



The Paisano

The official newspaper of
Big Bend National Park and the
Rio Grande Wild & Scenic River

Volume 28, number 2
Summer/Fall 2008



The American snout (*libytheana carinenta*) butterfly

Getting Started

8 What to See & Do

Find out how to make the most of your time in the park. Recommendations and suggested trip itineraries for one day, three day, or week long visits can be found here.

9 Day Hikes

Find descriptions of many of the most popular easy and moderate hiking trails here. Detailed descriptions of each trail include length, average time required, difficulty, and location.

16 Park Map

Don't know where you are? The park map can help. Detail maps of the Chisos Basin and Rio Grande Village are also found here. A list of useful phone numbers for services both in and outside the park is also included.

Little, humble, and overlooked

WELCOME TO BIG BEND NATIONAL PARK AND THE RIO GRANDE WILD and 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. This issue of the *Big Bend Paisano* explores animal species often overlooked by many visitors.

Many visitors are drawn to the Big Bend by the species that make this place famous: mountain lions, black bears, javelina, and scores of birds. These sought-after animals are merely the tip of the iceberg. While the Chihuahuan Desert landscape seems at first lifeless, this environment hosts a complex web of life. Focusing only on the most popular or well-known species is a disservice to the diversity that Big Bend National Park is host to. The little, the humble, and the overlooked species tell us important things about this place as a whole. The articles in this issue document some of the wildlife that you *may* not have noticed before.

Superintendent's Welcome

Welcome to Big Bend National Park and the Rio Grande Wild & Scenic River, two of THE most special places administered by the National Park Service. We trust that you will have a wonderful time as you explore and experience these great parks.

Too often when visiting national parks such as Big Bend, one expects and usually finds that the spectacular and publicized sights demand the visitor's attention and overwhelm one with beauty, size, or other qualities. Subtlety and patience are required for a deeper look into the desert landscape.

Greater understanding of the complexities that exist in the Chihuahuan Desert will be your reward. Park staff work diligently to learn more about all of the resources of Big Bend, the popular and the obscure, in order that we may all understand and protect it better.

National parks like Big Bend belong to us all, and as such we have a shared stewardship role. Please be mindful of that as you spend time in YOUR national park. Leave only footprints and take only memories.



William E. Wellman
Superintendent William E. Wellman

What's Inside

- Backcountry Planning 14
- Border Information 2
- Dayhikes 9
- Entrance Fees 2
- General Information & Services 12
- Important Phone Numbers 16
- Keeping Wildlife Wild 11
- Leave No Trace 13
- Park Maps 16
- Park News 4
- Park Partners 3
- Pets in the Park 13
- Safety 15
- Weather and Climate 15
- What Can Kids Do Here? 13
- What to See and Do 8

Features

- Birds & Birdwatching 10
- Desert Sanctuary 6
- Featured Hike 9
- Hypothetical Species 7
- Little Owls 5
- Nature's Grocery Store 4
- Night Skies 10
- No Regrets 7
- Summer Profusion 5

What is a Paisano?

Paisano is a Spanish word meaning countryman or peasant that is used throughout the American southwest as a nickname for the greater roadrunner.



Big Bend on the Internet

Plan your next trip, or learn more about the fantastic resources of the Big Bend by visiting the *official* National Park websites. These are your best source of information for weather conditions, river levels, research, park news, trip planning, and more.

Big Bend National Park:

<http://www.nps.gov/bibe/>

Rio Grande Wild & Scenic River:

<http://www.nps.gov/rigr/>

Got Water?

Carry and drink plenty of water—at least 1 gallon per person per day.

Emergencies

Call 911 or 432-477-2251
24-hours a day or contact a Park Ranger.

EXPERIENCE YOUR AMERICA™

National Park Service
U.S. Department of the Interior
Big Bend National Park
Rio Grande Wild & Scenic River
PO Box 129
Big Bend National Park, TX 79834





National Park Service
U.S. Department of the Interior

Big Bend National Park
Rio Grande Wild & Scenic River

The *Big Bend Paisano* is published by the National Park Service for the orientation and education of visitors to Big Bend National Park and the Rio Grande Wild & Scenic River.

National Park Service

Editor: Eric Leonard, Park Ranger
Chief Naturalist, David Elkowitz
Superintendent, William E. Wellman

The National Park Service was established on August 25, 1916. . . "to conserve the scenery and the natural and historic objects and the wildlife. . . 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." Authorized by congress in 1935, and established in June 1944, Big Bend National Park preserves the most representative example of the Chihuahuan Desert ecosystem in the United States. As conservation educators, the park's Division of Interpretation and Visitor Services provides guided walks, talks, evening slide programs, workshops, and other educational activities as well as written materials such as this newspaper.

Big Bend Natural History Association

Executive Director, Mike Boren



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.

Photograph Credits

When possible *The Paisano* proudly uses photographs of the park taken by visitors and submitted to the website visitor photo gallery. These photographs bear the photographer's name; all uncredited images are NPS photographs.

On matters relating to this publication:

National Park Service
Editor, The Big Bend Paisano
PO Box 129
Big Bend National Park, TX 79834
bibe_info@nps.gov

Park Mailing Address

Big Bend National Park
PO Box 129
Big Bend National Park, TX 79834

Phone

(432) 477-2251

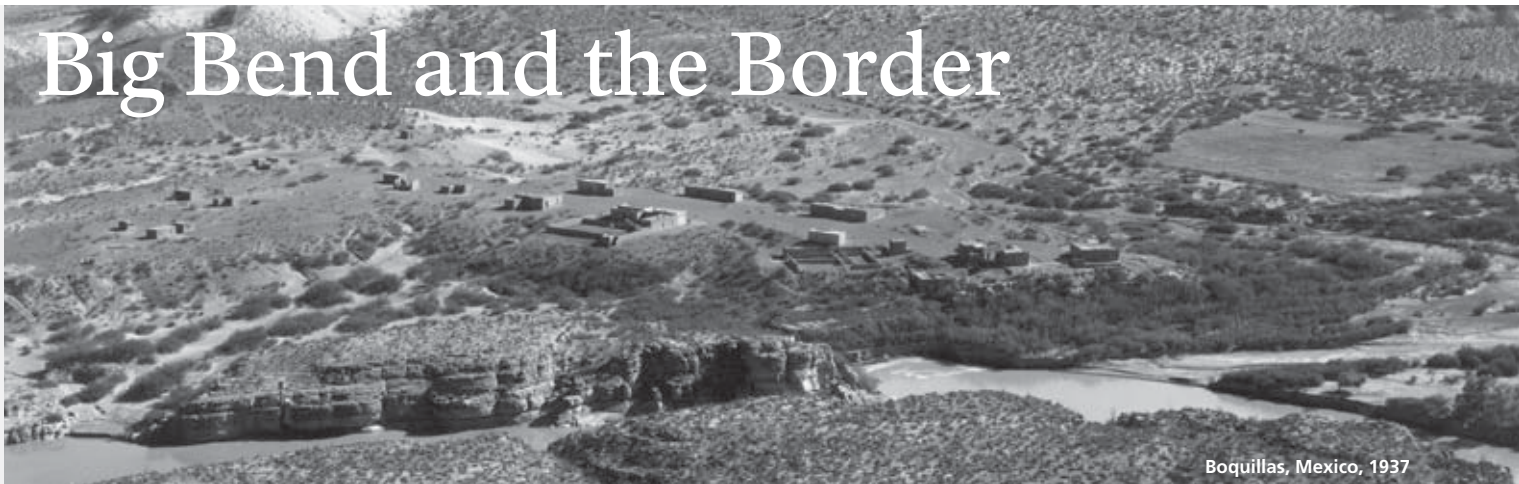
Official Park Websites

www.nps.gov/bibe/
www.nps.gov/rigr/

The National Park Service cares for the special places saved by the American people so that all may experience our heritage.

EXPERIENCE YOUR AMERICA™

Big Bend and the Border



Boquillas, Mexico, 1937

Viewing the sunset against the Sierra del Carmen mountains is a signature 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 have led to a number of important changes that affect the international boundary in Big Bend. 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 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 Del Rio and Presidio, Texas.

The U.S. Attorney's Office has indicated that it will prosecute any criminal violations regarding any 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.

When Visiting A Border Park

Big Bend National Park shares the border with Mexico for 118 miles. This is a remote region. *Visitors should be aware that drug smuggling routes pass through the park.*

If you see any activity which looks illegal, suspicious, or out of place, please do not intervene. Note your location. Call 911 or report it to a ranger as quickly as possible.

Each year hundreds of people travel north through the park seeking to enter the United States. 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, note your location and immediately call 911 or contact a ranger as soon as possible. Lack of water is a life-threatening emergency in the desert.

Fees: Your Dollars at Work

Why Do Parks Charge A Fee?

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 help offset the difference.

Where Does Your Money Go?

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 their upkeep and to upgrade those areas. Eighty percent of the money collected here stays in Big Bend National Park.



Hand-crafted items made in Boquillas, Mexico can now be purchased legally at the Chisos Mountain Lodge, camper stores and the bookstore in the Panther Junction visitor center.

Border Merchants

Mexican Nationals may approach you from across the river to sell souvenir items (walking sticks, bracelets, crafts, etc.). If you agree to look at/or 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 the crossings in the future.

Sotol walking sticks and other handcrafted items made in Boquillas, Mexico can now be purchased legally at a number of sales outlets inside and outside of the park.

Entrance Fees at Big Bend National Park

Private noncommercial automobile
\$20 (valid for 7 days)

Single entry (foot, bike, motorcycle, etc.)
\$10 (valid for 7 days)

Big Bend Annual Pass
\$40 (valid for one year from month of purchase)

Interagency Annual Pass
\$80 (This pass will be valid for one year from month of purchase for entrance fees to federal public land fee areas)

All currently valid passes will be accepted until expired, including the Golden Eagle Pass, Golden Age Passport, and Golden Access Passport.

How Is Your Money Used?

Your entrance and campground fees help Big Bend National Park complete important projects that directly benefit you and other park visitors.

Recent Projects at Big Bend Made Possible By Your Fees:

- Reconstruction of the Rio Grande Village nature trail boardwalk
- Installation of a toilet at Hot Springs
- Develop a visitor center at Castolon
- Improvements to river access boat ramps

Current Projects:

- Major expansion of the Panther Junction visitor center
- Castolon historic district exhibits

Park Partners



The concept of partnership is deeply embedded in the management philosophy of Big Bend National Park. As a result, the park has developed a number of effective partnerships to further the mission of the National Park Service at Big Bend.

Big Bend Natural History Association

The Big Bend Natural History Association (BBNHA) was established in 1956 as a private, non-profit organization. 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. BBNHA champions the mission of the National Park Service of interpreting 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.



