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Cultural Resource Report No. 3 - Archaeological Test Excavations At Site 10-El-294, Three Island Crossing

Center for Applied Archaeological Science
ARCHAEOLOGICAL TEST EXCAVATIONS AT SITE 10-EL-294, THREE ISLAND CROSSING

Mark G. Plew and Christopher A. Willson

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Boise State University

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INTRODUCTION

The Three Island Crossing (10-EL-294) site was originally discovered by Mrs. Esther Pusey of Glenns Ferry, Idaho, who reported her finding to the Idaho State Historical Society. The site, which is situated on the north bank of the Snake River two miles southwest of Glenn’s Ferry, Idaho, is approximately 100 meters east of the Oregon Trail river crossing. In March, 1986, two 1 x 2 meter test units and three auger tests were conducted by Boise State University. These limited efforts revealed a dark-stained cultural lens 20-30 centimeters in depth immediately beneath the ground surface. A variety of cultural remains including Late Archaic (past 2000 years) projectile points, potsherds, and fish remains were recovered. Subsequent excavations in the summers of 1986 and 1987 were conducted as part of the Boise State University Archaeological Field School in cooperation with the Idaho State Parks Department.

The Three Island Crossing site is situated approximately 40 meters north of the Snake River and extends over an area 90 x 30 m. The site extends onto private property lying to the north of the Three Island State Park boundary and presently is covered by a mix of sagebrush and greasewood. Aeolian sediments cover a durapan layer 40-70 centimeters below the surface. Lying approximately four meters above the lowest water levels of the Snake River, the modern surface is a relatively uniform terrace, exhibiting less than one meter of relief over the entirety of the site area. The northern portion of the site has been impacted by a historic road, depression-era dumping, and turn-of-the-century hydraulic mining, which occurred just beyond the western margin of the site with potato farming having disturbed the upper 20 centimeters of the deposit, an event most probably responsible for the higher than normal levels of phosphorus.

Excavations at Three Island Crossing produced highly significant data bearing upon issues of residential mobility, storage, and the use of fish (Gould and Plew 2001). Owing to these discoveries, we seek to determine if additional deposits rest to the east of the areas excavated in 1986 and 1987. We propose limited test excavations to assess the potential for conducting larger scale excavations that may bear upon earlier discussion. Specifically, we wish to determine if the site area extends eastward beyond the earlier delineated site boundary. Recent discoveries coupled with the availability of new analytical techniques should allow us to better understand the position of Three Island Crossing in the archaeology of the Middle Snake River.

The proposed excavation will make observations regarding depositional and cultural history of the area east of the original excavations. Initial examinations of the surface area will be performed by pedestrian survey and virtual assessments of the land form through 10 m digital elevation models and aerial photos. This proposal provides environmental and archaeological background data and details research objectives.

ENVIRONMENTAL SETTING

The area of the Middle Snake River in southwestern Idaho is a diverse landscape primarily formed from volcanic eruptions and persistent alluvial and aeolian-driven agencies (Hackett and Bonnichsen 1995). Within these larger geologic contexts are smaller ecological niches and zones (Malde 1965:255), all of which have changed dramatically over time, most notably during the past 10,000 years. It appears that environmental transformations in this area occurred gradually in some regions and relatively rapidly in others. Such changes would have impacted the availability of selected staple resources, as well as mean temperature, yearly rainfall, and snow accumulations.
Figure 1. Overview Map Illustrating General Site Location.
Generally, the region is characterized by unique geological features (Hill 2006). The landscape began to form nearly 12 million years ago with eruptions of rhyolites and basalts, forming the mountains and expansive lava fields existing today (Hackett and Bonnichsen 1995:37-38). Pluvial lake sediments and pillowed basalts suggest that large Pleistocene lakes formed across the entire basin. The largest of these Tertiary lakes was Lake Idaho, expanding into the western and central plains and reaching a maximum of 1,158.25 meters above sea level. As the lake drained nearly one million years ago, the Snake River was formed from the headwaters of the Salmon which had previously emptied into the lake. Many smaller rivers that drained into the lake were left positioned about the lake floor. As these large catch basins drained downward, they formed the canyons of the Bruneau and Owyhee in southwest Idaho and southeastern Oregon (Hackett and Bonnichsen 1995:38).

