

# STAND BLA

**America's newest national park has a lot to love, from windswept slopes of gypsum sand  
promotion could affect its groundbreaking research and how you can make the most**

---

PHOTOGRAPHS BY TIRA HOWARD

Illustrations by  
JAMESON SIMPSON



# ST

to one-of-a-kind critters. We get inside how White Sands National Park's recent of a day hiking, sledding, photographing, or picnicking in this magical destination.

BY ELIZABETH MILLER

ADDITIONAL STORIES BY DIANA ALBA SOULAR AND MARIA MANUELA

Made up of gypsum sand, the dunes move constantly, making every return visit feel like a brand-new experience.



**B**Y DUSK, THE WHITE SANDS NATIONAL PARK DUNE FIELD seems marked by a strange kind of hieroglyphics—footprints and long vertical lines of people scrambling up and then sliding down the steepest faces. The surreal, sinuous curves of white in this otherworldly place elicit an immediate sense of amazement and promote a carnival-like atmosphere.

People of all ages climb onto sleds—a mission so endorsed by the park that the saucers are for sale in the gift shop and recommended on several wayfinding signs. Other visitors rest on camp chairs under beach umbrellas. Laughter, jubilant calls, and delighted squeals carry across the sand.

As I walk the gypsum ridges in late August, a barefoot man strolls along the crest of one, playing an accordion. Its opened case lies by his

car, near a pair of kicked-off cowboy boots. He plays and sings while walking across a dune, a photographer crouching near him, capturing the scene. The sun moves toward the mountains rimming the Tularosa Basin, a jagged blue line on the horizon. A breeze picks up. The temperature drops.

The texture of the sand changes over the sides of a single dune—deep and soft in places and wind-firmed to a walkable crust in others, the surface scalloped in the way that waves often ripple undersea sand. As the sun sets, these dunes reveal how many shades can hide in a single color: pink-white, lavender-white, blue-white, gray-white, brown-white. People wandering



Go ahead and take off your shoes. Even during the height of summer, the sands feel cool.

the dunes transform into tiny black specks on the otherwise white landscape, a place unlike anywhere else on the planet, a light smudge visible from space.

In January 1933, President Herbert Hoover recognized its importance by designating White Sands as a national monument. In December 2019, the more than 145,000 federally protected acres became a national park. Like the windblown grains all around me, the shift may seem subtle but could represent seismic changes in our knowledge, understanding, and ability to tap into the many secrets this landscape contains.

New national parks generate excitement, and this January and February, White Sands witnessed its highest attendance ever for those two months. Then the pandemic came, dampening visitation. (It drew

## White Sands National Park

Some White Sands experiences are currently unavailable, but the park is open. When restrictions lift, expect sunset concerts, star parties, and campouts. Admission is \$20 per vehicle or \$15 per person (if only one adult is in a vehicle), good for seven days. You can drive up to 16 miles in a loop to view the dunes. The park is open every day of the year except Christmas. Winter hours (November 1–February 7) are 7 a.m.–6 p.m. Check the website for other hours, restrictions, and changes. Dogs and other pets must be on a leash. Bicycling is permitted on the asphalt and packed gypsum, but not on the dunes themselves. 575-479-6124, [nps.gov/whsa](https://nps.gov/whsa)

608,785 visitors in 2019, a boost for the cities of Alamogordo, about 15 miles to the northeast, and Las Cruces, about 50 miles to the southwest.)

The landscape itself unveils new mysteries as scientists poke into its inner workings. That's one reason its elevation to national park status calls for celebration: The national monument language spoke solely to preserving the dunes and their sand; the national park designation encompasses other natural resources, a nod to the robust research under way and a spur for more of it.

"In the last 20 years or so, a lot of what we know about the park has changed," says David Bustos, resource program manager with White Sands National Park. In fact, the designation specifically cited recent discoveries in paleontology, archaeology, geology, and hydrology. "That allows us to request special assistance and additional funds to understand these resources, but also to preserve them. Now it's part of our mission."

White Sands remains a largely untapped wonder, drawing researchers from throughout the United States and beyond. Eric Metzler, the resident moth expert, began researching species in the park in 2007. That thrilled Bustos, and the two expected to soon amass a comprehensive view of all moth species in the park.

Instead, Metzler is still at work, having identified 600 species in a swath only 100 yards across and 2 miles long. Each year, he finds and describes a new species just one dune over from the previous. Of the 60 new species he has discovered in White Sands, an astonishing 54 of them are endemic, found only in this hot whitescape of an environment. "That particular rate of endemism is unknown in the world, except perhaps in the Galápagos Islands," he says.

"It's a very unique place, so it draws a lot of people for that reason," says Ryan Ewing, an associate professor of geology at Texas A&M who comes to the park to study its sand dunes. "The reason we go out there is that this is like a natural laboratory."

The park is also reaching out to Native tribes, many of whom have stories that add a layer to the archaeological work under way and the understanding of how the landscape has changed over time.

"People visiting White Sands have had a special connection for a long, long time," Bustos says. "It's a special place, and it always has been."

Like the colors of the sunset reflecting off the dunes, Bustos finds variety in the work here, be it research on fossil footprints, a potential mission to Mars, or the military activities at nearby White Sands Missile Range. "There are so many different pieces," he says. "So many incredible stories, you never know how the day's going to go or what you're going to find." —*Elizabeth Miller*

# Water, Water Everywhere

WHITE SANDS MAY SEEM BONE-DRY, BUT ITS DUNES WOULDN'T BE THERE IF NOT FOR WATER. LOTS OF WATER.

BY ELIZABETH MILLER

**A**s you drive into White Sands National Park on Dunes Drive, the one road into the park, the Chihuahuan Desert gives way to ever taller white sand dunes. The sands may look dry, but there is actually *more* water here, not less. That water makes the difference between gypsum blowing away, like it does everywhere else in the world, and doing what it does only in this unmatched place: forming dunes.

