Many visitors to Dinosaur National Monument are surprised at the diversity of the sights and activities to be enjoyed here. Use this newspaper as a guide to learning about what there is to see and do during your visit. The index below will help you find the information you want.

Habitat diversity is a bonanza for Dinosaur’s bats

By Michael A. Bogan, Wildlife Research Biologist University of New Mexico

Bats and dinosaurs? Well, probably not. Dinosaurs were long gone by the time the first fully-developed bats took wing, about 60 million years ago. But bats at Dinosaur? You bet—and lots of them. Dinosaur National Monument is a great place for bats. Studies over the last 10 years have shown that Dinosaur is home to at least 15 different species. There are few other places in Colorado or Utah where so many kinds of bats have been found in one place.

Although each kind of bat is unique, bats at Dinosaur are alike in many ways. First of all, they are mammals. Most species of bats here are small, about the size of a mouse. But unlike rodents, bats give birth to only one young per year. Bats mate in the fall, just before hibernation or migration, and give birth in late June or July. Young bats are helpless and are nursed by their mothers just like other mammals. After three or four weeks, the young make their first awkward flights, and begin to find their own nourishment. After that, it’s a race to capture enough food to acquire sufficient fat for the winter.

All bats at Dinosaur eat insects such as mosquitoes, moths, and beetles. In most of...
**GENRAL INFORMATION**

**Welcome to Dinosaur!**

Within our 210,000 acres you will find incredible geological, paleontological, biological and cultural diversity. Situated at the confluence of three major biogeographical regions, Dinosaur offers some of the most unique resources found anywhere in the world. The Monument was added to this country’s National Park System some 80 years ago by President Woodrow Wilson. Today, Dinosaur is one of 368 diverse units that represent the finest and most valued portions of this nation’s heritage.

Our knowledge of the Monument’s resource base is ever increasing, helping us to offer you more accurate interpretation and education. As understanding improves, you will see changes in management policies designed to support the delicate balance in our responsibility to preserve these resources unimpaired for future generations while providing for your use today. You can help us by simply making your impact on the resources unnoticeable.

Meanwhile, I hope you will stay awhile and take advantage of the variety of programs and activities available to you this year. Spend time with any of our staff members (like you, we hail from states such as Colorado, Utah, Iowa, Illinois, California, and Wyoming) and if you have questions about why or how we do something, don’t hesitate to ask. Enjoy your national monument.

Comments/Suggestions

We would like to know if you enjoyed your visit. What can the National Park Service do to make your next visit more enjoyable? Please send your comments or suggestions to: Superintendent, Dinosaur National Monument, 4545 Highway 40, Dinosaur, CO 81610, or call (970) 374-3000.

The seasons of Dinosaur

Dinosaur National Monument is a place of extremes. Temperature and visitation are two examples. High temperatures and high visitation occur at the same time, during peak summer months. Yet winter’s quiet, snowy landscape is a different scene entirely. Spring brings gentle rains and wildflowers; fall reveals the gold within green cottonwood leaves. These colorful seasons are the most comfortable and uncrowded times to visit Dinosaur.

Regulations

Because this national monument and its resources belong to everyone, we ask that people not collect or disturb any animal, plant, rock, fossil, or any other natural, historical, or archeological feature.

The mandate of the National Park Service is preservation—a form of conservation that recognizes our need for wild areas and relics of our past. It is your responsibility to be familiar with park regulations.

**VEHICLES** of all kinds, including 4-wheel drives, motorcycles, and bicycles, must stay on designated roads. Some older dirt roads have been closed to let plants grow back. All motor vehicles and their drivers must be properly licensed.

**CAMP** only in designated sites and do no digging or leveling. Keep all vehicle wheels on the pavement or gravel, when those surfaces are provided. There is a maximum of eight people per campsite.

**FIRE** has a role in natural landscapes, but a campground is no place for a wildfire! Campfires may be built only in fire pits or grate boxes. They must be kept small and never be left unattended, even for a minute. Wood, dead or alive, may not be gathered.

**BACKCOUNTRY CAMPING** requires a free permit. Contact a park ranger to obtain information and a permit.

**PETS** and wildlife do not mix. Pets must be leashed (maximum length 6 feet) or otherwise restrained at all times. Pets are not allowed on trails or in the backcountry, and leashed pets are restricted to areas within 100 feet of developed roads. Pets should not be left unattended and tied to an object without shade and water.

**HUNTING** is not allowed. Weapons of any kind (including BB and pellet guns, bows, and slingshots) must be completely unloaded and fully cased or broken down. Traps, explosives, fireworks and firecrackers are also prohibited.

**WATER** is a precious resource in this desert area. Use of soap and disposal of wastewater in streams is prohibited.

**WILDLIFE** must be treated with respect, and may not be molested, fed or disturbed, both for their protection and yours. Even small, “cute” animals may carry contagious diseases.
Hiking & Camping

"You can't see anything from your car. You've got to get out of the damn thing and walk!" — Edward Abbey

Hiking Trails
(Distances shown are round-trip)

1. Desert Voices
A moderately difficult 2-mile hike which begins at the Split Mountain boatramp area. Sweeping views of colorful desert and thought-provoking signs highlight this trail. Some displays done by and for kids.

2. Hog & Box Canyons
One mile and 1/4 mile long, respectively. Easy walks into narrow, shady canyons at the Josie Morris historic site.

3. Sound of Silence
A challenging 2-mile route which calls upon hikers to find their way by locating a series of landmarks. Introduction to the unique aspects of desert hiking.

4. Cold Desert
An easy, 1/4-mile trail which begins at the park headquarters, and explores the ecology of the Cold Desert.

5. Plug Hat Trail
Easy, 1/4-mile walk. Views of Uinta Basin; interpretation of geology, human history.

6. Harpers Corner
Spectacular views of deep, river canyons await those who make this moderate 2-mile hike. A park highlight.

7. Gates of Lodore
An easy, 1 1/2-mile hike leads to impressive viewpoint of the Green River as it enters the brooding red Canyon of Lodore.

8. Jones Hole
Moderate, 8-mile trail begins at national fish hatchery. Path follows a clear, rushing creek through soaring Jones Hole canyon. Features trout fishing, rock art, back-country camping.

Hiking Safety & Etiquette

This is a desert. Carrying water is a good idea on any hike. Natural water sources are scarce and may contain the parasite, Giardia. Before drinking water from any natural source, boil it for 10 minutes, or use a 1-micron filter.

Plant life and soils are fragile because of the dryness here. Where trails exist, stay on them, and do not cut across curves or switchbacks. When hiking, walk in single file to minimize the effect of your footprints, and stay in wash bottoms, slickrock, or animal trails, wherever possible.

