



# The Paisano

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

Volume 26, No. 2 Fall 2005



Nina Hannold's gravesite

## Life and Death

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.

Even a casual visitor to the Big Bend will observe the ongoing process of life and death; be it the towering skeleton of an agave bloom from a previous year, or a suicidal jack rabbit. During much of the year turkey vultures, an infamous desert symbol, circle over the park in their search for carrion.

Even the rocks that form the landscape betray a millennial cycle of destruction and rebirth through volcanism and other processes. The massive bridge running over lower Tornillo Creek acknowledges another part of this process, the sudden flash floods which rearrange the earth and further the process of erosion.

Human history in the Big Bend is well known for its stark character, punctuated by violent encounters between American Indians, Spaniards, Mexicans, and settlers. The cemeteries and gravesites throughout the park provide mute symbol to the toll of a century of settlement.

While these legacies give the region a harsh reputation, the circle of life and death is a necessary part of all environments. In the Big Bend, this desert dichotomy is best characterized by two plants: the agave (also known as the century plant) and the resurrection plant. The agave, after a life span of twenty to thirty years, shoots up a bloom stalk over fifteen feet tall, then dies. On the other hand, the resurrection plant is a humble, often-overlooked example of desert flora. The plant adopts a withered appearance much of the year, brightly springing to life only after heavy rain.

In this issue of the Big Bend Paisano, we explore the various ways in which life and death permeate all of the park's unique resources. While you are here, we encourage you to observe the ongoing process of life and death; however, take steps to ensure a safe and enjoyable experience.

### 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.

As a large natural park, Big Bend National Park provides an excellent opportunity to view the often-complicated processes that make up everyday life for the plants and animals that call the Chihuahuan Desert home. During the fall season the park experiences one last wildflower bloom (if the late summer rains were heavy enough), and in the Chisos Mountains, you might notice oak



John H. King  
Superintendent John H. King

and aspen leaves turning colors toward the end of the season. Late summer rains can also bring flash floods, turning dry creekbeds into dangerous torrents.

During your visit to Big Bend, while you enjoy the unique landscapes the park has to offer, make sure to look after one additional precious resource: yourself. Safety is your responsibility; planning ahead with extra water, and other basic precautions such as sunscreen and a good pair of hiking boots can make all the difference in ensuring an enjoyable experience.

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. Above all be safe.

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### 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 roadrunner.

### Remember:

- The speed limit on all park roads is 45 MPH, unless posted slower.
- Resource collecting is prohibited in Big Bend National Park. Be on the lookout for illegal collecting activities and report suspicious activities to a visitor center, or park ranger.

### Emergencies

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



National Park Service  
U.S. Department of the Interior

Big Bend National Park

The Big Bend Paisano is published three times a year by the National Park Service and the Big Bend Natural History Association for the orientation and education of visitors to Big Bend National Park and the Rio Grande Wild & Scenic River.

#### National Park Service

Editor, Eric Leonard, Park Ranger  
Chief Naturalist, David Elkowitz  
Superintendent, John H. King

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

#### Big Bend Natural History Association

Executive Director, Mike Boren  
Sales Manager, Tom Gaffaney  
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Visitor Services Assistant, Anita Johnson



The Big Bend Natural History Association, established in 1956 as a private, non-profit organization, champions the mission of the National

Park Service in facilitating popular interpretation of the scenic, scientific, and historic values of Big Bend and encourages research related to those values. The Association conducts seminars and publishes, prints, or otherwise provides books, maps, and interpretive materials on the Big Bend region. Proceeds fund exhibits, films, interpretive programs, seminars, museum activities, and research.

#### Photograph Credits

The Paisano proudly uses photographs of the park taken by visitors when possible. These photographs bear the photographer's name; all uncredited images are NPS photographs.

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

EXPERIENCE YOUR AMERICA™

# Big Bend and the Border

Viewing the sun set against the Sierra del Carmen mountains is a sublime Big Bend experience, underlined by the irony that the mountains aren't a part of the National Park; in fact, they aren't even located in the United States. In addition to defining the curve that forms the Big Bend, the Rio Grande also serves as the international boundary between the United States and Mexico. Throughout much of its history the border along the Rio Grande has often been fluid, allowing people of both countries to come and go as needed. However, the border is an artificial boundary imposed on the natural environment, and as such is subject to political and social pressures.

Increased border restrictions following the 2001 terrorist attacks have led to a number of important changes that affect the international boundary in Big Bend. A visit to Big Bend is a wonderful experience to learn about the park's history and to experience a wide variety of natural history and recreation options. The park's border with Mexico is part of our shared landscape and a chance to experience and learn about our neighbors. A few simple steps can help keep the park safe for everyone who is here.

#### Crossings Remain Closed

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

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

#### When Visiting A Border Park

Big Bend National Park shares the border with Mexico for 118 miles. This is a remote region; however, each year hundreds of people travel north through the area seeking to enter the United States. Please keep the following in mind while visiting Big Bend:

- If you see any activity which seems to be suspicious, illegal, or out of place please do not intervene. Report it to a ranger as quickly as possible.
- It is possible you could encounter an individual or small group trying to walk through the park with little or no water. Please do not stop, but instead, immediately report such occurrences to a ranger. Lack of water is a life-threatening emergency in the desert.



#### 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 contaminants along the Rio Grande watershed. Supporting this illegal activity contributes to continued damage of the natural resources along the Rio Grande, and jeopardizes the possibility of reopening the crossings in the future.

## Volunteers in the Park

Last year over 150 volunteers contributed 38,355 hours of service to Big Bend National Park. Some service groups come for a few days, other volunteers stay for months. Some are students, others are retirees looking for adventure during their "golden years." Most of these volunteers work in visitor centers and as campground hosts; however, volunteers also help in science and resource management, maintenance, and administration. Regardless of age or background, these folks share a desire to make a positive contribution to the preservation and management of Big Bend National Park. Volunteers are a valuable and valued part of our operation and our community.

#### 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 Hiking Society  
Americorps  
Stan Amick  
Madeline Averett  
Barbara and Bill Baldwin  
Steven Boyle  
Dorita Brady  
Judy Brinkerhoff  
Nancy and Edwin Bump  
Kay and Doug Combs  
Denise and John Curd  
Nancy Daniel  
Nancy Dickerson  
Susie Douglas  
Samantha and Erwin Drabek  
Susan and Garry Esser  
Ken Fields  
Bud Frankenberger  
Steve Harper

Whit Hibbard  
Don Janes  
Sally and Bob Jones  
Mark Kirtley  
Joan and Jack Lamkin  
Greg Levandoski  
Terry Purvis  
Lee and Joe Pytel  
Dori and Tom Ramsay  
Carol Russell  
Samantha Schroeder  
Lauren Seidman  
Nicola Stringer  
Vicky Summy  
Joseph Webb  
Clara and George Willis  
Scarlett and Bob Wirt  
Reine Wonite

## Volunteer Spotlight



Every year, Americorps NCCC Volunteers contribute thousands of hours to Big Bend's Volunteer Program. Americorps NCCC (National Civilian Community Corps) are young volunteers between the ages of 18-24. In Big Bend, they are an invaluable work force for the trails program, usually staying six to eight weeks and camping the entire time. Don Sharlow, Trails Supervisor, says "The Americorps work extremely well with the trail crew, learn quickly and produce an amazing amount of quality work. They do all of this with smiles on their faces and sweat on their brows." The annual Ride For Trails motorcycle rally is able to fund the Americorps NCCC and other volunteer groups working on trails in Big Bend National Park.





# Big Bend Natural History Association



PO Box 196, Big Bend National Park, Texas 79834 432-477-2236 [www.bigbendbookstore.org](http://www.bigbendbookstore.org)

## What is the 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 past and present projects include:

- Operate book sales outlets in Big Bend National Park and Amistad National Recreation Area
- Publish trail guides and brochures and assist with the publication of *The Big Bend Paisano*
- Sponsor an on-going Seminar program
- Provide annual grants for research projects and administer grants and gifts received for the park
- Support the park's volunteer, Junior Ranger, and educational outreach 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. Our popular seminar program is an effective way for you to see and appreciate the Big Bend country and surrounding areas of West Texas. Sponsored by the Big Bend Natural History Association, the program offers a wide variety of ways to explore the secrets of the region and to learn about the wonders of the land from instructors who are informed, responsive, and insightful about their subject.

