

ARCHEOLOGY PROJECT REPORTING

PROJECT TITLE: University of Montana Archeological and Geomorphological Inventory and NR Testing on the East Shore of Yellowstone Lake

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YELLOWSTONE LAKE EAST SHORE SURVEY

RM-CESU AGREEMENT J1580100211, UMT-233, PMIS 42340

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Due to the current uplift caused by the magma chambers under Yellowstone Lake, 2,000-10,000+ year old previously buried cultural remains are being uncovered and lost into the lake as the shoreline erodes. This natural phenomenon is destroying some of the oldest archeology in YNP -cultural information which will help us understand human use of the area and its resources. Also recent forest fires have resulted in a loss of vegetation in this area, resulting in additional shoreline erosion. All of these factors, as well as looting by park visitors, contribute to the loss of significant archeological data.

This is a multi-year project funded under the NPS CRPP System-wide Archeological Inventory Program beginning in 2006, funded for 5 years. Early-on the project experienced some delays due to cooperator efficiency which has been resolved through coordination with a new cooperator under the RM-CESU agreement program. The 2010 project technically completes the first phase of the systematic inventory of the shoreline of Yellowstone Lake (Year 3 of 5) and initiated the evaluation and National Register testing of previously located archeological sites. The 2010 work also provided condition assessments on some of the previously identified sites and information for development of the scope of work for the FY 2011 project.

The survey area is located on the northeast, east, and southeast shores of Yellowstone Lake, in the Lake Butte, Frank Island, and Alder Lake 7.5 minute quadrangle maps, in the central portion of Yellowstone National Park. The survey area is composed of exposed and wooded lake shore terraces, sandy beaches, marsh lands and thermal areas. There are developed trails to access the northern portion of the survey area, but some areas will be better accessed by boat and/or horse pack. The survey area is approximately 19 linear miles and the archeological sites documented are surface and subsurface prehistoric sites. Historic archeological sites are few, if any, and have been previously documented. The survey area is some of the more remote areas within YNP.

Due to the danger, transportation costs, and rigors of protocol for backcountry work in Yellowstone NP, no volunteers were engaged in actual field work for this project. NPS staff archeologist, Elaine Skinner Hale, provided coordination and technical assistance (200 hours); the YNP Telecommunications, Back-country Office, Bear Management, and Lake Rangers all provided support, equipment and training (100 hours) -on-going

through the 2010 project. The concessionaire, Xanterra, provided ½ price boat shuttle services (\$1,500.00). Tobin Roop, Chief of Cultural Resources for YNP, provided management oversight for the project (20 hours). The University of Montana, Geology Department, Dr. Steven Sheriff, provided assistance in development of shoreline profiles to assist in identification of areas and terrain that would have been conducive to prehistoric camps (60 hours). The University of Montana professional team conducting the field operations contributed approximately 2048 paid staff hours. Additional hours are being accrued for artifact analysis and development of the FY2011 project.

The University of Montana completed its 2010 field season between July 15 and September 15, 2010, along the east shore of Yellowstone Lake. The university surveyed 26 miles of previously-unrecorded lake shoreline between the Nine Mile trail head and the Trail Creek Cabin. A total of 46 sites were visited along the east shore during this survey. An additional ~20 miles of shoreline were re-visited on the south shore of Yellowstone Lake to conduct condition assessments of approximately 35 sites previously recorded in that area. In total, the University of Montana surveyed 1,040 acres along the eastern and southern lake shores under this RM-CESU agreement. In addition to site identification, the university evaluated 24 sites to determine their eligibility for listing on the National Register of Historic Places; all of these sites are on the east shore. The east shore sites were tested by the excavation of 414 shovel test pits and five 1x1-meter test units, yielding approximately 600 stone artifacts. The test units were excavated to salvage three hearths eroding out of the lake shore in the northeastern portion of the lake near Clear and Cub Creeks. Radiocarbon dates of these three hearths indicate that the sites were occupied approximately 1,500 years ago during the Late Archaic period. Ethnobotanical and pollen analysis of the feature contents is on-going, as is analysis of source provenance of approximately 50 obsidian artifacts collected during survey and excavations. Geomorphology of lake terraces was also conducted by the University of Montana in 2010 to determine the antiquity of lake shores in several locations along the eastern shore, including Columbine Creek, Alluvium Creek, Park Point, and Clear Creek. This will help Yellowstone understand site locations relative to lake terraces and ensure their proper management.

The 2010 component was successfully completed at the project cost of \$180,000, of which \$153,191 were direct costs and \$26,809 were indirect CESU 17.5% overhead costs. The total multi-year project costs for PMIS 42340 is \$535,000. No funds were received from non-NPS sources for this component and all FY2010 funds were obligated through the RM-CESU to the University of Montana.

Prepared by Elaine Skinner Hale, Archeologist, RPA, Yellowstone National Park 307-344-2156, November 17, 2010