Avoid walking on microbiotic soil—lumpy, dark-crusted areas that are actually gardens of tiny spore-bearing plants. One footprint may destroy a half-century or more of their growth.

Notes for Campers

Backcountry campsites at Ely Creek in Jones Hole may be reserved at the Quarry or by phone, (801)789-2115. Backpackers may camp in areas that are at least 1/4 mile off any established road or trail. Further restrictions apply and a free permit is required. Group campsites at Split Mountain are by reservation only; call (801) 789-8277. Application fee required.

Be careful with fire. Be sure it’s OUT COLD when you go to bed or leave your campsite. Firewood may not be collected in the Monument but may be purchased at Green River and Split Mountain Campgrounds. Fire is a real danger in this dry land. Camp stoves are recommended to minimize fire danger and environmental damage. Dispose of all wastewater in toilets.

Campgrounds

A — Green River
Eighty-eight sites in cottonwood grove along Green River, five miles east of Quarry. Facilities include modern restrooms, tables, and fireplaces. Drinking water. Summer ranger talks. Handicapped site. $10 per site per night.*

B — Split Mountain
Four Group Campsites available by reservation only. $20 per group site per night. Located four miles east of Quarry. Modern restrooms, tables, and fireplaces. Drinking water.*

C — Rainbow Park**
Two shaded sites near boatramp on Green River. Vault toilets, tables, and fireplaces. No water.

D — Echo Park**
Magnificent setting, accessible only by steep, rough dirt road. (Check on conditions with a ranger before attempting.) Nine sites. Vault toilets, tables (charcoal fires only). Drinking water. $5 per site per night.**

E — Deerloge Park
Eight sites among cottonwood grove on Yampa River. Vault toilets, tables, and fireplaces. No water.

F — Gates of Lodore
Seventeen sites on Green River. Vault toilets, tables, and fireplaces. Drinking water. $5 per site per night.**

* Water turned off fall through spring due to freezing temperatures. No fee when water is off.
** Access involves rough dirt roads, not suitable for trailers, motor-homes, or other large vehicles, and IMPASSABLE WHEN WET. When dry, these roads can be driven in most vehicles.
† Trash not collected. You must carry out your own garbage.
DINOSAUR NATIONAL MONUMENT

DESSERT RIVERS

The rivers of this dry landscape offer an irresistible opportunity for boating, one of Dinosaur's most popular recreational activities.

Much of Dinosaur National Monument is a desert, but the best way to see a lot of it is by boat. This seeming paradox is due to the Green and Yampa rivers. There are several places where you can drive or hike to look into these canyons, but floating through them is the most intimate way to experience their beauty and solitude.

The Green and Yampa are white water rivers, and floating them requires proper equipment and skills. Thus for safety as well as for preservation of the canyons' resources and wilderness qualities, a permit is required for all boating on the rivers in the Monument.

One alternative is to join a guided trip offered by one of the eleven river running companies authorized to provide this service. On some trips, passengers can sit back and enjoy the scenery—and hang on in the rapids—while their guide handles the oars; on others, passengers can be paddlers, helping to propel and steer the raft under the guide's direction.

River trips in Dinosaur range from several hours to several days, depending on the portion of the river being floated. A trip down the Green River from the Gates of Lodore to Split Mountain usually takes three or four days. This 45-mile journey passes through the Canyon of Lodore, the deepest and most colorful of Dinosaur's canyons, and includes legendary rapids such as Disaster Falls and Hells Half Mile. Because the Green River is controlled by Flaming Gorge Dam, its flow is not entirely dependent on the weather and season. It is runnable year-round, but only in exceptionally wet years do spring boaters see the high water that once gave Lodore its fearsome reputation.

In contrast, the Yampa is the last major river uncontrolled by a dam in the entire Colorado River system. Its flow peaks in late May or early June, and often becomes too low to float by mid-July. It would be hard to find any other two canyons as close together but as different in scenery as Lodore and the Yampa Canyon. The walls of Lodore are dark-red, ancient rock rising in giant stairsteps from the river, whereas the Yampa slices through light-colored sandstone that forms sheer, sometimes overhanging cliffs. On some stretches the river is as quiet as a lake, but at Warm Springs Rapid and several others it gives boaters a wild ride. Depending on the flow, Yampa trips—72 miles from Deerlodge Park to Split Mountain—typically take from three to five days.

Split Mountain Gorge, just nine-river miles between Rainbow Park and the Split Mountain takeout ramp, is the shortest of Dinosaur's canyons, and makes a popular one-day trip. The Green flows briskly through Split Mountain, and several rapids provide roller-coaster-like rides.

If you are interested in doing it yourself you can apply for a permit by calling the River Ranger office at (970)374-2468. For a guided river trip, contact any of several privately operated concessioners. A brochure listing these businesses is available at any ranger facility.

Further reading

Whether floating the rivers yourself or simply enjoying them from the shore, you may want to read more about them. We recommend the following titles, generally available from Dinosaur Nature Association (see pages 8 and 9).

River Guide
• Dinosaur River Guide, Evans and Belknap
• General and descriptive
• Run River Run, Zwingler
• Echo Park: Struggle for Preservation, Cosco
• The Big Drops, Collins/ Nash

Historical accounts
• A Canyon Voyage, Dellenbaugh
• The Exploration of the Colorado River and Its Canyons, Powell
• The Log of the Panthom, Flavel
The Colorado squawfish, razorback sucker, humpback chub, and bonytail chub are ancient fish species that have inhabited the major tributaries of this region for over a million years. Having evolved to exist in the specific environmental conditions that created the canyons of the Colorado River Basin, these fish are now in danger of extinction. Environmental changes caused by construction of large dams, and the introduction of non-native fishes, have severely reduced the ability of these native species to maintain their numbers. In danger of being lost is a unique chapter in the living history of the West.

The Colorado squawfish is the largest minnow in North America and the biggest native predator in the Colorado River drainage. Historically, these fish weighed up to 60 pounds and were referred to by some early settlers as “white salmon” on account of their spawning migrations and quality food value. Now extinct in the lower reaches of the Colorado River, the greatest number of squawfish today live in the Yampa, Green, and White rivers. Squawfish spawn at only two significant locations. One is located within Dinosaur National Monument in the Yampa River.

Squawfish begin their spawning migration when peak spring flows decline. Radio telemetry studies show that individual fish go to the same spawning site annually, prompting scientists to believe that the fish are “imprinted” on the site where they were hatched. After hatching, young squawfish begin a migration of their own, drifting up to 150 miles downstream to nursery sites in the Green River.