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

## Fall Workshops

Lodge and Learn: Outlaws, Rumrunners, Cowboys, and Comanches, Sept. 18  
Birding in Big Bend, Sept. 24-25  
Lodge and Learn: Big Bend History, Sept. 25  
Landscaping with Native Plants, Oct. 1  
Lodge and Learn: Big Bend History, Oct. 2  
History on Horseback, Oct. 8  
Tracking in the Desert, Oct. 9  
When Dinosaurs Ruled, Oct. 22  
Big Bend Star Party, Nov. 5  
History on Horseback, Nov. 6  
Geology Jeep Tour, Nov. 12  
Rock Art in Big Bend, Nov. 19  
Large Mammals of Big Bend, Nov. 21

## Featured Books

*The Secret Knowledge of Water*  
Craig Childs. An exploration of the role of water in desert landscapes. \$13.95

*Ghost Towns of Texas*  
T. Lindsay Baker. A tour guide to former communities throughout Texas. \$24.95

*Texas Graveyards*  
Terry Jordan. A guide to the cultural legacy of Texas graveyards. \$19.95

*Night Comes to the Cretaceous*  
James Lawrence Powell. A summary of scientific theory pertaining to the end of the dinosaur age. \$24.95

*The Wind That Swept Mexico*  
Anita Brenner. The history of the Mexican Revolution with 184 of the best photographs of the time. \$23.95

## General Books

*Big Bend: Official National Park Handbook*  
This full color book gives a brief introduction to the park and its history. It also contains a concise travel guide. \$9.95

*Big Bend: The Story Behind the Scenery*  
General overview of Big Bend's natural features. \$9.95

*Big Bend National Park Impressions*  
Brilliant color photos of the big panoramas and the small gems of the park. \$9.95

## Trip Planning and Park Information

*Deluxe Trip Planner*  
Contains the following items: Road Guide, Backcountry Road Guide, Hiker's Guide, Park Handbook, Bird, Butterfly, Invertebrate, Mammal, and Reptile Checklists, Texas Highway Map, Chisos Mountains Trail Map, Terlingua-Chisos Map, and Nature Guide. A \$26.50 value for \$21.50.

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

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

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

*Guide Set*  
Buy all three guides together (hiker's & both road guides) and save! \$5.00

*River Guides*  
Printed on waterproof paper to ensure their long-term usefulness, this guide contains topographic strip maps showing both sides of the river. All rapids and major topographical features are labeled. General information river guide included with purchase. \$3.00 ea.  
Vol. 1: Colorado Canyon through Santa Elena Canyon  
Vol. 2: Mariscal Canyon through Boquillas Canyon

## Maps

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

*Trails Illustrated Topographic Map*  
The entire 1,200 square miles of Big Bend NP on one map! Backcountry and day hiking information. Waterproof and tearproof.  
Scale 1:133333 \$9.95

## Award Winner

*Land of Contrasts: Big Bend National Park*  
With stunning photography and insights from park rangers, renowned filmmaker Carl Crum distills the essence of the park experience. See mountain vistas, river journeys, wildlife and cactus in bloom. A must-have for Big Bend lovers. Also available in Spanish, 38 minutes. DVD/VHS

## Screen Savers

Big Bend screen Savers on CD-ROM. Cycles through 36 high-resolution images, with text and wallpaper. IBM/Mac. \$9.95

## Join Us!

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

### 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.

### Do more with your dues!

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

### Annual Dues

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

### Life Membership

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

- Renewal
- New Member

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

You can also join online at [www.bigbendbookstore.org](http://www.bigbendbookstore.org)

## Subscribe to The Big Bend Paisano

Keep up with your favorite national park through a subscription to the park newspaper. **Note:** BBNHA Members already receive a subscription to the Paisano.  
3 issues per year \$10 (US & Canada)  
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Mail check or money order payable to BBNHA. Detach and mail to: Big Bend Natural History Association,  
PO Box 196, Big Bend National Park, Texas 79834



# Park News

## New Trail Guides

Newly revised guide books are now available for two of the park's self-guided nature trails: The Panther Path at the Panther Junction Visitor Center and the Rio Grande Village Nature Trail. These new booklets incorporate recent changes in scholarship regarding a number of park resources. In addition, the new guide books reflect a uniform style, replacing a hodge-podge of design styles used in the past. Over the coming year, a number of additional trail guides will also be converted to this new format.

## Panther Junction Visitor Center Expansion

The Panther Junction Visitor Center was constructed in 1961 and is no longer adequate, as visitation to the park has increased 400% 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 planned expansion will nearly double the available space in the visitor center and will be constructed in a style compatible with the architectural style of the building. The expansion will occur on the eastern side of the building and includes making the existing public restrooms handicap-accessible. The Friends of Big Bend National Park have waged a multi-year fundraising effort to fund new exhibits for the expanded visitor center. It is hoped that construction will begin before the end of this year.

## Recent Management Fires

Recent fire scars are visible in the area of the Basin junction and the Boquillas Canyon trail. These fires took place as part of Big Bend's Prescribed Fire plan. Fire is an essential part of Big Bend's ecosystems and prescribed fire is one of the most effective tools available to resource managers for promoting ecosystem health and reducing exotic plants. Additional prescribed fires are planned for the fall and winter. Short-term closures, to ensure firefighter and public safety, may be implemented during these fire activities.

## New Turtle Species

Field researchers near Boquillas along the Rio Grande have discovered a species of turtle new to Big Bend National Park, bringing the total reptile species count to 61. *Pseudemys gorzugi*, the Rio Grande cooter, a species previously unknown in Big Bend National Park, has been collected in shallow water traps by researchers studying the Big Bend slider, *Trachemys gaigeae*. The Rio Grande cooter is characterized by prominent yellow stripes on the head and neck, half moon blotches along the plastral edge, and large reddish hind feet. The cooter's known range is downstream of Big Bend and the Pecos drainage in southwestern New Mexico and western Texas.



Top: The Panther Path nature trail begins at the far side of the visitor center porch.

Bottom: The prescribed fire in the area of the Basin Junction was conducted to reduce the fuel loading alongside and near the road which provides the access to the Chisos Basin.

## Entrance Fees at Big Bend National Park

### 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 offset the difference.

### Where Does Your Money Go?

Twenty percent of the money collected from entrance and campground fees is redistributed to units of the National Park System that do not charge fees to assist in the upkeep and upgrade of those areas. Eighty percent of the money stays in Big Bend National Park.

### How Is Your Money Used?

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

### Recent Projects at Big Bend Made Possible By Your Fees:

- Reconstruction of the Rio Grande Village nature trail boardwalk
- Installation of a toilet at Hot Springs
- Develop a visitor center at Castolon
- Rehabilitate the Rio Grande Village Amphitheater

### Future Projects:

- Major expansion of the Panther Junction visitor center (see article on this page)
- Improvements to river access boat ramps
- Castolon historic district exhibits

# Resurrection

Ranger Mark Flippo

The intricate complexity of water, soil, plant communities, and wildlife populations that makes up the Big Bend, is protected within the boundaries of the park, but is never completely understood. We monitor water and air quality. We survey plant and animal populations. We research and experiment with restoration techniques, all attempts to know more, understand more completely the dynamics of the ecosystem, but our knowledge always seems to lag behind. Our own actions, however well planned or intentioned, sometimes create more harm than good. A single thread breaks, one organism goes missing, and the chain of resulting consequences alters the whole in some almost imperceptible way. Sometimes I think we try too hard to affect change and trust too little the resiliency of nature. Resurrection can, and does, occur.

Several spring seasons ago (Volume 23, number 1: Spring 2002), I wrote in this journal the story of one of the missing; Montezuma quail. This cryptic-plumaged desert quail (known variously as Mearns's, Harlequin and Fool quail) joined the ranks of the ghosts

of Big Bend by the 1960s, its West Texas range reduced to the grassy, oak-studded slopes of the Davis Mountains. In 1973 a small covey was transplanted from Arizona into Pine Canyon. Park biologists monitored the quail yearly until 1979, when the last survey turned up not one bird. The last documented report came from the South Rim of the Chisos in 1983. I ended that piece with a wish; "Perhaps one day the little 'Fool' quail will again haunt the dry hillsides of the Chisos Mountains." At the time, Montezuma quail haunted the Chisos only in legend and memory.

In May, 2003, while performing an annual breeding bird survey along the Green Gulch,



A fleeting glimpse of the Montezuma quail on the South Rim.

Park Ranger Dan Leavitt and I heard a ghostly, quavering call from the opposite slope, a call we had to search memory for. The bird moved on the ground upslope, calling every few seconds. We could never see it, never make a positive identification, but our memory whispered Montezuma.