PO Box 196
Big Bend National Park, Texas 79834
432 477-2236

www.bigbendbookstore.org

The Association's ongoing projects include:

- Operate book sales outlets in Big Bend National Park and Amistad National Recreation Area
- Publish trail guides, 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 programs

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.

Additional information including seminar details and schedules is available on the BBNHA website, www.bigbendbookstore.org or call 877 839-5337. There are still slots available for the upcoming sessions. Sign up today!

Shopping Options

For those who prefer to shop in person, or during your visit, BBNHA operates sales outlets at Amistad National Recreation Area in Del Rio, Texas, and in Big Bend National Park Visitor Centers at the Chisos Basin, Panther Junction, Persimmon Gap, Castolon, and Rio Grande Village.

When preparing for a future visit, or remembering a previous trip, BBNHA offers both phone and internet sales. Phone orders can be placed during business hours seven days a week by calling 432 477-2236. Please browse through our online store at <http://www.bigbendbookstore.org/> You can enjoy safe, secure shopping in the comfort of your home. We offer many categories, authors, subjects, and titles.

All profits from your purchases are used to provide assistance to the National Park Service in Big Bend National Park and Amistad National Recreation Area.

Friends of Big Bend

Founded in 1996, the Friends of Big Bend National Park is a private not-for-profit organization with a mission to support, promote, and raise funds for Big Bend National Park in partnership with the National Park Service and other supporters who value the unique qualities of this national resource on the Rio Grande. The Friends of Big Bend National Park has funded a range of critical projects, including wildlife research programs, the purchase of equipment to monitor air and water quality, and the construction and renovation of Park infrastructure.

The Friends of Big Bend National Park host a yearly membership event and in-park tour, which is an excellent opportunity to get to know the board of directors governing the organization and perhaps even to get more involved with the group. Also, several fund-raising events occur in the major Texas cities throughout the year and are another opportunity to get involved and help with the mission of the Friends Group. The group's website is a great place to look for upcoming events and current happenings.



PO Box 200
Big Bend National Park, Texas 79834
432 477-2242

www.bigbendfriends.org

Get In On the \$30-Per-Plate Fund Raiser

Big Bend custom license plates are now available for your car, truck or motorcycle from the state of Texas and most of the cost will be used to help preserve and protect Big Bend National Park, one of the world's last great wildernesses. It may be the most fulfilling contribution you'll ever make.



Volunteers in the Park

Volunteers are a valuable and valued part of our operation and our community. Last year over 200 volunteers contributed approximately 45,000 hours of service to Big Bend National Park. Some service groups come for a few days, other volunteers stay for months. Some are students; others are retirees looking for adventure during their "golden years."

Most of these volunteers work in visitor centers and as campground hosts; however, volunteers also help in science and resource management, maintenance, and administration. Regardless of age or background, these folks share a desire to make a positive contribution to the preservation and management of Big Bend National Park.



Honor Roll

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

- Ashley Asmus
- Barbara & Bill Baldwin
- Marty & Howard Benham
- Joyce Berke
- Gretchen & Russell Berquam
- Barbara Bracken
- Judy Brinkerhoff
- Royann & Royce Brockett
- Jane Brown
- Sue Buchel
- Kay & Doug Combs
- Wanda & Mike Copeland
- Ed Davis
- Bob Douat
- Aletha & Roy Ellis
- Amanda Evans
- Lynda & Bob Fanning
- Kathi Hambly
- Claudia Hartley
- Bob & Ruthine Hennessy
- Timothy Hopp
- Elaine and John Jonker
- Sally & Bob Jones
- Joan & Raymond Kane
- Mary & John Kelling
- Mark Kirtley
- Magan Lippman
- Wyley & Mildred Mauldin
- Pat & Marshall McCall
- Sandi & Jay Mengel
- Emily Mount
- Glenda & Robert Overfelt
- James Priddy
- Pam & Mike Rash
- Linda Richardson
- Maryann & Ted Rowan
- Fran & Howard Smith
- Janice & Val Swanson
- Linda & Kenn Sutton
- Jennette Timmer
- Ally Catherine Wild
- Lynn Williams
- Bob Wirt
- Reine Wonite

Join us and support your park!

Become a member and create a lasting relationship with Big Bend National Park.

Do more with your dues!

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

Member Benefits

Membership benefits include a 15% discount in BBNHA bookstores; a 10% discount on most seminars; a subscription to the *Big Bend Paisano*; a current Big Bend calendar; discounts at many other association bookstores in other national park sites; and the opportunity to support scientific, educational and research programs in Big Bend.

Annual Dues

- Individual \$50
- Associate \$100
- Corporate \$200
- Joint Membership (W/ FBBNP)

Life Membership

- Individual/Family \$500
- Corporate \$1000
- Benefactor \$2500

- Renewal
- New Member

Name _____

Address _____

City _____ State _____ Zip _____

Make checks payable to BBNHA or charge to:

Visa Mastercard Discover

Card Number _____ Exp. Date _____

Signature _____

Detach and mail to: Big Bend Natural History Association,

PO Box 196, Big Bend National Park, Texas 79834

Telephone: 432 477-2236

You can also join online at www.bigbendbookstore.org

Park News

Panther Junction Visitor Center Expansion Completed

The long anticipated remodeling and expansion of the Panther Junction Visitor Center is complete. The visitor center reopened to the public on May 1. The finished facility features new exhibits that provide an overview of the resources and recreational opportunities that Big Bend offers. Additionally, rehabilitated and handicap-accessible restrooms were part of the project. The larger space will allow park staff to better serve visitors for years to come.

Construction began in August of 2007, and was completed in April, 2008. This was a two-phase project, beginning with the rehabilitated restrooms, followed by the main visitor center facility. The project was made possible through a partnership effort that included funds from the park's entrance fee program, the Big Bend Natural History Association, and the Friends of Big Bend National Park.

Emory Peak Trail Reroute Project

This spring the park's trail crew began work on rerouting the Emory Peak trail. The existing trail to the Emory Peak summit reaches the highest point in the Park (7,825' / 2,386 m). Presently a nine-mile round trip hike with a 2,400' elevation gain, the hike up Emory Peak is strenuous, especially in its final portion. The existing Emory Peak Trail in its current condition is no longer practical to maintain, it is very difficult for hikers, and is adversely impacting natural and cultural resources. The lower portion of the existing trail is extremely eroded and very poorly designed, climbing straight up drainages and ridge lines. The existing running slope of the trail traverses grades of up to 40%, making it prone to erosion and generally difficult for hikers to navigate.

The final section of the trail will be rerouted over the next several years with easier grades and spectacular overlooks into the Chisos Basin and Boot Canyon. The rerouted trail will be one mile longer than the existing route, but will be an easier, more rewarding experience, and a sustainable trail for future visitors climbing to Big Bend's highest point.

River Road Maintenance

A National Guard unit spent 60 days in Big Bend National Park repairing several badly eroded sections of the River Road, one of the park's primitive backcountry roads. The road repairs were part of a cooperative effort between the Park, the National Guard, and the U.S. Border Patrol. This road repair benefits both the U.S. Border Patrol and park visitors by allowing easier access and travel on the River Road. The work was completed to National Park Service standards for backcountry road maintenance and with park oversight. The road work is greatly assisting the park in its long-term maintenance of this backcountry access route by restoring the road to a baseline condition that is maintainable. Park Superintendent Bill Wellman said, "We are pleased with the assistance and the partnership efforts of the National Guard and U.S. Border Patrol to restore and maintain several difficult sections of dirt road after record rainfall eroded these segments in recent years."



Top: A river environment touch table provides hands-on learning in the new Panther Junction Visitor Center exhibits.

Middle: The park trail crew at work on the reroute of the Emory Peak trail. The lower portions of this trail will be rerouted over the next several years.

Bottom: National Guard work crew along the East River Road.

Nature's Grocery Stores

Park Ranger Mary Kay Manning

If you were an alien researcher who wanted to see a large number and variety of humans, where would you look? The neighborhood grocery store would be a good start. These stores are essential for our survival, almost everyone visits them, and there's constant activity. Naturalists in search of wildlife employ a similar strategy: look for the nearest "natural" grocery store.

In Big Bend in the summer, that's the century plant, a species of agave that grows throughout the Chisos Mountains. Its broad, spiky, grayish-green leaves grow in a basal rosette for decades, sometimes up to 40 years. When the time is right, it shoots up a flowering stalk, growing up to 6 inches a day, which may reach 20 feet in height. Numerous side branches support huge clusters of yellow flowers. Watch one of these plants for a while and you'll see all sorts of animals shopping for food.

Perhaps most noticeable along the bloom stalk are the large leaf-footed bugs, named after the flattened leaf-like appearance of the femurs on their hind legs. Bright orange feet and antennae tips stand out in contrast to the insect's dark brown body. Their mouthparts are designed for piercing plant tissue and sucking out the sweet energy-rich

sap; you may see numerous tiny holes on the stalk from their feeding.

Most hungry animals skip the sap and head directly for the nectar. Century plants in Big Bend produce most of their nectar at dusk, a strategy aimed at attracting nocturnal pollinators. Sit near a century plant after dark and you may see bats hovering at the flowers throughout the night. While 19 of the 20 species of bats found in Big Bend National Park feed on insects and other arthropods, there's one species, the Mexican long-nosed bat, which feeds on nectar, particularly the nectar of blooming century plants. Its long muzzle and tongue, which it can extend up to three inches, enable it to reach deep into flowers to reach the nectar. In doing so, the bat's face becomes covered with pollen, which it carries from flower to flower. This migratory bat is found in Big Bend only during the summer months when the century plants bloom; the park protects one of only two known roosting sites for this bat in the U.S. Due to its limited range in the U.S. and threats to its habitat in Mexico, the Mexican long-nosed bat is a federally-listed endangered species.

While long-nosed bats are the most efficient pollinators of the century plants, many other animals also feed on the nectar and transport pollen during the day. Look for bees, wasps, butterflies, beetles, and other insects swarming in and around the flowers. Some insects "shoplift" the nectar without conducting any pollination in exchange. Honeybees, for example, are too small to brush against the flowers' reproductive organs, so they transfer little pollen. Some beetles are too large to fit into the flowers, so they chew into the flower base to reach the nectar.

Watch for hummingbirds, particularly black-chinned and Lucifer, feeding on century plant nectar. Male black-chinned hummingbirds establish territories around blooming plants and aggressively defend them, while other hummingbirds forage at undefended plants. Rufous hummingbirds often claim a single century plant as their own, perching at the top of a plant and driving off all other birds. Even acorn woodpeckers and Scott's orioles drink the nectar, although the orioles and other birds also visit century plants to eat the insects that are feeding on the nectar. You may also see a rock squirrel climbing high into a century plant to feed on insects, flowers, and fruit.