These events laid the foundation for a diverse ecological system that can be currently witnessed as a dynamic landscape. Within this larger environmental context and dispersed within the various regional zones are smaller, more specific and consequently more sensitive ecological niches. Minor changes in temperature and precipitation either sustain or eliminate the fragile biome resulting in a distinct and marked change in the ecosystem.

Following the Bonneville Flood some 14,500 years ago, sediments along the Snake River suggest a succession of alluvial and aeolian depositions (Bentley 1981; see also Plew et al. 2006; Willson and Plew 2007). These consist primarily of silts and sands intermixed with small gravels and underlain by more extensive gravel deposits. Large melon gravels are commonly exposed within the study area as are localized sand dunes.

Vegetation cover currently includes a variety of species adapted to southern Idaho’s arid soils (see Soil Conservation Service 1973). Predominant among the species associated with these aridisols are varieties of sagebrush (Artemisia), particularly the large sagebrush (Artemisia tridentate). Perennial grasses are common, as are varieties of willow (Salix) and cottonwood (Populus), which border the Snake River and its tributary streams. Other species, including non-native groups, are commonly found. These consist of greasewood (Sarcobatus vermiculatus), cheatgrass (Taeniatherum caput-medusae), Russian olive (Elaeagnus angustifolia), and poison ivy (Toxicodendron radicans).

Associated with the floral community is a diverse animal population typical of the Northern Great Basin Biotic Complex (Davis 1939:32-34). Species common to the area include mule deer (Odocoileus heminous), bobcat (Lynx rufus), yellow-bellied marmot (Marmota flaviventris), muskrat (Ondatra zibethicus), badger (Taxidea taxus), coyote (Canis latrans), weasel (Mustela erminea), mink (Mustela vison), and otter (Lutra canadensis). Smaller mammals include desert black-tailed jack rabbit (Lepus californicus deserticola), Nevada wood rat (Neotoma lepiola nevadensis), Townsend pocket gopher (Thomomys townsendii), Great Basin chipmunk (Eutomias minimus scrutinator), Nevada mantled ground squirrel (Spermophilus lateralis), Snake River Valley raccoon (Procyon lotor excelus), little spotted skunk (Spilogale gracilis saxatilis), and the Nevada long-eared desert fox (Vulpes macrotis nevadensis) (see Larrison 1967). Mammals found outside the canyon proper include pronghorn antelope (Antilocapra americana) and in the early Historic period, modern bison (Bison bison). Reptiles and numerous species of birds abound (Larrison 1967). Avifauna which reside on a seasonal basis include game birds, waterfowl, and raptors.

Aquatic resources also thrive within the area. Common species include mollusks, varieties of trout, whitefish, squawfish, and sturgeon. Of these, the more important aboriginal resources included Chinook salmon (Oncorhyncus tsawatscha), steelhead trout.
(Salmo gairdnerii), pike minnow (Ptychocheilus oregonensis), bridgelip sucker (Catostomus columbianus), and sturgeon (Acipenser transmontanus).

BACKGROUND

Three Island Crossing: A Fishing Station on the Middle Snake River?

Three Island Crossing is located along the Middle Snake River near Glenn’s Ferry at the historic Three Island Oregon Trail crossing (Figure 2). Excavations conducted in 1986 and 1987 identified an occupation spanning 400-500 years and associated with relatively constant aeolian deposition. No evidence of significant inundation of the site was noted though major flood cycles could have caused inundation. A durapan developing upward from approximately 40 cm below the surface suggests that at some point the area may have been somewhat moister. Rodent activity, which may have contributed to mixing, is noted within Areas A and B, the two most discernible occupational areas. The more recent post-depositional history of the location is somewhat more certain. The very earliest impacts may be associated with early exploration and Oregon Trail periods. An aboriginally produced brass bipoint and historic glass trade beads of the type common prior to 1840 were recovered, suggesting that some of the most recent use of the area involved interaction with Euro-Americans. This pattern is further suggested by additional items of Protohistoric/Historic age discovered within the area (Crabtree 1968; Plew and Meyer 1987).