In April, 2004, Texas Parks and Wildlife Department (TPWD) biologist Dave Holdermann, with years of experience studying Montezuma quail, traveled the South Rim of the Chisos. On the dry grassy slopes, he found several small scrapes in the soil; sign, to his trained eye, of Montezuma. In spite of a search and attempts at calling them in, the little quail remained unseen.

Fast forward to May, 2005. Another TPWD biologist, Sylvester Sarola, also well experienced in the habits of Montezuma quail, retraced his co-workers path into the Chisos. On May 14, very close to where Holdermann reported finding sign, Sarola first heard, then saw, a male Montezuma quail. Two weeks later, Sarola, Holdermann, and Park Wildlife Specialist Raymond Skiles returned to the site and photographed at least three individuals. Ghosts no more.

Questions remain. Where did the quail come from? Are they descendants of the 1973 transplant project? Are they quail from populations in the mountains of Mexico just to the south? I'll leave that question to the specialists. I find hope and inspiration in the renewed presence of this one small thread of the tapestry. Like the black bear before them, Montezuma quail have returned. Our part in the process was to make sure there was a place to come home to, a place to return from the dead. Resurrection can, and does, occur.





Ranger Doug Thompson

Violence is a part of our lives, and we read or hear about it almost every day—from terrorist attacks to murders, robberies and riots. Violent acts were equally prevalent in the Big Bend before 1944, when the area became a national park. In fact, we can see many similarities between this historic violence and that of our own time.

Much violence in the early Big Bend occurred between different cultures or groups of people. For instance, Comanche warriors once rode the Comanche Trail through the Big Bend to attack settlements and ranches in northern Mexico. In the Comanche view, their world was threatened, and the raids were a method of weakening their enemies. They passed through Persimmon Gap (today's northern park entrance) and crossed the Rio Grande at Woodson's or San Vicente Crossing, returning a short time later with captured livestock and people, some of whom were later adopted into the Comanche Tribe.

The Spanish government of Mexico often sent punitive expeditions northward against the Comanches and other tribes. In 1787 Governor Juan de Ugalde of Coahuila attacked the Mescale-ro Apaches in a stronghold at the foot of the Chisos Mountains (now within Big Bend National Park), possibly near Lower Juniper Spring. His band of forty soldiers reportedly killed several hundred Apaches during a single day of fighting.

During the chaotic years of the Mexican Revolution (1910-1920), people along both sides of the Rio Grande feared attacks by Mexican bandits. Residents of the little farming community of La Coyota (whose ruins now lie within Big Bend National Park) kept their doors firmly secured against bandits at all times. This reminds us of our own situation today, in which people fear and take precautions against terrorist attacks, both in our own country and throughout the world.

The most significant bandit raid in this area during the revolutionary era occurred in 1916. On the night of May 5 (the Mexican holiday Cinco de Mayo), a large group of bandits crossed the Rio Grande and swept up a dry wash to the tiny community of Glenn Springs, located on the east side of the Chisos Mountains. They plundered the store and post office, set fire to a number of buildings and killed three of the nine U.S. soldiers who were stationed there, along with the storekeeper's five-year-old son. The Glenn Springs Raid prompted the United States government to post cavalry troops at numerous locations along the Rio Grande for the remainder of the Mexican Revolution, including Glenn Springs, La Noria and Castolon (all within today's Big Bend National Park).

Violence between individuals, though not common, did occur in the historic Big Bend. One of the most noteworthy incidents occurred in 1908. Justice of the Peace Max Ernst was returning by horse and buggy to his home at La Noria, a small settlement on Tornillo Creek, when an unknown assailant ambushed and killed him near the location of the current tunnel on the road to Rio Grande Village. Despite a lengthy investigation and several hearings, his killer was never identified or brought to justice.

A similar event occurred in 1933, with the brutal murder of Juan de Leon, a resident of Boquillas (near today's Rio Grande Village), whose lonely grave can still be seen along the Old Ore Road. De Leon also was ambushed and killed by an unknown assailant near the site of his grave. Rumors still circulate today that the assailant may have been Joe Loftin, who had a homestead just north of La Noria and who may have accused de Leon of stealing some of his sheep. Other rumors accuse Joe's father, Oscar Loftin, who believed that de Leon wanted to date one of his daughters. But, whatever the case, de Leon's murderer apparently was never brought to justice. These events remind us of some prominent murder trials today, in which a killer is not conclusively identified or convicted. Obviously, there are parallels between Big Bend's violent past and the violence of today.

Regrettably, violence between various cultural groups and between individuals was a part of life in the historic Big Bend, just as violence continues to be a part of life today. In fact, our own familiarity with violence can help us to understand the lives and feelings of early Big Benders—the revulsion they experienced upon learning about yet another, senseless shooting, or their fear of attack by Indians, Spanish soldiers or bandits. We can easily sympathize with our earlier counterparts in the historic Big Bend.

# The Big Sleep

Ranger Rob Dean

*Death, the last sleep? No, it is the final awakening.* Sir Walter Scott

Extinction is the big sleep, the dirt nap, the last roundup. It is unlimited, bounded only by finality, and not new. We view it in amazement. Its preserved remains, the boned monuments of the past, rest quietly on display in museums or encased in stone awaiting discovery, a record of Earth's lost biodiversity.

True natural extinction is an elimination and always final. Its effects can be global or local, large scale or small, witnessed or missed. Estimates calculate up to 50,000 species being lost annually worldwide – the earth gets emptier by 140 species a day. Things we never knew about, or were known to exist are gone forever, except to imagination.

Extinction is fundamental to nature and not rare. It is simply a process of change, and is viewed by most as a loss whose cause is endlessly debated by philosophers, environmentalists, naturalists, and scientists. In Big Bend, the remains of a natural, global extinction can be viewed in the Panther Junction visitor center. Fossil clams and oysters of ancient Mesozoic seas; fierce marine reptiles called Mosasaurs; wing bones of great flying reptiles of the Cretaceous; huge horned dinosaurs, and the most recognized dinosaur in the world, T. rex – offer testimony to the extinction record in Big Bend.

A small local extinction is often termed extirpation – loss of a species within a portion of its original range – and can have far reaching, long lasting interrelated effects. Consider that we have witnessed, as active participants, the extirpation of Big Bend's native desert grasslands through overgrazing and drought in the early 1900s. Consider the resultant erosion of grassland soils without the rooted protection of rich desert grasses, lost, blown, washed to sea, and extinct by the mid 1920s. Consider the Texas gray wolf, a grassland

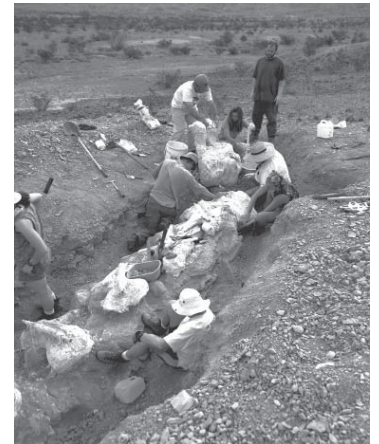
dependent species, last seen and extirpated in Brewster County in 1970. Consider a Big Bend with native soils, rich grasslands, and predator-prey associations that would include the wolf, prairie dogs, and pronghorn – associations never to be seen again – such is the power of extinction.

Nature is not without insurance and life's tenacity can make extinction difficult. The tenuous nature of life can make species recovery challenging but successes do occur. Species recovery after periods of prolonged absence reflects positively on an ecosystem and Big Bend is not without success and rediscoveries – most notably the endangered Big Bend mosquitofish recovered from only 3 individuals, now protected and surviving at Rio Grande Village. The return of the Mexican black bear in the 1980s was a surprising, encouraging sign; this year a black bear sow gave birth to triplets...all signs of a strengthening ecosystem. Big Bend's peregrine falcon is doing so well that some trail closures have been lifted. Desert bighorn sheep, reduced state-wide to about 150 individuals in the 1940s, are now wandering back into the Persimmon Gap area from the state managed Black Gap WMA. Montezuma quail, thought long gone from the Chisos, were recently sighted and photographed – the first sighting in over 20 years! And even more amazing is the rediscovery in Arkansas of the ivory-billed woodpecker thought extinct for 60 years, creating an unprecedented recovery opportunity for mankind.

Not everything recovers. Extinction is the ultimate end. In Big Bend we may witness losses, extirpations, reductions, limitations in all natural things; candidates include the last late leaf oak, the Mexican long nosed bat, the Texas horned lizard, water in the Rio Grande, and crystal clear skies. Visit Big Bend often and you can observe first hand the life and death struggle of survival and extinction.