The century plant (*Agave havardiana*).

As in our human world, these "grocery stores" support entire communities of nectar-feeders and insect-eaters, comprised of mammals, birds, and insects. Day or night, you can always find creatures gathering food at the 24-hour supermarket known as the century plant.

A Hypothetical Species?

Park Ranger Bob Hamilton

The man seemed a little hesitant as he approached the visitor center desk one morning last spring. He was dressed in hiking garb: well worn high-quality boots, broad-brimmed hat, nice hiking trousers, and a long-sleeved tan shirt with a pen protruding from the left front pocket. By my estimation, he had the look of an experienced desert visitor.

He looked at me and said “I need to report a wildlife observation.” I replied, “I’ll be glad to fill one out for you if you provide the information.” This is where things started to get very interesting.

When asked the name of the animal, he said “I saw a *black mountain lion* while I was hiking down Pine Canyon last evening.” He then described a large black cat moving slowly across the trail at approximately 6:30 PM. The sun had just dropped behind the Chisos Mountains but visibility was still good. Asked for an estimate of weight, body length, tail length, shoulder height and any other critical data, he provided dimensions of an animal that could only be an adult mountain lion in Big Bend National Park.

As our conversation continued, I learned that the man is a frequent visitor to Big Bend and travels here from a large East Texas city where he is a professor at a university. He has an obvious interest in and curiosity about all facets of the park and I could tell that he knows the Chihuahuan desert

ecosystem well. Clearly though, the man was convinced that he had seen an animal that, in the judgment of wildlife authorities in the western hemisphere, simply does not exist!

Throughout the entire range of the mountain lion, a black, or more appropriately, melanistic phase lion has never been captured in a formal scientific study or found as a road killed specimen. A black mountain lion has never been reported by a trapper or hunter. No report of a black lion has ever been filed by individuals while training lion dogs. In the absence of a verifiable specimen, black mountains are thought not to exist!

I was, however, intrigued by the visitor’s report for a very good reason. Through the 1800’s and into the early 1900’s many jaguar sightings occurred in Texas, mainly confined to southern and eastern counties of the state. While adult jaguars are larger on average than adult mountain lions, the jaguar is known to have a black, or melanistic color phase. With jaguar sightings confirmed recently in Arizona, is it possible that a black phase jaguar wandered into Pine Canyon?

While spotted jaguars are most often seen, the melanistic phase of the jaguar has seldom been observed north of Central America, so it is extremely unlikely that the animal the visitor had seen was a jaguar. Other visitors though, have reported seeing black mountain lions in Big Bend. Such reports of lions seen during late evening, early morning,



The presence of the jaguarundi (*Herpailurus yagouaroundi*) in Big Bend is still uncertain.

or nighttime may be normal colored lions whose appearance has been obscured by poor light conditions.

This record, however, begs the question: are there species of animals in Big Bend that we do not know about? Given that there are places within Big Bend National Park that remain unvisited and free of human footprints for years at a time, is it possible that there are species present but that remain on the “unverified” list?

More frequently reported by visitors to Big Bend is another member of the cat family: the jaguarundi. Often called Texas’ rarest cat of all, the jaguarundi is a small felid that reaches a maximum size only slightly larger than a domestic cat. Like the mountain lion, it is an unspotted cat, and occurs in three color phases: black, reddish-brown, or brownish-gray. Little is known about the preferred habitat of the jaguarundi, but it is thought to inhabit thorny shrublands, where

it hunts for birds, rabbits, and small rodents. Areas of Big Bend seem to meet both food and habitat requirements for this unique cat but, for now, it remains on the unverified list of animals that may be found in Big Bend.

Park personnel are very interested in learning the details of wildlife observations and encourage visitors to report wildlife observations. In the case of rare or undocumented species, the observer should submit detailed reports, including not only field marks and size, but also behavior. Photos or field sketches are always helpful.

It is exciting to think that, within the realm of the park, there may be animals that travel the remote canyons and secluded ridges under our radar, without our knowledge of their presence. One of the most important values of this magnificent park lies in the mystery of the place; here, you may still contribute to the verification of a species heretofore thought not to exist in the park.

A Summer Profusion

Park Ranger Angelina Yost

To some visitors, Big Bend appears as a barren desert wasteland, definitely a place to avoid in the hot summer months. But for those who choose to brave the searing heat, they may be surprised by a profusion of life, especially in the late summer.

Most of Big Bend’s moisture, an average of around ten inches a year, comes in the form of summer monsoons thunderstorms during the months of July, August and September. With this much needed precipitation comes life in the form of summer flowers, green leaves, frogs, toads and many other creatures. One of these critters comes out in such profusion that it nearly changes the appearance of the road.

Although only 4-6 inches long, a driver may find five or more of them in less than 100 feet. It may cause you to wonder what kind of creature would be brave enough to attempt crossing roads while tires are plummeting down at them. You may eventually feel compelled enough to slow down, or even stop to examine these road martyrs.

If you do stop, you will find that these animals are not intentionally suicidal, but rather slow-moving desert millipedes. The speed of the desert millipede is limited due to the large quantity of short legs, increasing their risks of becoming road kill.

They have two pairs of legs for each body segment, differing from centipedes which have one pair per body segment. Do they have a thousand legs? The number usually ranges from 80-400, depending on the species and the age, but new body segments are added every time they shed. Although they may live up to ten years or more, it is hard to determine the exact number of legs unless you count them. Be forewarned! If disturbed, millipedes curl up into a coil to protect its fragile legs and soft undersides. Additionally, each body segment has two poison glands, and under duress will secrete a noxious fluid along the side of its body. This substance can burn the exoskeleton of invertebrates, the skin and eyes of larger predators, but is usually only an irritant to humans. If you don’t want to count the number of legs, just enjoy the wavelike pattern as they glide determinedly across the tarmac.

All these legs make them adept at burrowing, a vital trait to survival in this extreme environment. Millipedes require a high level of humidity so they spend most of their time underground in the moist microhabitats of their burrows. Millipedes are also ectotherms, relying on heat from outside their bodies. Thus they remain underground unless the air is warm and moist. So, after a summer monsoon rainstorm, look out!



The desert millipede (*Orthoporus ornatus*).

When millipedes do come out, they serve a valuable function in the desert ecosystem. They feed on dead plant and animal matter, recycling nutrients back into the soil. This is especially important because natural decomposition can take years due to the dry conditions of the desert environment.

Are millipedes related to insects? Millipedes belong to the Phylum Arthropoda. Arthropods, the largest phylum of animals, have segmented bodies, with appendages on at least one segment. Insects, spiders and crustaceans are other examples of arthropods. While insects generally have three body segments and six legs, millipedes, centipedes and their relatives, a sub-phylum called Myriapods, have many body segments, each with one or two pairs of legs.

When asked about the wildlife of Big Bend, most people would not name any arthropods. But, after your hundredth sighting following a summer thundershower, you may consider millipedes as worthy candidates on your wildlife list. If by chance you are here to witness the amazing transformation of the desert after a rain, observe not just bright new leaves and summer flowers, but also look underfoot. What had appeared like a lifeless landscape for nearly nine months of the year, overnight is suddenly teeming with little critters like millipedes. So take time to slow down and notice not just the millipedes, but also other dramatic changes that could only occur during the hottest, and wettest months of the year.

A Desert Sanctuary

Common everywhere in the Big Bend area, soars the red-headed turkey vulture. Where life is, there is death, reasons the vulture; and where there's death, there's hope.

~Edward Abbey



Big Bend National Park is much more than just a recreational destination. It is a sanctuary of natural and cultural resources—a living museum for all the world. Conserving this heritage is a task the National Park Service cannot accomplish alone. All of us serve a critical role in maintaining Big Bend's sanctuary for the future.



Keep wildlife wild. Human foods are not healthy for wildlife. Feeding wild animals is illegal and can cause injury or death to the animal. Keep food in a hard-sided vehicle or food storage locker where provided.



Please respect the peace and quiet of Big Bend's unique environment and protect the subtle sounds of nature by traveling quietly.



You are an important resource, too. Use common sense and good judgement to protect your own safety and take advantage of our educational programs to enhance your knowledge of Big Bend.



Collecting any natural or historical feature or object is strictly prohibited. Leave the park intact for others to enjoy. If you witness any collecting, report it to a park ranger as soon as possible.

No Regrets

Park Ranger Ben Cramer

No regrets Coyote. We just come from such different sets of circumstance.

-Joni Mitchell



D. JAMES

A few years ago, during a freak spring snowstorm, one of our park rangers received word of a large white bird sitting at the side of the main road. Since it was an unusual report, he naturally wanted to see what kind of bird it was, so headed out to look. Instead of finding the bird, all he found was a pile of white feathers and some blood in the snow. Undaunted, and perhaps a bit intrigued by his find, he followed the bloody trail out into the desert. He hadn't gone very far when he spied a coyote with a large, very dead, white bird hanging from its jaws. It looked like a snow goose, indeed an unusual bird to find in the desert, which had likely come down in the storm. Instead of accepting that fate had prevented him from seeing this rare bird—alive anyway—he made the decision to somehow take the bird away from the coyote and add it to the park's collection of unique avifauna. In something akin to a passage from a Hunter Thompson novel, a chase ensued between man and beast. Now, coyotes are strong runners and have been observed at speeds

up to 40 mph, but not with large, dead birds in their mouths. Before it had gone very far, the coyote's burden, coupled with its sense of self-preservation, caused it to drop its prize and trot a safe distance away to reassess the situation. The ranger quickly grabbed the bird and turned for the road, occasionally looking back at the coyote, who sat mournfully watching his dinner being carried away. The bird, it turns out, *was* a snow goose and is still part of our collection. As for the coyote—well, it probably had to settle for kangaroo rat or road-kill rabbit instead of a full-course, gourmet goose dinner—no regrets coyote.

You're not likely to see a coyote carrying around a snow goose while visiting Big Bend National Park, but you might just see the big, bushy tail of one as it disappears into the brush, or hear their yips, yelps and wails in the night. In fact, the coyotes that sing for us now are likely the descendants of coyotes that sang for people who lived here long ago.

The Comanche and Apache, who lived in the Big Bend over a century ago, tell stories about Coyote as a trickster who either fools others with his clever nature, or gets into trouble by being too smart for his own good. The stories ring true...

