

Friends of Pinnacle Peak Park

NEWSLETTER

Spring 2021 Volume 35

Desert Holes

By Madison Barasha

“What made that hole?” Is probably a question you have asked yourself while hiking at Pinnacle Peak Park. There can be various answers to this question, but we will try and help guide you in becoming a “Desert Holes Expert.”



Harris' Antelope Squirrel

When you identify a hole start with observing your surroundings. Are you in a flat, open area? Is there a lot of vegetation or no vegetation? How many holes are in the area, is there one or many? If there are many holes that are about 1 ½ inch to 2 ½ inches in diameter it was either created by a round-tailed ground squirrel or a Harris' antelope squirrel. The difference between these squirrels' holes is that the Harris' antelope squirrels prefer to dig at the base or underneath vegetation, whereas the round-tailed ground squirrel prefers open terrain. Next, look at

the entrance shape of the hole and where it is facing. If it shaped like a crescent moon (has a flat bottom and domed top), ½ inch or more in diameter, and



Round-Tailed Ground Squirrel Holes



Wolf Spider Hole

If the hole spirals down, the diameter of the hole is about ¾ to 1 inch, has twigs and a film of silk around the

entrance this was created by a wolf spider. Spiders use the film of silk to communicate with the outside world; they use the vibrations to “see” unsuspecting prey or hostile predators.

There are animals, like snakes, who do not make their own holes since the ground is too hard for their noses. Instead, they rest in shallow, round or oval depressions or they invade a hole of another animal. Gila Monsters, who spend about 90% of their life underground, also invade or borrow holes, preferring rocky and south facing burrows.

Do not forget to look up because holes can be elevated! The carpenter bee creates their holes in dead sotol, agave stalk, or a yucca that is ½ inch in diameter and oval. Gila woodpeckers and gilded flickers make their homes in Saguaros. The

entrance hole is 2 to 2 ½ inches in diameter, while inside the cactus the nest is 8 to 15 inches deep and 6 to 8 inches wide. Once the Saguaro dies, a “boot” that formed around the nest cavity forms.

Next time you are hiking, make sure to observe what is around you. You never know what you will see! Also, remember to stay on the trail when searching for desert holes. This information is brought to you by Pinau Merlin's book, [A Field Guide to Desert Holes](#).



Saguaro Boot

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Carpenter Bee Hole

Introducing Teresa Abernethy

By Yvonne Massman

Let us introduce you to our new staff, Teresa Abernethy! She may be new to the staff roster, but not

to the Peak. Teresa has been hiking here since the park first opened both with friends, family, her husband

Craig, and their children when they were elementary and middle school age.

When not at the park, Teresa and Craig keep busy as the owners of the Franciscan Renewal Center bookstore and gift shop named Books and Blessings. As a fun hobby she makes jewelry that is also sold at the gift shop.

Teresa is a native to Arizona and a twin! She grew up with her family of four sisters and one brother in Central Phoenix. She left Phoenix and became a Scottsdale girl 25 years ago. Her motivation was to be close to Old Town for the party scene as a young single woman! Seriously, though, the beauty of the Scottsdale Greenbelt was the lure that really drew her in, and it was a good location for her job as a manager with the check printing company Clarke American. Teresa has remained in Scottsdale because she is very close to her family; of course she has also stayed for the sunshine, weather, and outdoor opportunities, which pretty much

Four Peaks Geology Summary

By Chad Kwiatkowski

Rising to 7,657 feet, the jagged mountain looming on the horizon 31 miles to the east is the aptly named Four Peaks, which is such a prominent landmark that it has earned its place on the Arizona license plate! The geology of Four Peaks can be thought of as 'quartzite teeth in granite gums', specifically your lower four front teeth. The gentle lower slopes (gums) are made of multiple intrusions of granite, crystallized from magma, that vary in age from 1.7 to 1.4 billion years old. The youngest of these is about the same age as the granite at Pinnacle Peak! The high, craggy peaks (teeth) are composed of 1.6-billion-year-old quartzite, one of Earth's most tenacious rocks, formed by the metamorphism of sandstone at elevated heat and pressure inside

Female Eagle Scout Project at Pinnacle Peak Park

By Yvonne Massman

History was made at Pinnacle Peak Park on Saturday, August 8, 2020 when 17-year-old Victoria Rader from Troop 3030 became one of the very first female Scouts to complete her Eagle Scout Project in our nation! Her Eagle Scout project consisted of fabricating a gabion bench at the end of the Pinnacle Peak trail.

The Boy Scouts of America changed their charter in February 2019 to allow female participation, while also changing their name to "Scouts of America." This change allowed Victoria the opportunity to complete over 21 merit badges from that date working towards the Eagle status with a project that she completed for the park!

aligns with the rest of us!

An extraordinary park experience that recently occurred for Teresa was the opportunity to hike in the SNOW, on January 25th! Pinnacle Peak is of course her number one favorite hiking trail, with the many trails found in the McDowell Sonoran Preserve running a close second. If you are at the park and see Teresa on the trail or keeping busy at the trailhead, be sure to say "hello!" You will most definitely be greeted with a beautiful smile and sweet, "hello!" back!

Oh, and one more thing worth mentioning. If she dare catches you spitting out your gum on the trail, forget the sweet smile, you will have a whole different Teresa to contend with! Just saying!



