

The Pumice Desert: Nature with a Human Face

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Sometimes the most difficult things to see are situated directly in front of you. This phenomenon is probably at its most pronounced when traveling by automobile. A case in point comes to mind with my commute to work, where I have taken the same route every day for more than a quarter century; that is, Highway 62 from Fort Klamath to Park Headquarters at Crater Lake.



Last summer (2020), when taking part in an archaeological survey,

Figure 1. Cambium peel on ponderosa pine near Highway 62 at Crater Lake N.P. (photograph by Steve Mark)

I stumbled across a rather dramatic cambium peel located next to the highway (essentially hidden in plain sight), so I wondered why I had never seen it previously. Cambium peels were made by tribal members, often

on Ponderosa pine, to obtain the edible portion of the tree, just under its bark. The peel can remain visible for decades. It certainly is visible from the road if you know where (and especially how) to look and is not far from an overlook oriented towards Annie Creek Canyon, rather than away from it.

Similarly, most motorists on the park's north entrance road roar past the Pumice Desert without stopping. For the few who might remember a glimpse of something in route, this area between the rim and Highway 138 is simply a short, but stark, break from the monotony of lodgepole pine (*Pinus contorta var. murrayana*) forest. The Pumice Desert can be forbidding on a warm day, as anyone who has experienced it under those conditions can readily attest. Their thirst may be difficult or almost impossible to quench as they survey the landscape—one where Mount Thielsen dominates the vista if one turns to the north, while the rim of Crater Lake is almost equally as conspicuous in the opposite direction. Where the lodgepole forest most dramatically contrasts with the Pumice Desert's stark terrain, the latter has less than five percent vegetative cover. Over the entire area of the Pumice Desert of 5.5 square miles, there are only 15 different plant species. Its mean elevation is 5,960 feet above mean sea level, where topographic relief is almost imperceptible in places, yet there is a very gentle downward slope toward its center. Although located at the Klamath Basin's outer edge, the Pumice Desert is also something of a "borderland," being as close as two miles from tributaries feeding the Rogue or Umpqua drainages.¹



Figure 2. Pine forest at edge of Pumice Desert showing a diamond sign marking the Old Diamond Lake Trail (photograph by Steve Mark)

If they linger long enough, some people notice steel rebar jutting upwards a foot

or so off the ground. The rebar indicates boundaries of plots first established in 1964 by a graduate student (and seasonal naturalist at Crater Lake) from Purdue University, Elizabeth Mueller (Horn). Hers is the longest running scientific study at the park, having begun as a master's thesis defended in 1966 and continued in order to document ecological changes, especially those affecting vegetation in the Pumice Desert. She has continued to publish results in the intervening decades and periodically volunteered her time at the park after a distinguished career with the U.S. Forest Service, along with her husband Kirk.²

Beth Horn's long-running work is not the only sign of human presence in this relatively small, but often overlooked place. Almost 20 years ago another seasonal naturalist, Mike Cook, noticed a small object near where the Pumice Desert meets with surrounding lodgepole forest. His long-term project to compile and illustrate a parkwide list of plants had nothing to do with the object, which is a translucent cryptocrystalline silicate (CCS) point, associated with prehistoric hunting. The point did not match any lithic material previously found in the park area, yet was obviously worked by native people sometime in the past, but could have originated from a site as possibly far away as Curry County, on the southern coast of Oregon.

Pumice Desert is a difficult micro-habitat for most native mammals, with permanent resident species restricted to just three species of rodents: Great Basin pocket mouse, deer mouse, and the western pocket gopher. The number of transient animal species are more abundant, yet only a couple of them are large enough to attract humans for hunting: mule deer, elk, and pronghorn antelope. Although it is only possible to guess what ancient hunters might have been seeking, the most documented transient mammal in the Pumice Desert is the pronghorn, as one nineteenth century name for the locale ("stony" or "antelope" prairie) readily indicates.³ Indeed, one of Oregon's earliest native-born advocates for retaining the entire length of the Cascade Range in public ownership, Judge John B. Waldo, not only documented their presence in the Pumice Desert before Crater Lake was established as a national park (on May 22, 1902), but also along the rim:

*"These singular and beautiful fleet footed children of the desert ought to be preserved...the sight of these interesting animals in their wild state would [also] be an attractive feature of a visit to [Crater] lake"*⁴



Figure 3. The pronghorn antelope is one of the most beautiful transient animals in the Park (drawing by Shirley Briggs, from *The Pronghorn Antelope and Its Management*)

Waldo recalled seeing six pronghorns standing on a precipice overlooking the lake on his return from a pack trip to Mount Shasta in 1888, while heading north to the Waldo Hills of Marion County via the High Cascades route. He remembered their running down the open northern slopes away from the rim of Crater Lake “with surprising speed,” once the antelopes saw Waldo’s party. This was no fluke, as the judge had seen 25 or 30 of them in one “bunch” near the Pumice Desert in 1887.⁵ While occasionally rhapsodizing about his life in the mountains and inspired by the works of Henry David Thoreau, Waldo could be notoriously vague about his route finding while in the Oregon Cascades. He rarely mentioned following trails, if any, preferring instead to describe vegetation, his horses, successful hunts, and camp life. Just how or where Waldo crossed the Pumice Desert on his five trips between Diamond and Crater lakes (in 1884, 1886, 1887, 1888, and 1896 respectively) is not likely to be resolved, but rumors persisted of “an old Indian trail” into the early 1920s.

The next record of travel from Diamond Lake to Crater Lake came six years after the national park was established through legislation in August and September of 1908. At that time Rodney Glisan, a Portland attorney and member of the Mazamas (a mountaineering and conservation club founded by William Gladstone Steel on Mount Hood in 1894), decided to undertake a pack trip from Mount Hood to Crater Lake. Glisan recorded distances, described his route, and the character of the country he traversed and even took photographs. For example, Glisan described the morning and early afternoon of September 8, 1908, this way:

“Left camp at 9:30, the sun and blue sky making us heedless of some heavily banked clouds on the horizon. Returning on the road to the signpost near [Diamond] lake, we took a road bearing southerly, and two miles further at 11 A.M. saw a sign pointing to some distant

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sharp-edged peaks announcing the agreeable news that Crater Lake was three hours away. Making our way a little west of south, we crossed an open, sparsely timbered lava over-flow with Mount Thielsen lifting its jagged peak as we advanced. Picking up old blazed marks, we worked southward, and about 1:00 P.M. came out on a miniature desert about a mile and a half across strewn with loose lava and pumice stone. A fairly good trail led across, entered scattering timber, took us up several steep slopes and then faded from view on an open plateau, crossed by canyon heads, strewn with clumps of mountain hemlock and dotted with patches of red weed [Newberry knotweed]. We secured distant views very attractive, but no grass or water...Distances, Diamond Lake to the Northwest Rim, 12 miles; Rim to Watchman camp, 4; total 16 miles.⁷⁶



Figure 4. Pumice Desert in 1908, looking north, Mount Thielsen in background (Rodney L. Glisen photograph from the Mazamas Library in Portland)



Figure 5. Southern corner of the Pumice Desert as seen from the northwest rim of Crater Lake in 1907 (Rodney L. Glisen photograph from the Mazamas Library)

By 1913 the one topographic map of Crater Lake National Park included the “Diamond Lake Trail,” which roughly bisected the Pumice Desert, but seemed to peter out as it approached the north rim near Red Cone. Few others apart from Glisan used it, but in 1918, having some connection to the north from Crater Lake mattered to the new National Park Service because the agency wanted to expand the park to include national forest lands surrounding Diamond Lake. Opening the new Rim Road as a circuit drive around Crater Lake to traffic that October helped to kickstart the campaign for an improved route to Diamond Lake, but appropriations for building such a road immediately following the end of World War I were still lean, especially when federal aid to state highways languished in their infancy. The NPS had hired one of the engineers who had helped build the Rim Road, Alex Sparrow, as its new park superintendent. Sparrow cobbled operating funds together so that the few park employees of that time could begin building a Diamond Lake Auto Trail (DLAT) in 1919.

