

# From Earth's Birth to Crystals: Contextualizing Sunset Crater and other Volcanic Events and Products

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# Purpose of These Observations

- To provide an epistemologically integrated cultural interpretation of volcanic events and their products.
- To assess whether or not such observations are generally shared by the American Indian ethnic groups connected with Sunset Crater.
- To provide a foundation for adding to the interpretation of Sunset Crater, Wupatki, and Walnut Canyon National Monuments

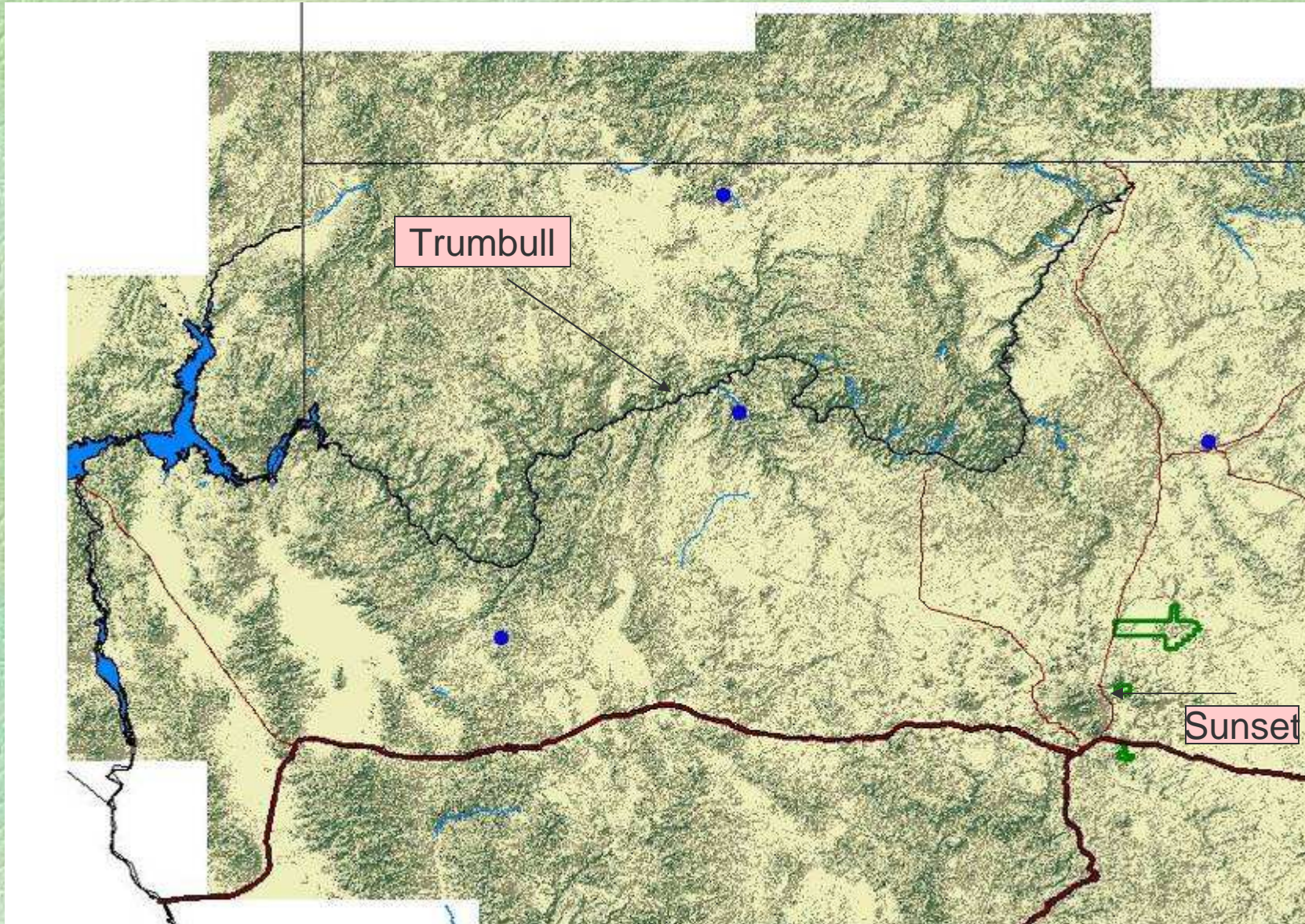
# Range of Observations

- Volcanos
  - Active
    - Sunset Crater – corn rocks
    - Mt. Trumbull – sherd rocks
  - Past
    - El Mal Pais – New Mexico
    - Shiprock Plug - Arizona
- Volcanic Presence in Canyons
  - Grand Canyon – Colorado River, AZ
  - Black Canyon – Colorado River, AZ-NV
  - Black Butte – Pahrnagat River, NV
- Volcanic Deposits
  - Buckboard Mesa – Nevada Test Site
  - Shoshone Mountain – Nevada Test Site
- Volcanic Minerals and Springs
  - Obsidian
  - Crystals
  - Hot Springs

