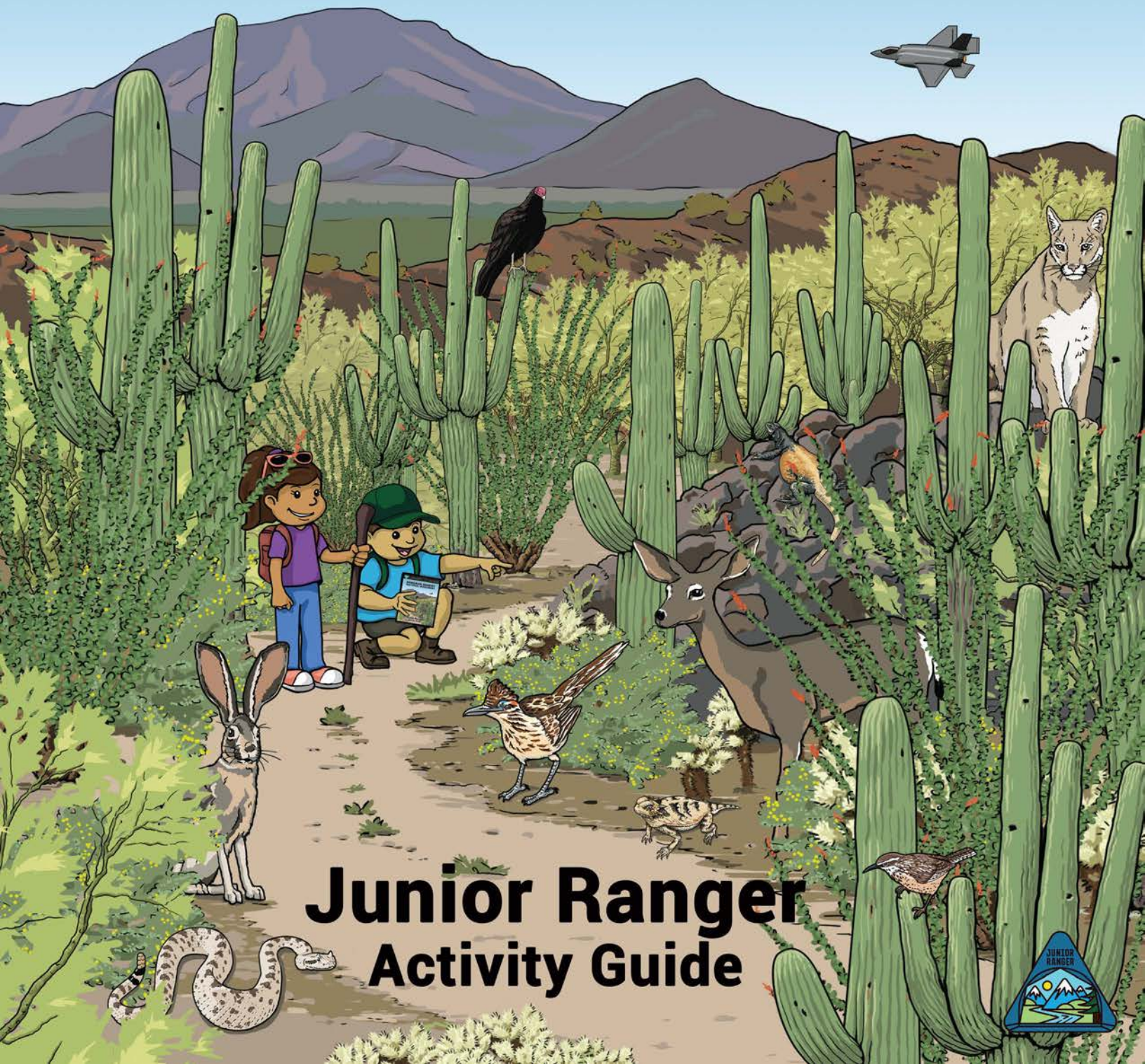




U. S. Department of the Interior
Bureau of Land Management

Arizona - Phoenix District
Lower Sonoran Field Office

SONORAN DESERT NATIONAL MONUMENT



Junior Ranger Activity Guide



What is a Junior Ranger?

A Junior Ranger explores the environment around them.

A Junior Ranger cares for plants, animals, and the land.

A Junior Ranger encourages others to recreate responsibly.

How to earn your patch and certificate

Complete six or more activities in this booklet.

To receive your Junior Ranger patch and signed certificate:

Bring your booklet to:

Phoenix District
Lower Sonoran Field Office
Bureau of Land Management
2020 E. Bell Road
Phoenix, AZ 85022

602-867-5400



Illustrations: Rachel Ivanyi

Wildlife species shown on front cover: Sidewinder rattlesnake, jack rabbit, roadrunner, horned toad, cactus wren, mule deer, chuckwalla, turkey vulture, mountain lion

Also on the cover: U.S. Air Force F-35 Lightning II Joint Strike Fighter from the Barry M Goldwater Range

Welcome to Sonoran Desert National Monument



**NATIONAL
CONSERVATION
LANDS**

The President designated this remarkable place in 2001 to help protect its natural and cultural resources for future generations. This Monument is made up of over 486,000 acres of Sonoran Desert, which is the most biodiverse desert in North America. That means you can find more plant and animal species here than in any other desert on the continent.

Mountain ranges and wide valleys help support the plants that grow here. Washes play an important role in transporting and storing rainwater that feeds the landscape. A very special part of this landscape is the abundant saguaro cactus forest that is found throughout the area. Saguaros, along with other cactus, tree and shrub species, provide habitat for a variety of birds, mammals and reptiles that are important to this ecosystem.

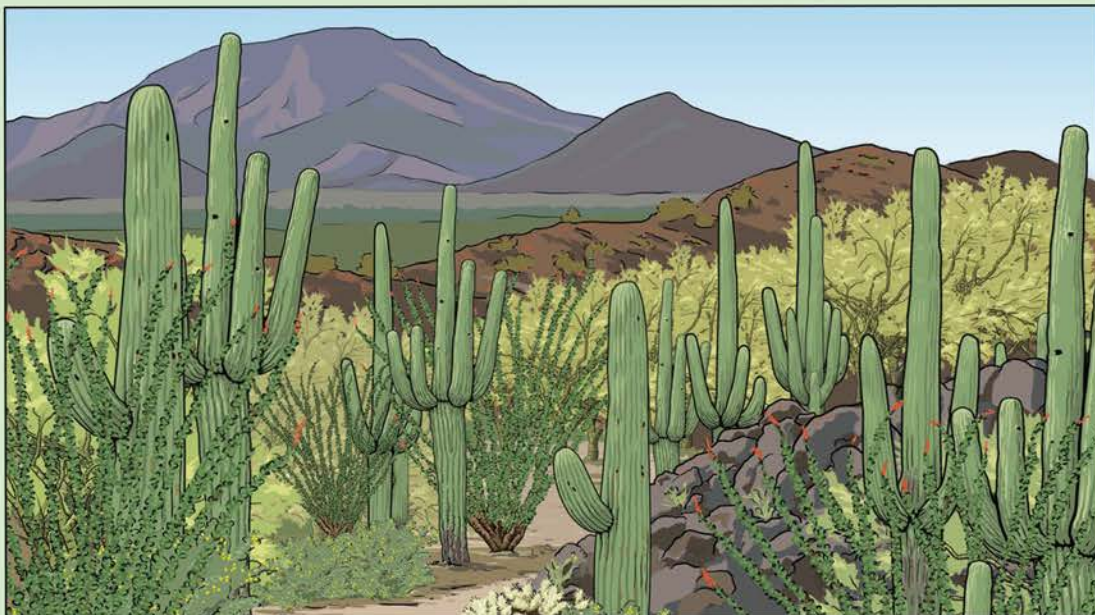
If you look up, birds and raptors are not the only thing you might see soaring in the sky. The F-35 Lightning II and A-10 Thunderbolt II "Warthog" fighter jets fly over the Monument on their way to train on the Barry M. Goldwater Air Force Range that borders the southwestern boundary. A portion of the Air Force range in the Sand Tank Mountains is now a part of the Monument, to

help protect this spectacular and richly diverse Sonoran desert landscape. A permit is required to visit this part of the Monument. Call the Bureau of Land Management, Phoenix District Office for more information.

