

ARCHAEOLOGY ON THE MONUMENT: THE PAULINA LAKE SITE

In Celebration of Newberry National Volcanic Monument



Figure 1: Excavation at the Paulina Lake Site by the University of Oregon in the 1990s (Connolly 1999: Figure 9.12).

11,000 Years of Human Occupation

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Archaeological evidence shows the area we know today as the Newberry National Volcanic Monument has been a focal point of human activity in Central Oregon for at least 11,000 years. People were drawn to this area due to the availability of essential resources like water, game animals, and the high-quality obsidian created by the Newberry Volcano. In the prehistoric period, obsidian was a prized commodity that was quarried and manufactured into stone tools. Dr. Thomas Connolly of the University of Oregon, Museum of Natural and Cultural History and his team of specialists conducted extensive archaeological research at the Newberry caldera. The following information is from *Newberry Crater: A Ten-Thousand Year Record of Human Occupation and Environmental Change in the Basin-*

Plateau Borderlands (Connolly 1999) published by the University of Utah Press and Dr. Connolly's 1995 unpublished report, *Human and Environmental Holocene Chronology in Newberry Crater, Central Oregon* on file with the Forest Service.

In the early 1990s, the Forest Service and the Oregon Department of Transportation contracted Dr. Connolly to examine the impact of the proposed realignment of Forest Service Road 21, the Paulina Lake Road, on archaeological resources. Under the National Historic Preservation Act of 1966, federal agencies are required to evaluate the effect of projects on significant archaeological sites. Thus, prior to beginning the ground disturbing work associated with road construction, an assessment of the impact on archaeological remains was required. This effort, led by

Dr. Connolly, produced the most comprehensive look at human use of this area completed to date. The project resulted in the formal evaluation of 13 archaeological sites and the excavation of four sites. Of the four sites, the Paulina Lake Site is notable for the vast amount of information on prehistoric life in the caldera gained from data recovery.

In an area that is now underneath asphalt between the Paulina Lake Campground and the Paulina Visitor Center, Dr. Connolly uncovered evidence of intermittent human occupation occurring over approximately the last 11,000 years. The caldera provides a unique research opportunity because past episodes of volcanic activity created distinct layers of sediment that separate archeological occupations. Geologists have established dates for these volcanic events. The eruption of Mt. Mazama around 7,600 years ago, the eruption that created Crater Lake, covered Newberry with approximately 3 feet of ash and pumice (see Figure 2).

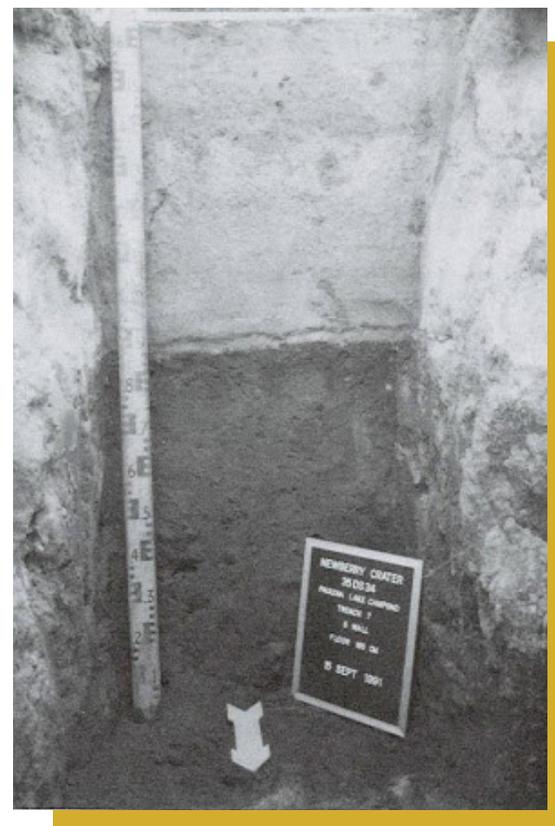


Figure 2: Sediment profile from Dr. Connolly's excavation at the Paulina Lake Site (Connolly 1999: Figure 9.5). The lighter colored material in the upper portion of the soil profile was deposited by the eruption of Mt. Mazama (the eruption that created Crater Lake) ca. 7,600 years ago. Archaeological material recovered from the darker colored sediment beneath the Mt. Mazama deposits dates between $\pm 11,000$ and ca. 7600

The Mt. Mazama deposits provide a convenient reference point in terms of events “before” and “after” approximately 7,600 years ago.

Occupation Prior to the Eruption of Mt. Mazama

The Pre-Mazama period dates between $\pm 11,000$ and 7600 years before present (B.P.). These are the deepest and most complex cultural remains found at the site. Researchers discovered evidence that prior to the eruption of Mt. Mazama, the site served as a seasonal residential camp. Findings include the charred remains of five wooden posts arranged in a semicircle. The posts are thought to have been a shelter similar to a wickiup or a windbreak (see Figure 3). The structure appears to have measured about 13 feet across and had a hearth centrally located. Radiocarbon dates combined with dendrocalibration date the remains of the structure to ca. 9500 years before present. This finding represents one of the oldest structural remains ever discovered in North America.

