

# *Foundation: a landowner's manual*

## *This is your territory...*

learn about it and you will come to love it. Like most other things in life, you will appreciate land more once you understand it better. These days, we forget that a deep understanding of Nature and the land were once essential for human survival. We were good at picking up this knowledge, we passed it down to our children, and incorporated it into our lives. In recent times, our culture has viewed understanding Nature more as a scientific pursuit, a weekend hobby, or something important only for people who make a living off the land.

When you have ties to a piece of natural land, it's time to rediscover the old abilities to understand and appreciate it. This book gives you a foundation of knowledge to do just that. It examines the land from many angles, weaving its separate elements together. Read this, and you will end up with an old-fashioned understanding and respect for this preserve that is rooted in today's science and the unique circumstances on the land itself. We hope that an in-depth understanding will make your time here more rewarding and show you it's worth your love.

*Welcome to your  
new wildlife  
and hunting  
paradise!*

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# *Foundation* *a landowner's* *manual*

*A Custom Interpretation*  
*for Your Land*

## Plateau Retreat

Latitude: 38.326342° Longitude: -108.075113°

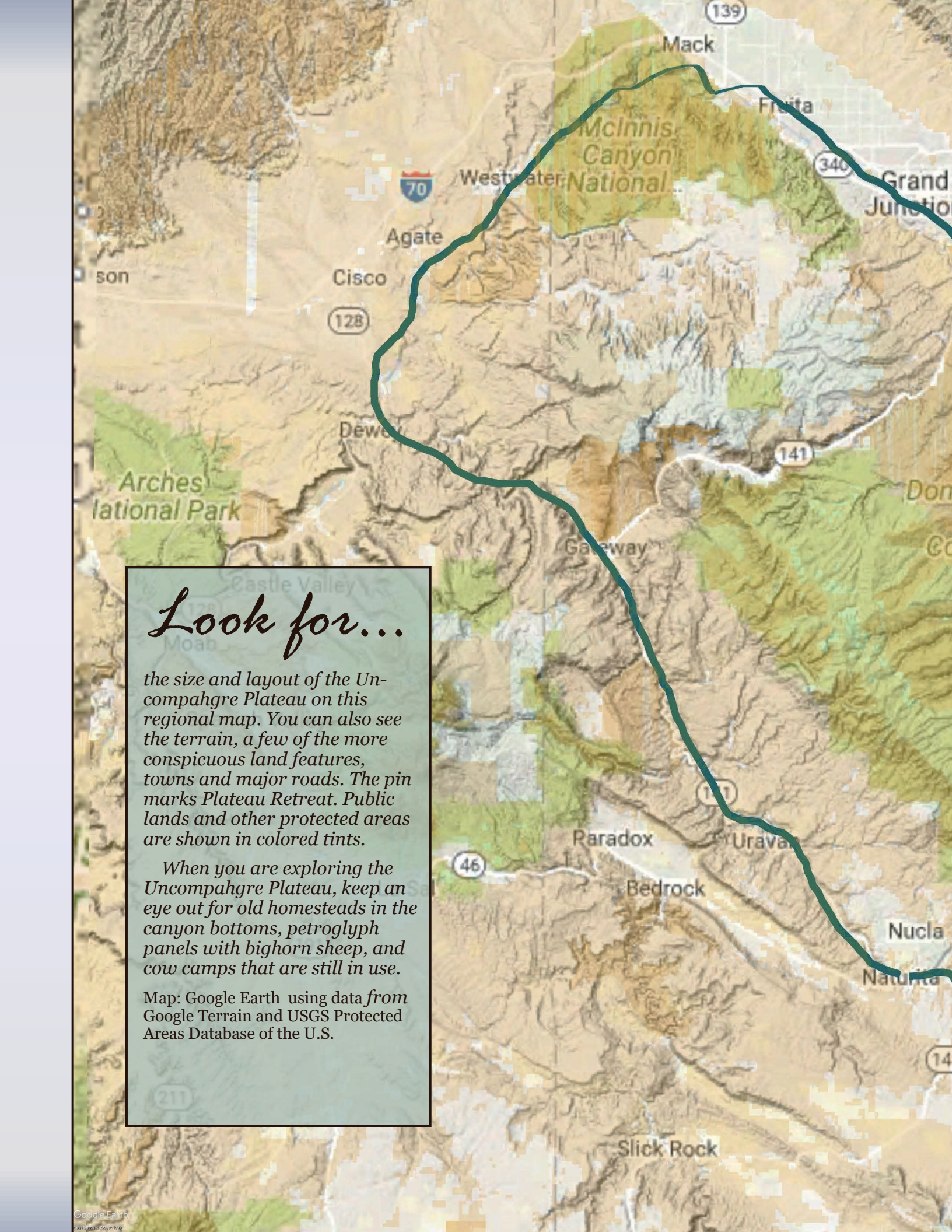
Elevation: 8624 feet

Created by Applied Ecological Services

for *Your Land Explained*

*Nothing better" ~ Albert Einstein*





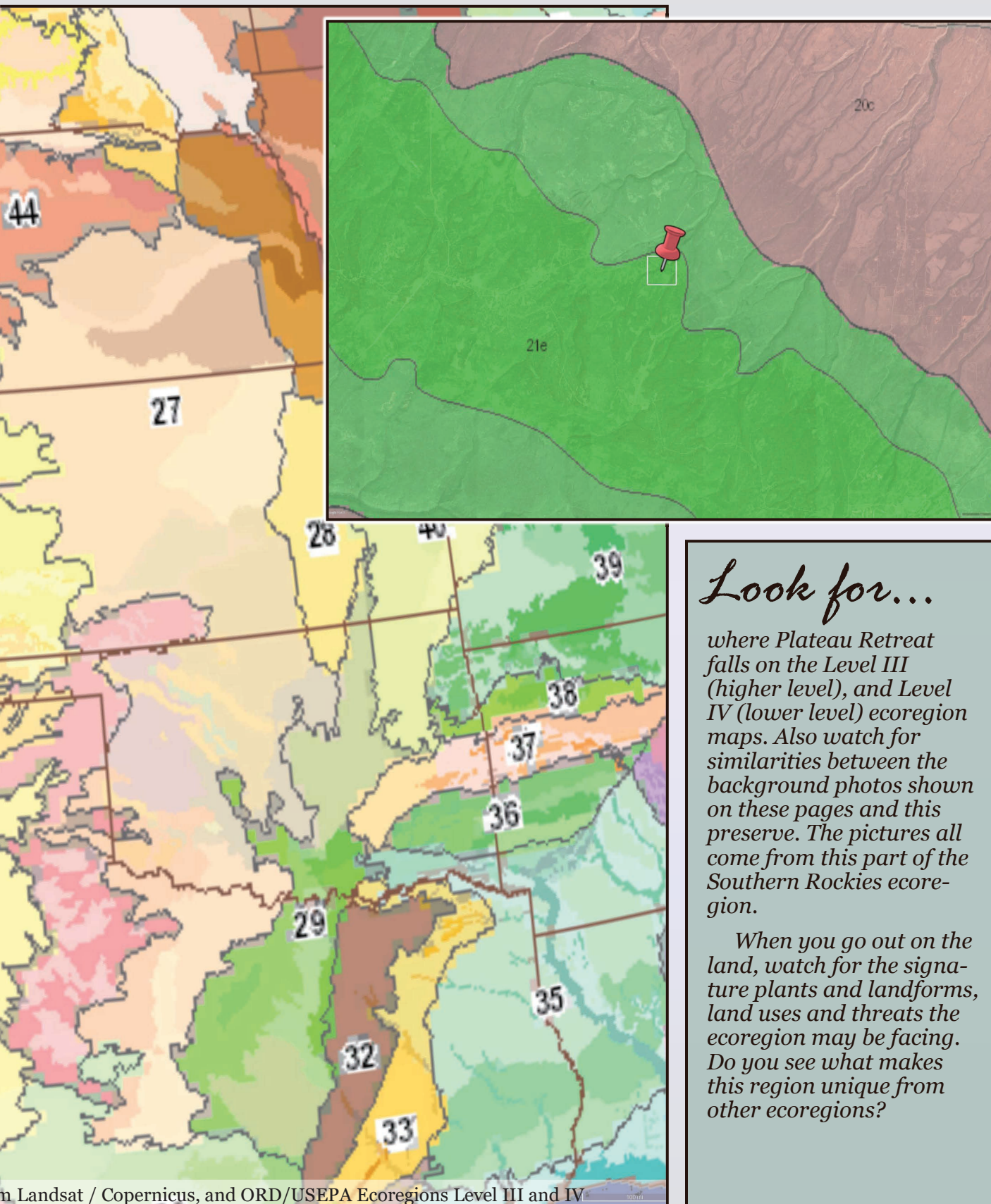
## Look for...

