

Summary Reports, Montana State University, Leslie Davis and Mack Shortt, Museum of the Rockies, Montana State University-Bozeman, Bozeman, MT, 59717, 406-994-6614.

Shortt, Mack W., M.A., *The Archaeological Inventory of Portions of the South Shore of West Thumb and Testing of the Osprey Beach Locality, Yellowstone National Park: The 2000 Field Season Final Report*, Davis, Leslie B., Editor, Cooperative Agreement 2002.

The 2000 MOR archaeological investigations along the south shore of West Thumb were initiated as a result of a 2-day field reconnaissance completed by Dr. Donald Blakeslee from Wichita State University (WSU) during early August 2000. The result of Blakeslee's survey was the collection of a large number of Precontact lithic remains from beach surface contexts. Included in the relatively large lithic tool assemblage were several specimens diagnostic of not only the Middle Precontact Period, but also the Early Precontact Period (Table 1). Specifically, artifacts typical of the Fishing Bridge Subphase (Cody Complex; Frison and Todd 1987) were identified.

The 2000 MOR field program along the shore of West Thumb was conducted under the auspices and guidance of the Branch of Cultural Resources in Mammoth Hot Springs. It included a 1-day revisit of the shore for the purpose of mapping and recovering significant archaeological materials not collected by WSU. It was also anticipated that a reconnaissance of the site area would improve our understanding of the geological associations of the observed archaeological materials. After consultation with Dr. Johnson, Yellowstone National Park Archaeologist, we decided that the immediate course of site conservation action should include the mapping and collection of remnant artifacts from the beach surface. Indeed, annual high water levels in the past had contributed to the exposure of buried archaeological deposits, including a large number of easily recognizable formal stone tool types.

The MOR field project also included the testing of a landform edge adjacent to and directly above several Early Precontact Period artifact findspots identified by WSU on the beach bottom (Section 2). The area adjacent to the beach became known as the Osprey Beach locality. The goal of this 4-day evaluative excavation program was to recover a small portion of the adjacent landform prior to its eventual erosion. It was hoped that the removal of these sediments would lead to the recovery of Early Precontact Period archaeological materials similar to those observed and ultimately collected on the beach. This, in turn, would result in our gaining a better understanding of the nature and origin of the artifacts on the beach and provide an opportunity for the preliminary evaluation of eligibility for nomination to the National Register of Historic Places.

To facilitate site relocation, the provenience of each artifact was noted by recording the Universal Transverse Mercator (UTM) grid coordinates of each individual lithic tool collected. This was undertaken through the use of a hand-held Global Positioning System (GPS) unit. Improved accuracy of the hand-held GPS unit was facilitated by removal of Selective Availability (SA) by the Clinton Administration in early 2000. Individual artifact locations were then marked on a 1:24,000-scale United

States Geological Survey (U.S.G.S.) topographic map. Portions of the beach area were photographed in color-positive 35-mm film.

### Test Excavation

Two-person teams consisting of an excavator and a screener undertook the excavation of each test unit at the Osprey Beach Locality. All excavation was performed using standard archaeological field techniques outlined in the Archaeological Treatment Plan (National Park Service 1993:65-73). Each excavator kept a daily record of his activities and pertinent site information in a field notebook. Excavation was undertaken by the use of trowel and shovel. All excavated sediments were dry-screened through 6.35-mm industrial mesh. Three-point provenience was not recorded for individual pieces of debitage or, if present, small zooarchaeological specimens. The assessment of each unit relied on arbitrary 10-cm excavation levels as the basis for proveniencing data. To further enhance control over provenience, each excavation level was divided into 50 x 50-cm quadrants. To avoid crosscutting natural strata, different sediments within arbitrary levels were screened separately. All archaeological materials were immediately bagged or packaged for special handling (e.g. aluminum foil for radiocarbon samples). Upon completion of each excavation unit, profiles and photographs were made and the unit was backfilled and revegetated.

### *Results*

Three Precontact archaeological sites (48YE409, 48YE410, and 48YE411) were revisited by the 2000 MOR crew, although, as will be discussed, the boundary between 48YE409 and 48YE410 was not clear. Indeed, it is recommended that, until further archaeological studies are conducted, the entire beach complex be considered as site complex 48YE409/48YE410 (Section 2.1.1). Only site 48YE411 is considered a separate archaeological/geographical entity (Section 2.2).

### Surface Reconnaissance

The variety of projectile points collected by WSU and by the MOR crew indicates that the entire site 48YE409/48YE410 complex may contain at least four components that date to the Early and Middle Precontact Periods (ca. 9,360 to ca. 1,600 years B.P.; Tables 1 and 2). As listed in Table 2, 11 of 22 (50%) of the temporally diagnostic artifacts are classifiable as Early Precontact forms (projectile points and Cody knives). Excluding the Cody Complex and other Early Precontact Period projectile points and bifaces, the temporally diagnostic artifact assemblage includes projectile points identified as Lamar Valley Subphase (ca. 3,000 to 1,600 years B.P.), Hayden Valley Complex (ca. 4,500 to 3,000 years B.P.) and Corwin Springs Complex (ca. 7,750 to 4,500 years B.P.) forms, manifestations that indicate heavy utilization and occupancy of the lake shore during the Middle Precontact Period (Tables 1 and 2). Late Precontact Period (Table 1) projectile points were not identified during the WSU or MOR field programs.

### Test Excavation

The excavation program at the Osprey Beach Locality demonstrated that, by at least  $9,360 \pm 60$  RCYBP, Early Precontact Cody Complex peoples were traveling in the heart of Yellowstone country to exploit local game and possibly plant populations. While around the lake, these people exploited a relatively wide variety of mammalian species, at least as indicated by the test results of blood residue analyses. Lagomorphs, canids, Rocky Mountain bighorn sheep/mountain goats, and deer/moose are all represented on the formed tools found during the test excavation and survey programs. While in the area around the lake, site inhabitants also utilized obsidian from the Obsidian Cliff Plateau to make projectile points and specialized bifaces. It is interesting to note, however, that other obsidian sources were also utilized. Non-local lithic material types were also used by Osprey Beach peoples. The production of wooden shafts, and, possibly, the preparation of animal hides are indicated by the presence of, respectively, a sandstone shaft abrader and a pumice hide abrader.

The variety of mammalian species represented by blood residues on Osprey Beach artifacts indicates that a diverse economy typified the Cody Complex adaptation around Yellowstone Lake. In addition, the “mixture” of Cody Complex projectiles with the parallel-obliquely flaked point suggests that not only Cody Complex peoples, but also other contemporaneous groups were traveling from adjacent plains, intermountain basins, and foothills to the area around Yellowstone Lake. Although the 2000 program on the south shore of West Thumb did not provide direct evidence of season of site occupation, I would suggest that the use of the area was likely seasonal and limited to the spring to fall times of the year when human groups coalesced on the Yellowstone Plateau. This hypothesis will be tested by future archaeological fieldwork at the Osprey Beach Locality and other sites on the shores of Yellowstone Lake.

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Shortt, Mack W., M.A., *The Museum of the Rockies Archaeological Assessment of Nine Sites in the Mammoth-Gardiner Corridor, Yellowstone National Park, Montana and Wyoming: 2000 Field Season Final Report*, Reeves, Brian O.K., Editor, Cooperative Agreement, 2003.

The Museum of the Rockies (MOR) Archaeological Assessment of Nine Sites in the Mammoth-Gardiner Corridor was carried out between June 15 and July 14, 2000. Field studies were completed under the direction of Mack W. Shortt (Project Archaeologist). Assisting crew members were Tom Besom, Doug Mitchell, and Kevin Thorson. John Reynolds volunteered for the duration of the project. Other volunteer personnel included Rick Kramer, Sean McEldery, Doreen Packila, and Bob Wilkins.

The testing program was undertaken in response to Yellowstone’s Park-wide Road Improvement Program aimed at redeveloping the 329-mile (526-km) road system in the park. Indeed, many segments of the Grand Loop Road through Yellowstone are structurally and/or functionally deficient. Research, in compliance with Section 106 of the National Historic Preservation Act, as amended, was conducted to record undiscovered sites and to revisit and assess previously known sites in the study areas. These studies

were undertaken to assess the potential for site damage or destruction due to proposed road reconstruction and to evaluate each site's eligibility for the National Register of Historic Places. Field studies also provided opportunities to assess the research and interpretive potential of those sites recorded. The information derived from the Archaeological Assessment of Nine Sites in the Mammoth-Gardiner Corridor is highly significant for the development of future archaeological data recovery plans.