In the Tularosa Basin, the water table sits roughly one to three feet below the surface. The water leaches into the sand and acts like glue that holds it together. “The role of the water is to stabilize the body of sand,” says Ryan Ewing, an associate professor of geology at Texas A&M University who studies White Sands. “You get cohesion of the particles because of a little, thin meniscus of water that’s trapped between them.”

Water also transports gypsum from the San Andres Mountains, to the west of the basin, and the Franklin and Organ mountains, in the south, to Lake Lucero and Alkali Flat, at the park. When the brine water in Lake Lucero evaporates, it leaves behind big gypsum crystals, which wind and water then break up and transport into the dune fields. “If you don’t have a big playa to form the sand, and the soil moisture and the high water table to hold that sand once you form it, then it just

blows away,” says David Bustos, resource program manager with the Park Service.

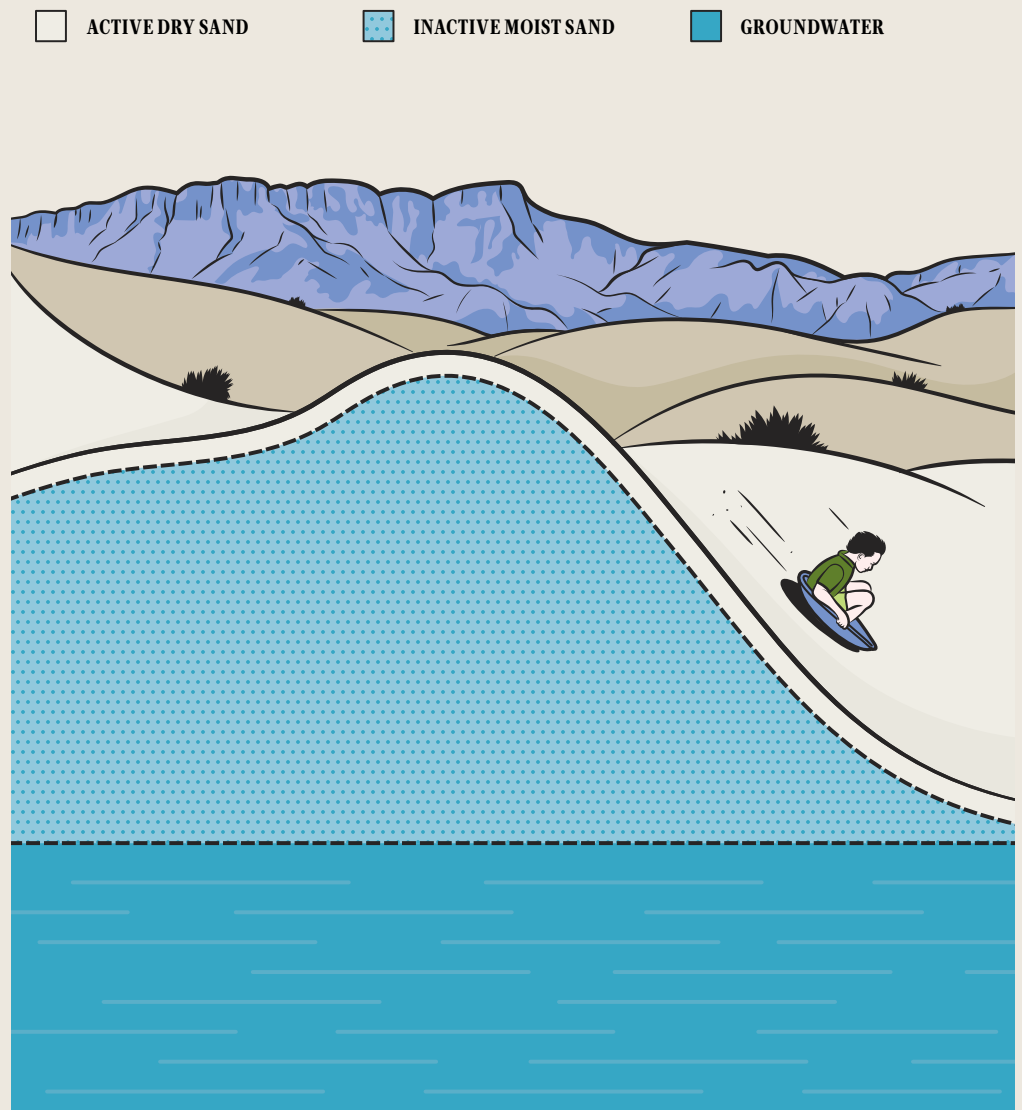
For most of the year, the pore space of the dunes (the space between the grains) holds the maximum amount of water possible against the pull of gravity. Precipitation—or its lack—dramatically af-

fects it. In the driest months, March through June, groundwater is pulled up from the shallow water table and evaporates, even as the sands hold on to their moisture. During summer monsoons, the extra water easily replenishes the water table, and sometimes even overflows, creating deep pools between the dunes and flooding the picnic area.

The best way to perceive the water at White Sands is one that takes patience. Bustos recommends sitting in an interdunal area beginning a few minutes before sunset. As

the sun sets, the temperature drops and the breezes pick up. You should notice a hint of dampness in the air—this represents the soil moisture rising as the sun goes down.

Streams flow into the Tularosa Basin from the San Andres Peaks but then disappear among the dunes. Then, on the far eastern edge of the monument, water reappears and flows for a short distance in what is called the Lost River. The water seems to flow in the direction opposite that of the dunes, though it’s unclear exactly why.



The New Mexico sky is an important element of landscape photography.



## HOW TO

# Photograph Like a Pro

**CRAIG VARJABEDIAN, WHO SPENT FIVE YEARS SHOOTING WHITE SANDS FOR HIS 2018 BOOK *INTO THE GREAT WHITE SANDS*, OFFERS A FEW TIPS FOR GETTING A GREAT PICTURE. BY MARIA MANUELA**

**T**he milky dunes etched in wavy lines stand out in the foreground. Falling sharply away, a dune's decline becomes shrouded in shadow. A pale hue delineates the horizon as it gives way to the San Andres Mountains, in the distance.

