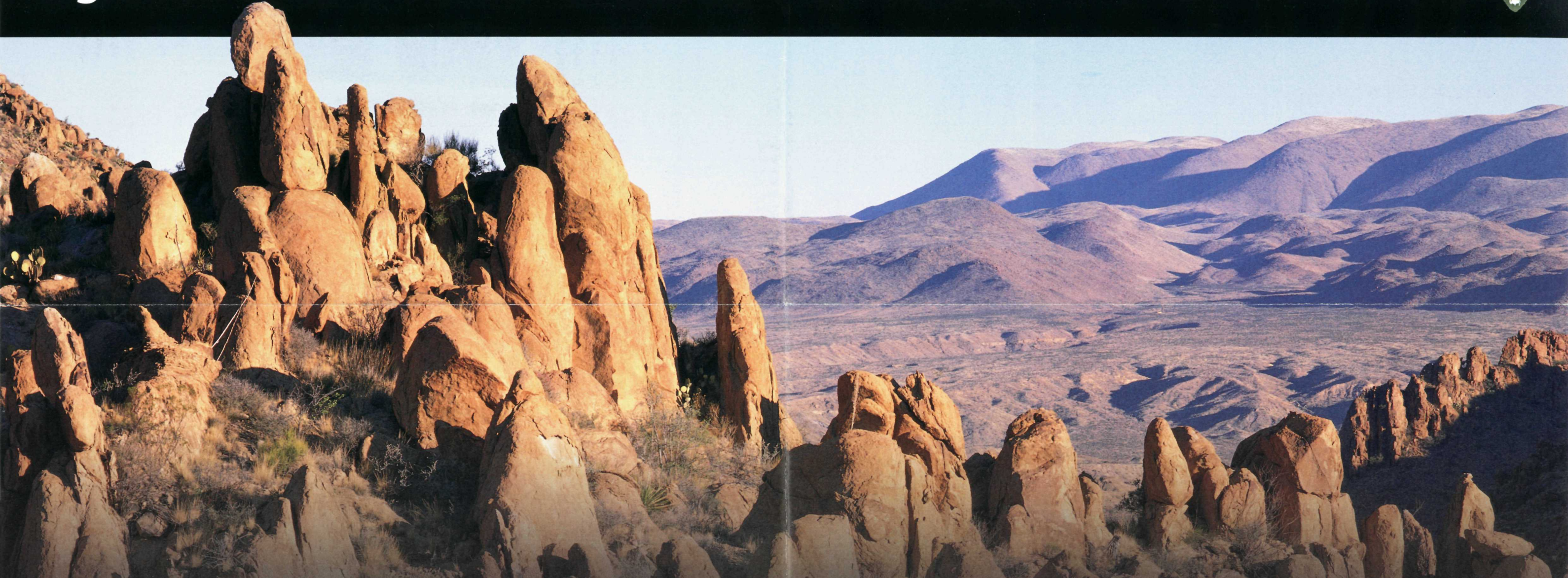




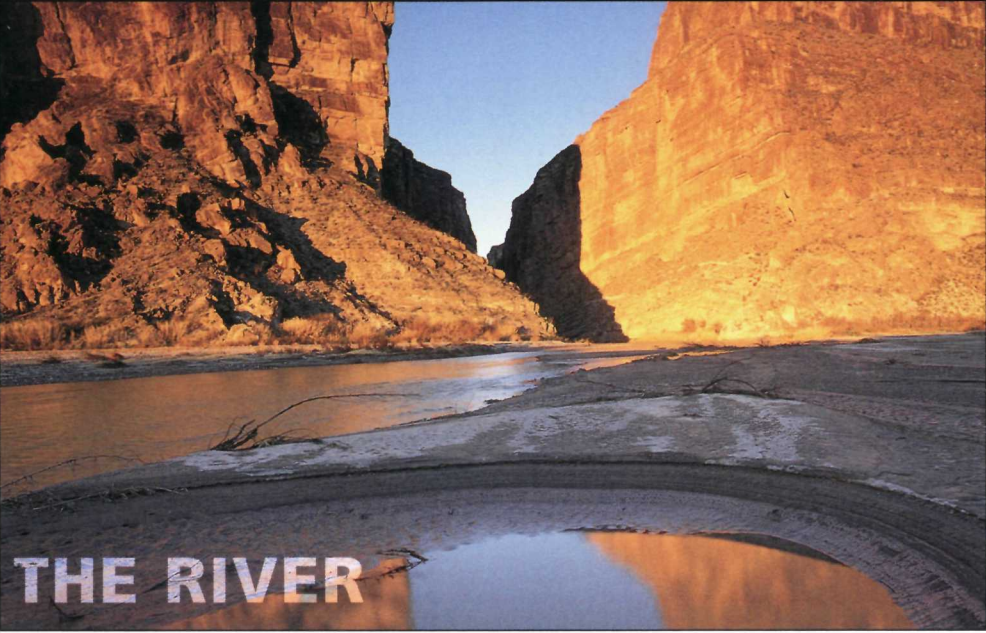
In Big Bend National Park roads end at the Rio Grande, the boundary between the United States and Mexico. But far more than two nations meet here. Three states abut at the river: Texas in the United States and Coahuila and Chihuahua in Mexico. Many of the park’s famous, expansive vistas mix scenes belonging to both nations. One of the park’s best-known features, Santa Elena

Canyon, is only half a canyon on the United States side. Its south canyon wall towers above Mexico. Big Bend National Park also marks the northernmost range of many plants and animals, like the Mexican long-nosed bat. The ranges of typically eastern and typically western species meet or overlap here. Many species here are at the extreme limits of their ranges. Latin American species, many from

the tropics, range this far north, while northern-nesting species often travel this far south in winter. Its location on a bird migration route between South, Central, and North America makes the park excellent for birding. The Rio Grande corridor is also a migration highway for many species passing through the desert. Elevation contrasts create varied microclimates that further enhance the

diversity of plant and animal life and the park’s wealth of natural boundaries. Birders and other wildlife watchers know that the greatest numbers of species often are found at the ecotone (the transition area) between adjacent ecological habitats. The park’s many, varied ecotones—formed by river, desert, and mountains—result in an outstanding diversity of wildlife.

Above: Rosillos Mountains viewed from Grapevine Hills



THE RIVER

