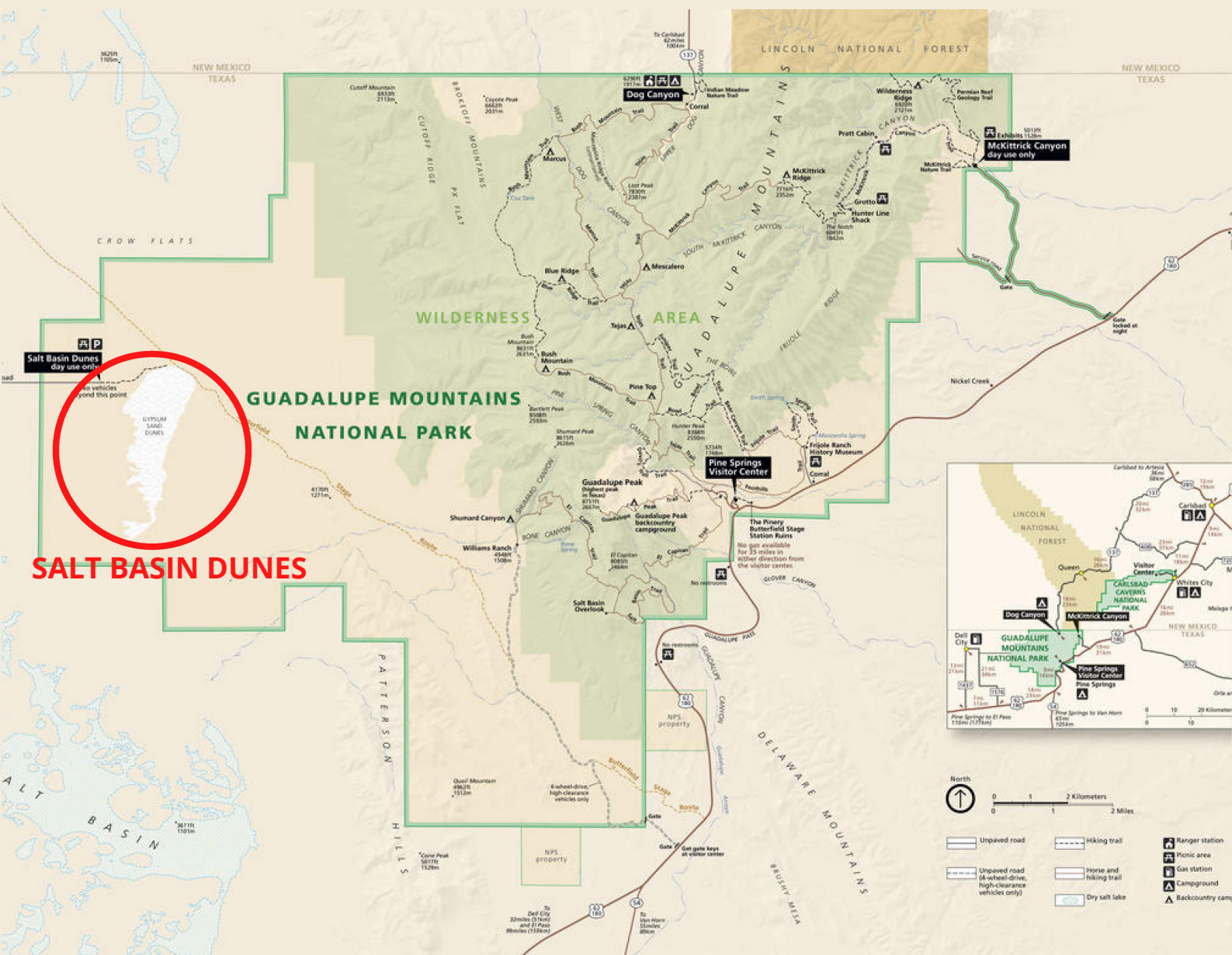


GUIDE TO THE SALT BASIN DUNES



Guadalupe Mountains National Park

PARK MAP



Courtesy: National Park Service

Guadalupe Mountains National Park is located in West Texas, 110 miles from El Paso, Texas. Many flock to the park to view and explore the magnificent Guadalupe Mountain range, which holds Guadalupe Peak, Texas' tallest summit. The Salt Basin Dunes, circled in red, are the hidden gems of the park. These dunes are formed from gypsum deposits brought by westerly winds and are host to a variety of unique flora and fauna.

DUNE HABITAT



The Salt Basin Dunes compose a picturesque habitat created from gypsum sand and salt left behind by an ancient lake, later moved by the wind. The dunes created here range from three to thirty feet tall, becoming larger and less vegetated on the northern and eastern edges.

-- REMINANTS OF THE PAST --

The Mescalero Apache is an Apache tribe of hunter-gatherers, who once roamed the southwestern US. They are one of the oldest inhabitants of the Guadalupe Mountains. Tools, such as the arrowhead pictured to the right, can be found throughout the park.