"I want people to take a moment and stand there with me," says photographer Craig Varjabedian of *Pastel White Dunes*, one of 91 images in his book *Into the Great White Sands* (University of New Mexico Press). "I know a picture of mine is successful if the image itself becomes a window to take me back to whatever it is I photographed."

Varjabedian visited White Sands every two weeks for five years for the book. Often, he would head into the bone-toned dunes at dawn, when the air is cooler and the pink aura of sunrise saturating the horizon makes the impact of the landscape even greater.

"It's not just the iconography," says Varjabedian, whose work has been exhibited and collected by museums throughout the country, including the Albuquerque Museum. "It's also that the photograph reveals a sense of the light and a sense of the air and reveals a sense of the temperature. You just sort of feel it."

Photographing the area since

the early 1980s, he has come to know it like few others. Rangers have showed him the sand's hidden treasures, like mammoth tracks, a downed fighter jet, and a decaying vintage automobile. It is also the place Varjabedian returns to when he needs inspiration, or, as his wife puts it, to find his smile. "There's a wonderful regenerative quality about White Sands," he says. "It nourishes my psyche."

Varjabedian, who teaches a variety of photography workshops, offers a few of his tips for capturing your best shot.

**Get out as early or as late in the day as possible.** "When the sun is at high noon, you can't see the landmarks very well. You really need the shadows to see the shape of the dunes. The sunsets at White Sands are the most beautiful I have ever seen."

**Try to shoot just a piece of the magic.** It's a lesson Varjabedian learned while working on his 2009 book *Ghost Ranch and the Faraway Nearby* (UNM Press). "Georgia O'Keeffe talks about how vast that Abiquiú landscape was," he says. "It was just too big to paint. So she started to paint little pieces of it that could potentially speak for the greater whole." He applied that to White Sands. "If you try to capture everything, you have a lot of information but no real sense of detail or space."

**Use the HDR setting when taking pictures with your phone.** "This will allow users to capture so much more of the light and shadows of this brilliantly illuminated landscape."





Columbian mammoth

Ancient camel

Dire wolf

Harlan's ground sloth



## Frozen in Time

RESEARCHERS ARE INVESTIGATING THOUSANDS OF FOOTPRINTS LEFT BY ICE AGE ANIMALS AND PREHISTORIC HUMANS TO UNCOVER RICH STORIES ABOUT OUR PAST.

BY ELIZABETH MILLER

On the far western fringe of the park, the dunes taper out to the edge of Lake Lucero. Here, in an area closed to the public, someone's ancient footprints, laid in the mud of an Ice Age lake, track alongside those of mammoths and giant sloths, which lived in the area when this was a more verdant landscape.

The footprints show that an individual walked a long distance with a child on his or her hip, then returned alone. Children played in the puddle left in a giant sloth footprint, and hunters surrounded a sloth and taunted it so that the animal turned, while the killing blow came from its blind side. A mammoth and baby mammoth walked together, the adult nudging the younger one along.

"The thing about footprints is that they tell a story, a very emotive story, very easily, so you can read what's going on," says Matthew Bennett, a professor of environmental and geographical sciences from Bournemouth University who travels from the United Kingdom to White Sands several times a year. "It's like a blank piece of canvas that people have run and played on for many years."

In dwellings and pottery, even sandal fragments, tools, and garment bits, what a person thought or felt or paid attention to remains a mystery. But a footprint shows when and where people leaned into one another, how a child tugged at an adult, or how someone rose up

on their toes for a better view. Thus, prehistoric humans become a little less abstract and a little more like us.

"It feels like a whole new level to understanding how these people interact that you wouldn't get if you were just looking at those as artifacts," says David Bustos, White Sands resource program manager.

Most footprint sites around the world record just a few steps, but the tracks at White Sands record thousands and preserve some of the oldest evidence of humans in North America. Back then, this was one of the largest wetlands in the Southwest—and where there is water, people are sure to follow.

Bustos invited Bennett and other researchers for a firsthand look at what's called the White Sands Trackway in 2017. Their work together, published in recent and upcoming articles, often focuses on one set of tracks at a time to unpack a single interaction for everything it has to tell about human behavior millennia ago.

Bustos guesses the footprints weren't visible when people first explored the dunes and even drove through this part of the park. As the sand atop them has eroded, they've come into view, but as that erosion continues, eventually it will erase the footprints, too.



Trails can be on sand or a boardwalk (below)—but dogs must be leashed.

waterworks, offer a brief shady respite.



**BACKCOUNTRY CAMPING TRAIL**

This lollipop two-mile loop takes off from near the Loop Drive juncture and heads west across the classic white dune field. Scramble up their faces, stroll their ridges, and then wander through the basins between dunes, spotted with purple sand verbena and soaptree yucca. The field is reset regularly by wind-sculpted ripples and, occasionally, rainstorms, which leave stipples in the firmer stretches of sand, so follow the route-mapping stakes to stay on track. You can see signs of nightly visitors in the form of footprints across the sand. Indications of the slow drift of the dunes themselves show in yucca buried to their needle tips. When overnight permits resume, intrepid campers can haul in a load for the evening and sleep nestled between the dunes, watching the sun turn ever bolder shades of pink as it moves toward the blue profiles of the San Andres Mountains, lining the western horizon.

# Way Finder

THESE THREE HIKES ARE A GREAT WAY TO EXPERIENCE THE DUNES AND ALL THEY HAVE TO OFFER.  
BY ELIZABETH MILLER

**W**hite Sands is in some ways a pathless place. Visitors are welcome to walk over any stretch of bare sand dunes. But these three hikes can help you break from the crowds and pique your curiosity at the strange features of the dunes, whether it's a chance to learn a new wildflower or to consider what it takes for plants and animals to survive in this unique and intense environment.



