THE ARCHAEOLOGY AND MOBILITY AT 10-CN-05, AN ARCHAEOLOGICAL SITE, MIDDLE SNAKE RIVER, IDAHO

by

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The final reading approval of the thesis was granted by Mark G. Plew, Ph.D., Chair of the Supervisory Committee. The thesis was approved for the Graduate College by John R. Pelton, Ph.D., Dean of the Graduate College.

Dedication

To C.D.J., J.E.G., and R.D.P.

Acknowledgements

I would like to acknowledge the following, rather in specific or in general, for their tireless support, enthusiasm, encouragement, chastising, and understanding: my committee members, my peers, my advisor, and lastly- Ann.

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sound, it is not the statement of a task to be accomplished, but the statement of a philosophy to always move forward.

Lastly, I wish to thank the greatest influence in my life, my daughter. My journey has been one in which I sought to provide to you with an example, a goal, an accomplishment, and the tools by which to survive whatever you decide to do. Never let them tell you 'you can't do that'. Without you I would have never grown up, and despite that, I still refuse to! Now get it done, don't argue, break a leg, cherish your friends, and go change the world!

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As always there are numerous others that need to be mentioned, but a wise man once said "there are no new ideas under the sun". Therefore in closing I wish to acknowledge Ethan Allen, hereinafter known as et al.

ABSTRACT

THE ARCHAEOLOGY AND MOBILITY AT 10-CN-05, AN ARCHAEOLOGICAL SITE, MIDDLE SNAKE RIVER, IDAHO

Tedd D. Jacobs

Excavations during 2007 and 2008 at site 10-CN-05, an archaeological site located on the Middle Snake River, five miles south of Melba, Idaho, uncovered material culture remains dating to the Late Archaic (2,500, years ago). An analysis of the archaeological remains, consisting of artifacts, lithic debris, and faunal remains, has provided insights into activities that occurred along the Western Snake River corridor. These activities include maintenance of lithic tools and procurement of medium and small sized mammals. The archaeology of 10-CN-05 suggests a pattern of sparsely populated, highly mobile hunter-gatherers making infrequent use of the area with relatively few repeat occupations.

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INTRODUCTION

During the summers of 2007 and 2008 excavations were conducted at site 10-CN-05, an archaeological site located on the Snake River approximately five miles south of Melba, Idaho. These excavations were conducted by Boise State University as part of its Archaeological Field School in cooperation with Celebration Park and Canyon County Parks, Recreation, and Waterways. Site 10-CN-05 (Figure 1) is located within Celebration Park between the Interpretive Center and the historic Guffey Railroad Bridge on a steppe terrace which extends for approximately 100 meters on the north bank of the Snake River. Because 10-CN-05 lies in close proximity to many other archaeological sites it provides an opportunity to continue systematic investigations into the prehistoric lifeways of indigenous populations along the Snake River and thus contribute to the knowledge about Southwest Idaho archaeology.

Sites 10-CN-05 and 10-CN-06 (Figures 2 and 3) were originally dubbed the "Warwick Site" for John Warwick who lived and farmed on the terrace. The sites were recorded and surveyed by Tuohy (1958), later by Keeler and Koko (1971), and lastly by Murphy (1977). More recent investigations into site 10-CN-05 include limited excavations reported by Huter, Kennedy, Plager, Plew, and Webb (2000) and excavations at site 10-CN-06 by Plew, Plager, Jacobs, and Willson (2006). Originally described as a "campsite", Tuohy noted mussel shell and lithic debis and suggested that the nearby site 10-CN-06 to the west may be an extension of it. Keeler and Koko reported in 1971 that 10-CN-05 and 10-CN-06 were continuous sites and noted extensive looting in the area, locating shell, lithics, and metates in the looters' backfill dirt. An archaeological survey

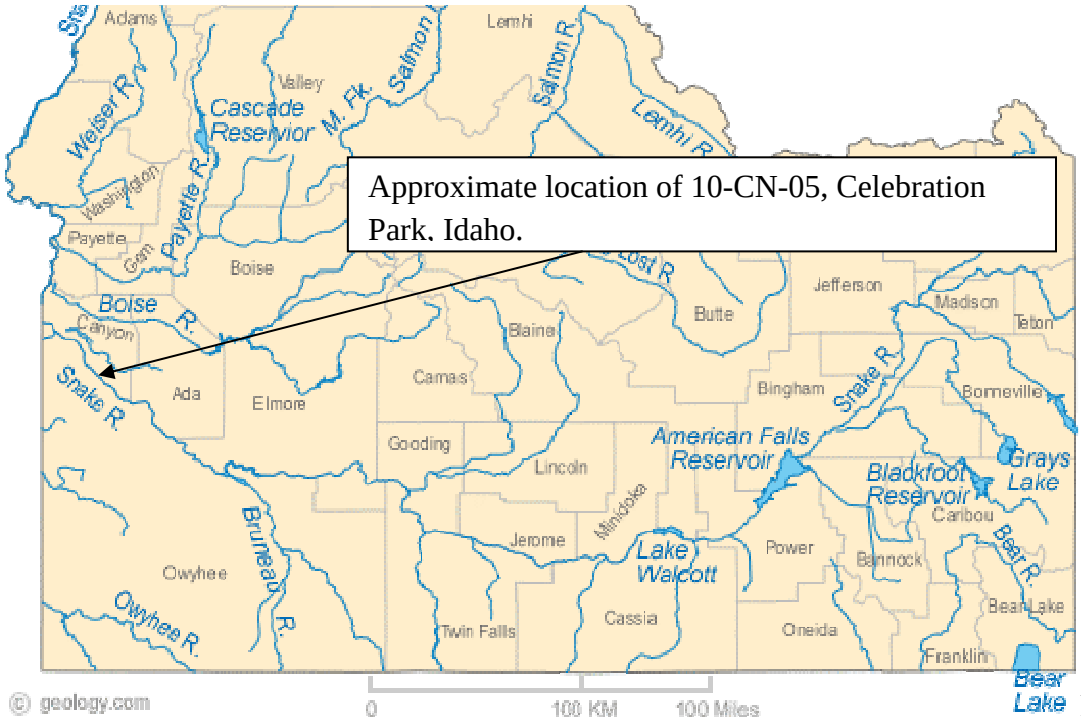


Figure 1. Map of Southern Idaho showing the approximate location of Celebration Park.

by the Bureau of Land Management conducted by Murphy described the area as a habitation site, also noting mussel shell and looters pits, as well as fire-cracked rock and two hand stones. Work conducted during the 1997 and 1998 field seasons included the excavation of eighty-nine unit levels but recovered only a few artifacts. The site appears to be a multi-component site spanning the Middle to Late Archaic (the last 3,000-4,000 years). The extensive excavations at nearby 10-CN-06 provided a catalog of material culture remains which created a strongly comparable relationship with site 10-CN-05 while documenting the range of activities conducted at the locality.

