The Paisano

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.

Expect Change

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 the concept of change, as it applies to a complex place such as the Big Bend.

We often think of parks as outdoor museums, but caretaking a living ecosystem is very different than protecting unchanging objects. Both natural features and human facilities may be different each time you visit. Park management may or may not affect your visit. You won’t notice the air quality monitoring equipment that works 24 hours a day, but you will see other activities. Some of them may unavoidably affect you, such as smoke from a prescribed fire or flash-flooding that leads to closures of trails and roads. Your visit gives you a snapshot of the year-round process of park management. Nature decides the timing of many of these activities, but they all share one goal: preservation of these parks for people now and in the future.

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.

Change comes in many forms—in the coming months the most visible example of change will be the expansion of the Panther Junction Visitor Center (see page four for more information on the project). In the early 1990s, when the visitor center was built, nearly one hundred thousand visitors came to the park each year; today, almost four times as many visitors come to the park, and about one hundred thousand enter the Panther Junction Visitor Center. This change will create a disruption now, but this enlarged and improved facility will have the ability to better serve the modern visitor to Big Bend. New exhibits will convey an overview of the complex resources and opportunities that the park offers. It is our sincere hope that on your next visit you will be able to enjoy the renovated visitor center.

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.

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
  - An Endangered View ........................................ 4
  - Birds & Birdwatching ..................................... 10
  - Desert Sanctuary ............................................. 6
  - Featured Hike .................................................. 9
  - K-T Boundary .................................................. 7
  - Managing Change ........................................... 5
  - Night Skies ..................................................... 10
  - Panther Junction Visitor Center ................... 5
  - A River of Change ............................................ 7

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 811 or 482-477-2251

24-hours a day or contact a Park Ranger.
Big Bend and the Border

Viewing the sunset across 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 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 18 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.

Border Merchants

Mexican Nationals may approach you from across the river to purchase souvenir items (walking sticks, bracelets, crafts, etc.). If you agree to look at 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 contraband 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.

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

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 the National Park Service.

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

- 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

Entrance Fees at Big Bend National Park

Private noncommercial automobile $20 (7 days)
Single entry (foot, bike, motorcycle, etc.) $10 (7 days, both parks)
Big Bend Annual Pass $40 (valid one year from month of purchase)

Interagency Annual Pass

Currently valid passes will be accepted until expired, including the National Parks Pass, Golden Eagle Pass, Golden Age Passport, and Golden Access Passport.

Overlooking the Rio Grande, 1950s.
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.

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 877 899-5357. There are still slots available for the upcoming sessions. Sign up today!

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

<table>
<thead>
<tr>
<th>Individual $50</th>
<th>Associate $100</th>
<th>Corporate $200</th>
<th>Joint Membership (W FBHBP)</th>
</tr>
</thead>
</table>

Make checks payable to BBNHA or charge to: ___ Visa ___ Mastercard ___ Discover

Card Number ___________ Exp. Date ___________

Signature ______________________

City __________________________ State ______ Zip _________

Name __________________________

Address __________________________

Life Membership

<table>
<thead>
<tr>
<th>Individual/Family $500</th>
<th>Corporate $1000</th>
<th>Benefactor $2500</th>
<th>Renewal New Member</th>
</tr>
</thead>
</table>

Detach and mail to: Big Bend Natural History Association, PO Box 196, Big Bend National Park, Texas 79834

Telephone: 432 477-2236

www.bigbendbookstore.org

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 432 477-2336. 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 projects, 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.

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 wilderness areas. 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 190 volunteers contributed 41,499 hours of service to Big Bend National Park. Some service groups come for a few days, others volunteer 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:

American Youth Works
Judy Atwood
Madeline Awrett
Reta and Dick Aveller
Barbara and Bill Baldwin
Barbara Bracken
Judy Brinkenhoff
Susan Buchel
Tillman Cavert
Aletha, Roy and Kenny Ellis
Diane and Gary Fable
Richard Grayson
Steve Harper
Ruthine and Bob Hennessy
Ginny and Jim Herrick
Whitney Hibbard
Jim Howell
Deborah Hunt
Sally and Bob Jones
Joan and Raymond Kane
Mark Kirtley
Jenny Krouse
Jodi Lau
Dan Leavitt
Wade May
Peter McEroy
Ed Navarro
Brittany Palmer
Kim and Al Peabody
Becky Reiger
Maryann and Ted Rowan
Samantha Schroeder
Patsy and Shad Shaddix
Phil Souza
Linda and Kenn Sutton
Jennette Timmer
Charlotte and Bob Whitesides
Steve Wick
Bob Wirt
Jessica Wooldridge

The Big Bend Paisano 3
Panther Junction Visitor Center Expansion

Please pardon the dust! After several years of delays, a remodeling and expansion of the Panther Junction Visitor Center began in October 2007. There will be some inconvenience to the public at several stages of demolition and construction associated with this project, but the results should carry on without interruption for several decades.

The Panther Junction Visitor Center was constructed in the 1960s and is no longer adequate, because visitation to the park has increased and the current bookstore is unable to accommodate the increased amount of literature that has been published on the Big Bend region. During peak winter months, holidays, and the weeks of spring break the visitor center is crowded to the point that visitor service is hampered by crowds, traffic flow, inadequate desk space, and grossly inadequate bookstore floor space.

The Panther Junction Visitor Center expansion is a two phase project that was made possible through a partnership effort that includes in phase one funds from the park’s entrance fee program, funding from the Big Bend Natural History Association and the Friends of Big Bend National Park. Phase two provides for the design, fabrication and installation of new exhibits through funding raised by the Friends of Big Bend National Park. At present, construction on the expansion is expected to be completed in March and new exhibits installed in April 2008.

National Park Centennial Project

Big Bend National Park’s project to construct a picnic facility and trailhead for access to a proposed multi-use trail is one of over 200 proposals approved for 2008 as part of the National Park Centennial Initiative. The potential multi-use trail in the vicinity of Lone Mountain will still need to proceed through the environmental assessment process to allow for public comment and consideration of a range of alternatives before construction could begin. The project will allow the park to construct a pull-through parking area, shaded picnic facilities and trailhead access to a potential multi-use hiking and biking trail around Lone Mountain in partnership with the International Mountain Bike Association, the multi-use trail still requires public input and comment through the environmental assessment process. More information regarding the National Park Centennial Initiative can be found at http://www.nps.gov.

