RED CLIFFS DESERT RESERVE

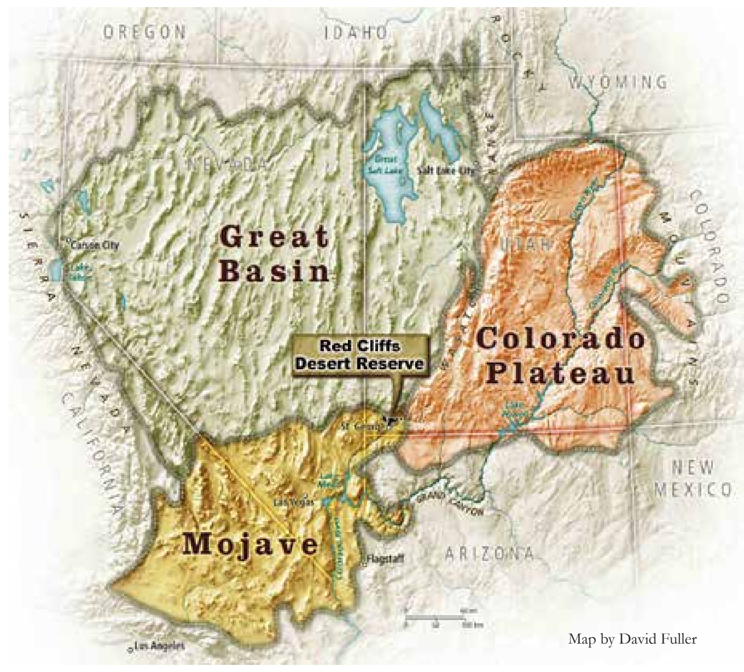
Welcome to the Red Cliffs Desert Reserve. When you step over one of the reserve's distinctive "step-over" gates, you are entering a special place, a place it is a privilege to visit. Not just another mountain bike trail, not just another horseback ride. You are entering a 62,000 acre scenic wildlife reserve set aside to protect the desert tortoise and other sensitive plants and animals.

At the merging of three great ecosystems – the Mojave Desert, the Great Basin Desert, and the Colorado Plateau – the reserve is biologically rich with a unique combination of plants and animals rarely seen in one place. The reserve contains the northernmost populations of the desert tortoise, Gila monster, sidewinder rattlesnake, and chuckwalla – reptiles typically associated with hotter and more southerly deserts, like the Mojave. A significant portion of the shrubs in this area, such as blackbrush and sagebrush, are more commonly found in the cooler Great Basin Desert. The spectacular red rock scenery, abundant throughout the reserve, is most typically associated with the Colorado Plateau. At the merging of these ecosystems, desert tortoises and other wildlife enjoy a relative abundance of food and shelter that make it an extremely productive environment. The conditions in the region are such that several endemic species, those which occur nowhere else in the world, are found here.

The reserve was established in 1996 to protect a large, diverse, and functional expanse of habitat capable of sustaining wildlife populations threatened by rapid development and habitat loss in Washington County. Located immediately adjacent to several growing communities, the reserve also protects the cities' scenic red rock backdrop and an increasingly popular area for recreation.

There are nearly 200 miles of shared-use and paved trails for hiking, horseback riding, and mountain biking in the reserve. Hunting is allowed during prescribed seasons, and improved roads within the reserve offer scenic vistas for motorized travel. While the reserve provides opportunities for recreation and enjoyment, direct and indirect impacts to wildlife and plants such as trail erosion, trampling of vegetation and delicate soil crusts, and disturbance to wildlife can undermine the ecological health of the reserve. To reduce impacts to sensitive areas, the reserve is separated into "Lowland" and "Upland" zones. Tortoise habitat in the Lowland Zone is the most sensitive; consequently, recreation is limited to designated trails and roads. However, in the upland zone, off-trail use is permitted. It is important that visitors understand and respect the purpose of this protected area. Please enjoy the reserve, but use it responsibly to keep the habitat healthy for the tortoise and for other visitors to enjoy as well.