Remnants of cultural and historic sites on the Monument offer a window to the area's past. The Juan Bautista de Anza National Historic Trail tells the story of a Spanish officer on his journey from Sinaloa and Sonora Mexico to Northern California. This trail crosses the Monument and was also used by the Mormon Battalion and Butterfield's Overland Mail Company.

There are three wilderness areas within the Monument's boundaries. These areas were designated by Congress and offer solitude for those who visit.

In this Junior Ranger Handbook, you will learn about the special resources that make up the Sonoran Desert National Monument. You will also learn how to prepare for a desert adventure and how to be safe while you are out exploring. If you look and listen closely, you can discover many of the incredible resources this special place has to offer.



Palo Verde – Arizona's State Tree

There are two varieties of Palo Verde on the Sonoran Desert National Monument: Foothills Palo Verde and Blue Palo Verde.

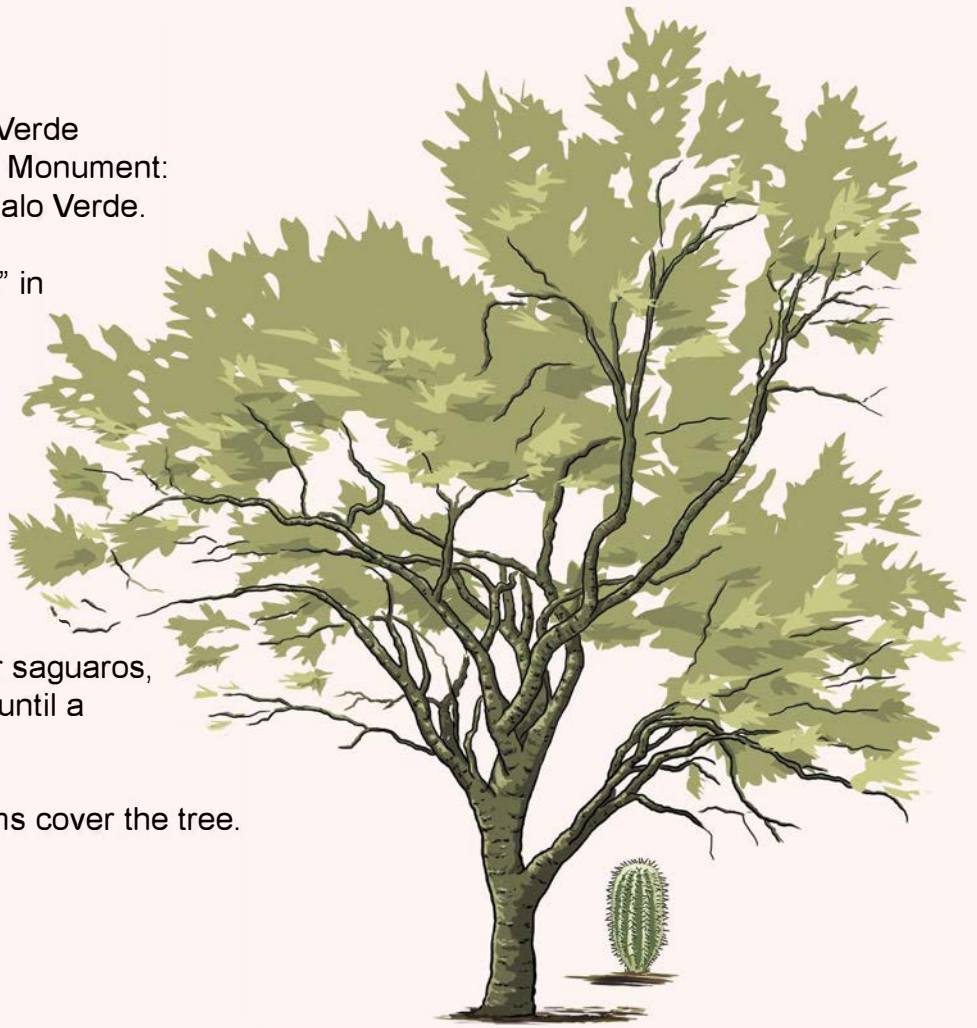
Palo Verde means "Green Stick" in Spanish due to its green bark.

It will drop its leaves throughout the year in response to rain, drought or cold.

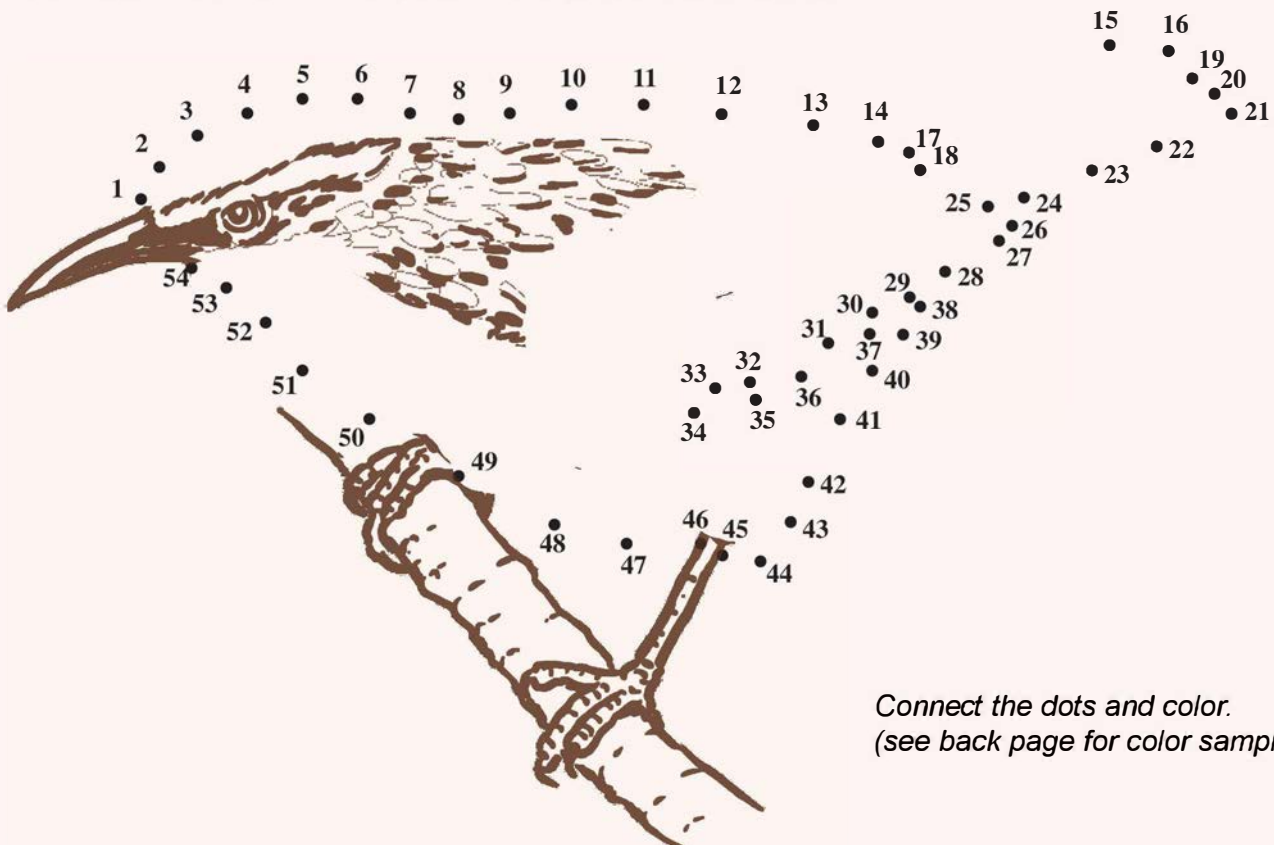
It may drop branches to conserve water.