*the size and layout of the Uncompahgre Plateau on this regional map. You can also see the terrain, a few of the more conspicuous land features, towns and major roads. The pin marks Plateau Retreat. Public lands and other protected areas are shown in colored tints.*

*When you are exploring the Uncompahgre Plateau, keep an eye out for old homesteads in the canyon bottoms, petroglyph panels with bighorn sheep, and cow camps that are still in use.*

Map: Google Earth using data from Google Terrain and USGS Protected Areas Database of the U.S.







# Geology: earth's structure and substance

*Can you ...*

**visualize a landscape of expanding and retreating shallow seas, coastlines, and streambeds? Now look at the native rock on this property. It was created here by that landscape. When you pick up a piece of its sandstone you are holding what was once sand accumulating on beaches, dunes, and streambanks.**

Geology is the foundation that underlies and shapes a piece of land. It catalogs the earth and its changes. Rocks are created, metamorphosed and eroded over the eons. They are rearranged by earthquakes and landslides, wind and water. This history is exposed in today's bedrock and landscape, it just takes some interpretation to see it.

While geology plays out at an almost imperceptible rate that is hard for people to grasp, the landscape itself is a snapshot of geologic processes in action. The larger region encompassing this preserve is characterized by a landscape of low

mountain ridges and slopes with pockets of rubble from Ice Age glaciers and landslides spread across layers of sandstone, shale and limestone. These were deposited across many geologic periods when fluctuating shallow seas, coastal plains and sand dunes dominated the landscape. You will find remnants of this geologic history on this preserve.

The geologic map on the following pages shows the major rock formations across Plateau Retreat. The main unit there is the Dakota Sandstone and Burro Canyon Formation, which is found in western Colorado, eastern Utah and northern New Mexico. This formation is identified as Kdb on the map. It originated in the Cretaceous period--145-66 million years ago, and is composed of sandstone, shale, and conglomerate. It contains bone fragments from dinosaurs like triceratops, tyrannosaurus and brachiosaurus. Fossil plants also occur. You can see what a typical section of it looks like in the picture next to the map.

