



The Big Bend Paisano

The official newspaper of
Big Bend National Park &
Rio Grande Wild & Scenic River
Volume 25, No. 3 Winter 2004 / 2005



Gary Donihoo

The South Rim of the Chisos Mountains as seen from the top of Elephant Tusk

Beyond Boundaries

WELCOME TO BIG BEND NATIONAL PARK AND THE RIO GRANDE WILD & SCENIC RIVER! Big Bend is one of the largest and least visited of America's national parks. Over 800,000 acres await your exploration and enjoyment. From an elevation of less than 2,000 feet along the Rio Grande to nearly 8,000 feet in the Chisos Mountains, Big Bend includes massive canyons, vast desert expanses, and the entire Chisos Mountain range. Here, you can explore one of the last remaining wild corners of the United States, and experience unmatched sights, sounds, and solitude.



Four state and national parks in the United States and two protected areas in Mexico, with a total acreage of nearly 2.5 million acres of protected lands, preserve the unique environment of the Chihuahuan desert on both sides of the border. Issues concerning the resources of Big Bend National Park, such as pollution, endangered species, exotic species and water quality affect all of the protected areas in the region.

In this issue of the Big Bend Paisano, we explore the larger landscape of the Big Bend, including the parks and protected areas in the United States and Mexico that share Rio Grande as a boundary and protect the Chihuahuan desert.

While Big Bend National Park is the primary draw for visitors to this region, it is merely the oldest of a number of protected lands throughout the region, and on both sides of the border.

“La Historia” Brings the Past to Life

Ranger Doug Thompson

During the last weekend in October, several staff members of Big Bend National Park took part in *La Historia*, a homecoming event sponsored by the Terlingua Preservation Foundation for former residents of the town of Terlingua (located just west of the park) and the surrounding area. *La Historia* included a number of social events at Terlingua, including the decorating of the cemetery, a dance, a communal potluck, food and craft booths, and a performance by the folklorico dancers of Terlingua High School. Park staff members helped conduct oral history interviews with some of the returnees and also presented a tour of the abandoned site of Terlingua de Abajo, a small settlement located about twenty miles south of Terlingua and within the boundaries of Big Bend National Park.

During the first half of the twentieth century, hundreds of Mexican and Mexican-American miners and their families lived in and around Terlingua. Most of the miners worked for the Chisos Mine, the largest of about thirty cinnabar mines in the region. (Cinnabar is the ore from which mercury is extracted.) Although life was difficult by modern standards, those who returned for *La Historia* recalled many good times in a colorful and exciting era.

The Terlingua Cemetery



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IN CASE OF EMERGENCY

Park Rangers are available to provide assistance. Dial 911 or (432) 477-2251

Phones are located at:
visitor centers,
campgrounds,
Camper Stores, and the
Chisos Mountains Lodge.

911


The Paisano is published by the National Park Service and the Big Bend Natural History Association for the orientation and education of visitors to Big Bend National Park

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The National Park Service was established on August 25, 1916. . . . "to conserve the scenery and the natural and historic objects and the wild-life. . . and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." As conservation educators, the Division of Interpretation provides guided walks, talks, evening slide programs, workshops, and other educational activities as well as written materials such as this newspaper.



The Big Bend Natural History Association, established in 1956 as a private, non-profit organization, champions the mission of the National Park Service in facilitating popular interpretation of the scenic, scientific, and historic values of Big Bend and encourages research related to those values. The Association conducts seminars and publishes, prints, or otherwise provides books, maps, and interpretive materials on the Big Bend region. Proceeds fund exhibits, films, interpretive programs, seminars, museum activities, and research.

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Superintendent's Welcome

Welcome to YOUR Park

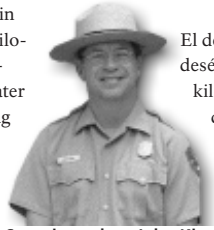
Welcome to Big Bend National Park and the Rio Grande Wild & Scenic River, two premier units of our nation's National Park System. We hope you have a wonderful time as you explore and experience these great parks.

The Chihuahuan Desert is the largest desert ecosystem in North America, encompassing nearly 630,000 square kilometers along Rio Grande/Rio Bravo River in the southwestern United States and northern Mexico. In the greater Big Bend region are six large "protected" areas including Cañon de Santa Elena Área de Protección de Flora y Fauna and Maderas del Carmen Área de Protección de Flora y Fauna in Mexico, and Black Gap Wildlife Management Area, Big Bend Ranch State Park, Rio Grande Wild & Scenic River and Big Bend National Park in the United States. These adjacent protected areas and public lands represent a protected core of the Chihuahuan Desert, and present a tremendous opportunity to visitors to experience the full diversity of flora, fauna and landscape that the desert provides.

National parks like Big Bend belong to us all, and as such we have a shared stewardship of these special places. The numerous parks in the Big Bend region not only preserve this unique environment, but also serve as a testament to the desire of two countries to protect our shared natural heritage. Please be mindful of that as you spend time in the Big Bend.

Experience Your America!

John H. King
John H. King, Superintendent



Superintendent John King

Bienvenidos

Bienvenidos al Parque Nacional Big Bend y al Natural y Escénico Río Grande, dos unidades memorables del sistema de parques nacionales estadounidenses. Esperamos que tenga una visita maravillosa mientras que usted aproveche la oportunidad de explorar y gozar de estos asombrosos parques.

El desierto Chihuahuense es el más gran ecosistema desértico en Norte América lo cual encuadra casi 630,000 kilómetros cuadrados a lo largo del río bravo en el suroeste de los Estados Unidos y el norte de México. Dentro de la región de Big Bend hay seis grandes áreas protegidas, cuales son las áreas de protección de flora y fauna Maderas del Carmen y Cañon Santa Elena en México, y en los Estados Unidos, el área estatal de manejo de vida silvestre Black Gap, el parque estatal Big Bend

Ranch, el Natural y Escénico Río Grande y el parque nacional Big Bend. Juntos estos terrenos públicos representan un núcleo de protección del desierto chihuahuense y además presentan una tremenda oportunidad para los visitantes de gozar de la diversidad de flora, fauna y paisajes que ofrezca esta región.

Parques nacionales como el Big Bend pertenecen a todos nosotros, pues entonces tenemos la responsabilidad compartida de proteger estos lugares especiales. Los varios parques dentro de la región de Big Bend no solo protegen a este ambiente único sino sirven como testimonio al deseo de dos países de proteger nuestro patrimonio natural. Por favor que sean atentos a este sentimiento durante su visita en el Big Bend.

¡Explore su América!

John H. King
John H. King, Superintendent



Volunteer Honor Roll

Each year, volunteers contribute thousands of hours to the National Park Service. A vital supplement to paid staff, volunteers bring special skills, dedication, and fresh approaches to our work in interpretation, visitor protection, maintenance, administration, and resource management.

This last fiscal year, volunteers at Big Bend National Park contributed 38,355 hours! Most of these volunteers work in visitor centers and as campground hosts; however, volunteers also help in science and resource management, maintenance, and administration.

Join us in thanking the following individuals and organizations who have recently donated 100 or more hours in volunteer service to Big Bend:

- Americorps
- Barbara and Bill Baldwin
- Nancy Bauer
- Jennifer Bollen
- Judy Brinkerhoff
- Royann & Royce Brockett
- Nathan Dammeyer
- John Davies
- Sam and Erv Drabek
- Lynda and Bob Fanning
- Diane and Gary Frable
- Steve Harper
- Ginny and Jim Herrick
- Whit Hibbard
- Sally and Bob Jones



Barbara and Bill Baldwin have been volunteering in Big Bend National Park for thirteen years. They volunteer as campground hosts at Rio Grande Village six months out of every year and, so far, have contributed over 11,000 hours each. Big Bend National Park thanks Barbara and Bill for their dedication and commitment over the years.

- Gail and John Kamaras
- Mark Kirtley
- Alex McIntosh
- Kim Miller
- Danielle Norris
- Terry Purvis
- Carol & Bob Schemm
- Samantha Schroeder
- Gary Stevens
- Allison Taylor
- Bob Thomson
- Dr. Arnold VanPelt
- Steve Wick
- Nan Wilson
- Scarlett and Bob Wirt



Volunteer training at Castolon



Did You know:

Park animals are wild. Do not feed or approach any of Big Bend's wildlife. Enjoy animals at a safe distance and allow them to find their own natural foods.

Do not remove any natural objects from the park, including rocks, cactus, reptiles, and fossils. Collecting specimens of any kind or defacing park features deprives other visitors. Leave everything as you found it for others to enjoy. If you must collect, pick up litter!

All bicycles, including mountain bikes, must remain on paved or unpaved roads. They are not allowed on hiking trails or off-road.

Motor vehicles must be licensed and street-legal. All motor vehicles must stay on established roadways open to public travel.

It's Up to You...

National parks have been described as the crown jewels of the United States. While enjoying the beauty of Big Bend National Park, please remember that few other nations have parks that can compare to those of the United States. They are something to be proud of. They are something to preserve.

The protection of Big Bend National Park is ultimately in the hands of the people who visit it. Your cooperation with park rules is one way to help ensure the park's survival.

Please, treat **your** park with care.



The Big Bend Natural History Association is a non-profit organization established to support the park's educational and scientific programs. BBNHA also publishes and distributes books, maps, guides, newspapers and other materials designed to enhance visitors' enjoyment and understanding of Big Bend National Park.

We're getting organized around here! Starting January 1, 2005, Big Bend Natural History Association (BBNHA) and the Friends of Big Bend National Park (FBBNP) will offer a dual membership in both organizations for \$100. This membership will carry the full benefits of membership in each organization and will carry both organizations' aid to the park to new levels. In numerous meetings over the last few months of the newly formed Partnership Council, the partners (BBNHA, FBBNP, Forever Resorts (FR), San Vicente Independent School District [SVISD] and the National Park Service [NPS]), have developed a strategy for combining the strengths of the various organizations in order to support the park and the region. This dual membership initiative is just the beginning.

FBBNP will be the primary fundraising and friend-raising organization for the park. BBNHA will provide logistical, administrative, and program support for those initiatives. FR will continue to provide first-class visitor ser-

VICES and support for membership events and programs. SVISD remains a vital link for attracting high-quality employees for all the partners by providing excellent education for children of the area, and, of course, the NPS continues to manage the wonderful resource we all wish to maintain and support. FBBNP, under this mandate, will be offering a tiered membership program that allows members to support the park at any financial level they can afford. All donations above the \$100 beginning level will also buy membership in BBNHA. Accordingly, BBNHA will be raising our membership dues for the first time since we began a membership program in 1989. Annual dues for a family will be \$50; Associate annual dues will be \$100; and Life Member dues will be \$500. We invite you to join our partnership in support of this wonderful part of Texas.

Mike Boren
Mike Boren, Executive Director

Seminars

Spend some quality time with an expert on Big Bend birds, tracks, black bears, dinosaurs, geology, and much more with our Natural History Seminars Program. Now in its 17th year, the immensely popular program sponsored by BBNHA continues to grow and improve.

There are still slots available for the upcoming sessions. Sign up today!

Winter & Spring 2005 Seminar Schedule

February 5	Pioneer Reunion
February 26	Big Cats <i>Gilbert Guzman</i>
February 27	Jeep Geology Tour <i>Bill Bourbon</i>
April 2	History on Horseback <i>Don Corrick</i>
April 3	Chihuahuan Wildflowers <i>Patricia Manning</i>
April 8	Big Bend Star Party <i>Carl Frisch</i>
April 9-10	Backpacking for Women <i>Melissa Forsythe</i>
April 10	History on Horseback <i>Don Corrick</i>
April 16	Desert Survival <i>Gary Carver</i>
April 17	Reptiles of the Trans-Pecos <i>Dave Elkowitz</i>

Average cost for a seminar is \$50 per day with most seminars running 1-2 days. Class size is limited to 15 participants to ensure individualized instruction. Seminar participants may also take advantage of free camping in one of Big Bend's group campgrounds.

