Take a nature scavenger hike!

Take a deeper look into your forest. Try to find the following items as you walk the Dave Wood Environmental Area nature trail. Use the descriptions as clues. The answers are at the stations.

Ponderosa pine trees have long (greater than 3 inches), thin needles and cones with bristles. Along the trail, look for naturally established trees in a random pattern and trees planted in even rows.

Pinon pine trees have short trunks and spreading branches with yellow-green needles that are less than 3 inches long and cones without bristles. Look for their delicious, edible seeds!

Mountain mahogany have leaves that are small, dark green above and whitish beneath. Compare the shape of its leaves with the one pictured to the right. It is a favorite food of big game animals.

Bluebird houses have been placed along the trail to encourage bluebird habitat. Can you find them? Can you spot a bluebird? Look for a flash of blue among the trees.

Trace fossils made by shrimp like creatures appear as small red and orange tunnel and linear shapes in the rock. These fossils are 100,000,000 years old and reflect life along beaches and shallow water; remnants of an inland sea that existed long before the mountains were formed.

Gambel oak have broad leaves 2 to 7 inches long, with 7 to 11 lobes. The leaves are smooth and shiny on the upper surface and hairy below. The dark green color turns orange and reddish in the fall. Although oak brush has acorns, it reproduces from sprouts. This deciduous shrub grows abundantly here, and is munched by deer and cattle.

Sagebrush is a silvery gray to pale aromatic shrub with a woody stem. This low growing evergreen plant keeps much of its leaves over the winter months.

Utah juniper and Rocky Mountain juniper are trees that can look like shrubs. If you see tiny sharp needles (less than 1/2 inch) arranged singly not in bundles, that look like scales along with bluish berries instead of cones, then it is a juniper tree. There are 2 types of juniper in this area. Gray and shredding bark is a Utah juniper (top right). If the bark is reddish brown and shredding, it is a Rocky Mountain juniper or red cedar (bottom right).

<u>Station 9</u> - Traces of ancient life in a long ago sea

Cozy up to a rock!

Cozy up to a rock. Feel the texture; does it feel smooth like a marble, or rough like sandpaper? Look very closely. Can you see grains of sand? What colors do you see? This rock is made of sand grains deposited on the shore of an inland sea that extended from the Arctic Ocean to the Gulf of Mexico about 100 million years ago! Over millions of years, the sand was buried beneath more layers of sand, compacted, cemented together, and turned into a rock called the Dakota sandstone which often forms the tops of mesas in western Colorado.

Look closely at the rocks here and also scattered along the trail. Watch for tube or rectangular shapes about ½ inch wide on the top or sides of the rocks. These are called trace fossils and were formed by animals as they slithered or burrowed through the sand. Some of the burrows are dark red and have a knobby appearance. These were left by shrimp-like animals and are thought to be both feeding and dwelling structures. Trace fossils give us clues about the behavior of the animal and include footprints, molds, casts, and fossil poop called coprolites.

This dead tree is called home by many plants and animals.

<u>Station 10</u> - Tree age, lightning, and a snag

As Ponderosa pine trees age, the bark changes from the black, rough texture of young trees to what you see here, an orange or cinnamon color forming long, flat plates. Usually the smoother and wider the plates are, the older the tree. The thickest trees at this station are over 200 years old! Note the large, dead Ponderosa pine nearby. A standing dead tree is called a "snag". Snags provide very important habitat for many life forms. Insects feed on them and birds, in turn, feed on the insects. Fungi and bacteria help decay the tree, softening the wood so that certain birds like woodpeckers can construct "cavities" that serve as nests. Some small animals such as raccoons may move into an unused nest cavity and "remodel" it to suit their own needs. There is no waste in nature.

<u>Fork in the trail</u> - Just after Station 10 you will come to a fork in the trail. Go to the right (to the south) to Station 14 through 16 or proceed ahead to Stations 11 through 13 and double back for Stations 14 to 16.

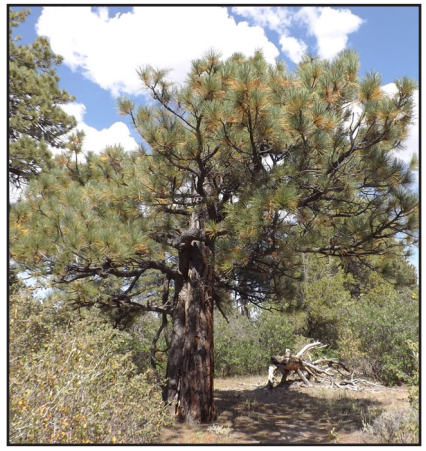
A porcupine must have munched on this Ponderosa pine! Note the two main stems at the top.

