

## ESTABLISHING LATE PLEISTOCENE OCCUPATION AT AN UPLAND PALEOINDIAN SITE: LAST SUPPER CAVE, NORTHWEST NEVADA

### PROJECT BACKGROUND

The Paleoindian record of the Great Basin is comprised primarily of open-air sites with limited potential for preserving organic material that can be submitted for radiocarbon dating. Therefore, dates for Paleoindian occupations in the Great Basin largely come from rockshelters and caves, where preservation of organic material is generally better. Although rockshelters are fairly abundant in the Great Basin, few contain evidence of Paleoindian occupations and even fewer have occupations dated to the Late Pleistocene in the region. In fact, only 10 sites in the Great Basin have been dated to the Late Pleistocene, a remarkably low number for such a large area (Goebel et al. 2011). Additional archaeological sites dating to this time period are needed to develop a more complete picture of Paleoindian occupation in the Great Basin. Last Supper Cave may be one such site.

Last Supper Cave (LSC) is a stratified archaeological site overlooking Hell Creek in the High Rock Country of northwest Nevada. It was tested in 1968 and completely excavated in 1973-74 (Smith 2008; Grayson 1988; Layton and Davis 1978). The site contained an extensive record of human occupation, including a considerable Paleoindian component dated by Layton and Davis (1978) to as early as 8,960  $^{14}\text{C}$  B.P. However, the original excavators had to rely on the conventional radiocarbon dating technique, as the Accelerator Mass Spectrometry (AMS) technique had yet to be developed. They were unable to submit smaller samples for dating, such as charcoal from a hearth feature in the lowest stratum of LSC associated with stemmed projectile points and other Paleoindian lithic artifacts. A recent AMS radiocarbon date of this hearth feature produced a date of 10,280  $^{14}\text{C}$  B.P. (Smith 2008), potentially pushing back the earliest occupation of the cave into the Late Pleistocene. As a result, LSC may add to the short list of Paleoindian sites dating to the Pleistocene in the Great Basin. Additionally, while most Paleoindian sites are found at lower elevations associated with extinct wetlands and lakes (Grayson 2011; Smith and Keilhofer 2011), LSC is an upland Paleoindian site and thus represents a rarity among substantial Paleoindian occupations. Geochemical characterization of obsidian artifacts associated with the earliest Paleoindian occupation of the site using X-ray Fluorescence (XRF) analysis can reveal how upland sites were used in the Late Pleistocene relative to early sites at lower elevations (e.g., the Parman Localities [Smith 2006, 2007], the Coleman and Sadmat sites [Graf 2001]).

## **PROJECT GOALS**

Given the absence of the AMS dating technique during initial excavation and the importance of verifying Smith's (2008) early date for the site, there are two goals of this project: (1) obtain a second date from the hearth feature to confirm that LSC was occupied as early as the Late Pleistocene; and (2) place LSC in both spatial and temporal contexts in relation to other important Paleoindian sites in the region, thus providing further knowledge about how Paleoindians used both uplands and lowlands during the Late Pleistocene.

## **MATERIALS AND METHODS**

This proposal seeks support from the NAA Student Research Grant to achieve its primary goals. First, I would like to obtain a second AMS date on the potentially early hearth dated by Smith (2008). Obtaining a second Late Pleistocene date on this feature will provide additional support for the early antiquity of human occupation of LSC. Second, I will submit 10 obsidian artifacts directly associated with the early hearth to the Northwest Research Obsidian Studies laboratory for XRF analysis, a process that will add to the growing amount of XRF data for artifacts from the site and expand our knowledge of how LSC was used by early groups. Both the contents of the hearth feature and all artifacts from LSC are currently housed at the Nevada State Museum and the staff there supports ongoing work with the collection. Layton and Davis' (1978) original field notes, which are critical to interpreting the stratigraphy and spatial organization of the site, are housed at UNR. These analyses represent the first step in my thesis research on LSC lithic technological organization and my efforts to re-date the site's deposits.

## **RESEARCH SIGNIFICANCE**

Acquiring a second AMS date to confirm the Pleistocene occupation of LSC and submitting artifacts associated with the feature are both expected to make significant contributions to our understanding of Great Basin prehistory, specifically that of northwest Nevada. The number of Paleoindian sites firmly dated to the Late Pleistocene in the Great Basin is limited, particularly in the northern Great Basin where there is only a handful (Goebel et al. 2011). Establishing an early occupation of LSC will consequently provide many important research opportunities. Specifically, it will allow me to study an upland Pleistocene occupation, which is an unusual occurrence in the Great Basin. The XRF analysis of artifacts from the lowest stratum has the potential to provide significant information about how these early groups used different parts of the landscape during the Late Pleistocene. Additionally, although LSC was excavated in the late 1960's and early 1970's, many of the artifacts have yet to be analyzed. My project will make use of an existing collection for which the archaeological community has been awaiting results for

some time. I will use the results of this pilot project as the first step of my thesis research on the study of lithic technological organization at LSC. This research will include characterizing the lithic debitage and tools associated with the early occupation of the site, as well as comparing the assemblage to published results for other nearby Paleoindian sites (e.g., the Parman Localities, the Coleman and Sadmat site), thereby placing LSC within a broader context of Great Basin prehistory.

## REFERENCES

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## BUDGET SUMMARY

Item	Source	Cost
AMS date on charcoal	Beta Analytic	\$595.00
XRF analysis of 10 artifacts	Obsidianlab.com	\$380.00
<b>Total Cost:</b>		<b>\$975.00</b>

## PROJECT TIMELINE

If I receive support for this project, I will collect the materials required for my research from the Nevada State Museum promptly and send off the  $^{14}\text{C}$  sample and the 10 artifacts for XRF analysis this summer. In September, I will begin analyzing the lithic tools and debitage from the assemblage and will have a progress report available for the NAA by the deadline of December 1, 2013. I will continue work on the assemblage throughout the next two years and will finish this work and defend it by May 2015 with the completion of my thesis.