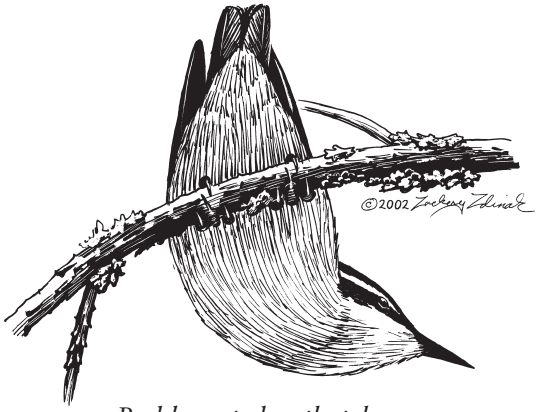
Turquoise Lake

NATURE TRAIL GUIDE

Leadville Ranger District

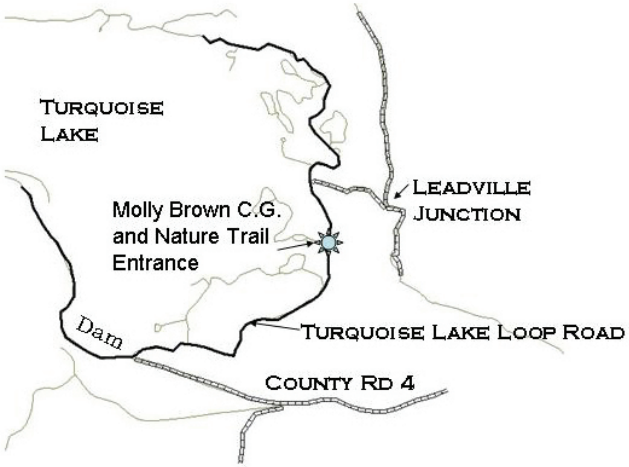
SAN ISABEL NATIONAL FOREST



Red breasted nuthatch

Welcome to the Turquoise Lake Nature Trail!

You are in a pine forest located 10,000 feet above sea level. As you walk along the trail, numbered stations will point out different aspects of the forest. You will learn about the trees, plants and wildlife in the area. This gentle 1.2 mile loop will take you from the depths of the forest to the shoreline of Turquoise Lake and everywhere in between. Take your time and enjoy your day in the beautiful Rocky Mountains.



To access the Turquoise Lake Nature Trail: From the main Turquoise Lake Loop Road, travel to the east end of the Lake and turn west toward the Molly Brown Campground. The free use Nature Trail parking lot is located on your left before entering the campground area.

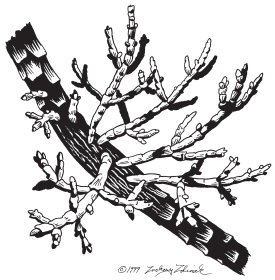
1. Lodgepole Pine

lodgepole pine branch

Before you is a lodgepole pine forest. Indians used these trees for teepee or lodge poles. That's why we call them lodgepole pines. Early settlers found the straight trunks ideal for their cabins and often traveled great distances in search of them. Today, these straight pines are made into fence posts, telephone poles and lumber.

Except where trees have been cut, not much grows on the forest floor. The ground is covered by pine needles in various stages of decay called "duff." Few animals live here because they cannot meet their food and shelter needs. Some mammals and birds that are adapted to living in this habitat are the golden mantled ground squirrel, least chipmunk, pine squirrel, mountain chickadee and gray jay.

2. Dwarf Mistletoe



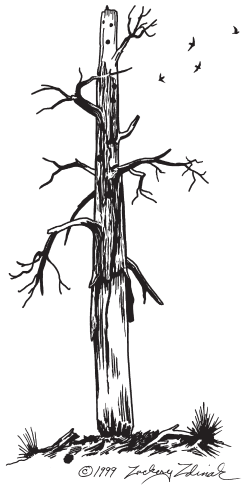
dwarf mistletoe

Many of the trees in front of you are infected with a parasite called dwarf mistletoe. Unlike Christmas mistletoe, dwarf mistletoe is a small, leafless, yellow-green, parasitic plant that feeds on pine trees. Over time, the mistletoe weakens and kills the tree by depriving it of important nutrients. The infection is spread from tree to tree by explosive seeds that take off at 60 miles per hour and travel up to 30 feet! This amazing feat is achieved by building up water pressure in the plant until it pops. A gluey coating on the seeds enables them to stick wherever they land.

Dwarf mistletoe is common in the Rocky Mountains and causes large bushy growths in the tree branches called "witches' brooms". These abnormal clumps provide important habitat for wildlife. Squirrels build their nests in the brooms because they provide protection from the elements during the winter and stay cool during the summer. The mistletoe also attracts many insects which, in turn, provide a great food source for local birds. Even larger animals like porcupines and deer have been known to snack on the dwarf mistletoe plants!