**INTERDUNE BOARDWALK**

This elevated, stroller- and wheelchair-accessible boardwalk, less than a half mile long, traces the boundary between the dunes and the Chihuahuan Desert scrublands. The landscape becomes whiter, with skunkbush sumac and hoary rosemary

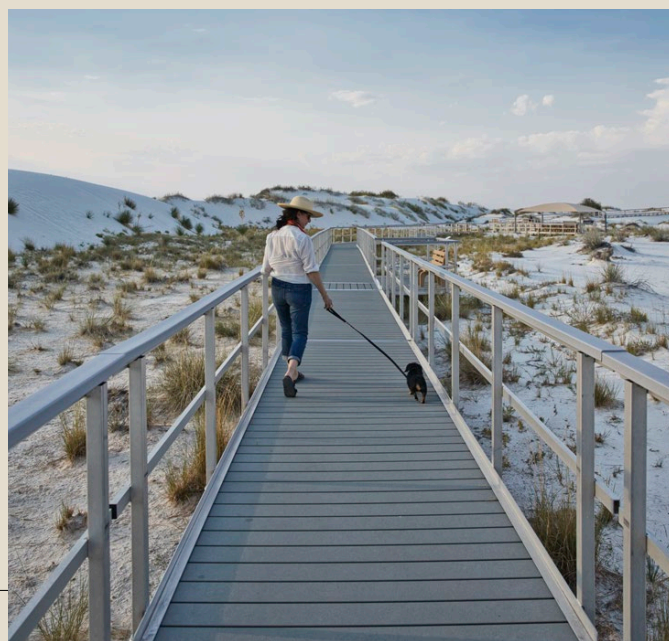
mint holding a few pedestals of higher sand in place. Signs lead the tour through the array of plants and animals that live in this diverse landscape, benches offer a chance for a break, and the walk culminates at a point with a view of the Sacramento Mountains, with their own visible layer of pale gypsum, just like the surrounding sand.



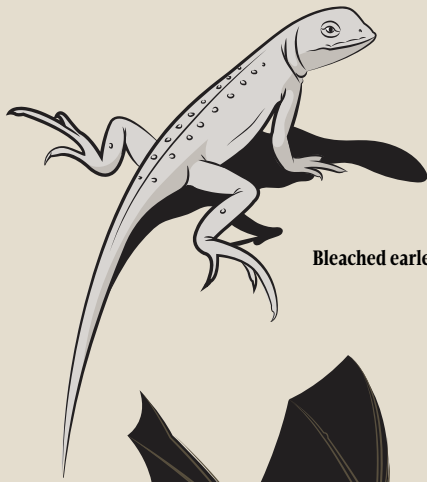
**DUNE LIFE NATURE TRAIL**

Meander up and over several dunes, along the crest, and through the scrub brush on this one-mile hike, following a course set by stakes and frequent interpretive signs. The blend of dunes and Chihuahuan Desert habitats makes for variable opportunities for wildlife. Those interpretive signs talk you through some of the wild residents—pallid

bats, coyotes, kit foxes, roadrunners, and burrowing owls, most of which avoid the heat by coming out only at night. By day, you're most likely to see the three white lizards endemic to the dunes: the bleached earless, little white whiptail, and fence lizards. A few small cottonwoods, hinting at the subterranean



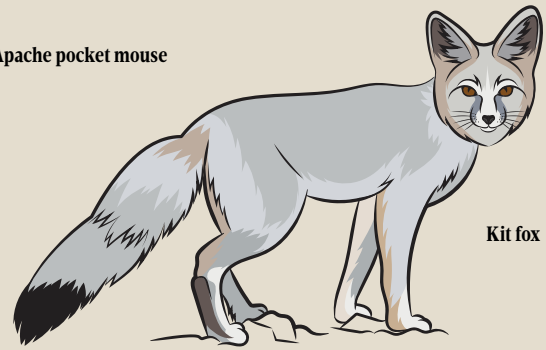




Bleached earless lizard



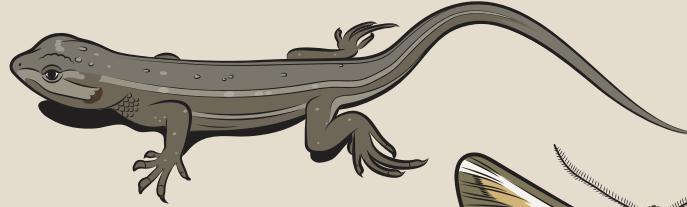
Apache pocket mouse



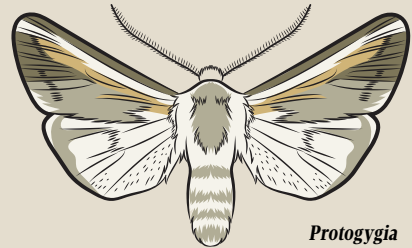
Kit fox



Pallid bat



Fence lizard



Protogyia whitesandsensis moth

# Animal Crossings

SEE IF YOU CAN SPOT THESE CRITTERS THAT HAVE ADAPTED TO LIFE IN THE DUNES.  
BY ELIZABETH MILLER

The dunes themselves are only about 10,000 years old, just a blink of an evolutionary eye, which makes the number of species adapted to this landscape astonishing. Take lizards. Of the 20 species that live in the Chihuahuan Desert, three of them evolved at White Sands, becoming whiter to remain cool and as camouflage from predators.

“Not only are they adorable and totally cool to look at,” says Erica Bree Rosenblum, an associate professor of environmental science at the University of California at Berkeley who studies lizards at White Sands, “but from a biological standpoint, they’re really, really interesting for learning how evolution works and how quickly animals can adapt when conditions change.”

