Great Sand Dunes

Great Sand Dunes
National Park and Preserve
Colorado

National Park Service
U.S. Department of the Interior



Stone, Sand, and Stream

© KRIS ILLENBERGER

Nestled against the rugged Sangre de Cristo Mountains, the Great Sand Dunes are the focal point of a wild natural system of high mountain peaks, sparkling streams, forceful winds, and billions of sand grains. Here majestic scenery also gives intimate glimpses of life's rich complexity.

These huge dunes—North America's tallest—are about 11 percent of a 330-square-mile deposit of sand. Eroded from mountains, then shattered by freezing and thawing, and tumbled by streams and winds, sand grains cycle through the dunes system. Plants stabilize most sand deposits outside the dunefield, where old dunes, now grass- and shrub-covered, are difficult to recognize.

Medano and Sand creeks edge the dunefield as the dunes system's lifeblood. Swift, shallow, and seasonal, they recycle sand as they water this arid valley. Habitats alongside them host a great deal of life's richness here, its biodiversity. The streams originate in the Sangre de Cristos of Great Sand Dunes National Preserve. High, cold mountains collect and hold snow from October into April, releasing it in icy streams in late-spring warmth. As community builders, the creeks feed the underground aquifers for San Luis Valley residents' wells, local agriculture, and livestock. People have lived here for 11,000 years. In historic times Southern Ute, Jicarilla Apache, Navajo, gold miners, homesteaders, ranchers, and farmers have lived here, and migrant workers labored here. By the 1920s the dunes fed local pride and tourist income, and valley residents pressed for the national monument status under the Antiquities Act finally realized in 1932. The area's expansion in 2000 as a national park and national preserve was driven both by better knowledge of water's many and complex roles here and the American people's desire to protect the dunes system—dunes, mountains, creeks, and wetlands—forever.

The map side of this brochure helps you visualize the relationship between the mountains, dunes, winds, and creeks, and how the creeks recycle sand for winds to create the tallest dunes. You will also find information to help you make the most of your visit more safely. The wealth of habitats making life so rich here will enrich your experience. Look beyond the dunes for further adventures among creeks, forests, grasslands, foothills, mountains, and wilderness.

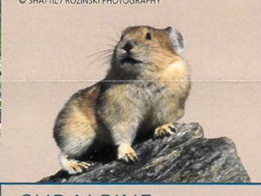
Stone

SEVEN LIFE ZONES OF GREAT SAND DUNES

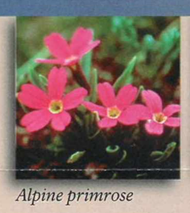
Life zones are determined by elevation, latitude, climate, and exposure to sunlight. The range of elevations at Great Sand Dunes National Park and Preserve offers you many life zones to explore.



ALPINE TUNDRA



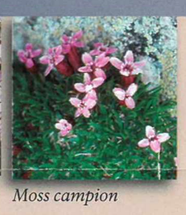
American pika
© SHATTIL / ROZINSKI PHOTOGRAPHY



Alpine primrose

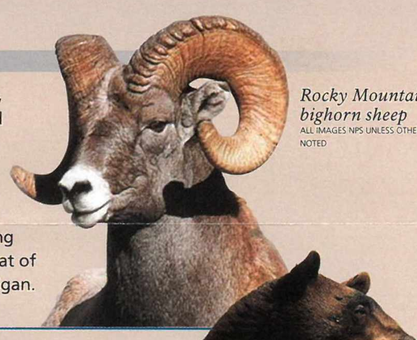


Dwarf phlox



Moss campion

Treeless alpine tundra occurs above 11,000 feet (3,350 meters), where winds blast rugged peaks ice-covered up to 10 months per year. Despite short growing seasons, small plants thrive by growing close to the ground and between rocks for wind protection. Animal life includes the American pika, yellow-bellied marmot, and Rocky Mountain bighorn sheep. In summer, watch for hawks, golden eagles, horned larks, and white-tailed ptarmigan. A warming climate threatens the habitat of pikas, marmots, and ptarmigan.



Rocky Mountain bighorn sheep
ALL IMAGES NPS UNLESS OTHERWISE NOTED



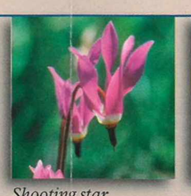
SUBALPINE



Peregrine falcon
© SHATTIL / ROZINSKI PHOTOGRAPHY



Colorado blue spruce



Shooting star



Blue columbine

Subalpine forest (9,500 to 11,500 feet; 2,900 to 3,500 meters) gets heavy snowfall, making it cold and damp all year. Hardy, stout trees, including Englemann and blue spruce, withstand heavy snow without breaking, while flexible subalpine firs bend to shed the snow's weight.