It serves as a "Nursery Tree" for saguaros, providing shade and protection until a saguaro is well established.

In the spring bright yellow blooms cover the tree.



Cactus Wren – State Bird of Arizona



*Connect the dots and color.
(see back page for color sample)*

Desert Adaptations

The Sonoran Desert is the hottest desert in North America. All living plants and creatures in this extreme environment have learned to adapt. Many become creatures of the night, each with unique features to help them survive.

Draw a line from the animal to the description of how they survive:

Stays cool by releasing heat from its oversized ears.

Stores greater than 40% of bodyweight in water.

Manufacture their water from digesting dry seeds.

Can fly silently, has excellent eye sight and hearing, allowing it to sneak up on prey.

This long-tailed animal snarls, growls and barks to scare away predators.

When this reptile senses danger, it hides in rock crevices and inflates its body.

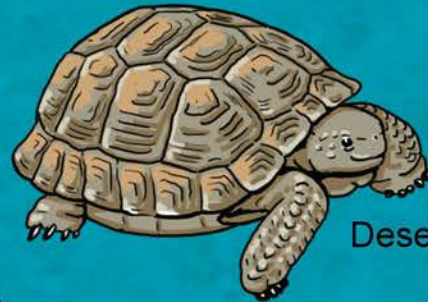
Fastest land mammal in America. Survives without water by eating chain fruit cholla.



Pronghorn



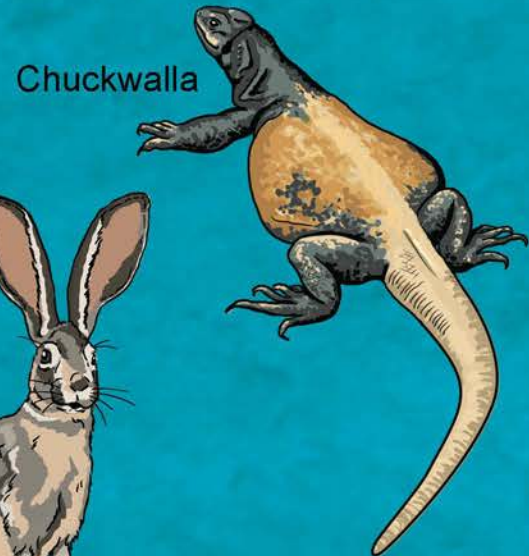
Ringtail



Desert Tortoise



Owl



Chuckwalla



Black-tailed Jackrabbit

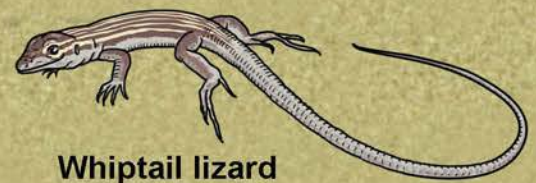
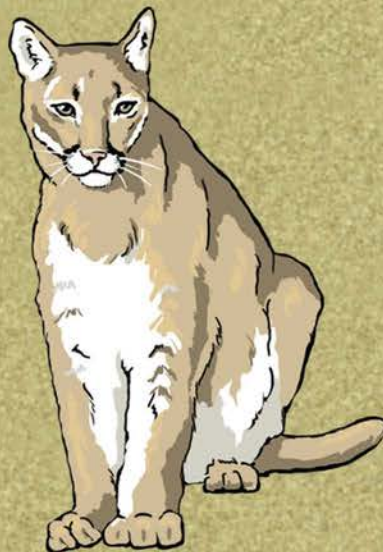
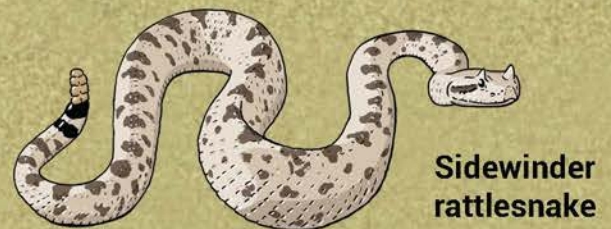
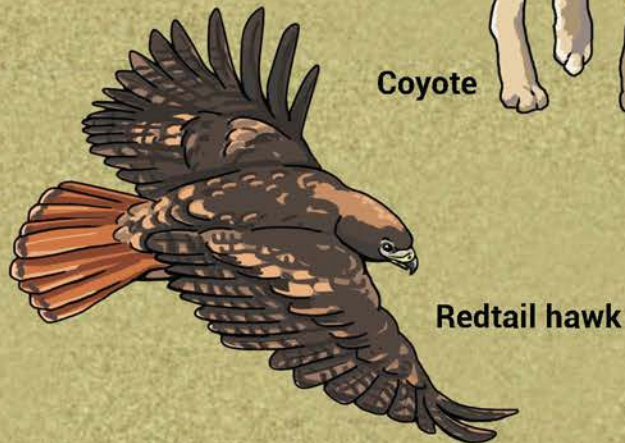
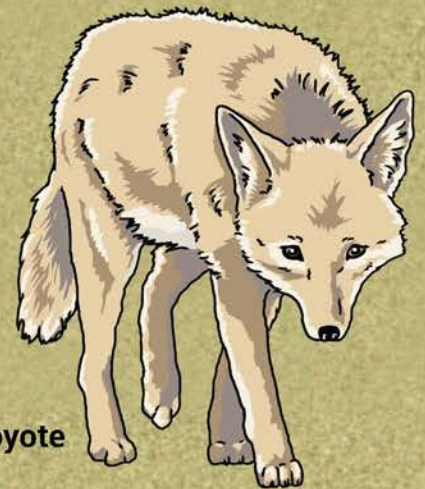


Kangaroo Rat

ANSWERS: Black-tailed Jackrabbit, Desert Tortoise, Kangaroo Rat, Owl, Ringtail, Chuckwalla, Pronghorn

Animal Tracks of the Sonoran Desert National Monument

Draw a line from the track to the animal that makes it.



Tracking Tips

1. Walk slowly and quietly - if you are lucky you may see the animal.
2. Tracks are easier to see in the mud.
3. Many animals come out only at night so look for tracks early in the morning.
4. Animals leave signs behind besides their footprints. For instance the packrat leaves his middens (piles of sticks, leaves and debris where he stashes the "treasures" he finds in the desert).
5. Canine tracks have toe nail prints, unlike feline tracks with retractable claws.

What Is Wilderness?

WILDERNESS is an area that is . . . WILD! You know what it means to be wild – when you are free to follow your own will, you are not controlled by others.

Complete the following description of wilderness by using these words to fill in the blanks:

controlled free will nature cut changed

In wilderness, nature follows its own _____ .

The animals aren't _____ .

The trees are not _____ .

The rivers run _____ without dams.

Visitors enjoy being in _____ as it was before modern humans _____ it.

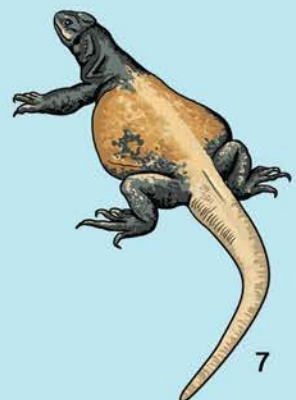
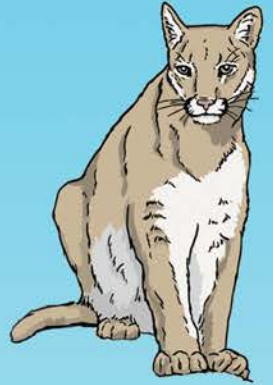
In 1964, Congress passed the Wilderness Act, recognizing that certain wild places are special and worthy of being protected forever. Here is a definition of wilderness from the Act:

"A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain."