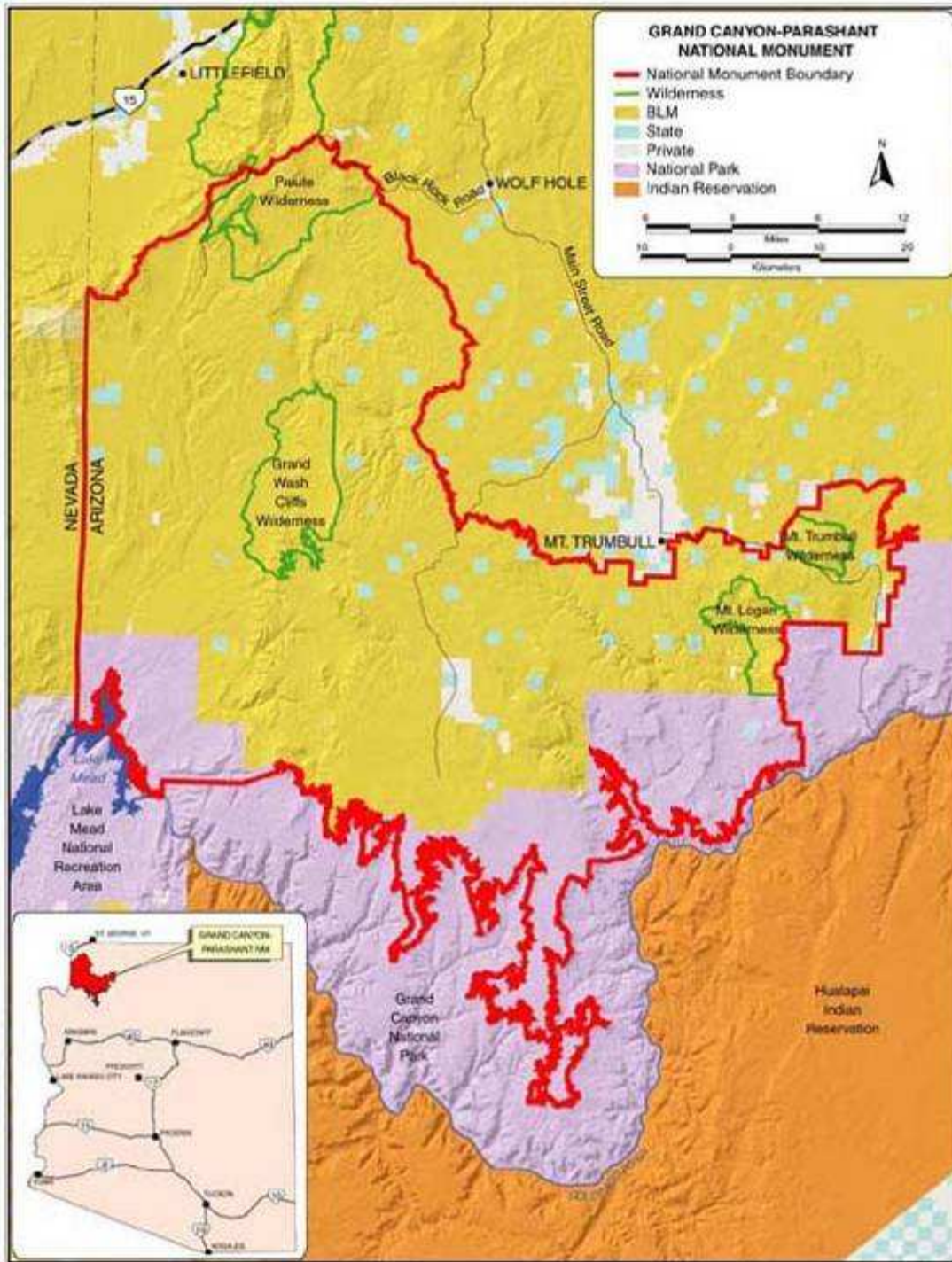
# Volcanos as Earth Birth Events

- At two locations in northern Arizona Indian people were present when magma oozed from the earth.
- At each of these places Indian people interacted with the moving or splashing magma. By shielding themselves with a wall of lava (fumerell) they placed corn or pots on the lip and formed lava rocks and corn rocks.
- These rock were subsequently placed in nearby structures.