Another unique species to the Colorado River Basin is the razorback sucker. This fish has a distinctive keel-like structure above its head that scientists think may improve its swimming ability during the turbulent spring runoff. Today, the only naturally reproducing population of razorback suckers spawns in and adjacent to Dinosaur National Monument. However, this group of approximately 500 individuals appears to be slowly declining. Razorbacks are similar to the squawfish in that they migrate each year to a specific spawning location. Only two spawning sites are known for this population, one in the Yampa River at Echo Park in Dinosaur, and the second in the Green River above the Dinosaur Quarry Visitor Center. Each spring adult razorbacks travel as far as 100 miles to one of the two sites. Research has shown that these fish are attracted to the sites by the increase in water flows, but spawning does not take place until water temperatures reach a specific range.

Thus, the natural conditions of the river dictate the conditions necessary for fish to reproduce. Razorbacks spawn prior to peak flows, allowing newly-hatched young to drift downstream where they have access to the food-rich flood-plains along the lower reaches of the Green River. In this respect, the highly productive floodplain habitats are important for the survival of newly spawned fish.

Relatively little is known of either the humpback chub or bonytail chub. The bonytail is thought to be nearly extinct in the wild, since few individuals have been captured in the last ten years. Because humpback chubs live exclusively in steep, inaccessible river canyons, they are relatively new to science. One of only six populations of humpback chub live in the Yampa. As opposed to the migratory nature of the squawfish and razorback, the humpback chub seems to remain in the pool and eddy habitats of the Yampa for most of its life.

Although it is suspected that the numbers of Colorado squawfish, razorback suckers, humpback chub, and bonytail chub began to decline within the last 80 years, the construction of large dams has had a measurable and devastating impact. Historically, the Colorado River and its tributaries were characterized by extremes in water flow and sediment load. Mainstem impoundments transformed them from warm, turbid, fluctuating flows to cool, clear, stable ones more suitable for trout than native fish. These altered environments have created outstanding blue-ribbon trout fisheries, but they come at the cost of native species which survive nowhere else. The Yampa River is the last major tributary in the Upper Colorado River Basin not regulated by a dam. As such, for the Colorado squawfish, razorback sucker, bonytail chub and humpback chub, it represents an irreplaceable oasis.

Another factor in the decline of these fishes is the introduction of non-native species which compete with the natives for food and habitat. The result of these factors is that these four native species are now listed as endangered. Legislation such as the Endangered Species Act provides mechanisms that may authorize changes in the way dams and other water developments are managed. Only time will tell if such efforts will be enough.

By Tim Modde
U.S. Fish & Wildlife Service
DINOSAUR NATIONAL MONUMENT

NATIVE AMERICANS

Unlike the Paleoindians and Desert Archaic people, the Fremont left a prominent reminder of their presence—rock art.

By David Whitman
Chief of Interpretation
Dinosaur National Monument

The oldest signs of human occupation within what is now Dinosaur National Monument is dated at 7500 B.C. We do not know what these people called themselves but archeologists call them Paleo-Indians.

Paleoindians were nomadic big game hunters, following the remnant herds of Pleistocene megafauna—mammoths, giant bison, and camels. They supplemented their mostly-meat diet by gathering wild plants. They made their clothing from animal skins and their tools from wood, bone, antler, and stone.

Around 6000 B.C. the climate became drier. This environmental change, coupled with increased hunting pressure, doomed the remaining Pleistocene megafauna to extinction. The Paleoindians began to rely more heavily on gathering roots, seeds, and nuts. This new, sedentary lifestyle, called the Archaic, was more closely tied to the seasons and the land.

During the winter, the Archaic people built structures called pit houses that provided better protection from the cold. Food items were preserved and stored in holes dug into the floor of the pit house. When spring returned, the people collected bitterroot and sego lily bulbs. From summer to fall they camped at higher elevations to hunt and trap game and gather grass seeds. During the fall, they camped in the forest to collect pineyow nuts and juniper berries.

The transition from Desert Archaic to the Fremont culture began between 300 B.C. and A.D. 200 with the introduction of horticulture from Mexico and the bow and arrow.

The Fremont people occupied what is now Dinosaur National Monument from A.D. 100 to 1250 A.D. Families, or bands, adopted a subsistence economy based on hunting, horticulture, and gathering roots, seeds, berries, and nuts. The Fremonts may have integrated with these arrivals. Around A.D. 1000 to A.D. 1150 droughts struck the western continent, perhaps curtailling Fremont horticulture. The semi-sedentary lifestyle appears to have been abandoned for a strategy relying entirely on hunting and gathering. Nunamiut peoples (Shoshonean and Ute) began to immigrate from what is now northern Baja California. The Fremonts may have survived by integrating with these arrivals.

The Fremonts may have practiced horticulture between 350 B.C. and A.D. 1250. They may have grown squash, corn, beans, and pumpkins, but they may have also supplemented their diet of mammoth bone, antler, and stone.

Petroglyphs were probably painted on sandstone walls—rock art carved into the rock. More rare are pictographs (created by applying pigment to the rock surface), perhaps because they are more easily weathered. These rock art sites are precious reminders of these ancient peoples. Please treat them as such.

Cub Creek — The most accessible rock art sites in the park are along Cub Creek, a few miles east of the Quarry Visitor Center. (See Tour of the Tilted Rocks, page 16)

McKee Spring — At this location near Island Park are some of the finest petroglyph panels in Dinosaur. Look for large, human-like figures and geometric designs on the sandstone cliffs.

Jones Hole — Hiking the Jones Hole Trail will take you past Deluge Shelter where archeologists have found the remains of both Fremont and Desert Archaic cultures.

Echo Park — Along the Echo Park Road, between the old Chew Ranch and Echo Park itself, are the distinctive Pool Creek petroglyphs. These are unique from other petroglyphs in the park.
PALEONTOLOGY

After the thrill of discovery, hard questions remain about Dinosaur’s new dinosaur.

By Dan Chure
Park Paleontologist
Dinosaur National Monument

Imagine—a nearly complete dinosaur skeleton is found on a 70° slope, at the head wall of a narrow canyon, twenty feet above the canyon floor. Just the toes and a bit of the tail are exposed. With such a discovery there is great initial excitement, after all, this could be the find of a lifetime! Then, the questions start: What kind of dinosaur is it? Could it be a new species? How much of it is actually there? And — most importantly — how in the world are we going to get it out of the canyon?

There is a great deal of work that goes into recovering and studying a dinosaur skeleton, especially one in the difficult situation described above. Yet this is just the situation Dinosaur National Monument faced with the discovery in 1990 of a new meat-eating dinosaur. It took three long summers of excavation, and a dramatic helicopter lift, just to get the specimen out of its stony grave and transported to the lab at the Quarry Visitor Center. An additional two years of work was needed to get the skeleton prepared. Study of the specimen requires careful and detailed analysis of the bones, and comparison with other related dinosaurs. To do this, we became dinosaur butchers; taking this magnificent skeleton apart bone by bone. However, to preserve a record for future scientists and visitors, a latex mold was made of the partially exposed, articulated skeleton, just as it lay in the rock. This mold will allow us to make duplicates for exhibits that will show how the skeleton looked before it was taken apart.