To register for a seminar or to receive a complete catalog, contact us at PO Box 196, Big Bend National Park, TX, 79834 or call 432-477-2236. You may also e-mail us at bibe_bbnha@nps.gov

Featured Publications

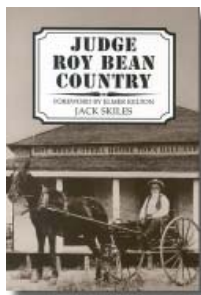
Have a hunger for the desert? Take a bite out of our great selection of books and publications. Our bookstores offer a wealth of books, maps, checklists, and field guides carefully selected to help you enjoy your visit to Big Bend National Park.

Stop by any visitor center, or order these online at bigbendbookstore.org



Judge Roy Bean Country

The country around Langtry, downriver from Big Bend National Park, is hard country. It was hard on the Native Americans who passed that way, leaving their paintings, artifacts, and graves. It was hard on early settlers, on ranchers, settlers, and railroaders. Judge Roy Bean was, as he said, the law west of the Pecos River. Jack Skiles has compiled a history of the area based on a lifetime of living and exploring. Forward by Elmer Kelton. \$18.95



Backcountry Mexico

Out of twenty years of travel in backcountry Mexico authors Bob Bursleson and David Riskind have produced a practical and accurate guide for the unconventional tourist. In addition to English-Spanish vocabulary lists and numerous terms relating to people, conditions, land, and situations, the authors have included hundreds of helpful phrases and short conversations. The perfect guide to the people, culture, folkways, landscape, and language of rural Mexico. \$14.95

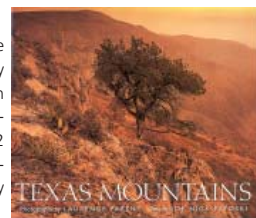


Big Bend National Park Impressions

A new and affordable book full of spectacular photos by Steve Guynes and Richard Reynolds, Big Bend Impressions captivates with scenes of mountains, wildlife, sun, and frost. The next best thing to being in the park. \$9.95.

Texas Mountains

Not all the mountains in the state are in Big Bend and the Guadalupe—they are spread throughout the western part of the state, many of them on private property. This book covers 42 mountain ranges with lavish color photos by Laurence Parent with text by Joe Nick Patoski. Hardcover; \$39.95.



Geology of Big Bend Ranch State Park

The park's neighbor to the west is Big Bend Ranch, one of the most rugged areas in West Texas. It got that way courtesy of a violent and fiery past full of volcanic eruptions, earthquakes, and erosion. This book combines aerial photos, drawings, and close-ups of rock to make the complex geology comprehensible. Published by the University of Texas Bureau of Economic Geology. Includes large geologic map. \$29.95.



Big Bend and the Border

Viewing the sun set against the Sierra del Carmen mountains is a sublime Big Bend experience, underlined by the irony that the mountains aren't a part of the National Park; in fact, they aren't even located in the United States. In addition to defining the curve that forms the Big Bend, the Rio Grande also serves as the International boundary between the United States and Mexico.

Throughout much of its history the border along the Rio Grande has often been fluid, allowing people of both countries to come and go as needed. However, the border is an artificial boundary imposed on the natural environment, and as such is subject to political and social pressures.

Increased border restrictions following the 2001 terrorist attacks have led to a number of important changes that affect the international boundary in Big Bend. The information below provides a summary of current conditions.

Border Merchants

Mexican Nationals may approach you from across the river to purchase souvenir items (walking sticks, bracelets, crafts, etc.). If you agree to look at/purchase their items and the Mexicans cross the river, they may be arrested for being in the U.S. illegally. They will be held until deported back to Mexico through Presidio (100 miles away). Mexican merchants will be arrested for illegal commercial operations which may result in a fine and/or additional incarceration while awaiting adjudication prior to deportation.

Items purchased will be considered contraband and seized by officers when encountered. Rocks, minerals, archeological items etc. cannot be purchased, imported, or possessed in the national park.

In addition, illegal trade impacts the resources of the park in a number of negative ways, including the creation of social trails, the cutting of cane along the river, erosion of riverbanks and an increased amount of garbage and contaminants along the Rio Grande watershed. Supporting this illegal activity contributes to continued damage of the natural resources along the Rio Grande, and jeopardizes the possibility of reopening these crossings in the future.

While Visiting A Border Park

Big Bend National Park shares the border with Mexico for 110 miles. This is a remote region; however, each year hundreds of people travel north through the area seeking to enter the United States. Please keep the following in mind while visiting Big Bend:



If you see any activity which seems to be suspicious, illegal, or out of place please do not intervene. Report it to a ranger as quickly as possible.



It is possible you could encounter an individual or small group trying to walk through the park with little or no water. Please do not stop, but instead, immediately report such occurrences to a ranger. Lack of water is a life-threatening emergency in the desert.

A visit to Big Bend is a wonderful experience to learn about the park's history and to experience a wide variety of natural history and recreation options. The park's shared border with Mexico is part of our shared landscape and a chance to experience and learn about our neighbors. A few simple steps can help keep the park safe for everyone who is here.



Crossings Remain Closed

As a result of a 2002 US Customs and Border Protection decision, there are NO authorized crossings in Big Bend National Park. *Crossing at Boquillas, Santa Elena, or other locations along the Rio Grande is prohibited.* The closest legal ports of entry are at Del Rio and Presidio, Texas.

The U.S. Attorney's Office has indicated that it will prosecute any criminal violations regarding these illegal crossings. If you re-enter the United States at any point within Big Bend National Park, you may be liable for a fine of not more than \$5,000 or imprisonment for up to one year, or both.

Please consult Park Rangers for the latest updates on this situation.

Slow Down & Enjoy the Scenery!



GIVE US A BREAK! Javelina and other desert wildlife can cross the road in front of you at any moment.

Big Bend's roads exist primarily to give visitors access to park destinations and to allow visitors a chance to discover the outstanding scenery of the park. The forty-five mile-per-hour speed limit is intended to encourage visitors to drive at speeds that are safe for them, protect park wildlife and better ensure the leisurely pace needed to fully enjoy Big Bend.

Most accidental deaths in Big Bend result from car accidents. While driving is a great way to see the park, it can also be dangerous, particularly if you are tired or are going too fast. Drive within the speed limit, 45 mph maximum in the park, and watch for javelina, deer, and rabbits grazing along road shoulders, especially at night. Remember, too, that you share the road with bicyclists and pedestrians.

In addition, while the State of Texas requires only the occupants in the front seat of a vehicle wear seat belts, Federal regulations require that ALL occupants of a vehicle wear seats belts while in a national park.

Castolon Visitor Center Opens

In mid-November a new visitor contact station in Castolon opened in the former Barracks building also containing the historic La Harmonia store, which is part of the Castolon Historic District. The facility is on the east end of the barracks just beyond La Harmonia and features completely new exhibits, a bookstore, hands-on displays and information services. The new contact station will be staffed by park employees and volunteers 10:00 AM to 5:00 PM daily November through May.

Your entrance and campground fees help Big Bend National Park complete important projects that directly benefit you and other park visitors. The new visitor center at Castolon is only the latest example of your fees at work in Big Bend. Fee money paid for the adaptation of the former apartment for use as a visitor contact station. Without the use of entrance fee funds, this project would have taken much longer to complete.

Much of the funding for Big Bend and other national parks comes from American taxpayers. However, protecting this land and ensuring that you have a safe, enjoyable and educational experience costs more than this tax base provides. Therefore, the U.S. Congress determined that people who use federal lands should pay fees to offset the difference. Twenty percent of the money collected from entrance and campground fees is redistributed to units of the National Park System that do not charge fees to assist in the upkeep and upgrade of those areas. Eighty percent of the money *stays in Big Bend National Park.*



Surf Big Bend

Official NPS Website



- Live Web-cam
- Daily Weather
- River Levels
- Campgrounds
- Research
- Backcountry
- Park Maps
- Press Releases
- Road Conditions
- Ranger Programs
- What's Blooming?
- Bird Sightings
- Photo Gallery

...and more!

www.nps.gov/bibe

A. Faulkner



The light of the setting sun illuminates the Sierra del Carmen mountains in Mexico. The Sierra del Carmens are protected as part of Mexico's Maderas del Carmen Área de Protección de Flora y Fauna.

While Big Bend is the oldest, largest, and best known of the protected areas along the United States-Mexico border, four state and national parks in the United States and two protected areas in Mexico, with a total acreage of nearly 2.5 million acres of protected lands, preserve the unique environment of the Chihuahuan desert on both sides of the border.

While each protected area is separately administered, they each complement the other and serve to protect this unique environment that is larger than the boundaries of an individual park and shared by two countries. Below is an overview of each area and its unique attributes.

Big Bend Ranch State Park

Size: 280,000 acres
Frontage on Rio Grande: 25 miles
Year Established: 1988
Ownership/Management: Texas Parks and Wildlife Department
Purpose for Designation: The primary goal of the area is to "preserve intact a large expanse of the Trans-Pecos ecosystem".
Significant and Unique Ecological Features: Remote and rugged terrain, including two mountain ranges and an ancient extinct volcano (El Solitario), within the Chihuahuan Desert ecoregion, Rio Grande, supports a tremendous diversity of animal and plant species, including 14 bat species, several species of hummingbirds, and at least 11 other rare plants and animals.
Annual Visitation: 10,000

Big Bend National Park

Size: 801,000 acres
Frontage on Rio Grande: 118 miles
Year Established: 1944
Ownership/Management: National Park Service
Purpose for Designation: The 1935 enabling legislation (49 Stat. 393) states "lands...as necessary for recreational park purposes...are hereby established, dedicated and set apart as a public park for the benefit and enjoyment of the people".
Significant and Unique Ecological Features: Large, unfragmented tract of the Chihuahuan Desert, diverse habitats and wildlife populations, Chisos Mountains, Rio Grande. Big Bend National Park has been designated as a part of the Chihuahuan Desert Biosphere Reserve. Elevation ranges from 1,350-7,825 feet.
Annual Visitation: 300,000

Rio Grande Wild & Scenic River

Size: 9,600 acres
Frontage on Rio Grande: 196 river miles (¼ mile wide on the US side of the river)
Year Established: 1978
Ownership/Management: National Park Service
Purpose for Designation: To preserve the primitive, free-flowing character and natural and scenic conditions of this river segment.
Significant and Unique Ecological Features: Rio Grande and tributaries, large canyons, riparian and aquatic habitats.
Annual Visitation: 600-1000 individuals float the Wild & Scenic portion of the river each year.

Black Gap Wildlife Management Area

Size: 119,000 acres
Frontage on Rio Grande: 25 miles
Year Established: 1948
Ownership/Management: Texas Parks and Wildlife Department
Purpose for Designation: The primary goal of the Black Gap Wildlife Management Area is to serve as a facility where research and demonstration projects can be implemented to aid private land management of natural resources and provide opportunities for public recreation.
Significant and Unique Ecological Features: Black Gap Wildlife Management Area is where the Sierra del Carmen Mountain range enters Texas. This rugged ridge and valley country is rich in birds, mammals, including desert bighorn sheep, and cacti and succulents in some of the lowest elevations of the Chihuahuan Desert found in the United States.
Annual Visitation: 3,000

Cañon de Santa Elena Área de Protección de Flora y Fauna

Size: 685,000 acres
Frontage on Rio Grande: 60 miles
Year Established: 1994
Ownership/Management: Cañon de Santa Elena is managed by the Instituto Nacional de Ecología. Ownership of lands includes 59% ejidos, 35% private land, and 6% incorporated lands, and it encompasses the communities of Manuel Benavides and Ojinaga in the state of Chihuahua, Mexico.
Purpose for Designation: The primary purpose for establishing Cañon de Santa Elena was to protect the Conchas River watershed.
Significant and Unique Ecological Features: Large expanse of the Chihuahuan Desert along the international border, many sensitive and protected wildlife and plant species, diverse geological formations, intact riparian habitats, abundant historical and cultural resources, and the diversity of desert and forest ecosystems (Rio Bravo, Sierra Rica, bajadas, etc.). Elevations range from 2250 to 7966 feet.