## Bleached earless lizard

Found in the interdunal areas, the bleached earless lizard

is the whitest of the three species living in the dunes and identifiable by the black spots on either side of its head. “They’re the most camouflaged,” says Rosenblum. “You have to almost see them by movement, because otherwise it’s too hard to look for them.”

## Fence lizard

Often perched on yucca stalks, this white variety of lizard with black stripes and blue accents uses its coloration to hold its territory against other males or to entice females. “They have these really bright blue bellies they use to communicate with one another,” says Rosenblum. “So sometimes you see them doing little push-ups.”

## Kit fox

The largest animal in the dune field, the kit fox weighs only about five pounds. Often found in the shrublands and the dunes, kit foxes tend to

be a little lighter in color and have adapted better to White Sands than their canid relative the coyote. “They’re able to live on a much smaller prey base, so can live in places where the coyotes cannot,” says Gary Roemer, a mammal researcher with New Mexico State University.

## Pallid bat

About four inches long, with large ears, these sand-colored bats often roost at the park’s visitor center. “Unlike many bat species that catch flying insects, pallid bats fly low and seek to catch insects moving along the ground,” says Jeremy Lane, New Mexico Department of Game and Fish’s public information officer.

## Apache pocket mouse

This tiny mouse lives out its entire life without ever needing a drink of water, instead absorbing it from the Indian rice grass seeds it eats, which

it packs into its mouth “pockets.” Although it’s nocturnal, the pocket mouse has white fur (surprise: It helps to be white even at night on the dunes). “The funny thing about all the white species: They’re not albino,” says David Bustos, resource program manager with the park. “They keep the pigment.”

## Protogyia whitesandsensis moth

Found in the southeast corner of the park, the largest of the dunes’ endemic moth species is 1.5 inches across, is dark in color, and—unique among moths—flies only in winter. “I hypothesize the darker-colored wings allow the moth to absorb solar energy during the short winter days, thereby allowing it to fly into the very cool evenings,” says Eric Metzler, a moth collector and researcher who has found them even after the temperature falls below freezing.



Sledding is a go right now. Check the park's website to see when camping (below) returns.

## HOW TO Sled the Dunes

PARK RANGER BRENNA RODRIGUEZ OFFERS A FEW TIPS TO CONQUER THE GYPSUM.  
BY MARIA MANUELA

**W**hooshing down a sandy hill while holding on for dear life (*we're* not screaming, *you're* screaming) is a sure way to prove you're a White Sands pro. But it takes some practice. The gypsum dunes might look like snow, but they don't act like it.

White Sands National Park ranger Brenna Rodriguez holds the intel for going fast, finding the best spots, and doing it all safely. (While she loves the sledding, she admits that her favorite activity is to lie flat at the top of a dune and roll down sideways.)

**Wax your sled.** Plastic saucer sleds, which can be purchased at the park's gift

shop (when open), provide the best option. Waxing the bottom "decreases friction on the underside of your sled, so it can glide smoothly," she says.

**Wax yourself with SPF 50.**

"The elevation, the reflection of sun off the sand, and the lack of any shade means that skin gets sunburned even faster and more severely than usual," she says. And don't forget sunglasses. "The gypsum sand can be as bright white as fresh snow and can make you go snowblind without eye protection."

**Go deep.** To find the best sledding area, walk a few dunes away from the parking area, where the surface hasn't been as disturbed and there's

no danger of sliding onto the road. "If you want the longest and fastest sledding experience, the largest dunes are the most fun," she says. Take note: The base of the dunes can be hard, so look for a gentle run-off for a softer landing.

## GOOD NIGHTS

The park's 10 camping spots offer a heavenly new perspective on the dunes, the wildlife, and the skies above.

Gypsum dunes take on a magical feel under moonlight—a wonder best experienced by camping at one of the park's 10 primitive spots. Roughly a quarter mile to a mile from the Backcountry Camping Loop trailhead, the campsites (closed indefinitely due to COVID-19) create a secluded

back-to-nature experience unlike any other.

**On top of park admission fees, camping permits are \$3 per person per day, on a first-come basis. Check with the park for availability.**

"Once you're out far enough, it's a whole new world," says photographer Wayne Suggs, who regularly camps at White

Sands to capture mesmerizing night views. "You find solitude. The breathtaking beauty of it is just amazing."

In addition to a tent, sleeping bag, food, and plenty of water (at least one gallon per person per day, according to park officials), Suggs advises a handheld GPS to avoid getting lost. Open fires aren't allowed, but it's okay to take a small camp stove.

While camping beneath the light of a full moon is popular, Suggs prefers moonless nights. That's when the glittery view of a sky packed with stars takes center stage.

"It doesn't matter what kind of light you're out there in," Suggs says. "It's always different, and it's always good." —Diana Alba Soular



# Gimme Shelters

THESE ICONIC TABLES CREATE A PERFECT PLACE FOR AN ALIENS-HAVE-LANDED PICNIC.

BY DIANA ALBA SOULAR

**L**ike silvery metal sailboats skimming a sea of blanched dunes, the picnic shelters at White Sands National Park add to the sense of whimsy and exoticism inspired by the world's largest gypsum dune field.

Designed by National Park Service architect Lyle E. Bennett, the park's 60-plus curved aluminum shelters draw inspiration from Frank Lloyd Wright, whose designs blended in with nature. A study in poetic contrasts, they look like wind-filled sails frozen in time—somehow ancient and new, fixed and fluid.

Unlike his backward-looking 1930s Pueblo Revival visitor center, Bennett's hat tip to Wright struck a modern tone for his day. Yet the shelters' simple curved forms have an organic feel, as if they have always been a part of the undulating landscape.

They certainly stand out to visitors, creating a one-of-a-kind aesthetic for a one-of-a-kind place, says Kelly Carroll, the park's chief of interpretation. "It's just such a unique design," he says. "I've never seen anything like it before."