Rare Bird Sighted

Among the many things that characterize Big Bend—spectacular vistas, towering river canyons, incredible wildflower displays, and rugged terrain—for some visitors, the possibility of finding rare birds is the defining experience.

Since the first ornithological investigations in the early 1900s, over 450 species of birds have been found in the park. Most are expected species, either as year-round residents or regularly occurring migrants. Occasionally though, the odd bird shows up, most often a species whose normal range lies in Mexico. Violet-crowned hummingbird, piratic flycatcher, flame-colored tanager, black-vented oriole are among the many that have been documented within the park. Recently another rarity joined the list.

On August 13, 2007, a fan-tailed warbler was an astounding find deep in Pine Canyon. Occurring in Mexico along both the Atlantic and Pacific slopes, the fan-tailed warbler was previously known in the U.S. only from a handful of sightings in remote wooded canyons of southeast Arizona. For just over a month, hundreds of birders drove the rough seven-mile long road and hiked four miles roundtrip to catch a glimpse of this very rare bird. Most were rewarded, but only a quick few managed a photograph of this first Texas record.

An Endangered View

Mountains are solid as a rock. They have been around for millions of years, and yet they are becoming part of an endangered view in Big Bend National Park. Sure they’re still there, but are you able to see them? The very skies above Big Bend are changing.

Many visitors come to Big Bend seeking expansive vistas, limited only by the horizon. But the horizon seems much closer as pollution hides entire mountain ranges behind a blanket of haze. This is becoming an all too common sight. Big Bend’s impressive views, with the ability to see detail on objects 100 miles away was one of the reasons this land became a National Park. Now, most visitors are met with moderately hazy days, with over twenty days out of the year featuring fewer than thirty miles of visibility.

Unfortunately not just the views are changing, but the ecosystems within the park are being affected as well. A long-term study in Pine Canyon has linked increased pollution to increased nitrates in the air and in the soil, making it significantly more acidic. This altering of the soil will change the composition of the plant communities growing in the affected areas, eliminating some species while making the area more prone to weeds. When the next generation of visitors comes to the park, they might be robbed of the opportunity to see the diversity of native cacti and wildflowers blooming around the base of the Chisos.

Where is this pollution coming from? Big Bend is a remote park, but not immune to the transport of pollutants carried on large-scale air patterns. Air resource specialists have been monitoring air quality since 1978, identifying the polluting and tracking wind patterns to identify the sources. They have found that much of the pollution comes from Central and East Texas refineries and coal-fired plants. Additional pollution comes from Mexico and as far away as the Ohio valley.

The Clean Air Act of 1970 (amended in 1977 and 1990) includes provisions to protect the National Parks’ air quality. Standards are set in place to “prevent the significant deterioration” of air quality in areas of natural, scenic and historic value such as Big Bend. But legislation can only go so far, leaving individuals room to make a difference. Coal burning power plants are a major source of pollution. Using energy-efficient appliances and lighting reduces electricity consumption. Additionally, many electric companies offer customer energy conservation programs and electricity from alternate sources. Cars are another major source of pollution. Keeping cars in good working condition, driving at medium speeds, using energy-conserving grade motor oil and “clean” fuels can help reduce exhaust emissions. Decisions made at home can have far-reaching effects. You can help ensure the future of Big Bend’s sky.

Notes

1 The pH data (unpublished) is part of an ongoing study of the Pine Canyon watershed. This is a joint effort of Dr. John Zak (Texas Tech University), Dr. Kevin Urbanczyk (Sul Ross University), and Dr. Joe Sirotnak of Big Bend National Park.

2 The BRAVO (Big Bend Regional Aerosol and Visibility Observational) study was conducted in 1999 and analyzed until 2004.

Santiago Peak, far to the north, can be clearly seen from the park during higher air quality conditions.

Panther Junction Visitor Center Expansion

Please pardon the dust! After several years of delays, a remodeling and expansion of the Panther Junction Visitor Center began in October 2007. There will be some inconvenience to the public at several stages of demolition and construction associated with this project, but the results should carry on without interruption for several decades.

The Panther Junction Visitor Center was constructed in the 1960s and is no longer adequate, because visitation to the park has increased and the current bookstore is unable to accommodate the increased amount of literature that has been published on the Big Bend region. During peak winter months, holidays, and the weeks of spring break the visitor center is crowded to the point that visitor service is hampered by crowds, traffic flow, inadequate desk space, and grossly inadequate bookstore floor space.

The Panther Junction Visitor Center expansion is a two phase project that was made possible through a partnership effort that includes in phase one funds from the park’s entrance fee program, funding from the Big Bend Natural History Association and the Friends of Big Bend National Park. Phase two provides for the design, fabrication and installation of new exhibits through funding raised by the Friends of Big Bend National Park. At present, construction on the expansion is expected to be completed in March and new exhibits installed in April 2008.

National Park Centennial Project

Big Bend National Park’s project to construct a picnic facility and trailhead for access to a proposed multi-use trail is one of over 200 proposals approved for 2008 as part of the National Park Centennial Initiative. The potential multi-use trail in the vicinity of Lone Mountain will still need to proceed through the environmental assessment process to allow for public comment and consideration of a range of alternatives before construction could begin. The project will allow the park to construct a pull-through parking area, shaded picnic facilities and trailhead access to a potential multi-use hiking and biking trail around Lone Mountain in partnership with the International Mountain Bike Association, the multi-use trail still requires public input and comment through the environmental assessment process. More information regarding the National Park Centennial Initiative can be found at http://www.nps.gov.

Rare Bird Sighted

Among the many things that characterize Big Bend—spectacular vistas, towering river canyons, incredible wildflower displays, and rugged terrain—for some visitors, the possibility of finding rare birds is the defining experience.