The first step in identifying the skeleton is to look at the structure of the individual bones and compare them to descriptions of other dinosaurs published in the scientific literature. Is this a species already known? If so, is it more complete than any other known specimens? Does it have some unusual feature, such as size, evidence of disease, etc.? Reading scientific papers can sometimes be bewildering, with sentences such as, "Recesses on the lateral surface of the basipterygoid processes and basioccipital are manifestations of diverticula of the tympanic pneumatic system lateral to the cranial wall." Nevertheless, such language does convey information to fellow scientists.

Since not all dinosaurs collected have been described in the scientific literature, it is necessary to travel to other museum collections to examine the specimens stored there. How does the new specimen compare to these? Are there other specimens similar to our skeleton which have yet to be described? Finally, with all the knowledge gathered, the paleontologist begins the task of writing the scientific paper which will get the word out to colleagues and the public about the discovery, and about what it tells us about dinosaur evolution and biology.

So where do we stand with Dinosaur’s new dinosaur? After two years, preparation of the skeleton is nearly complete. Comparisons have been made with the scientific literature, and trips to other museums have revealed some interesting (and perplexing) problems. The written description of the skeleton is underway. The biggest challenge remaining is to determine how this new animal relates to species already known. Hopefully that problem can soon be resolved and our spectacular find can take its place in the Dinosaur Hall of Fame.

Carefully wielding an air scribe, fossil preparator, Ann Elder, reveals delicate gastralia bones, which formed a rib-like protective structure for the dinosaur’s abdomen.

Aided by a microscope, fossil preparator, Scott Madsen, removes rock particles from a forearm of a new carnivorous dinosaur.
Publications available by mail order from the Dinosaur Nature Association

Prices stated are subject to change without notice. When ordering, please include catalog number; listed to left of price. Member discount prices, when applicable, are shown in parentheses. Books are paperback unless otherwise noted. Call toll-free, 1-800-845-DINO, to place your order or to receive a complete catalog.

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**RIVERS**

- **Dinosaur: Fossils and Paleontology in Dinosaur National Monument.** DNA, 1989. Discovery, history, and dinosaurs of the Quarry, and a behind-the-scenes look at recent paleontological work and discoveries in the Monument. VHS, 27 minutes.
  
  N200
  
  $19.95 ($15.96)

- **Jurassic Utah.** Bosworth Comm., 1994. A tour of Utah's rich and varied deposits of Jurassic-era dinosaur fossils. VHS, 58 minutes.
  
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- **The Great Dinosaur Hunters and Their Discoveries.** Colbert, Dover Publications, 1984. Describes the scientists who have revealed the prehistoric world for us.
  
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- **Blue Planet.** Smithsonian Institution. Original IMAX film is a stunning look at the Earth from space. VHS, 42 minutes.
  
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  $21.95 ($17.56)
IN DINO SAUR NATIONAL MONUMENT

Dinosaur Nature Association—patron of preservation

If you happen to hear someone in Dinosaur National Monument mention “DNA,” they’re probably not talking about genetics. More likely they mean Dinosaur Nature Association, which operates the bookstores at the Quarry Visitor Center and park headquarters, and also at Fossil Butte National Monument in Wyoming.

This DNA is a non-profit organization whose purpose is to provide educational and interpretive materials for park visitors. All profits from its sales are donated to the National Park Service in Dinosaur and Fossil Butte national monuments.

These funds help to purchase items as large as the cast skeletons of Allosaurus and Camarasaurus for the Quarry exhibits, and as small as a roll of film or a videotape for documenting resource management projects. The artwork for the Quarry exhibits, many roadside and trails displays, numerous free informational materials, and this newspaper have also been purchased or produced through donations from DNA.

DNA’s bookstores offer a variety of publications dealing with all of Dinosaur’s and Fossil Butte’s themes: paleontology, wildlife, geology, and more. Maps, postcards, posters, videos, models and kits, and film are also available, plus self-guiding leaflets for several roads and trails.

Eleven people from local and regional communities make up the Board of Directors which oversees DNA, guiding its activities and approving donations to the National Park Service. Many visitor services would not be possible without these dedicated volunteers.

Any purchase from DNA is a contribution to the National Park Service. You can contribute further, if you wish, with a personal membership in DNA. The $5 annual fee entitles you to a 20% discount on most items, not only in DNA’s bookstores but also from many similar associations in other parks. With it you are helping to preserve the beauty and uniqueness of Dinosaur, Fossil Butte, and your national parks and monuments.

POSTERS

Echo Park, Dinosaur National Monument. Gnass, Impact, Dinosaur Nat. Assoc. Aerial photo of Steamboat Rock rising above the Green River in the heart of Echo Park. 18”x24”, N2330................. $4.95 ($3.96)

Canyon of Lodore, Dinosaur National Monument. Telford, Dino. Assoc., 1995. Photo of the Green River drifting through the brooding red Gates of Lodore. 18”x24”, N2305................ $4.95 ($3.96)

Colorado River Basin Poster. DNA, 1995. The Colorado River System is clearly illustrated along with the web of dams and diversions which control its waters. 20”x29”, N2310.................. $7.95 ($6.37)

Dinosaur Quarry mural posters. Dawson, DNA, 1990. Reproductions of the colorful murals in the Dinosaur Quarry. Five titles:

• A Glimpse of the Past Portrays the river floodplain landscape of the area in late Jurassic time, with all the local dinosaurs. Two sheets make 12” x 70.5” horizontal. N2120 .................. $4.95 ($3.96)

(The following are each 12”x36” horizontal.)

• Claws and Teeth Allosaurus and Ceratosaurs. N2100 .................... $2.95 ($2.36)

• Old Bones, New Ideas Stegosaurus, Camptosaurus, and Dryosaurus. N2140 .................. $2.95 ($2.36)

• The Large and the Small Diplodocus and Dryosaurus. N2130 .................. $2.95 ($2.36)

• The Giants Diplodocus, Barosaurus, Camarasaurus, and Apatosaurus. N2110 .................. $2.95 ($2.36)

COLOR SLIDES

Slides are jumbo images in standard 2” x 2” cardboard mounts; fit all 35mm projectors. Sold in sets only, 5 slides per set.