It is well documented that the coyote is an intelligent animal, capable of learning from experience. When domestic livestock first appeared in their habitat, it's no surprise that coyotes quickly learned it was easier to drag lambs and calves away from the herd than it was to run down a rabbit. Such behavior placed coyotes in direct conflict with humans, and over the years, hundreds of thousands of coyotes have been shot, trapped, and poisoned in an attempt to stop their predation of livestock. Despite this pressure, coyotes have shown a great ability to adapt to the advance of human civilization.

They've maintained their populations and expanded their ranges throughout North America. Ironically, the coyote's resilience is likely due in part to the traits it has in common with its greatest enemy—humans. The coyote is smart, enduring and opportunistic. He communicates well and learns from his experiences. In areas where they aren't tempted away from their natural diet by livestock, coyotes exist largely unmolested by humans and serve as integral parts of the ecosystems in which they live. It is tempting to imagine that the yips, yelps, and howls of Big Bend's coyotes are exaltations of joy at knowing how good they've really got it. Hopefully the descendants of the coyotes we hear now will serenade and inspire generations of people who visit the park long into the future.

Little Owls: Elves and Screeches in Your Park!

Park Ranger Maria Lavender



S. HENCH

Listen in the night: what do you hear? You might be witness to one of the great predators of the night: Big Bend's little owls! Though most visitors are familiar with Big Bend's larger owls like the barn owl and great horned owl, there are some owls in the park that are less than 10 inches in height. Some of the little owls are very rare, but even the more common ones are rarely sighted. Superb at camouflage, owls blend in with their environment flawlessly, and many take refuge during the day only to fly in the darkening hours of twilight. Even more perplexing, many of the little owls do not "hoot," and their trills, screeches, and whistles are mistaken for the sounds of other creatures.

All of the little owls in Big Bend nest in cavities made by woodpeckers or flickers—except one, the burrowing owl. As the name suggests, burrowing owls (*Athene cunicularia*) nest in the ground, usually in abandoned burrows made by prairie dogs and ground squirrels. Burrowing owls are in Big Bend year-round and are crepuscular, hunting during the hours of twilight, but are also seen during the cooler parts of the day perched with their long skinny legs atop their burrow or a nearby fencepost. Burrowing owls make several vocalizations but are most famous for their rattlesnake mimicry, producing a hissing, rattle-like alarm sound if disturbed in their burrow. A fantastic protection for a creature that nests on the ground in the desert!

Both Western (*Megascops kennicottii*) and Eastern screech-owls (*Megascops asio*) are also in the park year-round. Screech-owls are named after their ever-so-romantic screech-like trills they make during the nesting season. Though the Western screech-owl is only found in a grey color morph here, the Eastern screech-owl can be

found in both a reddish-brown and grey color morph in the park. The two species can sometimes be differentiated in the field by their calls: the Eastern screech gives a descending whistle or a single high-pitched trill, the Western screech more typically calls out a series of whistles accelerating in tempo or one short trill followed by a longer trill.

The flammulated owl (*Otus flammeolus*), named for its reddish plumage, can be found nesting in moist woodlands like the Chisos Mountains. The flammulated owl is highly nocturnal and extremely migratory. This night-hunter can be identified by its low, hoarse, single-note hoot and its piercing black eyes; all of the other small owls in Big Bend have lemony-yellow eyes. Another highly migratory insect-eating owl is the elf owl. The aptly-named elf owl (*Micrathene whitneyi*) measures a scant 5 ¾ inches and weighs a mere 1.4 ounces! This sparrow-sized owl makes endearing little chirping and chattering noises, though it can be quite loud for its miniature size.

Owls are most vocal just before the nesting season, to establish territories and to attract mates. Because of the disturbance it might cause, use of audio devices and other loud call-imitations is not allowed in the National Park. Shining flashlights on birds to take photographs or to pick up eye-shine is not advisable either. The best way to experience Big Bend's nocturnal creatures is simply to sit in the quiet darkness of night and listen. Keep a respectful distance, find a place with good woodpecker holes or recently groomed burrows and look nearby for whitewash and the remains of regurgitated owl pellets. With the help of a good guidebook, a strong cup of coffee, and a lot of patience, you too can listen for and identify some of Big Bend's most overlooked wildlife: the little owls.



Top: Elf owl (*Micrathene whitneyi*).

Above: Burrowing owl (*Athene cunicularia*).

What to See and 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.

One Day

The visitor centers at Persimmon Gap, Panther Junction and the Chisos Basin are excellent places to begin your visit. Park staff there can answer your questions, and exhibits provide additional orientation. If time allows, drive to the **Chisos Basin** to take in spectacular views of the **Chisos Mountains**. Walk the 0.3-mile self-guiding **Window View Trail** to get a feel for the mountain scenery and one of the best sunset views in the park.

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. This drive highlights the geologic splendor and complexity that the Big Bend is famous for. There are many 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 Ranch, 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 walk into **Santa Elena Canyon**—one of Big Bend's most scenic spots. Travel to the end of the Ross Maxwell Scenic Drive to access the trailhead; rising water levels on the Rio Grande can lead to flooding as well as the closure of the road and trail. Stay off the shoulders of the roadway when encountering high water areas.

Three Days

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 sunrise and sunset. The historic Hot Springs nearby can be reached via an improved dirt road or a three-mile (one way) hike from the Daniel's Ranch picnic area.

The 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 into the entrance of this spectacular canyon.

One Week

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 drive some of the "primitive" dirt roads. For these, you'll need a high clearance or four-wheel drive vehicle. *Always check at visitor centers for current road conditions, and carry appropriate gear.*

The River Road, Glenn Springs Road and Old Ore Road are some of the more popular primitive roads. A visit to Ernst Tinaja near the south end of the Old Ore Road is a Big Bend highlight. The Pine Canyon Trail, located at the end of the primitive Pine Canyon Road, is an excellent hike to experience firsthand the transition from desert to mountains.

If you don't have high clearance or four-wheel drive, improved dirt roads such as the Old Maverick Road, Dagger Flat and Grapevine Hills will get you "off the beaten path." Hike the Chimneys 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 backcountry use permit is required and can be obtained at park visitor centers.



Camping at Pine Canyon



Overlooking the desert



Floating the Lower Canyons of the Rio Grande

Floating the Rio Grande

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. Outfitters and equipment rental companies are listed on page 16. See "Backcountry Planning" on page 14 for additional information.

Backcountry roads

If you have a high-clearance or four wheel drive vehicle, Big Bend's backcountry roads call for further exploration. There are over 200 miles of dirt roads in the park. Improved dirt roads like the Dagger Flat and Grapevine Hills roads are usually in good condition and accessible to normal passenger vehicles, except following rainstorms. Unimproved dirt roads, such as the Old Maverick Road, Old Ore Road, or the River Road, generally require high-clearance vehicles and/or four wheel drive. *Always* check current road conditions at a visitor center before traveling any of the park's primitive roads. Standard backcountry road conditions are listed on page 14.

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 visitor centers throughout the park, and they offer more detailed information about Big Bend's trails and roads. Attending **ranger-led walks 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!



Take a Day Hike on Big Bend Trails

From the 7,832 foot (2,387 m) 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.

On this page are descriptions of some of the most popular easy and moderate hiking trails, divided by the geographic areas of the park. Most of these trails are perfect for shorter day hikes of up to several hours.

Trail	Trailhead Location	Round Trip (mi/km) (avg. time)	Elevation (ft/m)	Description
Eastside — Panther Junction and Rio Grande Village				
Grapevine Hills	Grapevine Hills Road mile 7 Usually passable to all vehicles.	2.2/3.5 1 hour	240/73	Easy Follows a sandy wash through boulder field. A short climb at the end takes you to a large balanced rock.
Hot Springs	End of Hot Springs Road. Unpaved and narrow road.	0.75/1.2 1/2 hour	0/0	Easy Walk past historic buildings to the riverside hot spring. Take a bathing suit and soak in 105°F water. <i>Spring is subject to flooding due to rising river levels.</i>
Rio Grande Village Nature Trail	Rio Grande Village Campground Opposite campsite 18	0.75/1.2 1/2 hour	130/40	Easy Cross a boardwalk to a great view of the river and distant mountains. Good birding and sunrise/sunset views.
Boquillas Canyon	End of Boquillas Canyon Road	1.4/2.3 1 hour	40/12	Easy Begins with a short climb, then descends via a sandy path to the river. Ends near a huge sand dune "slide."


The Chisos Mountains


Basin Loop	Chisos Basin Trailhead (near the Basin Store)	1.6/2.6 1 hour	350/107	Moderate Connects the Laguna Meadow and Pinnacles Trails. Nice views of the Basin area.
Window View	Chisos Basin Trailhead (near the Basin Store)	0.3/0.5 1/4 hour	0/0	Easy Level, paved, handicapped accessible. Great mountain views. The best place in the Basin to catch sunset through the Window.
Lost Mine	Basin Road mile 5	4.8/7.7 3 hours	1100/335	Moderate but steep This trail provides excellent mountain and desert views. Go halfway for a shorter hike.
The Window	Chisos Basin Trailhead or Basin Campground	5.6/9.0 4 hours 4.4/7.0 3 hours	980/299 500/152	Moderate with steep return Descends to the top of the Window pouroff. Great scenery and wildlife viewing. For a shorter hike, start at the Basin campground.

Smoking is prohibited on all trails in the Chisos Mountains.

Westside — Ross Maxwell Scenic Drive

Blue Creek Ranch	Ross Maxwell Drive mile 8	0.5/0.8 1/2 hour	90/27	Easy Descends from overlook via old road to 1930s ranch buildings; connects the Blue Creek Canyon & Dodson trails.
The Chimneys	Ross Maxwell Drive mile 13	4.8/7.7 2 hours	400/122	Moderate due to length. Flat and scenic desert trail to rock formations. Look for rock art. No shade.
Mule Ears Spring	Ross Maxwell Drive mile 15	3.8/6.1 3 hours	20/6	Moderate A beautiful desert hike to a small spring. Spectacular geology and mountain/desert views.
Santa Elena Canyon	8 miles west of Castolon	1.6/2.6 3/4 hour	80/24	Easy Crosses creekbed, climbs stairs, then follows the river upstream into the mouth of the canyon. <i>Flash flooding on Terlingua Creek can close this trail.</i>

 = Self-guiding trail

 = Handicapped accessible trail

Looking for more hikes and information?

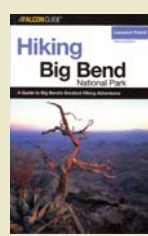
For information on longer, more challenging routes, or to plan an extended backpacking trip, stop by any park visitor center. A large selection of maps and trail guides are available and park rangers can assist you with trip preparations and backcountry permits. Visitor center bookstores carry a large selection of maps and guides. Below are a number of items that can assist in planning your Big Bend adventure.