Big Bend refers to the great southwest Texas U-turn the Rio Grande makes here—defining the park boundary for 118 miles. The river is an arcing linear oasis, a ribbon of green that cuts across the dry desert and carves deep canyons. Like all rivers surviving desert passages, it has its headwaters outside this desert, in Colorado. Irrigation, dams, agri-

Jackrabbit

Big ears are the jack-rabbit’s distant early warning system against its predators. The ears also work as radiators to transfer excess body heat to the environment as needed.

culture, manufacturing, exotic plants, and evaporation sap most of the Rio Grande’s water before it gets to the park. Inside the park the river’s water mostly comes from Mexico’s Rio Conchos.

Garfish and some turtles, living fossils, hint at the lush savannah and swamp of 50 million years ago. Their ancestors swam with crocodiles and hippopotamus-like creatures. If you wonder at the river’s power—did it truly cut colossal canyons?—just listen to a canoe’s hull hiss from the river’s abrasive particles. The river has run for eons like a belt sander.

The river creates a riparian corridor for species not adapted to arid desert life, adding to the park’s biological diversity. Its thin floodplain looks like a green belt in the desert. Beaver tooth marks on riverside cottonwood or willow trees may startle you, but

beavers live in bank burrows here. Some birders say birds in the floodplain are more colorful than elsewhere. Summer tanagers, painted buntings, vermilion flycatchers, and cardinals accent green foliage. River sand and gravel bars and cliff banks host creatures not expected in the Chihuahuan Desert. Sandpipers and killdeer sprint on sandbars. Cliff swallows fly to adobe nests of river mud.