Set 1: The Park at A Glance Dinosaur Quarry building; dinosaur fossils and preparators; Split Mountain; view from Harpers Corner; raft in Yampa Canyon. N5101 .......................... $1.75 ($1.40)

Set 2: A Visit to the Dinosaur Quarry Dinosaur Quarry building; observation deck view; fossil preparator on Quarry face; diorama of ancient river scene; mounted skeleton of Allosaurus. N5202 .......................... $1.75 ($1.40)

Set 3: Fossils in the Dinosaur Quarry Young Camarasaurus skeleton on slab; Camarasaurus skull; rare juvenile Stegosaurus bones; Allosaurus skull; fossil turtle, Dinochelys. N5303 .......................... $1.75 ($1.40)

Set 6: The Dinosaurs of the Quarry Life-size Stegosaurus model; life-size Camarasaurus cutouts; painting of Apatosaurus herd; painting of Camptosaurus and Dryosaurus; painting of Allosaurus. N5606 .......................... $1.75 ($1.40)

Set 11: Some Typical Park Residents Arrowleaf balsamroot; hedgehog cactus; white-tailed prairie dog; lizard; mule deer. N5612 .......................... $1.75 ($1.40)

Dinosaur Nature Association—patron of preservation

If you happen to hear someone in Dinosaur National Monument mention “DNA,” they’re probably not talking about genetics. More likely they mean Dinosaur Nature Association, which operates the bookstores at the Quarry Visitor Center and park headquarters, and also at Fossil Butte National Monument in Wyoming.

This DNA is a non-profit organization whose purpose is to provide educational and interpretive materials for park visitors. All profits from its sales are donated to the National Park Service in Dinosaur and Fossil Butte national monuments.

These funds help to purchase items as large as the cast skeletons of Allosaurus and Camarasaurus for the Quarry exhibits, and as small as a roll of film or a videotape for documenting resource management projects. The artwork for the Quarry exhibits, many roadside and trails displays, numerous free informational materials, and this newspaper have also been purchased or produced through donations from DNA.

DNA’s bookstores offer a variety of publications dealing with all of Dinosaur’s and Fossil Butte’s themes: paleontology, wildlife, geology, and more. Maps, postcards, posters, videos, models and kits, and film are also available, plus self-guiding leaflets for several roads and trails.

Eleven people from local and regional communities make up the Board of Directors which oversees DNA, guiding its activities and approving donations to the National Park Service. Many visitor services would not be possible without these dedicated volunteers.

Any purchase from DNA is a contribution to the National Park Service. You can contribute further, if you wish, with a personal membership in DNA. The $5 annual fee entitles you to a 20% discount on most items, not only in DNA’s bookstores but also from many similar associations in other parks. With it you are helping to preserve the beauty and uniqueness of Dinosaur, Fossil Butte, and your national parks and monuments.

POSTERS

Echo Park, Dinosaur National Monument. Gnass, Impact, Dinosaur Nat. Assoc. Aerial photo of Steamboat Rock rising above the Green River in the heart of Echo Park. 18”x24”, N2330................. $4.95 ($3.96)

Canyon of Lodore, Dinosaur National Monument. Telford, Dino. Assoc., 1995. Photo of the Green River drifting through the brooding red Gates of Lodore. 18”x24”, N2305................ $4.95 ($3.96)

Colorado River Basin Poster. DNA, 1995. The Colorado River System is clearly illustrated along with the web of dams and diversions which control its waters. 20”x29”, N2310.................. $7.95 ($6.37)

Dinosaur Quarry mural posters. Dawson, DNA, 1990. Reproductions of the colorful murals in the Dinosaur Quarry. Five titles:

• A Glimpse of the Past Portrays the river floodplain landscape of the area in late Jurassic time, with all the local dinosaurs. Two sheets make 12” x 70.5” horizontal. N2120 .................. $4.95 ($3.96)

(The following are each 12”x36” horizontal.)

• Claws and Teeth Allosaurus and Ceratosaurs. N2100 .................... $2.95 ($2.36)

• Old Bones, New Ideas Stegosaurus, Camptosaurus, and Dryosaurus. N2140 .................. $2.95 ($2.36)

• The Large and the Small Diplodocus and Dryosaurus. N2130 .................. $2.95 ($2.36)

• The Giants Diplodocus, Barosaurus, Camarasaurus, and Apatosaurus. N2110 .................. $2.95 ($2.36)

COLOR SLIDES

Slides are jumbo images in standard 2” x 2” cardboard mounts; fit all 35mm projectors. Sold in sets only, 5 slides per set.

Set 1: The Park at A Glance Dinosaur Quarry building; dinosaur fossils and preparators; Split Mountain; view from Harpers Corner; raft in Yampa Canyon. N5101 .......................... $1.75 ($1.40)

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STATE OF THE PARK
An update on resource management issues

FIRE MANAGEMENT

Overgrazing in the 1920s and 30s, accompanied by fire suppression, has bequeathed an explosive legacy to the rangelands of the West. Accumulated shrubbery, plant debris, and fallen trees have created conditions ripe for wildfires of an intensity unimaginable before the summer of 1988, which saw the scorching of Yellowstone National Park and much of the Rocky Mountains. Overgrazing has suppressed fire-tolerant grasses and allowed fire-intolerant sagebrush and juniper to proliferate. Species of plants which depend on fire for soil-enrichment and reproduction no longer thrive. Birds and other animals which rely on such plants for shelter and food are faced with diminishing habitat.

Decades of scientific research have shown resource managers that fire is a necessary process in plant and animal communities. Within Dinosaur National Monument, the Prescribed Fire Management Program includes preservation of naturally functioning ecological processes—including fire. Wildfires which threaten human life, property or historical or cultural sites, are immediately suppressed, but carefully monitored prescribed fires are used to meet specific objectives such as hazardous fuel reduction, eradication of noxious, non-native plants, rejuvenation of overgrazed landscapes, and restoration of species diversity.

The Placer Point picnic area, where Cub Creek Road crosses the Green River, offers a glimpse of what such management efforts can achieve.

EXOTIC PLANTS

At first glance, many of the plants that grow in abundance on the Colorado Plateau seem natural and attractive. But don't be fooled! An invasion of undesirable exotics threatens native plant species and the wildlife which depends on them in many Western landscapes.

One of these invaders present in Dinosaur National Monument is the Russian-olive, a thorny, medium-sized tree with silvery-green leaves. This aggressive, Eurasian species is crowding out native plants and degrading wildlife habitats in 17 Western states. Only the most adaptable birds, such as starlings and robins, find suitable forage and nesting opportunities in Russian-olives. Cavity-nesters, such as chickadees and bluebirds, are unable to find sanctuary in their hard wood. Insect eaters, such as warblers and woodpeckers, find little nourishment among their branches.

For decades following the Dust Bowl years of the 1930s, Russian-olives were widely promoted and planted as a means of providing wind breaks and enhancing soil conservation. Today, farmers and ranchers find pastures and irrigation ditches choked with Russian-olives, presenting them with the expensive and difficult task of removal.

Of the roughly 650 plant species in Dinosaur, more than 50—almost 10%—are exotics. The most troublesome of these include tamarisk, perennial pepperweed, Russian knapweed, cheatgrass, leafy spurge, and Russian-olive. The Monument's resource management staff is actively working to manage these threats to the native plant and animal life.