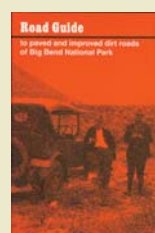
Hiker's Guide to Big Bend National Park
Updated in 2005. Covers all major trails in the park, from short self-guiding nature trails to strenuous backpacking routes. \$1.95



Guide to backcountry roads
Updated in 2004. Detailed mileage logs of Old Ore Road, Glenn Spring Road and River Road. Good descriptions of historic sites and scenery. \$1.95



Hiking Big Bend
In collaboration with National Park rangers, Laurence Parent has compiled a comprehensive guide to 44 of the most popular hikes. Photos show terrain and views. Describes

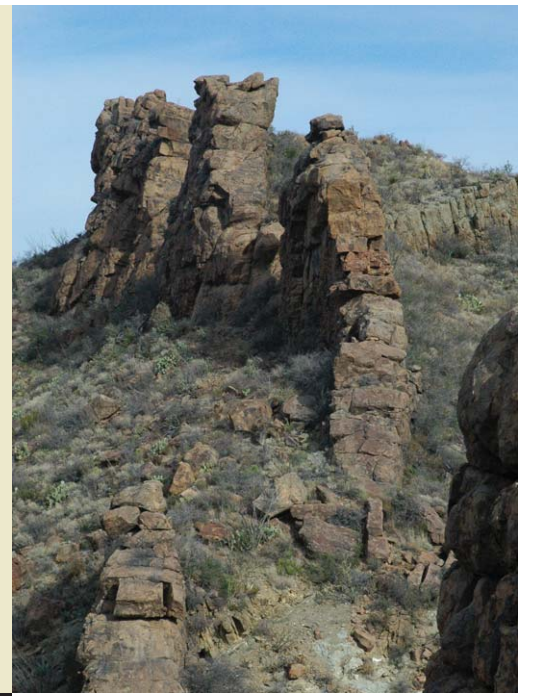


Guide to paved and improved dirt roads
Describes points of interest visible from all paved and improved dirt roads in the park. \$1.95



Chisos Mountains Trails Map
A topographic map that includes all trails in the Chisos Mountains. Includes trail lengths and descriptions. 99¢

difficulty, elevation changes, and maps needed. Also includes three hikes in Big Bend Ranch State Park. \$14.95



View of the volcanic dike at Ward Spring.

Featured Hike

The Ward Spring Trail

Distance: 3.6 miles (5.8 km) round-trip
Elevation: 480' (146 m) gain
Difficulty: Moderate desert hike with little shade

A little known, seldom used trail leading to a wonderful spring nestled at the base of an impressive volcanic dike, the Ward Springs Trail may be one of the Big Bend Desert Hikers' best kept secrets.

At 1.8 miles (one way), Ward Springs earns its *moderate* designation in part due to difficulty in locating the trailhead, as well as the need for route finding ability as you near the springs. From the junction at the northern tip of the Ross Maxwell Scenic Drive, go south towards the Castolon Historic District for 5.6 miles. There will be a paved pull-out on your left.

The trailhead is not signed, but is easy to pick out due to the well worn narrow path. You will leave the road behind quickly as you hike in towards the western slope of the Chisos Mountains. You will be thankful for your sturdy hiking shoes and ample water supply as the solitary strength of the desert makes its presence felt.

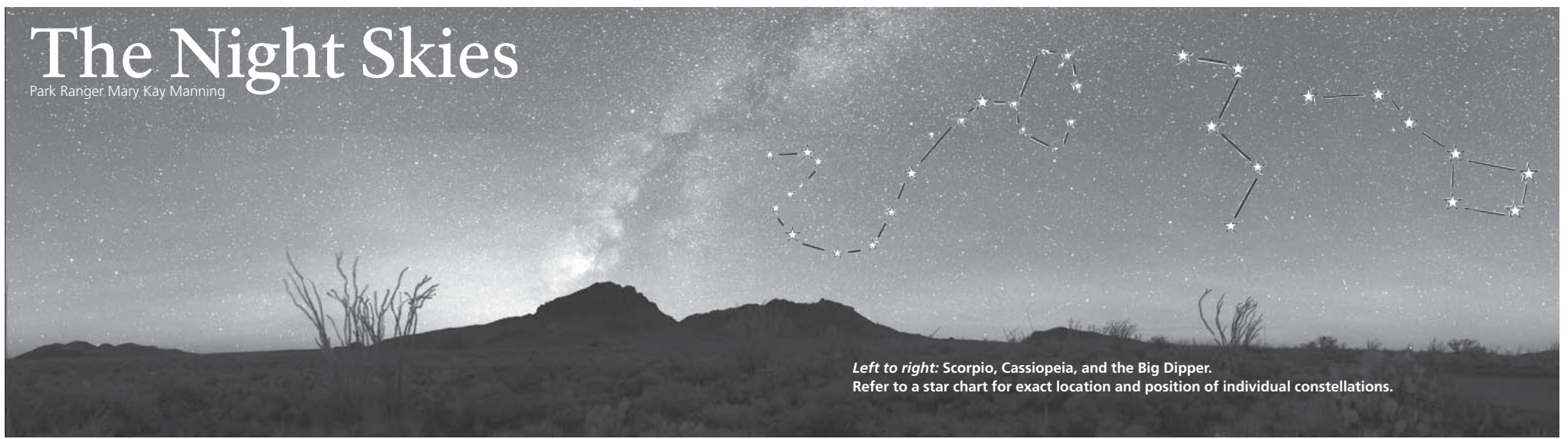
Water in the desert is a vital resource, as evidenced by the pipeline visible along portions of the trail. The Homer Wilson Ranch benefited greatly from the spring, which is very reliable except for the driest of times. Rock cairns and traces of trail will be your guide on the last third of the way, though the distinct "V" shaped gap in the volcanic dike will be visible to assure you of your destination. The dike, one of many along the west flank of the Chisos, is evidence of Big Bend's violent volcanic past.

As you move closer and closer to the spring and nearer to the end of the trail, there are a few short, sharp inclines and declines. The trail will drop into a small drainage and vegetation will begin to close in. The spring is marked by the presence of small trees below the dike. Here you can find a great shady place to rest and enjoy the sights and sounds around you.

The return hike, too, offers many rewards. The distant Santa Elena Canyon will be a visible companion on much of your return trip. The vast desert landscape before you may bring you a new perspective. It may strike you that such solitude, such stark beauty, can be yours to enjoy so close to the pavement.

The Night Skies

Park Ranger Mary Kay Manning



Left to right: Scorpio, Cassiopeia, and the Big Dipper. Refer to a star chart for exact location and position of individual constellations.

Stories in the Stars

Since time immemorial, humans have relied upon cues in the night sky for navigation and determining the seasons - key elements in their survival. To better remember these important stars and star patterns, our ancestors gave them names and identities based on things that were familiar to them. The names of these celestial objects, and the legends associated with them, tell us about the cultures of the people who passed this information on.

For instance, at least 6,000 years ago the Sumerians named many of the stars using terms associated with shepherding. They saw the stars as a herd of sheep, and bright Arcturus (directly overhead as summer begins) as the shepherd who drove them along through the sky. Arcturus is part of the constellation Boötes the Herdsman, considered to be among the oldest known constellations.

Other agricultural groups saw Boötes as a farmer pushing a plow of stars that we know instead as the Big Dipper.

The Big Dipper is certainly the most well-known of the star patterns seen this time of year, due to its brightness and its use in pointing to Polaris, the North Star, an important navigational aid. Along with Boötes, it is also one of the oldest known figures in the sky. It is not a true constellation by itself, but is part of the large constellation Ursa Major, the Big Bear. It is interesting that the early Greeks, the Hebrews, and a number of American Indian groups saw the figure of a bear in these stars, while the Babylonians and northern Europeans saw a wagon. Others saw a sickle, a shovel, or a grain scoop, testament to their farming culture. Arabs saw the hoofprints of a leaping gazelle in the stars forming the bear's paws.

Another prominent figure in the northern sky is Cassiopeia, shaped like a large "W" against the backdrop of the Milky Way. The Greeks and Romans saw this zigzag pattern of stars as a throne for an Ethiopian queen. Arabs and other Middle Easterners recognized the humps of a camel in this pattern, while Lapps saw the antlers of a moose, and Pacific Islanders saw a porpoise.

Low in the southern sky is another bright constellation, identified as Scorpio the scorpion by the Greeks at least 2,500 years ago. The Maoris of New Zealand see a fish hook in these same stars, and several Indonesian cultures see a palm tree. Some even see a duck nesting in the curl of stars that we see as the scorpion's tail.

If we had the chance today to rename the stars and constellations, what familiar creatures and objects would we associate with them?

Would we retain the historical names associated with wild animals, farming, and mythological beings? Or would we create constellations more meaningful to our modern society, perhaps named after cell phones, computers, and SUVs? Would most of us even be able to see enough stars on an average night to be able to piece together recognizable figures? What would future generations learn about us from our culture's stories in the stars?

Birds and Birdwatching

Park Ranger Mark Flippo

The spring season has passed, and with it the rush of northward bound migrants. The birds of Big Bend now settle into the focus of the summer months: nesting and raising the next generation. This is the time to move carefully and quietly to catch a glimpse of adult birds on the nest or bringing food to nestlings, and also the time for the many "specialty" species that characterize this productive birding area.

Gray, common black, and zone-tailed hawks are very likely to be seen at this time of year. Gray hawks nested last year at Cottonwood Campground and Daniels Ranch, a pair of common black-hawks at their traditional site in Rio Grande village, and zone-tails graced the Boot Canyon drainage in the high Chisos. Hummingbird diversity too is high, with chances for blue-throated, Lucifer, black-chinned and broad-tailed, particularly with the blooming of the Havard agave, or century plant, beginning in June. Of course the often-sought Colima warbler regularly nests in pine-oak woodlands of the Chisos Mountains, and can be easily found if you are willing to make the hike up above the 6,000 foot elevation mark.

Another potential of this season, usually in late summer, is the chance to see unexpected species that wander away from their normal nesting range after breeding. This phenomenon, called post-breeding dispersal, may produce some very surprising rarities: Last year at least two **northern pygmy owls** and a **fan-tailed warbler** were amazing finds deep in Pine Canyon, both staying from mid-August until well into September.

From excellent photographs of the owls, it appears both were representatives of the Mexican race known commonly as "mountain" pygmy-owl. The fan-tailed warbler, a tropical species from Mexico and Central America, represented a first Texas record and only the fifth US record. It is the possibility of rarities like these that bring out birders of all ages and levels of skill, and builds the reputation of Big Bend National Park as a premier birding hotspot. Not everyone, however, is in to dropping everything and rushing out the door to chase the rarities. For those who take their birds as they present themselves, the ensuing fall migration offers many opportunities.