Despite barely being graded at only one car width (six to eight feet), the DLAT opened in 1920 and followed roughly the same alignment as its predecessor. The few adventurers who attempted it could not be allergic to pumice dust since paved roads in Oregon of that era were almost non-existent. Motorists also had to be their own mechanics in many places and keep supplies of gasoline and oil with them, along with spare parts. Large clouds of dust could be seen from the Rim Road miles away and heralded the few intrepid visitors coming to Crater Lake from the north. While road conditions outside the park steadily improved through the 1920s, travel by automobile within the park during this period remained a slow and disagreeable experience. It is fair to say, however, that with those low standards to be expected, that “maintenance” on the DLAT consisted of dynamiting stumps, the occasional grading with a small bulldozer, and moving rocks where they might threaten to disable vehicles.

Construction of Rim Drive’s first segment, from Rim Village to a point that became known as the North Junction, started in 1931 as a component of work relief during the Great Depression. While highway engineers intended Rim Drive to incorporate as much of the old Rim Road as possible, this contract also included building a new North Entrance Road aligned to avoid the DLAT. Where the DLAT could be seen by motorists from the newly constructed road, work

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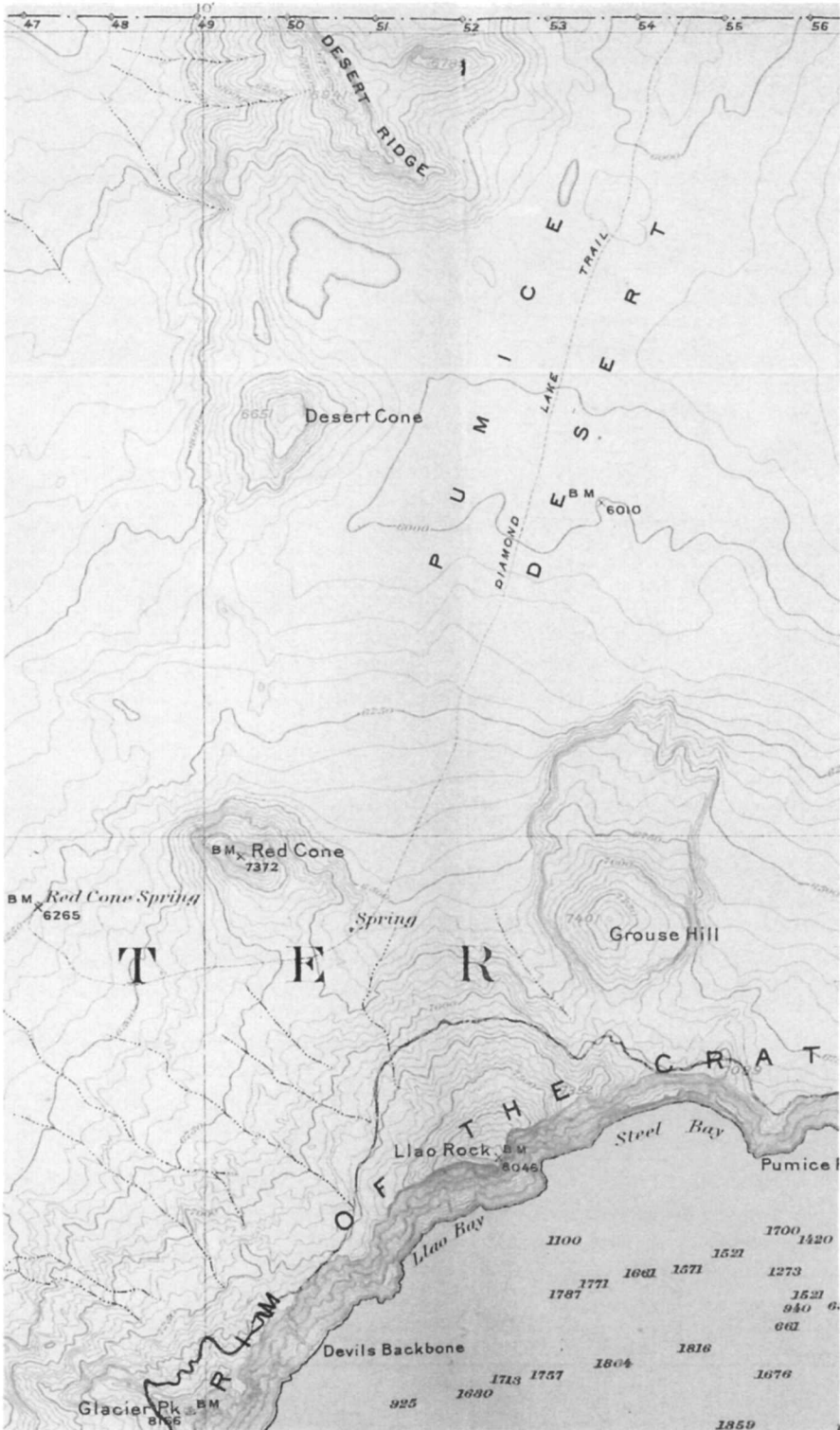


