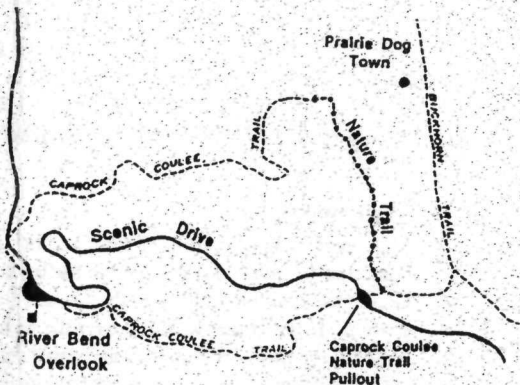


Caprock-Coulee Nature Trail



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THE PARK IS HOME TO MANY DIFFERENT KINDS OF WILDLIFE INCLUDING BISON, WHICH MAY CHARGE IF YOU GET TOO CLOSE, AND PRAIRIE RATTLESNAKES. WATCH YOUR STEP AND ENJOY ALL WILDLIFE FROM A SAFE DISTANCE. PLEASE LEAVE PLANTS, ROCKS, BONES AND ALL OTHER NATURAL OBJECTS UNDISTURBED FOR OTHERS TO ENJOY.

1. COULEES

The Caprock Coulee Nature Trail takes you through one of many coulees found in the badlands. Coulees are long, steep, narrow valleys like this small one. Formed by water erosion, they are usually dry in summer except during infrequent thunderstorms. Coulees were named by French fur traders who came to this country in the early 1800s.

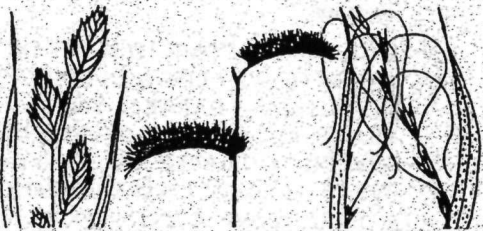
THE TRAIL FORKS. TO THE LEFT IS THE CAPROCK COULEE NATURE TRAIL. THE RIGHT FORK JOINS THE 11-MILE BUCKHORN TRAIL. A PRAIRIE DOG TOWN IS LOCATED 1 MILE FROM THIS TRAILHEAD ALONG THE BUCKHORN TRAIL.

2. EROSION

The never-ending process of wind and rain erosion continues to shape and change the badlands. Geologists call the pattern on the hillside rivulet erosion. Heavy rains washing over the face of the butte fill the maze of channels and carry sediment off the hillside. These narrow rills merge to form a network of larger channels. The pace of erosion quickens as the bottom of the butte is cut away.

3. GRASS

The plant communities of the Great Plains are dominated by a rich assemblage of grass species. The amount of moisture received by any one region dictates the type and size of grasses growing there. Our 15 inches of annual precipitation sustains grasses typical of the mixed grass prairie. Stands of western wheatgrass (*Agropyron smithii*), blue grama (*Bouteloua gracilis*), and needle-and-thread (*Stipa comata*) make this region especially suitable for the grazing of bison, elk, deer, and other wildlife. Look closely; can you pick out several types of grass?



Western Wheatgrass

Blue Grama

Needle & Thread

4. CHOKECHERRY (*Prunus virginiana*)

In late July or August, you should find dark purple chokecherries hanging from these branches. Their tart flavor adds meaning to the name "choke"-cherry! The Plains Indians relished the fresh fruits in summer. For winter use, they ground the fruits, shaped them into cakes, and laid them out to dry. When mixed with dried meat, they produced the popular food known as pemmican.



5. BADLANDS SLOPES

Do you see the differences in the vegetation patterns on the canyon walls around you? How would they help a traveler? Look back above the parking area. Observe the moist, cool, north-facing slopes supporting stands of juniper and other woody plants. As you turn around, notice the drier, hotter, south-facing slopes that support a more desert-like growth of cactus, saltbush and grasses. The trail will take you through both plant communities.



6. DIFFERENTIAL EROSION

To your left is a good illustration of how rocks of varying hardness erode at different rates. The soft gray material is a mixture of sand and bentonite clay. The thin layers of rusty looking rock are iron-impregnated sandstone. Notice how the latter forms a protective shelf wherever it occurs. It is harder and thus erodes more slowly than the softer surrounding clays.