The list of sites at which evaluative excavations were conducted included 24YE73, 24YE74, 24YE94, 24YE96, 24YE102, 24YE103, 24YE118, 48YE288, and 48YE298. With the exception of site 24YE118, all sites were discovered during the 1988 MOR inventory in the Mammoth-Gardiner Corridor (Shortt 1999a). Site 24YE118 was recorded during the 2000 site assessment program discussed in this report.

**Site 24YE73** is a Precontact Native American campsite. The 2000 MOR crew returned to the site 24YE73 area to undertake evaluative excavations. The assessment was initiated by establishing a series of 1 x 1-m evaluation units adjacent to the old Mammoth-North Entrance Station gravel road. Labeled 1 through 3, the first units were located in the general vicinity of Area 1. They were, as per the requirements of a FHWA testing program, established in an area directly adjacent to the existing road. Upon completion of the three initial excavation units, an additional five 1 x 1-m units were established on the landform. Finally, three 50 x 50-cm shovel tests (ST1 to ST3) were undertaken at site 24YE73 to further assess specific portions of site 24YE73.

The 2000 MOR test excavation program at 24YE73 verified the presence of buried archaeological deposits within the areas defined by the results of the ground surface reconnaissance, eight excavation units and three shovel tests. As such, buried archaeological deposits occur in an elongate area that measured 150 m (southwest-northeast) x 30 m (maximum northwest-southeast).

Although impacts relating to past infrastructure development activities and natural processes damaged buried archaeological deposits, the site still contains significant information relative to Yellowstone National Park's archaeological research themes (National Park Service, 1993; Reeves, 2000.) Site 24YE73 is considered eligible for the National Register of Historic Places under criterion D. The site is a component part of the large Precontact Native American site complex near the confluence of the Yellowstone and Gardiner Rivers. It has the potential to yield information pertaining to Late Precontact Period culture history, lithic resource procurement and utilization patterns, subsistence activities (zooarchaeological analysis and blood residue analyses of stone tools), settlement patterns, trade routes and networks, and domestic activities. One could also secure a radiocarbon date through the submission of a bone sample for radiocarbon analysis.

**Site 24YE74** is a Precontact Native American archaeological site. The MOR field crew returned to site 24YE74 to quantify observable ground surface artifacts and to undertake evaluative excavations. The former was undertaken by pin-flagging each individual artifact occurrence then counting flake and lithic material types. Three areas

were identified (Areas 1, 2, and 3). The subsurface assessment was initiated by establishing three 1 x 1-m evaluation units west of the Mammoth-North Entrance gravel road. Upon completion of the initial excavations, two additional units (Units 4 and 5) and three shovel tests (ST1 to ST3) were undertaken.

The 2000 MOR archaeological investigations at site 24YE74 indicated that a large portion of the basin and the toe of the rocky landform in the vicinity of Unit 4 contained Precontact archaeological deposits. Indeed, the distribution of surface artifacts indicated that archaeological materials occurred in an area that approximated 65 m (northwest-southeast) x 50 m (northeast-southwest). Buried archaeological deposits, while likely occurring in the same area, were determined to exist in a 35 m (northwest-southeast) x 23 m (northeast-southwest) area within the larger surface scatter. As illustrated in Figure 33, the southwestern boundary of site 24YE74 remains indeterminate.

Although impacts relating to past infrastructure development activities and natural processes severely damaged buried archaeological deposits, the site still contains significant information relative to Yellowstone National Park's archaeological research themes (National Park Service, 1993; Reeves 2000). Site 24YE74 is considered eligible for the National Register of Historic Places under Criterion D. The site is a component part of the large Precontact Native American Site complex in the Mammoth-Gardiner Corridor. It has the potential to yield information pertaining to Middle Precontact Period culture history, lithic resource procurement and utilization patterns, subsistence activities (zooarchaeological analysis and blood residue analyses of stone tools), settlement patterns, trade routes and networks, and domestic activities. Through the submission of a bone sample for radiocarbon analysis, one could also secure a date.

**Site 24YE94** is a Precontact Native American lithic scatter and cairn. The 2000 MOR crew returned to site 24YE94 to undertake evaluative excavations. Initially, however, the crew established preliminary site boundaries by pin-flagging each individual artifact occurrence. A scatter of lithic debitage was observed evenly distributed on the surface of the site within the boundary that measured 47 m (southwest-northeast) x 30 m (northwest-southeast). The subsurface assessment of site 24YE94 was initiated by establishing two 1 x 1-m evaluation units adjacent to the old Mammoth-Gardiner gravel road.

The 2000 MOR test excavation program at site 4YE94 verified the presence of buried archaeological deposits within the area defined by the ground surface reconnaissance. Two 1 x 1-m excavation units contained lithic artifacts and zooarchaeological specimens. Although impacts relating to past infrastructure development activities and natural processes damaged buried archaeological deposits, the site still contains significant information relative to Yellowstone National Park's archaeological research themes (National Park Service, 1993, Reeves, 2000).

Site 24YE94 is considered eligible for the National Register of Historic Place under Criterion D. The site is a component part of the large Precontact Native American

Site complex in the Mammoth-Gardiner Corridor. It has the potential to yield information pertaining to Middle Precontact Period culture history, lithic resource procurement and utilization patterns, subsistence activities (zooarchaeological analysis and blood residue analyses of stone tools), settlement patterns, trade routes and networks, and domestic activities. Through the submission of a bone sample for radiocarbon analysis, one could also secure a radiocarbon date. Although its function and age is presently unknown, the cairn has the potential to provide information pertaining to human movement patterns and possibly to ceremonial activities in Yellowstone National Park. A relatively large number of cairns, cairn alignments and cobble features have been recorded in the Mammoth-Gardiner Corridor (e.g. Shortt 1999a and references therein.)

**Site 24YE96** is a Precontact Native American archaeological site. The MOR field crew returned to quantify observable ground surface artifacts and to undertake evaluative excavations. Surface artifacts were identified in an area that approximated 55 m (southwest-northeast) x 55 (northwest-southeast). It must be noted, however, that the northwest-southeast measurement was determined by the inclusion of a single artifact 33 m northwest of the main site area. As such, more accurate dimensions would be 55 m (southwest-northeast) by 35 m (southeast-northwest). A surface artifact concentration that measured 23 m (northwest-southeast) x 35 m was identified in that part of the site adjacent to the arroyo.

The 2000 subsurface assessment of site 24YE96 was initiated by establishing three 1 x 1-m evaluation units (Units 1 to 3) in the main site area. This method of site evaluation was chosen instead of shovel tests in transects because there was no question of site boundaries. Upon completion of the initial excavations, two additional 1 x 0.5-m units (Units 4 and 5) were undertaken. The test excavation program at the site verified the presence of buried archaeological deposits within an area defined by the results of the ground surface reconnaissance and four of five excavation units (Units 1 to 4).

Although impacts relating to natural processes damaged buried archaeological deposits, the site still contains significant information relative to Yellowstone National Park's archaeological research themes (National Park Service, 1993, Reeves 2000). Site 24YE96 is considered eligible for the National Register of Historic Places under Criterion D. The site is a component part of the large Precontact Native American site complex at the north end of the Mammoth-Gardiner Corridor. It has the potential to yield information pertaining to Middle Precontact Period culture history (probably McKean Complex), unique lithic resource procurement and utilization patterns, settlement patterns, trade routes and networks, and domestic activities.

**Site 24YE102** is a Precontact Native American. The 2000 MOR crew returned to the site to quantify surface artifacts and to undertake evaluative excavations. All observable surface artifacts were located on or directly adjacent to the edge of the landform and the slope below it in an area that approximated 15 m (east-west) x 10 m (north-south).

The subsurface assessment of site 24YE102 was initiated by establishing a transect of 50 x 50-cm evaluative shovel tests at 5-m intervals. Referred to as Transect A, its constituent shovel tests were labeled A1 through A9 in a northeast-southwest orientation. This particular approach to site assessment was undertaken as a response to the complete lack of surface artifacts on the flat portion of the landform. Upon completion of the subsurface tests in Transect A, four other transects (B, C and D) and two randomly spaced tests were established at site 24YE102. In total, 25 tests were completed. One, ST C4, was expanded into a 1 x 0.5-m trench.