Maderas del Carmen Área de Protección de Flora y Fauna

Size: 515,000 acres
Frontage on Rio Grande: 20 miles
Year Established: 1994
Ownership/Management: Maderas del Carmen is managed by the Instituto Nacional de Ecología. Ownership of lands includes 64% ejidos and 36% private land, and it encompasses the communities of Ocampo, Acuña, and Múzquiz in the state of Coahuila, Mexico.
Purpose for Designation: The primary purpose for establishing Maderas del Carmen was to conserve native biodiversity and to protect an important mountain corridor used by a variety of wildlife species.
Significant and Unique Ecological Features: Sierra del Carmen mountains, and surrounding valleys and bajadas of Chihuahuan Desert. Elevation ranges from 1,350-8,400 feet.

Sierra del Carmen Mountain Range of Mystery

Chief Naturalist David Elkowitz

One of Big Bend National Park's most famous vistas is not inside the park – in fact, it's not inside the United States. Towering above Rio Grande Village, and visible from much of the southeast portion of the park, Mexico's Sierra del Carmen owes its name to its reflection of Big Bend's fiery sunset colors.

But tightened national security has closed all informal border crossings including the village of Boquillas in Mexico – the former gateway to the Sierra del Carmen. What once took five hours to reach is now a two-day roundabout, through Ciudad Acuna and the Mexican state of Coahuila. They are so close – yet so far away. One cannot help but try to imagine what's up there. Over one thousand feet taller than the mountains inside Big Bend, they can be crowned by clouds and lightning when the sky above the park is clear. Are they clad with forests or strewn with deserts? Are the lands behind its sheer western face a flat mesa, or are they cut by deep canyons? Are they home to diverse species? Do they harbor plants and animals not found in the U.S.A.?

This vast land of mystery, just across the river from Big Bend National Park, is known formally as the Maderas del Carmen Area of Protection for Flora and Fauna. It features a diversity of rugged habitats: huge expanses of trees and desert, plus meadows and grasslands. Each habitat teems with an abundance of wonderful plant and animal species, many of them rare or unusual. Some species are endemic – that is, they are found nowhere else.

By standards of scenic quality in the United States, the Maderas del Carmen could be a national park.

However, much of the Maderas del Carmen is not a national park. Instead, a unique partnership, operated by Cemex Corporation, of public and private entities protects its wild character. Over the past four years, this partnership has purchased or leased more than 200,000 acres. Over time, the hope is to protect the vast majority of the Sierra del Carmen land mass.

El Carmen is the name given to that portion of the Maderas del Carmen that is owned or leased by the Cemex – one of the largest cement manufacturers in the world. While a Mexican cement maker might seem an unlikely partner in conservation, Cemex boasts an award-winning conservation agenda. In fact, Cemex funds major conservation projects around the world, with El Carmen its largest effort. At present, aside from its various education and research projects, El Carmen is closed to the public – it is closed for restoration and scientific study.

Big Bend National Park owes something very special to the wildness of the Sierra del Carmen: the natural reintroduction of the Mexican black bear. The Mexican black bear had been eliminated from the area that is now the park by the early 1940s. However, by the 1980s, park employees began to hear of black bear sightings in the Chisos Mountains. Presumably, these intrepid explorers had ventured out from the Sierra del Carmen, crossing the low desert in search of new territory. Today, about a dozen or more Mexican black bears make their home in the Chisos Mountains of Big Bend National Park.

Within El Carmen, intense long-term efforts are in progress to repair damage caused by logging, mining and hunting. Among the most prominent of these efforts are the reintroduction of desert big horn sheep and the recovery of the Mexican black bear and del Carmen white tail deer populations, both of which had been reduced to tiny remnants. Over time, these management efforts will help rebalance the ecosystems of this amazing resource.

Understanding Haze in Big Bend National Park

Big Bend Regional Aerosol and Visibility Observational (BRAVO) Study

Background

The scenic beauty of Big Bend National Park is often spoiled by haze that obscures its many vistas. In addition, Big Bend is one of the few national parks where haze has been increasing since the late 1980s. In 1999, the National Park Service and the U.S. Environmental Protection Agency carried out the Big Bend Regional Aerosol and Visibility Observational (BRAVO) study. Other participating agencies were the Texas Commission on Environmental Quality and the Electric Power Research Institute. The primary objective of BRAVO was to determine what causes the haze at Big Bend. The BRAVO study involved a four-month intensive monitoring period from July through October 1999, followed by a data analysis and modeling effort.

Haze is caused by scattering and absorption of light (light extinction) by suspended particles in the air. Particles can stay suspended in the atmosphere for many days and be transported for hundreds of miles. The composition of the particles varies depending on their human and natural sources. Sulfate particles are the single largest contributor to haze at Big Bend NP, accounting for about half of the haze on the average and on the haziest days. Sulfate particles form in the atmosphere from chemical reactions of sulfur dioxide gas. Sources of sulfur dioxide include coal-fired power plants, metal smelters, refineries, other industrial processes and volcanoes. Dust from the suspension of soil particles and carbonaceous material from forest fires also affect haze at Big Bend. The haze in Big Bend NP peaks in the spring months (April–June), when both sulfate and carbonaceous particles are the dominant contributors, and the late summer and early fall months (August–October) when sulfate particles alone dominate. The least hazy conditions occur during the winter months.

BRAVO Analyses

After the field measurement period, laboratory analyses of the air samples were completed. These analyses yielded the concentrations and chemical composition of the atmospheric particles and concentrations of unique tracer compounds that were released to assess transport. A number of data analysis methods were used to ascertain what source regions were contributing to the sulfate haze at Big Bend National Park. Some methods involved examining the relationships between different measured chemical components and unique tracer compounds, while others were based on numerical models of the meteorology, pollutant transport, and chemical reactions of the atmosphere. One aspect of the BRAVO study was the innovative way numerical atmospheric modeling was reconciled with the measured chemical compounds to give a more accurate assessment of the contributors to sulfate haze.

Next Steps for Improving Visibility at Big Bend National Park

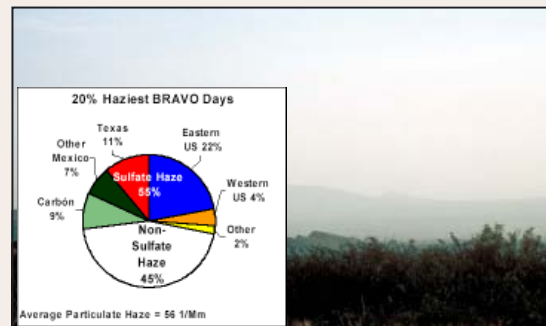
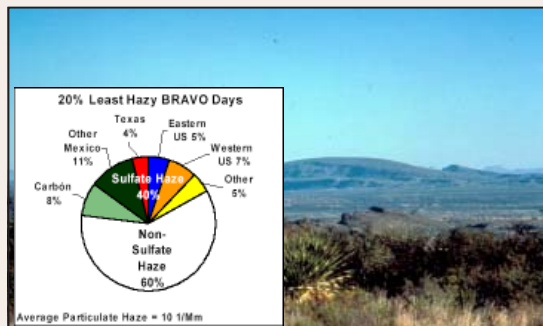
In general, sulfur dioxide emission reductions should help reverse the trend for worsening visibility in the Big Bend region. This is particularly true of sources in Texas and the eastern U.S., given the significance of the contribution from those regions. Sulfur dioxide emission reductions from the western U.S. and Northern Mexico would help maintain and improve the least hazy days.

There are current and pending federal regulations that should reduce sulfur dioxide emissions throughout the United States and make significant progress toward improving visibility in Big Bend National Park.

Although sources in Mexico are also shown to contribute to visibility impairment at Big Bend National Park, the U.S. government has no jurisdiction there. There have been partnerships between agencies in Mexico and the U.S. to address transport of pollution. Such a partnership might be of use in the Big Bend Region.

BRAVO Findings

- On average, during the study period more than half of the sulfate at Big Bend National Park came from the United States, in particular from the eastern United States and Texas.
- Eastern U. S. and eastern Texas sources were the largest contributors to peak particulate sulfate episodes during BRAVO.
- Airflow from eastern Texas and the eastern United States is most frequent during late summer and early fall months, when sulfate contributes most to haze.
- The least hazy days were frequently associated with transport from the west.
- Sources in the western United States and Mexico were the largest contributors on the least hazy BRAVO days.
- On average, Mexican sources contributed just over a third of the sulfate.
- The Carbon I and II power plants in Mexico contributed about one-fifth of the total sulfate measured at Big Bend National Park.



For More Information on the BRAVO study go to:
www2.nature.nps.gov/air/studies/bravo/index.htm

Winter Stargazing

Ranger Mary Kay Manning

Cold winter nights often drive us indoors, but there's good reason to bundle up and stay outside when darkness falls over Big Bend. Clear winter nights showcase the brightest stars and most vivid constellations seen all year. Here are some of the highlights to look for in the night sky this season.

December/January

Throughout the winter, Orion the Hunter is the most prominent figure in the nighttime sky. Look for the distinctive vertical line of three bright stars making up his belt. With binoculars, try to find the fuzzy cloud of the Orion nebula in the center of the sword hanging from his belt. Bluish-white Rigel, at Orion's left knee, is the third-

brightest star in the sky this time of year, while red Betelgeuse, at his right shoulder, is the fifth brightest.

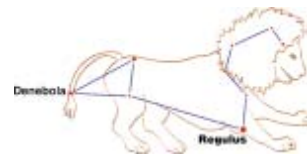
Draw a line upward through Orion's belt, and you'll hit the Pleiades, or Seven Sisters. This bright, compact group of stars forms the tip of the horn of Taurus the Bull. Viewed through binoculars, they look like a tiny version of the Big Dipper. Toward late winter they lie almost directly overhead.

A line drawn downward through Orion's belt intersects Sirius, the brightest star in the nighttime sky. Sirius is part of Canis Major, one of Orion's hunting dogs.

The Big Dipper rises in the northeast as

winter progresses. Its bright stars form a squarish "7". While it is one of the most distinctive patterns in the sky, it is not an official constellation. It is actually part of Ursa Major, the Great Bear, a larger pattern that can be more difficult to trace.

Leo the Lion rises prominently in the eastern sky in late winter. Draw a line from the two highest stars in the Big Dipper toward the east to intersect Regulus, the brightest star in the lion. Think of Regulus as the point of a question mark, and you'll notice the curve of stars above it that makes this shape backwards. Leo is an African lion, not a mountain lion; the question mark is his mane, and Regulus is a front paw.



The Milky Way runs directly overhead this time of year, resembling a band of clouds stretching from horizon to horizon. Look for a bright "W" pattern high in the north-west part of this band, almost overhead; this is the throne of Cassiopeia, a mythological Ethiopian queen.

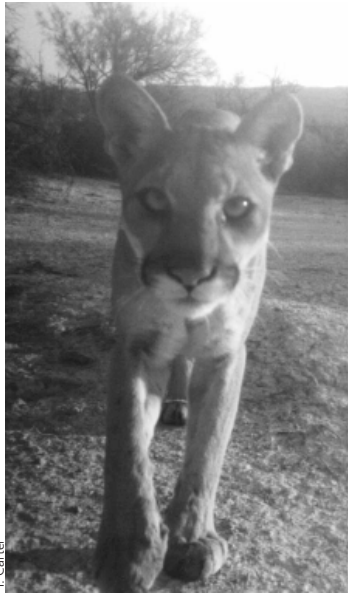
These are the brightest patterns in the winter sky. With a star chart and a good imagination, you can locate many more, as well as nebulae and the Andromeda galaxy. Saturn is also visible this winter, appearing as an extra "star" in the Gemini, the Twins. Happy stargazing!

Mountain Lion Country

If Big Bend National Park has a symbol, it might well be the mountain lion. Solitary and secretive, this mighty creature is Big Bend's top predator, and is vital in maintaining the park's biological diversity. Everywhere you go in Big Bend, you are in the territory of at least one lion. From mountain to desert, biologists estimate that the park has a stable population of approximately two dozen lions. Within the delicate habitats of the Chihuahuan Desert, mountain lions help balance herbivores (animals that eat plants) and vegetation. Research shows that cats help keep deer and javelina within the limits of their food resources. Without lions, the complex network of life in Big Bend would certainly be changed.