Untrammelled in the Wilderness Act means completely free, and unrestrained by humans.

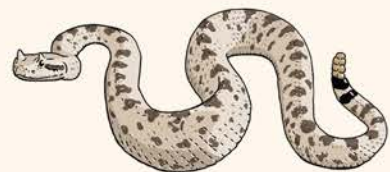
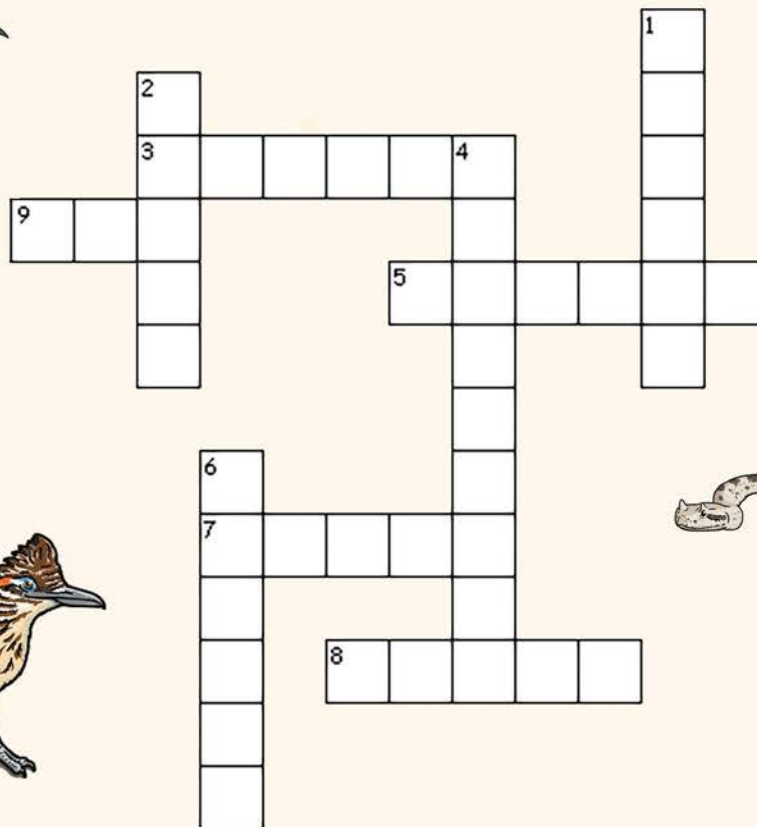
Special Places

What does the word WILD make you think of?
Draw or describe it here.



Desert Safety Crossword

1. Do not enter creeks, washes or roadways during flash F_____. Wait for waters to recede before crossing.
2. Carry and drink plenty of W_____ when hiking in the desert. It is very hot and dry, you need this to stay hydrated in the desert.
3. A_____ tell someone where you are going and when you will return.
4. Make sure you put on plenty of S_____ before you are exposed to the sun.
5. During a lightning storm its best to stay I_____.
6. Be careful around C_____ plants. They have very sharp spines that can poke you.
7. Stay out and Stay A_____! Never enter an abandoned mine, they are deep and dangerous!
8. Rattlesnakes, scorpions and other dangerous desert creatures live in the Sonoran Desert. Be careful where you put your H_____ and where you step.
9. You should always wear a H_____ in the desert.



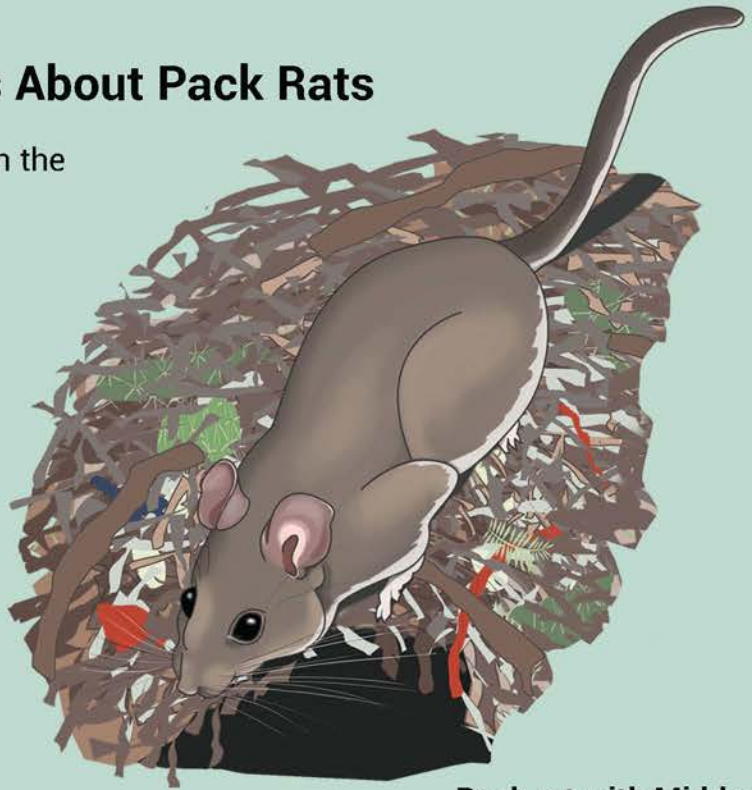
Cool Facts About Pack Rats

The White-throated and Desert Woodrat live in the Sonoran Desert.

They build houses called middens or nests which are big collections of sticks, cactus, bones, trash, and even poop from other animals.

They love to stockpile and hoard, especially enjoying collecting shiny objects. Earrings, coins, keys, and other items have been found in their nests. Each midden has many chambers inside, offering shelter from heat, cold and predators.

The midden is held together by the pack rat's highly concentrated urine. This fossilizes, or preserves the contents of the nest, allowing researchers to study how plants and animals have evolved in the Sonoran Desert.



Pack rat with Midden

They often times build the nest under cactus, or pile cholla in it to keep predators away.

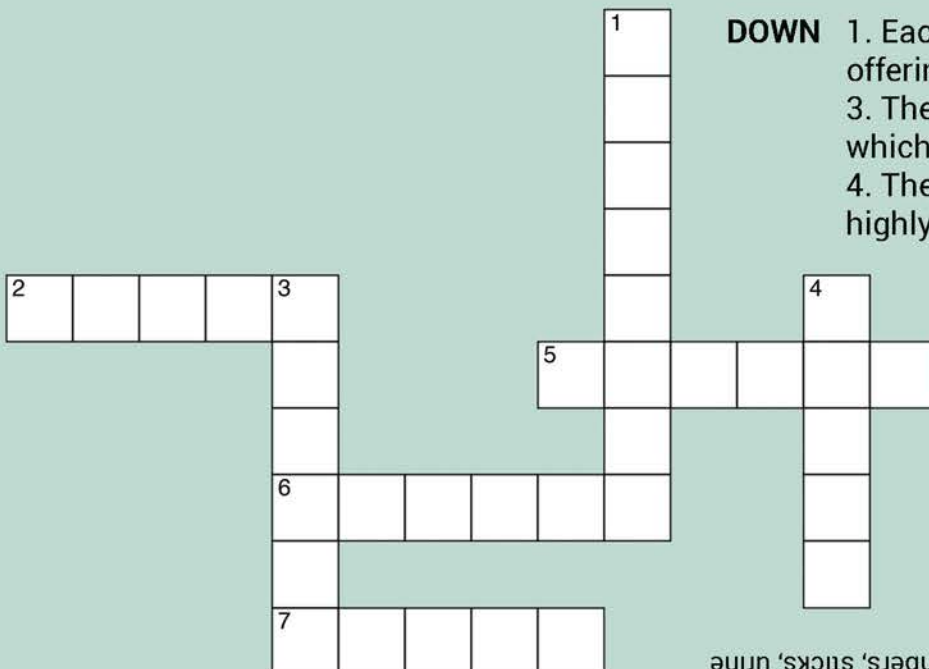
When a pack rat dies or move on, another one moves in.