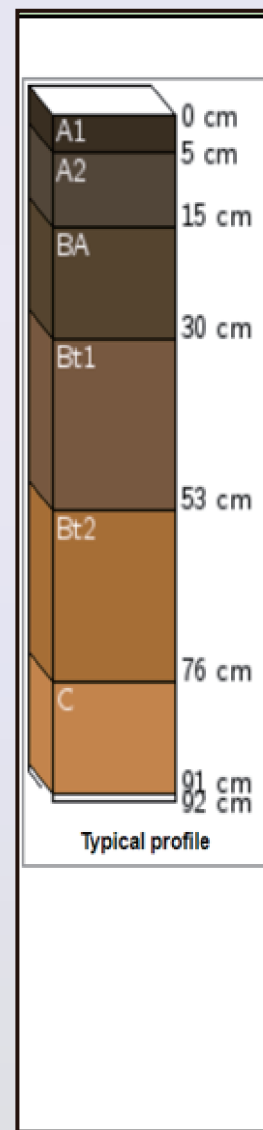
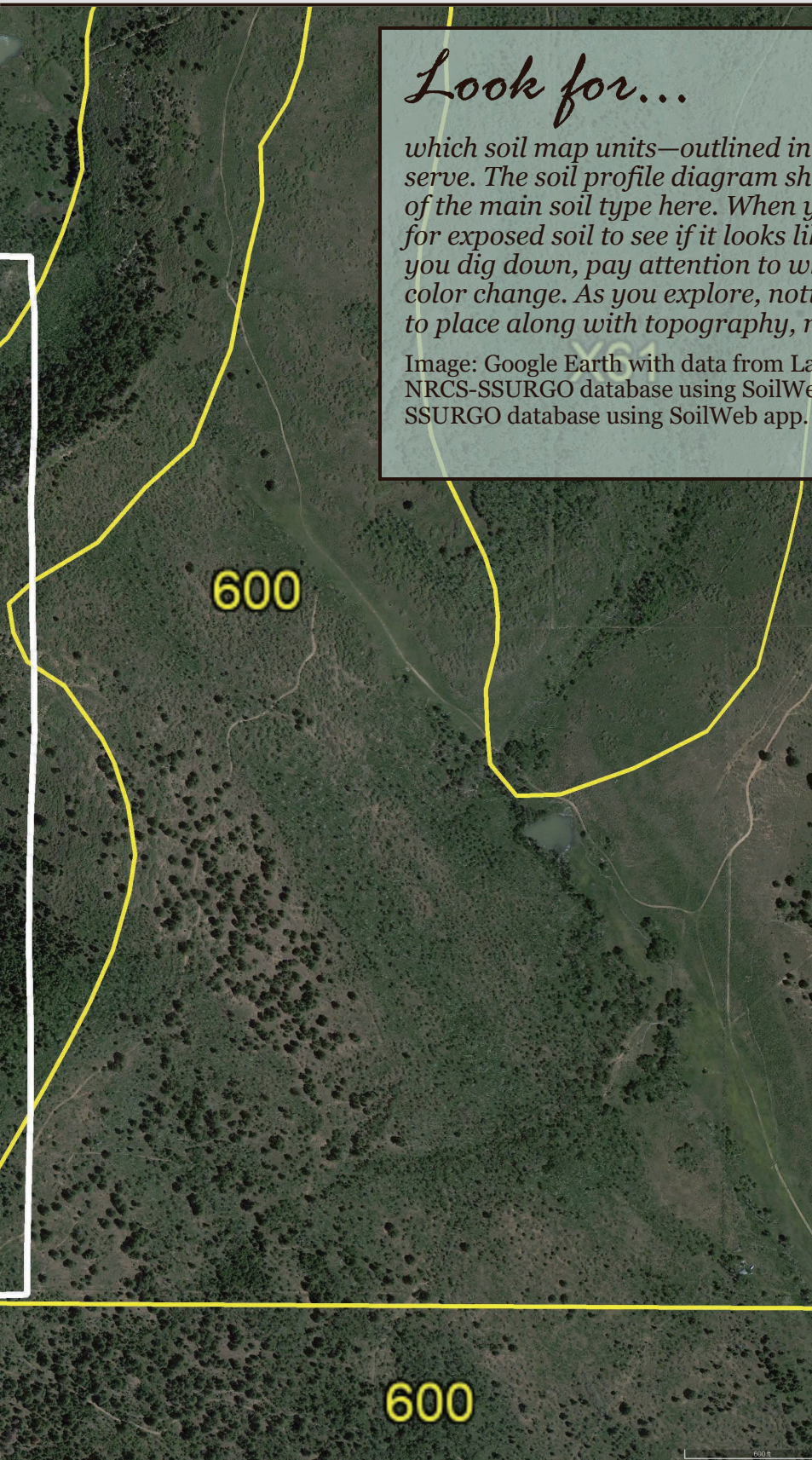
The geology has affected other conditions on Plateau Retreat. For example, some rock layers are harder than others leaving behind cliffs and slopes as the formation has weathered. This geology has also contributed to the area's porous, relatively infertile soils. These developed in



## Look for...

*which soil map units—outlined in yellow—occur on this preserve. The soil profile diagram shows depth, layers and colors of the main soil type here. When you go out on the land, watch for exposed soil to see if it looks like what is described here. If you dig down, pay attention to whether or not the texture and color change. As you explore, notice if the soil varies from place to place along with topography, microclimate and vegetation.*

Image: Google Earth with data from Landsat / Copernicus and USDA NRCS-SSURGO database using SoilWeb app. Diagram: USDA NRCS-SSURGO database using SoilWeb app.

