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Unearthing secrets of the ancient Cascades

digs: Artifacts from Rainier and elsewhere give scientists a window on human activity in the area long ago

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Archaeological digs in two Washington national parks continue to reveal artifacts that debunk the myth that indigenous people didn't gather food and plants from the upper reaches of the Cascades.

A dig near Cascade Pass in North Cascades National Park has revealed evidence that humans used the area 9,600 years ago. At Mount Rainier National Park, a site on the northern slope of the mountain has produced artifacts dating back 7,600 years.

"It documents, for the first time, human use at upper elevations dating that far back," said Greg Burtchard, Mount Rainier's archaeologist.

"One thing it does, it helps us understand the early time period. Getting back to 9,600 years ago, that's a time period for which we know almost nothing," said Bob Mierendorf, archaeologist at North Cascades.

For years, people felt prehistoric Indians lived in lowland areas. The argument was that the elevation, unpredictable weather and rugged terrain made places such as Mount Rainier a poor option for food-gathering and settlement, Burtchard said.

But these sites are helping researchers refine theories on where, when and why Indians traveled through the mountains.

Among the discoveries at the two sites – both about 5,400 feet in elevation – are small stone blades used to make knives, sharp-edge stones used to scrape animal hides, projectile points, stones from fire rings, and animal bones and teeth.

"One of the big misconceptions is people don't realize there were Native American populations moving around in the highlands," said Bradford Andrews, visiting assistant professor of anthropology at Pacific Lutheran University.

"Wherever there are people today, there were people in the past. Although today it's more recreational, in the past they were more worried about finding food to eat."

"It really broadens our understanding of human use of the mountain quite a bit," Randy King, acting superintendent at Mount Rainier, said of the discoveries.

"I think there is a fundamental need to understand people have been part of this landscape for a long, long time," King said. "You can go to when this park was started in 1899 and think that is the start of the human connection, but it isn't."

ESTABLISHING CONNECTIONS

A piece of white translucent stone no bigger than an adult's thumbnail, discovered in 2007, has become one of the most important artifacts to come from the Mount Rainier site. The piece of chalcedony, a silica mineral, is one of thousands of



DREW PERINE THE NEWS TRIBUNE Working in an excavation block, archaeologist Greg Burtchard shows a sample of ash from a Mount St. Helens blast 3,500 years ago. Volcanic events in the Northwest create distinct layers, which archaeologists use to help date the human activity on Mount Rainier.

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artifacts and pieces of debris found by Burtchard and his team at a site near Buck Lake.

It is the artifact that dates back 7,600 years, the oldest known evidence of human use on the mountain. The previous oldest artifact dates to 5,600 years ago.

An ancient Indian flaked off sharp pieces of the chalcedony from what Burtchard described as a microblade core. Those razor-edged pieces were glued to wood or bone with tree resin to make a knife.

"There is no doubt that the Indian people living around the mountain today, that these were their ancestors," Burtchard said.

The Buck Lake site was likely used by ancestors of today's Muckleshoot Tribe and other local tribes, Burtchard said. The Muckleshoots supported the Buck Lake research by supplying manpower, material and use of a helicopter. Muckleshoot officials would not comment for this story.

Evidence indicates that the Buck Lake site was used seasonally for gathering plants and animals for food, Burtchard said. The Indians likely lived in woven mat-and-wood frame structures or bark slab structures. There is no evidence of permanent structures.

The seasonal-use theory is based on Mount Rainier's weather.

"The best season for (gathering food) starts when the snow cover is off in late June and July, to when the snow flies again in October," Burtchard said. "We have such heavy snowload that it made it a seasonal use area."

Burtchard said it is likely that small bands of Indians – men, women and children – came to the mountain from lowland settlements near Enumclaw, Greenwater, Packwood, along the Puyallup River and at the confluence of the Nisqually and Mashel rivers. As the weather warmed, the groups passed through the relatively resource-poor lower forests heading for the upper meadows.

"I always assumed the primary use was resource acquisition, as opposed to sacred meanings," Burtchard said of the 95 known archaeological sites on the mountain.

Several factors led Indians to use a place like Buck Lake for thousands of years before Europeans arrived in the Northwest, Burtchard said.

The trees provided protection from the elements. An eastern exposure allows the sun to provide warmth in the morning.

With meadows immediately above the area, Indians had easy access to plants and berries – such as elderberries, huckleberries and avalanche lilies – and animals.

"The subalpine meadows, if you were interested in eating in the summer, they were the place to be," Burtchard said.

The site also is near ridges that lead up and around the mountain. Those ridges served almost as streets for Indians, allowing them to move up and around the mountain to hunt for elk, mountain beaver, bear, grouse, mountain goats and marmots.

"The ridges made it easy to carry animals back to the site," Burtchard said. "This was possibly a base camp, maybe a mixed age and gender group setting, based on the volume and type of tools we found."

Not every site was a base camp. Burtchard believes a site near Sunrise was used to process game, because they have found more tools for cutting and scrapping rather than projectile points.