Researchers have discovered some middens are up to 40,000 years old.

When you find a pack rat midden, observe what you see but don't take it apart; you just might have one staring you in the face!

- ACROSS**
2. _____, keys, and other items have been found in their nests.
 5. The White-throated and Desert Woodrat live in the Sonoran _____.
 6. They often times build the nest under _____
 7. They love to stockpile and hoard, especially enjoying collecting _____ objects.

- DOWN**
1. Each midden has many _____ inside, offering shelter from heat, cold and predators.
 3. They build houses called middens or nests which are big collections of _____.
 4. The midden is held together by the pack rat's highly concentrated _____.



Place the stickers on this page of the animals and plants you see on your visit. You can also draw or write notes here.

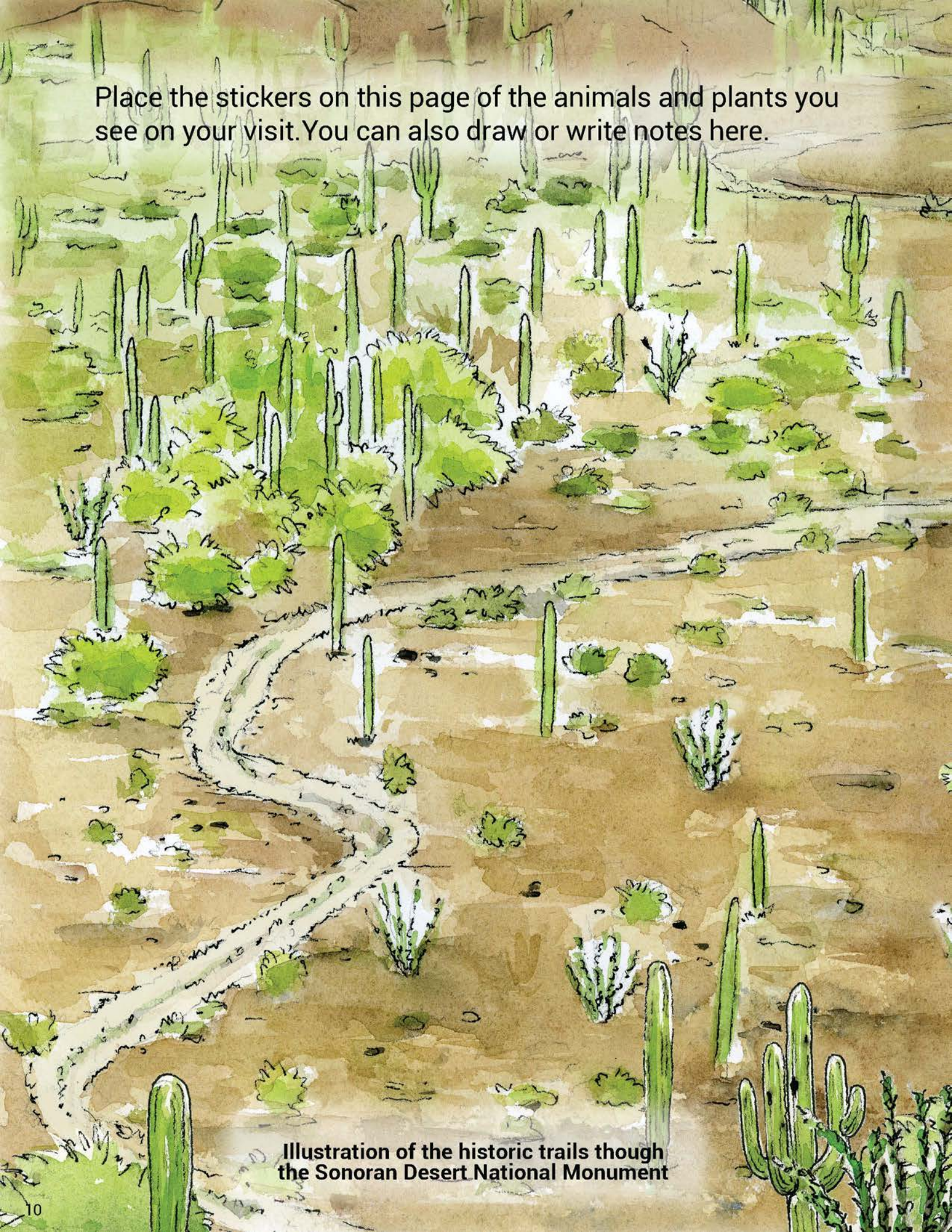
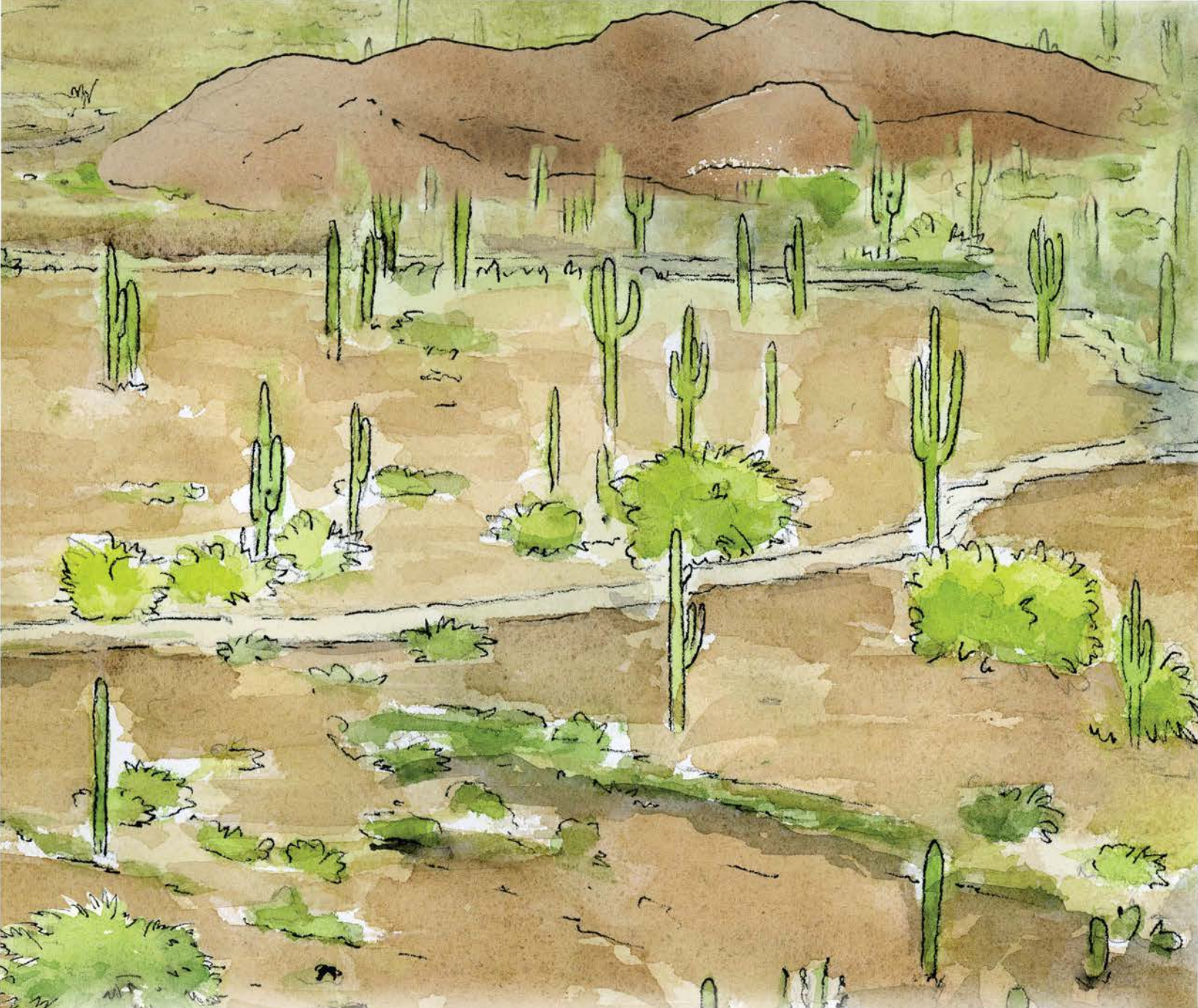


Illustration of the historic trails through the Sonoran Desert National Monument



The Long Life of a Saguaro

Meet **El Gigante**, the Saguaro cactus, King of the Sonoran Desert! Abundant saguaro cactus forests can be seen in many areas of the Monument. Saguaros take a long time to grow. If a saguaro seedling survives, it will turn into a small plant. Nurse plants such as the Palo Verde help protect the small cactus as it grows. Saguaros store rainwater to help sustain them during dry times. They can weigh up to several tons.