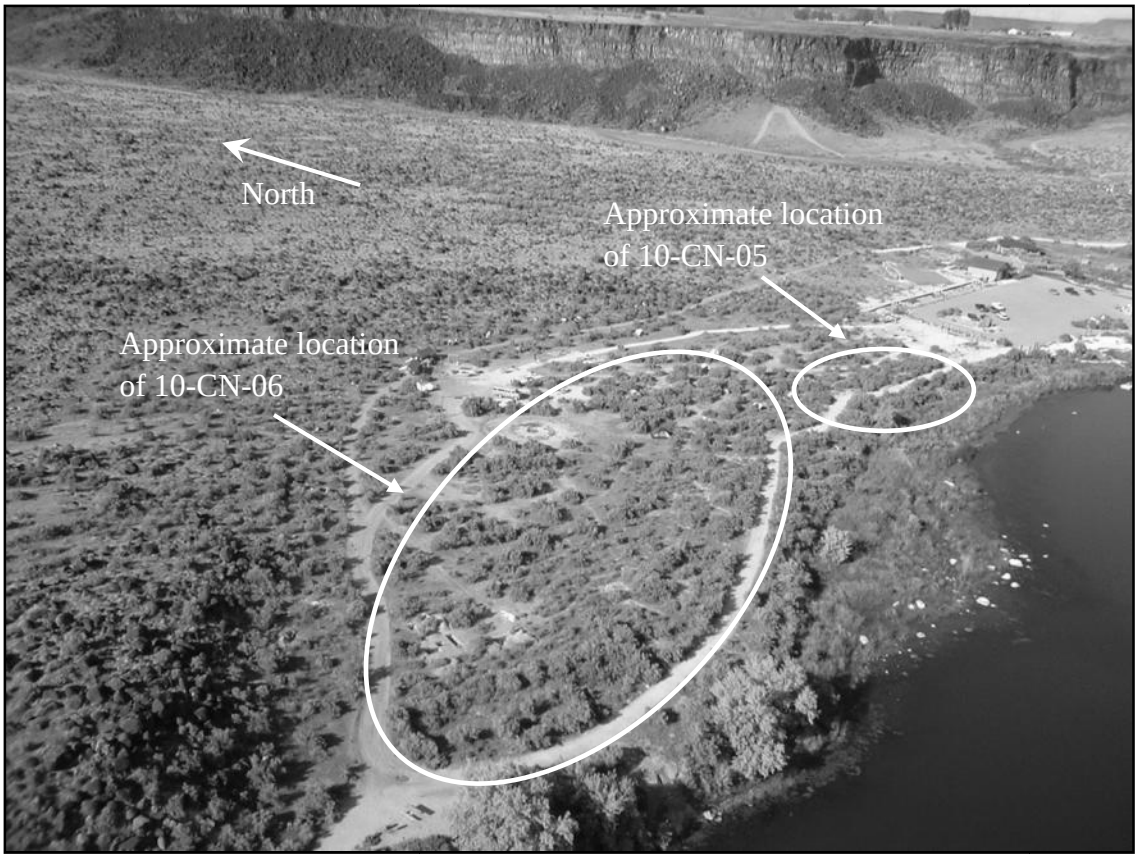


Figure 2. Aerial photograph overlooking the Snake River and the Celebration Park Recreation Area terrace formation with parking lot located to the right. Location of 10-CN-06 and 10-CN-05 are approximate. Excavations visible in foreground are from the 2004 field excavation of 10-CN-06. (Photograph courtesy of Kara Harden, 2004).

The analysis of materials recovered from10-CN-05 utilizes the same problem orientation followed by numerous excavations for the area to address the question of high versus low mobility patterns (e.g. Plew et al. 2006, Plew and Willson 2005, Willson and Plew 2007). To do this, it is necessary to first determine if the range of activities conducted at 10-CN-05 can be ascertained from the archaeological assemblage, what the range of those activities are in relation to adjoining archaeological sites, and evaluate the depositional nature of the site itself. In particular, this study examines the technological diversity of this site to place it within the broader context of hunter-gatherer mobility (Barnard and Wendrich 2008, Fitzhugh and Habu

2002, Binford 1980). By looking at the assemblage from this standpoint, it allows us to ask questions to determine if the evidence fits the pattern described by Gould and Plew (1996, 2001) of short-tem use of the canyon setting by highly mobile foraging groups.

Figure 3. Arial photograph of approximate location of 10-CN-05, located just to the west of the Celebration Park Recreation Area parking lot visible to the right of photograph. The Snake River is in the foreground. (Photograph courtesy of Kara Harden, 2004).

A discussion of the environmental setting of the area provides a backdrop for thinking about the prehistoric setting. Additionally, an overview of previous archaeological research sets the backdrop for past and current archaeological paradigms. To discuss the temporal context and

extent of disturbance, the depositional nature is examined in order to determine the range of possible explanations pertaining to the integrity of the site and questions of the completeness of the collection. A description of the materials remains classifies the collection according to morphological characteristics and functional types. This information is important to the discussion and implications in evaluating extent and possible use of the site over time, and in answering the primary question regarding high or low mobility of prehistoric hunter-gatherers in Southwestern Idaho.

ENVIRONMENTAL SETTING

The Snake River Plain is a designated physiographical section of the High Lava Plain Subprovence located within the Columbia Intermontane Provence (Freeman, Forrester, and Lupher 1945). Hill (2006) describes the area of The Western Snake River Plain as being comprised of fault bound Tertiary and Quaternary sediments and igneous rocks. The local geology relevant to site 10-CN-05 includes the geologic units in the Walters Butte-Guffey Butte region. These units are comprised of Late Quaternary alluvium, fluvial sediments, lava flows, gravels and sands and Tertiary lava flows with lacustrine and fluvial sediments.