Figure 6. 1919 topographic map showing unpaved Diamond Lake Trail, before construction of the Diamond Lake Auto Trail (DLAT)

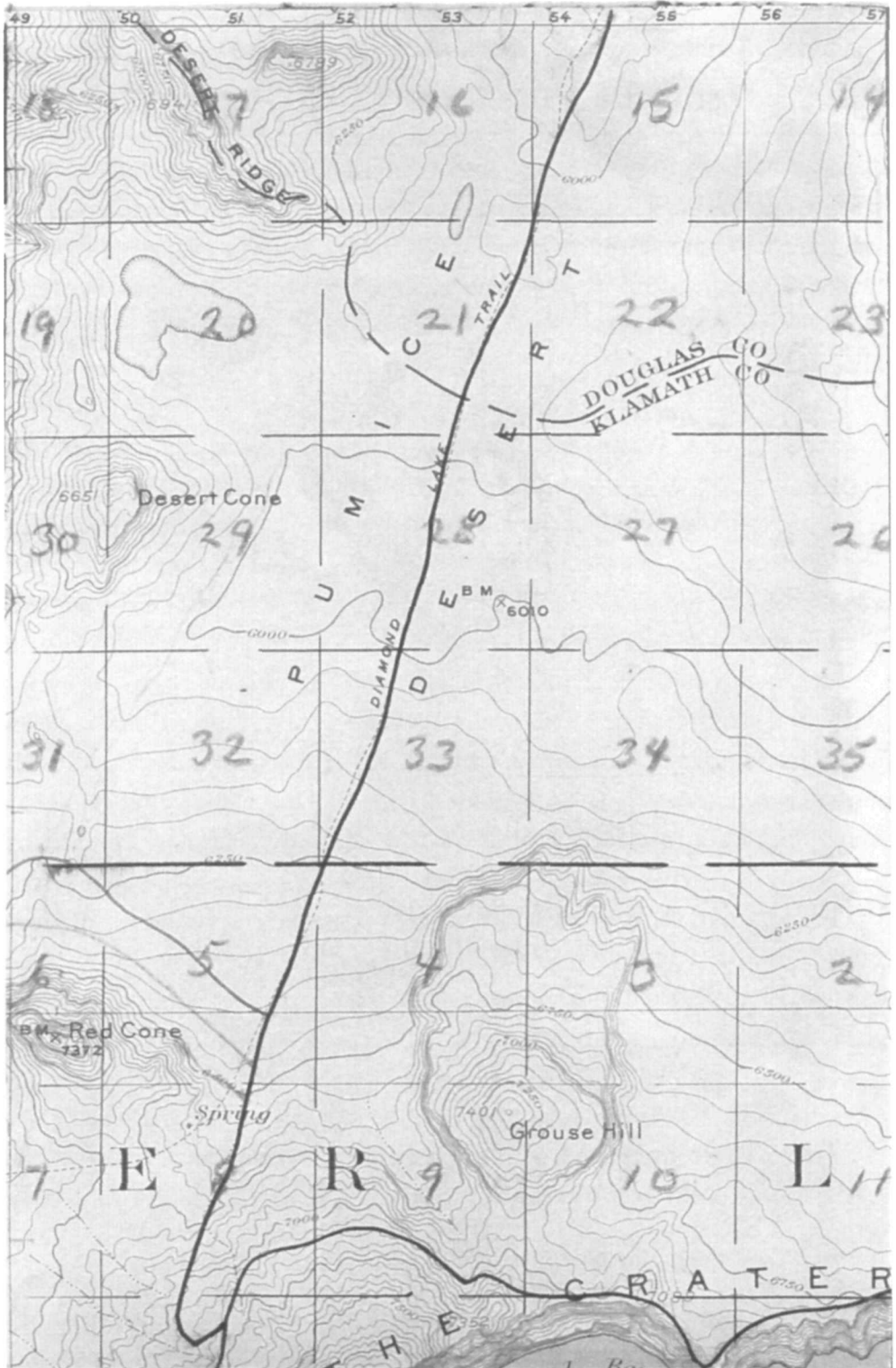


Figure 7. 1930 topographic map showing Diamond Lake Trail as a paved road.