The skull of *chasmosaurus mariscalensis*, found in Big Bend, measured over nine feet in length.



In 2001, a 27-foot-long section of fossilized neck bones belonging to *Alamosaurus*, a large, sauropod was air-lifted by helicopter from a wilderness area in Big Bend National Park.



# A Desert Sanctuary

There are two easy ways to die in the desert; thirst or drowning. This place is stained with such ironies, a tension set between the need to find water, and the need to get away from it, the floods that come with the least warning arrive at the hottest time of the year, when the last thing on a person's mind is too much water. It is everything here.

-Craig Childs



Above, Top to Bottom: Going, Going, Gone! The Hot Springs Bathhouse was totally submerged during flooding in October of 1932. Today only the foundation remains of the structure.

Left: Terlingua Creek, near the mouth of Santa Elena Canyon. Late summer thunderstorms can close the trail into the canyon due to flash flooding.

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



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



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



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



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



# Life Among the Graves

Ranger Sharon Collier



After driving through seventy miles of open desert scenery without another vehicle in sight, park visitors frequently use intriguing descriptions to illustrate their first taste of Big Bend's remote character. First-timers are usually astounded, more by the dearth of human presence on the landscape, than the landscape itself. Few places in the country claim such low population densities as the Big Bend, and visitors from large urban areas often feel unsettled and exposed in this mostly-uninhabited stark terrain.

Ironically, less than a century ago, the Big Bend was the hub of several thriving industries which sustained a diverse and healthy economy, particularly along the Rio Grande. Mexican and American wax makers, miners, ranchers, cavalry men, farmers, revolutionaries, entrepreneurs, loggers, merchants and bootleggers were drawn to the Big Bend area's wealth of untapped resources, creating a unique blend of two distinct cultures working side by side. The Big Bend teemed with industrial and social activity between the 1880s and the 1940s, and created a backdrop for the lives of thousands of people that came together in this vast and promising land.

Where did these people go? Where are they now? What happened to their families? Oddly enough, many of them are still here — underground.

Within Big Bend National Park's 800,000 acres lie the remains of over 310 area residents dispersed throughout 41 known burial sites. Most of these sites consist of small unmarked and unkept cemeteries adjacent to the historic locations of towns, wax factories, mines, and ranches.

Intrepid visitors who venture into the lofty expanses of desert scrub, or follow spring-fed creeks on cross-country hikes may accidentally stumble upon old town sites or burial grounds. A short walk from ruins onto the closest hilltop may reveal an assembly of low-lying, elliptically-shaped rock mounds, the length of an average-sized human being, camouflaged by the browns and greens of desert pavement.

The majority of these graves belong to unknown individuals that formed part of the transient Big Bend culture of the early 20th century. Most of these graves are undecorated, or perhaps ornamented only with a withered and cracked wooden cross. Most of these graves seem haphazardly put together, as if there was little time to waste on such formalities and symbolisms.

Most of these people were of Mexican descent, the product of a great migration of laborers looking for employment in the area's mines and ranches. Most of these people never made it back home.

The modest communal cemeteries found along the river and creeks house the remnants of individuals that perished of sickness and disease, many at the onset of childhood. Some were victims of the bloodshed and violence that the Mexican Revolution brought to the border. Others died far from the conveniences of modern medicine of risks associated with their chosen forms of employment.

With a few exceptions, the majority of Anglo-Americans that died in the Big Bend region were transferred to family gravesites "up north"; those that were buried on their Big Bend homesteads boast well-etched grave markers and walls to keep people, and marauding wildlife, out. In contrast, the majority of the humble Mexican graves are in a major state of disrepair, subject to the whims of vandalism or the relentless passage of time. Many have disappeared altogether, their rock markers washed away downstream during summer downpours and crosses whipped away by spring gales.

We hope that in your rambles through Big Bend National Park you take the time to stop at the gravesites at Terlingua Abajo, Glenn Springs, Hannold Draw and the Old Ore Road. Take a moment to pause and rest; sip a drink of water and absorb the desert silence. Listen to the past whispered on the winds as you meander from grave to grave, and try, for a moment, to imagine yourself in the Big Bend a century ago. Would you work in the wax factories? Would you farm along the river? Would you risk life and limb transporting tons of ore down rutted and washed-away roads? Would you have dreams for your future and family, or would you consider yourself lucky to have the morning sun beat down on you every day? And, would you hope that once you are gone, and your bones turned to dust, your legacy may live on as a silent, untouched pile of rocks in the middle of a large, vast desert?

Or would you even care?

*Please remember to respect and protect all of Big Bend National Park's resources, including ruins, grave markers, and archeological sites. These are the only tangible links we have to the lives of past Big Bend residents. Every pebble we lose to collectors, we lose forever. Please help keep Big Bend's past within the Big Bend.*

# A Roadkill Soliloquy

Ranger Mark Flippo



*You're bringing me down,  
I'm running aground,  
Blind in the lights of the interstate cars*  
—Grateful Dead

"Man! There are a lot of rabbits out here..."

I'm driving in from Terlingua, in the early morning before the sun, in the cool pause from dark to light. Normally I love this entry into another day. This particular morning though, the drive has become an obstacle course. Every tenth of a mile seemingly a dozen cottontails flash from the roadsides, coming in like tracers. I pull over at a favorite road side stop. One, to wipe off the coffee I spilled on myself from too strong a swerve avoiding three rabbits at once, each coming from a different direction and two, to reassure myself that no one is hanging from a bumper or dangling from the tailpipe. The truck is clean, but there's still another 15 miles to go. Ahead the shooting gallery continues, little white tails bouncing in the stream of my headlights. Lots of rabbits...

I would like to report that I made the trip in without a single casualty, but that would be a lie. At least two desert cottontails left this world under my tires.

In the days following this event, I pondered the carnage that occurs nightly along the park roads, and took to tallying up the bodies. In the approximately 22 mile stretch from the west park boundary to Panther Junction, over a four day period, I counted 78 cottontails, 42 black-tail jackrabbits, 5 western diamondback rattlesnakes, 4 black-tailed rattlesnakes, 3 striped skunks, 2 common poorwills, 1 lesser nighthawk, 1 coyote, 1 woodrat, 1 kangaroo rat, and lots of unidentifiable fur, feathers and scales.

Why so many critters on the roads?

I have no statistical data to support the following thoughts, just intuition and the theories of others who ponder things such as roadkill. Runoff from the pavement supports a lush growth of vegetation along the shoulders, especially tender shoots of young grass and other annuals, attracting herbivores like rabbits, jacks, and deer. Runoff also collects seed into convenient caches, attracting birds, mice, woodrats, and other seedeaters. The predators follow. Nocturnal birds like poorwills and nighthawks often sit on the pavement, gathering the last vestiges of the day's heat, their eyes glowing ghostly in the glow of our headlights. Sometimes, though, the road is just in the way, an obstacle to be crossed.

Desert millipedes can hit the roads in large numbers, winding along the pavement in red-brown ribbons. Usually this occurs after there have been good rainfalls, and the millipedes leave their burrows heading ...somewhere. In spite of many legs, a millipede isn't built for speed, and always loses the race with a vehicle. Amphibians like spadefoot toads emerge from their burrows after heavy late-summer downpours, racing to mate and deposit eggs in ephemeral pools. Sometimes the biggest pools form in the drainages along park roads. In some late summers, the roadways fill with swarms of lumbering creatures, some over three inches in length. Black armored, heavy bodies adorned with short red wings and bright yellow stripes, the mother of all grasshoppers, the Texas Lubber. Thousands of them for miles, they move in all directions with no apparent destination other than to mass on the road. There is no avoiding them. And nothing eats them... except other lubbers. A self-perpetuating mass roadicide, their smashed bodies grease the pavement. Only the sun and rain removes the evidence.

Most carrion is removed by other than the elements. During my little informal survey, I'm pretty certain that there were no recounted kills. The morning road crews are very efficient in removing the evidence — turkey vultures and common ravens recycle the protein (albeit at the risk of their own lives) usually before midday.

Other animals besides ravens and vultures also take advantage of the easy meals. I have seen coyotes and fox, hawks and eagles fending off the usual crew of carrion-eaters, and once had a memorable stand-off with a coyote over a rare snow goose downed by a late spring snowstorm, then killed on the road. It makes you wonder what all these carrion eaters, obligate and opportunistic, did before there were paved roads and fossil-fuel powered vehicles.