Since the 1950s, there have been more than 2,700 recorded sightings of mountain lions by the visiting public within Big Bend National Park. While 90% of sightings are along park roads, observations of lions on park trails also occur. While over 90 percent of these sightings were along park roadways, encounters along trails have also occurred. Since 1984, four lion and human encounters have resulted in attacks on people. In all cases, those attacked recovered from their injuries and the aggressive lions were killed, preventing them from playing out their important natural roles. The more we know about lions, and the less we seek an encounter, the better able we will be to make life easier for them and for us.

How much do you really know about this powerful and wild cat? Mountain lions live throughout the park, including the Chisos Mountains where they prefer to use trails. Your chances of encountering an aggressive lion are remote. What can you do to minimize the consequences of an encounter? Avoid hiking alone or at dusk or dawn. Watch children closely; never let them run ahead of you.



NEVER RUN FROM A LION!

Do not crouch down; the lion has seen you long before you saw it.

Hold your ground, wave your hands, shout! If the lion behaves aggressively, throw stones.

Convince the lion that you are not prey and that you may be dangerous yourself.

If you have small children with you, pick them up and do all you can to appear large.

Report all lion sightings to a park ranger.

The lion's role is a part of the health and welfare of the entire ecosystem. Research and further human understanding of the cat's habits pave the way for conservation efforts in its behalf. As we discover more about the lion, we fear it less and appreciate it more. For many visitors, just seeing a track, or just knowing lions are out there, will be reward enough.

Black Bears

THE RETURN OF BLACK BEARS TO BIG BEND National Park is a success story for both the bears and the park. Native to the Chisos Mountains, bears disappeared from this area during the pre-park settlement era. After an absence of several decades, bears began returning to the park from Mexico in the early 1990s.

Today, wildlife biologists estimate that up to 12 black bears may live in the park. Though they prefer the wooded Chisos Mountains, bears also range along the Rio Grande and throughout the desert, particularly when drought dries up their regular water sources in the mountains.

Black bears are omnivorous. They eat large amounts of nuts, fruits, sotol and yucca hearts, insects, and smaller quantities of eggs, small mammals, reptiles, amphibians, honey, and carrion. Their strong sense of smell also leads them to human foods, and they can quickly open coolers, backpacks, and trash cans when enticed by food odors.

Bears normally avoid humans, but bears that learn to get food from human sources often become aggressive in their attempts to get more "people" food. When humans disobey the rules of both the park and nature by feeding bears, it is the bears that end up paying the ultimate price. Rangers may have to kill bears that lose their fear of people and

endanger humans in their attempts to get our food. Fortunately, Big Bend has not had to kill any bears, but some national parks destroy several bears each season; we hope that through educating visitors about proper behavior in bear country, we can avoid this tragic outcome.



A small population of black bears lives here. Please help us keep them wild by storing all food items

Big Bend has made it easy to keep edible items away from bears. Campers at the Chisos Basin Campground, at High Chisos backpacking sites, and at some primitive roadside campsites will find bearproof storage lockers for storing all edibles. Hard-sided vehicles are also suitable for storing edible items. All dumpsters in the Chisos Mountains developed areas are bearproof, as well. And remember, a bear's definition of an "edible" is far broader than ours; lock up sunscreen, skin

lotion, toothpaste, soap, and other toiletries whose odors might attract wildlife.

There really are no problem bears- only problem people. Carelessness can kill. Don't be responsible for the death of a bear. Follow the guidelines below. Pay close attention to the food storage rules posted in the Basin campground and on your backpacking permit. Your actions affect both Big Bend's wildlife and future park visitors.

With your help, bears and humans CAN live safely together in Big Bend National Park.

Don't Call Me Pig!

FOR MANY VISITORS TO BIG BEND NATIONAL PARK, SEEING A JAVELINA (hav-uh-LEE-nuh) is a new experience.

These curious creatures, also known as collared peccaries, are only found in the United States in Texas, New Mexico, and Arizona. They are covered with black, bristly hairs and generally weigh between 40 and 60 pounds. They usually travel in groups called bands that consist of 10-25 individuals. Peccaries have a highly developed sense of smell, but very poor vision.

Physically, javelinas resemble pigs, but in reality, they are not closely related to pigs at all and have been genetically distinct from them for millions of years. A closer look reveals several major differences between the two animals. Javelinas have 38 teeth; domestic pigs and wild boars have 44. The canine teeth of the javelina are short and straight, while those of pigs are longer and curved. Javelinas have a scent



Collared peccaries live throughout Big Bend

gland that they use to mark their territory that pigs do not have. Pigs sweat to keep themselves cool, but javelinas must instead cool themselves in available water sources or by staying in the shade.

A javelina's diet includes prickly pear cactus, grasses, mesquite beans, pinyon pine nuts, fruits, berries, and seeds. Unfortunately however, many javelinas now include human food as part of their diet. Every year we are seeing more and more campsites in the park raided by javelina. Although normally not aggressive, they can be when food is involved. Protect yourselves and our javelinas by properly storing all your food inside a vehicle or in the food storage lockers provided in the campgrounds. Do not leave coolers or food boxes unattended on picnic tables or in a tent. Flatten tents when you are away from your campsite. It is important that javelinas and all park animals eat their natural food sources to stay healthy and safe. With your help, these unique animals can continue to thrive and thrill park visitors for years to come.

Keep ALL Wildlife WILD

In the Basin Campground

- Store food, beverages, trash, toiletries, pet food, and dishes in the bearproof storage locker provided at your site.
- Keep your campsite clean. Take trash and food scraps to a dumpster.
- Dump liquids in restroom utility sinks, not on the ground.
- Ice chests and coolers are not bear-proof; store them in your vehicle.

Cyclists

- Use food storage lockers where provided.

At the lodge

- Leave nothing outside your room, on the balcony, or on the porch.

When hiking

- Never leave packs or food unattended.
- Avoid carrying odorous food and toiletries.
- Leave excess food and beverages in your trunk or food storage box
- Carry out all trash, including orange peels, cigarette butts, and left-over food.

Now That You're Here, What Can You Do?

You've driven many miles to get here, and have finally arrived at your destination: Big Bend National Park. But now what? Now that you're here, how do you spend your time? Where should you go? What should you explore? The park is big, and often visitors have a limited amount of time to explore.



A. Faulkner

One Day

If time allows, drive to the **Chisos Mountains** to take in the spectacular mountain views. Walk the 0.3-mile self-guiding Window View Trail to get a feel for the mountain scenery.



S. McElwain

A trip along the **Ross Maxwell Scenic Drive** will give you a taste of the Chihuahuan Desert and will lead you to the Rio Grande. There are scenic overlooks and exhibits along the way. Sotol Vista, Mule Ears Overlook and Tuff Canyon are all worthwhile stops. The short walks to the Sam Nail (Old) Ranch and Homer Wilson (Blue Creek) Ranch and a visit to the Castolon Historic District will give you a glimpse into Big Bend's past.

A highlight is the short (1.6-mile round trip) walk into **Santa Elena Canyon**—one of Big Bend's most scenic spots. Drive to the end of the Ross Maxwell Scenic Drive to access the trailhead. You may return to the main road by returning on the Ross Maxwell Drive or on the **Maverick Road**, a 13-mile gravel road linking the Ross Maxwell Drive to the Maverick (west) Entrance. Always check on road conditions first.

Three Days



C. Rich

With three days to spend in the park, you can explore the major roads more thoroughly and still have time for hiking. In the Basin area, consider hiking the **Window Trail** (5 miles round trip) or the **Lost Mine Trail** (4.8 miles round trip); consult the *Hiker's Guide to Trails of Big Bend National Park*, for sale in park visitor centers, for trail descriptions.

In addition to the Basin and Ross Maxwell Scenic Drive (see suggestions for "one day") you can drive to **Rio Grande Village**, perhaps stopping at Dugout Wells along the way to walk the short Chihuahuan Desert Nature Trail. The Rio Grande Village Visitor Center offers a brief introductory slide program. Walk the **Rio Grande Village Nature Trail** which begins near site #18 in the campground. The bluff overlooking the Rio Grande at the end of the nature trail is a particularly beautiful spot at sunset.

Boquillas Canyon road will take you to several overlooks of the Rio Grande and the small village of Boquillas, Mexico. At the end of the road is the **Boquillas Canyon Trail**, which takes you to the entrance of this spectacular canyon.

One Week



L. Ritzen

With a week or more to spend in Big Bend, endless possibilities are open to you. You'll have plenty of time to explore the roads mentioned in the previous sections, and will also have time to hike or to drive some of the "unimproved" dirt roads. For these, you'll need a high clearance or four-wheel drive vehicle; don't forget to check at visitor centers for current road conditions. The River Road, Glenn Springs Road and Old Ore Road are some of the more popular backcountry routes. A visit to Ernst Tinaja near the south end of the Old Ore Road is a Big Bend highlight.

If you don't have high clearance or four-wheel drive, gravel roads such as Dagger Flat, Grapevine Hills and Maverick will get you "off the beaten path." Hike the Chimneys Trail, Mule Ears Trail, or Grapevine Hills Trail for a closer look at the desert environment. If you'd like to explore the Chisos Mountains, trails to Boot Canyon, Emory Peak and the South Rim offer good views of the park and take you into another world which seems far removed from the desert. There are plenty of opportunities for overnight backpacking along these trails. A free backcountry use permit is required and can be obtained at park visitor centers.

Float The Rio Grande



R. Skiles

If you have the time and a spirit of adventure, you may want to consider a river trip. Seeing the park's canyons from the middle of the Rio Grande is both fascinating and gratifying. There are many possibilities, from half-day floats to extended seven-day excursions. Park Rangers can recommend a trip that meets your abilities and interests. Rafting and equipment rental companies are listed on page 14.

See "Backcountry Planning" on page 13 for additional information on Big Bend river trips.

Enjoying Your Visit

No matter how limited your time in Big Bend, remember that you will enjoy the park more if you **stop your car and explore on foot**. That doesn't mean that you have to hike miles on steep grades; there are many short, easy walks and roadside exhibits where you can stretch your legs and enjoy the sights, smells and sounds of the Chihuahuan Desert.

Hiker's guides and road guides are available at book sales areas throughout the park, and they

offer more detailed information about Big Bend's trails and roads. Attending **ranger-led activities** and evening programs are also good ways to learn more about Big Bend; check at the visitor centers and park bulletin boards for current activities.

Remember, you will NOT be able to see everything on this trip. You will probably enjoy the park more if you choose a few spots and explore them thoroughly to get a taste of what Big Bend has to offer.

Then, come back again sometime to see the rest!





From the 7,832 foot summit of Emory Peak, to the banks of the meandering Rio Grande, visitors will find over 200 miles of hiking trails in Big Bend National Park. Trails range from strenuous primitive routes through rugged desert backcountry to short handicapped-accessible pathways. Whatever your style of hiking, you can find it in abundance in Big Bend.

Below are descriptions of many of the most popular easy and moderate hiking trails. Most of these trails are perfect for shorter day hikes of up to several hours. For information on longer, more difficult routes, or to plan an extended backpacking trip, stop by any park visitor center. A large selection of maps and trail guides are available and park rangers can assist you in trip preparations and backcountry permits.