Beginning about 12 million years ago basaltic and rhyolitic flows began forming the Western Snake River plain. Deep lake sediments and pillow lavas are the product of prehistoric Lake Idaho, which covered the region during this period. Once the lake began to drain, rivers left along the lake floor started to cut deep canyons through the basaltic layers, forming the modern Snake River system and its associated canyons (Hackett and Bonnichsen 1995). Lake Bonneville (of which the Great Salt Lake is a remnant) reached it highpoint about 15,000 years ago. At approximately 14,500 years ago the lake broke its earthen dam near Red Rock Pass, Idaho, resulting in the Bonneville Flood episode in which sediments and large boulders ranging in size from less than one meter (<1 m) to as large asfour to five meters in diameter (4-5 m), also referred to as “Melon Gravels”, were transported downstream, resulting in the new formation of bars and terraces within the canyon system (Malde 1968). These events provided many of the underlying foundations and parent material for the modern setting we see within the canyon today (Figure 4).

The area is characterized as a Semi-arid Desert biome, receiving between 7-12 inches of rainfall annually. The annual rainfall creates a system of seasonal creeks and playas that support desert shrub and grass communities. Within this barren landscape of xeric communities, which were used by archaic period hunter-gatherers, sediments are relatively young with weak definitions of horizons that are comprised of redistributed loess, alluvial, or lacustrine sediments that vary in depth from less than one meter to several meters (Collett 1980; Rosentreter 1984). The elevational range of the area is roughly 2000 to 3500 feet above sea level. The climate is influenced by maritime and continental air masses which combine to produce intermittent periods of stormy and mild weather during the winter and, drier, hotter weather in the summer months (Collett 1980).

Celebration Park is located five miles south of Melba, Idaho on a narrow terrace along the north bank of the Snake River. This terrace is characterized as a narrow, elongated shape that is stratigraphically comprised of lacustrine and fluvial sediments overlying the large Melon Gravels (Figure 4). These sediments range in depth from approximately three meters to less than one meter. A single layer of calcium carbonate ($CaCo^3$) appears at levels ranging from 40 centimeters to deeper than 80 centimeters (Figure 5). Hill (2006:138) has suggested the presence of calcium carbonate could reflect regional climate conditions associated with the Altithermal event of the Middle Holocene (7,000 to 4,500 years ago) however the impact of the Altithermal as Antevs (1948) described it have been debated within the Great Basin (see Grayson 1993).

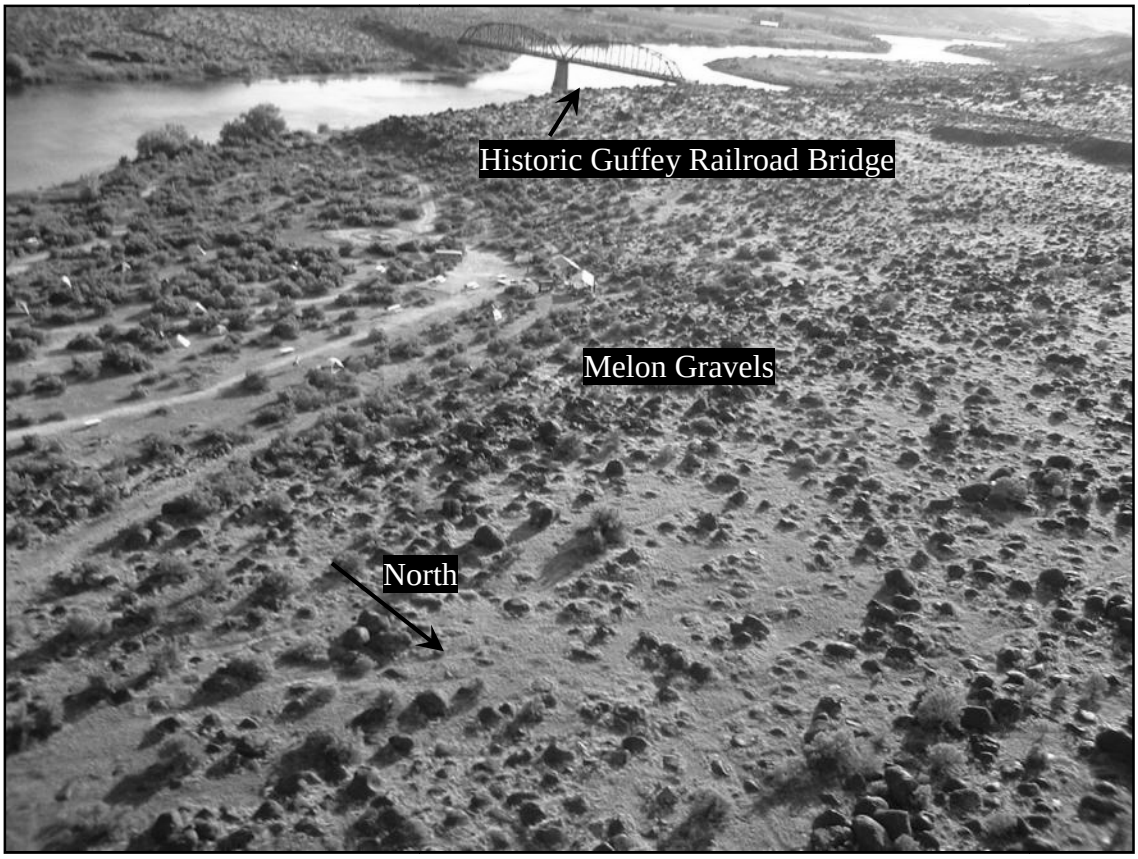


Figure 4. Looking southwest, an aerial photograph overlooking the terrace formation and Snake River at the Celebration Park Recreation Area with the Historic Guffey Railroad Bridge located at center-top. The large boulders visible are those of the Melon Gravels, deposited by the Bonneville Flood episode 14,500 years ago. (Photograph courtesy of Kara Harden, 2004).