<u>Station 7</u> - Transition to a native forest

The Ponderosa pines here look quite different from those you saw at Station 5 where they had been densely planted in rows. What differences do you see? These trees are much taller, have thicker stems, and are growing in a scattered arrangement – not in straight lines. These trees are not planted, but have become established naturally. This area gives you an idea of what this forest looked like long ago. Note that the bark color of the trees you see here is not the dark grey and black of the planted trees. Also the bark forms longer, somewhat flatter plates than the rough bark seen at Station 5. As you walk down the trail, notice that some trees are forked or twisted. Porcupines sometimes feed on the thin bark they find near the tops of pine trees. This feeding often kills the main stem, causing a side branch to take over as the dominant stem. Sometimes several side branches compete for top honors, resulting in a many-forked top.

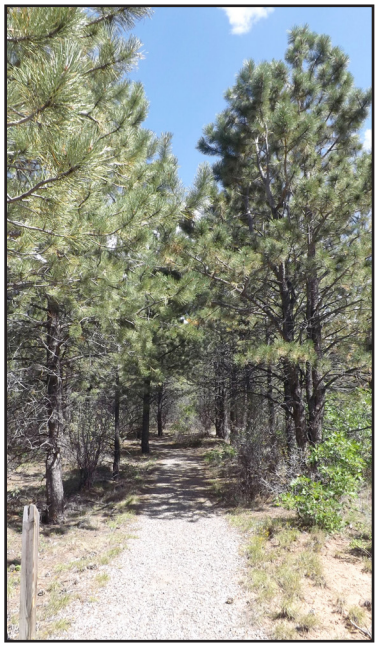
<u>Station 8</u> - Forest shaped by fire

Fire serves a very important ecological role in maintaining a healthy Ponderosa pine forest. Before Anglo settlers arrived in the late 1800's, fire was a frequent visitor to the Plateau. Scientific studies concluded that large fires occurred, on average, every 21 years while smaller fires occurred more frequently. Fire helps keep the tree population from getting too large, providing room for smaller vegetation, like grasses, forbs, and shrubs, to grow. These plants provide food and cover for many wildlife species. Frequent fire also keeps the forest floor relatively clear of fuels, like needles, branches, and logs, which can otherwise build up and set the stage for very large, forest-destroying fires.



At Station 8 you will find a tree hugging another tree! Find the tree that was killed by a lightning strike with another tree growing right next to it. The top of the dead tree is seen laying on the other side of the trail.

of you? Trees are densely packed and growing in straight lines or rows, and most are about the same height. What does this pattern suggest? These ponderosa pine trees were planted as seedlings by the Forest Service. Before the trees were planted, a bulldozer was used to scrape the oak brush and other vegetation from the ground surface to make room for the tree seedlings. A short distance up the trail, you can see evidence of a long, low pile of branches and debris called a windrow that resulted from the clearing work. A planting machine was then towed behind a bulldozer and a person inside the machine placed seedlings in the ground at regular intervals, which resulted in the lines of trees you see today.

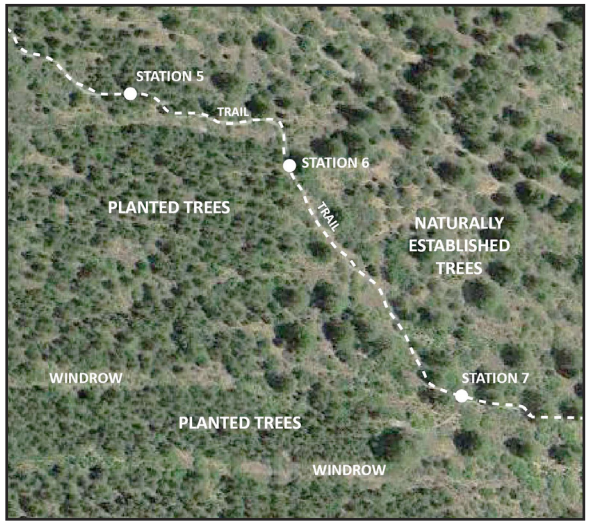


Photograph at Station 5 showing trees planted by hand in rows.

Nature does not often do its work in straight lines. Study the picture below to compare the appearance of a natural forest to a forest planted by hand.