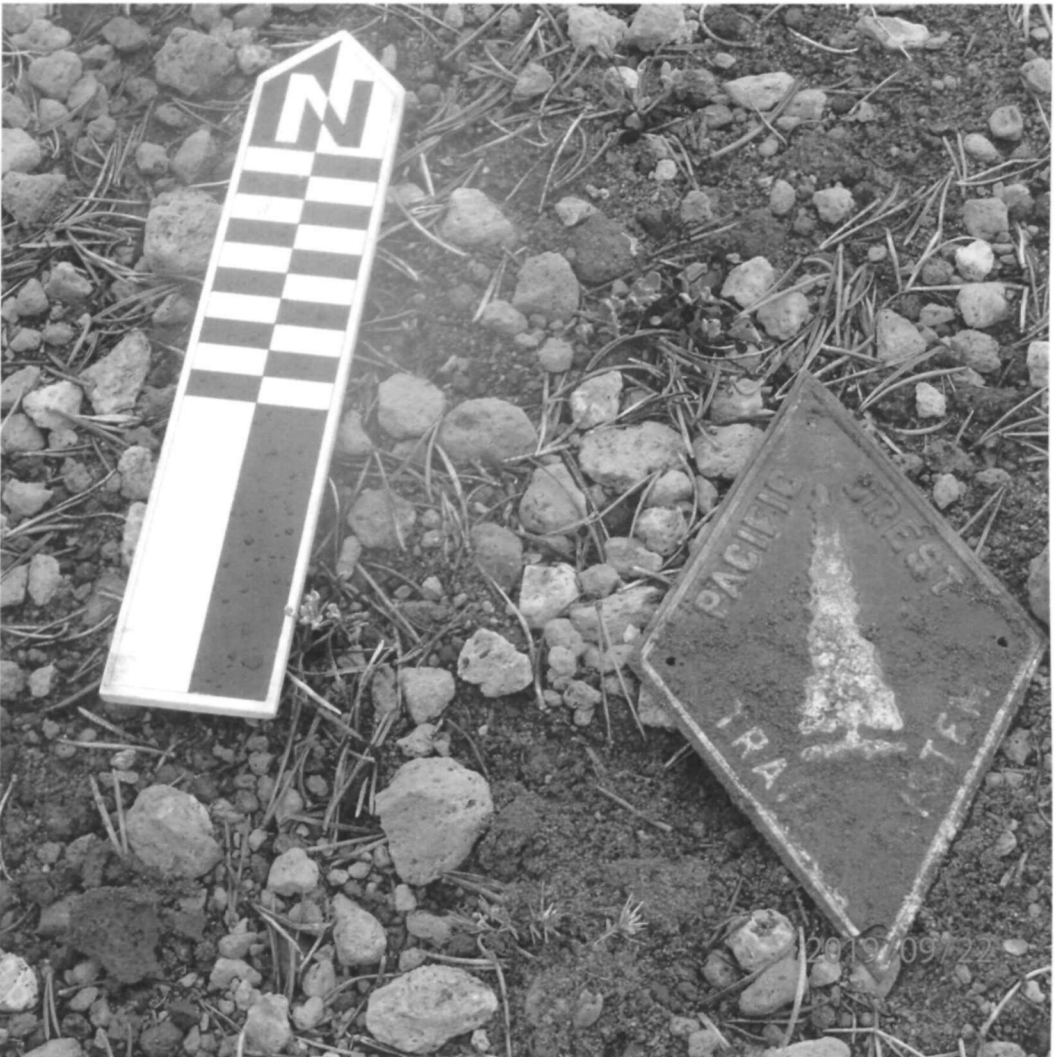


Figure 8. Old Pacific Crest Trail System sign found in the Pumice Desert in 2019 (photograph by Steve Mark)

relief funds also paid for contracted crews to obliterate it by restoring former contours or otherwise removing traces that interfered with the perception of pristine nature.⁷