In its first 8 years of life, the saguaro will only grow between 1 to 1.5 inches. At 17-25 years, it will be about a foot tall. The first blossoms

appear when the saguaro is 35-40 years old. At this stage, it is about six feet high. The first arm appears when the plant is 65-75 years old!

Woodpeckers will peck holes in the saguaro. Other birds and animals use these holes to build nests and live. As birds move out, others move in, sort of like a Saguaro Hotel!

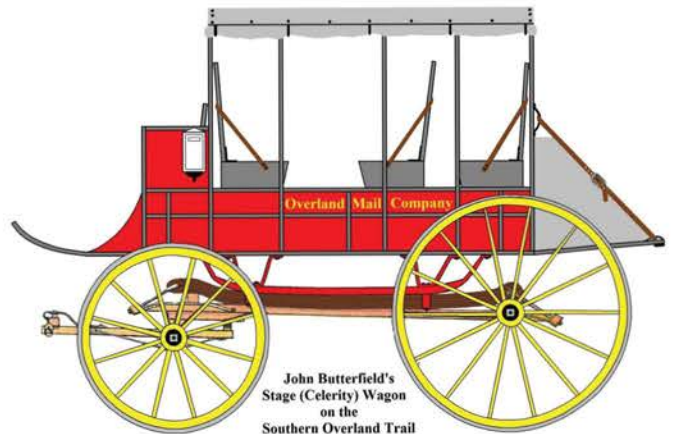
Saguaros live for up to 200 years. Death may come by freezing, lightning, wind, old age, vandalism, or human development. Once a saguaro dies, it becomes habitat for lizards, snakes, squirrels and other animals.

Historic Trails through the Sonoran Desert National Monument

For thousands of years people have lived and traveled along a trail corridor through Arizona known as the Southern Trail. Early Native Americans left evidence of their passage through the Monument; petroglyphs, pottery shards other signs can still be seen in some areas. More recent groups who traveled the trail include Juan Bautista de Anza, the Mormon Battalion, and Butterfield's Overland Mail Company.

1775 - Spanish Military Officer Juan Bautista de Anza, Captain of the Presidio of Tubac in Sonora (now southern Arizona) gathered Indian guides, priests, soldiers, mule packers, skilled tradesmen and their families to form a colonizing expedition from Sonora Mexico to Northern California to help settle the San Francisco area. This small town of about 300 people traveled 1,300 miles with over 1,000 head of livestock. Their journals contain the record of their passage to a new life of opportunity.

1846 - The Mormon Battalion assisted in the Mexican-American War. General Stephen W. Kearny directed this volunteer military unit to help secure California from Mexico. They traveled 1,800 miles by horse, wagon and on foot, and constructed wagon roads along the way from Kansas to San Diego. Prior to this, travel across the southern territories was not suitable for wagon traffic.



John Butterfield's Stage (Celerity) Wagon on the Southern Overland Trail 1858-1861
© Gerald T. Ahnert

1857 - Butterfield's Overland Mail Company operated between 1858 and 1861, along a 2,700 mile route between Missouri and California. The Butterfield Overland Stage Route operated day and night, offering mail and passenger service from the St. Louis area to San Francisco in a record 25 days. Up to nine passengers were crammed onto three benches, with little legroom and swaying seats that made many seasick. Stage stops along the trail provided fresh mules and a quick stretch for passengers who paid 10 cents per mile. A ride on Butterfield's Celerity wagon was quite rough and dusty! One of the rules for riders was, "Don't spit into the wind."

If it cost ten cents per mile to ride the Butterfield Overland Stage, how much did it cost to go from Missouri to California?



**50th Anniversary
1968 - 2018**

The Juan Bautista de Anza Trail is a National Historic Trail



ANSWER: It cost \$270 to ride the stage from Missouri to California.

Historic Trail Activity: "Provisions and Necessities"

History tells us that different groups of people traveled along this trail at different times in history. A two-track dirt road remains in many places, allowing you to follow some parts of the trail. The rest is up to your imagination!

What would you take long ago? What would you take today? Study the Provision Lists and fill in the lines to the right.

1775 - Anza Trail Provision List

Tents
Blankets
Clothing
Tools
Guns, Ammunition
Knives
Shoe iron for horses
Chiles, dry beans
Cornmeal
Jerked beef
Chocolate
Medicines
Cooking pots

1846 - Mormon Battalion Provision List

Tents
Blankets
Cooking equipment
Flint-lock musket
Cartridge box belt
Knapsack
Haversack
Food rations of hardtack
Biscuits and beans
Jerky
Canteen
Utensils; tin plate and cup

Traveling Long Ago

Imagine riding on a horse or walking on foot along the trail. Look at the lists and write down what you would take. Remember, you are on a long, dusty trail!

Traveling Today

Imagine you are traveling the trail today in a vehicle. Make a list of what you would bring.



Respect and Protect

The story of our Sonoran Desert National Monument is a rich and interesting one. As any history detective can tell you, there is evidence of people living in many areas. You can sometimes find the evidence:

Pottery
Stone Artifacts
Petroglyphs
Archaeological sites
Historic sites



Treat cultural resources with respect. Protect them from damage or theft.
Encourage others to do the same.



LEAVE NO TRACE

How can you be a responsible Junior Ranger?
The Seven Principles of Leave No Trace are a good starting place:

1. Plan ahead and prepare
2. Travel and camp on durable surfaces
3. Dispose of waste properly
4. Leave what you find
5. Minimize campfire impacts
6. Respect wildlife
7. Be considerate of other visitors



Sonoran Desert Word Search

Many different plants and animals live in the Sonoran _____.

If you see a desert _____, never pick it up. They can lose vital fluids that keep them alive.

Our State Tree is the _____.

Our State Bird is the _____.

This is the fastest land mammal in North America. _____.

This cactus is used by birds, lizards and other desert creatures as a hotel. _____.

This rattlesnake travels sideways across the desert.
Sonoran _____.