- It is assumed that all of these are ceremonial activities relating to the birth of the earth and the power (puha) one can derive from participating in such an event.
- It is assumed that the power of the event is captured in the lava boulder and a special connection derives from having either the corn or pots become a part of the boulder.

# Map of Region



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# Grand Canyon Parashant National Monument Map

# Mt Trumbull



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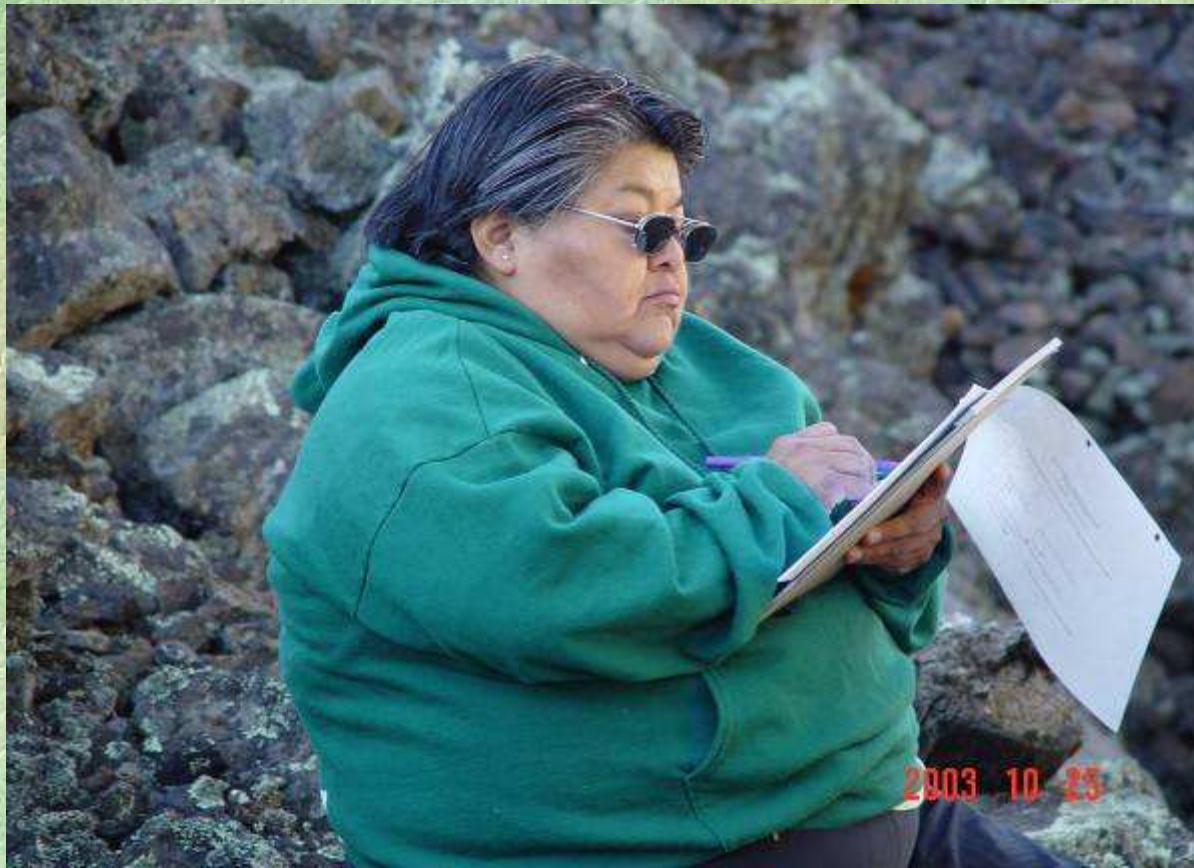
# Mt. Trumbull