MERGING OF 3 ECOSYSTEMS



Map by David Fuller

WANDERING WILDLIFE

Although much of the reserve is fenced, tortoises can sometimes find their way out. If you happen to come across a tortoise in your yard and are unsure what to do about it, please give us a call at (435) 634-5759. We are also happy to assist with other wildlife such as rattlesnakes and Gila monsters that may venture into your yard or home. Please remember that most bites occur when people try to handle or kill them. It is usually best to leave them alone and they will return to the desert on their own. Gila monsters are declining in Utah and observations are very rare, we would love to hear about any sightings you might have of them. To submit your observation please contact us or Utah Division of Wildlife Resources at (435) 879-8694.

RED CLIFFS NCA

Red Cliffs National Conservation Area (NCA) was designated by Congress as a part of the Omnibus Public Land Management Act in 2009. The public lands of the NCA comprise 70% of the Reserve and are managed by the Bureau of Land Management (BLM) to assist the recovery of threatened and endangered native plants and wildlife, helping to further the goals of Washington County's Habitat Conservation Plan. The NCA consists of approximately 45,000 acres, including 19,989 acres of the Cottonwood Canyon and Red Mountain Wilderness areas. The Red Cliffs Recreation Area is located within the NCA and includes a campground, day use areas, interpreted sites, and a non-motorized trail system. Fees are charged for overnight and day use of the Recreation Area. BLM also issues no-fee camping permits for the Sand Cove Primitive Camping Area. Permits are required for commercial and organized recreation activities and commercial filming within the NCA. For more information, please contact the St. George Field Office at (435) 688-3200 or go online at www.blm.gov/sgfo

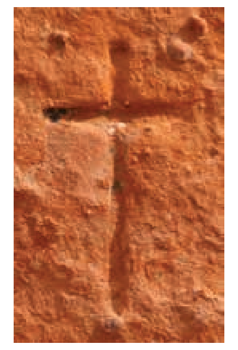
SNOW CANYON STATE PARK

Snow Canyon State Park is a 7,400 acre scenic park located almost entirely inside the Red Cliffs Desert Reserve. The park offers opportunities for outdoor enthusiasts of all ages. Park facilities include picnic areas, restrooms, and a 33-unit campground with hookups, tent sites, and a sewage disposal station. Day-use and camping fees are charged year-round. Additional fees are charged for group-use and reservations. Call (435) 628-2255 for inquiries.

TRACES OF HISTORY

The reserve is filled with many important historic archaeological sites. Over 10,000 years of human activity is preserved through etchings on the rocks and other artifacts that have been left behind. These resources are extremely fragile and protected by federal laws from collection, damage and destruction. If you are lucky enough to find these traces of the past, please be respectful and take only photographs so that others can enjoy them as well.

OLD SPANISH TRAIL



The 1,200 mile Old Spanish Trail played a significant role in the exploration and settlement of the West. It was first explored by Spanish explorers in the late 1500's. Then from about 1830 to the 1850's the trail received more extensive use by traders, explorers, horse thieves and settlers traveling from Santa Fe, New Mexico to Los Angeles, California. Over time, this led to the development of numerous main routes and alternatives that traversed the rugged mountains, deep canyons and arid deserts. Although most signs of this historic trail have now disappeared, some markers such as this cross near the Spanish Wash trail remain.

DINOSAUR TRACKS

Southern Utah, is loaded with evidence of dinosaurs. Dinosaur tracks, like the ones pictured below, can be found in several areas of the reserve. These tracks (called *Eubrontes*) may have been made from a *Dilophosaurus*-like meat-eating dinosaur during the Early Jurassic Epoch, approximately 195 million years ago. Tracks like these, as well as other fossil evidence, show how dinosaurs once ruled this area. Please be respectful of these amazing fossils and leave what you find for others to enjoy as well. It is illegal to collect or make casts of vertebrate tracks without a valid permit.