REMEMBER: THE PARK IS A HISTORIC SITE. IF YOU SEE AN ARTIFACT ANYWHERE ON THE DUNES, PLEASE LOOK, BUT DO NOT TOUCH!



PLANTS

Many of the plants inhabiting these dunes, such as the desert sage depicted below, are gypsumphilic. This means they are specialized to live in the sandy soils found here. Within the dunes, the habitats can vary greatly between small areas. These are known as microhabitats. These microhabitats can support life in different ways.



Some areas in between dunes are covered by a strange brown crust, as depicted above. This crust is cryptobiotic, meaning it is alive! It is actually an association between lichen and fungi. The crust is essential for preventing erosion and allowing plants to take root.

-- COMMON PLANTS --



Top left: Desert daisy; Bottom left: Yucca; Right: Cholla cactus

THE LIZARD SQUAD

The lizard squad is a group of biologists interested in reptile behavior and ecology. Through the Erell Institute, established by Doug and Maria Eifler, they visit desert ecosystems and study interesting lizards inhabiting these landscapes. Here at the Salt Basin Dunes, they studied the movement and habitat use of the common lesser earless lizard (*Holbrookia maculata*). They learned not only where on the dunes the lizards are likely to live, but also what microhabitats they are most likely to inhabit.



Members of the Lizard Squad enjoy a picturesque view of the Guadalupe Mountains on the Salt Basin Dunes.



The Lizard Squad

(Bottom row from left to right: Makenna Orton, Daanya Siddiqui, Kaera Utsumi, Maria Eifler, Doug Eifler; Top row from left to right: Telma Laurentino, Janey Haddock, Rachel Quock)



The lesser earless lizard can be found throughout much of southwestern and central United States, but the Salt Basin Dunes are one of the few places where you can see a blanch (white-colored) *H. maculata*. The photo above depicts a male, with temporary, non-toxic paint marks at the base of his tail for identification purposes during the research period.



COMMON LESSER EARLESS LIZARD

Holbrookia maculata

Description

These lizards are distributed across the central and southwest United States. Adults can fit in the palm of your hand, reaching about 2 inches in body length (over 4 inches with tail included). They vary in coloration from dark browns to a blached white and have dark patches running down their backs. In the breeding season, females develop colored side patches that range from pink to red.



Researcher Observations

The lizard squad made a few notable observations of this lizard species. During the mating season (May-July), two lizards were seen duking it out, biting one another, and even flinging each other upside down. Given the timing, this was potentially related to courtship, or it could have been a territorial dispute.

Habitat

The lesser earless lizard inhabits alkali flats, a dried-out desert lake, and mixed shrub grasslands. They are especially common in areas with sandy soils for burrowing. On the Salt Basin Dunes, these lizards camouflage perfectly with the white sand. They can be best observed by walking along the edge of the cryptobiotic crust. They can also be found on the sides of dunes, especially near sage bushes.

Diet

These lizards eat a variety of insects and spiders and can occasionally eat smaller lizards.



CAMOUFLAGE CORNER

Can you
spot me?



Did you know?



Grasshoppers are masters of disguise and have evolved various color patterns to better camouflage with their environments. A recent study found that some grasshoppers are aware of their coloration and can choose which substrates to spend time on to hide better.



COOL CRITTERS



1. What plant did I use to make my nest?



2. When do I appear to explore the sand dunes?



3. My shell protects me from predators and bad weather. What am I?



4. I am a great hunter that has many spots that help me hide. Can you guess my name?

1. Sagebush; 2. after rainfall; 3. Box turtle; 4. Leopard lizard

COOL CRITTERS



1. I am named for the black bars across my neck, can you guess my name?



2. I'm a musician and I buzz on hot days.
What am I?



3. I often hide-in-plain sight, on grass or branches. What am I?



4. Horned lizards have a very special diet.
Can you guess what I eat?

1. Collared lizard; 2. Cicada; 3. Walking stick bugs;
4. Ants

WHO MADE THESE TRACKS?



Desert Fox



Cicada larva

FUN FACTS

Most of the animals and plants on these dunes are psammophiles (pronounced "sam-o-phile") that thrive in sandy habitats. Psammophile comes from the Greek word *psammos*, meaning sand.

The Salt Basin Dunes and much of the Guadalupe Mountains National Park are part of an ancient fossilized reef system dating back millions of years ago.



White-colored lesser earless lizards live in the Salt Basin Dunes and the White Sands National Park in New Mexico. Although both are white, they have some differences. White Sands earless lizards (left) have two dark stripes on their sides, which the Salt Basin lizards (above) lack.

ACKNOWLEDGMENTS



Supported by Erell Institute
<https://www.erell.ngo/about>
Photo Credits: Maria Eifler

Visit the Guadalupe Mountains National Park website for
more info: <https://www.nps.gov/gumo/index.htm>