The 2000 MOR test excavation program at site 24YE102 verified the presence of buried archaeological deposits within the areas defined by the results of the ground surface reconnaissance, 24 50 x 50-cm shovel tests, and one (ST C4) 1 x 0.5-m trench. While surface artifacts were limited to a 10 x 15-m portion of the landform's edge and adjacent side slope, the testing program described above indicated that archaeological materials occurred in a minimum 50 (northeast-southwest) x 35-m (northwest-southeast) area.

Although impacts relating to natural and a limited number of recognized non-natural (human-related) processes damaged buried archaeological deposits, the site still contains significant information relative to Yellowstone National Park's archaeological research themes (National Park Service 1993; Reeves 2000). Site 24YE102 is considered eligible for the National Register of Historic Places under Criterion D. The site is a component part of a large Precontact Native American site complex. It has the potential to yield information pertaining to Middle Precontact Period culture history (probably McKean Complex), unique lithic resource procurement and utilization patterns, settlement patterns, trade routes and networks, and domestic activities.

**Site 24YE103** is a mixed Precontact Native American/Postcontact Euroamerican archaeological site. The 2000 MOR crew returned to the 24YE103 site to undertake evaluative excavations. Initially, the crew attempted to quantify observable ground surface Precontact archaeological materials. None were detected. Several Postcontact Euroamerican artifacts were, however, noted but not collected. Artifact types included clear glass bottle fragments, manganese glass and bottle fragments, aqua glass and bottle fragments, brown beer bottle glass fragments, a beer can with a "church-key" punched opening, tin cans, milled wood with wire nails protruding, unidentified pieces of iron, and an iron hoop.

The subsurface assessment of site 24YE103 was initiated by establishing two transects, each incorporating a series of excavation units. Transect A, consisting of six 1 x .50-m evaluation units (Units A1 to A6; Figure 40) at 5-m intervals, paralleled the old Mammoth-North Entrance Station gravel road on a northwest-southeast bearing of 151 degrees. Originating 5 m northeast of Unit A5, Transect B consisted of three 50 x 50-cm shovel tests established at 5-m intervals (Units B1 to B3). It was aligned along a northeast-southwest bearing (37 degrees) in an area that also appeared to be characterized by considerable soil deposits.

The 2000 MOR test excavation program at site 24YE103 did not result in the recovery of buried Precontact Native American archaeological deposits. Instead, the field program verified the presence of buried Postcontact Euroamerican archaeological deposits within the areas defined by the results of the three excavation units (Units A2 to A5) and one shovel test (STB3). The distribution of surface artifacts indicated that archaeological materials occurred in an area that approximated 55 (north-south) x 25 m (east-west). The east-west measurement was that distance from the road bed to STB3. Buried archaeological deposits, while likely occurring in the same area, were determined to exist in a 20 m x 20 m area within the larger surface scatter. Those measurements were based upon the results of Units A2 to A5 and STB3.

Although impacts relating to past infrastructure development activities and natural processes likely damaged buried Postcontact archaeological deposits, site 24YE103 contains intact, buried Euroamerican archaeological deposits. It could contain significant information relative to Yellowstone National Park's Euroamerican archaeological research themes (Hunt 1993). Information pertaining to, for example, the Diversification and Expansion Period (1893 to 1915) or Transition and Reformation Period (1916 to 1942) of tourism could be gleaned from the study of the site (Hunt 1993:24-35). Determination of eligibility would be further enhanced and finalized by additional subsurface testing and archival and historical studies aimed at determining the site's age and function. Additional analyses of bottles and other glass containers could also provide insight into the age of the site. As such, the Postcontact Euroamerican component at site 24YE103 is recommended as unevaluated.

In light of the absence of buried FCR, lithic debris, and stone tools, I recommend that the Precontact Native American component at site 24YE103 be considered as not eligible for nomination to the National Register of Historic Places.

**Site 24YE118** is a large lithic scatter. The archaeological site assessment of site 24YE118 was initiated by establishing a series of 1 x 1-m evaluation units adjacent to the mammoth-Gardiner road. Labeled 1 through 5, the units were 20-m apart and were established in a transect paralleling the existing road. Upon completion of the units in the initial transect, a short transect of 3 units was then completed adjacent to the former irrigation ditch (Units 6, 7, and 10). Two final test excavations were completed in more central areas of the site (Units 8 and 9).

The 2000 test excavation program at site 24YE118 verified the presence of buried archaeological deposits within the areas defined by two excavation unit transects (Units 1 to 6, 7, and 10) and two isolated units (Units 8 and 9) completed at the site. As such, buried archaeological deposits occurred in a triangular area (with two sides adjacent to the roads) measuring a minimum of 80 m (northwest-southeast) x 60 m (northeast-southwest).

Although impacts related to past infrastructure development activities and natural processes damaged buried archaeological deposits, the site still contains significant information relative to Yellowstone National Park's archaeological research themes (National Park Service 1993; Reeves 2000). Site 24YE118 is considered eligible for the



National Register of Historic Places under Criterion D. The site is a component part of the large Precontact Native American site complex at the north end of the Mammoth-Gardiner Corridor, near the confluence of the Yellowstone and Gardiner Rivers. It has the potential to yield information pertaining to lithic resource procurement, possibly subsistence (fauna and floral resources through blood residue analyses), settlement patterns, trade routes and networks, and domestic activities. Through the application of obsidian hydration or radiocarbon dating, one could also glean information pertaining to culture history. The former is a suitable method for determining the relative ages of obsidian artifacts.

In the event whereby avoidance of the site cannot be achieved, additional studies are required prior to the destruction of road-side cultural deposits through construction activities. Block excavations consisting of contiguous units adjacent to the MOR test excavation units should be considered as the foundation of a mitigative data recovery plan. Such a program could also further assess the sites research/interpretive potential and lead to the recovery of fire-cracked rock, zooarchaeological specimens, or macrobotanical remains not collected during the 2000 MOR excavation.

**Site 48YE288** is a Precontact Native American campsite and wickiup-like feature of unknown age (Figures 4 and 5). The MOR crew returned to site 48YE288 area to complete the evaluative program. Despite intensive ground surface inspection by six MOR crew members, no archaeological specimens were observed. The subsurface assessment of site 48YE288 was initiated by establishing a transect of 50 x 50-cm evaluative shovel tests at 5-m intervals. Referred to as Transect A, its constituent shovel tests were labeled ST A1 through ST A7, and were aligned in a northerly orientation. Upon completion of the tests in Transect A, one other transect (B) and two randomly-spaced tests were established. In total, 11 50 x 50-cm tests were completed. One, ST A1, was expanded into a 1 x 0.5-m trench.

The 2000 MOR test excavation program at site 48YE288 verified the presence of buried archaeological deposits within the areas defined by the results of 11 50 x 50-cm shovel tests. The testing program described above indicated that archaeological materials occurred in a minimum 22.5-m (north-south) x 13.5-m (east-west) area. It must be recognized that these measurements were based upon the distances between the 1998 ST 3 and the 2000 ST A6 and ST B1 and ST B4. Buried Precontact Native American archaeological campsite remains appeared to be coincident with the general shape and area of the small basin north of the wickiup.

Although impacts related to processes damaged buried archaeological deposits, the site still contains significant information relative to Yellowstone National Park's archaeological research themes (National Park Service 1993; Reeves 2000). Site 48YE288 is considered eligible for the National Register of Historic Places under Criterion D. The site is a component part of the large Precontact Native American site complex in the Mammoth-Gardiner Corridor. It has the potential to yield information pertaining to lithic resource procurement and utilization patterns, subsistence activities through zooarchaeological analysis, settlement patterns, trade routes and networks, and

domestic activities. Specialized food processing activities may be represented by the zooarchaeological remains and scattered subsurface FCR. One could also secure a radiocarbon date through the submission of a bone sample for radiocarbon analysis. Again, site 48YE288 was unique in the Mammoth-Gardiner Corridor study in that it yielded unequivocal FCR.

At the time of writing, the age of the wickiup-like structure at the site's southern margin is still unknown. However, that no mention is made of the 5-m x 4-m wickiup in the notes and writings of the late Aubrey Haines, former Yellowstone National Park historian suggests that it is of recent construction (Ann Johnson, personal communication). As such, it is likely that the wickiup is a construction of concession employees who hike up to the site area from their dormitories in Mammoth. The 2000 MOR archaeological assessment of site 48YE288 was oriented toward the buried Precontact component identified during the 1998 field season. Mapping of the wickiup was not undertaken.