The historic Oregon Trail crossing at Three Island may have impacted the site, since there exist references pertaining to Indians at the crossing. More recent activity involves gold placer mining at the extreme western border of the site. This activity, initiated at the beginning of the century and reestablished during the depression, saw the construction of a road bed extending over the site from east to west. Mining does not, however, appear to have directly impacted the site. Some depression-era dumping is noted, though this appears to have been minor. The excavations identified two major activity areas, designated Area A and Area B. Area A is located south of a turn-of-the-century mining road and dissects the site east-west.

![Figure 2. Overview of Three Island Crossing.](image)

The area includes Features 7a and 7b, two storage pits and Feature 5, a possible residential structure—and the storage pits (Figures 3, 4). A radiocarbon date of 970 +/- 330 B.P. (TX-5723) is associated with the house feature. Area B is situated north of the mining road and adjacent to a fence, passing east-west across the site and most probably extending onto private land northward of the fence. A radiocarbon date from samples near the base of the cultural stratum establishes the area’s age at 970 +/- 60 B.P. (TX-5724). A possible storage feature, designated Feature 4, is dated at 580 +/- 180 B.P. The feature was located on the eastern periphery of Area B and appears to date to the Late Archaic. All radiocarbon dates were obtained near the base of the cultural stratum, suggesting that the upper deposits may be of somewhat more recent age, mirroring some occupational surfaces at the Bliss site (10-GG-1) dating between 410 B.P. and 320 B.P. (Plew 1980:158). It is likely that there were several occupations of the locality, though none were stratigraphically distinct. Further, there is little evidence to suggest greater intensity of use at a particular point in time. Faunal data suggest
that resources exploited at Three Island did not change over the period of its use, though they may have varied in intensity.

The structure is a circular feature approximately 2.5 m in diameter and 25-30 cm in depth. In cross-section it appears as a shallow, dish-shaped feature slightly deeper opposite the entranceway, which is sloping and oriented toward the northwest. Four support posts are equally spaced around the perimeter of the structure at a slight angle to the surface and approximately 8-10 cm below the edge of the depression. The structure falls within the range of other pole-and-thatch wickiup structures excavated near Givens Hot Springs (Green 1981), at Big Foot Bar (Plew 1980), and Hagerman (Pavesic and Meatte 1980). Recently, Green (1993) has reviewed the pattern of residential house construction in southern Idaho. In his review of the 13 structures excavated to date, he notes the construction of semi-subterranean pit houses reminiscent of the Plateau and small pole-and-thatch wickiup structures more common to the Great Basin. The construction of residential architecture appears to date from 4000-5000 years ago with the building of larger semi-subterranean pit houses persisting until around 1000-1200 B.P., the later structures being replaced during the Late Archaic by the small, dish-shaped, pole-and-thatch wickiup structures (Green 1993). The structure at Three Island Crossing is temporally associated with the shift to the smaller residential units of the Late Archaic both in form and associated material remains.

Excavations at Three Island Crossing recovered 1413 artifacts distributed across several artifact classes. Unlike many of the assemblages from Snake River sites, the Three Island Crossing materials exhibit a considerable range of variation in individual tool types. The predominance of Desert Side-Notched, Eastgate, Rose Spring, Cottonwood, and Bliss points, along with corroborating radiometric dates, suggests a Late Archaic time frame.

Analysis indicates that projectile points and pottery sherds constitute the two largest artifact types. Assuming that the pottery (n=935) represents only a few vessels, the points are the dominant type. Though weapons and domestic items dominate the assemblage, the individual numbers of general utility (n=129) and fabricating/processing tools (n=49) are of note in relation to other southwest Idaho assemblages where they occur in limited quantities. In addition, a significant number of ceremonial (n=17) and ornamental items are present (n=21) (Figures 5, 6).