In addition, because the dunes are always shifting with the wind, the shelters can be

moved as the sands encroach. "Nothing is stationary out here," Carroll says.

The shelters blend form with function by shading visitors from the sun and providing a windbreak. Each is outfitted with a nearby charcoal grill.

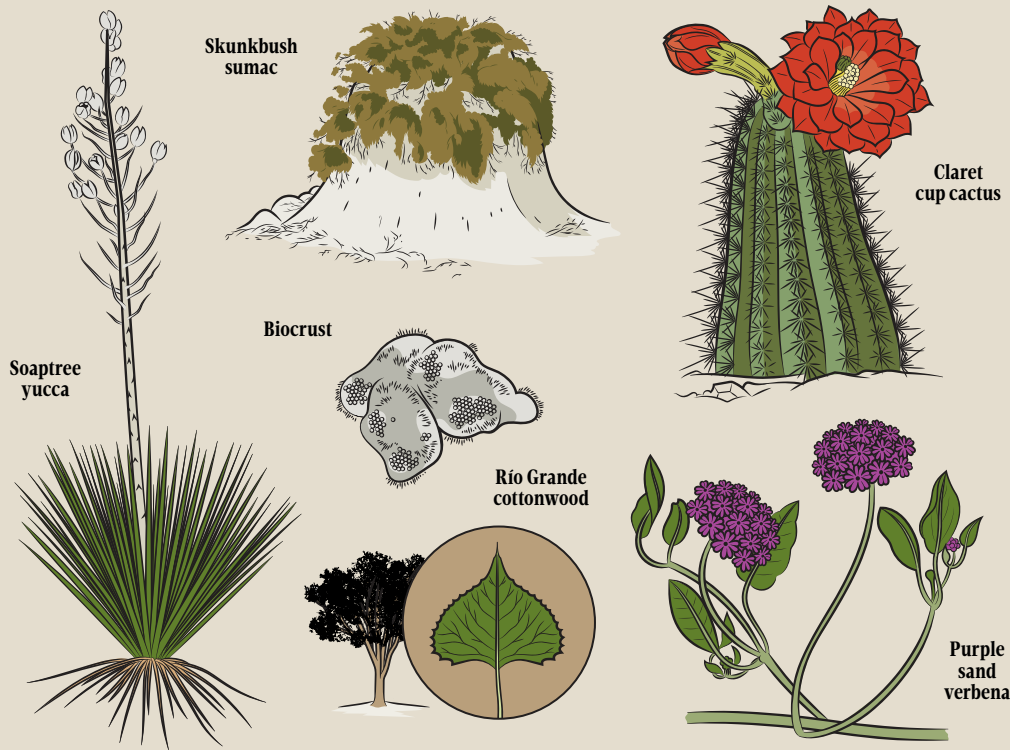
Some picnickers skip the shelters altogether and find a spot near the dunes to park. They set up lawn chairs and pop-up tents adjacent to the dunes. Hats, thin long-sleeved shirts, sunscreen, and sunglasses can guard against the intense sunlight reflected upward from the dunes, especially in the

warmer seasons.

For menu planning, keep it simple—an ice chest with hot dogs, hamburgers, fixings, and plenty of water and cold beverages. (Heads up: The park bans alcohol from February 1 through May 31.) Or skip the barbecuing and take your favorite cold sandwiches and chips. Staffers ask that you avoid bringing white disposable plates into the park. The reason? If plates blow away, they visually blend in with the pale dunes, making litter difficult to spot. Above all, bring what you need to clean up after yourself and your crew and #leavenotrace.

Lyle E. Bennett designed these picnic shelters exclusively for White Sands National Park.





# Power Plants

IT'S NOT EASY, BUT THESE DENIZENS OF WHITE SANDS HAVE FOUND WAYS TO SURVIVE THE HARSH CONDITIONS.

BY ELIZABETH MILLER

**A**s the dunes at White Sands shift, the environment itself changes from dune to dune, enabling distinctive communities of plants on and between each one. “Every step along the way, we have plants and animals and insects that are unique,” says David Bustos, resource program manager with White Sands National Park.

The plants have had to develop tactics to survive in this austere landscape. Some have learned to stock up on nutrients for years before blooming. Others grow a mesh of roots in the sand, holding that ground in place as the dune moves around them. Only the most clever ones survive; most find they can't keep pace with the rate at which the dunes move, leaving the landscape largely bare and open to the sun.

## Biocrust

The soil itself sprouts life in community groups that look like granola or cobbler topping: algal crust, moss crust, and microalgae. A tiny, hairy brown carpet (or sometimes green after a recent rain), moss crust ranks among the more visible of these tiny growths. Biocrust can be found along the Dune Life Nature Trail, often in the shade of other plants, but watch your step. “When it's dry, they're in a dormant state,” says Nicole Pietrasiak, assistant professor of environmental soil microbiology at the University of New Mexico. An entire community of the fragile, dried crusts can be destroyed by a single human footfall. “It literally turns into dust, and that gets easily blown away, so you lose that critical structure from the soil surface.”

## Soaptree yucca

One of the few plants that survive far into and atop the dunes, this spiny desert icon can grow to over 30 feet tall and blooms in cream-colored clusters of flowers along a single tall stalk. “The soaptree yucca can grow extremely tall in order to avoid being smothered by the moving dunes,” says Emily Bartow, a Student Conservation Association intern at White Sands. “If you spot a soaptree yucca on top of a dune, it's very likely that there's 30 feet of it buried below the sand.”

## Río Grande cottonwood

Cottonwood trees, with spade-shaped dark green leaves, send roots and sometimes much of the trunk deep into the soil to tap water far underground. “This species of tree is heavily dependent on water,” Bartow says. “Because

our dunes are so wet, the Río Grande cottonwood can survive in a harsh climate.”