**Site 48YE298:** The MOR field crew returned to site 48YE298 to quantify observable ground surface artifacts and to undertake evaluative excavations. The former was undertaken by pin-flagging each individual artifact occurrence then counting flake and lithic material types. The latter was initiated by the establishment of three 1 x 1-m units at the site's north end. Four 50 x 50-cm shovel tests located 10-m apart were subsequently completed at the site's south end, adjacent to the roadbed.

The 2000 test excavation program at site 48YE298 verified the presence of buried archaeological deposits within the areas defined by the results of the ground surface reconnaissance, three excavation units (Units 1 to 3) and three shovel tests (ST 1 to ST 3). Shovel Test 4 was archaeologically sterile. The distribution of surface artifacts indicated that archaeological materials occurred in an area that approximated 85 m (north-south) x 33 m (east-west). At the north end of the site, buried archaeological deposits were determined to exist in a 25 m x 25 m area within the larger surface scatter. The 2000 program demonstrated that the archaeologically richest portion of the site was, in fact, at the north end of the landform. It yielded the greatest number of surface and subsurface artifacts (Tables 19 to 21). That portion of site 48YE298 south of Units 1 to 3 (high density surface artifact concentration), few artifacts were found on the ground surface or in the shovel tests.

Although impacts relating to natural and, to a lesser extent, past infrastructure development activities damaged buried archaeological deposits, the site still contains significant information relative to Yellowstone National Park's archaeological research themes (National Park Service 1993; Reeves 2000). Site 48YE298 is considered eligible for the National Register of Historic Places under Criterion D. The site is a component part of the large Precontact Native American site complex in the Mammoth-Gardiner Corridor. It has the potential to yield information pertaining to lithic resource procurement and utilization patterns, subsistence activities (zooarchaeological analysis and blood residue analyses of stone tools), settlement patterns, trade routes and networks,

and domestic activities. One could also secure a radiocarbon date through the submission of a bone sample for radiocarbon analysis.

In the light of low artifact yields in questionable contexts, I recommend that annual monitoring and artifact collecting be undertaken in the site area south of Units 1 to 3 on the sloping landform (areas adjacent to ST 1 to ST 4 and east to the landform edge). No other archaeological studies are recommended for that area. In the event whereby avoidance of the site cannot be achieved, additional studies are required prior to the destruction of road-side cultural deposits through construction activities. Block excavations consisting of contiguous units adjacent to the MOR test excavation units should be considered as the foundation of a mitigative data recovery plan. Such a program could also further assess the sites research/interpretive potential and lead to the recovery of fire-cracked rock, additional zooarchaeological specimens, or macrobotanical remains not collected during the 2000 MOR excavation. Finally, the northern portion of site 48YE298 should be monitored and collected on an annual basis with artifact proveniences recorded.

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Shortt, Mack W., M.A., *Results of the Museum of the Rockies Archaeological Site Inventory at the Confluence of Slough Creek and the Lamar River, Yellowstone National Park, Wyoming: 2001 Field Season Final Report*, Davis, Leslie B.; Johnson, Ann M.; and Reeves, Brian O.K., Editors, Under Cooperative Agreement No. CA-1268-1-9017; 2002.

The 2001 MOR Archaeological Site Inventory at the Confluence of the Lamar River and Slough Creek was undertaken as part of a long-term commitment by the Branch of Cultural Resources in Yellowstone National Park to complete archaeological site inventories along major river corridors. Field research, conducted under the guidance of Dr. Ann Johnson, Yellowstone National Park archaeologist, was conducted to record undiscovered archaeological sites and to revisit previously known sites in the study area. Field studies were undertaken to assess the potential for site destruction due to natural or non-natural (human-related) processes and to evaluate the National Register of Historic Places eligibility and research/interpretive potential of each site.

Research questions identified in the “Archaeological Treatment Plan for Yellowstone’s Grand Loop Road Federal Highway Projects; Prehistoric Sites” (National Park Service 1993) were initially used as general guidelines for the 2001 trails reroute inventory. More recently, questions proposed on the research design developed for inventory studies in Yellowstone’s Northern Range (Reeves, 2000a) were addressed during interpretation of the data collected. Cannon, Crothers, and Pierce (1996:20) also suggest that, because Yellowstone National Park is unique in its location adjacent to several physiographic areas, “several different cultural and natural influences on the socioeconomic organization of groups who utilized the area may have occurred.” In light of this assertion, fundamental culture-historical questions pertaining to Precontact cultural affiliation, temporal association, faunal, floral, and lithic resource utilization, and settlement patterns were germane to the direction of the 2001 field program and to subsequent interpretations presented in this report. In the end, these types of questions

must be addressed to better understand Precontact cultural processes and the roles that Native American cultures played in the Yellowstone National Park ecosystem *vis-à-vis* Changing climatic, biotic, and geologic conditions.

The 2001 MOR inventory at the confluence of the Lamar River and Slough Creek was carried out by the MOR crew during the summer of 2001. A total of 215.11 ha was surveyed under the direction of Mack W. Shortt (Project Archaeologist) and Dr. Johnson. Crew members were Tom Besom, Doug Mitchell, and Kevin Thorson. John Reynolds volunteered for the duration of the program.

Field methods included the close inspection of all landforms potentially containing archaeological resources. Landform types included river and creek terraces, benches, slopes below terraces and benches, cliff tops, talus slopes, plateau and mountain tops, ridges, hilltops, and hillocks. Exceedingly steep slopes in excess of approximately 40 degrees were normally excluded unless archaeological materials were seen eroding from contexts upslope. While creek, river, pond, lake, and slough bottoms were normally excluded, the edges of those bodies of water were nevertheless inspected.

All crew members involved formed a “skirmish line” and, depending on the amount of dead fall/burned trees, either proceeded in a sinuous pattern avoiding obstacles or in straight parallel transects averaging 12 to 15 m apart. All ground surfaces and natural exposures, such as eroded river or creek terraces, tree tip-ups, rodent backdirt piles, game trails, hiking trails, and other areas devoid of vegetation or ground cover were inspected for cultural materials. Subsurface testing was not undertaken as a site-discovery technique. All Precontact Native American archaeological sites were recorded in notebooks and then on the Wyoming Cultural Properties Form. Site boundaries were determined in the field based on the presence or absence of observed cultural remains and then mapped relative to permanent natural features. Site boundaries were then marked on 1:24,000-scale United States Geological Survey (U.S.G.S.) topographic maps and aerial photographs. Sketch maps were also made in the field. All sites were photographed in color-positive 35-mm film.

The collection of surface artifacts from each site was also undertaken. Regrettably, artifact-collecting effectively removes part of the evidence necessary for future site relocation. Collection was, therefore, restricted to recovery of culturally and/or temporally diagnostic artifacts plus small samples of local lithics and obsidian suitable for sourcing analysis. The following report is organized by site number in ascending order.

### *Results*

The 2001 MOR site survey at the confluence of the Lamar River and Slough Creek resulted in the identification of 19 Precontact Native American archaeological sites and seven isolated finds. Three of the sites had been previously recorded (sites 48YE421, 48YE467, and 48YE1278). Of the three previously recorded sites, 48YE1278 was formerly known as part of site 48YE420.

In addition to the locations of all Precontact NATIVE American sites, descriptions include those artifacts and features observed and/or collected. Recommendations concerning site eligibility for nomination to the National Register of Historic Places and conservation, preservation, and interpretive potential are also given. An overall summary and concluding remarks are provided following presentation of the results.

The 2001 Archaeological Site Inventory at the Confluence of the Lamar River and Slough Creek highlighted a number of considerations related to the ongoing management of Yellowstone National Park Precontact Native American sites.

All of the sites discussed in this report are presently eroding on the surfaces and edges of landforms along the Lamar River and Slough Creek. Erosional processes (e.g. Butzer 1982; Rapp and Hill 1998; Schiffer 1987; Wood and Johnson 1978) have been in operation for thousands of years. As a result, a considerable amount of archaeological information has been lost. This problem has been, and continues to be, exacerbated by ungulate-grazing which reduces vegetative cover. Fortunately, as discussed in this report, in situ deposits likely remain at several of the sites. Their research and interpretive values and National Register of Historic Places status/eligibility should be evaluated through a program of test excavations in the future. Monitoring programs, such as are outlined in the main body of this report, should also be considered.

### *Conclusions*

The 2001 Archaeological Site Inventory at the Confluence of the Lamar River and Slough Creek was undertaken as part of a long-term commitment by the Branch of Cultural Resources in Yellowstone National Park to complete archaeological site inventories along major river corridors. Field research under the guidance of Dr. Ann Johnson, Yellowstone National Park archaeologist, was conducted to record undiscovered archaeological sites and to revisit previously known sites in the study area. Field studies were undertaken to assess the potential for site destruction due to natural or non-natural (human-related) processes and to evaluate the National Register of Historic Places eligibility and research/interpretive potential of each site.