It's hard to imagine a horse or wagon causing much damage to wildlife, even those traveling a well-worn track through the desert. Travel down a dirt road today in your vehicle, even some of the more heavily traveled roads like Old Maverick, and you'll seldom see a road-killed animal. Sometimes a rabbit, rarely a snake, will lie in the road, becoming one with the washboard. Obviously we don't, as a rule, drive as fast on dirt as on pavement. Speed kills.

So, slow down on the road. Enjoy the scenery. Take advantage of the opportunity to see wildlife. Maybe spare a life.

# Making the Most of Your Time



B. Dudley

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

## One Day

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

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

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

## Three Days

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

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

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

## One Week

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

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

## Floating the Rio Grande

If you have the time and a spirit of adventure, you may want to consider a river trip. Seeing the park's canyons from the middle of the Rio Grande is both fascinating and gratifying. There are many possibilities, from half-day floats to extended seven-day excursions. Park Rangers can recommend a trip that meets your abilities and interests. Rafting and equipment rental companies are listed on page 16.

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

## Backcountry roads

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

## Enjoying Your Visit

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

Hiker's guides and road guides are available at book sales areas throughout the park, and they offer more detailed information about Big Bend's trails and roads. Attending *ranger-led activities* and *evening programs* are also good ways to learn more about Big Bend; check at the visitor centers and park bulletin boards for current activities.

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



J. Schmitt

Boating in Santa Elena Canyon



J. Blum

Hiking along Terlingua Creek









D. Catalani

Camping at Paint Gap





# Take a Hike on Big Bend Trails

Trail	Trailhead Location	Round Trip (mi/km)	(avg. time)	Elevation (ft/m)	Description
<b>Eastside — Panther Junction and Rio Grande Village</b>					
<b>Boquillas Canyon</b>	End of Boquillas Canyon Road	1.4/2.3	1 hour	40/12	<b>Easy</b> Begins with a short climb, then descends via a sandy path to the river. Ends near a huge sand "slide."
<b>Chihuahuan Desert Nature Trail</b> 	Dugout Wells 6 miles south of Panther Junction	0.5/0.8	1/2 hour	0/0	<b>Easy</b> A flat desert path near a cottonwood oasis. Signs interpret Chihuahuan Desert plant life.
<b>Dog Canyon</b>	3.5 miles south of Persimmon Gap	5.0/8.0	2 hours	60/18	<b>Moderate due to length.</b> Informal hike to a prominent canyon. Requires some modest route-finding.
<b>Grapevine Hills</b>	Grapevine Hills Road mile 7 Usually passable to all vehicles.	2.2/3.5	1 hour	240/73	<b>Easy</b> Follows a sandy wash through boulder field. A short climb at the end takes you to a large balanced rock.
<b>Hot Springs</b> 	End of Hot Springs Road. Unpaved and narrow road.	0.75/1.2	1/2 hour	0/0	<b>Easy</b> Walk past historic buildings to the riverside hot springs. 105°F water. <i>Take a bathing suit and soak a while.</i>
<b>Rio Grande Village Nature Trail</b> 	Rio Grande Village Campground Opposite campsite 18	0.75/1.2	1/2 hour	130/40	<b>Easy</b> Cross a boardwalk to a great view of the river and distant mountains. Good birding and sunrise/sunset views.
<b>The Chisos Mountains</b>					
<b>Basin Loop</b>	Chisos Basin Trailhead (near the Basin Store)	1.6/2.6	1 hour	350/107	<b>Moderate</b> Connects the Laguna Meadow and Pinacles Trails. Nice views of the Basin area.
<b>Window View</b> 	Chisos Basin Trailhead (near the Basin Store)	0.3/0.5	1/4 hour	0/0	<b>Easy</b> Level, paved, handicapped accessible. Great mountain views. The best place in the Basin to catch sunset through the Window.
<b>Lost Mine</b> 	Basin Road mile 5 (at Panther Pass)	4.8/7.7	3 hours	1100/335	<b>Moderate but steep</b> This trail provides excellent mountain and desert views. Go halfway for a shorter hike.
<b>The Window</b>	Chisos Basin Trailhead or Basin Campground	5.6/9.0 4.4/7.0	4 hours 3 hours	980/244 500/152	<b>Moderate with steep return</b> Descends to the top of the Window pouroff. Great scenery and wildlife viewing. For a shorter hike, start at the Basin campground. <b>Note:</b> Smoking is prohibited on the Window Trail.
<b>Westside — Ross Maxwell Scenic Drive</b>					
<b>Blue Creek Ranch</b>	Ross Maxwell Drive mile 8	0.5/0.8	1/2 hour	90/27	<b>Easy</b> Descends from overlook via old road to 1930s ranch buildings; connects with Blue Creek Canyon & Dodson trails.
<b>Castolon Historic District</b> 	Castolon Historic District Ross Maxwell Drive mile 22	0.5/0.8	1/2 hour	20/6	<b>Easy</b> A short, self-guided walk highlighting the unique history of this border community.
<b>Burro Mesa Pouroff</b>	Ross Maxwell Drive mile 11	1.0/1.6	1/2 hour	60/18	<b>Easy</b> A flat, sandy trail up a canyon to the base of a dry pouroff. Interesting geology and desert plants.
<b>Burro Spring</b>	Ross Maxwell Drive mile 11	2.2/3.5	1 hour	20/6	<b>Easy</b> A short hike through the open desert to a spring.
<b>Sam Nail Ranch</b>	Ross Maxwell Drive mile 3	0.5/0.8	1/4 hour	0/0	<b>Easy</b> A loop walk through the remains of a fairly typical 1930s Big Bend area ranch.
<b>Santa Elena Canyon</b>	8 miles west of Castolon	1.6/2.6	1/2 hour	80/24	<b>Easy</b> Crosses creekbed, climbs stairs, then follows the river upstream into the mouth of the canyon. Flash flooding on Terlingua Creek can close this trail.
<b>Tuff Canyon</b>	Ross Maxwell Drive mile 19	0.75/1.2	1 hour	70/21	<b>Easy</b> Balconies overlook this scenic canyon. A short trail leads into and through the canyon itself.
<b>The Chimneys</b>	Ross Maxwell Drive mile 13	4.8/7.7	2 hours	400/122	<b>Moderate due to length.</b> Flat desert trail to prominent rock formations. Look for rock art. No shade.
<b>Mule Ears Spring</b>	Ross Maxwell Drive mile 15	3.8/6.1	3 hours	20/6	<b>Moderate</b> A beautiful desert hike to a small spring. Spectacular geology and mountain/desert views.

Looking for more hikes? *The Hiker's Guide to the Trails of Big Bend National Park* (\$1.95) contains detailed listings of longer duration hikes and additional trails throughout the park and is available at all visitor center bookstores. Additional guides describing the paved and backcountry roads are also available.



Hiking out of Pine Canyon.

## Featured Hike

### Explore the Hidden Wonders of Pine Canyon

Distance: 4 mile (6.4 km) round trip  
Elevation: 1000' (305 meters) gain

Tucked away beneath two of the largest peaks in the Chisos Mountains you will find Pine Canyon. If you are interested in enjoying the mountains without dealing with the hustle and bustle often found on the main Chisos Trails (Lost Mine or the Window), this is the hike for you. The seven mile road to Pine Canyon is located 5 miles south of Panther Junction and is only drivable by vehicles with high ground clearance.

Pine Canyon offers a fairly moderate hike with great views of desert grassland for the first mile. Meandering ever closer to the end of the trail, Lost Mine Peak and Crown Mountain begin to loom above. The last mile of trail is steep; however the effort spent getting there is well worth standing beneath a 200' pour-off. During the rainy season many lucky visitors have arrived to view a gushing waterfall cascading down the blackened pour-off.

In 1982, Pine Canyon was designated a Research Natural Area, a place where human impact is minimized and natural processes are maintained in a near pristine state, providing a natural laboratory for research. As a result of this action, the canyon is managed as a day use area only; no overnight backpacking is allowed in the canyon. However there are some spacious primitive roadside campsites down the road that can serve as great jumping off points for exploring the canyon.

### For Your Safety While Hiking

- Wear hiking boots with good traction.
- Carry plenty of water, drink a gallon a day.
- Wide-brimmed hats or sunscreen are necessary precautions against the desert sun.
- If you encounter a mountain lion or bear, DO NOT RUN! Yell, scream, wave your arms, throw rocks or sticks, and look big.
- Do not allow children to run ahead or get separated from the group.
- Elevations in the Chisos Mountains reach over 7800 feet (2377 m). If you are not accustomed to high altitudes, even mild exertion may leave you feeling light-headed and nauseated.