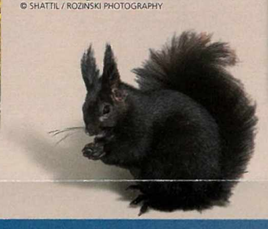
Broad sunny meadows are wet and vibrant with summer wildflowers and mosquitoes. Watch for mule deer, elk, beaver, black bears, and northern harriers, gray jays, and Steller's jays.

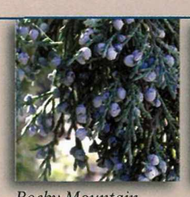
Black bear
© SHATTIL / ROZINSKI PHOTOGRAPHY



MONTANE FOREST

Abert's squirrel
© SHATTIL / ROZINSKI PHOTOGRAPHY





Rocky Mountain juniper



Splitleaf Indian paintbrush

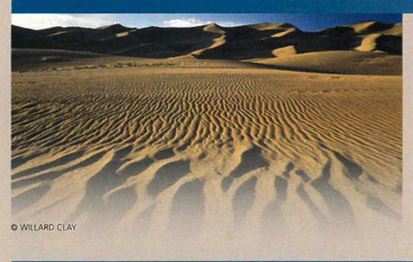


Claret cup cactus

Montane forests and piñon-juniper woodlands occupy like elevations (8,000 to 9,500 feet; 2,440 to 2,900 meters) but prefer different habitats. Montane species (Douglas fir, aspen, and narrow-leaf cottonwoods) thrive in wet drainages. Piñon pines and junipers prefer sunny hillsides. The contrasting habitats and plants attract a wide variety of wildlife. Black bears forage for insects, berries, and rodents; bobcats range hillsides in search of rabbits, Abert's squirrels, and other small animals; pine siskins and juncos feed among the trees. Short wings and long, rudder-like tails allow the northern goshawk to fly through dense forest without colliding with branches.

Bobcat
© SHATTIL / ROZINSKI PHOTOGRAPHY

Sand



© WILLARD CLAY

DUNEFIELD

Great Sand Dunes tiger beetle
© SHATTIL / ROZINSKI PHOTOGRAPHY





Prairie sunflower



Scurfpea



Skeletonweed

At a distance dunes look barren, but up close you see how life adapts to fill every niche. Seven insect species thrive here and nowhere else in the world, but only one mammal, Ord's kangaroo rat, lives in the dunefield, although coyotes, mountain lions, and elk wander through parts of it. Indian rice grass, blowout grass, and scurfpea, common in sandy dry areas, grow in the swales between dunes, anchored by their root systems. Here they survive the grit of windblown sands and the high surface temperatures.

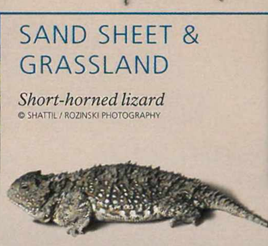
Ord's kangaroo rat
© SHATTIL / ROZINSKI PHOTOGRAPHY

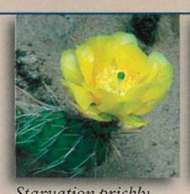


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SAND SHEET & GRASSLAND

Short-horned lizard
© SHATTIL / ROZINSKI PHOTOGRAPHY

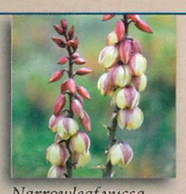




Starvation prickly pear



Small flower sand-verbena



Narrowleaf yucca

The vast sand sheet around the dunes makes up about 53 percent of the sand deposit. Grasses and shrubs, like rabbitbrush, prickly pear, and yucca, grow over old dunes, stabilizing them with their roots and reducing wind speeds with their branches and leaves. Many animals frequent the grasslands and sand sheet—elk, mule deer, pronghorn, white-tailed jack rabbits, and coyotes. Iridescent caterpillars that cling to rabbitbrush shrubs in the spring transform into green-striped rabbitbrush beetles in summer.