Moving at a more leisurely pace and lasting longer, generally from mid-August to early December, the fall migration is not as spectacular as that of the spring, but the potential still exists for surprises. It can be the season of the second chance. Eastern vagrant warblers missed in the spring sometimes show up again in the fall, while species that have more westerly ranges, including Townsend's, hermit, and Grace's warblers make eastern birders smile. The challenge of this season is identifying birds in faded adult or confusing juvenile plumages.

Patience, a good field guide, and knowledge of where to look are the keys to locating the birds of Big Bend. A recently revised and updated checklist of birds is available for purchase at any visitor center and is a great aid in learning which species are likely and the habitats where they are found.



Northern pygmy-owl (*Glaucidium gnoma*)

A visit to all the key habitats will provide the best opportunities to see birds and to build a "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: tread softly in fragile habitat areas, taking care not to damage water sources. Don't disturb nesting 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 summer and fall, and do all that you can to ensure their return.

Keeping Wildlife Wild



Javelina that become habituated to human food become more aggressive. At developed campgrounds, take down your tents when away from the site.

There really are no problem animals—only problem people. Carelessness can kill. Don't be responsible for the death of a wild animal. Your actions affect both Big Bend's wildlife and future park visitors. With your help, wildlife and humans CAN live safely together in Big Bend National Park.

Mountain Lions

Solitary and secretive, the mountain lion 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 and vegetation. Research shows that these large predators 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.

Each year, an average of 130 sightings of mountain lions are reported by the visiting public within Big Bend National Park. While over 60 percent of these sightings were along park roadways, encounters along trails have also occurred. Mountain lions live throughout the park, including the Chisos Mountains, where they sometimes use man-made trails. The best plan of action is for you to be aware of your surroundings. Watch children closely; never let them run ahead of you. Avoid hiking alone or at dusk and dawn.

A free brochure with more information about mountain lions is available at all visitor centers.



Javelinas

For many visitors to Big Bend National Park, seeing a javelina (pronounced *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 javelina's diet includes prickly pear cactus, grasses, mesquite beans, piñon 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 the javelina 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.



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 by the 1940s. After an absence of nearly fifty years, bears began returning to the park from Mexico in the late 1980s. Today, wildlife biologists estimate that between 15-20 black bears may live in the park.

Black bears are omnivorous; their normal diet is comprised of large amounts of nuts, fruits, sotol and yucca hearts, and smaller quantities of small mammals, reptiles, and carrion. 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. Rangers may have to kill bears that lose their fear of people and endanger humans in their attempts to get our food.

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 throughout the park are bearproof, as well.

A free brochure with more information about black bears is available at all visitor centers.



Do Not Feed the Animals.
Not even once. It's bad for them, they can hurt you, and it's against the law. Don't touch, don't feed.

Please Help

In Developed Campgrounds

- 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 when provided.

At the Lodge

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

In the Backcountry

- 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.
- Ice chests and coolers are not bear-proof; store them in your vehicle.

If you encounter a bear or mountain lion:

- Do not run (you may resemble prey).
- Watch children closely and never let them run ahead or lag behind.
- Try to look large. Wave your arms. Throw rocks or sticks at it.
- If attacked, fight back.
- Report any bear or mountain lion sightings or encounters to a park ranger as soon as possible.

Information and Services



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.

Camper Stores

Forever Resorts Inc., operates camper stores year-round at three locations in the park: Castolon, the Chisos Basin, and Rio Grande Village. Groceries, camping supplies and souvenirs are available in all locations. The gas station at Panther Junction also has a limited selection of groceries.

Banking

There are NO banking facilities in Big Bend National Park. ATMs are located in the park at the Chisos Mountains Lodge and the Rio Grande Village Store. The nearest bank is 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.

Lodging

The Chisos Mountains Lodge, operated by Forever Resorts Inc., is located in the Chisos Basin at 5,400 feet elevation. The lodge offers 72 rooms, plus a gift shop and dining room. For reservations or more information, please call 432 477-2291 or visit their website at www.chisosmountainslodge.com

Gas Stations

Gasoline is available at two locations in the park operated by Forever Resorts Inc. The Panther Junction station offers 24-hour gas pumps with diesel, and can undertake minor repairs. The gas station at Rio Grande Village also provides propane.

Post Office

A full-service Post Office is located at the Panther Junction headquarters, across the porch from the visitor center entrance. A mail drop is also available in front of the Chisos Basin store.

Showers and Laundry

Public showers and laundry facilities are located at the Rio Grande Village store.

Fires

Ground fires and wood fires are prohibited throughout the park. Use only gas stoves or charcoal within a BBQ grill. Pack out all evidence of use, including ash. In the backcountry, charcoal fires are only allowed at roadside campsites and are prohibited in the High Chisos or zone camping areas.

Public Phones

Public phones are located at visitor centers, campgrounds, camper stores, and the Chisos Mountains Lodge.

Cell Phones

Limited cell phone coverage is available in the Big Bend area. *Do not* depend on your phone to work in the Chisos Basin or remote portions of the park.

Recycling

Please use the recycling cans provided in campgrounds, around stores, and near visitor centers. On average, the park recycles around 100,000 pounds of aluminum, cardboard, glass, plastic, metal and other materials each year. Every pound of material that can be recycled means one less pound buried in the park landfill. Please recycle!

Accessibility

All visitor centers are accessible. Wheelchair-accessible campsites and restrooms are located in the Chisos Basin and Rio Grande Village Campgrounds. The Chisos Mountains Lodge restaurant is accessible, as are some motel rooms. A Telecommunications Device for the Deaf is available at park headquarters. Employees with sign language abilities may be available. Some ranger-led programs are also accessible. The Window View Trail is paved and fairly level. A brochure on accessibility is available at all visitor centers.



A summer thunderstorm.

Camping



Tent Camping

The National Park Service operates campgrounds at Rio Grande Village, the Chisos Basin, and Castolon. The cost is \$14.00 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 (see page 14).

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

Trailers & RVs

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 Forever 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. 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 60-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 hookups or dump station. *Cottonwood is a NO-generator campground.*

Big Bend's unpaved roads are generally unsuitable for RVs and trailers. Overnight camping in any primitive site requires a backcountry permit, which can be obtained in person at park visitor centers up to 24 hours in advance (see page 14 for more information).

Group Camping

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 through recreation.gov.

Camping Limits

Visitors cannot camp at developed campground sites for more than 14 consecutive nights, or for more than 28 nights (including both frontcountry and backcountry camping) in a calendar year, or at any one site for more than 14 nights in a calendar year. Occupying developed campsites for more than 14 nights during the period from February 1 through April 15 is prohibited.



Summer rains can raise the Rio Grande and submerge the hot spring.

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 15 to April 15 each year. Visitors may make reservations for the period of November 15 through April 15 up to 180 days in advance. 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 by calling 1-877-444-6777 or on-line at recreation.gov.

Developed Campgrounds at a Glance

	Elevation (ft/meters)	Sites	Nightly Fee	Facilities	Registration	Comments
Chisos Basin	5,401 / 1,646	60	\$14.00*	Flush toilets, dump station	Self-pay station	Surrounded by rocky cliffs; many hiking trails nearby
Cottonwood	2,169 / 661	31	\$14.00*	Pit toilets, <i>no generator use allowed</i>	Self-pay station	In a cottonwood grove along the river. Grassy sites.
Rio Grande Village	1,850 / 564	100	\$14.00*	Flush toilets, dump station	Self-pay station	Largest campground; shady sites. Laundry and showers nearby.
Rio Grande Village RV	1,850 / 564	25	\$26.00 and up	Full hookups	RGV Camper Store	Concession-operated; register at the RGV store.

* \$7.00 with an eligible Federal Recreation Pass



Pets in the Park

What Not to Do

"I led a bird walk at Rio Grande Village this morning. A woman asked if she and her dog could join our hike. When I told her that she was welcome but the dog was not, she tied the poodle to a picnic table and joined the group. After the hike, as we approached the woman's campsite, instead of finding 'Fifi' yapping away at us, we discovered only its remains. A javelina was just completing a poodle-dinner."

- Ro Wauer
Chief Naturalist, 1970

Pets in a Wilderness Park

Having a pet with you will limit your activities and explorations in the park. In addition, desert temperatures and predators are a serious threat to your pet's well being. Please keep in mind the following points when bringing a pet to the park:

- 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.
- Keep your pet on a leash no longer than six feet in length (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.
- Pet etiquette and park regulations require that you always clean up after your pet and dispose of waste in trash receptacles.
- Predators such as owls, coyotes, javelina, and mountain 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.



Pets must be on a leash at all times.



Pets are not allowed on trails or in backcountry areas.



Kennels

The following kennel and veterinary services operate in the greater Big Bend area:

Terlingua Creek Kennels (Oct-April)

Terlingua, TX
(432) 371-2348

Red Wool Inn of the Big Bend

Alpine, Texas
(432) 837-7475

Alpine Veterinary Clinic

Alpine, Texas
(432) 837-3888

Alpine Small Animal Clinic

Alpine, Texas
(432) 837-5416

Big Bend is for Kids



Explore!

Big Bend's habitats range from the Chihuahuan Desert to the Rio Grande to the Chisos Mountains, and all are rich with plants, animals, and stories of human history, giving children plenty of opportunity to explore.

Kids visiting the park enjoy the exhibits and relief map of the park at the Panther Junction Visitor Center, the Fossil Bone Exhibit area, the Hot Springs, the sand dune in Boquillas Canyon, the mountain lion exhibit at the Chisos Basin Visitor Center, and the hands-on exhibits at the Castolon Visitor Center.

Get kids involved in ranger-led programs. These include guided hikes, slide programs, bird walks, and explorations of various park features. Check the schedule at any visitor center to make sure you take advantage of all the available programs. Stop by any visitor center for further suggestions.

Hike a Trail!

Many park trails are suitable for families. Consult the listing of Easy and Moderate Hikes 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. Remember to watch children closely and never let them run ahead or lag behind.

Be Safe

Be sure to talk to your children about safe behavior before you begin hiking or exploring the park. Require children to walk with adults, rather than by themselves. Keep all your children with you and stand as a group. Desert vegetation can be sharp; have a first aid kit and tweezers handy. Please see pages 11 and 15 for additional safety information.



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 a badge or patch, a bookmark, and a certificate.

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

Is there any place to swim in the park?