# The Night Skies

Ranger Mary Kay Manning

Late summer can be a challenging time for stargazers in the Big Bend area. This is the peak of our rainy season, so cloudy skies are common. Prevailing winds blow from the south-southeast, bringing in pollution from industrial areas in east Texas, the eastern United States and northern Mexico. The good news is that the air quality improves as we move into autumn. Fall and winter cold fronts often clear the air, due to the lack of major pollution sources to the north and west of the park.

Several constellations indicate the changing seasons at this time of year. Keep an eye on the Big Dipper, part of Ursa Major, the Great Bear, as it slowly moves lower and lower toward the horizon on fall nights before finally disappearing from view. This indicates that winter will soon be here; just as the bears on earth go into dens for the winter, so does the bear in the sky, so we too should prepare for winter.

Scorpio dominates the southern sky all summer, but it, too, disappears in the fall. Legend has it that after the scorpion killed Orion the Hunter, the gods separated these two in the sky in order to keep them from fighting for all eternity; this is why you will never see them both in the sky at the same time.

Look low on the south-southeast horizon for a lone brilliant star. The appearance of Fomalhaut tells us that autumn has begun. It often appears to spin and change colors; moisture in the lower level of the atmosphere distorts the light we see and creates the appearance of movement and color.

The Milky Way runs directly overhead this time of year, from the northeast to the southwest horizons. The W-shape of Cassiopeia rises high against its haze in the northern sky as fall progresses. Andromeda and the Square of Pegasus lie nearby, moving directly overhead by November.

The Pleiades, or Seven Sisters, also begin to rise this time of year. This small cluster of bright stars looks like a tiny dipper to some. Binoculars reveal scores of dazzling bluish-white stars in this cluster. Look for red Aldebaran slightly below them. Aldebaran and the Pleiades are all part of the constellation of Taurus the Bull, but it takes a great deal of imagination to see this figure.

Far more constellations can be identified with the aid of a good star chart. Take advantage of our dark night skies, and you'll see a whole new side of Big Bend National Park.

# Birds and Birdwatching

Ranger Mark Flippo

While it is true that the incredible diversity of the spring migration will not be equaled during the late summer and fall, the months from August through November in Big Bend National Park still have much to offer to the birder. The high Chisos become a magnet for hummingbirds in August when the beautiful regal mountain sage (*Salvia reglia*) comes into bloom. All the breeding species of hummers are joined by migrating rufous and calliope hummingbirds and there is always a chance for something rarer; last year both broad-billed and white-eared hummingbirds made appearances in the Chisos. Consider too that many "specialty" species wander away from their normal nesting range after breeding. This phenomenon, called post-breeding dispersal, may also produce rarities like last year's rufous-capped and red-faced warblers, both review species in Texas. If the possibility of rarities like these doesn't excite you, keep in mind that on the heels of the post-breeding dispersal comes the beginning of the fall migration.

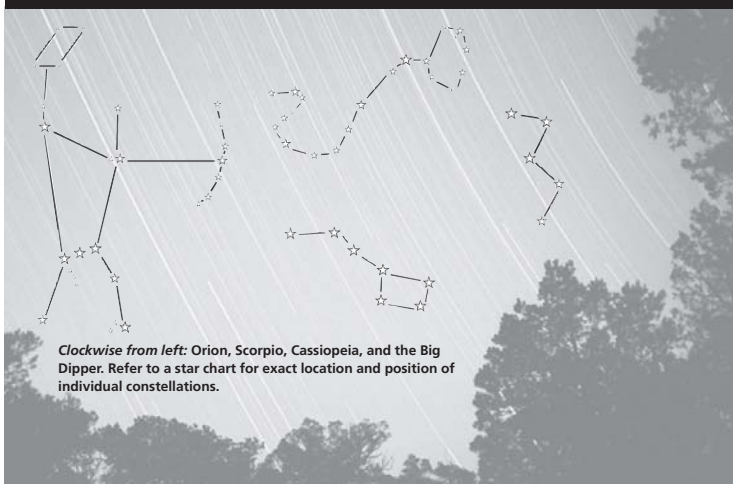
Moving at a more leisurely pace and lasting longer, generally from mid-August to early December, the fall migration is not as spectacular as that of the spring, but the potential still exists for surprises. Last November, a well documented pair of ruddy ground-doves began a several month stay at Cottonwood Campground, lurking in the mesquite thickets with resident Inca and common ground-doves. Fall can also be the season of the second chance. Warblers missed in the

spring sometimes show up again in the fall, including hermit, black-throated green and Townsend's warblers. The challenge of this season is identifying birds in faded adult or confusing juvenile plumage.

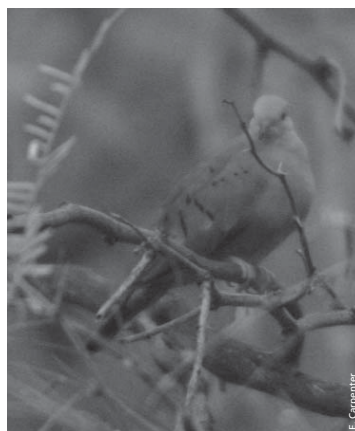
Patience, a good field guide, and knowledge of where to look are the keys to locating the birds of Big Bend. A checklist of birds is available for purchase at any visitor center and is a great aid in determining which species are likely and the habitats where they are found. Park naturalists offer guided bird walks throughout the season, an excellent way to learn about the basics of birding and the best places to look for birds. A visit to all the key habitats will provide the best opportunities to see birds and to build a "Big Bend List."

While "listing" is a legitimate and fun activity, keep in mind that many of the species that are the source of your enjoyment are members of populations in decline. Habitat destruction and degradation on both the wintering and breeding grounds are bringing many of these birds to the brink. You can help in several ways: tread softly in fragile habitat areas, taking care not to damage water sources. Don't disturb birds with excessive noise or intrusive attempts at photography. Please share your observations with us, particularly of rare and accidental species. Your detailed reports becomes part of the record and can be an aid to researchers. Enjoy the birds of fall, and do all that you can to ensure their return.

## Constellations of the Fall



Clockwise from left: Orion, Scorpio, Cassiopeia, and the Big Dipper. Refer to a star chart for exact location and position of individual constellations.



Ruddy ground-dove



White-eared hummingbird

## Be a Friend to Big Bend

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



PO Box 200  
Big Bend NP, TX 79834  
www.bigbendfriends.org  
432-477-2242

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

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





# Keeping Wildlife Wild



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

*Left: It's no laughing matter. Javelina that become habituated to human food become more aggressive. Several visitors are bitten by javelinas each year.*

S. Vancloppie

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 (animals that eat plants) 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 90% of sightings are along park roads, observations of lions on park trails also occur. While over 90 percent of these sightings were along park roadways, encounters along trails have also occurred. Since 1985, three 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.

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



## Javelinas

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



## Black Bears

The return of black bears to Big Bend National Park is a success story for both the bears and the park. Native to the Chisos Mountains, bears disappeared from this area during the pre-park settlement era. After an absence of several decades, bears began returning to the park from Mexico in the early 1990s. Today, wildlife biologists estimate that between 12-15 black bears may live in the park.

Black bears are omnivorous; their normal diet is comprised of large amounts of nuts, fruits, sotol and yucca hearts, and smaller quantities of small mammals, reptiles, and carrion.

Bears normally avoid humans, but bears that learn to get food from human sources often become aggressive in their attempts to get more "people" food. Rangers may have to kill bears that lose their fear of people and endanger humans in their attempts to get our food.

Big Bend has made it easy to keep edible items away from bears. Campers at the Chisos Basin Campground, at High Chisos back-packing 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 bear-proof, as well.

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



## Please Help

### In Developed Campgrounds

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

### Cyclists

- Use food storage lockers when provided.

### At the Lodge

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

### In the Backcountry

- Never leave packs or food unattended.
- Avoid carrying odorous food and toiletries.
- Leave excess food and beverages in your trunk or food storage box.
- Carry out all trash, including orange peels, cigarette butts, and left-over food.
- Ice chests and coolers are not bear-proof; store them in your vehicle.

## If you encounter a bear or mountain lion:

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

# Information and Services



## Ranger Programs

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

## Camper Stores

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

## Banking

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

## Lodging

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

## Gas Stations

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

## Post Office

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

## Showers and Laundry

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

## Fires

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

## Public Phones / Cell Phones

Public phones are located at visitor centers, campgrounds, camper stores, and the Chisos Mountains Lodge. Limited cell phone coverage is available in the Big Bend area. Do not depend on your phone to work in the Chisos Basin or remote portions of the park.