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# Cultural Officer Doing A Site Assessment Form



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# The Spring



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# Mt. Trumbull



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# Early Archaeology Survey Results

Source: Desert Archaeology- Elson (PI)  
and Samples; NAU Ort and Duffield

- Possibly mid 900s for an eruption date
- 150 masonry structures on top
- 10 trail heads
- Sherd Rocks and maybe corn rocks

# Sherd Rocks



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# The Trail to Napaweap



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# Ocean Woman's Net



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# Path to Grand Canyon



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# Grand Canyon at Toroweap Overlook



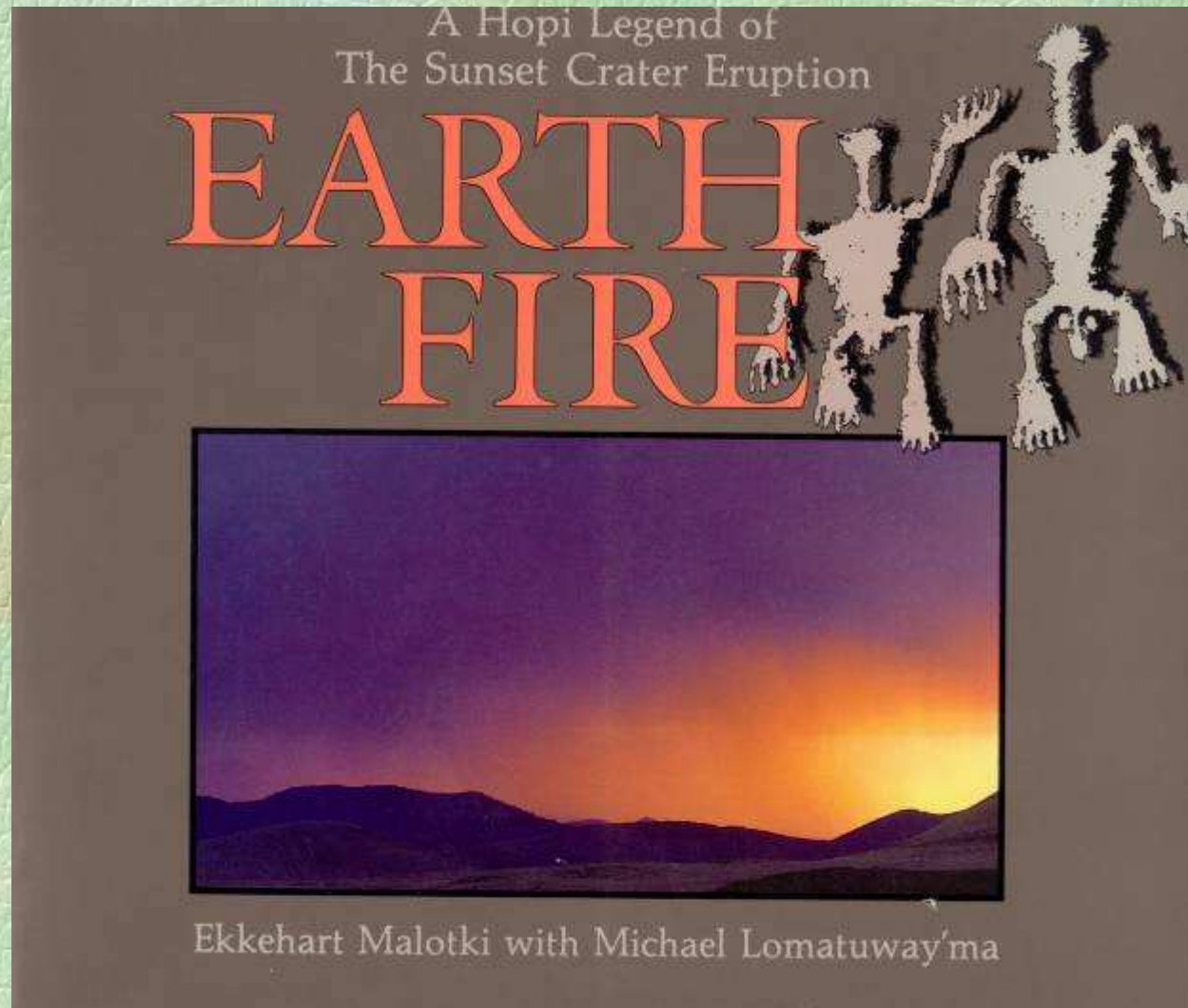
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# Sunset Crater