At the risk of repeating the obvious, Big Bend is a desert park; water is a precious commodity here and often difficult to find. *Swimming in the Rio Grande is not recommended.* See page 15 for important water safety information. The end of the Boquillas Canyon Trail and the Santa Elena Canyon trailhead area may be suitable for wading at certain times of the year (always check river conditions first). You can soak in the 105°F Hot Springs (near Rio Grande Village). When the Rio Grande rises above three feet in depth, the hot spring is inaccessible.

If you really want to swim, Balmorhea State Park (about a three-hour drive north of Big Bend) boasts the "world's largest spring-fed swimming pool." Contact Balmorhea State Park at 432 375-2370 for more information.

Leave No Trace in Big Bend

Plan ahead and prepare

Big Bend is a land of extremes. Plan on high desert 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.



It's not just about today—do your part to maintain the resources of Big Bend exactly as you see them so that future visitors can do the same.

Backcountry Planning



P. HIGGINS

Getting a Permit

A permit is required for all river use, horse use, and overnight backcountry camping, and can be obtained in person only, up to 24 hours in advance of the trip. Permits can be written for as many as fourteen (14) consecutive nights in the backcountry. Park staff can assist you with trip planning based on your needs and current trail conditions. Permits can be obtained at all visitor centers during normal operating hours.

Overnight Use Fee

A \$10-per permit fee is required for all overnight backcountry use permits, including multi-day river trips, and overnight backcountry camping. This fee is payable when the permit is issued, and all funds collected go to projects to improve or protect the backcountry experience, including hardening/improving river access points, backcountry campsite maintenance, and trail maintenance.

Plan Ahead

Detailed information on backcountry campsites in the Chisos Mountains and along the backcountry roads is available on the park's website at www.nps.gov/bibe. A wide variety of maps, books, hiking guides and river guides is 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 bookstore at www.bigbendbookstore.org.

Hiking & Backpacking

Big Bend National Park offers over 200 miles of hiking trails in the Chisos Mountains and desert terrain. A permit is required for all overnight trips in the backcountry. Decide how much distance you want to cover and how much time you have. Desert hiking can be unpleasant or deadly in hotter months.

In the Chisos Mountains, the Southeast Rim Trail and a portion of the Northeast Rim Trail from the Boot Canyon/Southeast Rim junction are closed during the peregrine falcon nesting season (February 1 - May 31).

Zone camping permits are available for those who wish to camp outside of the Chisos Mountains. The park is divided into a number of zones ranging from areas along popular trails to extremely isolated areas.

Backcountry Roads

For those who wish to camp in the backcountry without having to backpack, Big Bend offers over seventy primitive campsites along backcountry roads. While some sites are accessible to most vehicles, a high clearance and/or four wheel drive vehicle is necessary to reach others. Other than a nice view, isolation, and a flat gravel space, these sites offer no amenities and no shade. A backcountry permit is required to use these sites.

Backcountry Water

The dry desert air quickly uses up the body's water reserves. Each hiker should carry and drink a minimum of one gallon of water for each day they are in the backcountry. Spigots for drinking water are available at all visitor centers. Big Bend is a desert environment. Springs and tinajas (depressions in rock where water collects) are rare and often unreliable. Water should be filtered. Every gallon removed from backcountry water sources is one less for the wildlife which depend on them. Please carry enough water to supply your own needs—don't risk your life by depending on desert springs. Caching water is recommended for extended hiking trips in the desert.

Horses

Visitors are welcome to bring and use their horses in the park. A 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. Every horse user should obtain a copy of the regulations regarding use of horses in the park.

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. The Chisos Mountain and Burro Mesa trails are day-use only.

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. Three local companies (see page 16 for telephone numbers) 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 permit at a park visitor center. 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. Permits for floating Santa Elena Canyon may be obtained at the Barton Warnock Center in Lajitas. 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.



R. ZIEBER

During the summer low elevation activities, such as desert hiking, are often best done in the morning, to avoid the heat of the day.

Backcountry Regulations

Groundfires and woodfires are prohibited.

Use only gas stoves or charcoal within a BBQ grill. Pack out all evidence of use. Smoking is prohibited on all Chisos Mountains trails.

Pack out all litter.

Help preserve the park's natural beauty by packing out all litter, including cigarette butts and toilet paper.

No pets on trails or in the backcountry.

Pets may harm or be harmed by wildlife, and can attract predators.

Do not cut switchbacks on trails.

Although cross-country hiking is allowed, help prevent trail erosion by staying on marked trails.

Collecting any natural or historical feature or object is prohibited.

Leave park features intact for others to enjoy.

Contaminating natural water sources and their surroundings is prohibited. Camp at least 100 yards from any water source.

Desert water sources and springs are fragile and vital for the plants and animals that depend on them for survival. Soaps, oils, skin lotions, and food residues from bathing and washing can seriously impact water quality. Minimize your impact to areas surrounding springs, seeps, and other temporal water sources.

Camp within designated sites.

When camping in a designated site prevent resource damage by camping within the area outlined by rocks, logs, or brush.

Generator use is not permitted in backcountry campsites.

Natural quiet is a protected resource; help preserve a quiet wilderness experience.

In open zones, camp at least 1/2 mile and out of sight from any road and at least 100 yards from any trail, historical structure, archeological site, dry wash, or cliff edge.

Minimize your impact to the natural landscape.

Bury human waste at least 6 inches deep. Pack out toilet paper.

Human waste is unsightly and unsanitary. Carry a digging trowel. Locate latrines 1/4 mile from any water source and well away from camp.

Possession of firearms, other weapons, and traps is prohibited.

Motorized vehicles and bicycles are permitted only on designated public roads.

Off-road vehicle travel causes visual and environmental damage.

Do not feed wildlife.

Feeding wildlife is illegal; it often results in having to destroy the animal. Keep food, ice chests and cookgear in a hard-sided vehicle or food storage locker where provided.

Standard Backcountry Road Conditions

	Road open to:	Notes
Croton Spring	All Vehicles	Slippery mud after any rain
Dagger Flat	All Vehicles	Bumpy but ok for cars; very sandy near end of rd.
Glenn Springs	High Clearance	Narrow road; no RVs, Trailers or wide vehicles
Grapevine Hills	All Vehicles	Usually passable for all vehicles to trailhead
Hot Springs	All Vehicles	Narrow road; no RVs, Trailers or wide vehicles
North Rosillos	High Clearance	Deep ruts and sand; little-traveled
Juniper Canyon	High Clearance	High-clearance vehicles only; rough, rocky, & slow
Old Maverick	High Clearance	Rough; often impassable after heavy rains
Old Ore	High Clearance	High-clearance vehicles only, 4X4 recommended
Paint Gap	All Vehicles	High-clearance past PG 3 campsite
Pine Canyon	High Clearance	High-clearance vehicles only; rough, rocky, & slow
River Road East	High Clearance	High-clearance vehicles only
River Road West	High Clearance	High-clearance vehicles only, 4X4 recommended
Black Gap	4X4 only	4x4 required! never maintained

Always inquire at a visitor center regarding updated road conditions before heading out, and be prepared for any contingency. Weather conditions (such as heavy, or any, rain) may cause road conditions to deteriorate. Remember: all vehicles must be street legal and stay on established roadways.

Safety is *Your* Responsibility

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.

Big Bend 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 experience in Big Bend National Park.

Driving

Of the few accidental deaths in Big Bend that occur some years, most result from car accidents. 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. Federal regulations require that ALL occupants of a vehicle wear seats belts while in a national park. Remember, too, that you share the road with bicyclists and pedestrians. Some park roads, such as the road into the Chisos 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 and drink at least one gallon per person, per day. Wear a hat, long pants, long-sleeved shirt, and sun screen when hiking. Springs are unreliable and often dry up for much of the year. Travel 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, two have occurred in the last twenty 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.

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.

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. During drought conditions 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. *Smoking is prohibited on all trails in the Chisos Mountains.*

Poisonous Animals

Venomous snakes, scorpions, spiders, and centipedes are all active during the warmer months. Wear shoes or boots at night instead of sandals. 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.

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 in the special animal-proof dumpsters and trash cans provided.

Remember to report all bear or mountain lion sightings to a ranger.

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.

If you really want to swim, Balmorhea State Park (three hours north of Big Bend) boasts the "world's largest spring-fed swimming pool." Contact Balmorhea State Park at 432 375-2370 for more information.



Share the Road

Every year park rangers investigate an increasing number of motorcycle accidents. Unfortunately, a significant number involve serious injuries.

Be alert

Animals may dart out from road edges. Other drivers may pay too much attention to the scenery and cross over the center line into your travel lane or may suddenly stop their vehicles in the middle of the road to observe wildlife. These and other unforeseen conditions can lead to motorcycle accidents.

Suggestions for Motorcycle Riding

- Watch for vehicles straying over the center line.
- Stay alert for sudden stops or traffic slow-downs, especially around scenic pullouts or other congested areas.
- Wear brightly colored clothing or jackets to increase visibility to other motorists.
- Be aware of road surfaces as you ride. Never over-ride the road conditions.
- Watch for wildlife at the road edge.
- Secure your motorcycle and valuables when you are away from your bike.
- Ride with headlights on.

Survive the Sun

In all seasons, whether walking, backpacking, or day hiking, follow these tips to conserve your internal water reserves:

REDUCE YOUR ACTIVITY

During the warmest days, generally from May through August, avoid hiking in the lower elevations during the heat of the day—generally from 10:00 am to 6:00 pm.

FIND SHADE

Shade in the desert means the difference between excessive heat gain from the radiant sun and sheer comfort. In an emergency, a person resting in the shade will survive longer than someone exposed to the sun.

DRINK YOUR WATER

Don't try to conserve the drinking water you have. Whether strolling in the Basin, or hiking the South Rim Trail, you must DRINK your available water. Carry plenty of drinking water—at least 1 gallon per person per day. Balance your food and water intake. Eat a salty snack every time you take a drink of water.

REDUCE ALCOHOL & CAFFEINE INTAKE

Water is the best remedy for dehydration and listlessness. The diuretic effects of caffeine and alcohol can result in an accelerated loss of body water.

PROTECT YOUR BODY

Our sensitive skin burns easily; it needs shade, sunscreen, sunglasses, a widebrimmed hat, and proper footwear. Dehydration is accelerated by exposed skin, so keep your clothing on. Wear long-sleeved, loose-fitting, light-colored clothes.

Weather and Climate

Weather

Elevational 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.

Summer and Fall

Temperatures along the river tend to be the warmest in the park. Plan your activities with the weather in mind; visit the river in the morning, and always carry plenty of water. Higher elevations in the Chisos Mountains lead to lower temperatures. July brings thunderstorms; precipitation can liven up the landscape, but rains can reap havoc on the primitive roads throughout the park.

How Hot Is It?

Average temperatures and rainfall at 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 Avg.	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.