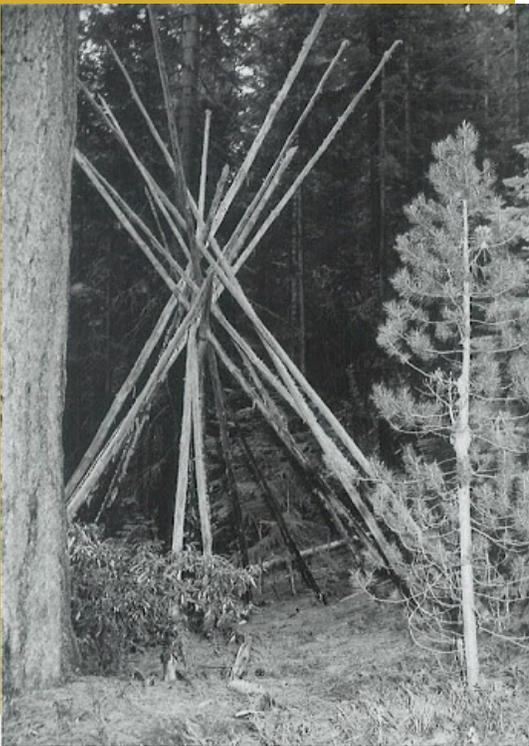


Figure 3: A wickiup on the Crescent Ranger District that may be similar to the structural remains found at the Paulina Lake Site. Photograph dated June 9, 1964; Image from the Deschutes National Forest Supervisor's Office Photographic Archives (#16521). The remains of the posts found at the Paulina Lake Site indicate larger posts (~20cm diameter) than those shown in this photograph were used to construct the shelter or windbreak found at the site. Researchers believe the larger size of the posts is related to the size of material available at the site.

Macrobotanical analysis was conducted on sediment from the interior of the hearth inside the structural remains. A number of plants known to be important prehistorically were identified, including chokecherry pits, an unidentified nutlet, seeds of bulrush and sedge (these were used for basketry, clothing, and matting), as well as lodgepole pine and ponderosa pine which were likely used as fuel. Analysis of sediment from the interior of the structure, outside the hearth feature, found pollen from the Apiaceae family which includes lomatiums. Lomatiums are identified as “one of the most important native foods in the region” (Connolly 1995:102). Pollen from hazelnuts, salmonberry/blackberry, and buckwheat were also identified from sediment in the “floor” area. This macrobotanical diversity was not found in sediment outside the structure. A feature believed to be a