<u>Station 6</u> - Welcome to the lower montane forest (life zones)

You are standing in a montane forest. The word montane means mountain. These forests occur between 5,500-9,000 feet elevation. Not surprisingly the major feature of this forest is trees! Ponderosa pines dominate in this forest along with Rocky Mountain juniper. Other trees and shrubs in the montane forest include aspen and mountain mahogany.



Photograph showing an aerial view of naturally established forest on east side of trail and planted trees on the west side of the trail. North is to the top of the image. (Photo credit: Google Earth)

<u>Station 11</u> - Growing up in the forest

Can you find this tree with an apron of broken rock around its base at Station 11?

Look at the bare ground surface to the left (south) of the trail. Solid sandstone bedrock is exposed with other loose rocks on top. Think about trying to plant a garden here. Farmers would say it's too rocky yet great Ponderosa pines grow. On the other side of the trail look for a large tree with rocks around the base, pushed up as the tree grew. Small seedings take root in cracks in the rock. As they grow, the roots advance deeper into the cracks making them wider. Water seeping into the cracks and freezing make the cracks wider still. This is called "weathering" of the bedrock. When the tree reaches maturity, dies, and falls, the cracked bedrock comes up with the tree roots and is scattered across the ground surface, like you see at Station 11. This is how bedrock becomes soil.

<u>Station 12</u> - Conifers or deciduous trees - what is the difference?

Deciduous trees like aspen or oak shed their leaves every autumn and go through the winter with bare branches. Coniferous trees like pines keep green needles throughout the year. At Station 12 you will find many of the trees in the scavenger hunt. You have already seen Ponderosa pines, sage, and Pinon pines along the trail. At Station 12 look for Utah juniper and Rocky Mountain juniper. Are they deciduous or juniper?

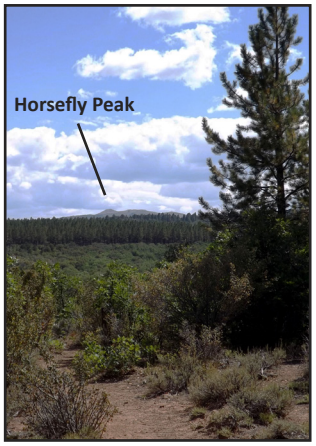
Compare the Utah juniper (left) and Rocky Mountain juniper (center) with the oak brush (right). In the fall, the leaves of the oak brush will turn orange, red, and scarlet before being shed. New, green oak leaves will grow in the spring.

<u>Station 13</u> - Canopy layers, birds, and a bluebird box

The crowns of the trees above you are almost interconnected providing an umbrella-like cover. We call this the forest canopy. There is a lot of bird action going on up there! Shorter trees below are referred to as the sub-canopy, even shorter shrubs are the undergrowth, and the wildflowers and grasses are the ground cover on the forest floor. Each layer of vegetation is the playground for different birds, mammals, and insects and many often move between layers.

Do you see a flash of blue? Mountain bluebirds are common here on the plateau. Bluebirds are voracious insect consumers. This timid, cavity-nesting bird searches for hollows in decaying wooden fence posts or dead trees. Over the years, trees have been lost when land is cleared, metal posts replace wooden fence posts, and natural nesting cavities have become scarce. The bluebird box you see in this area provides a suitable house to encourage these birds to nest. The good news! With volunteers establishing and maintaining bluebird trails with nest boxes, these bright blue birds are on an upsurge.

A bluebird nest box.



<u>Station 14</u> - Horsefly Peak

Look out into the distance; you can see Horsefly Peak. At 10,000 feet it is the high point on the Uncompahgre Plateau. The peak is capped by Mancos shale. The shale was deposited on top of the Dakota sandstone, which you are currently standing on. Both of these geologic formations were deposited in the long, inland sea discussed at Stop 9. The Dakota sandstone caps much of the Uncompahgre Plateau which is a highland, extending from Ridgway north to Grand Junction. The highland is bounded by faults on the east and west sides.

Horsefly Peak can be seen in the distance to the south from Station 14.

<u>Station 15</u> - Geology of the Uncompahgre Plateau and Uncomphagre Valley

The views around us tell stories of ancient seas, faulted mountains, volcanoes and a large river that carved the Uncompahgre Valley. Look to the south and east. The large, wide valley below is the Uncompahgre River valley. The river begins in the San Juan Mountains to the south of Ouray, passes through the City of Montrose, and joins with the Gunnison River in Delta.