7. SAGEBRUSH

The silvery-gray sagebrush is very noticeable throughout the western United States. Here, it grows profusely on terraces above the Little Missouri River. Look closely at the leaves on several of the bushes as you walk along the trail; you should find three different shapes belonging to three different species: silver (*Artemisia cana*), fringed (*Artemisia frigida*), and the less common big sage (*Artemisia tridentata*). Do you smell the fragrance? Is it the same for each species?



Silver Sage

Fringed Sage

Big Sage

8. LIGNITE

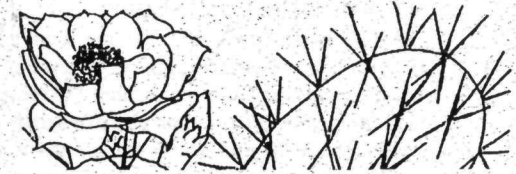
To your left, at the top of the black-gray layer about four feet up the slope, is a thin black seam of lignite. Lignite is a poor grade coal found throughout the area. It is composed of ancient plant material. Coal is formed when vegetation is preserved from decay by burial and then subjected to great heat and pressure. Finding it here indicates that this was once a lush, swampy land, one that looked very different from the way it does today.

9. BENTONITE

The blue-gray sediment on the face of the bluff across the coulee is bentonite. Bentonite is chemically altered volcanic ash and clay that has tremendous absorbent qualities. Prominent throughout the badlands, it can absorb several times its volume in water and has many industrial uses. After heavy rains or when soaked by melting snow, it expands and literally flows down hillsides. Can you see any wildlife trails crossing the steep bentonite slope?

10. PRICKLY PEAR CACTUS

Only a few species of cactus grow this far north (the park has four). Less stout than southern species but just as hardy, the plains prickly pear (*Opuntia polyacantha*) is quite common in the badlands. The Plains Indians found many uses for it after they painstakingly removed the spines! They ate the fruits raw and stewed and roasted the stems (the large fleshy pads). The peeled stems exposed a thick, sticky substance that was bound on wounds as a dressing.



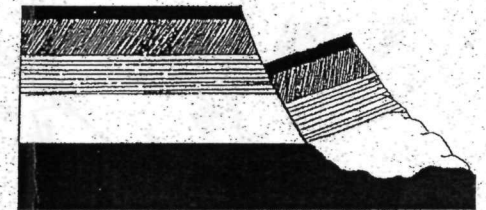
11. PETRIFIED WOOD

On the far hillside above the coulee are large light-colored pieces of petrified wood. The wood came from trees that grew here some 55 million years ago. Covered quickly by sand, mud, and clay before decay could begin, ground water percolating through the buried trees slowly filled the cell spaces with silica (quartz, derived from volcanic ash), which hardened and preserved the tree parts. Then, much later in time, erosion exposed the petrified wood.

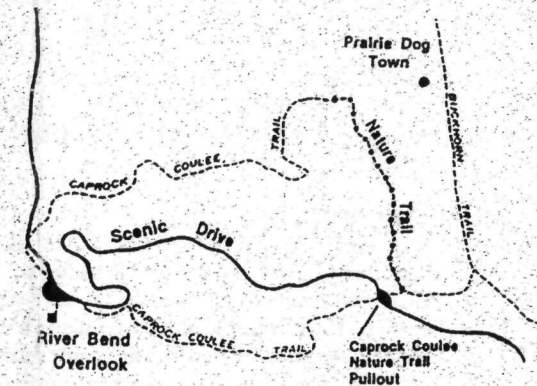
REMEMBER — IF EACH PERSON TOOK ONE PIECE OF PETRIFIED WOOD, THERE WOULD SOON BE NONE FOR OTHERS TO ENJOY. PLEASE DO NOT TAKE ANY.

12. SLUMP

Across the coulee to the right, is a small slump. Unlike a landslide where masses of earth and rock break up and tumble down steep slopes, slump blocks are sheared from the slopes and remain intact as they slide downward and rotate outward. Can you see where the slump came from? (Hint: Try to match the colors of each layer.)



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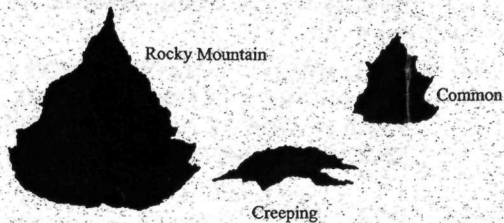
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13. PIPING

The tunnels or vertical "pipes" in the coulee walls are formed by an erosional process called piping. Rainwater, funneling through small surface openings (perhaps a rodent burrow or a tree root track), saturates ground sediments to the point of collapse, producing hollow, unstable cavities. The size of some pipes — up to several feet deep and wide — makes them a significant force of change in the badlands.