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# Hopi Stories



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# New Analysis of Corn Rocks

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## LAVA, CORN, AND RITUAL IN THE NORTHERN SOUTHWEST

Mark D. Elson, Michael H. Ort, S. Jerome Hesse, and Wendell A. Duffield

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*Fifty-five pieces of lava with impressions of prehistoric corn have recently been recovered from NA 860, a small habitation site near Sunset Crater Volcano in northern Arizona. Archaeological, geological, and botanical information suggest that husked ears of corn were deliberately placed in the lava's path when the volcano erupted in the mid-to-late eleventh century A.D. Over 40 kg of basalt lava containing the hardened corn casts were then taken to NA 860 located 4 km away from the lava flow. At the site, the rocks underwent lithic reduction to expose the casts. We suggest that these "corn rocks" are indicative of ritual practices, perhaps serving as an offering made to appease the forces responsible for the eruption. Although both prehistoric and modern offerings are commonly associated with volcanoes in other parts of the world, this is the first evidence from the Southwest United States of possible ritual behavior related to volcanism.*

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*Cincuenta y cinco pedazos de lava con impresiones de maíz prehistórico fueron descubiertos recientemente en NA 860, un pequeño sitio de habitación cerca del volcán Sunset Crater en el noroeste de Arizona. Información arqueológica, geológica, y botánica sugieren que las mazorcas de maíz fueron intencionalmente colocadas en la trayectoria de la lava cuando el volcán hizo erupción en la segunda mitad del siglo XI d. C. Más de 40 kg. de lava basáltica conteniendo impresiones de maíz se recuperaron en el sitio NA 860, a 4 km de distancia de la lava. En este sitio, las rocas fueron trabajadas para exponer las impresiones. Sugerimos que estas 'rocas de maíz' indican prácticas rituales, y que quizás estas rocas sirvieron como ofrendas para apaciguar a las fuerzas responsables por la erupción. Aunque las ofrendas asociadas con volcanes son comunes en otras partes del mundo, tanto en la prehistoria como en tiempos modernos, esta es la primera evidencia de prácticas rituales asociadas con vulcanismo que se ha recuperado en el suroeste de los Estados Unidos.*