The modern flora and fauna of the terrace are relatively uniform upstream and downstream within the greater canyon setting and fit with the Northern Great Basin Biotic Complex described by Davis (1939:32-34). Mammals found in the canyon include mule deer (*Odocoileus hermionus*), pronghorn antelope (*Antilocapra americana*), yellow-bellied marmot (*Marmota flaviventris*), coyote (*Canis latrans*), and otter (*Lutra canadensis*). Smaller mammals include, cottontail rabbit (*Lepus* species), pocket gopher (*Thomomys* sp.), and ground squirrel (*Citellus* sp.). Vegetation includes a variety of species adapted to the soils and precipitation of the area and include a variety of large and small sagebrush (*Artimisia* sp.), perennial grasses (e.g.

Agropyron, *Poa*, *Stipa*, and *Oryzopsis* species and subspecies), and various willows (*Salix* sp.) and cottonwoods (*Populus* sp.).

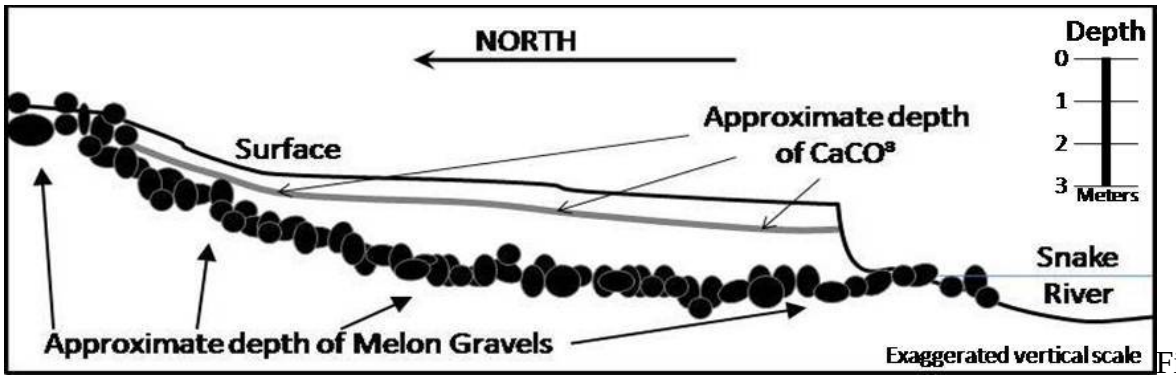


Figure 5. Schematic of the Celebration Park terrace formation showing relative depths of Melon Gravels, calcium carbonate deposits, and the Snake River in relation to topography. (Adapted from Plew et al. 2006). Vertical scale is exaggerated relative to distance.

While the Western Snake River Plain may seem to be relatively homogenous, there is a large degree of variation in the environment between upland and riverine settings. This information is important because the flora and fauna of the setting has remained relatively consistent throughout the Late Holocene, this allows for discussion (in a regional context) of the variety of strategies utilized by prehistoric hunter-gatherers to adapt to various environmental patches.

PREVIOUS ARCHAEOLOGICAL RESEARCH

An analysis and discussion of site 10-CN-05 is framed by previous archaeological research conducted at sites located along the Middle Snake River. This research includes archaeological surveys, small scale excavations, and on-going projects within and around the greater Snake River Birds of Prey National Conservation Area, and which have established the general temporal and functional range of activities of prehistoric indigenous populations both within riverine and upland contexts. A number of chronologies exist for Southwest Idaho and the Western Snake River Plain, Plew (2008) merges several Idaho chronologies to more accurately represent the broad prehistory of the region. In doing so however, he emphasizes the need to move beyond the "two-dimensional considerations" of an archaeological record based upon historical descriptions to place more focus on the study of past behaviors (Plew 2008:28). Recognizing this, an understanding of the range of socio-economic decisions available shifts research interests to those beyond that of simple assemblage descriptions. That having been said, a chronology is warranted as a means of framing descriptions of changes that have occurred over time within traditions, periods, and sub-periods bordered by definable changes in technologies or environment.

A Paleoindian tradition beginning about 12,000 years before present (BP) is sub-divided by a Clovis period (12,000-11,000 BP), a Folsom period (11,000-10,000 BP), and a Plano period (10,000-8000 BP). These periods are named for the technologies utilized at the time by paleoindian peoples and defined by their assemblage variation and/or association with extinct or extant fauna. An Archaic tradition, generally considered to be marked by a change in the

environment, follows the Paleoindian tradition and is sub-divided into three periods, Early Archaic (8000-5000 BP), Middle Archaic (5000-2000 BP), and Late Archaic (2000-250 BP). A Protohistoric period, also described as a transitional period, occurs after 250 years before present (Plew 2008). The Archaic sub-periods are defined by changes in assemblage variation, resource intensification, shifts in economic strategies, environmental change, and in the case of the Protohistoric, the appearance of metals indicating contact or exchange with euroamericans. Of interest here in relation to the analysis of 10-CN-05 are the Late Archaic and Protohistoric periods.

Though there is little evidence to support it, Meatte (1990) created a developmental model for the Western Snake River Plain consisting of a three stage chronology defined by adaptive systems (see Gould and Plew 2001 for critiques). The first, Broad Spectrum Foraging, spanning from 11,500 BP to 4,200 BP is characterized by mobile foragers with simple tool inventories who exploited a wide variety of food resources. The second, Semisedentary Foraging, dates from 4,200 BP to 250 BP and is thought to be characterized by extended residential stays and an increased reliance on fishing resources in canyon settings during winter seasons. The last stage, Equestrian Foraging, extends from 250-100 BP. Meatte describes this stage as being characterized by a heavy reliance on horse transportation, allowing for extended forays into upland areas during fall and winter months, or large, coordinated mounted groups.

During the 1960's a series of small scale excavations and surveys served to document the general time depth and functional variability of Southwestern Idaho prehistory. These studies are necessary for comparison and discussions of the mobility of 10-CN-05. The earliest of these is Louis Schellbach's (1967) excavation of Schellbach Cave in 1929. Located on the south side of the Snake River a few miles downstream from Swan Falls Dam, excavations at the cave

uncovered fishing gear, the remains of 11 salmonid and other items. While some have contended that the site is an important fish caching location (e.g. Pavesic, Follett, and Statham 1987), others argue there is little data to support the assertion (Plew 2008:116). While the site may, or may not be evidence of an intensive fishing strategy, it does indicate a diversified resource procurement pattern when taken into consideration with other sites in the region. Schellbach Cave is located approximately eight miles upstream from 10-CN-05.