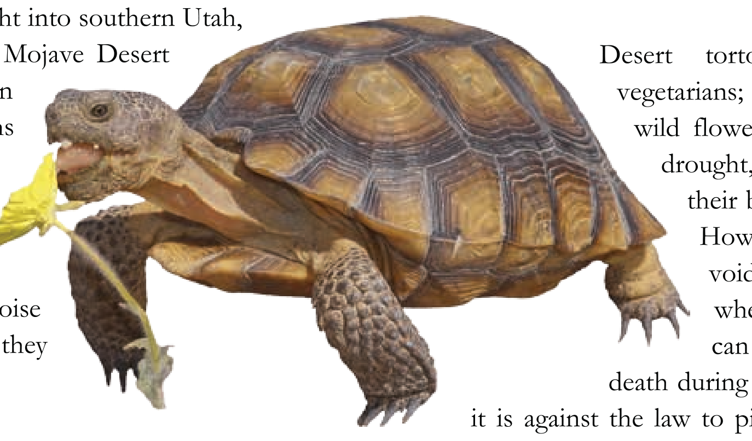
The tracks pictured here can be viewed on the Dino Cliffs trail just north of Washington City. To find the tracks follow the trail from the west end down the sandy hill until you reach the wash at the bottom. There are several tracks going in different directions in the rock-bottom wash. They are sometimes covered by sand and dirt, so you may have to look carefully to find them. Dinosaur tracks can also be found in the Babylon area of the reserve and more than 400 tracks can be viewed at the Warner Valley site (BLM lands south of the Reserve).

For additional information about dinosaurs in southern Utah, visit the St. George Dinosaur Discovery Site at Johnson Farm. They are located at 2180 East Riverside Drive, St. George, UT 84790. Phone: (435) 574-3466.

MOJAVE DESERT TORTOISE

All tortoises are turtles, but not all turtles are tortoises. The term "tortoise" typically refers to land turtles. The Mojave desert tortoise (*Gopherus agassizii*) inhabits desert washes, hillsides, and valley floors of California, Nevada, Arizona, and Utah. The reserve is the northern limit of their range.

In 1990, the U.S. Fish and Wildlife Service listed the Mojave Desert tortoise as a "threatened" species. Significant population declines were attributed to disease, over collecting, predation, and habitat loss. Though many tortoises were historically brought into southern Utah, they are a natural part of the Mojave Desert that extends into Washington County. Tortoise petroglyphs and fossils in the County document their long presence here. In 1996, the Red Cliffs Desert Reserve was established to protect tortoise habitat and ensure that they continue to thrive in Utah.



Desert tortoises have adapted to live in the extreme temperatures of the Mojave. Like all reptiles, tortoises are "cold blooded," meaning that they do not produce their own heat, but instead rely upon external sources to adjust their body temperature. They dig dens 5 - 30 feet deep and remain there during times of extreme cold or heat. Tortoises can spend as much as 95% of their life underground. They are most active in the spring and fall when mild temperatures are in the 70's and 80's.

In our area, most tortoise eggs hatch during late summer. Hatchling tortoises are only slightly larger than a silver dollar! Their shell remains soft for three years or more, which makes them easy prey for predators such as coyotes, ravens, and foxes. Less than 5% of hatchling tortoises reach adulthood. Ones that do survive, may reach up to 15 inches long and weigh up to 16 pounds. Tortoises are very long-lived, sometimes reaching over 60 years in the wild.

Desert tortoises are herbivores, or vegetarians; they eat mostly annuals and wild flowers. As an adaptation against drought, tortoises can store water in their bladder for very long periods. However, some tortoises may void their bladder (or urinate) when disturbed. This behavior can lead to dehydration and death during dry seasons. For this reason, it is against the law to pick up a wild desert tortoise. There is an important exception. If you happen to come across a tortoise on the road, or in other danger, please move it out of harm's way. First make sure it is safe for you to stop and go onto the road, then carefully lift the tortoise off the ground with both hands and take it across the road in the direction it was headed. You will never get in trouble for moving a tortoise out of danger.