Panther Junction - Rio Grande Village Area

Between Panther Junction and Rio Grande Village lies a vast sweep of scrub desert, rocky ridges, and river floodplain. Sprinkled through this massive area are trails that highlight

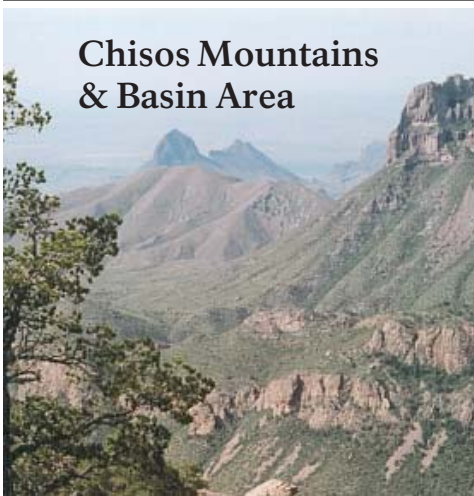
the fascinating natural and human history of Big Bend. Discover Indian mortar holes in Boquillas Canyon and the early pioneer settlements of Dugout Wells and Hot Springs. Enjoy the diverse birdlife along the Rio Grande and the rich geology at Grapevine Hills.

One of the more popular areas in Big Bend's east side, is the **Hot Springs Historic District**. Drift back in time and imagine what life was like during the early 1900s when J.O. Langford developed this natural hot spring into a tiny health resort. A one-mile loop takes you past the old motel, post office, homestead, and foundation of the hot spring bath-house.

Trail	Roundtrip Length	Comments	Trailhead Location
Grapevine Hills	2.2 miles	Follows a sandy wash through boulder field. A short climb at the end takes you to a large balanced rock archway	Grapevine Hills Road mile 6
Chihuahuan Desert Nature Trail	0.5 miles	A flat desert path near a cottonwood oasis. Signs interpret Chihuahuan Desert plant life.	Dugout Wells Picnic Area
Hot Springs	0.75 miles	Walk past historic buildings to the riverside hot springs. 105°F water. <i>Take a bathing suit and soak a while.</i>	End of Hot Springs Road (<i>unpaved</i>)
Rio Grande Village Nature Trail	0.75 miles	Cross a boardwalk and climb 125 feet to a great panoramic view of the river floodplain and distant mountains. Good birding and sunrise/sunset views.	Rio Grande Village Campground (<i>site 18</i>)
Boquillas Canyon	1.4 miles	Begins with a short climb, then descends via a sandy path to the river. Ends near a huge sand "slide."	End of Boquillas Canyon Road



K. Rontton



Chisos Mountains & Basin Area

The Chisos Mountains form the rugged heart of Big Bend National Park. High ridges and summits coax moisture from passing clouds. The result is a forested mountain "island" surrounded by a desert sea.

When the lower desert trails become uncomfortably hot, enjoy the shady, pine-scented trails of the Chisos Mountains. All Chisos trails begin from the Basin area

which is located in the center of the park.

For a good introduction to the scenery and wildlife of the Chisos, hike the **Window Trail**. From the Basin Campground, this trail winds two miles through colorful Oak Creek Canyon to the top of the Window pouroff. Wildlife is abundant along this trail. Look and listen for javelina, white-tailed deer, and Mexican jays.

Trail	Roundtrip Length	Comments	Trailhead Location
Window View	0.3 mile	Level, paved, handicapped accessible. Great sunsets and mountain views.	Chisos Basin Trailhead (<i>near the Basin Store</i>)
Basin Loop	1.6 miles	Connects the Laguna Meadow and Pinnacles Trails. Climbs 350 feet through pine/oak woodland. Nice views of the Basin area.	Chisos Basin Trailhead (<i>near the Basin Store</i>)
The Window	5.6 miles	Descends to the top of the Window pouroff. Great scenery and wildlife viewing. Climbs 800 feet on return.	Chisos Basin Trailhead or Basin Campground
Lost Mine	4.8 miles	This magnificent hike climbs 1,100 feet to excellent mountain and desert views.	Basin Road mile 5 (<i>at Panther Pass</i>)

Ross Maxwell Scenic Drive

The Ross Maxwell Scenic Drive skirts the rocky ramparts of the Chisos Mountains and descends through the spectacular west side of Big Bend National Park. Many of the park's best views and desert hikes are found here.

The Ross Maxwell Drive ends at the trailhead to **Santa Elena Canyon**. There is no better trail to experience the sights and sounds of the Rio Grande. From the parking area, the giant chasm is in full view before you. Hike to the river's edge

and follow it upstream into a world of superlative cliffs and dense thickets of riverside vegetation. Enjoy the sounds of moving water and the descending song of the canyon wren.

Trail	Roundtrip Length	Comments	Trailhead Location
Burro Mesa Pouroff	1.0 mile	A flat, sandy trail up a canyon to the base of a dry pouroff. Interesting geology and desert plants.	Ross Maxwell Dr. mile 11
The Chimneys	4.8 miles	Flat desert trail to prominent rock formations. Look for rock art. No shade.	Ross Maxwell Dr. mile 13
Mule Ears Spring	3.8 miles	A beautiful desert hike to a small spring. Spectacular geology and mountain/desert views.	Ross Maxwell Dr. mile 15
Tuff Canyon	0.75 miles	Balconies overlook this scenic canyon. A short trail leads into and through the narrow gorge carved out of soft volcanic tuff.	Ross Maxwell Dr. mile 20
Santa Elena Canyon	1.6 miles	Crosses creekbed, climbs stairs, then follows the river upstream into the mouth of a magnificent 1,500 foot deep limestone canyon.	8 miles west of Castolon



S. McElwain

Black Gap Wildlife Management Area

Ranger Mary Kay Manning

Most of us are familiar with the concept of national and state parks, and we've all probably visited a number of both. In addition to state parks, the Texas Parks and Wildlife Department manages another type of property that is much less well-known. Texas has 51 Wildlife Management Areas (WMAs), totaling around 756,464 acres. These are managed with the primary goal of preserving wildlife and its habitat, as well as providing natural laboratories for biologists to conduct research on wildlife management techniques. These lands also provide recreational opportunities for the public to hike, camp, hunt, fish, observe wildlife, and other activities compatible with resource conservation.

Lying just to the east of Big Bend National Park, the Black Gap WMA is the largest in Texas, at approximately 119,000 acres. The terrain is classic Chihuahuan Desert, containing mountains, canyons, and flat basins. Inventories of plants and animals there are on-going, and biologists have counted nearly 300 species of birds, nearly 60 spe-

cies of reptiles and amphibians, and over 50 species of mammals. Visitors can get check-lists of the birds, reptiles, and amphibians at the self-registration building at headquarters.

Since its inception in 1948, researchers have utilized the Black Gap WMA for numerous studies related to native and exotic flora and fauna. One of the main research projects was the reintroduction of desert bighorn sheep. Competition with livestock for food, exposure to livestock-borne diseases such as blue tongue, and other manmade effects caused the populations of these native wild sheep to plummet. Today, with intensive management, the bighorn sheep population at Black Gap numbers around 100. Some of these bighorn sheep have wandered into Big Bend National Park. A herd of around 16 bighorn sheep, containing rams, ewes, and lambs, has been seen ranging from Dog Canyon to the Sue Peaks area.

Another notable wildlife resident at Black Gap is the black bear. About 5 or 6 black

bears live in the WMA. According to Bonnie McKinney, a former wildlife researcher at the site, "Black Gap is the only WMA that has a breeding population of black bears. What's really unique about that is that Black Gap is a lower desert ecosystem, whereas bears are thought of as being woodland creatures." Observing the Black Gap bears' behavior has also been educational for wildlife biologists at Big Bend National Park. Staff here had observed that black bears leave the park during times of severe drought in search of more productive habitat, while the radio-collared bears at Black Gap remained during the drought.

Their proximity in the same ecosystem has given managers at both Black Gap WMA and Big Bend National Park the opportunity to work together on several projects. In addition to monitoring bighorn sheep and black bears on both sites, the two areas have also joined forces to eradicate tamarisk, or salt-cedar. This non-native tree disrupts the natural ecosystem by using excessive amounts of water, displacing native

plants, and concentrating salt in the soil. The managers of the six protected areas formed both sides of the Rio Grande have formed the Greater Big Bend International Tamarisk Removal Project to address this critical threat.

The team consists of staff from the Black Gap WMA, Big Bend National Park/ Rio Grande Wild & Scenic River, Big Bend Ranch State Park, and the two nearby protected areas in Mexico, the Maderas del Carmen and the Cañon de Santa Elena. This project illustrates how truly interconnected these trans-boundary sites are; removing exotic species from one area does little good if the species still thrives next door.

Visitors to the Black Gap WMA should be prepared for rough desert terrain with high temperatures during much of the year. For more information on visiting the Black Gap WMA, contact site headquarters at 432-376-2216.

What Can Kids Do Here?



Big Bend is a great place for kids!

Become a Junior Ranger!

Learn desert secrets, identify the parts of a cactus, and discover what javelina eat!

The Big Bend Junior Ranger program is designed for kids of all ages. Through activities, games, and puzzles, kids can have fun as they learn about the park. They can also earn stickers, badges, patches, and certificates.



The Junior Ranger Activity Book costs \$2.00 and is available at all park visitor centers.

Hike a Trail!

Many park trails are suitable for families. Consult the "Easy and Moderate Hikes" chart on page 9. For children in strollers, consider the Window View Trail, a paved ¼-mile loop trail that begins at the Chisos Basin trailhead.

Big Bend is a special place! We hope you enjoy Big Bend National Park and that you learn to value its resources. If you have any questions, ask a park ranger for help.

Where's All The Wildlife?

"HEY RANGER, WE'VE BEEN DRIVING ALL DAY AND HAVEN'T SEEN ANY ANIMALS. DOES ANYTHING live here?" These questions may have crossed your mind too. You may be surprised to learn that over 3,000 different kinds of animals inhabit Big Bend National Park. While the vast majority of these are invertebrates, over 600 species of vertebrates are also known here.

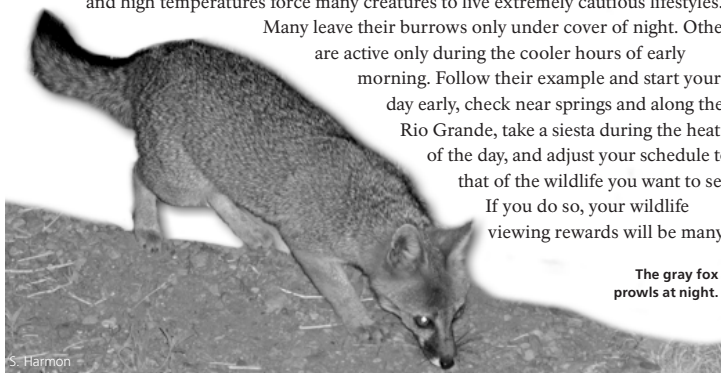
Common invertebrates include tarantulas, wolf spiders, centipedes, millipedes, scorpions, sunspiders, grasshoppers, walking sticks, velvet ants, harvester ants, and mites. Many are active only after summer rains, while others like the grasshoppers and cicadas may be heard singing throughout the heat of the day.

Vertebrates are most popular with park visitors since they include deer, javelina, black bears, and America's favorite watchable wildlife -- *the birds*. Checklists of the park's birds, mammals, reptiles, and invertebrates are available at park visitor centers. Researchers have identified over 39 species of fish, 75 species of mammals, 11 amphibians, and 56 reptiles. Big Bend's bird checklist contains 450 species, the largest diversity of birds to be found in any U.S. national park.

The desert landscape may seem completely uninhabited, but the desert is full of surprises. Those who take the time to get out of their car and investigate, will discover abundant evidence of the desert's denizens. Holes, tracks, nests, and droppings are everywhere. Lizards dart by at amazing speed. Listen for the tinkling notes of the black throated sparrow, or the raspy song of the cactus wren. Keep in mind that in desert areas like Big Bend, low rainfall and high temperatures force many creatures to live extremely cautious lifestyles.

Many leave their burrows only under cover of night. Others are active only during the cooler hours of early morning. Follow their example and start your day early, check near springs and along the Rio Grande, take a siesta during the heat of the day, and adjust your schedule to that of the wildlife you want to see.

If you do so, your wildlife viewing rewards will be many.

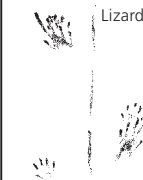


The gray fox prowls at night.

S. Harmon

"Desert Tracks"

Desert dramas are revealed in sand and soft soil. To see an animal, both you and it must be in the same place at the same time; but tracks may last for days. Below are some commonly seen Big Bend tracks.