To the west of 10-CN05, Givens Hot Springs is located near Marsing, Idaho, where "pit-houses" and associated features were excavated. These structures have been argued to indicate a shift in strategy from highly mobile hunter-gather behavior to that of a more sedentary, seasonal residential pattern (Green 1982, 1993). The structures, associated with hearths, storage pits, and refuse features, date from 4,620 BP to 1,100 BP. While this date range overlaps into the Late Archaic, Givens Hot Springs is widely regarded as a Middle Archaic site (Plew 2008).

Also to the west just beyond the historic Guffey Bridge and closer to 10-CN-05, site 10-CN-01 contained diagnostic artifacts typologically consistent with those of the Middle and Late Archaic and an extensive assemblage of fish, fauna and mussel remains, but relatively little groundstone. A Protohistoric component is evidenced by a glass trade bead (Sayer, Plew, and Plager 1997). To the east of Celebration Park, the "Midden" site, 10-AA-306 (Sammons and Myler 1994) is located approximately one mile upstream from 10-CN-05. Materials recovered include limited cultural remains but a variety of faunal remains, including small and medium mammals, avian, fish, and bivalves. This site is similar to the Cromwell site, 10-OE-2792 (Huntley 1988), located down river from 10-CN-05 near Marsing, Idaho; a site which also exhibits extensive mussel remains and only a limited range of cultural remains.

Located upstream near Swan Falls Dam, sites 10-AA-12, 10-AA-14, 10-AA-188 and 10-AA-189 contain no evidence of fishing activities and only limited faunal remains (Sayer, Plager and Plew 1996). Low densities of remains are also characteristic of each site except for 10-AA-188, a rockshelter that exhibits a high frequency of faunal remains (medium and small mammals) and extensive mussel shell.

Located within the vicinity is 10-AA-15 (Touhy and Swanson 1960) characterized by a predominance of medium-sized mammal remains. The special significance of 10-AA-15 is that, like 10-AA-12, 10-AA-14, and 10-AA188, the faunal assemblage contains no evidence of fishing activities despite its location. The greater density of medium mammalian remains may indicate seasonal use of the canyon setting during a time when deer were a preferred resource over fishing. Whether or not this was due to a non-optimal location, a more favorable strategy, or seasonality has been discussed (cf. Sayer et al. 1996).

Near Swan Falls Dam, excavations at site 10-AA-17 (Ames 1982) recovered a range of artifacts including projectile points, groundstone, and pottery fragments that are typologically consistent with the Middle to Late Archaic. Of more interest however, was the exposure of the remains of a structure resembling a small Late Archaic wickiup. While material culture remains were limited, a relative abundance of faunal and fish remains were collected, including over 7,000 mammalian remains and approximately 1,500 fish remains identified as salmon. While the distribution of artifacts, fire-cracked rock and faunal remains suggest activity areas, these cannot all be clearly associated to the structure (Plew 2008).

One of the most extensively excavated sites in the area is 10-CN-06 (Plew, Plager, Jacobs, and Willson 2006) which is located immediately west of 10-CN-05 on the same narrow

terrace located in Celebration Park. Between 2002 and 2005 fifty-nine excavation units, eight shovel probes were opened and two cut-banks exposed. Two of the excavation units and the cut-banks were exposed at depths greater than 200 centimeters. These excavations recovered 375 artifacts (270 of them prehistoric), approximately 16,000 lithic flakes and over 10,000 faunal remains. Among the prehistoric artifacts were seventy projectile point and point fragments. Raw materials for artifacts and lithic debitage were dominated by obsidian. Groundstone and decorative items were present, but not in high amounts (n=12 and 7, respectively) though greater than those present in many of the sites listed above. Also present was thirty-seven pottery shards. The majority of faunal remains had been charred and identifiable remains indicate the presence of deer, rabbit, coyote, gopher, muskrat, and fish.

Test excavations earlier conducted at 10-CN-05 (Huter, Kennedy, Plager, Plew, and Webb 2000) in 1997 and 1998 recovered approximately 109 artifacts including 27 projectile points, 19 bifaces, ceramics, groundstone, and decorative items. Functional tool categories suggest activities conducted at the site include hunting, manufacture and modification of chipped-stone tools, and processing activities. Additionally, 9,852 lithic flakes were collected and was dominated by the presence of obsidian materials. These excavations at 10-CN-05 indicate the site is a multi-component site dating from Middle to Late Archaic.

Previous X-Ray Fluorescence (XRF) analysis of obsidian material from sites 10-CN-06, 10-CN-05, 10-AA-14, and 10-AA-188 suggests a pattern of largely local acquisition of volcanic glass. Samples from 10-CN-06 represent volcanic glass acquired from Timber butte, Owyhee 1, Owyhee 2, Sinker Canyon, Sourdough Mountain, Venator, and Coyote Wells sources. The majority of samples from 10-CN-05 are from Owyhee 1, approximately 20 kilometers (km) south, while the 10-AA-14 and 10-AA188 samples are from Timber Butte (Plew et al 2006:42-

46). While it is unclear whether these materials were acquired through visitation or through exchange, it appears that localized obsidian sources dominate archaeological assemblages (see Willson 2007 for discussion of the limitations of XRF analysis to address specific behaviors in chipped-stone tool resource acquisition).

Farther to the east, excavations at Three Island Crossing (Gould and Plew 2001) near the westernmost edge of Hagerman Valley sought to answer questions of hunter-gatherer mobility, land use, and subsistence. Excavated during the 1986 and 1987 field seasons, a total of 1,413 artifacts were recovered and ten features were recorded. Artifact types are dominated by projectile points and pottery, the later totaling 66% of the collection (n=935). Included at the site was evidence of structures, storage pits, and fishing activities. They argue based on their findings that the majority of sites on the Middle Snake River represent short-term use of the canyon area by highly mobile foraging groups, but do not dismiss the possibility that a collector strategy may have been used during certain periods (Gould and Plew 1996**,** 2001:98). This site is important in that it indicates a repeated use of the site spanning approximately four- to five-hundred years during the Middle Archaic and into the Late Archaic with a shift to smaller residential units in the Late Archaic.