DESERT ADAPTATIONS

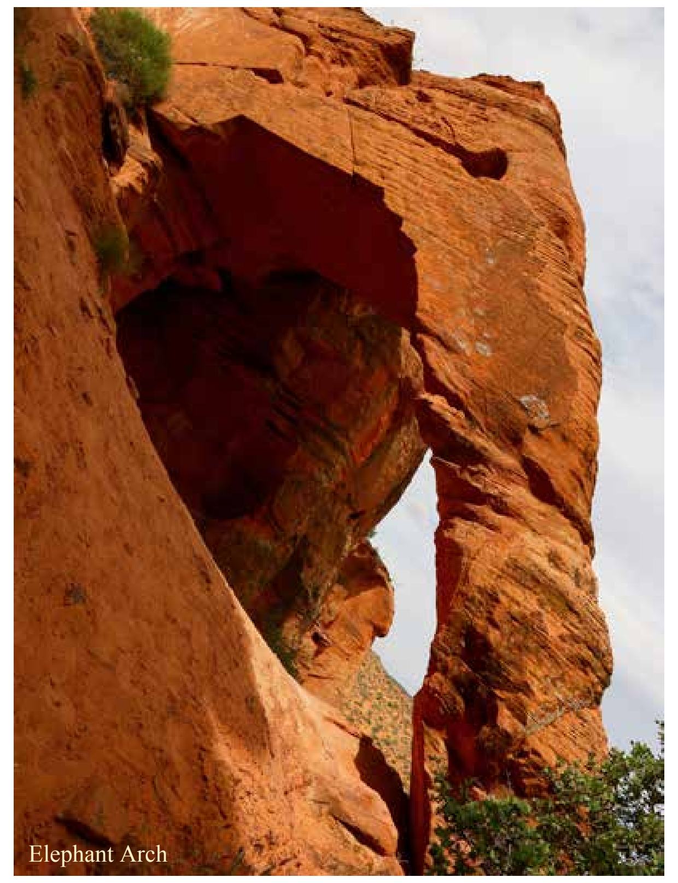
Plants in the reserve are adapted to deal with shallow soil and scant water. Slow-growing desert scrub vegetation and fragile ephemeral species take advantage of winter and late summer rain. Sage, blackbrush, creosote, and scrub live oak survive the hot, dry desert conditions using strategies such as light reflective coloration, small leaves, waxy leaf coverings, and the ability to drop their leaves and survive in a dormant state during extreme drought. Cacti store moisture in their fleshy pads. Annual grasses and plants quickly flourish after seasonal rains, flower, then leave their seeds to wait for the next rain.

Unlike plants, wildlife can move to access the resources they need. Larger mammals move around seasonally, escaping the summer heat by migrating to higher elevations. They can cover many miles in a day to find water, reducing their dependency on rainfall.

Smaller mammals and reptiles have physiology and behaviors that allow them to thrive in the desert. Tortoises can store enough water in their bladder to meet their needs for several months. Kangaroo rats are nocturnal, coming out to forage in the coolness of night. During the day, they plug the holes to their burrows trapping small amounts of moisture otherwise lost through breathing. Tortoises and other species survive the cold winter deep inside protective burrows waiting until spring before they emerge and resume activity.

GEOLOGY

Perhaps the single most important factor in the creation of the landscapes and habitats of Washington County (and the reserve) is the Hurricane Fault. The fault bisects the county, and is visible at the Hurricane Cliffs which run south to the Grand Canyon. The dynamic cracking, dropping, and thrusting of the earth's crust exposed colorful layers of rocks dating back to the age of the dinosaurs and older. Most of the scenic red rock we see today is known as Navajo sandstone. It was created from layers of cemented sand that blew into Utah nearly 200 million years ago. In the past million years, eruptions of several cinder cones and lava flows scattered the ground with black basaltic rocks. These hard rocks, along with others from nearby mountains, are carried down the canyon bottoms during heavy rainfall. This erosion process continues to carve out these dramatic canyons today.



Elephant Arch

COMMON PLANT AND WILDLIFE SPECIES

PLANTS

Trees

☐ Pinyon Pine (*Pinus edulis*)
☐ Utah Juniper (*Juniperus osteosperma*)
☐ Fremont Cottonwood (*Populus fremontii*)
☐ Single-leaf Ash (*Fraxinus anomala*)
☐ Honey Mesquite (*Prosopis juliflora*)
☐ Desert Willow (*Chilopsis linearis*)

Shrubs

☐ Creosote Bush (*Larrea divaricata*)
☐ Blackbrush (*Coleogyne ramosissima*)
☐ White Bursage (*Ambrosia dumosa*)
☐ Desert Almond (*Prunus fasciculata*)
☐ Indigo Bush (*Psorothamnus fremontii*)
☐ Utah Agave (*Agave utahensis*)
☐ Old man or Sand Sagebush (*Artemesia filifolia*)
☐ Mormon or Brigham Tea (*Ephedra viridis*)
☐ Broom Snakeweed (*Gutierrezia sarothrae*)
☐ Rubber Rabbitbrush (*Chrysothamnus nauseosus*)
☐ Shrub Live Oak (*Quercus turbinella*)
☐ Utah Yucca (*Yucca utahensis*)
☐ Datil or Banana Yucca (*Yucca baccata*)