## Purple sand verbena

Pale pink to purple flowers bloom from this low-growing, bushy plant found easily along the Dune Life Nature and Interdune Boardwalk trails. Useful as well as pretty, it can be used as a diuretic and as a dressing for burns. “This wildflower blooms in spring and provides an extra bit of color against the bright white landscape,” Bartow says. “Its tolerance for the salty gypsum sand allows it to thrive.”

## Claret cup cactus

Also charmingly called a strawberry hedgehog, these cacti sprout chalice-shaped, bright red flowers in late spring. Look for them throughout the Chihuahuan Desert, including near the entrance station before the start of the dunes and between the dunes. “The claret cup cactus provides both aesthetics and safety,” Bartow says. “In the spring, it produces beautiful red flowers and provides a safe haven year-round for many rodent species.”

## Skunkbush sumac

One of several species that grow on “pedestals” of sand that are held together by their roots. Along the Dune Life Nature Trail and the Sunset Stroll meeting area, skunkbush sumac blooms yellow and white in spring and produces red berries in fall. “If you see a pedestal with a plant on top, it is likely a skunkbush sumac,” Bartow says. “The way its roots take in water helps compact the sand, and when the dune moves past the plant, the compacted sand stays as a pedestal.”

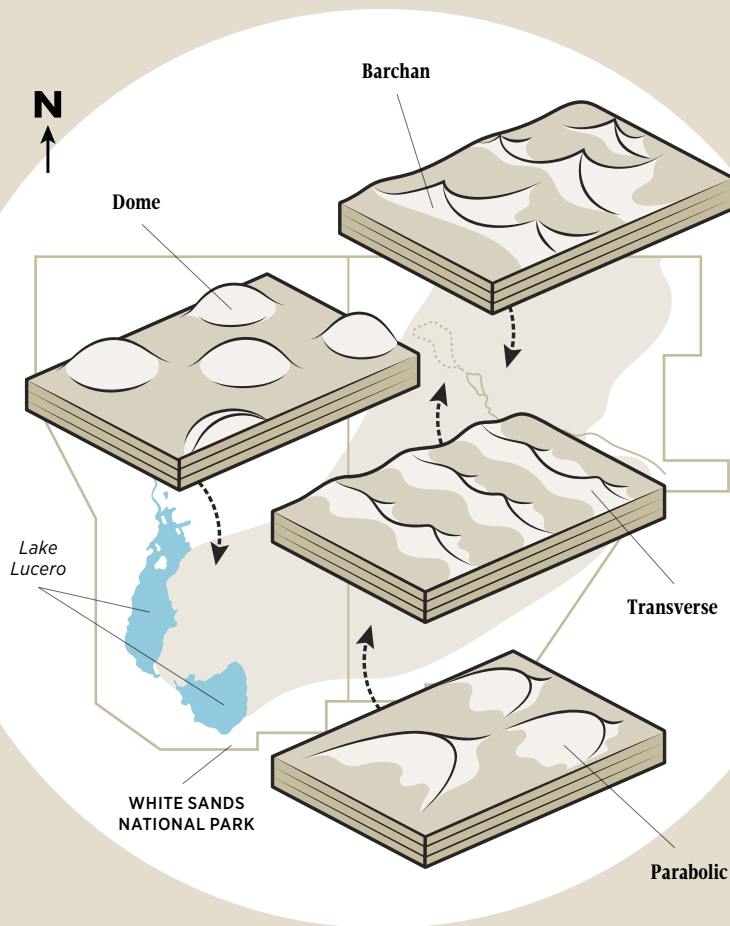
# Shape Shifters

DRIVEN BY WIND, THE DUNES MOVE CONSTANTLY, CRAFTING A DIFFERENT PLACE EVERY TIME YOU GO.

BY ELIZABETH MILLER

**W**ind carves the character of the dunes at White Sands, generally driving them from the southwestern corner of the park to its northeastern edge. Seasonal fronts can bring wind from the north and, occasionally, from the southeast. That makes for perpetual work for the plow drivers who clear the roads of moving sand.

“By and large it’s the winds that shape the dunes,” says Ryan Ewing, an associate professor of geology at Texas A&M University who has studied dune formation and movement at White Sands. The dominant wind sculpts the dunes to generally orient with those prevailing winds. “That gives you that nice, sinuous crest line.”



The **dunes** are, essentially, born on the edge of the park’s Lake Lucero, where they emerge in toe-high piles of sand.

The dunes are made of **gypsum**, from a geologic formation 260 million years old, created when the Southwest was covered by shallow seas. Unlike the more common quartz sand, gypsum sand grains have a more angular, elongated shape—not unlike the dunes themselves.

Dunes come in four primary types. **Dome** dunes are smaller and faster-moving. They form closer to the edge of Lake Lucero and can move at almost four times the average speed of the rest of the dune field.

**Barchan** dunes are thickest around the middle. Barchan and **transverse** dunes, which line up in tall mounds nestled next to one another, dominate the White Sands dune field.

**Parabolic** dunes form in archlike shapes, bent by the vegetation that holds parts of them in place, and crawl at just two to eight feet a year.

**Researchers** are using new geophysical techniques to map and track the dunes over time. Those records show them migrating about 10 feet each year on average. They also show dunes growing “arms,” Ewing says, that essentially reach out and hit one another; sometimes the larger dune swallows the smaller ones.

## SAFETY FIRST

Chief Ranger Aaron Summerlin has a deep appreciation and respect for White Sands National Park’s roughly 227 square miles. “It’s beautiful but also deceptively dangerous,” he says. “It is home to extreme temperatures and venomous insects and reptiles. The park’s mesmerizing beauty can also be disorienting.”

Summerlin, who has worked at White Sands for five years, has a few simple rules for being safe while having fun.

**1. Plan it out.** “Anytime someone decides to enjoy nature, they should have a plan,” says Summerlin. “Water, food, and first-aid kits are always important, but so is communication. Let people know where you are going. Have a fully charged cellphone and plan your route. Take note of landmarks and get your bearings before heading out for a hike. Weather conditions can change quickly, so having a backup plan is very important as well.”