Since the first ornithological investigations in the early 1900s, over 450 species of birds have been found in the park. Most are expected species, either as year-round residents or regularly occurring migrants. Occasionally though, the odd bird shows up, most often a species whose normal range lies in Mexico. Violet-crowned hummingbird, piratic flycatcher, flame-colored tanager, black-vented oriole are among the many that have been documented within the park. Recently another rarity joined the list.

On August 13, 2007, a fan-tailed warbler was an astounding find deep in Pine Canyon. Occurring in Mexico along both the Atlantic and Pacific slopes, the fan-tailed warbler was previously known in the U.S. only from a handful of sightings in remote wooded canyons of southeast Arizona. For just over a month, hundreds of birders drove the rough seven-mile long road and hiked four miles roundtrip to catch a glimpse of this very rare bird. Most were rewarded, but only a quick few managed a photograph of this first Texas record.

An Endangered View

Mountains are solid as a rock. They have been around for millions of years, and yet they are becoming part of an endangered view in Big Bend National Park. Sure they’re still there, but are you able to see them? The very skies above Big Bend are changing.

Many visitors come to Big Bend seeking expansive vistas, limited only by the horizon. But the horizon seems much closer as pollution hides entire mountain ranges behind a blanket of haze. This is becoming an all too common sight. Big Bend’s impressive views, with the ability to see detail on objects 100 miles away was one of the reasons this land became a National Park. Now, most visitors are met with moderately hazy days, with over twenty days out of the year featuring fewer than thirty miles of visibility.

Unfortunately not just the views are changing, but the ecosystems within the park are being affected as well. A long-term study in Pine Canyon has linked increased pollution to increased nitrates in the air and in the soil, making it significantly more acidic. This altering of the soil will change the composition of the plant communities growing in the affected areas, eliminating some species while making the area more prone to weeds. When the next generation of visitors comes to the park, they might be robbed of the opportunity to see the diversity of native cacti and wildflowers blooming around the base of the Chisos.

Where is this pollution coming from? Big Bend is a remote park, but not immune to the transport of pollutants carried on large-scale air patterns. Air resource specialists have been monitoring air quality since 1978, identifying the polluting and tracking wind patterns to identify the sources. They have found that much of the pollution comes from Central and East Texas refineries and coal-fired plants. Additional pollution comes from Mexico and as far away as the Ohio valley.

The Clean Air Act of 1970 (amended in 1977 and 1990) includes provisions to protect the National Parks’ air quality. Standards are set in place to “prevent the significant deterioration” of air quality in areas of natural, scenic and historic value such as Big Bend. But legislation can only go so far, leaving individuals room to make a difference. Coal burning power plants are a major source of pollution. Using energy-efficient appliances and lighting reduces electricity consumption. Additionally, many electric companies offer customer energy conservation programs and electricity from alternate sources. Cars are another major source of pollution. Keeping cars in good working condition, driving at medium speeds, using energy-conserving grade motor oil and “clean” fuels can help reduce exhaust emissions. Decisions made at home can have far-reaching effects. You can help ensure the future of Big Bend’s sky.

Notes

1 The pH data (unpublished) is part of an ongoing study of the Pine Canyon watershed. This is a joint effort of Dr. John Zak (Texas Tech University), Dr. Kevin Urbanczyk (Sul Ross University), and Dr. Joe Sirotnak of Big Bend National Park.

2 The BRAVO (Big Bend Regional Aerosol and Visibility Observational) study was conducted in 1999 and analyzed until 2004.

Santiago Peak, far to the north, can be clearly seen from the park during higher air quality conditions.
Managing Change

Change is a process with which many people are uncomfortable, especially if they happen to be fairly comfortable with the status quo. If considered within the grandest of scales, however, there is arguably no period of time in the 23-4 billion year history of the universe during which change has not been taking place.

Our home planet appears to be 4.5 billion years of age. If one examines current evidence scattered about our planet, one could say that there has also never been a period of time during which the earth has remained static, that is, absent of change over time. There was a period of time, for example, when the earth lacked oxygen, and another when continents were fused together. There was a period of time during which tropical plants dominated the landscape of Alaska, a time when the Grand Canyon was a flat plain, and multiple times when enormous sheets of ice covered huge areas of the planet’s surface. The very brief period of human existence on Earth, combined with the even shorter lifespan of the average human prohibits any one of us from noticing all but the most sudden of changes. There is no valid reason for any human to believe or expect that current conditions on planet Earth will continue to exist in the distant future as they do today. Change has been, and is likely to remain, the rule rather than the exception.

In that context then, consider the challenge before national park managers attempting to achieve the National Park Service mission. The first component of the NPS mission statement says: “The National Park Service preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations.”

If one considers both the natural and human forces of change at work within our national parks, monuments, and historic sites, the idea of actually achieving the NPS mission seems remote at best.

Perhaps the current state of affairs within Big Bend can illustrate the enormous challenges that face park managers. As at all national park areas, visitors to Big Bend National Park frequently pinpoint these important challenges through their questions.

Visitors often ask: “Why is the border between Mexico and the United States closed within the national park boundary?”

Many visitors traveled to Mexico from the park during past trips and consider the closure to be detrimental, not only to their personal experience, but also to the economy of the small Mexican villages across the river. On a more philosophical level, does the border closure represent a significant impairment to park cultural resources, specifically the cultural exchange that has existed here for hundreds of years? Does the closure impair the ability of the NPS to achieve its own mission statement?

Many visitors, especially those who have grown up in and near Big Bend before it became a national park in 1944, ask: “Why have the vast majority of ranch buildings, fences, and other evidence of historical occupation of this area been destroyed?” Is the ranching culture not an important part of the more recent history of this area? Ironically, if current management philosophy and law had been in place in the 1940s, the answer would have been yes.

Many visitors who wish to take advantage of birding opportunities within the park ask: “Why have windmills at Sam Nail Ranch and Dugout Wells not been repaired?”