PARK BUDGET

If you have visited Dinosaur National Monument before you may remember seeing more park rangers than this year. In fact, we do have fewer rangers working for us this summer, and we are doing fewer projects. This unfortunate situation is not the result of budget cuts from Congress. In fact, the National Park Service is the only federal agency which has not suffered budget cuts over the last several years. Congress has actually increased the NPS budget by one or two percent annually. So why can't we hire more seasonal employees? In a word—inflation.

Each year it costs more to operate the park, and small budget increases have not kept up.

The amount of money it takes to paint buildings, patch and pave roads, buy computer paper, or purchase heating oil and gasoline increases two to three percent each year. Added to this are small yearly pay increments that Congress usually authorizes for federal employees. Congress sometimes provides the park service with additional funds to cover these pay increases and sometimes they don't. When they don't, it erodes our budget.

Ten years ago, a seasonal park ranger cost us a little over $5,000. Today, the same seasonal costs us $7,500. Each year it costs more to operate the park, but each year our budget request for increases to our park's base funding is not fully authorized. The result? We fall further behind and have to do with a little less each year. Even so, Dinosaur National Monument will continue to provide as many quality services as our budget allows.
STATE OF THE PARK

An update on resource management issues

GRAZING

The community of animals at Dinosaur includes one species which may surprise you—domestic cattle. It can seem strange to find livestock grazing in a national park. After all, isn't the intent of such places to preserve natural systems? For visitors with this question a little background may help.

As native peoples, bison, and wolves were displaced from this part of the Colorado Plateau, a new type of range activity began. The first cattle were driven into the region in the early 1850s. Soon, small ranches were established and the cattle industry in the Uintah Basin had taken hold. The high desert would never be the same.

When Dinosaur National Monument was expanded in 1938 from some 80 acres to over 200,000, grazing rights had existed on the now-park lands for almost 70 years. Not until 1960 did Congress pass legislation providing for the eventual termination of grazing within Dinosaur. Accordingly, about half the permit holders (involving 52,330 acres) ceased operations in 1985. Of those remaining, some allotments will persist through the lifetimes of the permittees and heirs who were dependent on those lands.

When Dinosaur was expanded in 1938, grazing rights had been in existence for almost 70 years.

As with some visitor actions, the impacts of too many cattle can be damaging. The Monument seeks to minimize over-grazing through a program of cooperative management with local ranchers and surrounding land management agencies. These actions include evaluating permit applications, checking permit compliance, conducting range surveys, limited boundary fencing, and monitoring of rare plant and archeological sites.

INHOLDINGS

An inholding is private property within the boundaries of Dinosaur National Monument. Most private landowners in Dinosaur are ranchers, and their cattle may be seen grazing throughout the park.

Near the park entrance, below the Quarry Visitor Center, is an inholding called Orchid Draw. This eighty-acre parcel of land once served as home to Earl Douglass, discoverer of the first dinosaur fossils here. Earl's son, Gawin, spent much of his childhood at this site known as Orchid Draw playing with his father's tools and the prehistoric treasures he unearthed. Mr. Gawin Douglass retains this inholding and visits the Dinosaur Quarry occasionally.

In addition, nearly 2,000 acres of non-federal public land is nestled within the Monument. It is the goal of the National Park Service to eventually secure those lands for the benefit of the public. A program is underway which would exchange these areas, such as those owned by the State of Utah, for land outside the park, thus transferring title of those inholdings to the National Park Service.

ENVIRONMENTAL EDUCATION

Dinosaur National Monument strongly believes that children are the key to preservation of the park in years to come. With this in mind, in 1992, we began an Environmental Education Program for local school kids—third, fourth, and fifth graders in the six county school system surrounding Dinosaur. This program has been a partnership between the Monument, area school districts, and the Dinosaur Nature Association, which funds supplies, travel expenses, and personnel.

Each year our EE staff visits over 7,000 children in their classrooms to present talks on one of three topics: Dinosaurs, Fremont Indians, or the Monument's ecosystem. In the spring, about 3,000 school kids visit the park for guided walks through the Dinosaur Quarry or to Indian rock art sites, or to play environmental games in the cold desert plant and animal community.

We feel that the more children understand how the ecosystem they live in works the more likely they will be to make good decisions about how their actions affect that ecosystem when they are adults.
The United States insects are only abundant in the summer. This means bats must either stop eating in the winter or go south where insects are still active. Most species of bats at Dinosaur find secure places in or near the park where they spend the winter. In these places they enter hibernation. During hibernation, bats lower their body temperature to conserve energy and live on stored fat. If they are disturbed and awakened too frequently, they will use up their stored energy and may perish from the cold. At least two species of bats at Dinosaur don’t hibernate but fly south. The Hoary Bat probably flies as far as Central America.

All bats at Dinosaur are nocturnal, that is, the most active only at night—though some can be seen in the evening sky before full darkness. Bats are agile fliers, but they are no match for diurnal predators such as hawks. As the sun rises, they return to the shelter of their day roost. Bats at Dinosaur find insects in the dark by emitting high-frequency sound waves that we can’t hear. Bats are very dependent on sources of drinking water, especially in an arid environment. When a bat needs a drink it swoops down over a calm pool, and scoops up the water with its extended tongue. In addition to hawks, owls feed on bats too. Other predators such as snakes, bobcats, ringtails, and raccoons hide in or near bat roosts to catch bats.

In spite of many similarities, bats at Dinosaur also greatly differ in size, appearance, roosting site preference, and in the kinds of insects they eat. Their ultrasonic vocalizations also vary greatly.

About half of the species at Dinosaur belong to a group known as Myotis. In color, they range from light tan to bright orange to dark brown. Their ears and wing membranes are tan to black. The California and western Small-footed myotis roost alone or in small groups, usually in cracks or crevices. They are agile fliers and capture insects in open spaces. The Little Brown and Yuma myotis rely on the presence of open water sources such as stock ponds over which they forage for insects. Both are commonly found in human dwellings. The Long-eared and Fringed myotis are very agile fliers and fly in and through vegetation where they catch insects. The Long-legged myotis is a common western bat and is one of the most widespread and abundant species at Dinosaur.

The other eight species of bats here are all quite different in appearance and habits. The Hoary Bat, so-called because it appears to be covered with frost, is one of the largest bats at Dinosaur. The smaller Silver-haired bat also has frosted tips to its dark, chocolate-brown or black fur. It is known to roost in holes and crevices in trees. At Dinosaur, most bats of these two species are males. The females spend the summers in the eastern U.S. where they give birth and rear their young. Unlike most other North American bats, female Hoary Bats give birth to up to four young at a time. This is probably an adaptation to increased losses of babies due to their relatively exposed tree roosting places.