Cacti

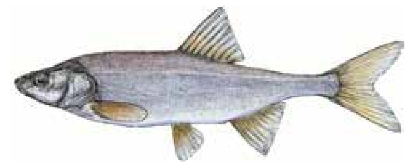
☐ Silver Cholla (*Opuntia echinocarpa*)
☐ Purple Torch (*Echinocereus engelmannii*)
☐ Pincushion Cactus (*Coryphantha vivipara*)
☐ Engelmann Prickly Pear (*Opuntia engelmannii*)

Wildflowers & Grasses

☐ Sego Lily (*Calchortus nutallii*)
☐ Spectaclepod (*Dithyrea wislizenii*)
☐ Four O'clock (*Mirabilis multiflora*)
☐ Desert Marigold (*Baileya multiradiata*)
☐ Evening Primrose (*Oenothera caespitosa*)
☐ Common Paintbrush (*Castilleja chromosa*)
☐ Desert Globemallow (*Sphaeralcea grossulariifolia*)
☐ Bottlebush (*Erigonum inflatum*)
☐ Indian Rice Grass (*Achnatherum hymenoides*)
☐ Big Galleta Grass (*Pleuralphis rigida*)

FISH (Virgin River)

Despite flowing through an arid region, the Virgin River is home to a surprisingly diverse array of plants and animals. Many of these species are endangered or are considered sensitive species within the State of Utah. The Virgin River Program was established to enhance, recover, protect and preserve native species and to enhance the ability to provide water for human needs. For more information about the fish of this area and how you can conserve water to protect these species, please visit them in St. George at 533 E Waterworks Drive, or call them at (435) 673-3617.



Virgin River Chub
(*Gila seminuda*)

Woundfin
(*Plagopterus argentissimus*)

Virgin Spinedace
(*Lepidomeda mollispinis*)

Speckled Dace
(*Rhinichthys osculus*)

Desert Sucker
(*Catostomus clarki*)

Flannelmouth Sucker
(*Catostomus latipinnis*)

Illustrations by Jon Wagner

REPTILES

Turtles & Tortoises

☐ Desert Tortoise (*Gopherus agassizii*)
☐ Red-eared Slider (*Trachemys scripta*)*
☐ Spiny Softshell Turtle (*Apalone spinifera*)*

Lizards

☐ Banded Gila Monster (*Heloderma suspectum*)
☐ Chuckwalla (*Sauromalus ater*)
☐ Great Basin Collared Lizard (*Crotaphytus bicinctores*)
☐ Long-nosed Leopard Lizard (*Gambelia wislizenii*)
☐ Zebra-tailed Lizard (*Callisaurus draconoides*)
☐ Desert Horned Lizard (*Phrynosoma platyrhinos*)
☐ Yellow-backed Spiny Lizard (*Secloporus magister*)
☐ Western Fence Lizard (*Sceloporus occidentalis*)
☐ Plateau Fence Lizard (*Sceloporus tristichus*)
☐ Side-blotched Lizard (*Uta stansburiana*)
☐ Tiger Whiptail (*Aspidoscelis tigris*)
☐ Western Skink (*Plestiodon skiltonianus*)
☐ Western Banded Gecko (*Coleonyx variegatus*)

Snakes

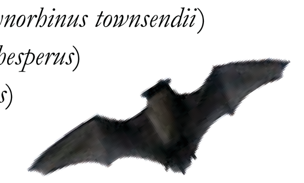
☐ Western Patch-nosed Snake (*Salvadora hexalepis*)
☐ Coachwhip (*Masticophis flagellum*)
☐ Striped Whipsnake (*Masticophis taeniatus*)
☐ Gopher Snake (*Pituophis melanoleucus*)
☐ California Kingsnake (*Lampropeltis getula*)
☐ Long-nosed Snake (*Rhinocheilus lecontei*)
☐ Glossy Snake (*Arizona elegans*)
☐ Lyre Snake (*Trimorphodon bisctatus*)
☐ Night Snake (*Hypsiglena torquata*)
☐ Regal Ringneck Snake (*Diadophis punctatus*)
☐ Ground Snake (*Sonora semiannulata*)
☐ Smith's Black-headed Snake (*Tantilla hobartsmithi*)
☐ Western Blind Snake (*Leptotyphlops humilis*)
☐ Mojave Desert Sidewinder (*Crotalus cerastes*)
☐ Great Basin Rattlesnake (*Crotalus lutosus*)

