube)

[A lazy way to grow cactus from seed](#) by Cookie's Cacti  
(YouTube)

[How to Grow Cacti and Succulents from Seed 2021](#)

[Updated Methodology](#) by Cactus Quest (YouTube)

<https://cactiguide.com/forum/> (online forum)

Experiment and see what works for you!



# Published Resources

## Books

[Field Guide to the Cacti and Other Succulents of Arizona by Breslin, Romero, Starr, Watkins](#)

Guide to the Cacti of Utah by Stock, Lee, Wellard, and others coming soon

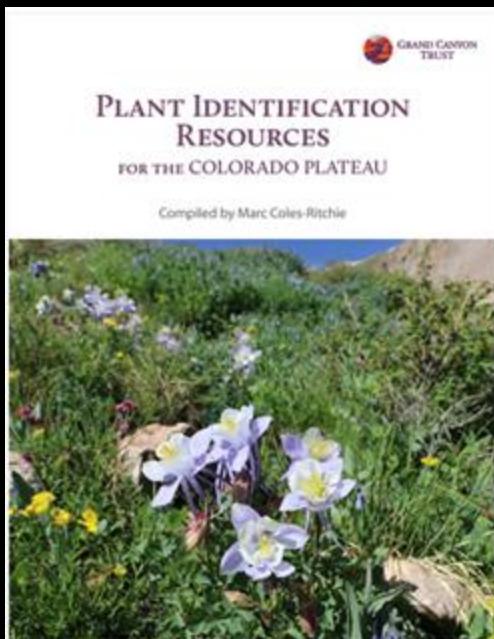
## Websites

[Utah's Opuntias \(UNPS\)](#)

[iNaturalist](#)- helpful down to genus level but less so with species.

# Plants Identification Tools

- iNaturalist – post, others will identify
- List of books, apps and websites:  
<https://www.grandcanyontrust.org/plant-identification-resources>



TITLE	GEOGRAPHIC FOCUS	DESCRIPTION	AUTHORS AND PUBLISHER
<b>Forbs/Wildflowers (may include some shrubs, trees, and grasses)</b>			
A Field Guide to the Plants of Arizona	Arizona	Color photographs and descriptive text for 850 plant species found in Arizona.	Anne Duth and Dale Peterson, Peterson Field Guides, 1991.
*Capitol Wildflowers	Central Utah	Field guide to 200 plants of the Capitol Reef area, with some plants from the Kaibab Plateau. Includes 40 endemic species.	Daleen L. Clark, Published by Impact Photography Inc., 2006.
Wildflowers of the Colorado Plateau	Colorado	Organized by zones, with names, descriptions, and detailed descriptions of each flower.	James E. Colorado Museum Guide, 2012.
*San Juan County Wildflowers: A Field Guide to the Wildflowers of the Most Popular Areas	Southwest Utah and adjacent states	Descriptions and color photographs for many of the common wildflowers and shrubs of the Colorado Plateau and mountains of southeastern Utah.	Anne Duth and Dale Peterson, Red Mesa Guides, 2010.
*San Juan County Wildflowers: The Red Mesa Guide	Southwest Utah and adjacent states	Descriptions and color photographs: 120 of the common wildflowers and shrubs of the Colorado Plateau and mountains of southeastern Utah.	Anne Duth and Dale Peterson, Red Mesa Guides, 2011.
*Spring Wildflowers of the Colorado Plateau	Southwest Utah and adjacent states	Includes full-color, large photographs, text, and profiles of the red rock desert with photographs and profiles of about half these plants.	Patricia Lusk and Walter Hensig, Published by Tritium Press, 2010.
*Wildflowers & Trees of the Colorado Plateau: A Field Guide	Utah	A handy booklet with descriptive text and color photographs of 60 of the common wildflowers in Utah.	Roger Barbour, Michael Pratt, James H. Green, and Utah State University Cooperative Extension, Logan, UT, 2010.
Wildflowers of the Mountain West	New Mexico, Colorado, Wyoming, Idaho, Utah, Nevada, and Oregon	Descriptions and color photographs organized by flower color.	Ronald M. Anderson, Jay D. Gosselman, Jerry L. Johnson, and Utah State University Press, Logan, UT, 2012.

A screenshot of the iNaturalist website showing observations for the "Cacti" category. The top navigation bar includes "Explore", "Community", "More", and "Log In or Sign Up". The main section is titled "Observations" with a "Cacti" filter selected. It displays statistics: "The World" (756 observations, 15 species, 88 identifiers, 323 observers). Below are five cards, each showing a photo of a cactus and its details: "Kingcup Cactus" (165 observations, CC0), "Plains Pricklypear" (136 observations, CC0), "Smallflower Fishhook Cactus" (120 observations, CC0), "Brown-spined Pricklypear" (62 observations, CC0), and "Golden Pricklypear" (35 observations, CC0).

A screenshot of the iNaturalist website showing observations for the "Cacti" category. The top navigation bar includes "Explore", "Community", "More", and "Log In or Sign Up". The main section is titled "Observations" with a "Cacti" filter selected. It displays statistics: "The World" (756 observations, 15 species, 88 identifiers, 323 observers). Below is a map of the Colorado Plateau showing a cluster of red dots representing cactus sightings. To the right, there are cards for "Mojave Kingcup Cactus" (Echinocactus triglochidiatus) with a photo and a "Research Grade" button, and another card for "Mojave Kingcup Cactus" (Echinocactus triglochidiatus) with a photo and a "Research Grade" button.

