



The Whiskeytown Nugget

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Safeguarding the Old Growth Forests of Whiskeytown

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Magnificent forests of spreading oaks and giant mixed conifers that were once maintained with fire by local Native Americans . . . heavily logged areas covered with stumps, landings and deteriorating skid and haul roads . . . evidence of the exclusion of fire . . . and forest communities that are being restored with prescribed fire . . .

Did you know that you can find all of these within Whiskeytown National Recreation Area?

Whiskeytown's many forest types provide visitors with a snapshot of what forests used to look like before the arrival of European settlers and demonstrate the degree and extent to which they have been impacted.



Grove of large pines early 1900s

HOW THEY ALL CAME TOGETHER

When Whiskeytown National Recreation Area was established by Congress in 1965, the original boundaries of the park only included the newly created Whiskeytown Lake and about 3,000 acres of land immediately surrounding the water. When the rumor got out that the park was going to increase in size to encompass the surrounding landscape, private land owners began extracting timber as quickly as possible before the 1972 boundary change was enacted.

In addition to purchasing private lands, Whiskeytown inherited seven sections that were once owned by the railroad. In the 1870s, Central Pacific Railroad was given land grants in exchange for laying track in the West. These land grants were an incentive to expedite the settlement of this new frontier and were distributed in alternate sections, like a checkerboard, so that one section went to the railroad, and the next was given to the government or bought by private citizens.

OLD GROWTH CONIFEROUS FORESTS

The seven railroad sections within Whiskeytown were not logged and did not have roads put in, making most of them virtually inaccessible to this day. There is one section that you can drive to at Coggins Park, located on the western side of Whiskeytown. Giant old incense cedar, sugar pine, ponderosa pine, white fir, and Douglas fir codominate here. Some of these trees are more than 400 years old and reach up to 150 feet in height.

A fire history project near Coggins Park conducted by UC Berkeley determined that the earliest fire scar on a tree dated to 1663. The study found that fires in the old growth conifers were relatively small in size and occurred frequently, approximately every 12-15 years. These fires were probably ignited by lightning strikes and the local Native American tribe, the Wintu. Fires could have been set for a variety of reasons, such as reducing brush and encouraging the growth of food plants and basketry materials.



Canyon live oaks on Brandy Creek.

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Will Global Climate Change Affect Whiskeytown?

Global climate change is a complex and for some, a controversial topic. What scientific data clearly shows is that temperatures are rising almost everywhere on the planet. There are still many questions and many predictions about the future, some of which are contradictory, but that doesn't mean we should ignore the issue.

How will global climate change affect Whiskeytown? The short answer to that is "We don't know." Will Whiskeytown's average temperatures increase? Will that happen in both summer and winter? Will daytime or nighttime temperatures change the most? Will rainfall increase or decrease? Will the rainy season lengthen or shorten? Will there be less snow and more rain?

Models and predictions try to answer those questions and more, and they are good ways for us to prepare for the future. One of the things needed is good data. In 2001, the National Park Service, park staff and researchers at Whiskeytown began inventorying and monitoring the natural resources and conditions found within National Park sites including Whiskeytown. This "Inventorying and Monitoring" program first looked at all the plants, animals and conditions in the park. Next, some "indicator" species were picked to focus attention on, with the intention that by monitoring these, the condition of the whole could be correctly measured. Data is coming in.

Fortunately, we already have some good data that includes temperature and rainfall, tree ring studies, historic wildfire frequency studies and other research. Combined with newer data, we can start to put pieces of the puzzle together.

While it would be very helpful to have a completed puzzle with enough data to draw definitive conclusions and take decisive actions, for the most part, we aren't there yet.

So what should we do now?

No matter what the data shows, one decisive action each of us can take is to conserve. The American values that drove the creation of National Parks, and the National Park Service back in 1916 were the conservation and stewardship of resources for the benefit of all Americans.

Our conservation and stewardship values are just as important today. Reducing our personal use of resources, using less energy, and releasing less carbon will help. We can all make a difference.

Old Growth

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After 1850, these fires dropped off dramatically as the Gold Rush brought in a flood of prospectors. The displacement of the native people by the new settlers was most likely a significant factor in the decrease of fire frequency in the Whiskeytown area.

OLD GROWTH OAK WOODLANDS

As you hike through the park, look for large oak trees with spreading limbs. These oaks most likely grew in open conditions with lots of sunlight. Native Americans especially valued tan oak, black oak, and canyon live oak for their acorns, which was the main food staple of many tribes. They used fire to enhance acorn production and to maintain the sunny conditions in which the oaks grew.



Dense growth from fire suppression.