The Solitario

Sentinel of Big Bend Ranch State Park

Dispatcher Meghan Hicks

Travel a short distance west of Big Bend National Park along Highway FM 170, and you will encounter another stunning destination nestled deep within west Texas, Big Bend Ranch State Park. The 337,000 acres of Big Bend Ranch State Park (BBRSP) are protected and preserved by the Texas Parks and Wildlife Department largely as remote and undeveloped wilderness; that is, a few paved and dirt roads, hiking and biking trails, and campsites occasionally spatter this otherwise untouched land.

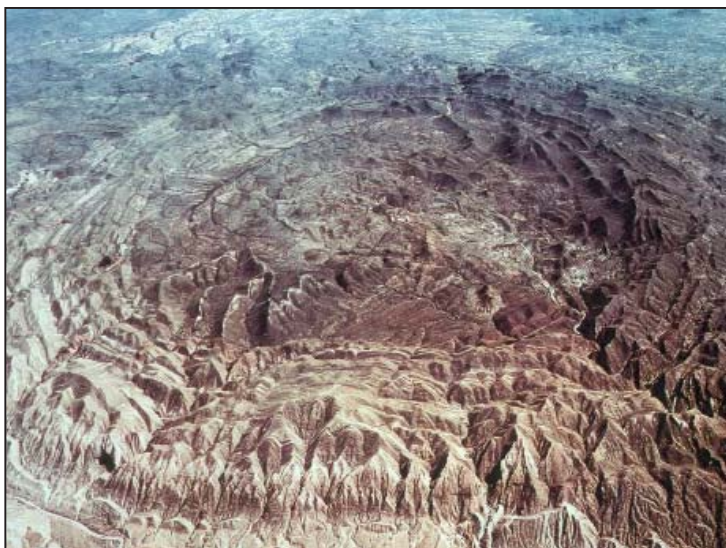
The diversity of resources within BBRSP is tremendous. Lonely vistas spanning mountain ranges and canyons, undulating badlands with vivid color palettes, deep sun-shading canyons carved by the Rio Grande, historic ranch homesteads representing the region's cattle ranching era, and solitary oases of water, vegetation, and shade that provide respite from the desert to all living things are just a few of the resources you will encounter at BBRSP. Perhaps the most striking resource of BBRSP is the immediate, innate, omnipresent solitude of undeveloped wilderness.

Another one of BBRSP's most exquisite resources is also one that remains mostly secreted within this wilderness. The Solitario, a Spanish word meaning "hermit" or "that which stands alone or is unique," is a geologic feature located in BBRSP's interior. Indeed, this resource is a lonely feature of the land, perched within perhaps one of Texas' most remote areas. Significant effort is required to even view this resource from a distance, and only a handful of people are lucky to experience it in person in any given year. However, despite its inaccessibility, the Solitario seemingly symbolizes the solitude, emptiness, and untouched nature of BBRSP's wilderness.

The geologic history of the Solitario began about 35 to 36 million years ago. At that time, hot, molten rock from deep within the earth began to rise upward towards the earth's crust, the cold, solid layer of rock on the earth's surface. The molten rock intruded into the earth's crust, tilting the crust upwards and creating a circular blister on the earth's surface. This blister of molten rock eventually exploded and created a volcano. During a series of eruptions, the volcano destroyed the overlying crust and spewed ash and molten rock over the earth's surface. This volcano eventually collapsed upon itself, after emptying all of its molten rock. This created a divot in the earth's surface that was surrounded by a circular ring of tilted rocks. In the time since the formation of the Solitario, erosion has filled in some of the divot and shortened much of the tilted ring of rocks. However, the Solitario still remains a significant feature of the BBRSP landscape.

Hermit within the depths of BBRSP, the Solitario stands as a timeless sentinel both guarding and representing BBRSP's wilderness and innumerable other resources awaiting your discovery. Take a drive along BBRSP's paved and dirt roads; explore its backcountry via hiking and biking trails; make camp for an evening at one of the park's campsites; perhaps make a special visit to view the Solitario. In whatever capacity you are able to experience Big Bend Ranch State Park, the opportunity to experience wilderness, solitude, and innate peace will be present.

Due to the remoteness and sensitive nature of this resource, access to the Solitario is limited to BBRSP guided tours and private tour company trips. For information regarding the Solitario or Big Bend Ranch State Park, please contact the Barton Warnock Environmental Education Center, BBRSP's main visitor center, at 432-424-3327.



The Solitario is about 8 miles in diameter and is composed of an interior divot, now mostly covered by erosion, and a ring of tilted rocks around it. Overhead photographs and geologic maps of the Solitario may be viewed at the Barton Warnock Environmental Education Center. The best place to view the Solitario is from the Solitario Viewpoint, located at the terminus of BBRSP's interior dirt road. (TPWD Photograph)

More than a name

Ranger Dan Leavitt



Visitors often ask about the origin of place names in the Big Bend, seeking perhaps to forge a closer connection to the landscape around them, or just to satisfy a curiosity over something unusual. Many of the names here have changed over the years with different landowners, each new owner providing their interpretation of what these locations should be named. Some names are obvious (the "Mule Ears"), while others are more subtle. All tell a story. Case in point: From the Chisos Basin looking out the Window (named for the spectacular opening to the desert below) you might notice the large dome-shaped peak to the north side. Once called "Old Baldy" due to its lack of vegetation and rocky appearance, this peak is now labeled Vernon Bailey Peak.

Who was Vernon Bailey? Why does he deserve a peak? The man was truly unique in his day. Growing up in the Midwest, young Bailey had gained practical knowledge of wildlife by preparing specimens for biologists. Upon seeing his work, the head of the United States Biological Survey employed Bailey to assist in collecting specimens of birds, mammals, reptiles, amphibians and plants from around the country for a national inventory. Eventually Bailey became the chief field biologist for the Biological Survey. From 1889 through 1906 Bailey and his survey group were studying the fauna for the state of Texas.

In traveling around the state they made their way into the Big Bend country. The quiet and lonely landscape was just as sparsely populated then as it is today. In 1901, Bailey ventured up the rugged slopes of the Chisos Mountains and walked by a mountain that would later bear his name. As a part of the survey, specimens were collected from each landscape. Here in the Chisos they found black bear, wild turkey, Montezuma quail, and desert bighorn sheep among a large number of other animal and plant species. Though their stay here was short, their discoveries established a baseline for decades of ensuing biological study.

In the time since Bailey departed the region and eventually the state, a great many changes occurred to the Big Bend landscape. More ranchers settled the land in the early 1900's, each one bringing unique plants, animals and land practices. Many of the species Bailey had recorded as being plentiful or abundant were lacking or extirpated by 1944. What happened to the black bear, Montezuma quail, wild turkey and desert bighorn sheep? In many cases, large predatory animals such as bears, eagles, and mountain lions were killed due to their depredations on livestock. As for desert bighorn, wild turkey and Montezuma quail, it appears that pressure from competition with domesticated livestock, habitat impacts, and hunting had dramatic effects on their populations.

What if Vernon Bailey Peak had been named Bighorn Ridge? It was near Vernon Bailey Peak that Bailey and company acquired their bighorn sheep specimens in 1901 and the name would have seemed suitable then. Now that name would appear a nostalgic and perhaps sad reminder of an animal that used to live here. The name Vernon Bailey conveys much more. It stands not only as testimony to the efforts of a pioneer biologist, it also speaks to the changes that have occurred here in just one hundred years. Consider that within forty years of Bailey's visit, some of the species he recorded were gone. Too, his name speaks to the resiliency of the land. Today, as you gaze out the Window and observe "Old Baldy", let your mind wander back to 1901, and ponder the Big Bend as seen by Bailey. Yes, some wildlife populations are missing but, don't forget, the black bear came back.

Ranger Programs



Join a park ranger for a guided hike, evening slide show, talk, or workshop on Big Bend's natural and cultural history. These free programs are offered daily. Consult the Interpretive Activities Schedule posted on visitor center and campground bulletin boards for more information.

Lodging



The Chisos Mountains Lodge, operated by Forever Resorts Inc., is located in the Chisos Basin at 5,400 feet elevation. The lodge offers a variety of rooms and cottages, plus a gift shop and dining room. For reservations, please call (432) 477-2291 or 2292 or visit their website at <http://www.chisosmountainlodge.com/>

Banking



There are NO banking facilities in Big Bend National Park. The nearest banking/ATM services are located in Study Butte, 26 miles west of park headquarters. Most stores accept major credit cards; however, some local services accept only cash. It is advisable to have small bills (\$1, \$5, \$10, \$20) since larger bills are often difficult to change.

Birdwatching



Birding is one of the main attractions of Big Bend National Park. More bird species (450) have been observed here than any other national park. Although Big Bend specialties like Colima warbler and Lucifer hummingbird have left the park to winter in warmer southern climates, the winter season is no time to put away your binoculars. Winter birding can be very rewarding here, with the added bonus of generally mild, dry, and sunny weather in which to be afield.

Camping



Tent Camping

The National Park Service operates campgrounds at Rio Grande Village, the Chisos Basin, and Castolon. The cost is \$10.00 per night for a site. Campsite fees can be paid in US currency, personal checks, or credit card.

Camping is also available at **primitive backcountry campsites** in the Chisos Mountains and along backcountry roads. High-clearance or 4-wheel drive vehicles are necessary to reach most road sites. Backcountry permits are required and can be obtained in person at park visitor centers up to 24 hours in advance.

Camping areas are often full during the Thanksgiving and Christmas holidays, as well as during spring break in March or April.



M. Schuler



Trailers & RV's

All park campgrounds can accommodate trailers and RVs, but vehicle lengths have a great deal to do with safely reaching the campground and finding a suitable space.

The only hookups available in Big Bend National Park are at Rio Grande Village in the 25-site, **Rio Grande Village RV Park** operated by Big Bend Resorts, Inc. Although there is no size restriction, your vehicle must be equipped with water and electrical hookups as well as a three-inch sewer connection. Register at the store. No advance reservations.

Near the RV park is the 100-site **Rio Grande Village Campground** operated by the National Park Service. Although there are no hookups, water, flush toilets, and a dump station are available. Set in a large grove of cottonwoods, the campground is adjacent to the Rio Grande. Many of the sites are pull-throughs. **Generator use is limited: from 8:00 am to 8:00 pm daily.** A no-generator use area is also designated.

The 63-site **Chisos Basin Campground** is rugged and hilly. The sites are small and most are not suited to recreational vehicles or trailers. The road to the Basin is steep and curvy, especially at Panther Pass—the road's highest point. The road into the campground is a 15 percent grade. Trailers longer than 20 feet and RVs longer than 24 feet are not recommended.

Cottonwood Campground, near Castolon, offers pit toilets and potable water, but no hook-ups or dump station. **Cottonwood is a NO-generator campground.**

Big Bend's unpaved roads are generally unsuitable for RV's and trailers. Overnight camping in any primitive site requires a backcountry permit, obtained in person at park visitor centers up to 24 hours in advance.



The only showers and laundry facilities in the park are located at the Rio Grande Village store.

Present throughout the winter are those species considered permanent residents of the park, many of them unique to the desert southwest, like greater roadrunner, cactus wren, and black-throated sparrow. Residents are joined by other species that spend only the winter in Big Bend, migrating here from breeding grounds farther north, including ruby-crowned kinglet, sage thrasher, and orange-crowned warbler. On the heels of a very wet summer and fall, the winter grass seed set should be bountiful, encouraging diverse flocks of wintering sparrows, including rarities like sage and Harris's sparrow. Mild weather may even encourage some migrants to linger here, as did a gray hawk at cottonwood Campground last year.