Elk
© SHATTIL / ROZINSKI PHOTOGRAPHY



SALT-ENCRUSTED PLAIN OR SABKHA

American avocet
© SHATTIL/ROZINSKI PHOTOGRAPHY





Baltic rush
© CHARLES PEIRCE



Inland saltgrass
BROTHER ALFRED BROUSSEAU, © SAINT MARY'S COLLEGE OF CALIFORNIA



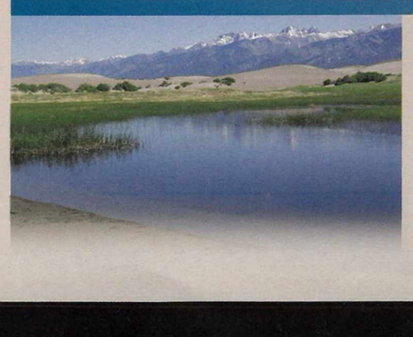
Four-wing saltbush
© MICHAEL CHARTERS 2003

Low-lying salt-encrusted plains, or sabkha, make up 36 percent of the sand deposit west and south of the dunefield. Wetlands and patches of white, crusty sand dot this area. Alkaline minerals leached from the high water table cement the surface as a fragile crust. Few plants, like saltbush and saltgrass, tolerate this harsh area, although slightly higher and less alkaline areas nearby may host plants and animals of the sand sheet. Wetlands in the sabkha attract migratory birds, like the sandhill crane and American white pelican.

Sandhill crane
© SHATTIL / ROZINSKI PHOTOGRAPHY



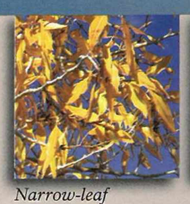
Stream



STREAM SIDES & WETLANDS

American white pelicans
© SHATTIL / ROZINSKI PHOTOGRAPHY





Narrow-leaf cottonwood



Rocky Mountain iris



Broadleaf cattail

Medano and Sand creeks flow seasonally around the dunefield *(see map on other side)*. They carve sand from its eastern, western, and northern edges and redeposit it to the south, where wind will recycle it back into the dunefield. Vegetation alongside creeks creates oases in which cottonwoods, willows, golden currants, and Wood's roses thrive. Watch for the red and yellow flash of western tanagers and the bold, black-and-white of magpies.

Subsurface flow from these streams feeds the wetlands that foster amazing life in the midst of a sandy desert.

American beaver
© SHATTIL / ROZINSKI PHOTOGRAPHY



Exploring the Park from Streams to Summits

The park is open 24 hours a day, all year. Visitor center hours vary by season: Call 719-378-6399 or check our website.

Several park and federal passes are honored: See the park newspaper or check www.nps.gov/grsa.

You can enjoy ranger-led programs and events, go birding, swim, picnic, hike, backpack, photograph, stargaze, ride horses, climb dunes, or go sandboarding, skiing, sledding, or high-clearance four-wheeling (ATVs prohibited).

Accessibility We strive to make our facilities, programs, and services accessible to all. For information go to a visitor center, ask a ranger, or check our website.

More than Sand Dunes
You can explore the mountains, foothills, diverse forests, and grasslands here as well as sand dunes.

Safety *Don't trust computer road mapping here.* The only paved-highway access is via US 160 and CO 150 from the south, or CO 17 and County Lane 6 from the west. • Lightning strikes can be fatal: If you see a thunderstorm, get off the dunes! Storms and cold weather can occur any time of the year. • Summer sand surfaces reach 140°F. Hike dunes in early mornings or evenings then. Wear closed-toe shoes and monitor pets' feet. • Elevations range from 7,500 to nearly 14,000 feet: Seek medical advice about doing vigorous exercise. Elevation sickness symptoms are short breath, headache, and nausea. Drink lots of water.

Do not feed any wildlife. It is dangerous for you and unhealthy for them.

National Park Foundation.
Join the park community.
www.nationalparks.org



Medano Creek wave surges (seasonal)

More Information
Great Sand Dunes
National Park and Preserve
11999 Highway 150
Mosca, CO 81146-9798
719-378-6300
www.nps.gov/grsa

The national park and national preserve are two of over 400 areas in the National Park System. Learn more about national parks and National Park Service programs in America's communities at www.nps.gov.

Emergencies call 911



Tall trees, Montville Trail



Sand Creek Lakes area

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Wilderness at Great Sand Dunes

Congress has protected nearly 90 percent of Great Sand Dunes National Park and National Preserve as wilderness under the 1964 Wilderness Act. The Great Sand Dunes Wilderness is 33,549 acres in the national park, and 41,676 acres of the national preserve are in the Sangre de Cristo Wilderness.

Wilderness designation protects forever the land's wilderness character, natural conditions, opportunities for solitude, and scientific, educational, and historical values. In wilderness people can sense being part of the whole community of life on Earth.