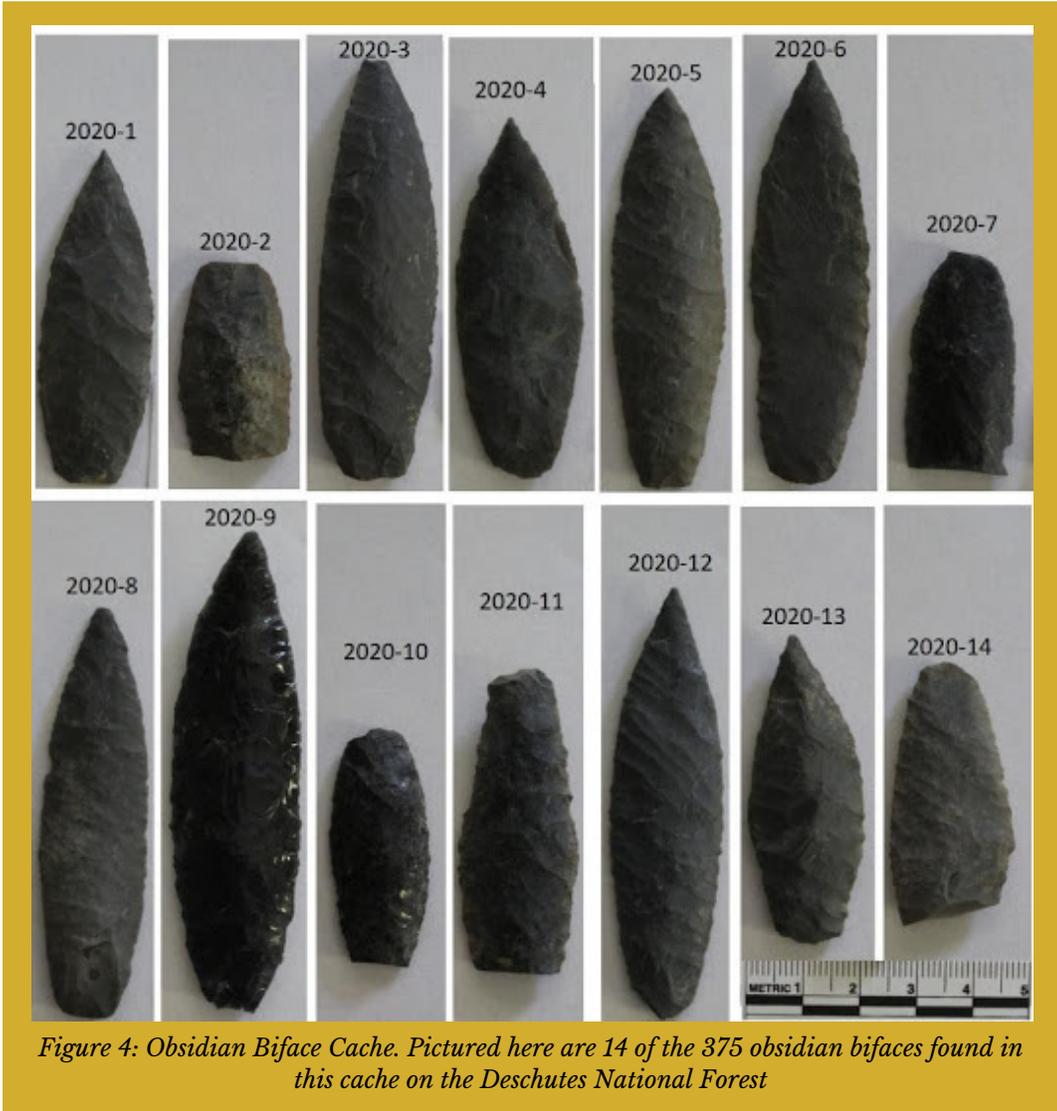
storage pit was also discovered. Pollen analysis of the fill from the pit indicated the presence of Onagraceae (willowweed or fireweed) and Philadelphus (mock orange). In addition to the features, a great diversity of artifacts was found in the pre-Mazama deposits, including Western Stemmed and foliate/lanceolate projectile points, bifaces, end-scapers (used for scraping hide), edge modified flakes, groundstone, abraders, choppers, mauls, and flakes. Analysis of lithic debitage showed that during the pre-Mazama period, activities were focused on tool production and maintenance, rather than procurement of obsidian.

Occupation after the Eruption of Mt. Mazama

After the eruption of Mt. Mazama, evidence of human occupation at the Paulina Lake Site is virtually non-existent until 4000 years B.P. People seem to have abandoned the caldera for nearly 3,600 years. Connolly's research, as well as studies from elsewhere in central Oregon, have found the massive eruption of Mt. Mazama blanketed the caldera and surrounding areas with several feet of volcanic ash and pumice. This caused a significant shift in the composition of vegetation and likely limited the availability of plant and animal resources that people found desirable. Furthermore, within a few hundred years of the eruption of Mt. Mazama, Newberry itself experienced explosive volcanic activity. Newberry's landscape went from having open pine forests with meadows and a shrub-steppe understory to a "pumice desert" (Connolly 1995:iii). When evidence of human use of the caldera begins to emerge around 4000 years ago, the archaeological materials left behind suggest a very different focus than the Pre-Mazama occupation. There is very little diversity in the type of artifacts recovered. There are no features or materials that suggest domestic activities such as hearths, groundstone, or scapers. Lithic analysis showed, "... use was predominantly focused on quarrying and the production of mid-stage bifaces (apparently for transport out of the caldera)...These production-oriented camps and work stations produced enormous quantities of chipped stone waste, many large mid-stage bifaces and fragments, and only occasionally other tools or ephemeral hearth features" (Connolly 1995:iii-iv). The use of Newberry primarily for the procurement of obsidian and the production of bifaces is supported by the

number of obsidian biface caches found in the upper Deschutes River basin (see Figure 4). These caches contain anywhere from 10 to as many as 2,000 obsidian bifaces. The caches are thought to have been part of an extensive trade network that ran northward up the Deschutes River to the great trading center along the Columbia River at The Dalles. Obsidian from the Newberry Volcano has been found as far north as the Salish Sea in British Columbia.

The evidence of prehistoric use of the Newberry Caldera can be seen today in the flakes of obsidian strewn across the landscape. These artifacts are an irreplaceable part of human history. The Deschutes National Forest Service would like to remind visitors that damage or removal of archaeological material, including arrowheads, is



illegal under the Archaeological Resources Protection Act. If you discover artifacts on public land, please leave these special items where you found them and report the location to your local Forest Service office.

See article references below.

References:

Connolly, Thomas J.

- 1995 *Human and Environmental Holocene Chronology in Newberry Crater, Central Oregon*. Unpublished report on file at the Deschutes National Forest.
- 1999 *Newberry Crater: A Ten-Thousand Year Record of Human Occupation and Environmental Change in the Basin-Plateau Borderlands*. University of Utah Anthropological Papers, Number 21. University of Utah Press, Salt Lake City, Utah.