On the opposite side of the valley is a large mountain rising almost 5,000 feet above the valley floor. Gazing from the bottom to the top, we see gentle slopes made of light yellow to tan colored Mancos shale. This is the same shale that is found at the top of Horsefly Peak. Brown to red colored vegetation is pinon/juniper and oakbrush, much like we see growing here in the drainage next to us. Above that are light green colored aspen (when

<u>Station 3</u> - Mind your manners!

When you walk along this trail, be on your best behavior, just like you were visiting your grandmother, aunt, or other family member.

- Don't walk in their flower or vegetable garden! In this case, stay on the trail.
- Don't disturb your napping grandfather or baby cousin. In this case, talk in quiet voices so others can enjoy the sounds of nature.
- Don't throw your trash on the floor or in their backyard. In this case, pack out what you pack in. No one wants to see trash in nature.
- Don't take your grandmother's prize possessions! In this case, leave what you find so others can enjoy it. Preserve and keep an awesome find through a photograph or a sketch in your journal.

"Leave No Trace" is the golden rule of nature. Enjoy this trail but leave no trace of your visit!

<u>Station 4</u> - Did you know that sagebrush plants can communicate?

The fragrant, low, pale green shrubs around you are sagebrush. When sagebrush are munched on by mule deer or other animals, they don't take it lying down. The plants emit volatile chemicals. These strong-smelling messengers trigger nearby sagebrush plants to adjust their defenses. Put your nose next to a sagebrush and take a big breath. You're smelling the camphor, terpenoids and oils that make some wildlife say, "No thanks" to eating sage.

The trail leads through fragrant sagebrush at Station 4.

<u>Fork in the trail</u> - Just after Station 4 you will come to a fork in the trail. Go to the right (to the southeast) to Station 5.

<u>Station 5</u> - Nature is not linear - a planted forest

What do you notice about the size and arrangement of trees you see ahead

Station 1 - Kiosk
You have just arrived here by driving the Dave Wood Road. Who was Dave Wood and why is this road named for him? Dave Wood was a successful freighter (wagon train operator) in southwestern Colorado. He started his business in 1881 in Gunnison. When the railroad built its narrow-gauge line through the Black Canyon and over Cerro Summit into Montrose, Dave Wood took his business to Montrose and for five years he was the exclusive agent for all freight going to Ouray, Telluride, and Rico. His freight was hauled along tis road.

Station 2 - Land use in the forest
The corral and loading chute you see are a reflection of historic ranching on the Uncompahgre Plateau. Ranching continues to be an important use of the National Forest here. The corral is just a recent chapter of man's appreciation of the forest resources. Archaeologists tell us that humans have lived in this area for over 10,000 years. About 1,000 years ago, the Ute people migrated to these lands from an area in current-day southern New Mexico and Arizona. The Utes were good caretakers of the land. They hunted game in the cool forests and woodlands of the Uncompahgre Plateau and moved down to the warmer river valleys in the winter. The first historic account of Europeans in the Uncompahgre country is the 1765 Juan Rivera expedition on its way from Santa Fe to California. During the early 1800's, mountain men in search of beaver pelts visited the area. Gold and silver were discovered in the San Juan Mountains in 1875 and began a flood of fortune seekers to Ouray and Telluride. Soon, others were lured by the plentiful water flowing in the Uncompahgre and Gunnison Rivers and in 1882 the Uncompahgre Valley Ute people were removed to a reservation making room for cattlemen and farmers.

Gate to old corral and loading chute, Station 2.

View to the east from near Station 15.

leafed out, otherwise light tan colored when the leaves have fallen). The top of the mountain has cliffs made of volcanic rock. Volcanoes near Ouray, Lake City and Silverton (the San Juan volcanic field) blasted volcanic ash and other rubble across the southwestern part of the state between 40 and 19 million years ago. Some of the volcanic rock was moved by rivers draining from the high volcanoes. The volcanic rock is harder and more resistant to erosion than the softer Mancos shale on the slopes below, and forms steep cliffs. Patches of dark green vegetation near the base of the cliffs are spruce and fir trees. In contrast to the Uncompahgre Plateau which was warped and faulted upward, this mountain is high because rivers have cut down through the soft Mancos shale. The volcanic rock capping the mountain top has protected it from being worn down completely.

Station 16 - Ready to explore more?
You may continue on the trail, however, it is unimproved and not maintained. The trail continues into the drainage, and if you turn left (north) and follow the creek, you will wander through an aspen forest that leads to a beaver pond. The trail continues across the creek. You may return the way you arrived at this point or take a short cut to your right (west) through the corrals and back to the parking area.