14. NORTH-FACING SLOPE

For the next hundred yards the trail traverses a north-facing slope. Feel the difference in temperature and listen for sounds. Hikers and animals appreciate these pickets of vegetation for the shade they offer in summer and for the protection they provide in winter. The predominant trees are junipers and ash. Three species of juniper are found here. The Rocky Mountain juniper (*Juniperus scopulorum*) is an upright tree. The common juniper (*J. communis*) resembles a shrub, rarely exceeding three feet in height and with conspicuous, sharp, three-sided needles. Creeping juniper (*J. horizontalis*), as its name implies, is low and mat-forming. See if you can locate all three as you continue.



15. RABBITBRUSH

Rabbitbrush (*Chrysothamnus nauseosus*) provides a touch of bright yellow to this hill in late summer & early fall. It is the last flower of the season to bloom, hinting that winter is soon to come. Rabbitbrush provides shade and shelter for small animals during the hot summer and food for deer in winter.



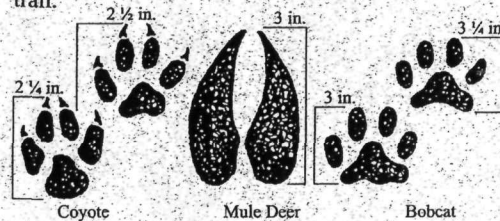
16. ACTIVE SLUMP

A slump that begins on the butte to your left has completely blocked the coulee. Weak, slippery bentonite, saturated by water from the seep above you, became overburdened to the point where it finally yielded to gravity and began to slide. While the seep water is unfit for human use, animals welcome it in this semi-arid country.

CAUTION! WATCH YOUR FOOTING

17. WILDLIFE TRAIL

Small sources of water, like the one you just passed, become gathering places for wildlife such as mule deer, bobcats, bison, and coyotes. Look around and try to spot their tracks or scat on the trail.



18. FOREST "LITTER"

The death of these trees does not harm the remaining plants & animals that depend upon forest litter for food, shelter and nesting places. Eventually the dead trees and plant materials decay into the ground to nourish a new cycle of plant growth.

19. GREEN ASH

Green ash (*Fraxinus pennsylvanica*) is found growing in ravines and coulees throughout the park. It is a fast-growing tree and is relatively hardy — resisting drought and heat, but not cold. The seeds are quite conspicuous, resembling miniature canoe paddles. Look closely at the bark. Some of it has been rubbed smooth. Bison have been using this tree and others as scratching posts!

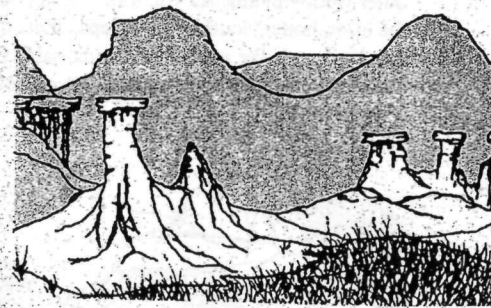


20. LICHENS

The bright-colored splashes on the tree trunks are masses of minute plants called lichens (pronounced li'kens). Lichens consist of two different kinds of plants — fungi and alga — which live together in a closely balanced relationship. The alga produce food for themselves and the fungi, while the fungi obtain and hold water for the organism. Certain lichen species are sensitive to changes in air quality and can be used to monitor the presence of air pollutants.

21. CAPROCKS

Throughout the park are examples of hoodoos and caprocks. Harder than the sediments around them, the caprocks resist erosion. In so doing, they shelter the soft clays beneath them from the direct effects of rainfall. But the splash of raindrops, running water and wind eventually removes the surrounding material until mushroom-like pedestals or "hoodoos" are formed. Ultimately the supporting pillar becomes too weak to hold the caprock, and it topples off. Deprived of its protective cover, the pillar is rapidly worn down to the level of the surrounding soft rock. High up on the cliffs surrounding this basin are examples of this process. The large caprocks in this basin have fallen and now only the supporting pillars remain.



This basin is a good place to do a little exploring, or to just sit and relax. It is also the end of the self-guiding part of the trail. Remember, the shortest way back to your car is to retrace your steps. If you continue on ahead, you will be hiking another 3.3 miles before you return to your starting point.

You may keep this leaflet or return it to the dispenser for others to use.