Four categories of items are included: fire-cracked rock, lithic debris, bone, and shell. Fire-cracked rock is represented by 6404 fragments which were recovered throughout the site. Virtually all specimens appear to be fragments of river cobbles, likely obtained from the Snake River which abuts the southern margin of the site. Lithic debris was well documented and marked by the recovery of 13,885 individual flakes. Debris material shows a heavier use of basalt than of other materials. Basalt debitage totaled 7391 flakes, representing 53.2% of the recovered debris. Obsidian accounted for 30.2% (n=4,200) of the total, whereas cryptocrystalline flakes constituted 16.5% (n=2,294) of the recorded debris. Excavations at Three Island Crossing failed to recover extensive botanical remains. Only a few seeds were recovered, primarily from flotation samples and representing modern flora. No botanical macrofossils were
recovered. The faunal assemblage is more substantial, including a large collection of fish remains consisting of Chinook salmon (*Oncorhynchus tshawytscha*), suckers (*Catostomus columbianus*), squawfish (*Ptychocheilus oregonensis*), and sturgeon (*Acipenser transmontanus*). In all 19,000+ fish remains were recovered, the majority representing salmon or trout. The remains include highly fragmented vertebrae, ribs, fin rays and head parts. Most interesting are the remains of sturgeon, which are poorly documented in the archaeological record of southern Idaho (Plew 1997). Pavesic and Zontek (1988) have attempted to place the Three Island Crossing discovery in a broader regional perspective, suggesting a greater use of sturgeon than has been documented. Plew (1997) presents data which argue for a lesser importance in overall subsistence.

The distribution of fish remains does not correlate with Features 2, 7, 7a, and 7b. Fish remains were associated with Features 1, 4, and 5. The largest sample of identifiable remains is most notably associated with Feature 5. This may or may not be significant since features were most probably cleaned out. The remains from the fill of Feature 5 probably represent a composite contained in sediments from adjacent areas. In general, a greater distribution of remains is noted with Area A, which includes Feature 5. However, exceptions are noted, including units N19-20, E10-12; N22-23, E16-18; N19-21, E24-25; and N20-22, E28-30. There appears to be a relatively non-random distribution of remains across the site. Fish remains were recovered outside Area A and B, a major concentration of fish remains occurring on the southwestern edge of the site in units S6-7, W33-35; S7-8, W33-35; and S8-9, W33-35.

![Figure 4. Plan Map of Three Island Structure (Gould and Plew 2001).](image-url)
These remains were associated with mussel fragments, debitage, and pottery sherds. Indeed, many more remains were found here than in Areas A and B combined. Though probably contemporaneous, the activity area is spatially separate from Areas A and B. Particularly interesting is the large number of burned remains. This suggests, as Huelsbeck (1981) has noted, that the fish were not being dried and pulverized to be made into fish meal but rather being consumed and the remains discarded. This may indicate that the site was used during spring or summer when preparation for storage other than short-term caching would not have occurred (see Plew 1990; Gould and Plew 1996). Calculation of the minimum number of individuals (MNIs) indicates the assemblage may represent no more than 300-400 fish.

Deer are the most optimal species represented in the Three Island Crossing assemblage. Original sorting of faunal remains, as noted, indicated few remains readily identifiable by species. The exception was deer remains. Notably, only limited numbers of remains are associated with archaeological features. The majority were found in the 10-30 cm level in Area B with the heaviest concentrations in units N19-21, E22-24; N20-22, E14-16; N22-24, E20-22; and N26-28, E13-14. An estimate of MNIs suggests fewer than 30 individuals, presumably harvested over a period of time.