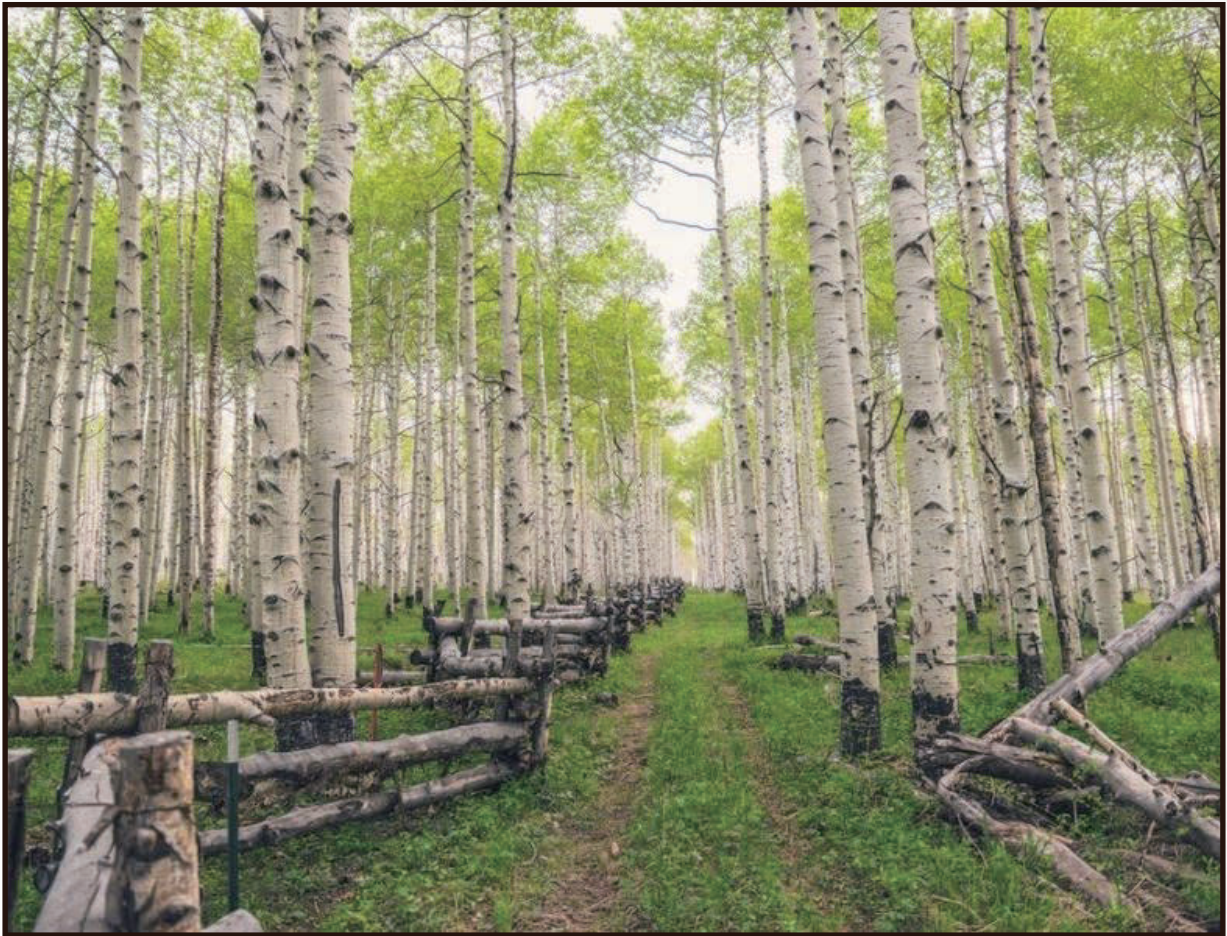




# Looking at the Land: Part 2

## Geology and Soils

Reading the landscape includes looking for indicators of the underlying geology and soils. Landforms can reveal the geologic processes at work, and vegetation growth provides clues to the soil and its organic material. These views don't show any rocks on the surface, but the steep draw indicates water has cut through the formation over time, and the rock is fairly soft because it has formed an incline instead of vertical cliffs. The dark soil under the aspen confirms that yearly leaf fall has built an organic soil. This is a story of life and its power to cover bare rock and stave off erosion.





## Look for...

*these native plants as you get to know Plateau Retreat. There can be hundreds of species you might encounter, so focus on the ones that are dominating the vegetation as a starting point. If you think of them as the major players in the ecosystem and learn some of their characteristics, you'll get a sense of the main plot line in the vegetation story going on around you.*

*The less common plants might catch your eye and pique your curiosity, but they are just minor characters in the larger story. The last page has a link to a regional plant guide that can help you identify them.*

*When you go out on the land pay attention to terrain, because where there are microclimate differences, there are likely to be additional species. If you look closely, you should be able to find insects and other animals using each plant species.*



Chokecherry is a tall shrub or short tree with oval, toothed leaves and cherry-like fruit. A member of the rose family that grows in moist soils, it survives in shady or sunny conditions with the help of underground rhizomes which sucker to form thickets, and sweet fruit that lures animals to spread its seeds.

Quaking aspen is a deciduous, white-barked tree that forms groves because they're connected underground by a massive root system. This member of the willow family deals with cold and snowy habitats by efficiently photosynthesizing through thin bark and trembling leaves, and sprouting from its roots once the canopy is removed.