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The eruption of the Sunset Crater Volcano in the mid-to-late eleventh century A.D. has long played a prominent role in archaeological models of northern Arizona prehistory. Starting with the work of Dr. Harold S. Colton and his colleagues at the Museum of Northern Arizona (MNA) in the early 1930s (Colton 1932a) and continuing into the modern period (Anderson 1990; Downum 1988; Pilles 1979, 1987; Sullivan 1984), the eruption has played a significant part in interpretations of prehistoric settlement and subsistence in the Flagstaff region. For example, to explain the increase in site density at the end of the eleventh century, Colton (1932a, 1946) proposed that thin layers of deposited cinders acted as a water-retaining mulch, allowing previously infertile areas to be farmed. In Colton's (1949:24) view, the opening up of new lands resulted

in large-scale migrations (a prehistoric "land rush") that dramatically changed the nature of the groups living in the Flagstaff area. Colton's theory has been adopted with some modifications, by more recent researchers, who propose that the cinder mulch was an important factor in the initial settlement and subsequent population growth evident in Wupatki National Monument (Downum and Sullivan 1990:87-88).

Although other models suggest that it was not the cinder mulch that allowed new lands to be farmed, but changing climatic conditions (Pilles 1979:479-480; 1996:65), all researchers agree that the eruption of Sunset Crater had an enormous impact on the prehistoric inhabitants of the Flagstaff area, and probably the greater northern Southwest. Some 900 years later, Hopi accounts of the eruption

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# Sunset Fumerell



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# Structures and Rocks – Wupatki



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# Walnut Canyon



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# Walnut Canyon

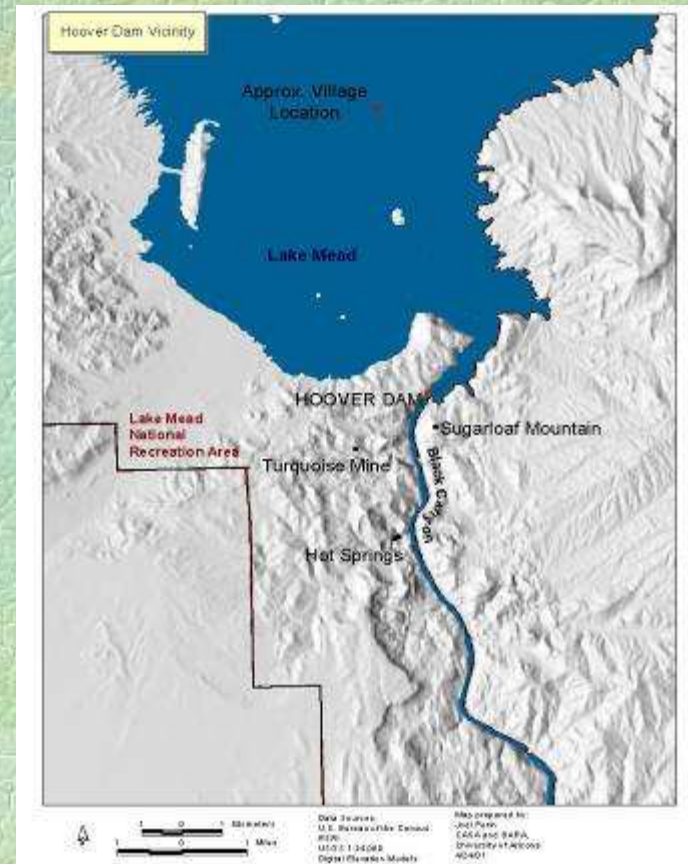


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# Volcanos, Canyons, Rivers

- Lava Falls, Grand Canyon, Colorado River
- Black Butte, Pahrnagat River
- Black Canyon, Colorado River



# Black Canyon



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# Hot Springs, Song Caves, Paint Sources, Vision Questing