"At a base-camp setting you would expect a wider variety of tools," he said.

As he traces the site's evolution, Burtchard said it is likely the earliest Indians, those living in the area 10,000 to about 4,500 years ago, were more nomadic rather than settling along the mountain's salmon-bearing rivers.

"They didn't need to because they didn't have that many people to feed. So they could travel around the region, moving as the resources allowed," he said. "Later when populations get high, they had to look for food sources that could be mass harvested, which is salmon."

Even then, Buck Lake was used by generations of Indians.

"At Buck Lake, we have the early use," Burtchard said, "but at 4,500 years ago that use increased until populations were reduced in the 1700s because of European diseases like smallpox, measles, whooping cough."

WHAT THE ARTIFACTS REVEAL

It takes a practiced eye to realize the value of the items found at Buck Lake and other archaeological sites on the mountain. The vast majority of the nearly 20,000 Buck Lake artifacts are not flashy museum pieces. Most is debitage, the rocky chips and flakes left over when creating stone tools.

"The problem is when people see the Christmas tree shaped stone of an arrow point, it goes into their pocket 99 out of 100 times," Burtchard said.

While it might not look like much, that debris still tells an important story.

"That tells us how the stone tools were made, where the stone was coming from. That tells us how far they moved around or who they traded with," said Andrews. He has been a part of the PLU team studying the Buck Lake artifacts for three



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years.

Andrews is studying the material to detect any changes in technology over the years.

"That will help tell us how these people changed over time. Societies are never static. We can see that in our own society. Things changed in the past, albeit much slower," Andrews said.

One thing that has surprised Andrews about the Buck Lake site has been the sheer volume of material discovered. He has been to two other sites on the mountain, and they contain maybe 5 percent of what has been found at Buck Lake.

Andrews has focused his research on projectile points, including atlatl, or spear throwers, and arrow points, plus two-edged tools used for chopping, tools used for scraping hides and processing plant foods. They are made from material such as chert, also known as flint, and obsidian.

He said the obsidian, a volcanic glass, was probably brought in from another area by trading with other Indians bands. The nearest regional sources are in southern Washington and Oregon.

"That tells us about trade patterns and the distance people were moving in their annual rounds," he said.

In addition to studying the artifacts, Andrews crafts his own stone tools, a form of experimental archaeology.

"I make them so I can look at the flakes I produced and look at how they pattern out. Then I compare them to the artifacts," he said. "No one makes flake stone tools anymore, so we have to become the modern analogy. And then we can make some educated guesses about what we find."

CLUES AND TIMELINES

While there are other archaeological sites around the mountain – 95 at last count – Buck Lake is unique because of the lake itself. The lake is fed by melt water and has no outlet stream, so anything that has fallen into the lake has settled to the bottom, including pollen from plants that grew in the area over the ages.

Examining lake bottom core samples almost 15.5 feet deep, Burtchard and his crew have tracked environmental changes that might have affected human use of the area. After two major volcanic eruptions, the core samples show pollen levels dropped immediately afterward as plants were smothered in ash.

"You can tell when there were fires and changes in vegetation," Burtchard said.

Seeing the volcanic history unfold as archaeologists dug deeper adds to the site's unique character.

The pit walls reveal layers of dirt interspersed with six lighter layers, markers as if the wall were a timeline.

One near the surface is the volcanic deposit left behind when Mount St. Helens erupted about 4,200 years ago. Until three years ago, all the artifacts found at Buck Lake were above this layer.

A deeper layer was created by the eruption of ancient Mount Mazama in Oregon, the event that led to the creation of Crater Lake. It took place about 7,400 years ago.

It was beneath the Mazama layer that the small microblade core was discovered two years ago. Given the time frame of the Mazama deposit, Burtchard knew they had made a significant find.

"You can get precise time control because you have these volcanic events that you can date," he said. "They create a timeline from which you can gauge finds."

A site near Sunrise has deposits from seven major events, including the Osceola lahar about 5,700 years ago.

The North Cascades site also has volcanic layers, ash deposited from eruptions at Mount Baker, Mount St. Helens, Glacier Peak and Mount Mazama. There also are ashes Mierendorf's team has yet to identify.

The site has also produced other ash evidence, coming from cooking pits.

"They're small and not elaborate, but pretty clearly they were cooking with hot stones. But I don't know what they were cooking," Mierendorf said. "That implies more than just traveling through the area."

"These are repeatedly used, including one individual pit used and reused for all 9,600 years. I've never seen anything like that in 40 years of professional archaeology."

Burtchard has the same reaction as he and his team continue to find evidence of people living and gathering food on Mount Rainier so long ago.

"It is one of the most important sites I've worked on. It allows us to rebuild 8,000 years of environmental changes side by side with human use."

"It's just a tremendous sense of discovery," he said. "It's been sitting there 7,600 years, and you were fortunate enough to find it."

"Finding the item is a great discovery, but also what it means, that people have been using that area for 7,600 years."

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