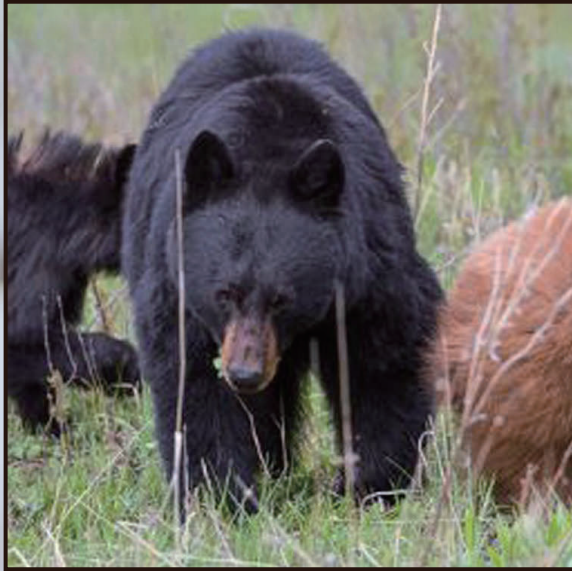


Shrubby cinquefoil is a short shrub with fuzzy, olive-colored leaves and 5-petaled yellow flowers. It's a hardy member of the rose family that occupies moist habitat types. This is a species which can tolerate cold temperatures, and resist grazing, probably because of its fuzzy leaves. It is widely distributed across the Northern Hemisphere.



Roundleaf snowberry is a low shrub with pale green leaves and white berries. This member of the honeysuckle family survives here because it's able to grow in the shade of taller trees and shrubs, and spread by putting up new shoots from root rhizomes. Its white berries contain saponins, making them poisonous to most animals.





Black bears occur here in low numbers. Seasonally, they are active between mid-March through early November, and go into hibernation when food sources disappear. They feed mainly in morning and evening on plants, insects, carrion, and very rarely other animals. Females have a single litter a year, and stay with their cubs until they reach about 18 months old. Otherwise, they are solitary and territorial creatures. They consume large amounts of ants, termites, berries and nuts, causing localized mayhem, but planting many seeds. Expect them to use Plateau Retreat mainly because of its food source of acorns and berries.

North American porcupines are fairly common but rarely seen here since they are mostly active at night. These large, quill-covered rodents eat all sorts of plant parts, focusing on pine needles and inner tree bark in the winter. They lead largely solitary lives--except to mate in the fall. The females give birth to a single, soft-spined porcupette the following spring. They can't shoot their quills, but they can vocalize. As for their impacts on the system--their taste for bark kills some trees, while some predators have figured out how to get past their quills. They come to this preserve largely because of the woodland it provides.



Coyotes are common but often go unseen in this area. Most active after dusk, they feed on a variety of prey species and plant parts. Coyotes usually form small, family-based packs in mid-winter, with one reproductive female. She has one mate and one litter a year of 5-9 pups, which she raises in a den with the help of the pack. Adaptable, intelligent, and communicative, they work together to hunt larger animals. Their presence affects prey populations and prey behavior, which has trickle down impacts on the vegetation. One important feature Plateau Retreat offers this species is the prey base it provides.



# Past Cultures: land use

## Imagine...

**yourself as a rancher here in the early 1900s. Your concerns would be finding forage and water for your livestock, keeping them from being lost or stolen, and getting them to market. The rapidly growing economy and new railroads increase your markets and encourage you to grow your herd.**

The people who now live in this area represent just the latest iteration in a series of cultures that has occupied the region for thousands of years. Each culture has found a use for the land and impacted it in different ways. They have used it by hunting, harvesting its plants, farming, grazing animals, marketing its resources and constructing dwellings.

This preserve has only very minor signs of recent land use, but there is also a hidden history. Deep within it may be remnants from some of the oldest cultures on the continent. Clovis people could have traversed this area more than 8,000 years ago. Some evidence indicates

they contributed to the extinction of many Ice age mammals, causing ripple effects to the natural community that still resonate today.

Thousands of years later the Fremont people farmed corn, beans and squash in the river bottoms, hunted and foraged here, living in small settlements. Their impacts to plants, animals, soils and even rock have mostly disappeared or been buried.

The Ute people had been in this region for at least 1,000 years before being removed in the late 1800s. Originally nomadic hunter-gatherers who lived in small bands, the Ute culture changed dra-

