

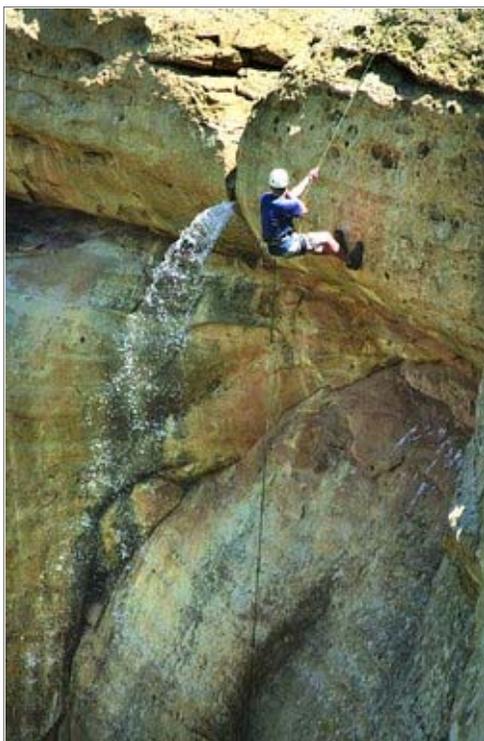
New insights about water at Mesa Verde

Puebloans directed rain from mesa top to cistern below

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By Joe Hanel | *Herald Denver Bureau*

DENVER - Almost every visitor to Mesa Verde National Park wants to see the big cliffside ruins.



Not Ken Wright.

Courtesy of the Wright Paleohydrological Institute

A researcher from Wright Paleohydrological Institute rappels down a cliff face in May while others (out of the photo) pour water through a nearby spout. The water fell into a cistern, which the inhabitants of nearby Mug House apparently built to take advantage of the rare rains that fell.

Since 1995, the renowned Denver water engineer has studied four piles of dirt atop the mesas and in canyon bottoms. Those piles turned out to be reservoirs that were built hundreds of years before Cliff Palace and the other famous villages.

But in May, Wright and his wife, Ruth, turned their attention for the first time to the cliff dwellings. They came away more impressed than ever by the smarts and strength of the long-departed ancestral Puebloans who built Mesa Verde.

The Wrights visited Mug House, a ruin in the park's southwestern corner that's closed to the public. They examined a 5,000-gallon cistern about a five-minute walk from the ruin.

"We were impressed by how they were able to develop water from the mesa top and direct it into a cistern down below. These people were smart. They were good public works engineers," Wright said.

And they knew the value of water better than modern people, Wright said.

"We also learned they were willing to spend a lot of, in effect, money on their water," he said.

By "money," he means work. Time spent gathering water is time lost to farming, construction, pottery-making and child-rearing.

Earlier excavations found 5-gallon jugs - about as much as an able-bodied woman could carry. When the cistern was dry, the Puebloans had to make a 3-mile round trip to a spring for their water.

Wright hopes to learn how many calories the people spent in water-gathering by the time his Wright Paleohydrological Institute issues its report on the Mug House cistern.

In the meantime, Wright has discovered that the village's inhabitants found a way to capture the rain that occasionally fell.

A small slot on the mesa top directed water over the cliff. Down below, the Puebloans built up a wall to hold the water that spilled whenever it rained.

"It had a spillway, so when it would overflow it wouldn't wash it out. So it was a nice job," Wright said.

The Wrights brought along several people on their Mug House study, including state Supreme Court Justice Greg Hobbs and his wife, Bobbie.

Bobbie Hobbs made the trek from Mug House to the pool. It's a narrow but level walk, she said, with a series of steps at the end. She imagined the care the people must have taken with their ceramic jugs.

"Water was very precious, and they couldn't afford to drop or break anything," she said.

As part of the research permit, Wright got the OK to pour a few gallons of water through the slot, to replicate the ancient rainshowers that nourished the 50 or so inhabitants of Mug House.

The pool is about 5,000 gallons, much smaller than the older reservoirs that Wright excavated. One of them could have held 120,000 gallons, according to Wright.

But things had changed at Mesa Verde by the time the people built Mug House, named for the coffee mug-style cups found at the site.

The Puebloans who had lived and farmed for centuries on the mesa tops decided to build villages in the cliff sides about 1100 A.D.

The reason for their move is one of two main mysteries of Mesa Verde, said Linda Towle, chief of research and resource management at Mesa Verde National Park.

The other mystery: Why did they leave Southwest Colorado around 1300 A.D.?

Modern Pueblo Indians - the descendants of Mesa Verde's great engineers - have their own answer, Towle said. Quite simply, the spirits told the ancient people it was time to move on. They did, settling throughout New Mexico's pueblos.

Towle appreciates Wright for creating a useful record of wet and dry years at Mesa Verde. She hopes he can figure out how often the Mug House cistern filled with water.

"I have seen it when it's muddy, but I've only seen it with standing water once," she said.

Wright last visited Mesa Verde in 2003, when his team made the last field study in their decade-long investigation of the reservoirs.

He published two books on the subject and laid to rest a long debate over the mysterious mounds discovered at the park. Some researchers thought they were dance platforms. But Wright and others suspected they were reservoirs. They stand several feet above the surrounding ground, because they kept filling up with sediment, the same as modern reservoirs.

The Puebloans solved the problem of their ever-rising reservoirs by building inlet canals uphill from the reservoirs. Every so often, they would have to build a new canal even farther uphill, until finally the reservoirs were abandoned.

Morefield Reservoir remained in operation for 350 years.

"That's a long time," Wright said. "That's nearly twice as long as the United States has been a country."

And still today, the ancient obsession with water continues.

"The good news is it's been raining here since last week," Towle said. "So the fire danger has gone down. But it's still only July."

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