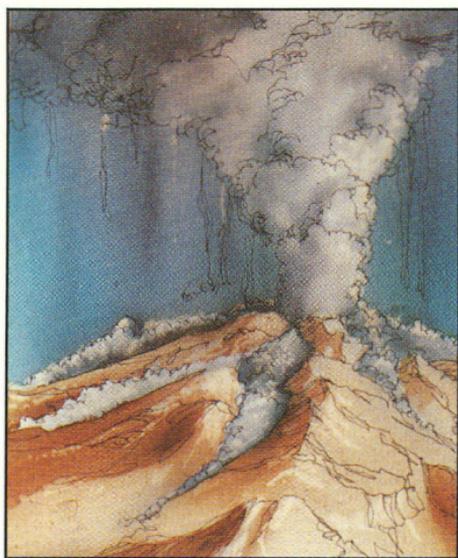


A T R A I L G U I D E
T O
Godfrey Glen



Price 25¢

Godfrey Glen Trail circles along the rim of a very steep-walled canyon for about one mile (1.6 km). Allow about 45 minutes to complete the loop on this pleasant walk.

Crater Lake National Park

Natural forces — volcanism, erosion, and weather — interact to form canyon spires and tall forest trees at Godfrey Glen. The encircling Shasta red fir-mountain hemlock forest with associated subalpine fir and lodgepole pine has adapted to long winters, snowfalls that average 50-feet per winter, 6,200 foot (1890 meters) elevation, and porous volcanic soils. This quiet forest scene belies early glacial and more recent violent volcanic times.

As the multiple peaks of Mt. Mazama grew during the last half million years to an elevation of nearly 10,000 feet, glaciers grooved and gouged the surface of the volcano and carved the bold U-shaped valley now occupied by Munson Creek. Except for a few ridge tops, as at Castle Crest, the entire mountain was mantled by ice. By about 8,000 years ago, the glaciers had melted so that none stretched beyond the present caldera rim.

Then, according to Klamath Indian legend, the battle began. Skell, god of the above world who lived on Mt. Shasta, battled Llao, evil god of the below world. Skell was the victor. He beheaded the mountain of Llao, ridding the world of this demon forever.

This legend may be explained in different terms by geologists. During Mt. Mazama's climactic eruption of about 6,840 years ago a stupendous cloud of pumiceous ash exploded from the volcano. The volume of ash is calculated to exceed 73

cubic kilometers (17.8 cubic miles). This eruption was shut off quickly as the volcano began to collapse. Vents closed as support for the roof of the magma chamber was removed. As the mountain foundered, pumiceous ash eruptions began anew. Rock fragments and ash came boiling out and hurtled down the mountainside in glowing avalanches (pyroclastic flows). The remnant of the center of the mountain collapsed, forming the caldera which now holds Crater Lake.

Godfrey Glen was filled to a depth of 250 feet when the avalanches poured through Annie Creek canyon. As the eruption proceeded, the source of buff colored dacite pumice was exhausted and a smoke colored andesitic scoria, rich in crystals, erupted. The scoria now forms a conspicuous dark layer above the pumice in the canyon walls. A thin veneer of air fall ash and crystals was deposited atop the scoria. Slopes of

Stand back!

Do not venture too close to the edge as the pumiceous layer may not hold your weight and you could slip suddenly and dangerously. Carefully note the opposite canyon wall. This side is similar.



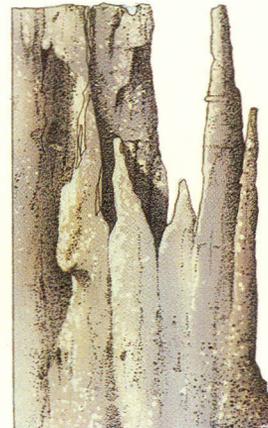
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1. Ash fall covered 250,00 square miles north and east of the volcano. Map lines mark zones of equal depth. Pyroclastic flows filled valleys and spread in sheets closer to Mazama.

2. Gray andesite scoria was deposited above buff-colored pumice as Mazama's eruption tapped deeper layers of magma. A thin veneer of air-fall ash capped the flow deposits.

3. Heat and chemical action cemented pumice and scoria in fumarole walls.

4. Cooling cracks and fumarole walls control the rate of erosion in canyon spires.

the collapsed volcano became lifeless wastes of ash and pumice. Forests which had stood nearby were swept away or buried by the flows. Lower Munson Valley at Godfrey Glen had become a "Valley of Ten Thousand Smokes" as hot gases seethed upward through the deposits. Where these gases bubbled out of cylindrical vents, called fumaroles, the vent walls were cemented due to heat and chemical action of the vapors. Munson Creek cut quickly into the loosely bonded pyroclastic deposits to form the present V-shaped canyon. The canyon walls, widened by water and wind, are sculptured with many spires controlled partly by vertical cracks (joints) in the rocks and partly by the cementing action of ancient fumaroles.

Godfrey Glen, a level verdant meadow in summer, is formed at the confluence of Munson Creek and Annie Creek. Winter presents a different scene as Godfrey Glen lies under 15-feet of snow. The glen was named for William C. Godfrey, chief ranger, who lost his life in a blizzard while on patrol near here November 18, 1930.

Shasta red fir - mountain hemlock forest and associated animals have regained a foothold on the landscape devastated by the eruption of Mt. Mazama 6,840 years ago. Huckleberries, pipsissewas, smooth woodrush, and Crater Lake currant thrive on the forest floor. Horsehair lichen drapes the trees.

The forest will remain stable until some new cataclysm such as forest fire or renewed volcanism changes its environment.



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