The Rio Grande floodplain has been home to people for many centuries, well before Spaniards arrived here seeking gold, silver, and fertile land in the 1700s and 1800s. In 1773 they established Presidio del Paso de San Vicente at a major river crossing. Comanche raiding parties routinely crossed to and from Mexico during the 1800s. In 1852 US Army Maj. William H. Emory did a boundary survey and his party floated

Kangaroo Rat

The kangaroo rat is superbly adapted to dry desert life. It does not need to drink to survive. It can metabolize water from carbohydrates in seeds, and it wastes no excess moisture.

Mariscal Canyon. An 1881 Texas Ranger-led survey party floated Santa Elena Canyon. An 1899 US Geological Survey party was the first group known to run Boquillas Canyon. Anglo-American settlers began farming the river’s banks after 1884, and Mexicans before 1900. Cotton and food crops were grown around Castolon and today’s Rio Grande Village even after the park was created.



THE DESERT

Big Bend National Park lies in the northern part of the Chihuahuan Desert, one of North America’s four major deserts. Rain-blocking mountains border the Chihuahuan on three sides. Its other side abuts vast semiarid plains.

This young desert is just 8,000 years old. Green and fairly lush, its rainfall comes mostly in the July-to-October monsoon. Its rains and clouds can mean far cooler summer

Roadrunner

Running at speeds up to 20 mph, the roadrunner pursues lizards and small rattlesnakes. It pecks them to death with stunning blows of its beak. The roadrunner gets much of its required moisture from the body fluids of its prey.

days than you might expect in a desert. Heat and seasonal winds increase aridity. Summer ground temperatures may be 140°F at midday—or freezing in winter as northern storms sweep by. If you want warmer winter walking or hiking or just to enjoy the outdoors, the good news is that the lower desert can be near 80°F in winter.

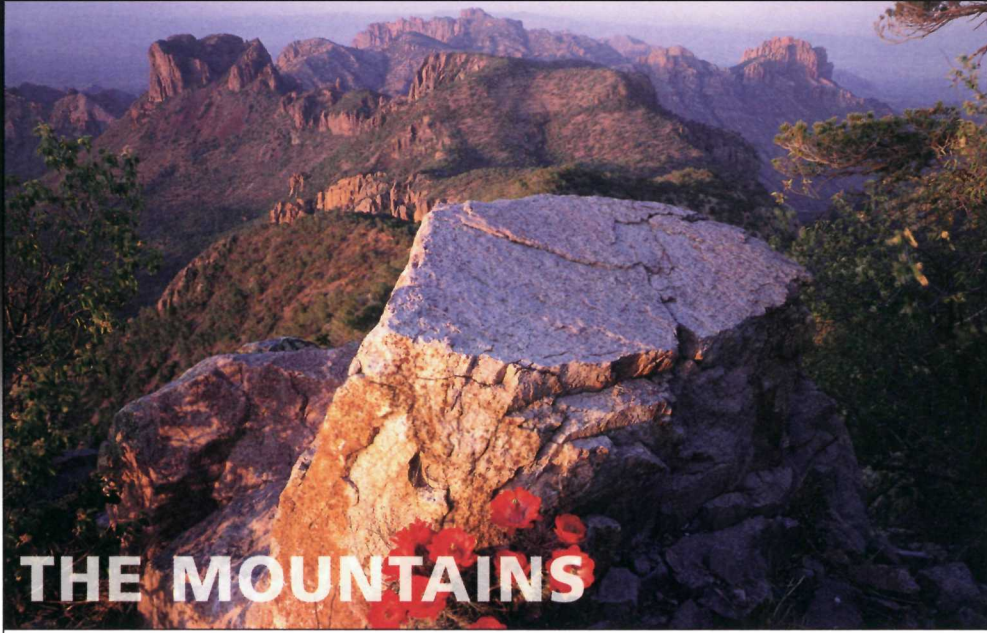
Desert life is adapted to save its energy and to get and keep water. Many animals beat the heat by being out only at night. Most snakes do this—hot summer days on the desert floor would kill them in minutes. Another way to beat this heat is to climb above it. Summer travelers cross the desert quickly, headed for the higher, cooler Chisos Mountains. Some insects fly straight up a

short distance to cool off. One walking beetle seems to rise up on stilts to escape killing heat.