Ready to learn more?
Want to learn more about the Dave Wood Environmental Area Trail? Find out more in depth information and see more photographs of the trail? Visit our website for this trail at http://www.fs.usda.gov/goto/DaveWood. There is even more fun stuff to learn about other resources within the National Forest at our learning website at http://www.fs.usda.gov/main/gmug/learning. Reference the QR code on the right.

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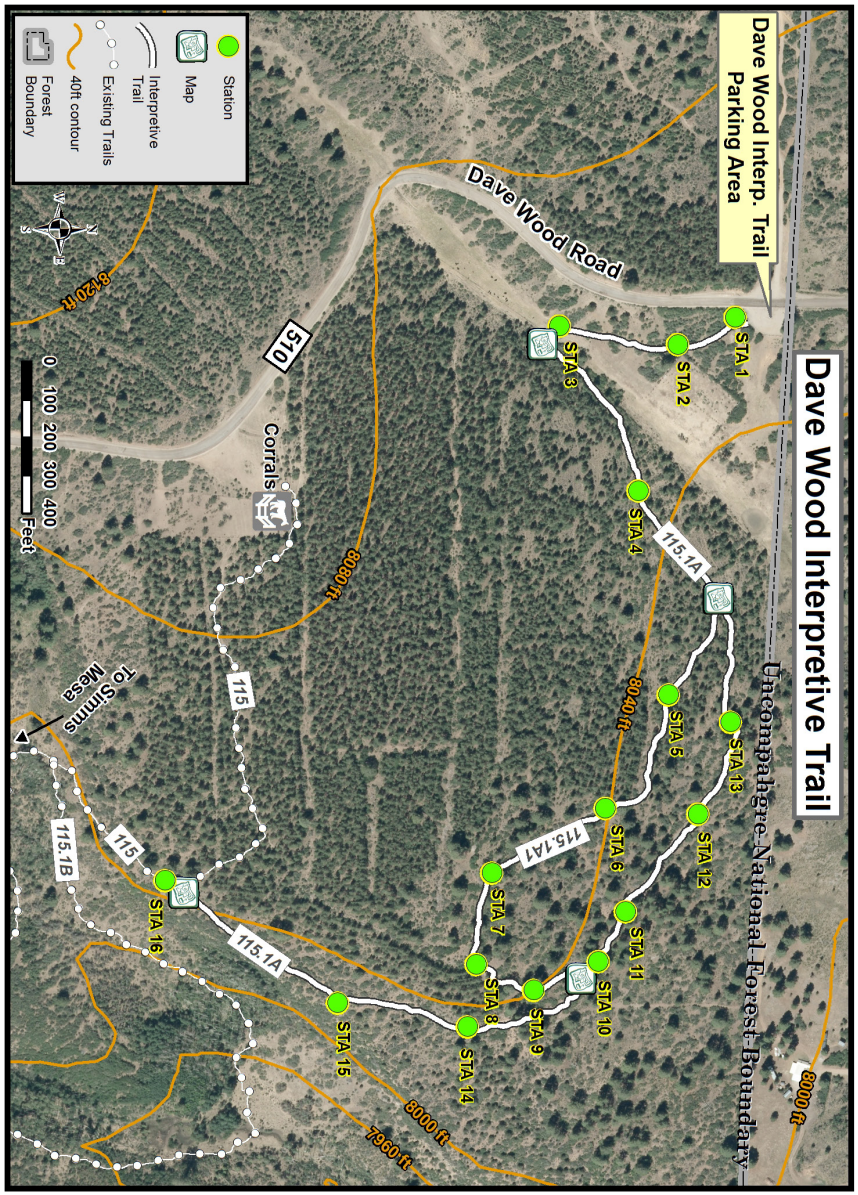
Dave Wood Environmental Area Trail Guide

A trail wanders through this pine forest, beckoning the hiker to explore. To the casual observer, there is just the forest, the path, and the sky. To the careful observer, however, there is evidence of multiple ecosystems, traces of past life that swam in an ancient sea, plants that actually communicate with each other, and traces of history that shaped our lives.

Be an observant hiker and discover your forest - there are surprises everywhere! This guide will help get you started. Visit the GMUG National Forest website for more information on the Dave Wood Environmental Area.

Graphic design by Nancy Lamm



Trail Map

Use the map on the left to find the stations described in this trail guide. The trail forks in several places so refer to your map to find out which direction to go. Use the map to locate each station as well as other trails to hike in this area.