

Bandelier

Bandelier National Monument

National Park Service
U.S. Department of the Interior



Bandelier's Archeological Sites and the Las Conchas Fire



Starting on June 26, 2011, the Las Conchas Fire burned through the Bandelier National Monument. The fire ranks as the largest wildfire in New Mexico history, burning a total of 154,349 acres, 43,000 of which were burned in the first 12 hours. Eventually, the fire burned across almost the entire eastern third of the Jemez Mountains.

Bandelier National Monument is well-known for its rich history and abundance of cultural sites. The Ancestral Pueblo Peoples came to settle the area leaving traces of their inhabitation dating back to 1175 CE. Within Bandelier's borders 1,104 of these cultural sites have been confirmed to be located in burned areas. The monument, in conjunction with the Burned Area Emergency Response (BAER) team, has developed a plan for protecting and preserving its cultural resources.

Fire Effects to Archeological Sites

Fire can cause direct damage to cultural sites such as spalling building stone, covering artifacts with soot, and heat fracturing of stone and ceramic artifacts. As part of the BAER plan, sites located within high, moderate, or low burn severity areas will be

assessed for these and other heat related impacts (see the pair of photographs on the following page). Many sites within the fire perimeter and downstream of severely burned areas are at risk from damage by flooding and erosion. This requires archeologists to assess sites located within 50 meters of drainage bottoms in watersheds with badly burned headwaters and sites located on slopes greater than 5%.

Sites that have fire-killed trees will also be assessed to determine if the removal of fire-killed trees is necessary. Fire-killed trees pose a threat to cultural sites when they eventually fall and could then uproot sites. These trees, if they are to be removed, can then be used to protect cultural sites by assisting in erosion control in the form of soil retaining structures.

Protecting Archeological Sites

In an effort to protect and preserve our cultural sites Bandelier staff has planned to construct soil retention structures, water diverters, and apply slash-mulch around sites determined to be in danger of post-fire erosion damage. Materials for these actions will be collected from within

archeological sites and adjacent areas. In some areas all of the woody material was consumed in the fire making erosion control even more difficult. However, many areas are seeing increased vegetation recovery reducing the risk of post-fire erosion damage. Based on individual site assessment, the most appropriate action will be pursued to ensure that our cultural resources will be protected and preserved. Cultural sites, such as Tyuonyi, Big

Kiva, and those located along the Main loop trail have been assessed for risk of flooding and determined that the risk is very low. Damage from installing point protection, such as sand bags, on these areas would most likely result in more damage to the structure than any potential flooding. However, the Visitor Center and historic administrative buildings are located closer to the floodplain and have been protected against flooding by use of sand bags and jersey barriers.



Photo 1. Taken in 2005 showing site prior to Las Conchas Fire. Note duff cover and dead and down trees.



Photo 2. Same site in 2011, following Las Conchas Fire. Note lack of duff and consumed fuels.

Looking to the Future

It is important to Bandelier, and the NPS, that we learn from these events. By monitoring archeological sites, we will have the opportunity to study the effects of fire on archeological sites. Many cultural sites have been burned

numerous times by small surface fires and other large fires such as the La Mesa Fire and the Dome Fire. From these fires we have learned how to preserve archeological sites for future generations. From Las Conchas, we hope to learn the impacts of large, stand replacing fires, beyond the actual effects from the heat, flames,

and smoke. These data will then be used as another tool in managing forests that will include large scale thinning and prescribed burns in order not only to preserve ecosystem health but cultural resources as well.