Patience, a good field guide, and knowledge of where to look are the keys to locating the birds of Big Bend. First and foremost are the riparian areas, including the corridor of the Rio Grande (Rio Grande Village and Cottonwood campgrounds), and the many desert springs (Dugout wells and Sam Nail Ranch). Other productive areas include the pinyon-juniper-oak belt (Green Gulch and lower Lost Mine trail), the moist wooded canyons of the high Chisos (Boot Canyon), the grassland/shrub community along the lower slopes of the Chisos (Blue Creek Canyon), and the remaining lower desert areas. A checklist of birds is available for purchase at any visitor center and is a great aid in determining which species are likely to be present and the habitats where they are found. A visit to all these key habitats will provide the best opportunities to see birds and to build that "Big Bend List."

While "listing" is a legitimate and fun activity, keep in mind that many of the species that are the source of your enjoyment are members of populations in decline. Habitat destruction and degradation on both the wintering and breeding grounds are bringing many of these birds to the brink. You can help in several ways: Come join us in the annual Christmas Bid Counts held December 28 and 29 (ask at a visitor center for details), tread softly in fragile habitat areas, taking care not to damage water sources, and don't disturb birds with excessive noise or intrusive attempts at photography. Please share your observations with us, particularly of rare and accidental species. Your detailed reports become part of the record and can be an aid to researchers. Enjoy the birds of winter, and do all that you can to ensure their return.

Campsite Reservations

Forty-three (43) sites at **Rio Grande Village campground** and twenty-six (26) sites at the **Chisos Basin campground** are reservable from November 15th to April 15th each year. Visitors may contact ReserveUSA year round to make reservations for the period of November 15th through April 15th of each year. All remaining campsites in these two campgrounds and the entire Cottonwood campground remain on the first-come first-serve basis.

Campsite reservations may be made through the Internet: www.reserveusa.com, or by calling 1-877-444-6777.

Big Bend National Park cannot make reservations.

Groups of 10 or more are eligible to reserve a spot in one of the park's **Group campsites** at the Rio Grande Village, Chisos Basin, and Cottonwood Campgrounds. Group sites are reservable year round and reservations may be made 360 days in advance. Reservations for Rio Grande Village and the Chisos Basin campgrounds family-type sites may be made 240 days in advance.

Park Campgrounds

	Elevation	Sites	Nightly Fees:	Facilities	Registration	Comments
Chisos Basin	5,401 ft	63	\$10.00*	Flush Toilets, Dump Station	Self-pay station	Surrounded by rocky cliffs. Many hiking trails nearby.
Cottonwood	2,169 ft	31	\$10.00*	Pit Toilets, No Generators	Self-pay station	In a cottonwood grove along the river. Grassy sites. Good birding.
Rio Grande Village	1,850 ft	100	\$10.00*	Flush Toilets, Dump Station	Self-pay station	Largest campground. Shady sites. Laundromat and showers nearby.
Rio Grande Village RV	1,850 ft	25	Starts at \$18.00	Full Hookups	Inquire at RGV Camper's Store	Concession-operated. Adjacent to RGV store.

* \$5.00 with Golden Age or Golden Access Passport

Horses



Visitors are welcome to bring and use their horses in the park. A free stock-use permit is required and may be obtained in person at any of the park's visitor centers up to 24 hours in advance of the trip.

While horses are not permitted on paved roads or road shoulders, all gravel roads are open to horses. Cross-country travel is permitted in the park, except in the Chisos Mountains where horse use is limited to the Laguna Meadow, Southwest Rim, and Blue Creek trails. Horses are not permitted in picnic areas, on nature trails, the Santa Elena and Boquillas Canyon Trails, or the Pine Canyon Trail.

Grazing within the park is not permitted, so you must bring your own feed. Stock may be watered in the Rio Grande and at springs that are not used for domestic water supply. Be prepared to haul water for your stock as springs are unreliable, especially during winter months. Check current spring conditions at a visitor center when you arrive. All horse manure must be removed from the park, or deposited at a designated location near the NPS horse corral at Panther Junction (ask a ranger for directions).

You may camp with your horses at many of the park's primitive road campsites. These are available on a first-come, first-served basis through a free backcountry use permit available at park visitor centers. These campsites are especially difficult to obtain during holiday periods, especially spring break. The Government Springs campsite, located 3/4 miles from Panther Junction, is a primitive campsite with a corral large enough for 4-8 horses. If you plan to bring horses to the park, you may reserve this campsite up to 10 weeks in advance by calling (432) 477-1158.

Hiking & Backpacking

Big Bend National Park offers over 100 miles of hiking trails. A free permit is required for all overnight trips, and can be obtained in person only up to 24 hours in advance of the trip. Because of the unreliability of desert springs, it is difficult to plan an extended backpacking trip prior to your arrival in the park. Decide how much distance you want to cover and how much time you have. Park staff can assist you with trip planning based on your needs and current trail conditions. The Panther Junction Visitor Center is open daily from 8:00 a.m. to 6:00 p.m.

Backpacking sites in the Chisos Mountains are difficult to obtain during the Thanksgiving and Christmas holidays, and during spring break in March and early April.

Maps and hiker's guides are available for purchase at park visitor centers. If you would like to order them in advance of your trip, call the Big Bend Natural History Association at (432) 477-2236 or visit their online internet bookstore at www.bigbendbookstore.org

The Southeast Rim of the Chisos Mountains, Mariscal Rim, and Casa Grande are closed during the peregrine falcon nesting season (February 1 - July 15).

 **Pets are not allowed on trails or in backcountry areas.**
Please leave pets at home if you plan to hike.

Weather

Elevation differences in Big Bend mean that temperatures can be vastly different in different areas of the park. The lower areas along the Rio Grande are very hot during the summer months, while the Chisos Mountains are considerably cooler. Winter weather generally occurs between November and February, with temperatures dropping dramatically as cold fronts move through the area. Between June and October thunderstorms and flash floods may occur. Bring clothing for both warm and cool weather, as well as rain gear, when visiting Big Bend any time of the year. See "how hot?" on page 15.

Floating the Rio Grande



The Rio Grande follows the southern boundary of Big Bend National Park for 118 miles. In this distance it has carved three major canyons, Santa Elena, Mariscal, and Boquillas, which have rapids varying in difficulty from Class I to Class IV. Between the canyons, the river is generally slower-paced. The Rio Grande Wild and Scenic River extends downstream beyond the park boundary for an additional 127 miles.

If you plan to take a river trip in Big Bend National Park, you may bring your own equipment, or you can hire a guide service. Four local companies (see page 14 for telephone listings) provide guide service in the park—you may reserve a trip by contacting them directly.

If you plan to use your own equipment, you must obtain a free permit at a park visitor center. Permits are issued up to 24 hours in advance of your trip, in person only. Stop by the Panther Junction Visitor Center for your permit and for current river condition information prior to your trip.

Permits for the Lower Canyons of the Rio Grande Wild and Scenic River may be obtained at the Persimmon Gap Visitor Center, when open; a self-permitting station is also located at Stillwell Store, 5 miles south on FM2627 on the way to La Linda, Mexico. Permits for floating Santa Elena Canyon may be obtained at the Barton Warnock Center in Lajitas. Only permits for Santa Elena Canyon may be written there. However, we encourage all parties to get their permits at a park visitor center when possible, to obtain the most up-to-date river information and conditions.

River guide booklets are available for purchase at park visitor centers. If you would like to order them in advance of your trip, call the Big Bend Natural History Association at (432) 477-2236 or visit their online internet bookstore at www.bigbendbookstore.org

Leave No Trace principles of outdoor ethics in Big Bend National Park



Plan ahead and prepare:

Big Bend is a land of extremes. Plan on high temperatures in the summer with little to no shade; in the winter freezing temperatures are possible in the Chisos Mountains. Schedule your visit to avoid peak season. Visit in small groups. Split larger parties into groups of 4-6. Use a map and compass to eliminate the use of marking paint, rock cairns or flagging.

Travel and Camp on Durable Surfaces:

Durable surfaces include established trails and campsites, rock, and gravel. Protect riparian areas by camping at least 100 yards from springs, creek beds, and tinajas. Good campsites are found, not made. While on the trail, walk in single file in the middle of the trail, even when wet or muddy. Keep campsites small. Focus on areas where vegetation is absent.

Dispose of Waste Properly:

Pack it in, pack it out. Inspect your campsite and rest areas for trash or spilled foods. Pack out all trash, leftover food, and litter. Deposit solid human waste in cat-holes dug 6 to 8 inches deep at least 1/4 mile from water, camp, and trails. Cover and disguise the cat-hole when finished. **Pack out toilet paper and hygiene products.**

Leave What You Find:

Preserve the past. Examine, but do not touch, cultural or historic structures and artifacts. Leave rocks, wildflowers and other natural objects as you find them. Avoid introducing or transporting non-native species. Do not build structures, furniture, or dig trenches.

Minimize Campfire Impacts:

Campfires are not allowed in Big Bend National Park. In order to cook foods you may use a backpacking stove, portable fuel stove or the barbeque grills in your campsite.

Respect Wildlife:

Observe Big Bend's wildlife from a distance. Do not follow or approach them. Never feed wild animals. Feeding wild animals damages their health, alters natural behaviors, and exposes them to predators and other dangers. Protect wildlife and your food by storing rations and trash securely. Pets are not allowed in the backcountry or on trails. Pets should be on leash and under supervision at all times.

Be Considerate of Other Visitors:

Respect other visitors and protect the quality of their experience. Be courteous. Yield to other users on the trail. Step to the downhill side of the trail when encountering pack stock. Take breaks and camp away from trails and other visitors. Let nature's sound prevail. Avoid loud voices and noises.

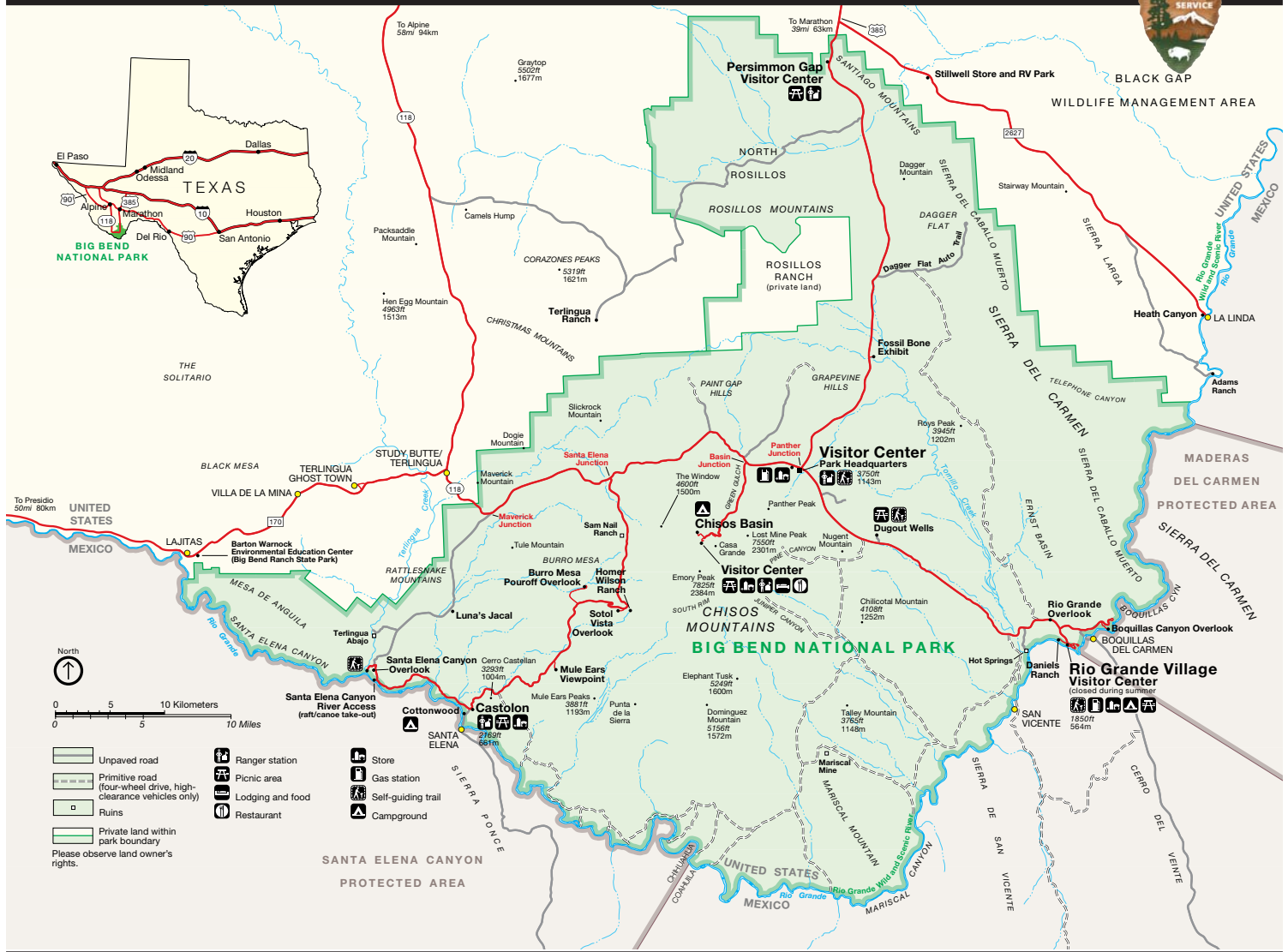


Keep Big Bend Beautiful

For your convenience, barrels for recycling cans, glass, and plastic bottles are located at the entrances of park campgrounds.