Large portions of the DLAT did not disappear and instead were used as two relatively long segments of the Oregon Skyline Trail (OST) within the park. While originally conceived as a road connecting Mount Hood with Crater Lake in 1920, the OST quickly evolved over the following decade under U.S. Forest Service sponsorship as a connection between those two terminal points for hikers and

equestrians. Throughout the 1930s, the USFS effectively preempted NPS expansion proposals in Oregon by administratively establishing what were initially called “primitive areas” in the Oregon Cascades, whose access was largely by use of the OST for hiking or stock.⁸ In so doing, non-conforming uses such as new roads, logging, or mining were either actively discouraged or banned outright. Conservation groups such as the Mazamas and the Wilderness Society wanted certain places like Mount Jefferson, the Three Sisters, Diamond Peak, and the Mountain Lakes made off limits to cars and any developments beyond trail access or horse camps.

Some of the wilderness advocacy during the 1930s lay in government; one key individual was the USFS chief of recreation, Robert “Bob” Marshall, who dreamed big and worked to configure the primitive areas so that they took in more than rocks and ice. By 1937 he and others at the local level backed plans to incorporate the OST in Oregon, the Cascade Crest Trail in Washington, and the John Muir Trail in California into one overarching Pacific Crest Trail that stretched from the U.S. border with Mexico to the Canadian line. Marshall also became critical of the NPS for what he saw as overdevelopment in national parks and diminishing their wilderness character by pandering to ever higher visitation. At Crater Lake, visitation steadily climbed through the 1930s to a new record of 250,000 for the 1941 season, and development also took the form of oiling a certain number of trails (to lessen the dust) and creating a network of unpaved but graded fire roads—euphemistically called “motorways” or “truck trails”—intended to expedite response times to lightning-caused fires by allowing fire crews to drive most of the way to where blazes had started.⁹

The NPS did, nevertheless, lend token support to the idea of a trail running north to south through the park, as Crater Lake’s contribution to the PCT. Initially the agency chose to use some existing fire roads and most of what remained of the DLAT for the PCT, a situation that prevailed until 1976. That year, during the U.S. bicentennial, the NPS responded to a Forest Service realignment of the PCT on the Winema National Forest east of Diamond Lake. It began in 1972 by building a new section of hiking trail. Part of the NPS section still utilized another fire road, but the new 4.5-mile trail was entirely located east of the Pumice Desert. This left the DLAT portion effectively abandoned and awaiting rediscovery when the “stars aligned” more than 40 years later.

What is generally called in the trade *compliance archaeology* served as the pretext for the DLAT's rediscovery. Two very different surveys done prior to federal projects with potential for ground disturbance, in accordance with cultural resource statutes, happened to be located not far apart from each other. Both involved background research where the DLAT had been mentioned in the park archives, leading to confirmation in the field that short sections still existed within those survey units. This quickly flowered into full reconnaissance over the DLAT's entire length in the late summer and early autumn of 2019. The effort occurred because several things converged at once, beginning with a particularly egregious incident of off-road damage from a vehicle illegally driven for several miles in the Pumice Desert, much of which is managed as wilderness. It occurred in 2018 and remained a mystery as to who the perpetrators were until they posted photos of their actions on social media, something that led to an arrest and conviction with a fine. The botany crew at Crater Lake wanted to mitigate some of the damage with native plantings in the worst-affected area of the Pumice Desert. Since this involves additional ground disturbance, the NPS archaeology crew had to figure out a polygon to use as the survey area. On the other side of the North Entrance Road, the crew conducted a survey along the corridor for a future prescribed burn unit that ran 200 feet wide in a linear fashion along the road's east side toward the park boundary, then along the south side of Highway 138 for about four miles. We—I was a member of the crew—came across the DLAT twice, which due to its past use as the PCT, was more evident than if it had simply been abandoned 90 years ago.¹⁰

Part of the fieldwork in the Pumice Desert involved determining whether the off-road vehicle activity had negatively affected the DLAT. Upon closer inspection, only a small amount of damage could be tied to the tracks crossing the old road. To our surprise we found numerous *isolates* associated with the DLAT, with more of them seemingly tied to its brief use as a road rather than the far greater number of years as the PCT. In any event, this is a designation in archaeology where associated artifacts number fewer than ten, which would otherwise constitute a *site*, according to the practice in Oregon. Both sites and isolates are associated with past human activity, generally up to 50 years ago, but sites are recorded and mapped more intensively than isolates. A third category, that of *features*, is sometimes recorded, yet they, unlike artifacts, cannot be separated from their location without changing their form.