The smallest bat in the western U.S. is the Western Pipistrelle; Dinosaur is at the northern edge of this bat’s distribution and it is one of the rarest bats in the park. Pipistrellas often fly early in the evening; if you see a very small bat with a fluttery way of flying it is probably a Western Pipistrelle. The Big Brown Bat is one of the larger bats here and one of the most common.

The Pallid Bat is unique because of its large size, long ears and method of feeding. These bats actually land on the ground and snatch prey such as scorpions and centipedes with their sharp teeth. The Mexican Free-tailed Bat—so named because a portion of its tail extends beyond the membrane between the hind legs—is rare at Dinosaur as the park is at the northern edge of its range.

Two of the most distinctive species of bats at Dinosaur are the Spotted Bat and Townsend’s Big-eared Bat. The Spotted Bat is common at Dinosaur, especially in areas with permanent water sources. This bat is common at Dinosaur especially in areas with permanent water sources. Photo by J. Scott Altenbach.

The Spotted Bat, with its large pinkish ears and white spots on its black back, may be the park’s most beautiful.

Western Small-footed myotis is one of the smallest bats at Dinosaur. Photo by J. Scott Altenbach.
One of the many on-going research projects in Dinosaur National Monument involves the use of lichens as biomonitors of air quality. Since 1991 we have established a series of 14 monitoring sites within the park, and are beginning to see the first results of our studies.

Lichens are complex, symbiotic organisms made up of a fungus and either a green or blue-green alga. The fungus provides a suitable habitat for the alga, and the alga in turn supplies organic molecules to the fungus through photosynthesis. Lichens grow on rocks and soil, as well as the bark of various trees and shrubs.

Lichens are commonly confused with mosses which often occupy similar habitats; however, lichens are more closely related to molds and mushrooms. Unlike higher plants, lichens lack true roots, stems and leaves, and absorb most of their water and minerals directly from their surfaces. Most of the water absorbed by lichens comes as either rain, snow, fog, or dew; and most of the minerals used by lichens are those washed from the air by precipitation. This particular aspect of lichen ecology is what makes them so sensitive to air pollution. Any airborn contaminant that is deposited on the surface of a lichen will be absorbed into its tissues. Depending on the toxicity and concentration of the pollutants, various structural and functional features of the lichen may be impacted. Photosynthesis, cellular respiration, and nitrogen fixation are particularly sensitive to a wide range of pollutants. Eventually, if intensive air pollution impact is prolonged enough, damage may become visible as bleached or dead spots. In extreme cases the organism can die.

Colorful lichens cover many of Dinosaur's south-facing ridges, as a pair of visitors discover in photo at left. Lacking true roots, lichens must absorb water directly from their corrugated surfaces (see magnified photo above).
LODORE

Most visitors never see this canyon portal that John Wesley Powell called "The Gates of Lodore." Most visitors don't know what they're missing.

A quiet morning scene in the Canyon of Lodore gives little hint of the formidable rapids boiling downstream.

Canyon of light and shadow

At the Canyon of Lodore, the hard, burgundy-tinted walls rise vertically from the river. The pink of sunrise echoes upon the water. As we emerge from our tents a mule deer snorts and slowly grazes away. Walking through the small campground, other campers begin rising and dismantling their tents. Colorful rubber rafts hide from sight just over the river bank. Most of the campers will pile aboard them and drift into the canyon now partly basking in sunlight. Shadows slink from sight as we walk along the short nature trail perched above the river. A canyon wren sings out from across the way. We sit at the end of the trail, absorbing the silence.

The heat rises and we return to lounge on the broad sandbar that sweeps to the river from camp. Small clouds form and begin to tower. Cloud shadows blanket the deep canyon walls. We watch as a flash brightens the billowing vapor. The clouds race across the landscape and disappear behind an azure sky. As the sun drops below this spur of the Uinta Mountains, shadows and cooler air creep toward us. Night comes softly upon the land and a billion stars are flung across the sky. Coyotes serenade the scene. We are alone in the campground...and, perhaps, the world.

Exploring Browns Park

Visitors to Lodore soon discover there is much to experience beyond its dramatic canyon portal and friendly campground atmosphere. Nearby Browns Park offers an unusually varied glimpse into America's past. You can drive across the Green River on the historic Swinging Bridge, and see thousands of water birds at the Browns Park National Wildlife Refuge. Or get a taste of pioneer history at the Bureau of Land Management's wonderfully restored Jarvie Ranch. Step even farther back into time at Irish Canyon, and ponder the mysterious markings made there by prehistoric people.

Ranger Glade Ross: Lodore's "Jack-of-all-trades"

For the last quarter century, Park Ranger Glade Ross has kept a watchful eye on the Canyon of Lodore, serving as the area's law enforcement officer, fire fighter, river-runner rescuer, story teller, and sometime-guitar picker.

Glade—who prefers to be called by his first name—is the only park ranger permanently stationed at Lodore. In the summer, he stays busy with fire duties. Summers also bring a heavy flow of river traffic. In addition to ensuring that river-runners are properly equipped for a safe adventure, occasional rescues are required—often with the aid of a helicopter.

In the winter Glade busies himself with chores such as repairing signs and other maintenance work. Yet the diversity of his duties is one of the best parts of his job, Glade says. "It's the way the park service used to be. Nowadays, in a lot of parks, rangers hired to do law enforcement (mostly) do road patrols, and seldom do fire work. Here, at these smaller parks, we can be a jack-of-all-trades."

Among the many trades that Glade practices is the role of historian for the Lodore area. One day, when he retires, Glade plans to publish an account of his discovery of the site of the lost 1830s fur-trading post, Fort Davy Crockett.

Glade Ross prizes the isolation offered by the canyon, enjoying the company of the park's coyotes, elk, pronghorn, golden eagles and occasional mountain lions. "It's really quite nice to get up in the morning and see five or 10 deer grazing on the lawn," he says.
You are hiking in Dinosaur National Monument. The setting could be Wild Mountain or Douglas Mountain or Blue Mountain—it doesn’t matter. You are in a drainage basin that empties into the Green or Yampa river. In the late afternoon, you observe dark clouds pile up and rise into giant threatening towers of wind and rain. You wait for the inevitable and it begins when you hear first one pat and then another. The solitary drops of rain raise puffs of dust and dirt into the still air. There is a flash and a clap of roars and a bounding, dirty torrent cutting through the banks of an arroyo. Large chunks of soil slump into the water and swiftly disappear. The interaction between debris flow fans, and river currents has been occurring on the green for millions of years—that is until 1963 when Flaming Gorge Dam began to control its flow. The total volume of water has not been altered. However, the magnitude and length of spring floods has been reduced about one-third. What effects has the dam had? There have clearly been biological repercussions—but what about the physical nature of the river?