D. Barchelder

Park Map



Local Services

Inside The Park (432)

EMERGENCY	911
National Park Service	
General Information	477-2251
Big Bend Natural History Association	
Booksales & Seminars	477-2236
Visitor Centers & Ranger Stations	
Castolon Ranger Station	477-2225
Chisos Basin Visitor Center	477-2264
Panther Junction Visitor Center	477-1158
Persimmon Gap Visitor Center	477-2393
Rio Grande Village Visitor Center	477-2271
U.S. Post Office	
Panther Junction	477-2238
Lodging / Restaurant	
Chisos Mountains Lodge	477-2291
	477-2292
Park Gasoline Service	
Panther Junction (also diesel)	477-2294
Rio Grande Village	477-2293
Campground Stores	
Rio Grande Village	477-2293
Chisos Basin	477-2291
Castolon	477-2222

Outside The Park (432)

Lodging	
Lajitas Resort, Lajitas	877-525-4827
Big Bend Motor Inn, Study Butte	800-848-BEND
Easter Egg Valley Motel, Study Butte	371-2254
El Dorado Motel, Terlingua	371-2111
Gage Hotel, Marathon	386-4205
Heath Canyon Ranch Inn, FM 2627	376-2235
Longhorn Ranch Hotel, Hwy. 118	371-2541
Marathon Motel, Marathon	386-4241
Terlingua Ranch Resort	371-2416
Camping	
Big Bend Motor Inn, Study Butte	800-848-BEND
Big Bend Ranch State Park, Lajitas	424-3327
Big Bend Travel Park, Study Butte	371-2250
Heath Canyon Ranch, FM 2627	376-2235
Longhorn Ranch, Study Butte	371-2541
Ocotillo Mesa RV Park, Study Butte	800-729-1406
Stillwell's Trailer Camp, FM 2627	376-2244
Study Butte RV Park	371-2468
Terlingua Ranch Resort	371-2416
Gas Stations & Grocery Stores	
Big Bend Motor Inn (gas, diesel)	800-848-BEND
Lajitas Trading Post (gas, supplies)	424-3234
Study Butte Store (gas/diesel/groceries)	371-2231
Stillwell Store & Station (gas)	376-2244

Medical Services	
Terlingua Medics	371-2222
Lajitas Infirmary	424-3536
Big Bend Regional Medical Center, Alpine	837-3447
Banks	
Quicksilver Bank & ATM, Study Butte	371-2211
Kennels	
Terlingua Creek Kennels (Oct-April)	371-2348
Alpine Veterinary Clinic, Alpine, Texas	837-3888
Red Wolf Inn of the Big Bend, Alpine, Texas	837-7475
Guide Services	
Big Bend Touring Society, Terlingua	371-2548
Texas Jeep Expeditions	877-839-JEEP
Rio Grande Float Trip Outfitters/Rentals	
Big Bend River Tours, Study Butte	800-545-4240
Desert Sports, Terlingua	888-989-6900
Rio Grande Adventures, Study Butte	800-343-1640
TX River Expeditions, Study Butte	800-839-7238
Horseback Riding	
Big Bend Stables, Study Butte	800-887-4331
Lajitas Stables, Lajitas	424-3238
Spring Creek Remuda, 23 mi. south of Marathon	376-2260
Ben's Hole Creek Ranch, Terlingua	371-2954

Let Safety Be Your Constant Companion

Big Bend is unfamiliar country to most visitors yet it need not be dangerous. Whether hiking the highcountry, rafting the Rio Grande, observing wildlife, or simply driving the scenic roads of this wilderness park, let safety be your constant companion. Spend a moment reviewing these common safety concerns so that you may have an enjoyable visit.

Driving

Many accidental deaths in Big Bend result from car accidents. While driving is a great way to see the park, it can also be dangerous, particularly if you are tired or are going too fast. Drive within the speed limit, 45 mph maximum in the park, and watch for javelina, deer, and rabbits grazing along road shoulders, especially at night. Seat belts are required at all times. Remember, too, that you share the road with bicyclists and pedestrians. Some park roads, such as the road into the Chisos Mountains Basin, are steep and winding and require extra caution. The Basin Road is not recommended for RVs over 24 feet or trailers over 20 feet. Finally, always select a designated driver before drinking alcoholic beverages.

Heat

Desert heat can kill you. Carry plenty of water (at least one gallon per person, per day) and wear a hat, long pants, long-sleeved shirt, and sun screen when hiking. Springs are unreliable and often dry up for a portion of the year, despite what maps indicate. Avoid hiking during mid-day in summer; travel as wild animals do, in the early morning or late evening hours rather than during the heat of the day.

Mountain Lions

Big Bend is mountain lion country, especially the Chisos Mountains. While lion attacks are rare, three have occurred in the last 10 years. Should you encounter an aggressive mountain lion, hold your ground, wave your arms, throw stones, and shout. Never run. Keep groups together and consider hiking elsewhere with young children if you come across a special mountain lion warning sign posted at a trailhead.

Desert Wildlife

Black bears, javelinas, skunks, coyotes, and raccoons frequent Big Bend's campgrounds. Although they sometimes appear tame, all of the animals in the park are wild, and could pose a threat to your health and safety if you attempt to approach or feed them. Never feed any of Big Bend's wildlife. To prevent these creatures from becoming habituated to people, store all food, coolers, cooking utensils, and toiletries in a hard-sided vehicle, preferably in the trunk of your car. Food storage lockers are available for hikers and campers in the Chisos Mountains. Dispose of garbage properly. At the Chisos Basin Campground, throw away garbage in the special bear-proof dumpsters and trash cans provided. Remember to report all bear or lion sightings to a ranger.

Hiking

Exploring this desert and mountain country on foot requires both mental and physical preparation. Trails vary from well maintained in the Chisos to primitive and barely visible in the desert. Plan hikes within your ability. Take along a map and compass and know how to use them. Flash floods may occur following thunderstorms so avoid narrow canyons or dry washes. Stay low and avoid ridges during thunderstorms. Carry a flashlight and a first aid kit. Let someone know where you're going and when you expect to return. If you get hurt or lost, stay in one place to conserve water and energy. Signal for help; three blasts on a whistle is a well-recognized distress call. In remote areas, a large "X" marked on the ground by any means visible from the air will signify that help is needed. Carry a signal mirror. Remember to obtain a free backcountry use permit before heading out overnight.

Fire

Fire danger is always an important safety consideration in Big Bend. Wood or ground fires are not permitted in the park, and you must exercise caution in the use of gas stoves, charcoal grills, and cigarettes. Big Bend has experienced drought conditions in the past several years and some restrictions may apply to the use of these heat sources. Check with a ranger for the latest information about fire safety in the park.

Swimming

Hot weather makes the muddy Rio Grande look very inviting, but swimming is not recommended. Water borne micro-organisms and other waste materials can occur in the river and cause serious illness. The river can be hazardous, even in calm-looking water. Strong undercurrents, deep holes, and shallow areas with sharp rocks and large tree limbs are common and make the Rio Grande unsafe for swimming. If you do choose to swim, wear a life jacket and avoid alcohol.

Poisonous Animals

Venomous snakes, scorpions, spiders, and centipedes are all active during the warmer months. Inspect shoes and sleeping bags or bedding before use and always carry a flashlight at night. While snake bites are rare, they usually occur below the knee or elbow. Pay attention to where you walk and place your hands.

Big Bend truly is wild country. In fact, many people visit precisely because it is so remote and rugged. But remember, as you enjoy the splendor of this great wilderness area, to make safety a priority. By giving forethought to your actions you can have a safe, exciting, and rewarding vacation in Big Bend National Park.

Keep The Wild in Wildlife!

Javelina are wild and can be dangerous...

Never Feed Javelina!





Regulations are strictly enforced!

How Hot?

PANTHER JUNCTION
elevation 3,750 feet

	Avg.High/Low	Avg.Rainfall"
January	61/35	.46
February	66/34	.34
March	77/45	.31
April	81/52	.70
May	88/59	1.50
June	94/66	1.93
July	93/68	2.09
August	91/66	2.35
September	86/62	2.12
October	79/53	2.27
November	66/42	.70
December	62/36	.57
Yearly average:	79/47	15.34"

Temperatures in the Chisos Basin vary 5-10 degrees below these readings, while daytime temperatures along the Rio Grande average 5-10 degrees warmer.



Pets in the Park

Keep your pet on a leash (or in a cage) at all times. Pets are not allowed on park trails, or anywhere off established roadways. Pets may not be left unattended in the park. **Please leave pets at home if you plan to hike.**

A National Park is a refuge for the animals and plants living within it. Even if your pet doesn't chase animals, dogs present the image and scent of a historical predator. The result is stress on native wildlife.

Predators such as owls, coyotes, javelina, and lions CAN and DO kill pets here. Even large dogs cannot defend themselves against such predators.

Remember, desert heat is **deadly**. Do NOT leave your pet alone in a vehicle. Pets are not allowed on trails, off roads, or on the river. The nearest kennel service is in Terlingua, 30 miles away.



National Park Service
U.S. Department of the Interior

Big Bend National Park
PO Box 129
Big Bend, TX 79834
www.nps.gov/bibe



Big Bend Natural History Association
PO Box 196
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www.bigbendbookstore.org

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PO Box 200
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www.bigbendfriends.org

EXPERIENCE YOUR AMERICA

Join Our Family



Please accept our invitation to join the Big Bend Natural History Association

The Association's goal is to educate the public and increase their understanding and appreciation of the Big Bend Area and what it represents in terms of our historical and natural heritage. You can be an important part of this effort when you become a member.

BBNHA was founded in 1956 to aid educational, historical, and scientific programs for the benefit of Big Bend and its visitors.

Your Benefits as a Member

- A 15% discount on items sold by BBNHA
- A 10% discount on most seminars
- A subscription to *The Big Bend Paisano*
- Current Big Bend calendar
- Discounts at many other association bookstores in visitor centers at other national park sites
- Opportunity to support scientific, educational, and historical programs in Big Bend

NEW - Do more with your dues!

Purchase a dual annual membership in both BBNHA and the Friends of Big Bend National Park for only \$100.

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- Operate book sales outlets in Big Bend National Park and Amistad National Recreation Area
- Publish trail guides and brochures and assist with the publication of *The Big Bend Paisano*
- Sponsor an on-going Seminar program
- Provide annual grants for research projects and administer grants and gifts received for the park
- Support the park's volunteer, Junior Ranger, and educational outreach.

Yes!

Please enroll me as a member of BBNHA

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- New Member Renewal

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City _____ State/ZIP _____

Make check payable to BBNHA or charge to:

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Card No. _____ Exp. Date _____

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DETACH AND MAIL TO:

BBNHA, P.O. Box 196
Big Bend National Park, Texas 79834
Telephone: (432) 477-2236
e-mail: bibe_bbnha@nps.gov