## Recycling

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

## Accessibility

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



All trails start here! The Chisos Basin trailhead is located just past the camper store in the Basin.

# Camping



## Trailers & RVs

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

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

Near the RV park is the 100-site Rio Grande Village Campground operated by the National Park Service. 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.

## Tent Camping

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

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

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



Chisos Basin Campground

## Campsite Reservations

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

Campsite reservations may be made on-line at [www.reserveusa.com](http://www.reserveusa.com), or by calling 1-877-444-6777.

## Group Camping

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

## Developed Campgrounds at a Glance

	Elevation (ft/meters)	Sites	Nightly Fee	Facilities	Registration	Comments
<b>Chisos Basin</b>	5,401 / 1,646	60	\$10.00*	Flush toilets, dump station	Self-pay station	Surrounded by rocky cliffs; many hiking trails nearby
<b>Cottonwood</b>	2,169 / 661	31	\$10.00*	Pit toilets, <i>no generator use allowed</i>	Self-pay station	In a cottonwood grove along the river. Grassy sites. Good birding.
<b>Rio Grande Village</b>	1,850 / 564	100	\$10.00*	Flush toilets, dump station	Self-pay station	Largest campground; shady sites. Laundromat and showers nearby.
<b>Rio Grande Village RV</b>	1,850 / 564	25	\$21.00 and up	Full hookups	RGV Camper Store	Concession-operated; adjacent to the RGV store.

\* \$5.00 with Golden Age or Golden Access Passport



# Backcountry Planning

## Getting a Permit

A free 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 sites throughout the park are difficult to obtain during the Thanksgiving and Christmas holidays, and during spring break in March and early April.

## Plan Ahead

Detailed information on backcountry campsites in the Chisos Mountains and along the backcountry roads are available on the park's website at [www.nps.gov/bibe](http://www.nps.gov/bibe)

A wide variety of maps, books, hiking guides and river guides are available for purchase at park visitor centers. If you would like to order them in advance of your trip, call the Big Bend Natural History Association at 432-477-2236 or visit their online internet bookstore at [www.bigbendbookstore.org](http://www.bigbendbookstore.org)

## 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 and should be filtered. Every gallon removed from backcountry water sources is one less for the wildlife which depend on them. Please carry enough water to supply your own needs — don't risk your life by depending on desert springs. Caching water is recommended for extended hiking trips in the desert.

## Hiking & Backpacking

Big Bend National Park offers over 100 miles of hiking trails in the Chisos Mountains and desert terrain. A free permit is required for all overnight trips in the backcountry. Decide how much distance you want to cover and how much time you have. Desert hiking can be unpleasant or deadly in hotter months.

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

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

## Horses

Visitors are welcome to bring and use their horses in the park. A free stock-use permit is required and may be obtained in person at any of the park's visitor centers up to 24 hours in advance of the trip. 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 where horse use is limited to the Laguna Meadow, Southwest Rim, and Blue Creek trails. Horses are not permitted in picnic areas, on nature trails, the Santa Elena and Boquillas Canyon Trails, or the Pine Canyon Trail. The Chisos Mountain and Burro Mesa trails are day-use only.

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

You may camp with your horses at many of the park's primitive road campsites. The Government Springs campsite, located 3½ miles west of Panther Junction, is a primitive campsite with a corral large enough for 6 horses. If you plan to bring horses to the park, you may reserve this campsite up to 10 weeks in advance by calling 432-477-1158.

## Backcountry Roads

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



## Floating the Rio Grande

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

If you plan to take a river trip in Big Bend National Park, you may bring your own equipment, or you can hire a guide service. Four local companies (see page 16 for telephone listings) provide guide service in the park—you may reserve a trip by contacting them directly.

If you plan to use your own equipment, you must obtain a free permit at a park visitor center. Stop by the Panther Junction Visitor Center for your permit and for current river condition information prior to your trip.

Permits for the Lower Canyons of the Rio Grande Wild and Scenic River may be obtained at the Persimmon Gap Visitor Center (a self-permitting station is available for after-hours use). 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.



Top: A comfortable campsite in the lower canyons of the Rio Grande.

Bottom: Camping along the backcountry roads.



## Leave No Trace in Big Bend National Park

### Plan ahead and prepare

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

### Travel and Camp on Durable Surfaces

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

### Dispose of Waste Properly

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

### Leave What You Find

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

### Minimize Campfire Impacts

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

### Respect Wildlife

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

### Be Considerate of Other Visitors

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

## Pets in the Park



### What Not to Do

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

- Ro Wauer

Chief Naturalist, 1970

### Pets in a Wilderness Park

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

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

- Keep your pet on a leash no longer than six feet in length (or in a cage) at all times. Pets are not allowed on park trails, or anywhere off established roadways. Pets may not be left unattended in the park.

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

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



**Pets are not allowed on trails or in backcountry areas.**

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

#### Terlingua Creek Kennels (Oct-April)

Terlingua, TX  
(432) 371-2348

#### Red Woof Inn of the Big Bend

Alpine, Texas  
(432) 837-7475

#### Alpine Veterinary Clinic

Alpine, Texas

# Big Bend is for Kids

## Explore!

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

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

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

## Hike a Trail!

Many park trails are suitable for families. Consult the listing of Easy and Moderate Hikes on page 9. For children in strollers, consider the Window View Trail, a paved ¼-mile loop trail that begins at the Chisos Basin trailhead. Remember to watch children closely and never let them run ahead or lag behind.

## 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.



Top: Children of all ages enjoy a good hike.

Bottom: Watching a deer in the Basin.

# Better Safe Than Sorry

Ranger Mary Kay Manning

"How often do people get bitten by rattlesnakes here?" "When was the last mountain lion attack?" "Are tarantulas poisonous?"

Rangers hear these questions almost daily. While these visitor concerns are certainly valid, injuries from animals tend to be either minor or rare. Rattlesnakes have bitten only 5 people in the park in the past 20 or so years, mountain lion attacks are even less common, and neither animal has killed anyone here in the park's history. And while tarantulas may bite if provoked, they are not dangerous to humans. In fact, park plants – notably cactus and lechuguilla – injure far more visitors than do the animals.

Park staff appreciate that visitors are concerned about their safety, but we would like to see visitors channel this concern into more common and more serious safety issues. The following is a list of the ways in which visitors most frequently imperil themselves and others.

Driving or riding in a motor vehicle is by far the most dangerous activity in the park, especially for those who fail to wear seatbelts. In the 13-month period from March 2004 through April 2005, there were 16 vehicle accidents here, with one fatality. One involved two vehicles backing into each other in a

parking lot; the others were all single-vehicle accidents. In the past four years, three people have been killed when they were thrown from rolling vehicles. Excessive speed, alcohol or drug impairment, wet or icy pavement, gravel, sharp curves, and wildlife in the road can all cause drivers to lose control. Park speed limits may seem slow, but there are reasons for these limits. Slow down, enjoy the scenery, wear your seatbelt, and watch for hazards! (Note: Federal regulations require that ALL vehicle passengers wear seatbelts!)

Failing to drink enough water while involved in strenuous activity in the heat is the second leading cause of visitor problems here. In the same 13-month period mentioned above, park staff responded to six dehydration/heat stress incidents, including one fatality. People frequently underestimate both the desert heat and how much water they'll need to drink here. Temperatures can reach over 110 degrees in the summer; even during the winter, they can climb to the 80s or even the 90s. Perspiration evaporates so quickly in this arid climate that people may be unaware of how much water they're losing. During the warmer months, limit physical activity to the cooler morning hours. Carry plenty of water or sports drinks, and drink before you feel thirsty. Depending on the temperature and your level of activity, you may need to drink

a gallon of water per day...or more. Monitor yourself and your companions for signs of heat stress and dehydration: headache, irritability, lethargy, confusion, and decreased urine output are all early indicators of problems.

Use caution around cliff edges. Much of the rock here is unstable and fractures easily, and there's nothing soft below it to break your fall. In the past six years, four people have fallen to their deaths in the park.

Watch the weather. Winter storms and thunderstorms can move in quickly. Hypothermia and lightning have both taken lives here. Rain can cause flash floods many miles away, so even if the sky overhead is clear, be careful around creek beds and the Rio Grande during the rainy season.

About 350,000 people visit Big Bend National Park each year. Most of them leave the park with wonderful memories and nothing more serious than sunburn or a cactus spine. With a little planning and caution, you can be one of these visitors...and not a Big Bend statistic.