Using Three Island Crossing as a baseline, Gould and Plew (1996) analyzed seven Late Archaic Snake River sites dating between 1150-150 B.P. Included were Three Island Crossing, three components at Bliss, Assemblage 1 and 2 at Crutchfield, Clover Creek, and Hagerman. Initial analysis focused on examination of economic similarities. A frequency-based Phi square statistic was used to reflect proportional differences in the assemblages rather than simple sample size variations used by Plew (1988). Empirical evaluation of the assemblages and faunal data suggest an isomorphic relationship between harvested prey and variation in exploitive technology. Quite notably, there is a high degree of redundancy in the number of tool classes at each site. The same functional/technological items are represented at all sites with no clearly definable specialized tools, only differential functional elements. Hence, intersite variability reflects only proportional
differences in the production of general tools, which appear to have been used for harvest of both fish and terrestrial mammals, a pattern which most likely reflects the expedient tool manufacture associated with the direct feeding habits of foraging populations (see also Plew and Plager 1999 for discussion). While these assemblages are devoid of fish hooks, lines, net sinkers, gaffs, fishing spears, etc., we recognize that evidence of gear selectivity by species and environmental/topographic context may not have been preserved in the record or that it is reflected at one level by artifact categories such as Bliss points, which may be functionally associated with fishing (see Gallison and Reid 1993; Yohe et al. 1996).

Important in the analysis of Three Island Crossing was an investigation of structural components of the location. A somewhat unique method was used to define spatial patterns at Three Island Crossing. Using a Spearman’s rank order correlation matrix of the frequencies of the 18 material classes, a principal factor analysis with orthomax rotation was performed on the 18 x 18 cm matrix, resulting in a five-factor solution accounting for 100% of the variance estimated by the squared multiple correlations. The factor analysis, which identified clusters of material remains, was used to address issues relating to temporal variation in activities at Three Island Crossing.

During the early occupation, fish were exploited but with an emphasis on fishing for daily subsistence. This view was consistent with a variety of data. First, 69.5% of the fish remains included in this analysis were charred. Further, in terms of the perspective offered by Factor 1, these charred fish remains were distributed along with mussel shell fragments and highly fragmented mammalian bones in a hearth context. Since one characteristic of drying fish is the stripping away of bones after completing the first stage of drying (O’Leary 1985), it seems unlikely that charred remains would be part of an ongoing system of hearth-related activities, unless, of course, the fish were being processed and stored while foragers subsisted on alternative resources. This, of course, could be accounted for by purposeful burning of fish processing wastes.

While Feature 5 fits within the range of ethnographically documented structures generally considered house forms by Green (1993), it resembles fish drying and storage facilities in size and shape. Though a fair number of fish remains were associated with the feature, it seems unlikely that it served as a drying or storage facility. It would be difficult to accommodate this view with the frequency of fire-cracked rocks and projectile points or for that matter with the recovery of the pipe fragment. Feature 7b is somewhat more difficult to evaluate. Based upon the distribution of Factor 2 and 3 scores, it seems the feature is related to the processing of fish. Processing was accomplished using an expediently produced, highly generalized assemblage (see Gould and Plew 1996). There is the possibility that Features 7a and 7b represent storage pits. However, salmon stored beneath the ground do not last long (O’Leary 1985, 1996). Based on a cross-cultural survey of storage pit forms, the type of bowl-shaped pits found at Three Island Crossing can only be used to store food for a maximum of three months (see Zeanah 1980 for a discussion of maximum storage period as a function of pit form). If one or both of these features provide evidence of storage, it undoubtedly would be for periods less than two months. Notable also are MNIs, which represent fewer than 300 fish over a period of 400 years and at least three occupational episodes.

Approximately 600 years ago, Three Island was briefly reoccupied. Factor 4 may demonstrate a relationship between later hearths and the distribution of expediently produced cores and scrapers, but this cannot be clearly tied to the later episode. On the other hand, Factor 5 does seem to be entirely related to this later occupation and defines a limited processing assemblage comprised of potsherds and hammerstones. In terms of subsistence, the pattern related to this use episode is not at all clear. However, Feature 4 and possibly Feature 7a are linked to this period.
The prehistoric inhabitants of Three Island Crossing did make use of migrating salmon but in a rather limited fashion. Importantly, no fishing equipment or drying/storing facilities were documented at the site. A few small pit features may have been used to store fish, but this could only be for a short time period. There is no evidence for any aggregation of structures, much less houses. Thus, it can be concluded that the prehistoric occupants of Three Island Crossing did fish but not in a manner akin to that described in the ethnohistoric record.