In total, 19 Precontact Native American sites and seven isolated finds were recorded. Three of the sites had been previously recorded (sites 48YE421, 48YE467, and 48YE1278). Of the three previously recorded sites, 48YE1278 was formerly known as part of site 48YE420.

The method by which the archaeological sites were discovered during the 2001 field program did not include subsurface-testing (e.g. shovel-prospecting or controlled trowel-excavation). Ground surface inspection was the sole method of site recovery. Thus, inventory studies relied upon the intense examination of natural features such as river/creek banks, rodent burrows, tree throws, blowouts, and game trails, as well as National Park Service trail surfaces and eroded backcountry campsites. When cultural materials are observed, they can be collected and turned over to the Branch of Cultural

Resources for appropriate documentation and curation. It is important for National Park Service personnel to record the precise locations of any artifacts collected.

Fortunately, ground surface exposure in these project areas that had archaeological site potential was generally good to excellent. Limited vegetation due to ungulate grazing or forest fires, eroded river and creek terraces, and trail surfaces all provided excellent opportunities for observing cultural materials. As such, we feel that the MOR crew met the objectives of the inventory by successfully recording those Precontact Native American archaeological sites within the project area.

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Shortt, Mack W., M.A., *Yellowstone National Park Trails Relocation Archaeological Site Inventory: 2001 Field Season Final Report*, Davis, Leslie B., Editor, Cooperative Agreement; 2002.

The 2001 Trails Relocation Archaeological Site Inventory was undertaken in response to the proposed FY01 rerouting of several trail segments through Yellowstone National Park. Field research, conducted under the guidance of the Branch of Cultural Resources and the Yellowstone National Park Trails Foreman, was conducted to record undiscovered archaeological sites and to revisit previously known sites in the study areas. These field studies were undertaken to assess potential for site destruction due to trail construction or rehabilitation activities and to evaluate the National Register for Historic Places eligibility and research/interpretive potential of each site.

Research questions identified in the “Archaeological Treatment Plan For Yellowstone’s Grand Loop Road Federal Highway Projects; Prehistoric Sites” (National Park Service 1993) were initially used as general guidelines for the 2001 trails reroute inventory. More recently, questions proposed in the research design developed for inventory studies in Yellowstone’s Northern Range (Reeves 2000a) were addressed during interpretation of the data collected. Cannon, Crothers and Pierce (1996:20) also suggest that, because Yellowstone National Park is unique in its location adjacent to several physiographic areas, “several different cultural and natural influences on the socioeconomic organization of groups who utilized the area may have occurred.” In light of that assertion, fundamental culture-historical questions pertaining to Precontact cultural affiliation, temporal association, faunal, floral, and lithic resource utilization, and settlement patterns were germane to the direction of the 2001 field program and to interpretations presented in this report. In the end, these types of questions must be addressed to better understand Precontact cultural processes and the roles that Native American cultures played in the Yellowstone National Park ecosystem *vis-à-vis* changing climatic, biotic, and geologic conditions.

The current study areas are located in the northwestern, east-central, and south-central portions of Yellowstone National Park. Those areas with segments of hiking trails slated for relocation included the Fan Creek valley near the northwestern corner of the park, the Pelican Valley, the southeastern shore of Shoshone Lake, the southeastern shore of Shoshone Lake, the Outlet Creek valley east of Heart Lake, the southeastern corner of

Heart Lake, and the lower Snake River. In conjunction with actual trail reroute studies, several additional areas were inventoried by the 2001 Museum of the Rockies (MOR) crew. These project areas included backcountry campsites near the southeast corner of Shoshone Lake, at the south end of Outlet Lake; the eastern shore of Heart Lake, the confluence of Outlet and Surprise Creeks, and on the lower Heart River.

The 2001 Trails Relocation Archaeological Site Inventory was carried out by the MOR crew during the summer of 2001. In the Pelican Valley, a total of 18.27 hectares (45.25 acres) were surveyed. While in the field, the MOR crew stayed at the Pelican Springs patrol cabin. Survey activities along the south shore of Shoshone Lake (85.55 hectares/211.4 acres) were completed over a four-day period. The first and last days were spent hiking to and from the cabin at Outlet Ranger Station which was the base camp for the duration of operations in the area. The Heart Lake/Outlet Creek trails realignment program inventoried 47.82 hectares or 118.16 acres. Finally, survey activities along the Snake River (36.37 hectares/89.87 acres) and Fan Creek (5.88 hectares/14.54 acres) were completed. The latter was somewhat hampered by an early season heavy snowfall. All portions of the 2001 trails realignment site inventory were completed under the direction of Mack W. Shortt (Project Archaeologist) and Dr. Ann Johnson, Yellowstone National Park archaeologist. In sum, a total of 193.89 hectares (479.12 acres) were inventoried during the 2001 trails realignment archaeological inventories in Yellowstone National Park.

Field methods included the close inspection of all landforms traversed by existing and proposed trail alignments potentially containing archaeological resources. Landform types included river and creek terraces, benches, slopes below terraces and benches, cliff tops, talus slopes, plateau and mountain tops, ridges, hilltops and hillocks. Exceedingly steep slopes in excess of approximately 40 degrees were normally excluded unless archaeological materials were seen eroding from contexts upslope. While creek, river, pond, lake and slough bottoms were normally excluded, the edges of those bodies were nevertheless inspected.

All crew members involved formed a “skirmish line” and, depending on the amount of dead fall/burned trees, either proceeded in a sinuous pattern avoiding obstacles or in straight parallel transects averaging 12 to 15 m apart. All ground surfaces and natural exposures, such as eroded river or creek terraces, tree tip-ups, rodent backdirt piles, game trails, hiking trails, and other areas devoid of vegetation or ground cover were inspected for cultural materials. Subsurface testing was not undertaken as a site-discovery technique. All Precontact Native American archaeological sites were recorded in notebooks and then on the Wyoming Cultural Properties Form. Site boundaries were determined in the field based on the presence or absence of observed cultural remains and then mapped relative to permanent natural features. Site boundaries were then marked on 1:24,000-scale United States Geological Survey (U.S.G.S.) topographic maps and aerial photographs. Sketch maps were also made in the field. All sites were photographed in color-positive 35-mm film.

The following report is organized by trail area in a north-south orientation, beginning with the Fan Creek reroute. Succeeding discussions include the Pelican Valley reroute, the south shore of Shoshone Lake, the Outlet Creek alley reroute, portions of the southeast shore of Heart Lake, and the South Boundary Trail in the Snake River valley.

### *Results*

In total, seven Precontact Native American archaeological sites were recorded by the 2001 MOR crew. Of this total, four Precontact archaeological sites were recorded in the Pelican Valley (sites 48YE1286, 48YE1287, and 48YE1288, and 48YE1289). Three Precontact archaeological sites were subsequently identified on the east side of Heart Lake (sites 48YE1290, 48YE1291, and 48YE489). These are not associated with any National Park Service trail realignments, but were instead found in or adjacent to National Park Service backcountry campgrounds. Of the sites recorded on the shore of Heart Lake, two were newly discovered by the MOR crew (sites 48YE1290 and 48YE1291) and one was a revisit of a previously recorded site (48YE489).

The trail realignment study areas that did not yield Precontact archaeological sites includes the Fan Creek valley, the south shore of Shoshone Lake, Outlet Creek valley, and the South Boundary trail in the lower Snake River valley.

### *Conclusions*

The 2001 Trails Relocation Archaeological Site Inventory was undertaken in response to proposed trail developments in five areas within Yellowstone National Park: Fan Creek Valley, Pelican Valley, the south shore of Shoshone Lake, Outlet Creek Valley, and the lower Snake River Valley. Supplemental inventories were also conducted along the south shore of Shoshone Lake, the southeast shore of Heart Lake, and south side of Pelican Creek to provide the Branch of Cultural Resources with a listing of archaeological resources in the area. In total, seven Precontact Native American archaeological sites were recorded by the 2001 MOR crew. Four Precontact archaeological sites were recorded in the Pelican Valley (48YE1286, 48YE1287, 48YE1288, and 48YE1289) and three were recorded on Heart Lake (48YE489, 48YE1290 and 48YE1291). This list includes the single site recorded in the area of the Pelican Valley Trail reroute itself (48YE1286). The remaining sites are not associated with any National Park Service trail realignment.