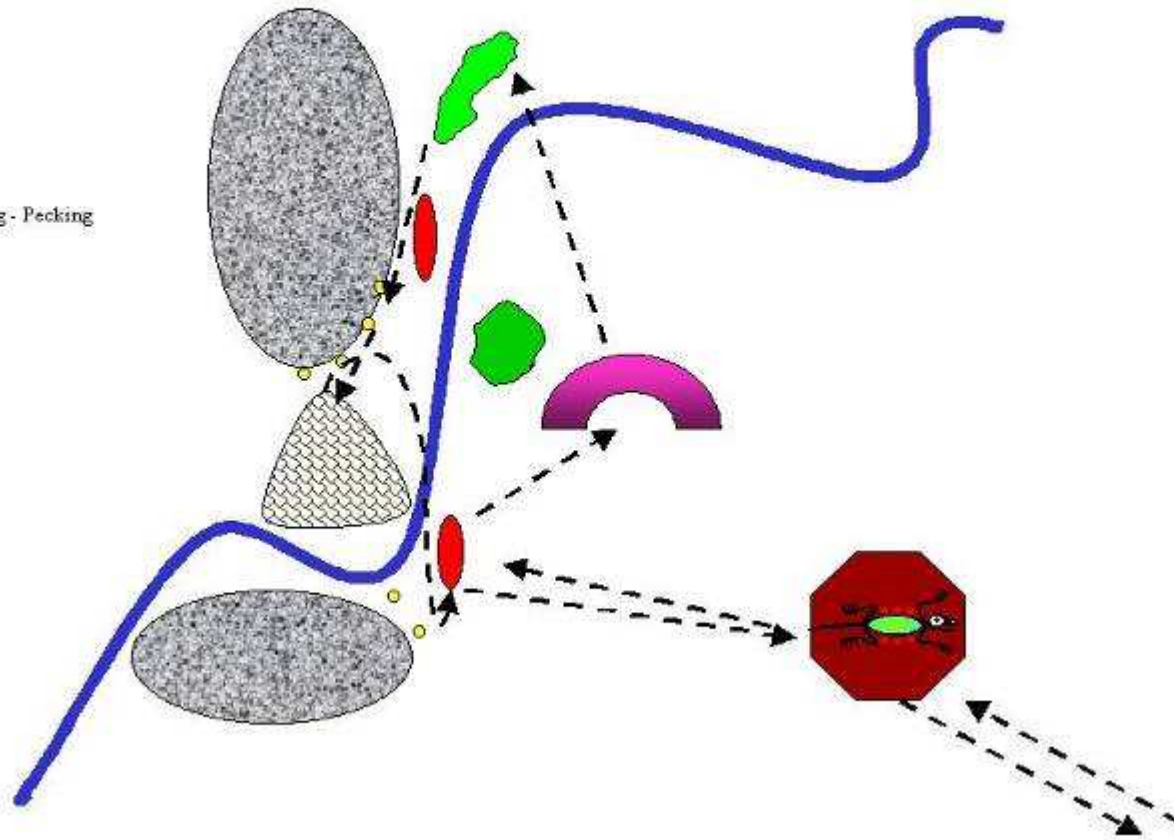


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# Cultural Landscape

## Human Elements of Riverine Landscapes

- Hot Springs
- Cave
- Paint
- Lava Flow
- Plants
- Mountain
- River
- Rock Painting - Pecking



# Volcanic Deposits

- Buckboard Mesa and Shrugham Peak, NTS
- Vision Seeking on Apache Tears and Obsidian Bombs, Shoshone Mountain, NTS



## Buckboard Mesa, NTS

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**Scrugham Peak and Buckboard Mesa from  
Shoshone Mountain.**

# Shoshone Mountain



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# Shoshone Mt., Vison Questing



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# Volcanic Minerals and Springs

- Tecopa Hot Spring – on the path to the Paiute and Hualapai afterlife
- Coso Hot Springs –
- Obsidian
- Crystals
- Sweat Lodge Rocks

# Hot Springs



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# Apache Tears



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# Crystals



# Volcanos As Components of Cultural Landscapes

- What is a cultural landscape?
- Nested cultural landscapes?
- Layered cultural landscapes?

# Sunset-Centered Cultural Landscape