Photo by Enzo Bonnette

Earth's crust. A younger metamorphosed mudstone unit, 1.5 billion years old, is exposed on the east side of Four Peaks. Both of these rock units, originally deposited as horizontal layers of mud and sand at Earth's surface, have been compressed by tectonic forces and folded into a large, half-mile wide 'U'-shaped fold called a syncline. The multiple intrusions of granite which formed 6-8 miles deep in the crust, with sedimentary rocks deposited at Earth's surface directly on top of them in intervening times, tell a story of repeated sedimentary burial, intrusion of magma, then uplift and erosion along a former collisional tectonic plate boundary. What a great geologic story Four Peaks has to tell!

Victoria did an amazing job researching and preparing for her gabion bench project with a concrete sitting slab. Some of the prep included a test of the concrete to see how fast it would set and how much tint was needed to match the existing landscape, reaching out to concrete experts to learn the best methods and practices to prevent cracking and making a proper form, preparing a cost assessment of the entire project, soliciting the donation of many of



Victoria with the wet bench



Victoria with her dad

the supplies, and putting together a COVID-19 friendly work plan to ensure the health and safety of her troop members working on the project.

We are honored that Victoria chose our park for

this monumental achievement! She has been added to the Pinnacle Peak Park trailhead Eagle Scout display board for others to admire her accomplishment!



Victoria with her troop

Over a Barrel (Cactus)

By Bob Scalia

Barrel cacti are members of two genera: *Ferocactus* and *Echinocactus*, and they are found in the southwestern deserts of North America. Their stems range from globular to columnar, are pleated, usually unbranched, and vary from less than a foot tall in some species to as much as 10 feet tall in others. There are 25 known species of *Ferocacti* and 6 of *Echinocacti* in the world.

Ferocacti are characterized by many heavy spines growing along prominent ribs. They include the large barrel cacti that grow in the hottest deserts of Arizona and California, although there are far more varieties of *Ferocacti* further south in Mexico.



The Arizona Barrel Cactus (*Ferocactus wislizeni*), is also known as the Fishhook Barrel or Compass Barrel. Usually 2-4 feet tall, they are barrel-shaped, can reach up to 10 feet tall, have hooked spines, and are generally found in South/Central Arizona and Northern Sonora. Some botanists consider the Twisted Barrel (*Ferocactus herrerae*), with its spiraled ribs, to be included in *Ferocactus wislizeni*.

The California Fire Barrel (*Ferocactus cylindraceus*), is also known as the Spiny Barrel or Compass Barrel. It is columnar rather than barrel-shaped, and can grow up to 10 feet tall, although they usually mature at less than half that height. Were it not for its curved spines, one could easily mistake this cactus for a young saguaro, which has straight spines.

The reason for the name Compass Barrel is the fact that the larger plants often lean (or point) toward the southwest. One prevailing theory for that phenomena is that the intense heat of the afternoon sun stunts their growth on the southwest side, with the growth disparity causing them to lean in that direction.

Echinocacti resemble some of the *ferocactus* species. They are spherical or barrel shaped, have dense and/or thick spines arranged

along ribs, and may be single or clustered. They do not reach the great heights of the *ferocacti*, and are known by the common name of stout spined cactus. Only three species are found naturally in the Southwest.



The Many-Headed Barrel Cactus (*echinocactus polycephalus*), aka the Cottontop Cactus, is found in the driest parts of the Sonoran and Mojave Deserts. It is the only barrel cactus in our region that

branches under normal conditions, and the 8 inch diameter heads can form clusters of up to 200, in mounds up to 3 feet high.



While the Many-Headed Barrel is the most common *echinocactus*, many people will be more familiar with the Mexican species Golden Barrel Cactus (*Echinocactus grusonii*), since it is so commonly used as

a landscaping plant.

A common desert survival misconception is that barrel cacti, among others, are an easy source of emergency drinking water. Well, for starters, many species cause diarrhea and/or vomiting at best, and have toxic levels of oxalic acid and/or alkaloids at worst. If that is not daunting enough, the liquid is extremely hard to access. Here's a quote from an article referenced below by Mark A. Dimmitt, who stated: "But most city dwellers, including most aspiring survivalists, could not get water from any cactus if their lives depended on it (pun intended)."

To learn more, check out [Cactaceae \(cactus family\)](#) by Mark A. Dimmitt, to be found on the Arizona-Sonora Desert Museum [web site](#), as well as several articles on the American Southwest [web site](#). These sites contain excellent information and were the primary resources for this article."

Pinnacle Peak Park Scheduled Activities:

Sat., 2/6/21	6:45PM - Astronomy Talk	Sat., 10/30/21	6:30PM - Astronomy Talk
Fri., 3/5/21	7:00PM - Astronomy Talk	Fri., 11/26/21	6:00PM - Astronomy Talk
Sat., 4/3/21	7:30PM - Astronomy Talk	Thur., 12/30/21	6:15PM - Astronomy Talk
Fri., 5/7/21	8:00PM - Astronomy Talk	Sat., 1/22/21	6:30PM - Astronomy Talk
Fri., 9/3/21	7:30PM - Astronomy Talk		
Fri., 10/1/21	7:00PM - Astronomy Talk		

** Call the Pinnacle Peak Park main number at (480) 312-0990 to make reservations for the Astronomy Talk*

*** This program has been redesigned with COVID safe precautions. Registration for each program begins 2 weeks prior to the event..*

Friends of Pinnacle Peak Park

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