

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Data Recovery for Mitigation of Site 48YE128, Yellowstone National Park, Phase 1 Excavations and Phase 2 Analysis of Archeological Materials and Final Report Production

Discipline: Cultural Resources
Type of Project: Technical Assistance
Funding Agency: National Park Service
Other Partners/Cooperators: University of Wyoming
Effective Dates: 5/1/2010 - 12/31/2014
Funding Amount: \$182,729 [FY12 \$76,676; FY10: \$106,044]

Investigators and Agency Representative:

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Project Abstract: During late June and early July of the 2011 field season the Office of the Wyoming State Archaeologist (OWSA) conducted the final data recovery excavations at site 48YE128, a prehistoric archeological site associated with the procurement of Obsidian Cliff National Historic Landmark obsidian, previously bisected by the 1930s construction of the Grand Loop Road. Previous archeological inventory (Section 110) of this road segment identified the precontact surface and buried archeological sites that are eligible for the National Register and within the area of potential effect (APE) of the future planned road widening. YNP worked in conjunction with the Office of the Wyoming State Archaeologist (OWSA) and the Wyoming State Historic Preservation Office (WYSHPO) to develop a data recovery plan to excavate the areas to be impacted at site 48YE128. As identified in the park's road reconstruction Programmatic Agreement, the recovery of the archeological data within the area of potential effect of the road reconstruction will mitigate the adverse effects of that impact to the National Register eligible site. Fortunately, the most significant portion of this site is near Obsidian Creek, away from the road corridor, and will not be impacted by this road project. No data recovery will be conducted in that portion of the site. The data recovery plan is a multi-year project designed to retrieve enough archeological data and information from areas planned for construction disturbance to get an understanding of the nature and significance of the site. Previous archeological survey of the site identified 6 lithic concentrations, the lithic concentrations on the west side of the road being most dense.

The excavation work at this site began in 2010 with 20 shovel tests and 19 1-meter X 1-meter excavation units and was completed in 2011 with the excavation of six additional 1-meter X 1-meter units down to 70 cm below surface level to Pleistocene gravels. Over 8,000 artifacts were retrieved in the 2011 excavation, mostly consisting of obsidian flake stone debris and a few tools, from preliminary field identification. All artifacts were bagged and labeled by excavation unit level and taken to the OWSA laboratory for further identification and curation. The combined 2010 and 2011 excavations at 48YE128 recovered over 18,000 chipped stone artifacts from the PaleoIndian to the Late Prehistoric periods in a combined total of 25 1-meter X 1-meter excavation units. Unfortunately, there was little vertical separation or intact stratigraphy and the upper levels contain relatively higher quantities of artifacts indicating more use of the area during later culture periods. No features were uncovered within the road corridor area of potential effect and few diagnostic artifacts preliminarily indicate a stone tool production area rather than domestic activities such as hide production or food preparation. The larger artifacts were plotted *in situ* and all of the artifacts will be subjected to various source, use, and residue analysis for the second phase of the data recovery.

Work to Be Performed

Phase 2 of the recovery of archeological data from the road corridor area of potential effect of site 48YE128, located south of Sheepster Cliffs on the Norris to Golden Gate segment of the Grand Loop Road, will involve completing a variety of analytical processes and prepare the artifacts for museum curation. At the OWSA laboratory the artifacts will be closely examined and put into categories of commonly found chipped stone tools and debitage. A combination of morphological and technological categories will be employed for tools and debitage will be categorized into commonly established flake types. Bifaces will be classified into stages of manufacture and reduction and use-phase categories. Use-wear analysis will also be conducted on appropriate artifacts. Flaked stone tools will be organized by formal tools, expedient tools, and other lithic artifact types such as cores and tested cobbles. Projectile point styles and chronological affiliations will follow the Northwestern Plains chronology described by Frison (1991), Mummy Cave, and the Myers-Hindman sites chronologies will be employed. Spatial analytical methods including density plots

and artifact refitting will also be employed. Selected artifacts will undergo protein residue analysis and obsidian source analysis. If carbon is recovered in sufficient quantity, radiocarbon dates will be identified.

Analysis will also be conducted on the excavation sites to determine agents that may have had a hand in deriving the landforms and matrix in which the artifacts were recovered. Macrofloral analysis of recovered soils and sediments may provide information on the environment and activities of the park's early visitors. Debitage analysis may include traditional flake type analysis, and Sullivan and Rozen flake types.

The final product, the data recovery report will synthesize all pertinent and significant archeological data recovered. Research topics such as the environmental zonation and human settlement, refinement of the Paleoenvironmental sequence, culture history, lithic resource procurement and technology, season of occupation, floral and faunal resource procurement, and exchange networks will be addressed if pertinent information on each topic is available from the excavation.

Outcomes with Completion Dates: Due Date for Preliminary Excavation Report: May 31, 2014

Keywords: archeological artifacts, subsurface excavations, prehistoric site 48YE128, Yellowstone National Park, University of Wyoming