PROBLEM ORIENTATION

It is clear from previous work that one of the major questions relating to Hunter-Gatherers within the southwestern Snake River Canyon is whether local populations were foragers or collectors. This study examines the assemblage variability from 10-CN-05 as a means of identifying the type of prehistoric mobility characteristic for the site. In short, foragers move from location to location making use of the resources which are available during their stay, while collectors on the other hand, will transport these resources back to a central or base camp. This is expected to be evident in the archaeological record.

A number of authors have presented models of residential mobility. Three of these are illustrated here (Figure 6, a-c): logistic mobility (Binford 1980) in which segments of the group gather resources for the base camp (a), residential mobility (Kelly 1992) in which the entire group travels from resource to resource (b), and tethered mobility (Ingold 1980) in which the entire group follows a distinct and fixed pattern (c). Kelly (2001) has provided a means by which to operationalize these models by looking at levels of mobility in relation to the artifact assemblage. Thus, high or low residential mobility can be measured by site function, size and variation and can be evaluated through lithic technologies (Kelly 2001, Winter 1969) though others have sought evaluation through ceramic technologies (Simms, Bright, and Ugan 1997, Eerkens 2008). It is important to note that these models of mobility are not exclusive and are overlapping, meaning that in the real world the different strategies could be represented by varied mobility types. Since the main question here is whether the assemblage reflects a

collector strategy (a) or a foraging one (b or c), it is important to clarify which type of mobility fits which pattern.

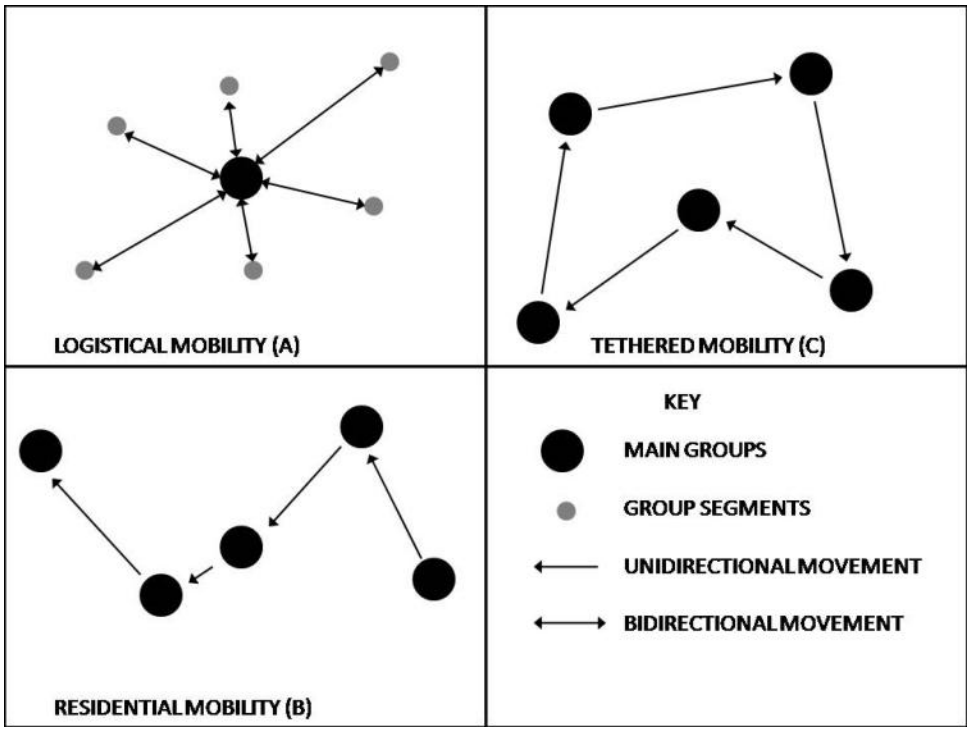


Figure 6. Settlement models used to describe different residential mobility strategies: logistical mobility (Binford 1980), A; residential mobility (Kelly 1992), B; tethered mobility (Ingold 1980), C. (Adapted from: *The Archaeology of Mobility: Old World and New World Nomads,* edited by Barnard and Wendrich, 2008).

Kelly's (2001) model for residential mobility strategies provides a means of measuring the relatedness of the assemblage to types of mobility. In measuring residential mobility, the presence of a high tool/debitage and flake tool/biface ratios, the rare occurrences of angular debris, bifaces bi-products, bipolar knapping, fire-cracked rock, and the common occurrence of bifaces as cores and flake tool fragments, are considered evidence indicating high residential mobility. Additionally, raw materials and site size/diversity are considered in determining the separation between high and low residential mobility. Low residential mobility represented by

the higher occurrence bifaces byproducts, flake tools, complete flakes, angular debris, and fire-cracked rock, and a lower occurrence of flake fragments and bifacial cores. Plew et al. add volcanic glass (obsidian) as a raw material as evidence of high residential mobility (2006:49).

Kelly's model is useful in that it allows us to identify the possible range of mobility options, this is important when debating whether collecting or foraging activities were conducted at site 10-CN-05. Additionally, this model has been applied to 10-CN-06 (Plew et al. 2006), 10-OE-110 (Willson and Plew 2007) and 10-EL-1367 (Plew and Willson 2005) for lithic assemblages associated with mobility. Both 10-CN-06 and King Hill Creek (10-OE-110) fit the criteria for high residential mobility in 12 of Kelly's 14 categories, the notable exceptions being the medium occurrence of bifaces as cores and the bifaces/flake tool ratio (see also Plew 2008). This supports the pattern for the Late Archaic described by Gould and Plew (1996, 2001) for small residential groups of highly mobile foragers within the Middle Snake River area.

In addition, ceramic analysis has been used by Simms et al. (1997) to argue that the presence of crudely constricted, undecorated, thin-walled pottery remains are an indication of tethered mobility (Eerkens 2008).

METHODS

Excavations at 10-CN-05 were conducted as part of on-going, systematic excavations at Celebration Park (see also, Plew et al. 2006; Huter et al. 2000). Conservation and preservation concerns were balanced with the need to make optimal use of budget and time allocations. Excavation and recovery techniques employed were consistent with the standards and practices fitting to the research design including the use of 1/8" hard wire mesh screens, troweling, shovel shaving, brushing and sediment collection. This design entailed the vertical and horizontal proveniences based on a datum arbitrarily set and fixed at 100 meters elevation and 0 meters north-south and 0 meters east-west. Excavation units were based on a one meter by one meter quads and excavation levels based on 10 centimeter (cm) increments. In special cases, excavation units may have been split to one-half meter by one meter increments or excavation levels may have transcended the arbitrary 10 centimeters. Shovel probes were additionally conducted as part of the 2008 season to depths of approximately 40 centimeters. All materials recovered were collected, processed, and cataloged.