**2. Carry water.** Yeah, we already mentioned it, but it matters that much. Bring more than enough water for yourself

and for everyone in your crew. And drink it throughout your stay. One of the first effects of dehydration? Making poor decisions.

**3. New to the park? Stick to the trails.** Newbies should start with some of the easier hikes, like the Interdune Boardwalk Trail and the Playa Trail, and work up to the moderate and then strenuous trails. “Visitors who decide they want to hike off-trail should do so only if they have planned it out and are prepared,” says Summerlin.

**4. If you need help, call 911.** Even if it appears there’s no

cell signal, call it. “Most times, emergency calls will still go through even if it seems like a signal is unavailable,” says Summerlin.

**5. Bring GPS.** But don’t depend on it exclusively; many times throughout the year it can be unreliable.

**6. Follow the White Sands motto: Safety First.** “We exemplify that motto with our multilingual safety brochure that we provide to all visitors,” says Summerlin. For more information, visit [nps.gov/whsa](http://nps.gov/whsa) or call 575-479-6124.

—Maria Manuela



A period-specific update to the historic visitor center's sign is in the works.

# Revival House

DESIGNED IN A PUEBLO REVIVAL STYLE, THE NEW DEAL-ERA VISITOR CENTER IS WORTH A PILGRIMAGE ALL ON ITS OWN.

BY DIANA ALBA SOULAR

**D**uck into a dim hallway in the White Sands National Park visitor center for a welcome respite from the southern New Mexico sun. Around you, thick, plastered adobe walls feel cool. Log vigas traverse the low ceiling. Smooth terracotta tile covers the walkway. To step inside this historic building—part of a larger complex known as the White Sands Historic District—is to peel back the layers of time.

“One of the cool things is if you spend a little time looking at the structure, you’ll find out little secrets about it,” says Kelly Carroll, chief of interpretation for the park.

Built by craftsmen in the 1930s, the Lyle E. Bennett-designed structure used locally sourced materials for everything from handcrafted furniture to the earthen bricks that shape the building. Workers used traditional building techniques, helping to preserve those skills at a time when construction practices were swiftly changing.

Bennett styled the building after a mission church—a nod to the state’s architectural past, blending Spanish elements with the flat-roofed style of Native pueblos. Later, when the National Park Service developed facilities at parks throughout the Southwest, it tapped into an architectural trend, centered in New Mexico, that renewed the Pueblo-Spanish aesthetic of centuries past. It came to be known as Pueblo Revival.

The White Sands visitor center is a fine example of the style, says Billy Garrett, executive director of the New Mexico History Museum and a retired national park architect. “Architectural revivals have been popular throughout American history, because they use traditional building forms and details to reinforce regional identity,” he says. “Many of the visitor facilities built by the National Park Service during the first half of the 20th century were designed with this objective in mind.”


Simple but elegant details

that help to define the Pueblo Revival style can be found at every turn.

The hand-hewn pine support beams, or vigas, and the pine laths known as latillas form the ceiling. Outside, carved corbels sit atop vertical beams, adding support for the portal’s roof.

Throughout, tin light fixtures feature hand-punched floral designs—a traditional New Mexican craft. Combed glass, painted with the aid of a haircomb, is evident on some light fixtures.

The rustic main room is fashioned after the nave, or central part, of a church. Light beams in from square windows near the ceiling. A staircase winds to an upper landing, mimicking a church choir loft. Tin chandeliers hang at intervals throughout, while the vintage wood furniture references traditional church pews.

A “truth window,” an eight-inch cutout in the wall, gives a look at the adobe brick construction that otherwise would be hidden by plaster. 

## DO THE DUNES

Consider making Alamogordo or Las Cruces your home base during a trip to White Sands. They can even add to the adventure. Be sure to call ahead to check on availability and any potential schedule changes.

### In Alamogordo

Stay at the **Magnuson** ([magnusonbydesertaire.com](http://magnusonbydesertaire.com)), a boutique hotel with Southwestern accents. Snag breakfast at the **Waffle and Pancake Shoppe** ([facebook.com/waffleandpancakeshop](https://www.facebook.com/waffleandpancakeshop)).

Swing by **575 Brewery** ([575brewing.co](http://575brewing.co)) for a White Sands Wit microbrew. Check in with your astronaut heroes at the **New Mexico Museum of Space History** ([nmspace.museum.org](http://nmspace.museum.org)) and more local history at the **Tularosa Basin Museum of History**

([alamogordonntrue.com/tularosa-basin-museum](http://alamogordonntrue.com/tularosa-basin-museum)). Stock up on locally grown pistachios from **Heart of the Desert** ([heartofthedesert.com](http://heartofthedesert.com)) and **McGinn’s PistachioLand** ([pistachioland.com](http://pistachioland.com)). Fill up on New Mexican food in nearby Tularosa at **Casa de Sueños** (575-585-3494).

### In Las Cruces

Hike in the **Dripping Springs Natural Area** ([nmmag.us/drippingsprings](http://nmmag.us/drippingsprings)), in the Organ Mountains-Desert Peaks National Monument. Browse vendors, food, and crafts at the Saturday **Farmers & Crafts Market of Las Cruces** ([farmersandcraftsmarketoflascruces.com](http://farmersandcraftsmarketoflascruces.com)), which is open until Christmas. Pop out to the nearby and historic Mesilla for patio dining at **Salud! de Mesilla** ([saludmesilla.com](http://saludmesilla.com)). Back in Cruces, sip on a pecan-flavored beer at the **Pecan Grill and Brewery** ([pecangrill.com](http://pecangrill.com)). Brave a custard sundae topped with both green chile and pecans at **Caliche’s Frozen Custard** (various locations, [caliches.com](http://caliches.com)).

—Elizabeth Miller