The nature of this question requires both the NPS manager and the visitor to define what exactly constitutes “unimpaired.” In thinking about the issue, managers must establish the historical point in time from which impairment will be evaluated. Do we strive for an unimpaired Chihuahuan desert ecosystem within the boundaries of Big Bend National Park? If the answer is “yes” then windmills represent an unnatural pathway to bring valuable water to the surface of the desert, and as such, ought to be removed.

Where human impacts are concerned, natural changes are often trumped by human interference. The impact of overgrazing before the establishment of Big Bend may pale when compared to impacts of the introduction of non-native plants such as love grass, buffal grass, giant river cane, and tamarisk. Even the proliferation of native Trans-Pecos shrubs after the grass was removed begs the question “can a pristine....if such can be determined.”

Chihuahuan desert ever be re-established in Big Bend?”

How does the park management deal with invasive animal species? Barbary sheep, feral hogs, cattle, burros, nutria, bullfrogs, and elk are seen in Big Bend each year. Each of these exotics changes the flow of nutrients through native food chains. In some cases, native wildlife populations are adversely affected by the presence of non-native species. Should funding be allocated to eliminate species that clearly do not belong here, especially if there is doubt that they can be eliminated at all?

Challenges to the mission of the NPS sometimes arise from special interest groups. Do we establish mountain biking trails in our national parks? Do we re-build the walls of the old hot spring bathhouse to exclude a rising ever that keeps visitors from “enjoying” the hot spring, which is a naturally occurring feature within the park? Or do we treat the remaining walls as “unnatural” and remove them altogether?

As the Endangered Species Act of 1973 mandates, do we try to restore the Big Bend ecosystem by re-introducing species that have been extirpated by past occupants of the landscape? Is Big Bend an impaired system if key species are missing?

Opinions on these and other management issues abound in Big Bend National Park, as well as most parks in the National Park system. The task of managing national parks is daunting, far more complex than most visitors realize or even think about. But it is the park owners, the visitors who are US citizens, who must consider all the issues that surround the great treasures that are our National Parks.

The great writer Wallace Stegner once wrote “National Parks are the best idea we ever had. Absolutely American, absolutely democratic, they reflect us at our best...”

Confronting change, both natural and human-caused, within our national parks should also be democratic in nature. That happens only if all who care about our national parks remain engaged through thought and action to confront the changes with which the system is faced. It is they who must understand the important issues that confront the parks, it is they who must watch how park managers respond to those issues and, ultimately, it is they who must vote for the officials who will determine park management philosophy.
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.

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.

Observe always that everything is the result of a change, and get used to thinking that there is nothing Nature loves so well as to change existing forms and to make new ones like them.

~Marcus Aurelius
On the surface of things, the pace of change appears very slow at Big Bend National Park. Arid regions, like this one, display very little change from year to year. Compare a photograph taken today at a specific site in the desert landscape and then compare it to a 100-year-old photo taken at the same location. There is little difference. Creosote bushes are about the same size and have nearly the same spacing. Amp the time frame however, and change becomes much more apparent.

Big Bend country was an entirely different place 65 million years ago. If you had visited here then, you might have witnessed the giant Alamosaurus, a 50 ton, 100 foot-long plant-eating dinosaur. If you had seen a giant shadow cross the ground and then looked up, you may have observed a Quetzalcoatlus Northropi, a pterosaur with a 36 foot wingspan. And if this was then a National Park, you would have rushed to the nearest visitor center to fill in a wildlife sighting card.

We know that both of these gigantic creatures lived here because their fossil bones were discovered and excavated in the park. The fossils were contained in the Javelina formation, a sedimentary rock layer deposited when this region was an inland fresh water system of lakes, rivers, marshes, and swamps. Other fossils from this time frame, but not necessarily in the Big Bend Javelina formation, include those of birds, mammals, flowering plants, ferns, insects, fishes, corals, mollusks, and plankton, all organisms that you might have seen on your prehistoric visit. Now, if you traveled again to Big Bend country after waiting several thousand years, the changes would be amazing.

One thousand years hence, the first thing you would notice is the absence of the large dinosaurs and pterosaurs, indeed dinosaurs or pterosaurs of any size. They would be absolutely and irrevocably gone. The plankton, fishes, and crustaceans, too, would be gone. You would see birds, mammals, flowering plants, ferns, insects, and corals, but fewer varieties of each. If you assembled a team of scientists to perform a comparison survey, they would report that 70 percent of all plant and animal species are missing and presumed extinct. Walking around in disbelief you would find the color and texture of the earth beneath your feet had also changed. If you also happened to have a metal detector and tuned it to find iridium, a rare metal found in the inner regions of the earth and meteorites, it would peg the needle. What happened? One possible answer actually suggests origins off earth, and presumed extinct. Walking around in disbelief you would find the color and texture of the earth beneath your feet had also changed. If you also happened to have a metal detector and tuned it to find iridium, a rare metal found in the inner regions of the earth and meteorites, it would peg the needle. What happened? One possible answer actually suggests origins off earth, and the apparent impact crater has now been found deeply buried in the sediments off the coast of the Yucatan peninsula of Mexico. The egg-shaped crater, called Chicxulub, is 10 miles across, testimony to the enormity of this cataclysmic event.

Scientists also tell us that, around the same time, there were gigantic volcanic eruptions which could produce results similar to those of a meteorite impact. These lava flows, now known as the Deccan Traps of western India, cover over 1,000,000 square miles. About 90 percent of the vast Deccan Traps erupted 65 million years ago, pouring out its vast volume of lava in hundreds of thousands to several million years.

What ties the Big Bend to these ancient cataclysms? Iridium. Because meteorites have a much higher percentage of the metal iridium relative to the earth, concentrations of this rare metal in terrestrial deposits are possible indicators of past meteor impacts. On the other hand, iridium also exists at the earth’s core, and a massive volcanic event could bring this rare metal to the surface. Around the globe, an iridium-bearing clay layer corresponding in age with both the Chicxulub crater and the Deccan Traps has been confirmed in 100 locations, including Big Bend National Park.

This layer, called the K-T Boundary, is the precise division between the Age of the Dinosaurs at the end of the Cretaceous Period and the Age of Mammals at the beginning of the Tertiary Period. We are fortunate that thirty percent of all species did survive and that some mammals, including our progenitors, were included among them.