SURVEY AND EXCAVATION METHODS

A baseline was established from a primary datum aligned to data points associated with the original excavation test units and were excavated in arbitrary 10 cm levels (Figure 7). Testing identified the most eastern lying unit from the 1986 excavation; resulting in our calculations of the location of the original datum that was displaced some years ago within approximately 20 cm. A total of 17, 1 x 1 meter test units excavated. The majority of units were excavated to depths of 40-60 cm below datum. Two units were excavated to 1.5 meters and probed with an auger. The entire site area was augured at one meter intervals to a depth of 100 cm. The excavation employed the use of standard excavation techniques including hand trowelling, shovel shaving, and the use of 1/8” hard wire mesh for dry screen recovery. Cultural materials were collected and bagged by material type in material specific catalogs. A separate artifact catalog was maintained with numbers reflecting the original series. Standardized forms were used as well as notebooks by all crew members. Digital photographs were taken of all levels and features. Sediments and flotation samples were collected as deemed appropriate.

![Figure 7. Plan View of Excavation Units at 10-EL-294.](image-url)
Site stratigraphy indicates four natural/cultural stratum. The upper stratum (surface) extends to 10 cm below pit datums and consists of grayish-brown sandy-silt (7.5 YR/4.2). The stratum contains rootlets and some grass on the surface. A second stratum consisting of brown (7.5YR/5/4 sand-silt extends from 10-50 cm below datum. This stratum is compact and contains extensive carbonates. It is characteristic of the durapan described by Bentley (1981) at Clover Creek and Bliss sites. A third stratum extends 30 cm to a depth of approximately 80 cm. The stratum is characterized by slightly darker brown (7.5YR/6.4) and heavily compacted silt containing considerable calcium carbonates. A fourth stratum extends from 80-120 cm below datum. It is characterized by somewhat less compacted sandy-silt that exhibits increased clay levels. Sediments contain only a few small rocks, the majority measuring under 10 cm in length. Sediments vary somewhat in their distribution across the site since natural swales and historic water diversion ditches and leveling have disturbed the upper 30 cm of the site area.
MATERIAL CULTURE

Cultural materials were typed and functionally classified using a modified version of Winter’s (1969) classification scheme. Categories include weapons (projectile points), domestic tools (ceramics and bone needles), fabricating (cores) and general utility tools (knives, bifaces, worked flakes, hammerstones, and pestles), and decorative (beads and pipe fragments). Size ranges are given in centimeters by length, width and thickness respectively. When there is only one specimen represented in the collection, artifacts are measured individually and represent actual sizes.

Projectile Point Fragments

No. of Specimens: 2 (A13, A25) (Figure 9, a-c)

Form: Fragmentary point bases. Bases are straight to slightly expanding.

Material: 1 Cryptocrystalline, 7 Obsidian

Size Range: Greatest width: 1.4-0.6 cm

Scrapers

No. of Specimens: 1 (A29) (Figure 9, e)

Form: Combination end and side scraper exhibiting relatively fine retouch.

Material: 1 Cryptocrystalline

Size Range: 5.9 x 2.7 x 0.6 cm

Technique: Percussion

Worked Flakes

No. of Specimens: 6 (A1, A2, A10, A19, A21, A31) (Figure 9, f-h)

Form: Irregularly shaped flakes exhibiting retouch on lateral margins.

Material: 3 Basalt

Size: 5.1-1.5 x 3.2-1.0 x 1.0-0.5 cm

Cores

No. of Specimens: 1 (A18) (Figure 9, i)

Form: One conical/ovate and seven irregular cores.