A good place to see a variety of old growth oak areas is the Brandy Creek drainage. Canyon live oak woodlands beautify the beginning of the Brandy Creek Falls Trail and tan oaks begin to dominate areas along the upper portions of the trail. Near Sheep Camp, there is an area that was once a spectacular stand of large oaks and open understory maintained by the Wintu with fire. Perhaps the area received its name from early settlers who chose to graze sheep there because the open conditions provided abundant forage for their livestock. Today, due to the almost complete lack of fire, the area is shady and many smaller trees can be found.

FIRE SUPPRESSION AND OVERCROWDED FORESTS

Aggressive fire suppression began in the early 1900s. Without frequent fire to burn out the understory, smaller trees and shrubs are now densely packed around the remaining old growth trees. In many areas, you can barely walk between them. The little trees compete with large oaks and mixed conifers for water, light and nutrients. Bigger trees need a lot more energy to support their large size; eventually they become stressed and may die from the competition. Examples of encroaching trees, mostly Douglas and white firs, can be seen along the trails to Whiskeytown Falls, Boulder Creek Falls, and Brandy Creek Falls.



Grizzly Gulch 1940's.

LOGGING

One of the most heavily logged areas of the park is along the trail to Whiskeytown Falls. Significant portions of the trail are actually old haul roads and there are a few flat, wide spots or *landings* where logs were loaded onto trucks . . . Many of the trees that you see now date back to the 1940s and 1950s, which is about the time the area was logged for its old growth ponderosa pines, incense cedars, Douglas firs and sugar pines. The remaining trees were probably left because they were small and not very valuable at the time. When the larger trees were cut down, sunny conditions returned and reduced the competition so that these remnant trees could grow rapidly. Without the role of frequent fire, Douglas firs have encroached in and around these residual trees. In many areas of the park, the combination of fire exclusion and past timber practices have fostered an entirely different plant community to spring up in what used to be old growth mixed conifer.

REINTRODUCTION OF FIRE

In 1985, Whiskeytown began reintroducing fire to the landscape in a series of prescribed burns. To view a recent prescribed burn in one of the park's high elevation forest types, pack some food, water and a good pair of boots, and drive up to Coggins Park. From there, hike east along the old road that skirts the north side of Shasta Bally. Along the south side of the road, stumps are evidence of sections that were logged in the late 1950's and early 1960's. As you hike farther, you will see giant mixed conifer trees that are being maintained by prescribed fire. This



Coggins IV burn unit.



Huge canyon live oak near Mill Creek Trail.

is what Whiskeytown's high elevation forests once looked like. When you get to a point where the road is washed out by a creek, you are at the end of the burn unit.

THREATS TO OLD GROWTH FORESTS

Two main factors threaten Whiskeytown's old growth forests, with the most immediate threat being catastrophic wildfire. Historically, crown fires were somewhat rare in our high elevation forests, mostly due to the scarcity of vegetation that would carry fire up into the tree canopy. But without frequent low-intensity fires to burn out the understory, vegetation beneath the trees has become densely packed. Given the right weather conditions, fires can now carry upwards into the tree canopies and race across the landscape. The second factor is that the old-growth trees are robbed of nutrients by overcrowded, shade-tolerant species. The old-growth forests provide critical information that can be used by resource managers to create conditions conducive to forest restoration.

WHY SHOULD WE SAVE OLD GROWTH?

Stands of old growth forests are becoming rare throughout the Pacific Northwest. They are critical reservoirs of information that provide resource managers with reference conditions for ecological restoration. At Whiskeytown, the driving goal for restoration is to have the "physical and biological systems of the undeveloped portions of the park approximate early 1800 conditions and processes." The park's primary restoration tool to recreate these conditions is prescribed fire.

Old growth forests are complex and worthy of conservation. They require long periods of time to develop their large dimensions and their late successional characteristics. The risk of losing old growth forests to fire or competition-induced stress, gives urgency to restoration. The protection of these forests within National Park units is crucial not only at the park-scale, but also on a much larger global scale. Threats to our local forests have implications for resources that extend far beyond the park's boundary.

UNIQUE IN THE WORLD

Whiskeytown is located on the southeastern edge of the Klamath-Siskiyou ecoregion, which has been designated as a World Heritage Site, a UNESCO Biosphere Reserve and an Area of Global Botanical Significance by the World Conservation Union. The Klamath Mountains are one of the richest temperate coniferous forest regions of the world and provide valuable habitat. Whiskeytown hosts three species of flowers that are endemic to the Klamath range, Canyon Creek Stonecrop, Snow Mountain Beardtongue, and Shasta County Arnica, and one species of grass that is found only in Whiskeytown and nowhere else in the world. These and many other species are dependent on intact forests and healthy watersheds for their continued existence.

It is hoped that an understanding of the uniqueness and importance of Whiskeytown's forests will inspire the public to advocate for their conservation.

Stop by the Visitor Center and pick up free guides to the park's trees and shrubs so that you, too, can appreciate the great variety of life that Whiskeytown has to offer.