Area Phone Numbers

Services inside the Park

EMERGENCY	Call 911
National Park Service	
General Information	432 477-2251
Big Bend Natural History Association	
Booksales & Seminars	432 477-2236
Visitor Centers	
Castolon	432 477-2666
Chisos Basin	432 477-2264
Panther Junction	432 477-1158
Persimmon Gap	432 477-2393
Rio Grande Village	432 477-2271
U.S. Post Office	
Panther Junction	432 477-2238
Lodging / Restaurant	
Chisos Mountains Lodge	432 477-2291
Park Gasoline Service	
Panther Junction (diesel)	432 477-2294
Rio Grande Village	432 477-2293
Campground Stores	
Rio Grande Village	432 477-2293
Chisos Basin	432 477-2291
Castolon	432 477-2222

Services outside the Park

Lodging	
<i>Lajitas</i>	
Lajitas Resort	877 525-4827
<i>Marathon</i>	
Gage Hotel	432 386-4205
Marathon Motel	432 386-4241
<i>Study Butte/Terlingua area</i>	
Big Bend Motor Inn	800 848-2363
Easter Egg Valley Motel	432 371-2254
El Dorado Motel	432 371-2111
Longhorn Ranch Hotel	432 371-2541
Ten Bits Ranch	866 371-3110
Terlingua Ranch Resort	432 371-2416
Camping	
Big Bend Motor Inn	800 848-2363
Big Bend Ranch State Park	432 424-3327
Big Bend Travel Park	432 371-2250
Heath Canyon Ranch	432 376-2235
Longhorn Ranch	432 371-2541
Stillwell's Trailer Camp	432 376-2244
Study Butte RV Park	432 371-2468
Terlingua Ranch Resort	432 371-2416
Convenience Stores/Gasoline	
Big Bend Motor Inn	800 848-2363
Lajitas Trading Post	432 424-5040
Study Butte Store	432 371-2231
Stillwell Store & Station	432 376-2244
Medical Services	
Terlingua Fire and EMS	911
Lajitas Infirmary	432 424-5111
Big Bend Medical Center	432 837-3447
Banks	
Quicksilver Bank/ATM	432 371-2211
Float Trip Outfitters/Rentals/Guide Services	
Big Bend River Tours	800 545-4240
Desert Sports	888 989-6900
Far Flung Outdoor Center	800 839-7238

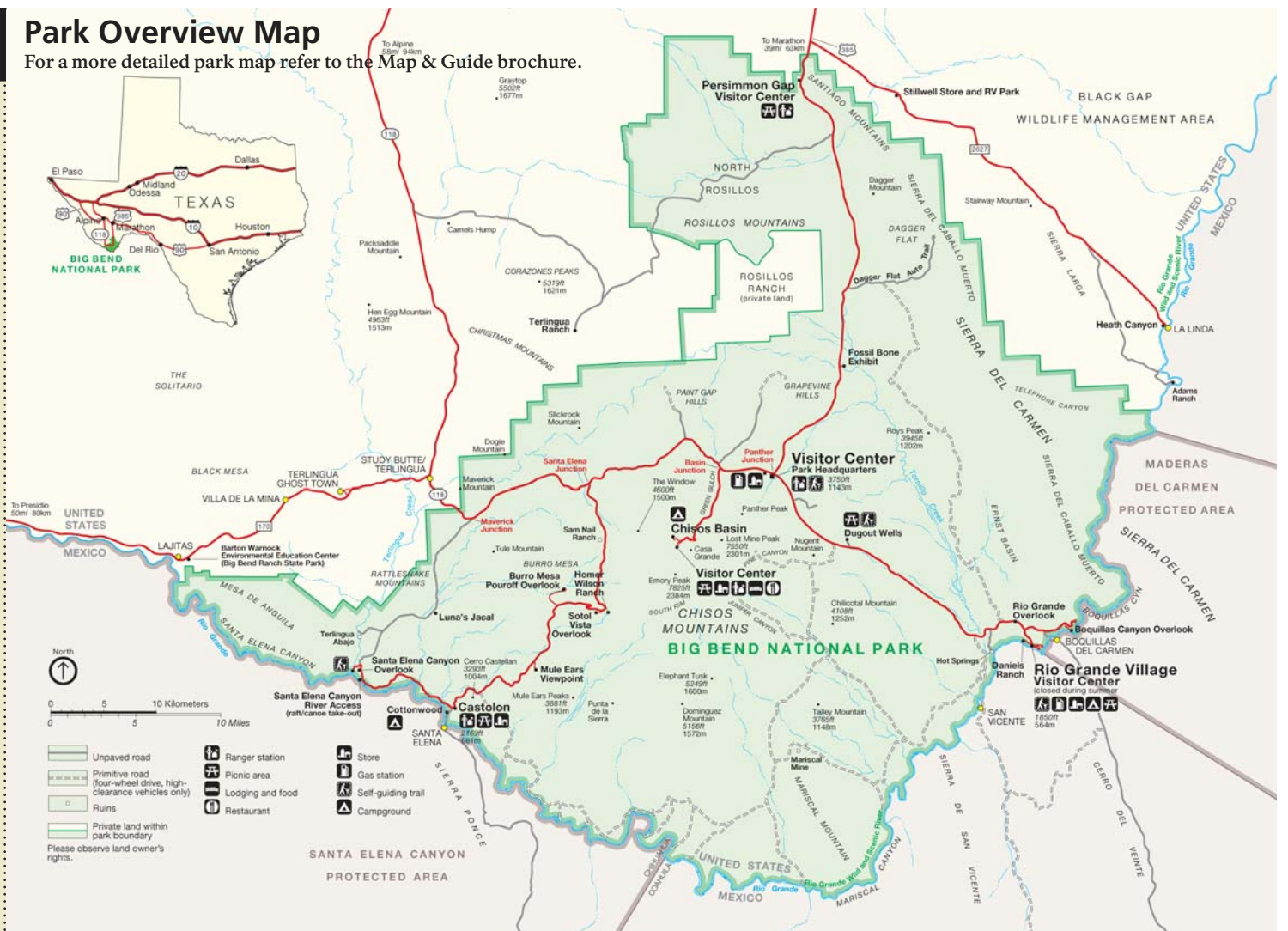
Horseback Riding	
Big Bend Stables	800 887-4331

The facilities and services listed here are located within the greater Big Bend area, and vary from 30 to 100 miles from Big Bend National Park. The communities of Terlingua/Study Butte (30 miles west) and Marathon (70 miles north) offer basic services, including gas stations, restaurants, lodging, and campgrounds. Alpine, 100 miles to the northwest of the park, offers the greatest number of services.

This listing of local services is a courtesy to our visitors and implies no endorsement by the National Park Service or Big Bend National Park

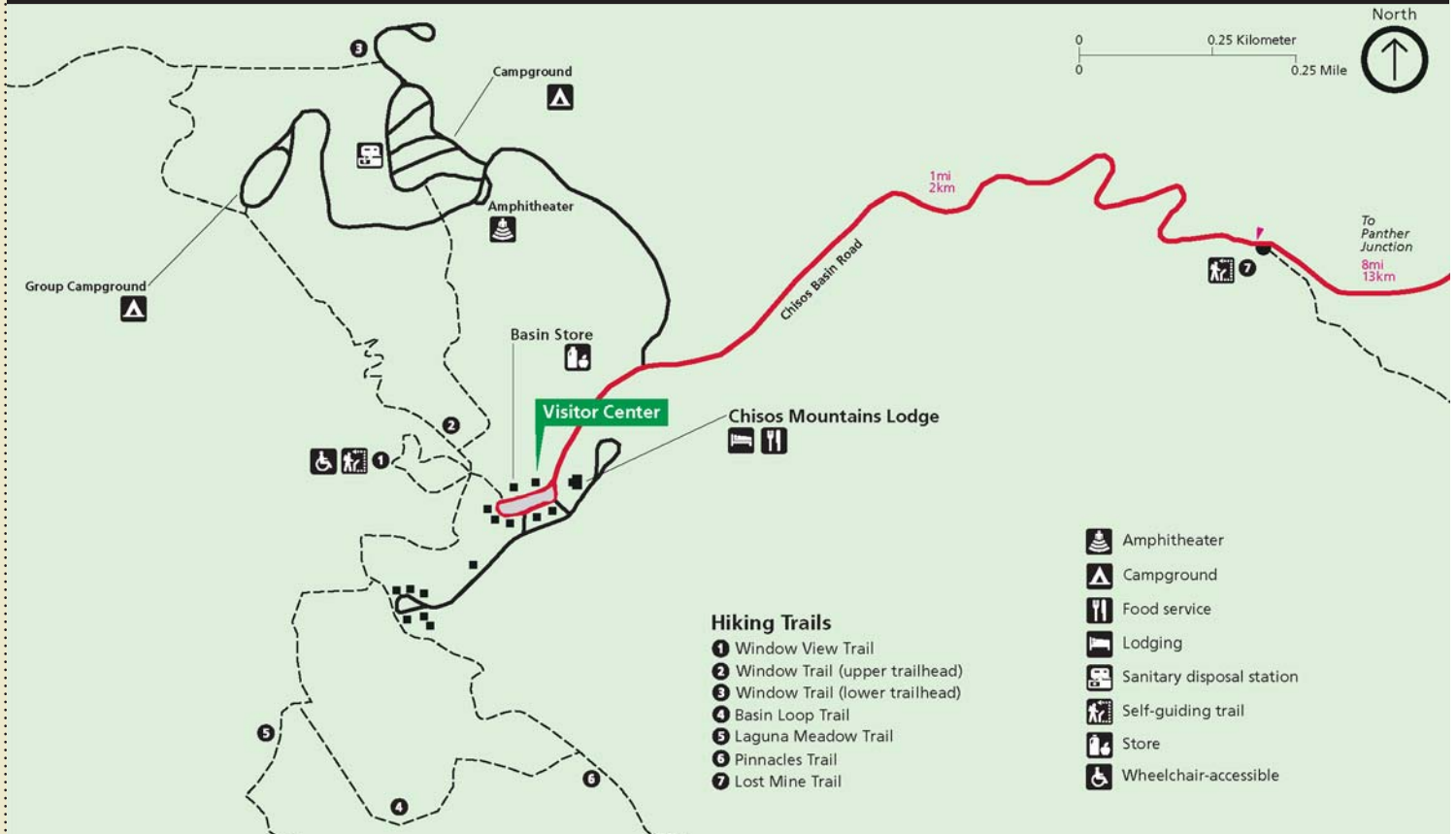
Park Overview Map

For a more detailed park map refer to the Map & Guide brochure.



Chisos Basin

5401ft 1646m



Rio Grande Village

1850ft 564m