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Meyer, Daniel A., Ph.D., *Yellowstone National Park Archaeological Site Assessment: 2001 Field Season Final Report*, Reeves, Brian O.K., Editor, Cooperative Agreement ; 2004.

The 2001 Yellowstone National Park Archaeological Site Assessment Program was undertaken to determine the research and interpretive potential and National Register of Historic Places status of selected Precontact Native American sites located in the northern part of the park. Research, in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, was conducted to assess the research and



interpretive potential of the sites in question. The sites were all recorded during recent surveys of northern portions of the park by crews from the Museum of the Rockies (MOR) under the field direction of Mack Shortt

The 2001 Museum of the Rockies assessment program test excavated five Precontact archaeological sites in the northern part of Yellowstone National Park.

**48YE972** was first recorded by the MOR survey team in the summer of 1999. Site 48YE972 is a large, Late Precontact Period lithic scatter located on a 3 m terrace. The 2001 MOR team excavated a total of 16 m<sup>2</sup> to help define the site boundaries and gather pertinent information regarding the site's temporal-cultural affiliation and activities undertaken by its occupants. Ten of the units were dispersed across the site, with another 6 located in a small excavation block in an area that provided the highest artifact densities.

Although initial survey of 48YE972 observed a sparse scatter of cultural material over a large 15,000m<sup>2</sup> area, test excavations indicated a more restricted distribution of subsurface remains. Dense cultural materials appear to be relatively restricted to a smaller 1000m<sup>2</sup> area centered around the main excavation block and Units 13 and 14, north of the bend of the river. Cultural materials from 48YE972 derive from late Holocene brown silty sands in the uppermost 30 cm of the soil profile. The dark brown silts noted in several units beneath the brown sandy silts, do not represent the paleosol observed across the river at 48YE975, as cultural materials at 48YE972 drop off markedly above these deposits.

The remains contained within 48YE972 are indicative of changing resource use and settlement pattern seen in the Greater Yellowstone area during the Late Period. Recovered cultural artifacts consist primarily of lithic debitage, a few tools, and limited quantities of faunal materials. At this time, the lack of observed features and fire-cracked rock indicate that this site does not represent a significant campsite in this location. Artifactual evidence does indicate substantial site activities including tool manufacture, and light processing activities such as food processing and perhaps hide working. However, long-term occupation of the site and heavier processing likely did not occur. Instead, the site likely represents a mosaic of short duration stays during seasonal resource harvesting or travel through the area.

Diagnostic items recovered from 48YE972 point to only Late Period occupation of the site. This is not a surprising finding. Although multiple occupations or activities as appear to be present, the site itself is likely a single component Late Period site associated with First Blood A Sub phase (local variant of the Numic Ahvish Phase, ca. 800-200 B.P.).

48YE972 has demonstrated high potential for the recovery of more cultural/temporal diagnostic materials, debitage and tools that will help determine the nature of activities which were carried out here. In addition, identifiable faunal remains may be recovered which will help determine prey species and perhaps provide material suitable

for dating to help further refine the chronology of the site. Given this, 48YE972 is recommended as eligible for nomination to the National Register of Historic Places under Criterion D, having high research and interpretive potential. The Late Period cultures and occupations of Yellowstone National Park are poorly understood, and sites such as 48YE972 can contribute significantly to our understanding of the time period and its associated cultures.

**48YE975** was first recorded by the MOR survey team in the summer of 1999. 48YE975 is a small, Precontact lithic surface scatter and buried campsite located on a 5 m. The 2001 MOR team excavated a total of 9m<sup>2</sup> to help define the site's boundaries and gather pertinent information regarding its temporal-cultural affiliation and activities undertaken by its occupants. Two units were placed on the 6 m terrace away from the river edge, 1 unit was placed on the 5 m terrace back from the cut bank, and 8 units representing 6 m<sup>2</sup> were placed along the cut bank to test this area of known dense cultural materials, and to rescue deposits threatened most severely by erosion.

Test excavations indicate that 48YE975 is a multi-component, possibly stratified site, with at least two occupations, one late Middle Period and the other Late Period. Diagnostic projectile points recovered from the site indicate Lamar Valley Subphase and Black Canyon Subphase occupations, potentially dating from 3000 to 1200 years B.P. The site occupation, as represented by materials excavated on the lowest terrace in the main excavation block and nearby Unit 7, indicate the presence of a third, and possibly more, components of undetermined temporal-cultural affiliation associated with a paleosol. In addition to the differential depositional contexts of this occupation, the materials begin to reveal a different type of occupation and use of resources. Unfortunately despite the presence of high densities of buried material culture, including lithic debitage, faunal remains, and fire-cracked rock, no diagnostic or datable items were recovered directly associated with the paleosol noted on the lower terrace adjacent to the river.

Materials recovered to the west on the low second terrace revealed near-surface remains consisting of moderate amounts of lithic debitage, relatively high numbers of tools, a moderate amount of fire-cracked rock, and a moderate amount of unidentified faunal remains. The differences in cultural materials between the three areas tested at 48YE975 indicate strong differences in activities carried out during various occupations of the site. The Lamar Valley Subphase and Black Canyon Subphase components, as noted in Units 5 and 6 on the upper terrace remnant, indicate intensive camping activities with thorough processing of faunal resources, the working of other materials, and the manufacture of tools. Although the sample size is small, the sparse amount of obsidian and the lack of ceramics are consistent with Black Canyon components as seen elsewhere in Yellowstone National Park.

48YE975 has demonstrated high potential for the recovery of more cultural-temporal diagnostic materials, identifiable faunal remains, intact features, and debitage and tools that will help determine the nature of the activities carried out at the site. The presence of multiple components and possibly stratified remains indicate the possibility

of investigating cultural changes and tracking long term changes in resource procurement strategies over time in the Yellowstone Valley. Given this, 48YE975 is recommended as eligible for nomination to the National Register of Historic Places under Criterion D, having high research and interpretive potential. Sites such as 48YE975 can contribute significantly to our understanding of Precontact cultures in the Greater Yellowstone area.

**48YE882** is a small Precontact campsite which was first recorded in 1996 by the MOR survey team. The site is situated on a low, 2-3 m terrace. A total of three 1 x 1 m excavation units were placed to test the subsurface deposits on the terrace. One unit was placed in the vicinity of the tree throw, one near the food preparation area, and one roughly equidistant from the other two in the middle of the terrace.

Cultural remains recovered from all three test excavations at 48YE882 indicate that the main cultural occupation of the site occurs in the grey-brown silt horizon, primarily from 10-30 cm b.s., with Unit 2 excavations indicating highest concentration around 20 cm b.s. The site is not stratified, and number of components cannot be determined as no culture nor time diagnostic materials were recovered. However, given the depth of the materials, the subsurface deposits are intact, with relatively minor disturbance from bioturbation.

Excavations indicate that the site extends across the entire terrace remnant. Although the northern, central and southern portions of the site yielded similar materials, differences in proportions of these materials and raw material sources indicated substantial activity area differences across the site. The central portion of the site seems to have witnessed significantly more intensive occupation and resource processing than the rest of the site. The sheer amount of lithic debitage, fire-cracked rock, and faunal remains indicates heavy processing of resources and intensive occupation. Although intact features were not encountered, this portion of the site has demonstrated high potential for encountering features during future excavations. The high amount of faunal remains and lithic debitage indicate good potential for the recovery of identifiable faunal specimens and the recovery of diagnostic stone tools.

48YE882 has demonstrated high potential for the recovery of cultural/temporal diagnostic materials, identifiable faunal remains, intact features, and debitage and tools that will help determine the nature of the activities carried out at the site. The intact nature of the remains indicate that this cultural resource is worthy of further research and protection. Given this, 48YE882 is recommended as eligible for nomination to the National Register of Historic Places under Criterion D, having high research and interpretive potential. Sites such as 48YE882 can contribute significantly to our understanding of Precontact cultures in the Greater Yellowstone area.

**48YE1025** is a Precontact campsite first recorded in 1988 by the MOR survey team. The site occupies a low 1-2 m terrace. Excavation units were placed in the area of higher visibility and surface artifact density in the northeast portion of the site, and further west along the terrace. A total of 4 m<sup>2</sup> were excavated. Due to the unexpected depth of the remains, a more extensive testing program could not be completed.