# Engagement with Grand Staircase-Escalante Landscape

- GSENM Citizen Science website:  
[https://www.blm.gov/working-us -](https://www.blm.gov/working-us-)
- GSENM Science & Research website:  
<https://www.blm.gov/programs/national-conservation-lands/utah/grand-staircase-escalante-national-monument/science-research ->



# Images

Marc's photos of GSENM plants are here (sorted alphabetically by scientific name):

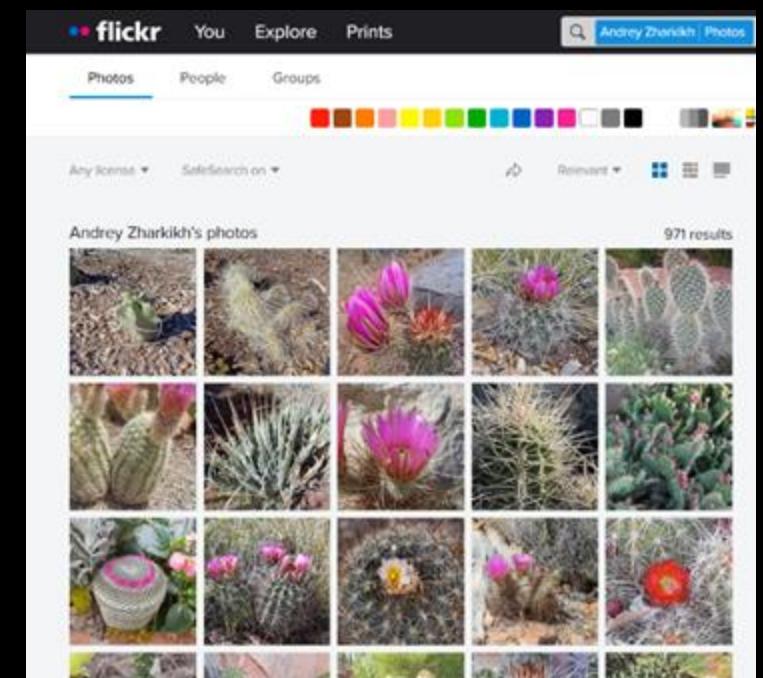
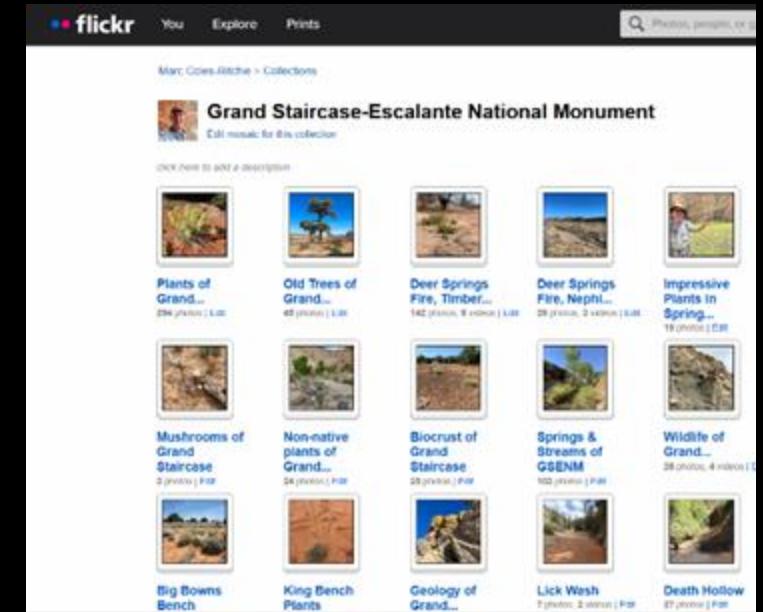
<https://flic.kr/s/aHsmVnwKU8>

Marc's photos with word “cactus” in them are here:

[https://www.flickr.com/search/?user\\_id=97636754%40N04&view\\_all=1&text=cactus](https://www.flickr.com/search/?user_id=97636754%40N04&view_all=1&text=cactus)

Andrey's photos with word “cactus” in them are here:

[https://www.flickr.com/search/?user\\_id=33497841%40N02&view\\_all=1&text=cactus](https://www.flickr.com/search/?user_id=33497841%40N02&view_all=1&text=cactus)



# Upcoming Science Talks at Kanab Library

February 12: Riparian and wetland plants ( Marc Coles-Ritchie)

February 26: Bighorn sheep in Grand Staircase (Joel Berger)

March 12: Walking with Tyrants: Grand Staircase-Escalante's Tyrannosaur Renaissance ( Dr. Alan Titus)

April 9: Landscaping with Native Plants ( Marc Coles-Ritchie & Tim Clarke)

April 16: Bumblebees & Citizen Science (Amy Dolan)

(summer hiatus)

Fall 2025 ?

Note: Grand Staircase-Escalante Regional Symposium March 20-22 in Escalante, Utah