Ancient peoples lived here some 10,000 years ago but left little evidence until the Archaic or Desert Culture 8,000 years ago. They used hundreds of desert plants as food and medicine, including sotol, lechuguilla, yucca, prickly pear, mesquite, and acacia. They wove baskets and sandals of lechuguilla fiber and yucca leaves and hunted deer, rabbits, and other animals with atlatl throwing sticks and stone-tipped darts. Desert springs gave them drinking water. Home sites often still have remnants of rock shelters and hearths or fire rings.

In late Archaic times, trade introduced settled agriculture, and they cultivated corn, beans, and squash. By 1200 the La Junta people, farmers related to the upper Rio Grande Puebloan people, farmed floodplain areas west of today’s park. In the 1500s Spaniards enslaved the Indians and greatly transformed their culture. Pushed south by Comanches, Apaches moved to this area in the 1700s.

Apaches were able to resist the Spaniards, who began losing their tenuous hold on the area in the 1700s. In the 1800s encroachment by Anglo-American homesteaders forced the Comanches southward into Apache territory. By the early 1800s Mexican settlers lived in the Big Bend, and their isolation made them targets of Comanche raids. Mid-1800s gold strikes in California and destruction of bison herds hastened the Comanches’ decline. Military forts were built to secure the route to California gold fields.



THE MOUNTAINS

If the Rio Grande is the Big Bend country’s linear oasis, then the Chisos Mountains are its green island in a sea of desert. The mountains attract creatures, several quite rare and unexpected in a desert.

The isolation that began thousands of years ago as the great ice age ended accounts for their rarity. As colder, moister climates retreated northward, many plants and animals were stranded in the Chisos Mountains

Golden Eagle

A golden eagle’s wingspan may be six to eight feet. Its golden nape is seen only at close range. It nests in large trees or on high rocky ledges, eating mostly rabbits and big rodents.

by the surrounding lowlands’ increasing aridity. Carmen Mountain white-tailed deer, for example, live in the Chisos and nearby sky-island mountains. They are unknown elsewhere. White-tailed deer are not well adapted to deserts but probably ranged widely here in the ice age. As the climate warmed, only mountains offered coolness.

Average rainfall at the Basin—a Chisos Mountains spot popular with both people and wildlife—is over twice that at Rio Grande Village, by the river. Going to the mountains on the Basin Road, you pass grasslands punctuated by century plants and sotol, which soon give way to green, leafy shrubs. Then bushes get taller, with evergreen sumac, mountain mahogany,

Texas madrone, and common beebrush. You see evergreen and deciduous trees. At 4,500 feet, tall trees appear. Higher up in the drainages are masses of trees—junipers, small oaks, and pinyon pines.

Some species grow at the extreme southern limit of their US ranges in the Chisos Mountains. Arizona pine, Douglas fir, Arizona cypress, quaking aspen, and bigtooth maple are last remnants of ice age-influenced forests once widespread here. The Chisos Mountain terrain is the only US habitat for several plant species, like the Chisos oak and the weeping juniper, that thrive in Mexico and elsewhere.

The Colima warbler nests only in the Chisos Mountains, after wintering in Mexico. Also living here is the mountain lion, locally

Coyote

The coyote can put on a burst of speed sufficient to run down jackrabbits. Its craftiness, immortalized in many Indian stories, sometimes is witnessed by wildlife watchers.

known as panther, which has given its name to the lion’s share of park places, like Panther Pass and Panther Junction.



Desert marigold



Claret cup cactus



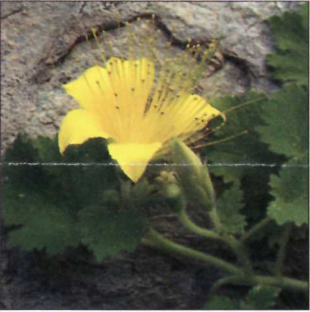
Prickly pear cactus



Desert willow



Ocotillo



Rock nettle



Pitaya cactus



Torrey yucca



Lechuguilla stalk

Amazing Adaptations

Not vast emptiness but a life zone—deserts are full of the plants and animals suited to their situations. Witness the carpets of wildflowers in bloom after a rainy period. Cacti blossom and bulge to full water-hoarding bulk. Plants that looked dead leaf out anew.