Whether the great dinosaur extinction and the K-T boundary layer was caused by an extraterrestrial impact, gigantic volcanism, both, or neither is still debated among the experts. What is not debated is the presence of the K-T iridium boundary. Can you walk up and put your finger on it? Not really.

Traveling the road between the west park boundary sign and the Maverick entrance station offers an opportunity to see the deposits. Park on the road shoulder at mile marker 22 and look across the road to the northeast. How will you know the exact K-T boundary layer? It will be difficult to pinpoint but the bands of purple in the clay hills to the northeast will give you an approximate idea of the location. One thing is certain: below the layer you might find dinosaur fossils, but above it, you will definitely not. And what about future K-T like boundaries, deposited tens of millions of years from now? Will there be human fossils below the boundary layer and no human fossils above?
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.

Floating the Rio Grande

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.

Backcountry roads

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 #8 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.

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 #8 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 “unimproved” 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.

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 meters) 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.

### Eastside — Panther Junction and Rio Grande Village

<table>
<thead>
<tr>
<th>Trail</th>
<th>Trailhead Location</th>
<th>Round Trip (mi/km)</th>
<th>Difficulty, Elevation Changes, and Maps</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grapevine Hills</td>
<td>Grapevine Hills Road mile 7</td>
<td>2.7/3.5 1 hour</td>
<td>Easy</td>
<td>Follows a sandy wash through boulder field. A short climb at the end takes you to a large balanced rock.</td>
</tr>
<tr>
<td>Hot Springs</td>
<td>End of Hot Springs Road</td>
<td>0.75/1.2 1/2 hour</td>
<td>Easy</td>
<td>Walk past historic buildings to the riverside hot spring. Take a bathing suit and soak in 105°F water. Spring is subject to flooding due to rising river levels.</td>
</tr>
<tr>
<td>Rio Grande Village Nature Trail</td>
<td>Rio Grande Village Campground Opposite campsite 18</td>
<td>0.75/1.2 1/2 hour</td>
<td>Easy</td>
<td>Cross a boardwalk to a great view of the river and distant mountains. Good birding and sunrise/sunset views.</td>
</tr>
<tr>
<td>Boquillas Canyon</td>
<td>End of Boquillas Canyon Road</td>
<td>1.42/3 1 hour</td>
<td>Easy</td>
<td>Begins with a short climb, then descends via a sandy path to the river. Ends near a huge sand “slide.”</td>
</tr>
</tbody>
</table>

### The Chisos Mountains

<table>
<thead>
<tr>
<th>Trail</th>
<th>Trailhead Location</th>
<th>Round Trip (mi/km)</th>
<th>Difficulty, Elevation Changes, and Maps</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basin Loop</td>
<td>Chisos Basin Trailhead near the Basin Store</td>
<td>1.62/1 1 hour</td>
<td>Moderate</td>
<td>Connects the Laguna Meadows and Pinnacles Trails. Nice views of the Basin area.</td>
</tr>
<tr>
<td>Window View</td>
<td>Chisos Basin Trailhead near the Basin Store</td>
<td>0.3/0.5 1/4 hour</td>
<td>Easy</td>
<td>Level, paved, handicapped accessible. Great mountain views. The best place in the Basin to catch sunset through the Window.</td>
</tr>
<tr>
<td>Lost Mine</td>
<td>Basin Road mile 5</td>
<td>4.8/7.7 3 hours</td>
<td>Moderate</td>
<td>but steep</td>
</tr>
<tr>
<td>The Window</td>
<td>Chisos Basin Trailhead or Basin Campground</td>
<td>5.6/9 4 hours</td>
<td>Moderate</td>
<td>with steep return</td>
</tr>
</tbody>
</table>

Smoking is prohibited on all trails in the Chisos Mountains.

### Westside — Ross Maxwell Scenic Drive

<table>
<thead>
<tr>
<th>Trail</th>
<th>Trailhead Location</th>
<th>Round Trip (mi/km)</th>
<th>Difficulty, Elevation Changes, and Maps</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Creek Ranch</td>
<td>Ross Maxwell Drive mile 8</td>
<td>0.5/0.8 1/2 hour</td>
<td>Easy</td>
<td>Descends from overlook via old road to 1930s ranch buildings; connects the Blue Creek Canyon &amp; Dodson trails.</td>
</tr>
<tr>
<td>The Chimneys</td>
<td>Ross Maxwell Drive mile 13</td>
<td>4.8/7.7 2 hours</td>
<td>Moderate</td>
<td>due to length</td>
</tr>
<tr>
<td>Mule Ears Spring</td>
<td>Ross Maxwell Drive mile 15</td>
<td>3.8/6 3 hours</td>
<td>Moderate</td>
<td>A beautiful desert hike to a small spring. Spectacular geology and mountain/dessert views.</td>
</tr>
<tr>
<td>Santa Elena Canyon</td>
<td>8 miles west of Castolon</td>
<td>1.62/6 3 hour</td>
<td>Easy</td>
<td>Crosses creekbed, climbs stairs, then follows the river upstream into the mouth of the canyon. Flash flooding on Teregua Creek can close this trail.</td>
</tr>
</tbody>
</table>

### 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 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.

**Remember:**
- Smoking is prohibited on all trails in the Chisos Mountains.
- No collecting or removing of vegetation.
- Wildflowers are subject to spring flooding. Please be aware and watch your step.
- No pets, other than assistance animals.
- No fires.
- No alcoholic beverages.
- Wear sturdy shoes.
- Always carry water.
- Let someone know where you are going and when you expect to return.
- Pack it out, pack it in.
- After dark, turn off vehicle lights.
- Always check trail conditions before setting out.

**Featured Hike**

The Hot Springs Canyon Trail

**Description:** 6 miles (9.7 km) round-trip

- **Distance:** 3 miles (4.8 km) with shuttle

**Elevation:** 467’ (142 meters) gain

The Hot Springs Canyon Trail is a scenic hike connecting the Hot Springs with the Daniel’s Ranch area of Rio Grande Village, and is like taking a trek through time; from the recent resort ruins and discarded dish shards to traces of Big Bend’s ancient past as revealed in the rocks themselves (remember: no collecting). The trail crosses three types of fossil-filled limestone (Boquillas, Buda and Santa Elena), where shells and ammonites can be observed.