Test excavations of 48YE1025 indicate that the site is a deeply buried, stratified, multi-component campsite occupied over thousands of year. The limited testing program found direct evidence of Early Period and Middle Period components represented minimally by the Windust Complex, 10,000-9,500 B.P., and the Corwin Springs Subphase, 7,750-4,500 B.P. respectively. The excavations indicate not only vertical stratigraphic separation in the materials, but also horizontal differences indicating the presence of activity areas on the site.

As noted in all excavation units, the uppermost materials on the site, roughly the top 50 cm associated with brown to grey-brown silts, can be ascribed to Middle Period occupations. These occupations are characterized by evidence of prolonged site occupation and more intensive utilization and processing of resources. Overall, high densities of lithic debitage and a high ratio of tools to debitage indicate significant tool manufacture and use at 48YE1025. The presence of moderate amounts of fire-cracked rock (FCR), heavily fractured bone, some burnt or calcined, and identifiable remains of mountain sheep provide evidence of relatively heavy processing of local faunal and likely floral resources.

The lower levels of excavation, roughly below 50 cm, can be ascribed to Early Period occupations. Large quantities of lithic debitage occur in the lower levels as with the upper levels, especially in the central portion of the site as seen in Unit 3. The lack of FCR, substantially quantities of faunal remains, and the low tool to debitage ratio in the Early Period levels suggests less intensive site occupation at 48YE1025 during that period. Occupation of the site was probably limited to more short-term forays into the area for resource gathering activities. The only tool recovered from the Early Period is a Windust point collected from 60-70 cm b.s. in Unit 4.

Test excavations at 48YE1025 have demonstrated high potential for the recovery of cultural-temporal diagnostic materials, identifiable faunal remains, intact features, and debitage and tools that will help determine the nature of activities carried out at the site. Despite the noted rodent disturbance especially in the lower levels, the relatively intact nature of the remains indicate that this cultural resource is worthy of further research and protection. Given this, 48YE1025 is recommended as eligible for nomination to the national Register of Historic Places under Criterion D, having high research and interpretive potential. Sites such as 48YE1025 can contribute significantly to our understanding of Precontact cultures in the Greater Yellowstone area, especially in the Early Period for which relatively few sites are known.

**48YE1027** is a Precontact site located on a low terrace. Only 7.5 m<sup>2</sup> of a planned 10 m<sup>2</sup> were excavated due to unexpectedly high artifact densities and site depth.

Test excavations at 48YE1027 found it to be a large, multi-component campsite of very high artifact density. The excavations recovered a total of 8,455 pieces of lithic debitage, 97 stone tools including 13 diagnostic projectile points, 16 identifiable faunal elements, 1,999 unidentifiable bone fragments, and 809 pieces of fire-cracked rock.

Materials recovered from the site indicate occupations covering the last 4,500 years of the Precontact period. Components identified from diagnostic projectile points include the Hayden Valley Subphase (4500-3000 BP), the Lamar Valley Subphase(3000-1800 BP), the Black Canyon Subphase (1600-1200 BP), the Tower Junction Subphase (1600-800 BP), and the First Blood Subphase (800-200 BP). Most of these materials derive from the top 40 cm of deposits at the site, but there are indications of possibly earlier components recoverable at 48YE1027. Excavations in Unit 11 in fact, recovered deeply buried materials but indications are that these may have been redistributed by rodent activity.

The high density of recovered material culture and one possible feature indicate a broad range of activities occurred on the site, probably during extended stays by relatively large groups of people. Activities undertaken at the site include stone tool manufacture, the processing of animal kills, primarily bison and mountain sheep, including stone boiling of heavily reduced animal bones, and the processing of hides. Several trends can be noted in the data including shifts in lithic resources utilized over time, shifts in the processing of faunal resources, and changes in the intensity of site occupation.

Test excavations at 48YE1027 have demonstrated high potential for the recovery of cultural-temporal diagnostic materials, identifiable faunal remains, intact features, and debitage and tools that will help fully determine the nature of the activities carried out here. The relatively intact nature of the remains and notable trends in the data indicate that this cultural resource is worthy of further research and protection. Given this, 48YE1027 is recommended as eligible for nomination to the National Register of Historic Places under Criterion D, having high research and interpretive potential. Sites such as 48YE1027 can contribute significantly to our understanding of Precontact cultures in the Greater Yellowstone area.

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Shortt, Mack W., M.A., *Yellowstone National Park Trails Relocation Archaeological Site Inventory: 2002 Field Season Final Report*, Reeves, Brian O.K., Editor, Under Cooperative Agreement No. CA-1268-1-9017, 2003.

The 2002 Trails Relocation Archaeological Site Inventory, conducted under the guidance of the Branch of Cultural Resources and the Yellowstone National park Trails Foreman, was undertaken to record undiscovered archaeological sites and to revisit any previously known sites in the study areas. The program consisted of an archaeological site inventory of portions of the existing National Park Service hiking trail system in the Mountain Ash Creek/Falls River region of the park. This was undertaken to provide the Trails Foreman with information regarding those archaeological resources in and adjacent to the existing trail system. That data will be of considerable significance should future trail maintenance, realignment or rehabilitation projects be considered. In addition, the 2002 Trails Relocation Archaeological Site Inventory provided opportunity to evaluate the national Register of Historic Places eligibility and research/interpretive potential of each site.

Research questions identified in the “Archaeological Treatment Plan for Yellowstone’s Grand Loop Road Federal Highway Projects; Prehistoric Sites” (National Park Service, 1993) were initially used as general guidelines for the 2002 trails inventory. More recently, questions proposed in the research design developed for inventory studies in Yellowstone’s Northern Range (Reeves 2000) were addressed during the interpretation of the data collected. Cannon, Crothers, and Pierce (1996:20) also suggest that, because Yellowstone National Park is unique in its location adjacent to several physiographic areas, ‘several different cultural and natural influences in the socioeconomic organization of groups who utilized the area may have occurred.’ In light of this assertion, fundamental culture-historical questions pertaining to Precontact cultural affiliation, temporal association, faunal, floral, and lithic resource utilization, and settlement patterns were germane to the direction of the 2002 field program and to subsequent interpretations presented in this report. In the end, these types of questions must be addressed to better understand Precontact cultural processes and the roles that Native American cultures played in the Yellowstone National Park ecosystem *vis-à-vis* changing climatic, biotic and geologic conditions.

The current project commenced at the Fish Lake Trailhead and included the trail that led in a northerly direction across the Falls River to the junction with the Old Marysville Road/Union Falls Trail, then northwest toward National Park Service backcountry campsites 9U2 and 9U3 on Mountain Ash Creek. Backcountry campsite 9U7 was located approximately 600 m north of the Yellowstone National Park/Targhee National Forest boundary and 700 m northeast of Trailhead 9K3. Field activities also included that portion of the Union Falls Trail to the falls of that same name. Backcountry campsites 9U4 and 9U5 were in the general area. The 2002 survey program also included the Old Marysville Road trail from its junction with the Union Falls branch to the trailhead northwest of the Grassy lake Reservoir. Backcountry campsite 9U6, located approximately 825 m north of the Yellowstone National Park/Targhee National Forest boundary, was located on the right bank of the Falls River.

The 2002 Trails Relocation Archaeological Site Inventory was carried out by Visti Kjar and Doug Mitchell. A total of 20.587 hectares (50.89 acres) were surveyed. This based upon a linear trail distance of 20.587 km with a 10 m right of way centered on the existing trail tread.

Under normal circumstances, MOR field methods include the close inspection of all landforms traversed by the existing and/or proposed Yellowstone National Park trail alignments. As per the instructions of the Trail Foreman, however, only the existing trail tread, regardless of landform type, was inspected for Precontact archaeological remains. Adjacent terrain up to 5 m on either side of any given trail segment was also included. Landform types included river and creek terraces, benches, slopes below terraces and benches, plateaus, ridges, hilltops, and hillocks. While creek and river bottoms were normally excluded, the edges of those watercourses were nevertheless inspected.

When Precontact archaeological materials were found, crew members involved formed a “skirmish line” and, depending on the amount of deadfall/burned trees, either

proceeded in a sinuous pattern avoiding obstacles or in straight parallel transects averaging 10 m apart. All ground surfaces and natural exposures such as eroded river or creek terraces, tree tip-ups, rodent backdirt piles, game trails, hiking trails, and other areas devoid of vegetation or ground cover were inspected for cultural materials. Subsurface testing was not undertaken as a site-discovery technique. All Precontact Native American archaeological sites were recorded in notebooks and then on the Wyoming Cultural Properties Form. Site boundaries were determined in the field based on the presence or absence of observed cultural remains and then mapped relative to permanent natural features. Site boundaries were then marked on 1:24,000-scale United States Geological Survey (U.S.G.S) topographic maps and aerial photographs. Sketch maps were also made in the field. All sites were photographed in color-positive 35-mm film.