In addition to the material culture remains recovered during excavation, other lines of evidence were collected, including sediment information, faunal, botanical, charcoal, mussel shell, and flotation samples for microbotanical analysis. Level records for each unit were kept. Artifacts were collected individually and recorded by site and numbered according to order of recovery which cataloged unit and level information, as well as personnel and date for cross-referencing to individual field notes. All other data was recorded by material category, unit and level, and transported to the field laboratory for processing.

Field processing entailed quantitative measurements of material by category, type, unit and level (Appendix). In addition to quantitative methods, qualitative descriptions were made for all artifact, lithic, and faunal remains. All prehistoric artifacts were drawn, measured and described by shape, form, and material type. Lithic remains were sorted and described by material type and relative size. Unidentifiable faunal remains were sorted by the visible presence or absence of charring, then counted and weighed. Because of their fragile nature and the nature of the deposits, mussel shell at the site is extremely fragmentary, therefore only mussel shell exceeding 2 centimeters in diameter were collected and counted, in instances where the diameter was less than 2 centimeters, shell was not collected but was duly noted in the level records.

NATURE OF DEPOSITS

The 2007 and 2008 excavations exposed stratigraphic sequences overlying large basalt boulders which were deposited by the Bonneville Flood approximately 14,500 years ago. Wind deflation and surface water erosion are evident. Deposits are intermixed with loess and sandy sediments with some pockets of gravel and cobbles. Compacted sediments due to higher silt and clay content, and the presence of calcium carbonates ($CaCo^3$) appear at levels ranging from 40 centimeters to deeper than 80 centimeters and have been suggested to reflect regional climate conditions associated with the Altithermal event of the Middle Holocene (7,000-4,500 years ago). Krotovina and rodent intrusions were present throughout all levels.

Sediment Analysis

Sediment analysis of the terrace was performed on site 10-CN-06, adjacent to site 10-CN-05 (see Jacobs 2006). Since both sites are located on the same terrace formation, the analysis from 10-CN-06 is applied to 10-CN-05. Sediments were sampled from a stratigraphic transect across site 10-CN-06 which was selected for its distance, depth, and elevational slope. The sediments were analyzed for color, grain size, and grain distribution. Results of this analysis indicate a higher percentage of sand-sized particles over silt-sized and clay-sized, especially as depth increases. Stratigraphic profiles indicate a week definition of horizons, however Hill (2006:133) notes a buried A horizon. A geologic description of the sediments classifies them as a very fine, sandy loam. This suggests an intermixed deposition dominated by fluvial deposition with smaller amounts of eolian deposits. Sediment color is dominated by those ranging from brown (Munsell notation 10YR 5/3) to pale brown (Munsell notation 10YR 6/3).

Sediments from the terrace are described as a very fine sandy loam, which is defined as being comprised of 30% or more very fine sand (or) more than 40% fine and very fine sand, at least half of which is very fine sand and less than 15% very coarse, coarse, and medium coarse sand (Soil Conservation Service 1975). These sediments fit the Chilcott and Sebree complex series (Rosentreter 1984). The Chilcott series are described as fine montmorillonitic, mesic Abruptic Xerollic Druagrid, characteristically drain well, and have a pH range of 6.6 to 8.4.

Table 1. Results of sediment analysis from 10-CN-06. From Plew et al. 2006.

UNIT: 36-37s/13-14e											
Sample	**Depth**	**Munsell**	**Percentage Sands**				**Percentage Muds**			**Totals**	
			Coarse	Medium	Fine	V.Fine	Coarse Silt	Fine Silt	Clay	Sands	Muds
D-2	10-20	10YR5/4	0.40	0.71	12.06	28.01	21.76	9.33	9.33	41.19	40.41
D-5	40-50	10YR5/3	0.18	0.65	9.78	21.65	15.02	10.01	7.51	32.26	32.53
D-9	89-90	10YR6/3	5.76	3.35	19.98	21.32	10.98	8.23	8.23	50.41	27.44
D-13	120-130	10YR6/3	6.48	6.40	28.24	21.65	13.28	5.31	5.31	62.78	23.91
D-17	160-170	10YR6/3	1.82	5.01	38.21	46.90	17.91	8.96	8.96	91.94	35.82
D-22	210-220	10YR6/3	0.48	0.67	8.24	18.70	14.14	6.06	6.06	28.09	26.26

Color and stratigraphic profiles were recorded in the field but no sediments were collected from 10-CN-05 during the 2007 or 2008 excavations. These results conform to those from site 10-CN-06 in which there are relatively few indications of breaks in the depositional continuity over the last 14,000 years. While Jacobs (2006:84) suggested the evidence points to environmental factors remaining relatively consistent over time, this seems an unlikely view and is not supported by other environmental lines of evidence and thus more research is needed (Plew et al. 2006:16). Alternately it may be suggested the nature of the terrace deposits can be associated with a relatively uniform and stable rate of change in the depositional environment during the Holocene since canyon areas may act as buffer zones against regional environmental change (Huckleberry and Fadem 2007).

This information, while telling, will beg the question in later discussion of "why old dirts, but recent cultural deposits?" based upon results of analysis of materials from 10-CN-06 and 10-CN-05. One solution to this is to consider the terrace stability; prior to the Late Holocene the terrace may have experienced periodic inundation by seasonal run-off or other times of high water, which could have the effect of washing any existing cultural material farther downstream or into the river channel. Secondly, the downwash of "older" material from upslope coupled with the loess deposits blowing in from the Owyhee's would have provided an ample supply of "old dirt". The general limitation of the assemblages to a Late Archaic component in-and-of itself suggests either no use of the location until later periods, or that the terrace formation was not stable enough to preserve the archaeological record. As a way of additional, historic information the terrace was a homestead to the Warwick family, who farmed on the property. This information can help to account for the intermixing, depth and redistribution of cultural materials.