Reconnaissance can thus be a precursor to the greater amount of time and effort required for intensive survey, mainly for a stand-alone project that aims to inventory and evaluate cultural resources that may meet the legal definition of *historic properties*, as defined in regulations associated with sections of the amended National Historic Preservation Act of 1966. Not to remove the “shine” from archaeology, but our most common finds are cans—tobacco tins are the most ubiquitous, with the datable “hole in top” variety used for condensed milk and other liquids being the most intriguing—followed by bottles, which are often in pieces or shards. Prehistoric artifacts are rare in the park but have been found in unexpected contexts. Within the DLAT reconnaissance and intensive survey, I would rate an old diamond-shaped sign for the Pacific Crest Trail found still affixed to a lone lodgepole in the middle of the Pumice Desert as the most evocative, since the unusual setting somehow magnified it in my imagination.

Beyond the recording of finds, archaeologists and historians should always be testing their ideas as to why an artifact or feature came to land where it is found, as well as what might be its larger context. In some ways this forces the observer into the trap of *relativity*. This is perceiving only what you want to see because any scientific, historical, or artistic method employed to examine a subject also constructs that subject. With this truism in mind, nature—like the past—is a construction and any interpretation is limited to how well it represents the subject in reference to its intended audience, which is usually other specialists. Like a good parable, some aspects of nature and the past serve to undercut widely shared stories (i.e. myths) where a society collectively assigns heretofore unexplained phenomena a habitation and a name in an attempt to make the unfamiliar into a recognized form. Regarding the survey of the DLAT, this linear resource had never been designed or engineered and some of it was obliterated so that in some sections only traces of varying degrees remained for a careful observer to follow. Even then, the observer could only just “imaginatively inhabit” the Pumice Desert, since this place restricted them to be merely a wanderer or a guest, and not a master.¹¹

Attempts by vandals to experience the Pumice Desert on their terms have proven both futile and expensive in this strange Arcadia, where the cycles of time are seemingly suspended, yet the Pumice Desert is no cathedral of gilded sunlight. It can, however, play on one’s imagination, especially on days when clear skies and heat briefly abate in favor of cloud banks and cooler temperatures. These



Figure 9. Aerial view of the Pumice Desert (National Park Service)

conditions help intensify the color of pumice soils and surrounding topographic features, but also make signs of human agency more apparent. Mapping is part of survey and recording, but on one wet and blustery afternoon in the Pumice Desert, I thought about some lines from one of the greatest writers of the twentieth century. As a master of parabolic prose, Jorge Luis Borges (1899–1986) can only be compared to Franz Kafka (1883–1924) and Milan Kundera (1929–). Borges was careful about taking himself too seriously, commenting near the end of his life, *“Every memorable man runs the risk of being minted in anecdotes.”*¹² This, of course, belied his searing insights, with what is below extracted from his essay on Kafka:

*“In the critics’ vocabulary, the word ‘precursor’ is indispensable, but it should be cleansed of all connotation of polemics or rivalry. The fact is that every writer creates his own precursors. His work modifies our conception of the past, as it will modify the future.”*¹³

Borges also wrote the following short critique of relativity, as spun in the form of parable:

*“A man sets himself the task of depicting the world. Year after year, he fills a space with images of provinces, kingdoms, bays, ships, islands, fishes, rooms, instruments, stars, horses, and people. Just before he dies, he discovers that out of this patient labyrinth of lines emerges features of his own face.”*¹⁴

Endnotes:

1. Monical, Ruth and Stephen P. Cross. 1992. "Mammals of the Pumice Desert," *Nature Notes from Crater Lake* **23**: 17-18.
2. Mueller, Elizabeth Laura. 1966. *Introduction to the Ecology of the Pumice Desert, Crater Lake National Park, Oregon*. Master's thesis, Purdue University, 110 pages. Her latest publication is E.L. Horn, 2009, "Forty Years of Vegetation Changes on the Pumice Desert, Crater Lake National Park, Oregon," *Northwest Science* 83(3): 200-210. She has numerous other publications, including four more on the Pumice Desert.
3. J.B. Waldo to Clara Humason Waldo, September 24, 1887, in Gerald W. Williams (comp.), *Letters and Journals from the High Cascades of Oregon, 1877-1907*. Portland: USDA Forest Service, 1992, page 55.
4. Waldo to W.G. Steel, May 19, 1896, in G.W. Williams and S.R. Mark (comps.), *Establishment and Defense of the Cascade Range Forest Reserve from 1885 to 1912*. Portland: USDA Forest Service, 1995, page 338. Waldo noted that one of his companions on his trip in 1887 killed a "fat buckantelope" while crossing what was later called the Pumice Desert, as named by geologist J.S. Diller.
5. For more on this epic journey, see Jeff LaLande, 1989, "A Wilderness Journey with Judge John B. Waldo, Oregon's First 'Preservationist,'" *Oregon Historical Quarterly* 90(2): 117-166; and Barbara Ditman, 2014, "Judge John Breckenridge Waldo and the Cascade Range Forest Reserve," *Journal of the Shaw Historical Library* 27: 23-41.
6. Glisan, journal entry for Tuesday, September 8, 1908, pages 19-20 in Series 7, Personal Trip: Mt. Hood to Crater Lake, August 12 – September 13, 1908, Glisan Collection, The Mazamas, Portland. The writer wishes to thank Mathew Brock in locating the journal and accompanying photographs of Glisan's excursion.
7. One of the limiting aspects of the DLAT route was that it connected only to poorly signed one-lane tracks left from the nineteenth century that ran to and from Diamond Lake during the 1920s. The impetus for a new North Entrance Road came from discussions with the Oregon State Highway Department and the USFS, who funded a new secondary route from The Dalles – California Highway (US 97) to Diamond Lake, with construction of what later became a portion of SR 138 in 1932-33.
8. Detail about how the name "primitive area" originated is in Stephen R. Mark, 2005, *Preserving the Living Past: John C. Merriam's Legacy in the State and National Parks* (Berkeley: University of California Press, pages 135-36; see also Paul S. Sutter, 2002, *Driven Wild: How the Fight Against Automobiles Lunched the Modern Wilderness Movement*, Seattle: University of Washington Press, pages 120-126.
9. Mark, Stephen R. 2013. *Trails: Administrative History of Crater Lake National Park*. Seattle: Government Printing Office, pages 41-48.

10. Mark, *Trails*, pages 62-63. Some momentum for the effort was undoubtedly produced by culmination of a multi-year effort to nominate the Rim Road and other components of the Army Corps of Engineers Road System as a historic district. It was listed on the National Register of Historic Places on August 12, 2019, just prior to rediscovery of the DLAT. The writer wishes to thank Park Archaeologist Kelly Kritzer, as well as interns Sally Gaston, Jessica Cresanti-Daknis, Cassidy Schoenfelder, Crista Cummings, and Brooke Willoughby for their assistance with the DLAT project.
11. Ludlow, Fritz Hugh. 2001. *The Heart of the Continent: A Record of Travel Across the Plains and in Oregon* (1870), page 158; quoted in Angela Miller, "Albert Bierstadt, Landscape Aesthetics, and the Meanings of the West in the Civil War Era," as part of an anthology titled *Terrain of Freedom: American Art and the Civil War*. Chicago: Art Institute of Chicago, page 49.
12. Borges, Jorge Luis. 1985. *Atlas*. New York: Dutton, 95 pages.
13. Borges, Jorge Luis. 2011. "Kafka and his Predecessors," in *Labyrinths*. Melbourne: Penguin, page 236.
14. Borges, Jorge Luis. 2021. "Afterword," in *The Maker: Prose Pieces 1934-1960* (a translation by Norman Thomas Giovanni); an on-line version is: libraryofbabel.info/Borges/themaker.pdf, accessed March 1, 2021 (page 61).