AMPHIBIANS

☐ American Bullfrog (*Rana catesbiana*)*
☐ Pacific Chorus Frog (*Pseudacris regilla*)*
☐ Canyon Tree Frog (*Hyla arenicolor*)
☐ Red-Spotted Toad (*Bufo punctatus*)
☐ Southwestern Toad (*Bufo mexicanus*)
☐ Woodhouse's Toad (*Bufo woodhousei*)
☐ Great Basin Spadefoot (*Spea intermontana*)

MAMMALS

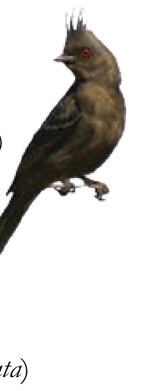
☐ Mule Deer (*Odocoileus hemionus*)
☐ Mountain Lion (*Felis concolor*)
☐ Bobcat (*Felis rufus*)
☐ Coyote (*Canis latrans*)
☐ Kit Fox (*Vulpes macrotis*)
☐ Gray Fox (*Vulpes cinereoargenteus*)
☐ Ringtail Cat (*Bassariscus astutus*)
☐ Raccoon (*Procyon lotor*)*
☐ Striped Skunk (*Mephitis mephitis*)
☐ Spotted Skunk (*Spilogale gracilis*)
☐ Beaver (*Castor canadensis*)
☐ Muskrat (*Ondatra zibethicus*)
☐ Striped Skunk (*Mephitis mephitis*)
☐ Porcupine (*Erethizodon dorsatum*)
☐ Black-tailed Jackrabbit (*Lepus californicus*)
☐ Desert Cottontail (*Sylvilagus audubonii*)
☐ Antelope Squirrel (*Ammospermophilus leucurus*)
☐ Western Gray Squirrel (*Sciurus griseus*)
☐ Ord's Kangaroo Rat (*Dipodomys ordii*)
☐ Desert Woodrat (*Neotoma lepida*)
☐ Pocket Gopher (*Thomomys bottae*)
☐ Deer Mouse (*Peromyscus maniculatus*)
☐ Long-tailed Pocket Mouse (*Chaetodipus formosus*)
☐ Mexican Free-tailed Bat (*Tadarida brasiliensis*)
☐ Townsend's Big-eared Bat (*Corynorhinus townsendii*)
☐ Western Pipistrelle (*Parastrellus hesperus*)
☐ Fringed Myotis (*Myotis thysanodes*)
☐ Pallid bat (*Antrozous pallidus*)



* Introduced or non-native species

BIRDS (S = Summer; W = Winter; R = Resident)