A desert may be full of dormant seeds patiently waiting for rain. Cacti are the popular image of desert-dwelling plants. Equipped with spines rather than water-losing leaves, cacti hoard water like misers. Spines also protect against being trampled or eaten. Thick, fleshy stems minimize surface area, and waxy coatings inhibit evapotranspiration. Its

shallow, widely spread roots intercept rainwater as soon as it enters the ground. Cacti can survive long droughts. The ocotillo is not a cactus but a family of its own. With rainfall the ocotillo develops leaves but drops them when dry conditions return. This may happen several times a year.

Another adaptive strategy is dormancy. Unlike annuals in temperate climes, desert annual plants can wait for rain in their seed stage. If the rains don’t come, the seed can stay dormant for years. Some seeds are coated with chemicals that inhibit germination; unless enough rain falls to wash off the inhibitor, the seed won’t germinate. This adaptation

ensures that a developing plant gets enough water to complete its life cycle and set new seeds before the next dry spell. Desert annuals can develop, flower, and fruit far more rapidly than temperate annuals do.

Creosote bushes ply yet another strategy. They are so regularly spaced that they look planted. Their leaves produce a toxin that discourages other plants from intruding in their growing space. Their small, resin-coated leaves lose very little moisture to the air. Such strategies make creosote bush the park’s most prevalent shrub and enable it to prosper in the desert. Creosote bushes that grow along a road drink runoff from

the pavement and may grow twice as tall as the creosote bushes that grow just one row back from the road. Some plants here have practical or commercial uses. Wax extracted from the candellilla, or wax plant, has been used to make candles, waxes, gum, and phonograph records. In the rainy season the candellilla stem fills up with a thick sap that coats the stem. This seals in moisture to protect the candellilla from drought.

Desert plants flower most profusely February through April and in the fall, but this can be difficult to predict. One glimpse of this burst of floral wealth may change your image of the desert forever.

Exploring Big Bend



Backpacking the Chisos



Exploring the Rio Grande



South Rim View, Chisos Mountains



Historic ruins



Hot Springs Post Office



The Window

ALL PHOTOS NPS

Visiting the Park

Big Bend National Park is in a remote part of southern Texas (see map at right). Check supplies before leaving Alpine or Marathon. Gas stations and water sources are few and far between. Cell phone service is unreliable. Some park roads may require four-wheel drive.

Stay overnight at the Chisos Mountains Lodge (www.chisosmountainslodge.com, 877-386-4383). Camp at the Chisos Basin, Rio Grande Village, or Cottonwood campgrounds. Limited sites at Rio Grande Village are reservable Nov. 15–April 15 and at Chisos Basin Campground Nov. 15–May 31 (www.recreation.gov, 877-444-6777). Otherwise campgrounds are first-come, first-served. Full hookups are available at Rio Grande Village RV (877-386-4383). Backcountry permits are available at visitor centers.

Park concession facilities are open year-round. Find groceries and camping supplies at Chisos Basin, Rio Grande Village, Castolon, and Panther Junction. Gas is sold only at Panther Junction and Rio Grande Village. Vehicle repairs and towing are available at Study Butte/Terlingua.

Border Crossings Crossing at the Port of Entry requires a passport. For current information about legal US-Mexico border crossings, ask a ranger or check the park newspaper or website.

Accessibility We strive to make our facilities, services, and programs accessible to all. Call us or check our website.



More Information

Big Bend National Park
PO Box 129
Big Bend National Park, TX 79834
432-477-2251; TTY 432-477-2370
www.nps.gov/bibe

Big Bend National Park is one of over 400 parks in the National Park System. To learn more about national parks, visit www.nps.gov.