3. Snags

Behind you is a standing dead tree, called a "snag". Years ago, it was infested with bark beetles that dug into the tree bark, laying eggs as they went. These eggs hatched into soft-bodied grubs and fed under the bark. Beetles carry a fungus that clogs the tree's water transport system. Without water, the tree weakens and dies.



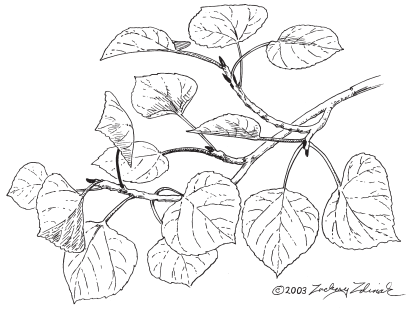
snag

Though insects caused this tree to die, snags are created in many different ways. Fungus and diseases, that may enter a tree through a wound site like a broken off branch, can cause a tree to rot and die. Severe drought, fires, and lightening can also cause the death of a tree.

At station 21, you will learn why snags are important to our ecosystem.

4. Colorado Gold

Aspen trees make up this small stand. In autumn, aspen leaves turn a brilliant yellow and the mountains are flecked with gold. When burned or cut down, aspen roots send up sprouts, called suckers. Most new aspen trees come from suckers, not from seed. This means that many of the trees before you share the same root system and are clones of each other. In fact, one aspen clone in Utah spans over 107 acres and weighs over 13 million pounds, making it possibly the largest living organism! We use fire and cutting to restore an old aspen stand or increase the amount of aspen in suitable locations.

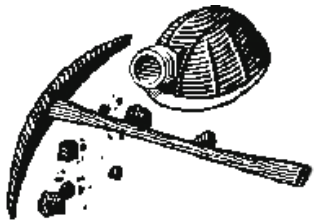


aspen

Aspen bark is very thin and easily injured. Carving or wounding the bark leads to diseases that kill the tree. You can help protect your forests by reminding others that carving initials in aspen bark can kill the trees.

5. Prospect Pit

On the ground in front of you is what's called a prospect pit. Miners dug pits hoping for the "prospect" of finding gold and silver ore. Thousands of these pits or "glory holes" dot the hillsides around Leadville. If the prospect was successful, a claim was established. If no precious metals or ore were discovered, the miners would try their luck somewhere else.



Leadville was once the richest mining areas in Colorado. Deposits of gold and silver in the Leadville area resulted in a boom that brought thousands of miners. Ore worth more than 125 million dollars was removed from these hills by 1887.

It is important to remember to leave historical remains intact. When you find remnants of our past, like old cans or bottles, be sure to take only pictures. It is illegal to take historical artifacts with you and we want others that travel after us to be able to enjoy this unique part of our past too.

6. Subalpine Fir

Notice the small trees here are different from pine trees. These are subalpine fir trees. Press the needles between your fingers. Firs have soft, flat needles; pines have longer, round needles. You probably won't find any cones beneath these trees as you might with other conifers. This is because the cones disintegrate while still on the tree, releasing their seeds in late summer.

subalpine fir

Dwarf mistletoe and pine beetles do not attack firs, but they are susceptible to other ailments like heart, root and butt rots.

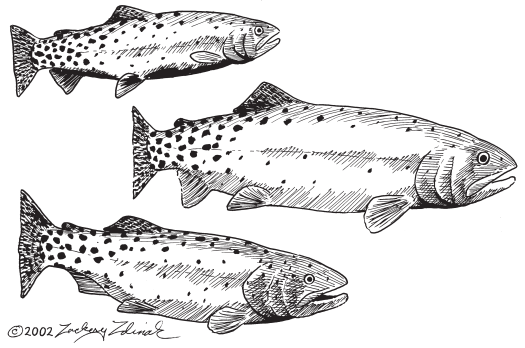
7. Restoring the Land

During the mining days, loggers cut the best trees and left the smaller, weaker trees standing. These remaining trees were susceptible to insects and disease. When the Leadville National Forest was formed in 1905, foresters recognized how the land had been drastically altered as a result of logging during the mining boom. Efforts were made to restore the landscape to its natural state. Here, pines heavily infected with dwarf mistletoe have been thinned and Engelmann spruce trees were planted. Thinning provides an opportunity for more light to reach the trees and gives them more room to grow. Planting spruce trees gives the forest more variety and an opportunity for various wildlife species to enjoy this unique patch of habitat.

8. Turquoise Lake

This beautiful 1,800 acre lake was created in 1967 by damming Lake Fork Creek, creating water storage for the Front Range cities of Aurora, Colorado Springs and Pueblo. It was named for the turquoise mineral deposits found in the area years ago. This reservoir provides a variety of recreation opportunities and experiences for thousands of visitors each year.