The trip can be started from Daniel’s Ranch (accessible to all vehicles), or from the Hot Springs parking lot (as described here). This trail is lovely in the fall, winter, and especially the spring when cacti and other wildflowers are blooming, but offers little shade for relief from the heat of mid-summer. Avoid the Hot Springs area after heavy rains or high river levels as the trail will be muddy.

A two-mile long dirt road (accessible to all except RV’s and wide trucks) leaves the paved road to Rio Grand Village near milepost 17 and leads to the Hot Springs parking lot. The signed trailhead is found at the south edge of the parking area, where you may purchase a guidebook about the history of J.O. Langford and his resort. The trail leads approximately 2.5 miles past the old trade post and former motor court, through a shaded alcove where Native American pictographs decorate the rock walls, and finally to the hot springs themselves. Another 0.25 mi farther is a signed junction, to the left an alternate high trail heads back to the start point by way of Langford’s home overlooking the confluence of Tortillo Creek and the Rio Grande, to the right the sign points the way to Rio Grande Village. Continue on this path for the remaining 0.6 miles to Daniel’s Ranch.

The trail hugs the edge of the Rio Grande, often providing picturesque views of the river and canyon walls below. At various vantage points one has spectacular vistas of the Sierra del Carmen range downstream in Mexico, Sierra de San Vicente to the west, and the Chisos Mountains dominating the northern skyline. The trail eventually meanders from the river to cross the shallow end of a side canyon before climbing to a final overlook. From there it descends to Daniel’s Ranch, a picnic area shaded by cottonwoods. If you have a shuttle, your trip is done. If not, return on the same path and consider soaking your feet in the springs as the reward for completing the round-trip.
Welcome to Big Bend National Park and all that it offers to those fascinated with birds! With a list of 400 confirmed and an additional 450 hypothetical species, and many easy to access hotspots in which to search, Big Bend National Park indeed offers birders of all levels of skill opportunities to find challenge and reward. Patience, a good field guide, and knowledge of where to look are the keys to locating the birds of Big Bend.

First and foremost are the riparian areas, including the corridor of the Rio Grande (Rio Grande Village and Cottonwood campgrounds), and the many desert springs (Dugout Wells and Sam Nail Ranch). Other productive areas include the pinoy-juniper-oak belt (Green Gulch and lower Lost Mine trail), the moist wooded canyons of the high Chisos (Boot Canyon), the grassland/shrub community along the lower slopes of the Chisos (Blue Creek Canyon), and the remaining lower desert areas. A visit to all these key habitats will provide the best opportunities to see birds and to build that “Big Bend List.”

The timing of your visit will obviously dictate what birds you may be able to find in the park. A checklist of birds is available for purchase at any visitor center and is a great aid in determining which species are likely to be present at any given time of the year as well as the habitats where they are found.

The winter season (late November – mid-February) can be very productive for birds with almost a third of the 400 documented species occurring here during these months. Many of these are waterfowl and sparrows, the former along the Rio Grande, the latter haunting grassy areas in the lower and mid-elevation desert. The challenge of identifying winter plumage ducks and sparrows is huge, but not to worry. There are other birds out there to lend diversity to your list.

Easily found permanent residents of the park, many of them unique to the desert southwest, include greater roadrunner, cactus wren, and black-throated sparrow. These are joined by species that spend only the winter in Big Bend, migrating here from breeding grounds farther north, including Anna’s hummingbird, ruby-crowned kinglet, sage thrasher, orange-crowned warbler, green-tailed towhee, and sage sparrow. To tempt the avid birder, there is always the possibility of discovering a rare, out of range species. During the 2006 winter season two accidentally occurring species, tundra swans and boreal ovenbird, were observed and documented by park staff and visitors.

By late February the composition of species begins to change. Wintering birds start to leave, replaced by other species coming in from points south, signaling the onset of the spring migration. The number of migrants increases steadily through the ensuing months until peaking in the last two weeks of April and the first week of May. In this rush of birds are many neotropical migrants returning from wintering ranges in Latin America. Most pass through, but some remain the summer to nest and raise their young. Among the expected passage migrants comes the occasional rare and accidental species. The biggest surprise of early spring 2006 was a banded aplomado falcon observed just south of Panther Junction. Once native to the yucca-studded grasslands of West Texas, the aplomado falcon disappeared by the mid 1990s. Recent restoration efforts have established several breeding pairs in the Marfa grasslands and Marathon Basin north of the park. From band information the falcon was identified as a female released in 2004, 16 miles east of Marathon, Texas.

Discoveries like these add a special allure to the endeavor of birding, and maintaining a list of identified species is a legitimate and fun activity. Keep in mind though, that many of the species that are the source of your enjoyment are members of populations in decline. Habitat destruction and degradation on both the wintering and breeding grounds are bringing many of these birds to the brink. You can help in several ways.

Come join us in the annual Christmas Bird Count held December 28 and 29 (ask at a visitor center for details). Tread softly in fragile habitat areas, taking care not to damage water sources. Don’t disturb birds with excessive noise or intrusive attempts at photography. Be aware that the use of artificial lures (feeders and electronic playback devices) is prohibited in the park. Please share your observations with us, particularly of rare and accidental species. Your detailed reports become part of the record and can be of aid to researchers. Enjoy the birds of Big Bend, and do all that you can to ensure their return.

One final question: Is your view of the night sky the same as it was when you were a kid? For most of us over a certain age, the answer is “No.” Nights full of starry skies and fireflies have become blotted out by light pollution and air pollution. Remote areas like Big Bend National Park still exhibit the clear night sky views that were so much more common years ago. While airborne debris does blow into this area, the park is almost free of light pollution. Research has documented that Big Bend National Park has some of the absolute darkest night skies of any national park in the continental U.S. in terms of absence of artificial light. If our ancestors could see the night sky over Big Bend now, they might find that this aspect of the modern world hasn’t changed much at all.