Emergencies call 911

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

Things to See and Do

Big Bend offers superb walking, hiking, river running, and birding. For a full list, get the park newspaper, *The Paisano*. Visitor centers have activity schedules; road, river, and hiking guides and maps.

Hiking Walks and hikes range from short, self-guiding nature trails to challenging cross-park treks. Off-trail hiking requires proper gear and adequate supplies. Use a topographic map and know your route.

River Use The park administers 245 miles of the Rio Grande for recreational use. Get a river float permit (required for all boat use) and up-to-date river information at park headquarters or ranger stations. Be well-equipped and informed before running the river. There are no equipment rentals in the park. Contact the park for a list of river outfitters and for river levels. Check river levels before starting a float trip. The Rio Grande is a designated Wild and Scenic River for 196 miles along part of the park boundary and downstream.

Birding The park is a birder's paradise—over 450 bird species have been seen here. The larger migration occurs in spring. Ask a ranger about the best birding spots.

For Your Safety

Emergencies Call 911 in an emergency; response can be slow. The nearest hospital is in Alpine, 100 miles north of park headquarters.

Heat Can Kill Carry at least a gallon of water per person per day. When hiking, start your return trip before your water is half-gone. Treat spring water before drinking; do not drink river water. Wear a hat, long pants, long-sleeved shirt, and sunscreen. Springs are unreliable and often dry, despite what maps show. In summer, avoid hiking in midday. Instead, mimic wildlife by hiking in early morning or late evening. Tell someone where you are going and when you plan to return.

Driving Hazards Obey the park maximum speed limit (45 mph). Make sure your vehicle is in good mechanical condition and has a spare tire and tire-changing tools. When a water crossing floods, wait out the high water; don't let your vehicle get swept away. Stay on established roads. Check conditions before driving unpaved routes; storm damage may close backcountry roads. Seat belts are required in moving vehicles. Drive carefully at night because many animals are on the roads; if they are blinded by headlights, they might not move off the road.

Mountain lions and bears inhabit the park. Ask a park ranger about precautions you can take and how to react.

Encounters with Poisonous Wildlife Four rattlesnake species and one copperhead species live here, but are rarely seen by day. Stay on trails and use a flashlight at night. Snakes, scorpions, tarantulas, and most other wildlife generally will not harm you unless you harass them. Get prompt attention if injured.

Arroyos or washes can become raging rivers while you sleep. Do not camp in them or in other low spots. Watch for rapid changes in weather: extreme summer heat and thunderstorms and winter or early spring cold fronts.

Swimming The Rio Grande's strong currents, submerged snags, and drop-offs are extremely dangerous. Do not swim or wade in the river.

Border Awareness Big Bend shares 118 miles of international border with Mexico. Always be aware of your surroundings. Report unusual or suspicious activity.

Regulations

Firearms Texas state laws apply. More information at a visitor center or on the park website.

Protecting the Park Federal law protects all natural and cultural features in the park. Do not remove, collect, deface, destroy, or disturb rocks, wildflowers, tree limbs, soil, vegetation, wildlife, or artifacts.

Wood and ground fires are prohibited.

Camping is allowed in campgrounds and in the backcountry. Hammocks are permitted only if self-supporting. Backcountry overnight use requires a permit (fee).

In addition to the high country trails, there are rewarding hikes in lower, desert areas; ask a ranger. Smoking may be banned on some trails. Carry out all trash, including cigarette butts and toilet paper. Stay on trails to prevent erosion and other damage. Wear sturdy shoes and clothing. Carry tweezers; spines and thorns of cacti and other plants are hazardous.

Store food and toiletries in approved bear-proof container, vehicle, or food locker. Do not feed wildlife.

Pets are allowed only on roads, in developed campgrounds, and at primitive roadside campsites. They must be leashed at all times. Pets are prohibited on trails, in public buildings, and in the backcountry. Dispose of pet waste to limit the transfer of disease to wildlife.

Fishing in the park requires a free permit available at any ranger station. Fishing license not required.

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