Material: 1 Basalt

Size Range: 5.5 x 2.7 x 1.9 cm

Technique: Percussion

Figure 9. a-c. Projectile Point Fragments; d. Biface; e. Scraper; f-h. Worked Flakes; i. Core.
Biface Fragments

No. of Specimens: 4 (A9, A12, A14, A17) (Figure 9)

Form: Fragmentary bifacially-worked specimens.

Material: 3 Cryptocrystalline, 1 Obsidian

Size Range: 2.9-1.0 x 1.9-1.0 x 1.5-0.3 cm

Technique: Percussion

Hammerstones

No. of Specimens: 3 (A3, A4, A8) (Figure 10)

Form: Cobbles exhibiting proximal/distal end damage.

Material: Quartzite

Size Range: 6.8-5.0 x 6.5-3.1 x 3.7-2.1 cm

Technique: Percussion

FUNCTIONAL DISTRIBUTION of ARTIFACTS

Analysis of the 2008 excavation assemblage indicates little diversity in the tools present. Of the 17 artifacts included in the analysis, 17% are weapons (n=3). The general utility category constitutes 64% of the total assemblage and is comprised of bifaces (n=4), unifacially worked flakes (n=4), and scrapers (n=1). The domestic category is not represented where as fabricating or reworking of chipped stone tools occurred at the site as evidenced by cores (n=2) and hammerstones (n=3) (Figure 11).

LITHIC DEBITAGE ANALYSIS

The 2008 test excavations recovered 641 lithic flakes, of which 248 (39%) are obsidian, 231 are basalt (36%), and 162 (25%) are cryptocrystalline. The recovered flakes indicate no specific preference for raw material. Debris recovered during the excavation exhibited fairly even dispersal of flake sizes (Figure 13). Analysis indicates few early stage reduction flakes of any material type (Figure 12). The majority (70%) of flakes are <1 cm in length indicating retooling activity as no significant evidence of manufacture exits. This, however, could reflect the use of small locally available nodules reflecting flake sizes normally associated with late stage reduction.
A total of 25 specimens of thermally altered stone were noted from all excavation units. All specimens recovered from the upper 20 cm of the deposit, were typically small angular pieces of quartzite that ranged in size between 2 and 7 cm in length.

**RESEARCH QUESTIONS FINDINGS AND CONCLUSIONS**

**Site Formation**

Our research sought to further examine the nature of the natural and cultural deposits of the area east of the 1986-1987 excavations. We were interested in assessing the following:

- **The geomorphology of the site relative to other sections of the Snake River area that have become better known during the past 20 years.**

- **Findings:** We observed that the geomorphic context is quite similar to those recently described at King Hill (Willson and Plew 2007) and Hammett (Plew and Willson 2005). Late Archaic cultural deposits are contained within the upper 20-30 cm and underlain by an emerging durapan similar to that described by Bentley (1981) at Clover Creek. At Three Island Crossing this heavily carbonated sediment extends to beyond one meter below the surface of the site area and softens only at about 1.2 meters below datum where a noticeable increase in clay content occurs. Sediments are highly uniform and consist largely of re-deposited silty-sands. The depth of the deposit and its uniformity appears similar to other sites within the area. Sediment depths would appear to be slightly deeper at Three Island Crossing than at King Hill.

- **Defining identifiable marker beds, including Pleistocene surfaces associated with the Bonneville boulders/gravels.**

- **Findings:** Our test excavations did not identify any obvious Pleistocene surfaces.
associated Bonneville gravels. This most probably reflects the depths at which we would expect to locate Bonneville gravels at Three Island Crossing. Examination of the adjacent river bank indicates that Bonneville materials at this location lie at depths greater than three meters. We presume, however, that sediments below one meter and a half are of probable Late Pleistocene or Bonneville age and are likely to be re-deposited.