The following report is organized on a site-by-site basis starting with those sites recorded in the western portion of the study area.

In total, four Precontact Native American archaeological sites, and three isolated finds were recorded by the 2002 MOR crew. Each site (48YE1338-1341) was a small lithic scatter. The 2002 Trails Relocation Archaeological Site Inventory was undertaken to provide the Trails Foreman with information regarding those archaeological resources in and adjacent to the existing trail system along Mountain Ash Creek and the Falls River. That data will be of considerable significance should future trail maintenance, realignment, or rehabilitation projects be considered. In addition, the 2002 Trails Relocation Archaeological Site Inventory provided opportunity to evaluate the National Register of Historic Places eligibility and research/interpretive potential of each site found during the field program.

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Shortt, Mack William, M.A., *The Federal Highways Administration Archaeological Site Inventory of Three Scenic Drives, Yellowstone National Park, Wyoming: 2002 Field Season Final Report*, Reeves, Brian O.K., Editor, Under Cooperative Agreement No. CA-1268-1-9017, 2003.

The 2002 Federal Highways Administration Archaeological Site Inventory of Three Scenic Drives was undertaken in response to Yellowstone's Park-wide Road Improvement Program aimed at redeveloping the 329-mile (526-km) road system in the park. Research, in compliance with Section 106 of the National Historic Preservation Act, as amended, was conducted to record undiscovered sites and to revisit previously known sites in the study area. These studies were undertaken to assess the potential for site impairment or destruction due to proposed road improvements and to evaluate each site's eligibility for the National Register of Historic Places. Field studies also provided opportunities to assess the research and interpretive potential of those sites recorded. The information derived from the 2002 Federal Highways Administration Archaeological Site Inventory of Three Scenic Drives is thus highly significant for the development of future archaeological data recovery plans.

Research questions identified in the “Archaeological Treatment Plan for Yellowstone’s Grand Loop Road Federal Highway Projects; Prehistoric Sites” (National Park Service 1993) were initially used as general guidelines for the 2002 Archaeological Site Inventory of Three Scenic Drives. More recently, questions proposed in the research design developed for inventory studies in Yellowstone’s Northern Range (Reeves 2000) were addressed during interpretation of the data collected. Cannon, Crothers and Pierce (1996:20) also suggest that, because Yellowstone National Park is unique in its location adjacent to several physiographic areas, ‘several different cultural and natural influences on the socioeconomic organization of groups who utilized the area may have occurred.’ In light of this assertion, fundamental culture-historical questions pertaining to Precontact cultural affiliation, temporal association, faunal, floral and lithic resource utilization, and settlement patterns were germane to the direction of the 2002 field program and to subsequent interpretations presented in this report. In the end, these types of questions must be addressed to better understand Precontact cultural processes and the roles that Native American cultures played in the Yellowstone National Park ecosystem *vis-à-vis* changing climatic, biotic, and geologic conditions.

The current study areas are located in west-central Yellowstone National Park. Included in the 2002 Federal Highways Administration (FHWA) Archaeological Site Inventory were the Virginia Cascade Drive, the Firehole Canyon Drive, and the Firehole Lake Drive. Brief descriptions of the physical settings of each area are provided in subsequent sections.

The 2002 Federal Highways Administration Archaeological Site Inventory of Three Scenic Drives was under the direction of Mack W. Shortt (MOR Project Archaeologist). Assisting crew members were Visti Kjar, Doug Mitchell, and Kevin Thorson. Jim Dougherty volunteered for the duration of the program. The inventory of the Virginia Cascade Drive covered 35.673 ha (88.17 acres). Fielded activities along the Firehole Canyon Drive resulted in the inclusion of 33.58 ha (82.97 acres) in the project area. Finally, MOR personnel completed the archaeological site inventory of the Firehole Lake Drive with a total of 64.33 ha (158.9 acres).

Field methods included the close inspection of all landforms within a minimum 100-m right-of-way centered on the existing roadways. Occasionally, rights-of-way widths were increased to include additional landforms that potentially contained archaeological resources. With regard to the Virginia Cascade and Firehole Canyon Drives, the river-side portions of the survey rights-of-way were narrowed when the respective roadways neared the rivers’ edges. Landform types included river and creek terraces, benches, slopes below terraces and benches, cliff tops, talus slopes, plateau tops, ridges, hilltops, and hillocks. Exceedingly steep slopes in excess of approximately 40 degrees were normally excluded unless archaeological materials were seen eroding from contexts up slope. While creek and river bottoms were normally excluded, the edges of those bodies of water were nevertheless inspected.

All crew members involved formed a “skirmish line” and, depending on the amount of dead fall/burned trees, either proceeded in a sinuous pattern avoiding obstacles



or in straight parallel transects averaging 12 to 15 m apart. All ground surfaces and natural exposures such as eroded river or creek terraces, tree tip-ups, rodent backdirt piles, game trails, hiking trails, and other areas devoid of vegetation or ground cover were inspected for cultural materials. Subsurface testing (e.g. shovel prospecting) was not undertaken as a site-discovery technique. All Precontact Native American archaeological sites were recorded in notebooks and then on the Wyoming Cultural Properties Form. Site boundaries were determined in the field based on the presence or absence of observed cultural remains. Universal Transverse Mercator (UTM grid coordinates of site boundaries and individual lithic tool findspots were recorded. This was undertaken through the use of a hand-held Global Positioning System (GPS) unit. Improved accuracy of the hand-held GPS unit was facilitated by the removal of Selective Availability (SA) (e.g. Ferguson 1997) by the Clinton administration in early 2000. Site boundaries were then marked on 1:24,000-scale United States Geological Survey U.S.G.S.) topographic maps and aerial photographs. Sketch maps that included permanent natural features were also made in the field. All sites were photographed in color-positive 35-mm film.

In total, 13 archaeological sites were recorded by the 2002 MOR crew along the Virginia Cascades Drive (n=10) and the Firehole Canyon Drive (n=3). No additional archaeological sites were identified in the Firehole Lake Drive project area. Of the total, 13 are Precontact Native American archaeological sites and one is a Postcontact (Euroamerican) cairn. The Precontact Native American sites in the Virginia Cascade Drive right-of-way included 10 lithic scatters (Sites 48YE1311, 48Y1312, 48YE1313, 48YE1314, 48YE1315, 48YE1316, 48YE1317, 48YE1318, 48YE1319, and 48YE154) and a single isolated find (48YE363). Sites 48YE154 and isolated find 48YE363 had been previously recorded. Those Precontact Native American cultural resources identified in the Firehole Canyon Drive project area included two lithic scatters (sites 48YE1320 and 48YE1321). As mentioned, a Non-Native (Euroamerican) cairn was also recorded (site 48YE1322).

The 2002 Federal Highways Administration Archaeological Site Inventory of Three Scenic Drives was undertaken in response to Yellowstone's Park-wide Road Improvement Program aimed at redeveloping the 329-mile (526-km) road system in the park. Indeed, many segments of the Grand Loop Road through Yellowstone are structurally and/or functionally deficient. Research, in compliance with Section 106 of the National Historic Preservation Act, as amended, was conducted to record undiscovered sites and to revisit previously known sites in the study area. These studies were undertaken to assess the potential for site damage or destruction due to the proposed road improvements and to evaluate each site's eligibility for the National Register of Historic Places. Field studies also provided opportunities to assess the research and interpretive potential of those sites recorded. The information derived from the 2002 Federal Highways Administration Archaeological Site Inventory of Three Scenic Drives is thus highly significant for the development of future archaeological data recovery plans.

We feel that the MOR crew met the objectives of the inventory by successfully recording those Precontact Native American archaeological sites that might be threatened by future road construction and/or rehabilitation programs. It should be noted that the use

of heavy construction equipment will necessitate additional archaeological site discovery and testing techniques prior to deep, subsurface disturbances.

Finally, the final outcome of the 2002 FHWA Archaeological Site Inventory of Three Scenic Drives is positive and beneficial. Not only do the results contribute significantly to understanding the Precontact Period in Yellowstone National Park, but they also facilitate site management and conservation. Indeed, continued assessment-oriented research by the Branch of Cultural Resources will prevent the destruction of non-renewable archaeological resources.