☐ R Gambel's Quail (*Callipepla gambelii*)
☐ R Wild Turkey (*Meleagris gallopavo*)
☐ R Great Blue Heron (*Ardea herodias*)
☐ S Turkey Vulture (*Cathartes aura*)
☐ R Golden Eagle (*Aquila chrysaetos*)
☐ R Red-tailed Hawk (*Buteo jamaicensis*)
☐ R Cooper's Hawk (*Accipiter cooperii*)
☐ W Sharp-shinned Hawk (*Accipiter striatus*)
☐ R Peregrine Falcon (*Falco peregrinus*)
☐ R Prairie Falcon (*Falco mexicanus*)
☐ W Merlin (*Falco columbarius*)
☐ R American Kestrel (*Falco sparverius*)
☐ R Northern Harrier (*Circus cyaneus*)
☐ R Mourning Dove (*Zenaida macroura*)
☐ R Eurasian Collared-Dove (*Streptopelia decaocto*)*
☐ R Rock Pigeon (*Columba livia*)*
☐ R Greater Roadrunner (*Geococcyx californianus*)
☐ R Great Horned Owl (*Bubo virginianus*)
☐ R Western Screech-Owl (*Megascops kennicottii*)
☐ R Burrowing Owl (*Athene cunicularia*)
☐ R Barn Owl (*Tyto alba*)
☐ S Lesser Nighthawk (*Chordeiles acutipennis*)
☐ S Common Poorwill (*Phalaenoptilus nuttallii*)
☐ S White-throated Swift (*Aeronautes saxatalis*)
☐ S Costa's Hummingbird (*Calypte costae*)
☐ S Black-chinned Hummingbird (*Archilochus alexandri*)
☐ R Anna's Hummingbird (*Calypte anna*)
☐ R Red-naped Sapsucker (*Sphyrapicus nuchalis*)
☐ R Downy Woodpecker (*Picoides pubescens*)
☐ R Northern Flicker (*Colaptes auratus*)
☐ S Western Wood-Pewee (*Contopus sordidulus*)
☐ R Say's Pheobe (*Sayornis saya*)
☐ S Gray Flycatcher (*Empidonax wrightii*)
☐ S Ash-throated Flycatcher (*Myiarchus cinerascens*)
☐ S Western Kingbird (*Tyrannus verticalis*)
☐ R Loggerhead Shrike (*Lanis ludovicianus*)
☐ W Pinyon Jay (*Gymnorhinus cyanocephalus*)
☐ R Western Scrub-Jay (*Aphelocoma californica*)
☐ W American Crow (*Corvus brachyrhynchos*)
☐ R Common Raven (*Corvus corax*)
☐ R Horned Lark (*Eremophila alpestris*)
☐ S N. Rough-winged Swallow (*Stelgidopteryx serripennis*)
☐ S Violet-green Swallow (*Tachycineta thalassina*)
☐ R Juniper Titmouse (*Baeolophus ridgwayi*)
☐ R Verdin (*Auriparus flaviceps*)
☐ R Bushtit (*Psaltriparus minimus*)
☐ R Brown Creeper (*Certhia americana*)
☐ R Cactus Wren (*Campylorhynchus brunneicapillus*)
☐ R Canyon Wren (*Catherpes mexicanus*)
☐ R Rock Wren (*Salpinctes obsoletus*)
☐ S Blue-gray Gnatcatcher (*Polioptila caerulea*)
☐ W Ruby-crowned Kinglet (*Regulus calendula*)
☐ R American Robin (*Turdus migratorius*)
☐ W Mountain Bluebird (*Sialia currucoides*)
☐ R Northern Mockingbird (*Mimus polyglottos*)
☐ R Sage Thrasher (*Oreoscoptes montanus*)
☐ R Crissal Thrasher (*Toxostoma crissale*)
☐ R European Starling (*Sturnus vulgaris*)*
☐ W American Pipit (*Anthus rubescens*)
☐ S Phainopepla (*Phainopepla nitens*)
☐ S Orange-crowned Warbler (*Oreothlypis celata*)
☐ S Lucy's Warbler (*Oreothlypis luciae*)
☐ S Yellow Warbler (*Setophaga petechia*)
☐ R Yellow-rumped Warbler (*Setophaga coronata*)
☐ S Green-tailed Towhee (*Pipilo chlorurus*)
☐ R Spotted Towhee (*Pipilo maculatus*)
☐ R Abert's Towhe (*Melozone aberti*)
☐ S Chipping Sparrow (*Spizella passerina*)
☐ S Brewer's Sparrow (*Spizella breweri*)
☐ S Black-throated Sparrow (*Amphispiza bilineata*)
☐ W Sage Sparrow (*Amphispiza belli*)
☐ R Song Sparrow (*Melospiza melodia*)
☐ W White-crowned Sparrow (*Zonotrichia leucophrys*)
☐ R Dark-eyed Junco (*Junco hyemalis*)
☐ S Western Tanager (*Piranga ludoviciana*)
☐ S Black-headed Grosbeak (*Pheucticus melanocephalus*)
☐ R Red-winged Blackbird (*Agelaius phoeniceus*)
☐ R Western Meadowlark (*Sternella neglecta*)
☐ S Brown-headed Cowbird (*Molothrus ater*)
☐ S Bullock's Oriole (*Icterus bullockii*)
☐ R House Finch (*Haemorhous mexicanus*)
☐ R Lesser Goldfinch (*Spinus psaltria*)
☐ R House Sparrow (*Passer domesticus*)*



RED CLIFFS
DESERT RESERVE
www.redcliffsdesertreserve.com

Future plans include improving trails, installing information signs, and improving parking areas. Contact reserve managers for more information. To report irresponsible use or violations, contact the County Sheriff at (435) 634-5730.