# 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 each year, most result from car accidents. Drive within the speed limit, 45 mph maximum in the park, and watch for javelina, deer, and rabbits grazing along road shoulders, especially at night. Federal regulations require that ALL occupants of a vehicle wear seats belts while in a national park. Remember, too, that you share the road with bicyclists and pedestrians. Some park roads, such as the road into the Chisos Basin, are steep and winding and require extra caution. The Basin Road is not recommended for RVs over 24 feet or trailers over 20 feet. Finally, always select a designated driver before drinking alcoholic beverages.

## 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.

## Hiking

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

## 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 a portion of the year. Avoid hiking during mid-day in summer; 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, three 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.

## Desert Wildlife

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

## 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.

## Swimming

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

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

## Survive the Sun

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

### REDUCE YOUR ACTIVITY

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

### FIND SHADE

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

### DRINK YOUR WATER

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

### REDUCE ALCOHOL & CAFFEINE INTAKE

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

### PROTECT YOUR BODY

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

# Weather and Climate

## Weather

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

## What to Expect in the Fall

Throughout the season, daytime temperatures become cooler. Days are usually clear and mild; nights are often cool and windy. Autumn color displays begin in late October in the high Chisos. The late summer rainy season can extend into October; watch for sudden and heavy rainfall and flash flooding. Lower elevation desert hikes become more pleasant by the later autumn months.

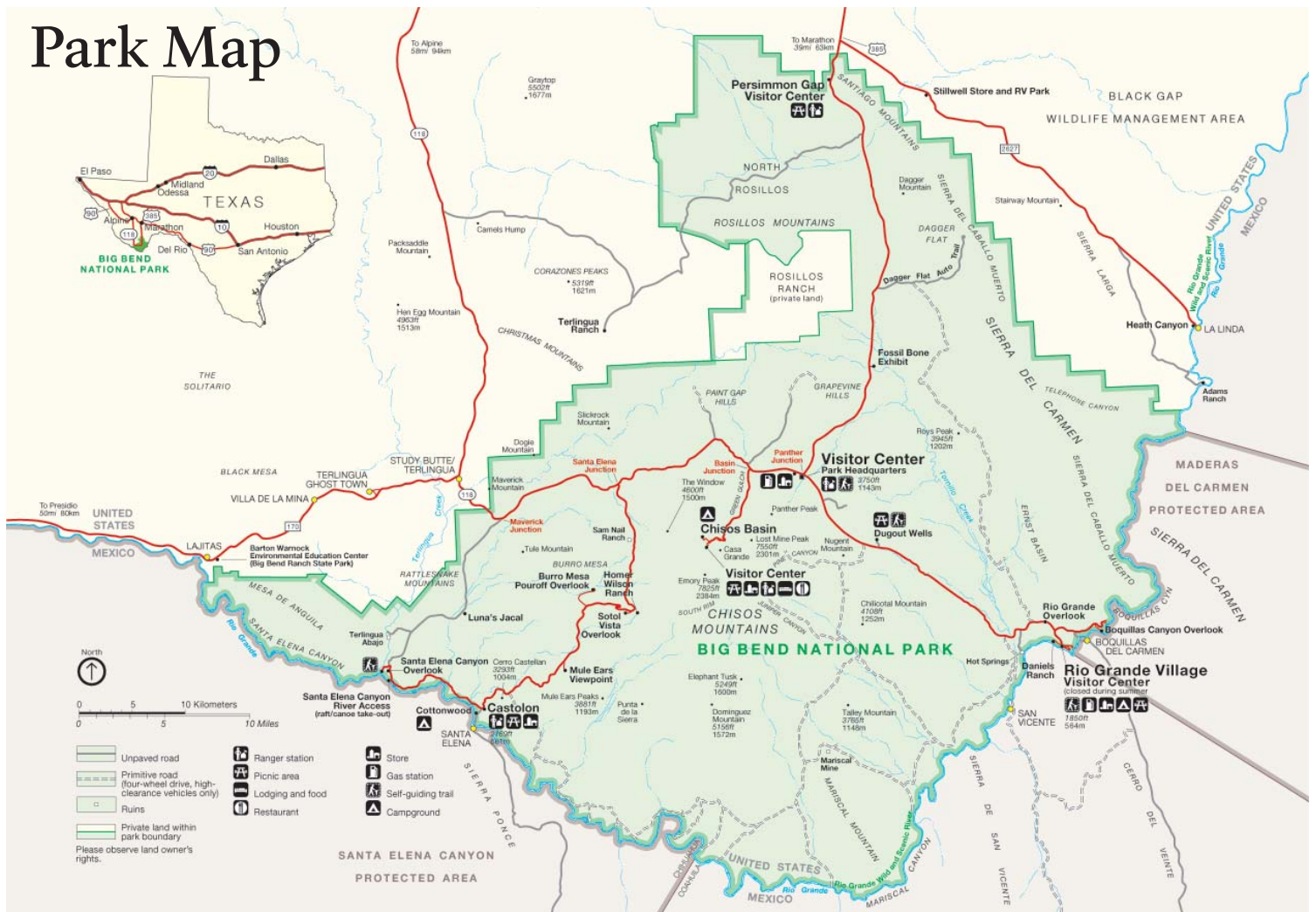
## How Hot Is It?

Average temperatures and rainfall at Panther Junction elevation 3,750 feet

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

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

# Park Map



## Local Services

### Inside The Park

#### EMERGENCY Call 911

**National Park Service**  
General Information 432-477-2251

**Big Bend Natural History Association**  
Booksales & Seminars 432-477-2236

**Visitor Centers**  
Castolon 432-477-2666  
Chisos Basin 432-477-2264  
Panther Junction 432-477-1158  
Persimmon Gap 432-477-2393  
Rio Grande Village 432-477-2271

**U.S. Post Office**  
Panther Junction 432-477-2238

**Lodging / Restaurant**  
Chisos Mountains Lodge 432-477-2291  
432-477-2292

**Park Gasoline Service**  
Panther Junction (also diesel) 432-477-2294  
Rio Grande Village 432-477-2293

**Campground Stores**  
Rio Grande Village 432-477-2293  
Chisos Basin 432-477-2291  
Castolon 432-477-2222

### Outside The Park

**Lodging**  
Lajitas Resort, Lajitas 877-525-4827  
Big Bend Motor Inn, Study Butte 800-848-2363  
Easter Egg Valley Motel, Study Butte 432-371-2254  
El Dorado Motel, Terlingua 432-371-2111  
Gage Hotel, Marathon 432-386-4205  
Heath Canyon Ranch Inn, FM 2627 432-376-2235  
Longhorn Ranch Hotel, Hwy. 118 432-371-2541  
Marathon Motel, Marathon 432-386-4241  
Terlingua Ranch Resort 432-371-2416

**Camping**  
Big Bend Motor Inn, Study Butte 800-848-2363  
Big Bend Ranch State Park, Lajitas 432-424-3327  
Big Bend Travel Park, Study Butte 432-371-2250  
Heath Canyon Ranch, FM 2627 432-376-2235  
Longhorn Ranch, Study Butte 432-371-2541  
Ocotillo Mesa RV Park, Study Butte 800-729-1406  
Stillwell's Trailer Camp, FM 2627 432-376-2244  
Study Butte RV Park 432-371-2468  
Terlingua Ranch Resort 432-371-2416

**Convenience Stores/Gasoline**  
Big Bend Motor Inn (gas/diesel) 800-848-2363  
Lajitas Trading Post (gas/supplies) 432-424-3234  
Study Butte Store (gas/diesel/groceries) 432-371-2231  
Stillwell Store & Station (gas) 432-376-2244

**Medical Services**  
Terlingua Medics 432-371-2536  
Lajitas Infirmary 432-424-5111  
Big Bend Regional Medical Center, Alpine 432-837-3447

**Banks**  
Quicksilver Bank & ATM, Study Butte 432-371-2211

**Guide Services**  
Big Bend Touring Society, Terlingua 432-371-2548  
Texas Jeep Expeditions 877-839-7238

**Rio Grande Float Trip Outfitters/Rentals**  
Big Bend River Tours, Study Butte 800-545-4240  
Desert Sports, Terlingua 888-989-6900  
Rio Grande Adventures, Study Butte 800-343-1640  
Far Flung Outdoor Center, Study Butte 800-839-7238

**Horseback Riding**  
Big Bend Stables, Study Butte & Lajitas 800-887-4331  
Spring Creek Remuda, 23 mi. south of Marathon 432-376-2260

*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, 90 miles to the northwest of the park is the largest community and offers the greatest number of services.*

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