Fishing is popular here as the lake has been stocked with cutthroat, rainbow, brown, and lake trout. Lake trout, also known as mackinaw, is the largest fish in the lake, sometimes growing over 30 inches long. Upstream from the lake, the native greenback cutthroat trout, a threatened species, has been re-introduced.



greenback cutthroat trout

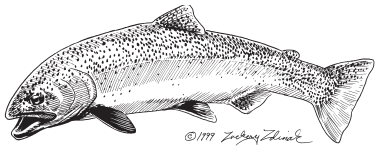
If left behind, broken fishing line, lures, hooks and nets can be dangerous to fish and wildlife. Animals and fish can get tangled up causing various injuries or possibly death. So remind each other to pick up all your tackle after a great day of fishing!

9. Winters on the Lake

Fishing is not only for the summer recreationists. Ice fishing keeps anglers on the lake the 7 months out of the year that the water freezes. Beginning in November, the lake begins to freeze and stays frozen through May. In some areas, the ice may be several feet thick!

During this time, fish go into a state of dormancy, physically slowing down to reserve energy at low temperatures. Often they stay on the bottom of the lake or in a warm current. Actively pursuing food is no longer a priority, as they will only eat something if they come across it.

10. Strike it Rich!



rainbow trout

The peaks across the lake are Sugarloaf Mountain on the left, and Galena Mountain on the right. Galena is a common mineral that contains lead and silver. On Sugarloaf Mountain, yellowish mine dumps can be seen as evidence of mining activity that occurred in the 1870's. The prospect pits must've been successful there!

Many of the sites in this recreation area have been named after famous people of the mining era including Molly Brown, Baby Doe Tabor, and Father Dyer. Visit the many shops and museums including the National Mining Hall of Fame and Museum in Leadville and learn about this area's colorful history.

11. Forces of Nature

This boulder was left here over 10,000 years ago by a retreating glacier. Natural forces (ice, water, and wind) have split and worn the large rock smooth. The colored areas on the surface of the boulder are lichens (pronounced LIKE-ens), colonies of algae and fungi living together in a partnership. Algae contribute sugars that the fungi need for food. Fungi give shelter and, like a sponge, store water for the algae. The different colors and forms are different species of lichen. Other evidence that glaciers once passed here are found in the numerous small lakes around the campground. As the glacier moved, it created depressions called pot-hole lakes, which are found around the trail.

12. The Circle of Life

New life begins in this part of the forest as you can see smaller trees growing in front of you. The old trees that once inhabited this area were blown down and began decomposing. The nutrients from the decaying logs are absorbed into the earth, providing a richer soil for the new trees to grow in. Find the biggest tree around and then look at the smallest one you can see. There is more than 100 years difference in age between the two.

13. If a Tree Could Talk

If a tree could talk, we could learn more about its history and past weather events. Rings of dark color in these tree cross-sections show tree growth. They are called growth rings because a new one is added each year. Rings that are close together show slow growth. Perhaps a drought occurred or trees were dense and overcrowded. Wide spaced rings indicate better growing conditions. You can determine a tree's age by counting the rings. How old were these trees? After you've counted, look on the back of the stump for the answer!

14. Making Charcoal

Old, dry stumps in this area are evidence of past human activity. The shape of the stump where the tree was cut, gives a clue as to whether it was cut using an axe or a saw. Smooth tops indicate saw use, whereas uneven, choppy wood cuts are a sign of axe use. During the late 1800's, trees were cut to make charcoal. Large kilns were constructed of brick and the wood was stacked in the kilns, ignited and slowly burned down to blackened chunks of charcoal. It took thousands of trees to keep the kilns burning and supplying charcoal for the smelting process that extracted gold and silver from local ore.

Common Juniper

Shrubby cinquefoil

15. Everything Changes

Pines, shrubs, and other plants are slowly replacing this meadow. In nature everything is always changing. Sometimes these changes are rapid, like when a fire burns through a portion of the forest. And sometimes the changes are slow, like the encroachment of these plants into the grassy meadow. Some of the more common shrubs in this area are sagebrush, common juniper, and shrubby cinquefoil (pronounced SINK-foil), which has bright yellow, rose-like flowers in summer.

16. Midden

Around the base of these lodgepole pines you will see piles of spruce and pine cones discarded by pine squirrels after searching for seeds inside the cones. These piles are called middens. Middens indicate favorite feeding places. Squirrels store cones underneath the midden and then in the winter, tunnel under to get the seeds. During the fall months, you may spot a squirrel carrying cones to his favorite spot. Pine squirrels are called chickerees because of the chattering sound they make. Do you hear any chickerees?