Washington County HCP Administration
10 N. 100 E. Tabernacle
St. George, UT 84770
(435) 634-5759

Bureau of Land Management
345 E. Riverside Drive
St. George, UT 84790
(435) 688-3246

Snow Canyon State Park
1002 N. Snow Canyon Drive
Ivins, UT 84738
(435) 628-2255

Design & Photography: Cameron Rognan
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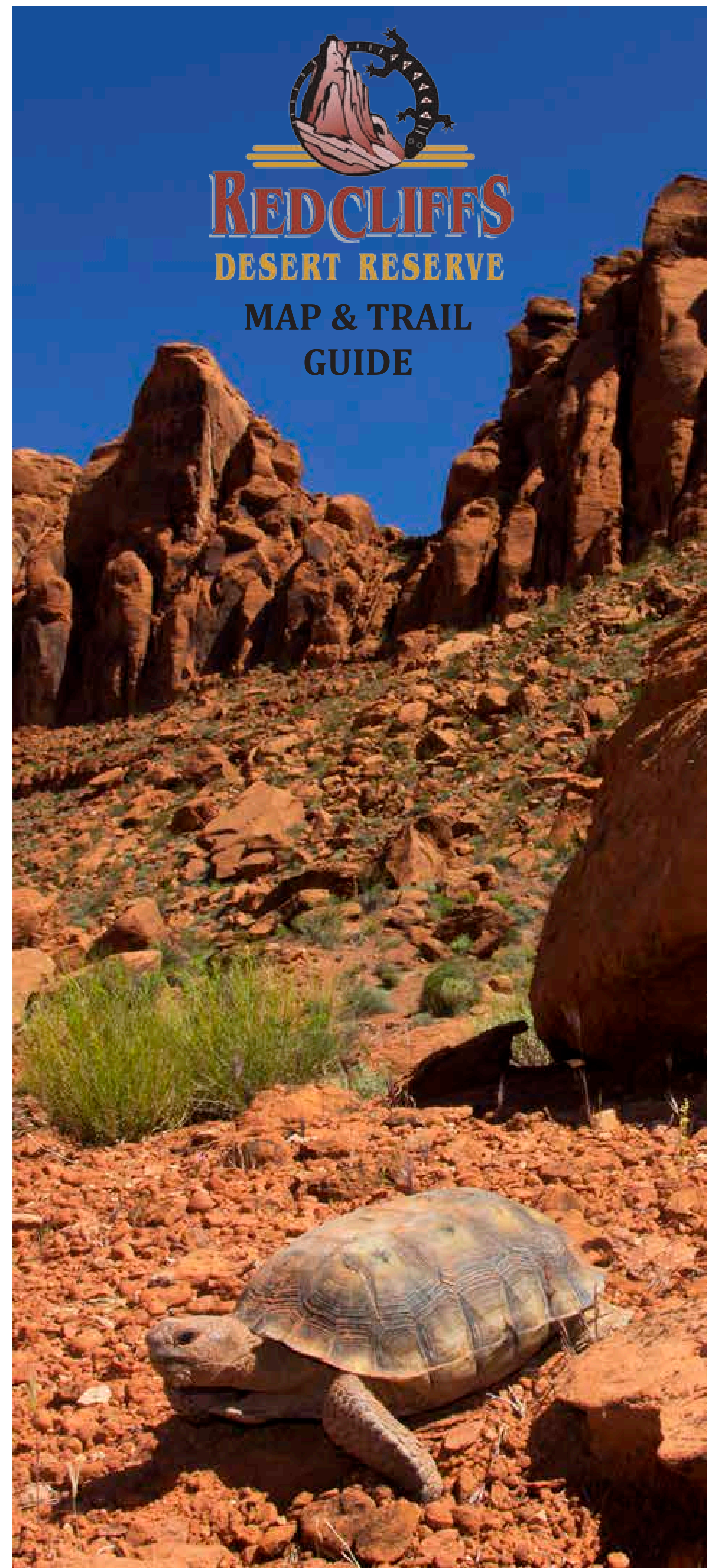
Special thanks to all partners of the Red Cliffs Desert Reserve including the Bureau of Land Management, Snow Canyon State Park, Utah Division of Wildlife Resources, United States Fish and Wildlife Service, State of Utah School and Institutional Trust Lands Administration, St. George, Ivins, Washington, Hurricane and other municipalities.

SUGGESTED RETAIL:
$5.00

leave no trace



RED CLIFFS
DESERT RESERVE
MAP & TRAIL GUIDE