Crestone
Colorado Road T
To 17
Camino Baca Grande
Camino Real
Wagon Wheel Road
Camino Del Rey
Camino Baca Grande
These are public roads, but please respect private property in the Baca Grande Subdivision.
PRIVATE PROPERTY
Liberty Road
Liberty Gate (backcountry access)
Deadman Creek
Crestone Peak 14294ft 4357m
Cottonwood Creek
RIO GRANDE NATIONAL FOREST
SANGRE DE CRISTO MOUNTAINS
Marble Mountain 13266ft 4043m
Milwaukee Peak 13522ft 4122m
Music Mountain 13355ft 4071m
Upper Sand Creek Lake 11745ft 3580m
Lower Sand Creek Lake 11473ft 3497m
Tijeras Peak 13604ft 4146m
Deadman Lakes
Cleveland Peak 13414ft 4089m
Little Sand Creek Lakes
Alpine Creek
Pole Creek
Short Creek
Crystal Falls Creek
SAN ISABEL NATIONAL FOREST
To 69
119
Music Pass Creek
Music Pass 11380ft 3469m
Grape Creek
Snowslide Mountain 11664 ft 3555m
Blueberry Peak 12005ft 3659m
Cottonwood Creek
North Muddy Creek
Hudson Branch
Sand Creek
STORM WINDS
WATER
Medano Lake 11518ft 3511m
Mount Herard 13297ft 4053m
559
Medano Pass 9982ft 3043m
GREAT SAND DUNES NATIONAL PRESERVE
Middle Bruff Creek
Sand Ramp Trail
Cold Creek
National Preserve
National Park
Many primitive campsites along road in this area. High-clearance 4WD only.
Medano Creek
Piñon Flats campground to Medano Pass 12mi 19km
8600ft 2621m
Little Medano Creek
Road closed in winter
BACA NATIONAL WILDLIFE REFUGE
Ask a ranger for access information
SAN LUIS VALLEY
STAR DUNE COMPLEX
GREAT SAND DUNES NATIONAL PARK
DUNEFIELD
Sand Creek
Primitive Road
Medano Pass
Sand Ramp Trail
Horse Canyon
Mount Zwischen 12006ft 3659m
Castle Creek
Sand Pit
Medano Pass Primitive Road
4-wheel drive beyond this point
Point of No Return
Sawmill Canyon
Overlook
Star Dune • height: 755ft/230m (tallest dune in park)
High Dune • height: 699ft/213m
ESCAPE DUNES
Piñon Flats
Amphitheater (tire air and RV dump available)
Dunes Parking
Wellington Ditch Trail
Montville Nature Trail
Visitor Center
8175ft 2492m
Park Headquarters
Mosca Pass Trail
Mosca Pass 9737ft 2968m
583
Buck Creek
Garden Creek
North May Creek
South May Creek
Potato Creek
Indian Spring Creek
Big Spring Creek
Dollar Lake
Cotton Lake
Head Lake
Little Spring Creek
PREVAILING WINDS
SAN LUIS LAKES STATE PARK AND WILDLIFE AREA
San Luis Lake 7515ft 2308m
Twin Lakes
PRIVATE PROPERTY
THE NATURE CONSERVANCY
Visitor Center to Mosca 23mi 37km
County Lane 6 North
150
Visitor Center to 160 19mi 31km
Morris Gulch
Aspen Creek
Carbonate Mountain 12308ft 3751m
(Open April to October, privately owned)
RIO GRANDE NATIONAL FOREST
SAN ISABEL NATIONAL FOREST
North
0 1 2 Kilometers
0 1 2 Miles

Origins of the Dunes

Wind and water move sand, continually forming dunes. Most sand comes from the San Juan Mountains, over 65 miles to the west. Larger, rougher grains and pebbles come from the Sangre de Cristo Mountains *(right)*. Sand and sediments from both ranges washed into a huge lake once covering the valley floor. As the lake reduced, prevailing southwesterly winds *(large white arrow)* bounced the sand grains to be piled up beneath the Sangre de Cristos or to be washed back toward the valley floor *(small blue arrows)*. Northeasterly storm winds *(small white arrows)* blast through mountain passes, piling dunes back on themselves and creating North America's tallest dunes. The dunes are probably less than 440,000 years old.

Unpaved road
4-wheel-drive road
Hiking trail
Unimproved trail
Parking/trailhead
Picnic area
Campground
Lodging
Food service
Store
Gas station
Horse trailer parking