Red Squirrel

17. Nature's Garden

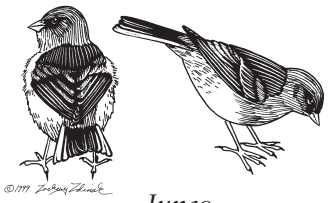
Several species of wildflowers are growing here. Some of the flowers are Indian paintbrush, yarrow, silvery lupine, penstemon and prairie coneflower. Flowers and other plants usually grow only where light is available. If the forest is dark and dense, very little development of flowers and shrubs can occur. By thinning dense stands, we can encourage more wildflowers and other plant species to grow.

Wildflowers are fragile vegetation that can take years to get established. Please do not pick them to take home with you. Pictures, paintings, or drawings are a great way to remember your experience in the forest.

18. Where's the Lake?

This small pothole lake was formed by glaciers. The pothole is gradually filing in with flowers, grass and shrubs. Scouler willow is a common small shrub with narrow leaves often found in potholes and moist depressions that collect snowmelt and rainwater. This oasis attracts various birds, like warblers, which are not usually seen in the dry lodgepole stands. A good time to view wildlife is first thing in the morning and again at dusk. Sit down for a while and just watch and listen quietly. Before you know it, you'll be looking at one of natures wonderful creatures.

As you continue to walk around the pond, notice how different the forest smells here.



Junco

19. Kinnikinnick

No, that's not a typo . . . Kinnikinnick (pronounced KIN-eh-keh-nick), is a ground hugging plant that is common in lodgepole pine forests. Indians and trappers smoked the dried leaves, sometimes mixing them with tobacco. Pioneers made cider and jelly from the berries.

Also called bearberry, kinnikinnick's fruit provide food for many species of wildlife, including bears. Black bears do live in the area and, unfortunately, sometimes wander into the campgrounds. Campers who leave food unattended can unknowingly lure bears to the area. Make noise to avoid any confrontations with bears while hiking. Talking, singing, or whistling will alert a bear that you are in the area, and it will usually run away before you encounter it. For more information on bears in the high country and how to keep your campsite free of bears, talk to your campground host or stop by our office.

Black Bear

20. Managing the Land

This lodgepole stand was thinned many years ago because it had too many trees for the available space, water, and sunlight. The remaining trees have become healthier, faster growing, and more resistant to pine beetle attack. We can use a variety of techniques to reduce the threat of attack by bark beetles and other forest pests, to provide a greater variety of plant species, and to promote a healthier forest for the local wildlife. Some of these techniques include thinning with chainsaws, burning with controlled fires, or a combination of both.

Chipmunk

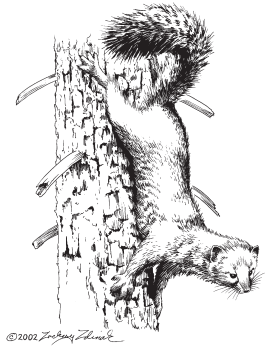
21. Animal Inns

There's life in dead trees! Old or dead trees provide homes for a variety of wildlife species. We identify and preserve these "animal inns" whenever management activities are planned. More than seventy species of birds and twenty-six species of mammals use dead trees for shelter, food, or rearing their young. Rot or decay in the tree makes the wood soft and easy to remove by some species of birds and animals. The most common species found in this area are: Hairy woodpeckers, Red-napped sapsuckers, Mountain blue bird, and the pine squirrel.

Red-napped Sapsucker

22. The Significance of Logs

In front of you are blown-down trees and decayed logs. Often when we thin a part of the forest, we leave some trees on the ground rather than removing them from the forest floor. This mimics nature's way of recycling nutrients back into the soil, by allowing the trees to rot back into the earth. Woody debris on the ground also can also provide travel systems or dens for wildlife underneath the snow. Small animals like mice, squirrels, and pine martens, move underneath the logs that aren't lying completely flat on the ground. It's easier to travel there because of lower snow accumulation.



Pine Marten

Chorus Frog

23. Bridge Across Time

Lodgepole pine forests do not commonly include the worlds of water and wildlife. These potholes now are the home to very different forms of life than found in the dark, dry forest. Frogs and insects, such as dragonflies, may be seen if you look and listen.

As you approach the end of the trail, we hope you have enjoyed your walk and have learned about the lodgepole pine forest and the plants and creatures that live here.

Chickadee

Feel free to keep this pamphlet as a reminder of your walk or deposit it back at the trailhead for others to enjoy. Any donations received will be used to maintain this interpretive trail. If you have any questions or comments about the trail or Forest Service management of this area, please see your campground host or visit our district office in Leadville at 810 Front Street.

http://www.fs.fed.us/r2/psicc/leadville

Illustrations by Zackery Zdinak

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