Since 1993, Paul Grams of Utah State University's Department of Geography and Earth Resources, has been studying that question. He has completed detailed mapping of floodplains, sandbars, and gravel bars and has examined some 60 old photographs of the river taken between 1871 and 1922. He has also been trying to control its flow. The total volume of water has not been altered. However, the magnitude and length of spring floods has been reduced about one-third. What effects has the dam had? There have clearly been biological repercussions—but what about the physical nature of the river?

Since 1993, Paul Grams of Utah State University's Department of Geography and Earth Resources, has been studying that question. He has completed detailed mapping of floodplains, sandbars, and gravel bars and has examined some 60 old photographs of the river taken between 1871 and 1922. Grams confirmed what had been suspected—that Flaming Gorge Dam has caused changes in the corridor of the Green River. Since the time of the historic photographs, sand has been deposited on top of gravel bars. There has been an increase in the amount of bank vegetation. This vegetation occupies areas that in the old photos were clearly sites of regular erosion and deposition, consisting of either bare sand or gravel. These areas are now stabilized and are only rarely inundated by the river. Thus the active width of the river channel has narrowed and the proportion of sand and silt relative to gravel has increased.

But what does this mean? Conceptually, Grams' observations show that the intrusions we place in nature often carry a price. Specifically, Flaming Gorge Dam blocked the migration route of the native fish. The gravel bottom required by native fish for spawning is being silted. Consequently, four endangered native fish no longer spawn in the Canyon of Lodore. (For more on endangered fish, see page 5.) The absence of spring flooding that scoured the river banks has resulted in loss of habitat for an endangered orchid, and allowed tamarisk, an exotic tree, to invade the river corridor. Tamarisk displaces native riparian vegetation, and since native wildlife are not adapted to tamarisk it provides poor habitat. The spring scouring of river banks and sand and gravel bars are also necessary for the germination of cottonwood tree seeds. Cottonwoods need silt deposits formed on bare sand as germination beds. In the Canyon of Lodore, there is no current regeneration of cottonwoods, trees that provide habitat and nesting sites for many creatures, including the bald eagle. These are a few of the consequences we know about. Further study is needed to identify other impacts. Paul Gram's research is providing one piece of information needed to understand the complex interrelationships between the Green River and its inhabitants.
SCENIC DRIVES

Pack a lunch, pick a direction, and lose yourself on your own "road less traveled."

Wilderness in Dinosaur National Monument is not exclusive to backcountry hikers. Beauty and solitude await visitors travelling by foot, bicycle, raft or motor vehicle. Road conditions here vary. Main routes are paved, while some prominent park features are reachable only via dirt roads. Below are descriptions of some of the scenic drives you might enjoy during your visit.

HARPERS CORNER SCENIC DRIVE
Start at the Headquarters Visitor Center (open daily in summer, 8:00 a.m. to 4:30 p.m.) for orientation and a 10-minute slide program. Consider stretching your legs on the Cold Desert Trail. A guide for the Harpers Corner Scenic Drive may be purchased here.

From Headquarters, the road winds up and around Plug Hat Butte where there are picnic tables and a short nature trail. The road then climbs gradually over open uplands toward the canyon rims where overlooks provide panoramic views of the gorges carved by the Green and Yampa rivers. Note: This is Open Range—be alert for livestock on the road. A side trip—hiking the 8-mile Ruple Point Trail—will reward you with spectacular views of Split Mountain.

TIME: 2 to 4 hours
DISTANCE: 62 miles round trip
CONDITIONS: Paved road
VEHICLE REQUIREMENTS: Suitable for all vehicles.
SIDE TRIPS: Echo Park Road (see description at right), Plug Hat Nature Trail, Ruple Point Trail.
HOT TIP: For the best views, walk the Harpers Corner Trail at the end of the road (see page 3). Late afternoon travelers are often rewarded with colorful sunsets.

ECHO PARK ROAD
From Harpers Corner Scenic Drive, the Echo Park Road makes a dizzying plunge into the heart of the Monument. Unique geologic features, prehistoric rock art, and the spectacular confluence of the Green and Yampa rivers below Steamboat Rock await those who journey to Echo Park.

TIME: 2 hours from Harpers Corner Scenic Drive
DISTANCE: 26 miles round trip
CONDITIONS: Unpaved, steep, winding and narrow. IMPASSABLE WHEN WET!
VEHICLE REQUIREMENTS: 4-wheel drive recommended, but negotiable with high clearance 2-wheel drive; not suitable for sedans, trailers or motorhomes.
SIDE TRIPS: Wagon Wheel Point, Harding Hole Overlook.
HOT TIPS: Carry extra water, food and a first-aid kit. Be sure your vehicle is in good condition, that the radiator is full and that you have at least one spare tire. Check with staff concerning campsite availability and current road/weather conditions.

YAMPA BENCH ROAD
Adventure and solitude await those who take the time to explore this rough road parallel­ing the Yampa Canyon. The bench provides a glimpse back into the rugged west, before the era of barbed wire fences, asphalt and wayside exhibits. Hiking and backcountry camping opportunities are endless. Overnight stays require a free permit. A map is a must.

TIME: 3 hours to half a day
DISTANCE: 25 miles one way.
Access roads add to this.
CONDITIONS: Unpaved, steep, bumpy and dusty. IMPASSABLE WHEN WET!
VEHICLE REQUIREMENTS: 4-wheel drive recommended, but negotiable with high clearance 2-wheel drive; not suitable for sedans, trailers or motorhomes.
SIDE TRIPS: Connects with Echoes Road; add 11 miles to each end of the drive.
HOT TIPS: Carry extra water, food and a first-aid kit. Be sure your vehicle is in good condition, that the radiator is full and that you have at least one spare tire. Check with staff concerning campsite availability and current road/weather conditions.

ISLAND PARK ROAD
Driving to Island and Rainbow parks reveals the quieter side of the Green River as it winds through open, colorful badlands; don't miss historic Ruple Ranch at Island Park, and superb rock art at McKee Spring. You can reach the Island Park Road from the Quarry by exiting the Monument and following Brush Creek Road toward Vernal.

TIME: 2 hours
DISTANCE: 51 miles round trip to Rainbow Park; add 11 miles for Island Park
CONDITIONS: Unpaved, rough dirt and gravel road. IMPASSABLE WHEN WET!
VEHICLE REQUIREMENTS: Suitable for most passenger vehicles; not suitable for trailers or motorhomes.
SIDE TRIPS: Connects with road to Jones Hole; 33 miles of paved road to national fish hatchery and Jones Hole Trail (see page 3).
HOT TIP: This drive leads to the launch site for one-day boat trips. Early morning and late afternoon drivers may encounter vehicles with wide loads.