- **Assessing the post-depositional history of the site.**

- **Findings:** Our investigation allowed us to better assess the post-depositional history of the site. Observations made during the initial investigations of 10-EL-294 noted upper level disturbances and the assertions of local informants that the area had been farmed as recently as the early 1970s. Our recent findings allow us to offer additional observations regarding the setting. We noted that across the terrace there is considerable undulation of the landscape. In particular, we noted a large swale on the east end of the terrace that measures some 2-3 meters across. These areas contain culture bearing deposits which are otherwise quite uniform in the distribution across the site area. We surmise that the entire area may have been leveled/graded prior to agricultural use. We further identified a shallow (50 cm in width) water diversion ditch that runs east-west from the mid-point of the site to the center of 10-EL-294. We also note, upon further inspection, a shallow berm that extends from the east end of the terrace beyond 10-OE-294 proper as described in 1986 (Gould and Plew 2001). We believe that the berm represents a remnant of the original surface. We also conclude that the excess sediment from the access roadway running east-west along the fence line on the northern margin of the site was turned on top of the original surface of 10-EL-294. This may partially account for the density of material recovered in the area during the 1986-1987 seasons. Historic materials dating largely from the 20th century were recovered from across the site area.

**Cultural Adaptations and Behaviors**

Culturally our goal was to assess the extent of cultural deposits beyond the original excavations and to determine if there are identifiable activity areas. We sought to inform our discussions and interpretations regarding the following:

- **Whether the site was continuously occupied by prehistoric peoples or visited multiple times over many years and whether earlier Archaic deposits are present.**

- **Findings:** We were unable to demonstrate multiple uses of the location, though we believe with some certainty that the site area does reflect more than a single occupation. The four radiocarbon dated occupations of 10-EL-294 strengthen the argument that the area saw multiple Late Archaic visits. Though our presumption is that the materials recovered are of Late Archaic age, we can with certainty conclude that we found no evidence of Middle or Early Archaic use of the site. This is of interest as it reflects the relative absence of earlier Archaic use of the Snake River corridor.

- **The relative importance of fishing, hunting, and collecting relative to earlier findings which suggest a primary reliance on deer and fish.**

- **Findings:** One of the most interesting discoveries of the 2008 investigations is the relative absence of faunal remains. The area to the east of the site produced virtually no vertebrate (n=86) or invertebrate (n=95) remains. The remains are highly fragmented and largely unidentifiable. On the basis of size, deer and rabbits and many small rodents appear
to be represented. Even more interesting is the total absence of any fish remains. The original investigations recovered 6847 mammalian remains and 19,000+ fish remains. Though calculations of MNIs indicate fewer individual fish harvested intermittently over a period of 400 years, the site produced more fish remains than any other type on the Snake River, a basis for arguing that the primary activity at Three Island Crossing was fishing. It appears that, based upon our recent findings, the processing of fish at Three Island Crossing was a highly localized activity. Given this information we have no basis upon which to discuss diet breadth and prey choice beyond what is indicated by the original investigations.

- **Whether manufacturing, fabricating or other specific activities occurred within the area.**

- **Findings:** Recent investigations indicate that some limited re-tooling of artifacts may have occurred in the area east of 10-EL-294 proper. No evidence of processing or other distinct activities was noted. The artifactual remains included only 17 prehistoric items, most of which are general purpose tools. In this regard, material assemblages provide no basis upon which to assess residential mobility. The total absence of storage pits, fire hearths, roasting pits, and structures are, however, indicative of highly mobile populations (Kelly 2001).

**General Conclusions**

Our investigation of the area east of 10-EL-294 allows us to conclude that while the site appears to generally extend into the area, no evidence of specific activities are present. As noted, we found no features, very limited faunal remains (no fish remains), and little material culture. We conclude that the area is peripheral to the diverse activities documented in the central portion of 10-EL-294. We note that the average size of hunter-gatherer sites is equivalent to that of the area excavated in 1986-1987 (approximately 100 square meters), and that the area east of the previous investigations is similar in material densities to those on the periphery of the central area of 10-EL-294 along the fence line investigated in 1986.
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