To learn more about the night sky, take a look at the selection of astronomy books and star charts available in park bookstores, or attend a ranger-led astronomy program.

**A Sky of Constant Change**

Without looking, can you name four constellations that are visible in the sky tonight?

Not all that long ago, just about anyone, anywhere in the world, could have answered this question without even looking up. Recognizing the stars and constellations, knowing when specific ones rose or set, told people when it was time to plant crops, when to expect floods, or when to prepare for winter or other seasonal weather changes. For instance, the Iroquois watched for the Great Bear to begin disappearing below the northwest horizon as a sign that winter would soon begin. The bear in the sky was going into its den, just as the bears on the ground were doing the same, in preparation for the cold weather.

Our ancestors knew that the features in the night sky changed throughout the year, and also that these features would appear to be present at any given time of the year as well as the habitats where they are found.

This observation allowed people to associate certain bright stars or star patterns with seasonal changes or key events. Of course, it also means that learning the constellations visible in December won’t do you much good in April. Next December, however, the night sky will look the same as it does this December.

Now, can you point toward the north without using a map, compass, or other tool? Our ancestors (well, those in the northern hemisphere) could easily do this, too. They observed that while almost all of the stars moved throughout the night and throughout the year, one star stayed in the same place. This is Polaris, the Pole Star. From our perspective here on Earth, this star appears to be lined up with our north pole. This knowledge guided people in their seasonal migrations, and led many slaves in the southern U.S. north to freedom. Measuring Polaris’ distance above the horizon also enabled sailors to get their bearings as they crossed the oceans, as you travel further north, Polaris is higher above the horizon.

Unfortunately, Polaris is fairly dim and doesn’t stand out among all the other stars. To find it, look for either the Big Dipper or Cassiopeia. Both of these patterns are bright and easy to find, and both can be used to point toward the North Star. The Big Dipper disappears below the horizon during the winter months at our latitude, but Cassiopeia will be visible all winter long.

**The Big Bend Paisano**

Ranger Mark Flippo

**The Night Skies**

Ranger Mary Kay Manning

J. ESTER
Keeping Wildlife Wild

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
If Big Bend National Park has a symbol, it might well be the mountain lion. Solitary and secretive, this mighty creature is Big Bend’s top predator, and is vital in maintaining the park’s biological diversity. Everywhere you go in Big Bend, you are in the territory of at least one lion. From mountain to desert, biologists estimate that the park has a stable population of approximately two dozen lions. Within the delicate habitats of the Chihuahuan Desert, mountain lions help balance herbivores 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.

Since the 1950s, there have been more than 2,700 recorded sightings of mountain lions by the visiting public within Big Bend National Park. While over 70 percent of these sightings were along park roadsides, encounters along trails have also occurred. Since 1987, two lion and human encounters have resulted in attacks on people. In all cases, those attacked recovered from their injuries and the aggressive lions were killed. The more we know about lions, the better able we will be to make life easier for them and for us.

Javelinas
For many visitors to Big Bend National Park, seeing a javelina (hav-uh-LEE-nuh) is a new experience. These curious creatures, also known as collared peccaries, are only found in the United States in Texas, New Mexico, and Arizona. They are covered with black, bristly hairs and generally weigh between 40 and 60 pounds. They usually travel in groups called bands that consist of 10-25 individuals. Peccaries have a highly developed sense of smell, but very poor vision.

Physically, javelinas resemble pigs, but in reality, they are not closely related to pigs at all and have been genetically distinct from them for millions of years.

A 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 you keep your campsite clean. Take trash and food scraps to a dumpster.

Black Bears
The return of black bears to Big Bend National Park is a success story for both the bears and the park. Native to the Chisos Mountains, bears disappeared from this area during the pre-park settlement era. After an absence of several decades, bears began returning to the park from Mexico in the 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.

Black 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.
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. The nearest banking/ATM services are located in Study Butte, 26 miles west of park headquarters. Most stores accept major credit cards; however, some local services accept only cash. It is advisable to have small bills ($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 (434) 472-2249 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.

Visitor Centers
Information and Services

Interpretive Activities Schedule posted on visitor center and campground bulletin boards for more information.

Campsite Reservations

Group Camping
Groups of 10 or more are eligible to reserve a spot in one of the park’s Group campsites at the Chisos Basin 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.

Developed Campgrounds at a Glance

<table>
<thead>
<tr>
<th>Campground</th>
<th>Sites</th>
<th>nightly Fee</th>
<th>Facilities</th>
<th>Registration</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chisos Basin</td>
<td>5,401</td>
<td>$14.00*</td>
<td>flush toilets, dump station</td>
<td>self-pay</td>
<td>surrounded by rocky cliffs; many hiking trails nearby</td>
</tr>
<tr>
<td>Cottonwood</td>
<td>2,169</td>
<td>$14.00*</td>
<td>pit toilets, no generator use allowed</td>
<td>self-pay</td>
<td>in a cottonwood grove along the river. grassy sites.</td>
</tr>
<tr>
<td>Rio Grande Village</td>
<td>1,850</td>
<td>$14.00*</td>
<td>flush toilets, dump station</td>
<td>self-pay</td>
<td>largest campground; shady sites. laundry and showers nearby.</td>
</tr>
<tr>
<td>Rio Grande Village RV</td>
<td>1,850</td>
<td>$21.00* up and</td>
<td>full hookups</td>
<td>self-pay</td>
<td>RGV Camper Store; Concession-operated; register at the RGV store.</td>
</tr>
</tbody>
</table>

Developed Campgrounds at a Glance

<table>
<thead>
<tr>
<th>Campground</th>
<th>Sites</th>
<th>nightly Fee</th>
<th>Facilities</th>
<th>Registration</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chisos Basin</td>
<td>5,401</td>
<td>$14.00*</td>
<td>flush toilets, dump station</td>
<td>self-pay</td>
<td>surrounded by rocky cliffs; many hiking trails nearby</td>
</tr>
<tr>
<td>Cottonwood</td>
<td>2,169</td>
<td>$14.00*</td>
<td>pit toilets, no generator use allowed</td>
<td>self-pay</td>
<td>in a cottonwood grove along the river. grassy sites.</td>
</tr>
<tr>
<td>Rio Grande Village</td>
<td>1,850</td>
<td>$14.00*</td>
<td>flush toilets, dump station</td>
<td>self-pay</td>
<td>largest campground; shady sites. laundry and showers nearby.</td>
</tr>
<tr>
<td>Rio Grande Village RV</td>
<td>1,850</td>
<td>$21.00* up and</td>
<td>full hookups</td>
<td>self-pay</td>
<td>RGV Camper Store; Concession-operated; register at the RGV store.</td>
</tr>
</tbody>
</table>

A busy day at the Rio Grande Village Campground.