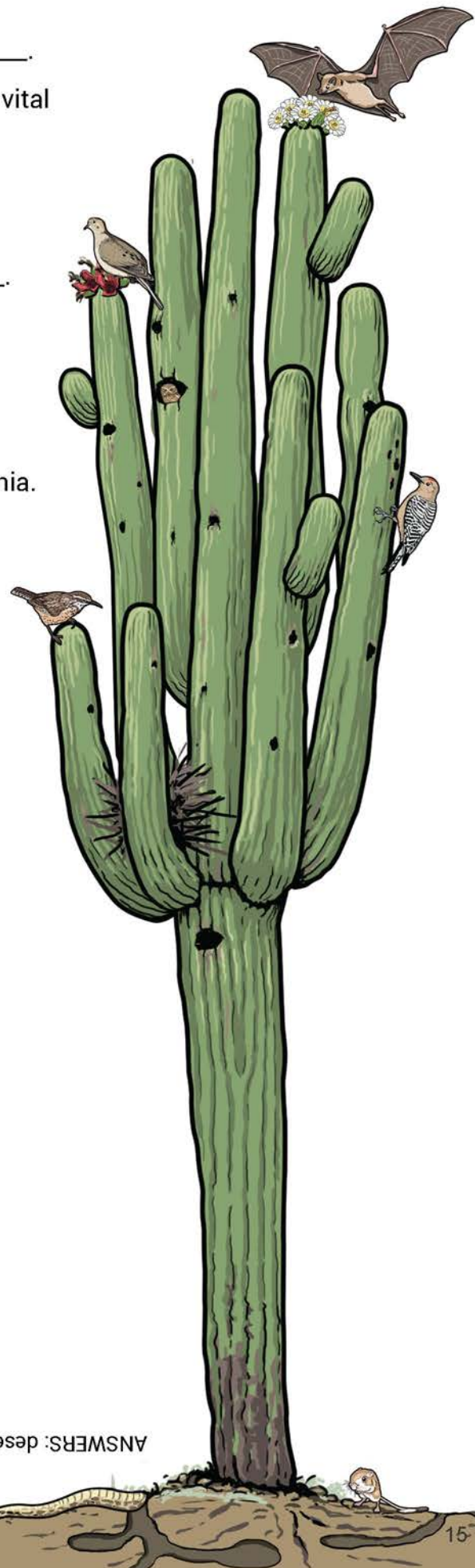
This Spanish Explorer helped move families to help settle California.
Juan Bautista de _____.

This large raptor soars high above the desert looking for prey. Redtail _____.

_____, bees and birds pollinate saguaro flowers.

H	M	P	J	Z	L	I	E	P	R	P	T	D	N	N
G	V	S	R	U	E	A	Q	E	X	H	O	P	E	E
Y	F	A	D	O	O	N	D	S	D	H	R	G	R	R
J	H	K	K	M	N	N	J	C	O	M	T	I	W	W
W	P	G	G	M	I	G	I	O	D	L	O	S	W	S
R	Z	F	T	W	M	L	H	A	W	K	I	R	E	U
K	T	R	E	S	E	D	B	O	O	N	S	O	S	T
O	S	D	P	A	L	O	V	E	R	D	E	A	A	C
F	I	U	Z	W	A	G	U	I	D	N	G	S	J	A
S	T	N	T	T	T	P	M	T	M	U	K	H	V	C
D	A	G	S	C	F	V	N	F	A	D	W	G	U	M
C	E	G	L	I	A	G	Z	R	T	A	J	R	P	G
R	O	W	V	Y	X	C	O	S	Y	C	M	H	E	E
D	U	W	N	A	R	V	B	H	F	E	C	H	J	N
B	A	T	S	P	N	Z	M	G	I	M	N	U	V	U

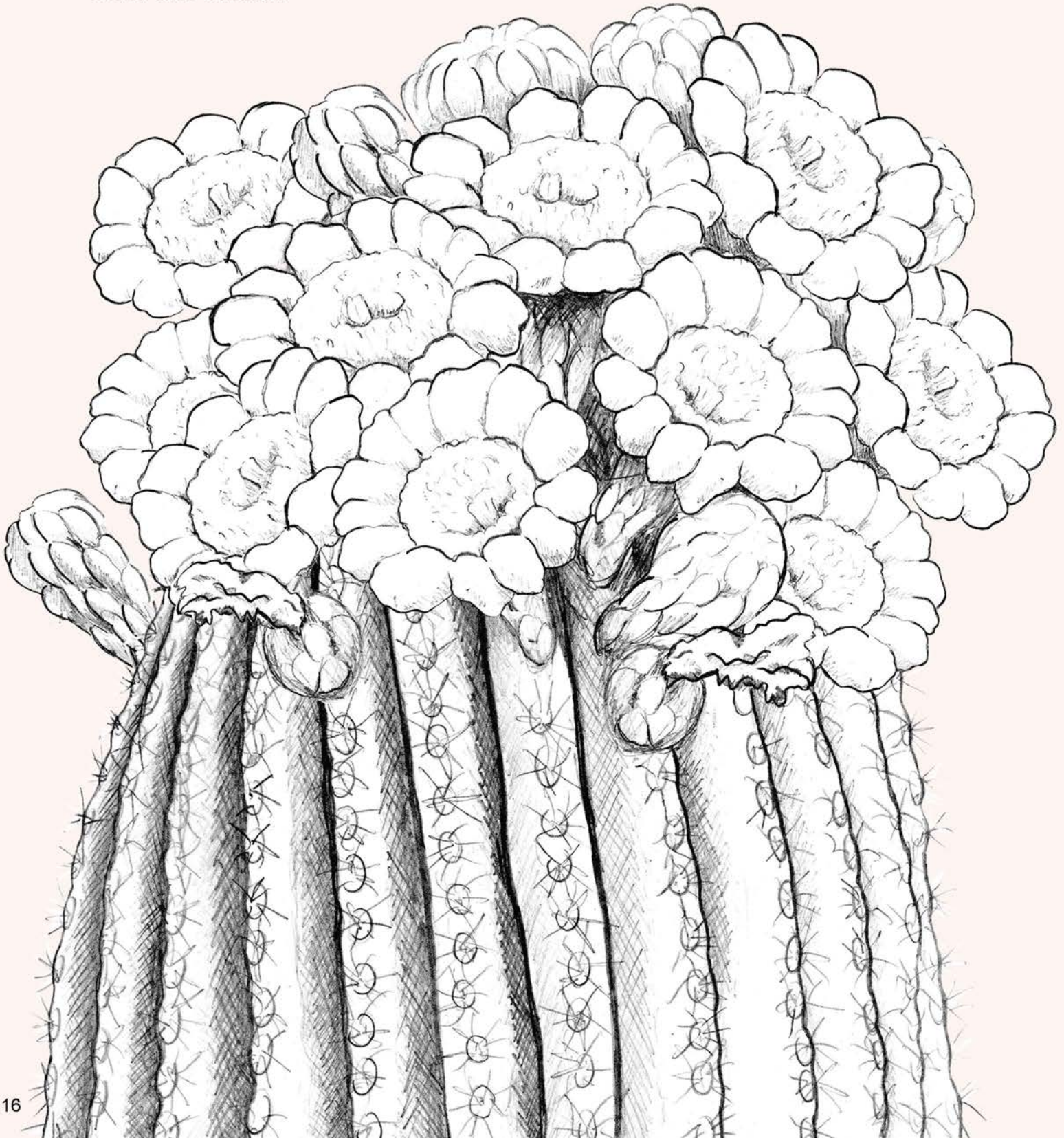
ANSWERS: desert, tortoise, paloverde, cactus wren, pronghorn, sidewinder, anza, hawk, bats.



Saguaro Cactus Flower

The saguaro flower blooms in the late spring, and only opens up for less than one day. After bats, bees and birds pollinate the flowers, they mature into bright red fruit. The fruit ripens, and up to 2000 small black seeds spill out. Bats, birds and others will eat the fruit, and in turn help spread seeds across the desert, where some will take hold in the soil and begin to grow, repeating the cycle of the saguaro.

Color the cactus.

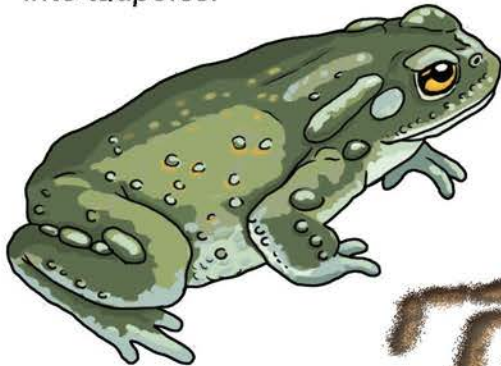


Hidden Treasures Amphibians on the Sonoran Desert National Monument

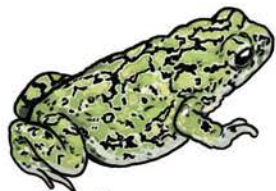
The Monument only receives about seven inches of rain each year, but it still has lots of amphibians in it. Up to 10 kinds live in this area – at least seven are found in a single valley. Most of these frogs only need pools of water for a few weeks in the summer – and one can get by with just over a week of water! The rest of the year, they burrow underground, where they rest until the next summer rainy season.

Most of the kinds found here are toads and spadefoots, which have adapted to live in the desert. For example, the burrowing treefrog uses its head and flattened lips to dig into the mud of temporary pools and coats itself with a "cocoon" to stay moist. And Couch's spadefoot can go from egg, to tadpole, to froglet in as little as nine days! This allows it to use puddles of water that dry up quickly. Afterwards, both of these types of frogs may stay underground until the next summer rainy season.

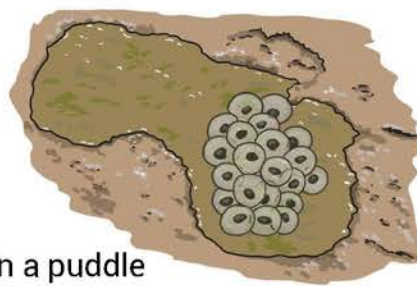
Draw the way through the maze for Great Plains Toad in the crevice to lay her eggs so they can turn into tadpoles.



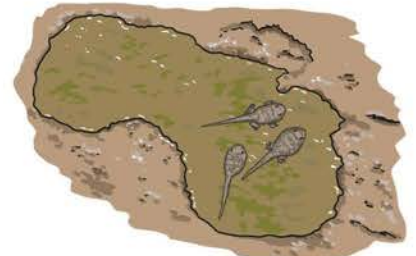
Sonoran Desert Toad



Sonoran Green Toad

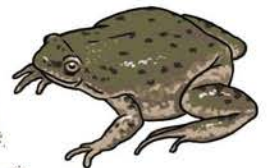


Eggs in a puddle



Tadpoles in a puddle

Finish here

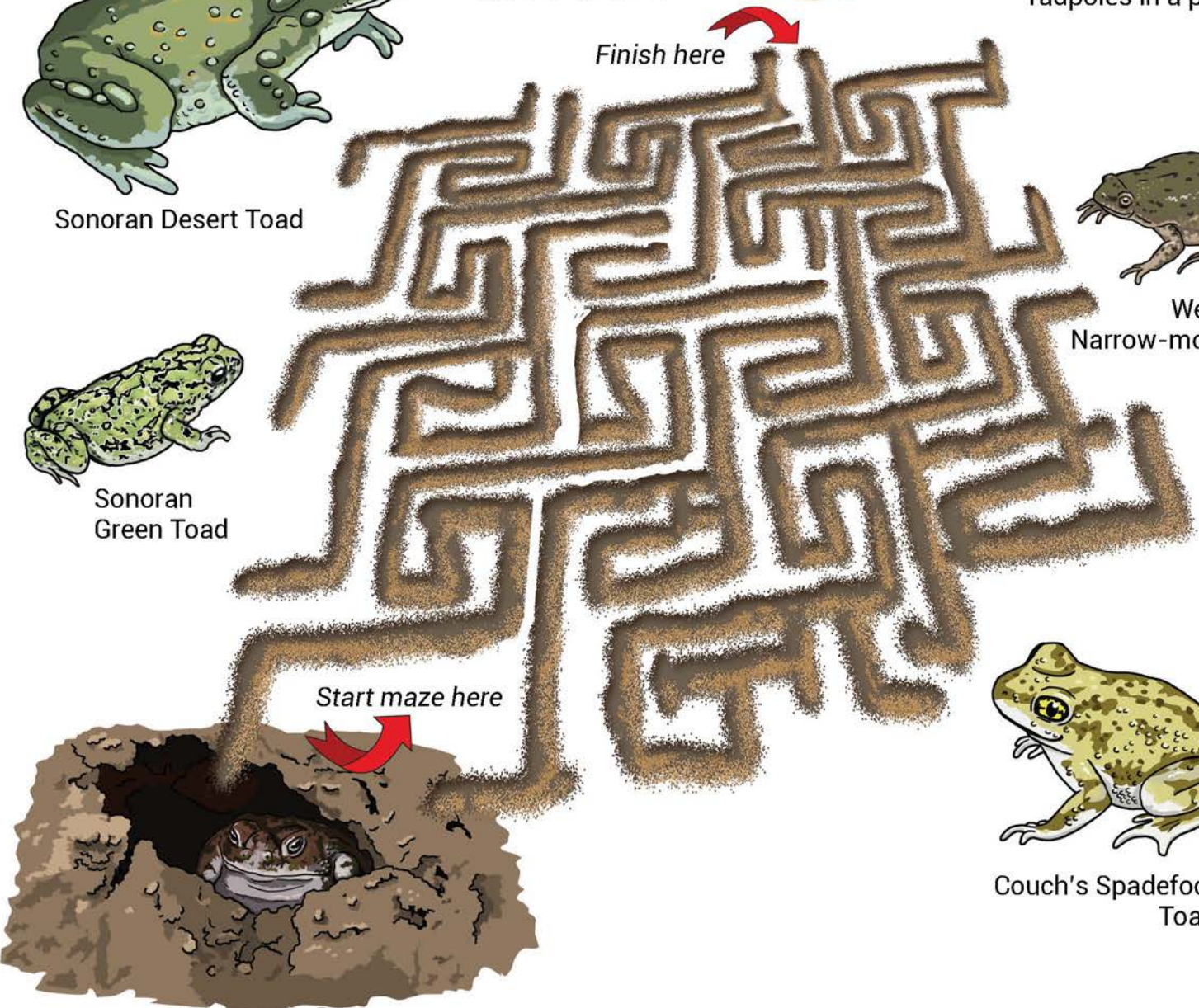


Western
Narrow-mouthed
Toad

Start maze here

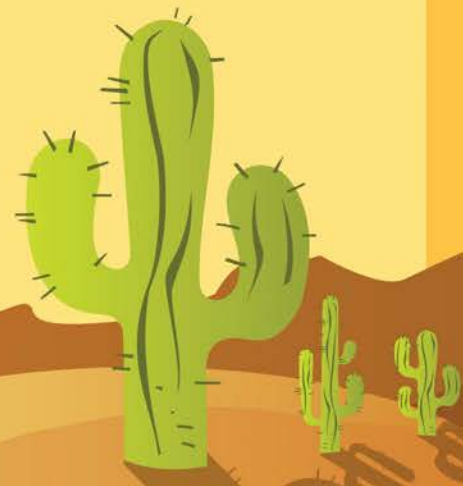
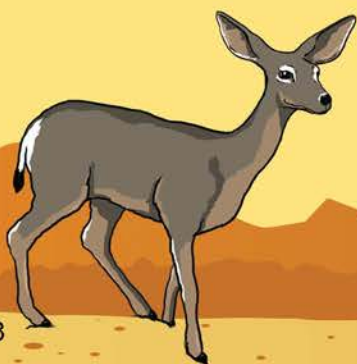


Couch's Spadefoot
Toad



Your Own Journal

Use this page for your drawings and notes as you visit the Monument.
Look up words in this book you are not familiar with and write down their meanings.

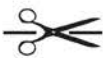
[illegible]

More Places to Play and Learn on the National Conservation Lands



**NATIONAL
CONSERVATION
LANDS**





Cut on dotted line



Junior Ranger Oath



I promise to help protect the Sonoran Desert National Monument,
public lands, my community, and the earth by being an active and
responsible steward of the environment.

I promise that I will not feed wild animals.

I promise to leave rocks, plants, artifacts and historic objects
as I found them for everyone to enjoy.

I promise to continue to explore, learn about,
and respect the world wherever I go.

I promise I will share what I learn with others.

Signed _____

Date _____