Camping

Tent Camping
The National Park Service operates campgrounds at Rio Grande Village, the Chisos Basin, and Castolon. The cost is $8.00 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 campgrounds 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 next page for more information). Camping areas are often full during the Thanksgiving and Christmas holidays, as well as during spring break in March or April.

Trailer & RVs
All park campgrounds can accommodate trailers and RV’s, 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. Although there are no hookups, water, flush toilets, and a dump station are available. Set in a large grove of cottonwoods, the campground is adjacent to the Rio Grande. Many of the sites are pull-throughs. Generator use is limited from 8:00 am to 8:00 pm daily. A no-generator use area is also designated.

The 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 next page for more information).
Pets in the Park

What Not to Do

"If the mood of a visit at Rio Grande Village this morning. A woman asked if the dog and her dog could join our hike. When I told her that she was welcome but the dog was not, she led the dog into a picnic table and joined the group. After the hike, as we approached the woman's campsite, instead of finding "f unrestricted cemented gravel. We discovered only its remains. "A javelina was just completing a more of this information.

Pats in a Wilderness Park

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:

Tortelina Creek Kennels (Oct-April)
Trrtelina, TX
(432) 371-2348

Red Roof Inn of the Big Bend
Alpine, Texas
(432) 837-3475

Alpine Veterinary Clinic
Alpine, Texas
(432) 837-3888

Alpine Small Animal Clinic
Alpine, Texas
(432) 837-5416

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 ½-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.

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 camp sites are found, not made. While on the trail, walk 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 254 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 barbecue grills in your campsite.

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.

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 100°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

Remember, desert heat is deadly. Do NOT leave your pet alone in a vehicle. Pets are not allowed on trails, off roads, or in the river.
Backcountry Planning

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.

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 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 88 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 6 for telephone listings) provide guide service in the park—you may reserve a trip by contacting them directly. If you plan to use your own equipment, you must obtain a permit at a park visitor center. Stop by the Panther Junction Visitor Center for your permit and for current river conditions 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.

Backcountry Regulations

GROUNDFIRES AND WOODFIRES ARE PROHIBITED.
Use only gas stoves or charcoal within a BBQ grill. Pack all evidence of use. Smoking is prohibited on all Chisos Mountains trails.

PARK 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 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 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.
National parks are a protected resource; help preserve a quiet wilderness experience.

IN OPEN ZONES, CAMP AT LEAST 1/2 MILE AND OUT OF SIGHT FROM ANY WATER SOURCE AND AT LEAST 100 YDS. FROM ANY ARCHEOLOGICAL SITE, DRY WASH, WIND 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 4-6 miles from any water source and well away from camp.

POSSESSION OF FIREARMS, OTHER WEAPONS, AND TRAPS IS PROHIBITED.

MOTORIZED VEHICLES & 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 coolgear in a hard-sided vehicle or food storage locker where provided.

14 The Big Bend Paisano
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 A.L.L. occupants of a vehicle wear seat 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. Dispose of garbage properly in the special animal-proof dumpsters and trash cans provided.

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

Swimming
Hot weather makes the muddy Rio Grande look very inviting, but swimming is not recommended. Water-borne microorganisms 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 432-375-2376 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 staying 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 precious 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 shade 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 cool off by drinking huge gulps of water—whether at a spring, in a cold drink, or by pouring water on you. Drink 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
Watch 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 desert sun burns easily. It needs shade, sunscreen, sunshades, a wide-brimmed hat, and proper footwear. Dehydration is accelerated by exposed skin. To keep you cool try: Wear long-sleeved, loose-fitting, light-colored clothes.

Weather

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.

Winter and Spring
Winters are generally mild, although periods of cold weather are possible. Fronts and storms can blow in quickly, lowering temperatures throughout the park.

Spring brings warmer temperatures; the river tends to be the warmest place in the park. Plan your activities with the weather in mind, visit the river in the morning, and always carry plenty of water.

How Hot Is It?

<table>
<thead>
<tr>
<th>Month</th>
<th>Avg. High/Low</th>
<th>Avg. Rainfall</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>61/35</td>
<td>.46</td>
</tr>
<tr>
<td>February</td>
<td>66/34</td>
<td>.34</td>
</tr>
<tr>
<td>March</td>
<td>77/45</td>
<td>.31</td>
</tr>
<tr>
<td>April</td>
<td>81/52</td>
<td>.70</td>
</tr>
<tr>
<td>May</td>
<td>88/59</td>
<td>1.50</td>
</tr>
<tr>
<td>June</td>
<td>94/66</td>
<td>1.93</td>
</tr>
<tr>
<td>July</td>
<td>93/68</td>
<td>2.09</td>
</tr>
<tr>
<td>August</td>
<td>91/66</td>
<td>2.35</td>
</tr>
<tr>
<td>September</td>
<td>86/62</td>
<td>2.12</td>
</tr>
<tr>
<td>October</td>
<td>79/53</td>
<td>2.27</td>
</tr>
<tr>
<td>November</td>
<td>66/42</td>
<td>.70</td>
</tr>
<tr>
<td>December</td>
<td>62/36</td>
<td>57</td>
</tr>
<tr>
<td>Yearly</td>
<td>79/47</td>
<td>15.34°</td>
</tr>
</tbody>
</table>

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