MATERIAL CULTURE REMAINS

Cultural materials collected from site 10-CN-05 were cleaned, measured, weighed, and cataloged. A total of seventy-four (N=74) artifacts were stored at the Center for Applied Archaeological Science at Boise State University until analysis in January 2009. Artifactual materials included chipped-stone and groundstone tools, ceramics, and historical materials, additional material categories collected include lithic debitage, faunal and botanical remains, and shell. Artifact analysis includes those materials whose forms and shapes are directly modified or manufactured through anthropogenic means; percussion, incising, drilling, use, or otherwise manipulated for function, use, or decoration. A typology of lithic tools and historic artifacts is listed below. Lithic debitage and faunal remains are evaluated under non-artifact analysis in the next section.

Artifact Analysis

The typology for cultural materials (Table 2) recovered from 10-CN-05 utilizes the comparative descriptions found in the regional literature for the Snake River Plain, Northern Great Basin and Columbia Plateau for form, shape, dimensions, material, and manufacturing technique. This descriptive typology allows for comparisons with other artifact assemblages as well as cultural and chronological sequences. The analysis and classification of artifacts from 10-CN-05 provides both general categories and morphological types essential to interpreting the site chronology, function, and spatial relationships.

Lithic Artifacts

Lithic artifacts include all implements manufactured or modified from stone materials and includes chipped-stone (e.g. cryptocrystalline, obsidian, fine-grained basalt) and groundstone materials (e.g. quartzite, basalt, granite). The typology of the artifacts is based on the morphological and technological attributes and comparative collections. This typology follows that used within the greater Snake River Plain region (see Plew 2008:25). Lithic items were measured for length along the longitudinal axis where orientation could be identified, and on the longest axis in all other cases. Width was determined by the widest point perpendicular to the length. Thickness refers to the maximum thickness perpendicular to the length-width plane. Specific parameters are given where any additional measurements were taken. All measurements are given in centimeters (cm) and weights are given in grams (g).

Projectile Points

A total of six incomplete projectile points (n=6) and nineteen projectile point sectional fragments (n=19) were recovered from excavations at 10-CN-05. Only projectile points with the base and a majority portion of the midsection intact were classified according to a specific type where identifiable. All unidentifiable points are classified according to morphological features and are described following their type. Within the size ranges, is based on complete specimens only.

Table 2. Prehistoric artifact distribution from excavations conducted at 10-CN-05 during the 2007 and 2008 field seasons.

No.	Decription	Mat.	L	W	Th	Unit	Depth

2007-01	Bone awl (tip)	bone	1.74	0.29	0.32	9-10E/0-1N	0-10
2007-02	Sherd	Ceramic	1.99	1.95	0.85	9-10E/0-1N	10-20
2007-03	Projectile Point	BAS	8.20	2.00	0.66	15-16E/01S	10-20
2007-04	Bead	shell	0.58	0.51	0.24	9-10E/0-1N	10-20
2007-05	Projectile point (tip)	OBS	1.24	1.13	0.42	15-16E/01S	10-20
2007-06	Projectile point (tip)	OBS	1.70	0.90	0.10	9-10E/0-1N	20-30
2007-07	Projectile point (tip)	OBS	1.47	0.74	0.20	9-10E/0-1N	20-30
2007-12	Modified Bone	Bone	0.94	0.61	0.39	15-16E/01S	0-10
2007-15	Projectile Point (tip)	ING	0.93	0.83	0.18	10-11E/8-9N	10-20
2007-16	Projectile point (tip)	OBS	0.96	0.66	0.74	10-11E/14-15N	10-20
2007-17	Projectile point (mid)	OBS	2.08	1.92	0.59	10-11E/14-15N	20-30
2007-18	Projectile point (tip)	OBS	1.03	0.95	0.15	10-11E/14-15N	20-30
2007-19	Projectile point (tip)	CCS	1.40	1.00	0.40	10-11E/8-9N	10-20
2007-20	Sherd	Ceramic	2.60	2.16	0.75	14-15E/0-1S	20-30
2007-21	Projectile point (tip)	OBS	1.17	0.69	0.31	0-1E/13-14N	0-10
2007-22	Projectile point (tip)	OBS	0.82	0.71	0.32	14-15E/0-1S	40-50
2007-23	Projectile point (tip)	BAS	1.62	0.64	0.27	15-16E/0-1S	10-20
2007-24	Projectile point (tip)	CCS	1.48	1.25	0.24	14-15E/0-1S	10-20
2008-01	Sherd	Ceramic	3.10	2.10	1.00	6-7W/0-1N	0-10
2008-02	Scraper (frag)	CCS	2.96	2.36	0.34	8-9W/5-6N	0-10
2008-03	DUPLICATE ENTRY						
2008-04	Projectile point (inc)	CCS	2.20	1.53	0.22	6-7W/0-1N	0-10
2008-05	Projectile point (inc)	CCS	2.40	1.30	0.60	6-7W/0-1N	0-10
2008-06	Sherd	Ceramic	2.40	2.05	0.66	6-7W/0-1N	0-10

Table 2 (continued). Prehistoric artifact distribution from excavations conducted at 10-CN-05 during the 2007 and 2008 field seasons.

No.	Decription	Mat.	L	W	Th	Unit	Depth
2008-09	Cobble (frag)	QZT	4.75	3.80	2.25	8-9W/5-6N	10-20
2008-14	Projectile point (tip)	OBS	0.70	0.50	0.50	8-9W/5-6N	10-20
2008-15	Scraper (frag)	BAS	4.16	1.82	0.94	6-7W/0-1N	20-30
2008-16	Projectile point (base)	CCS	2.10	0.68	0.38	9-10W/0-1S	20-30
2008-17	Knife	OBS	7.65	4.20	1.40	8-9W/5-6N	30-40
2008-18	Biface (frag)	OBS	4.39	2.50	0.79	6-7W/0-1N	30-40
2008-19	Projectile point (frag)	CCS	1.45	1.20	0.60	6-7W/0-1N	surface
2008-22	Projectile point (tip)	OBS	0.68	0.61	0.15	0W/8S	probe
2008-23	Projectile point (mid)	OBS	1.14	2.80	0.80	8-9W/5-6N	40-50
2008-24	Fragment (?)	CCS	6.47	3.63	1.07	8-9W/5-6N	40-50
2008-27	Projectile point (inc)	OBS	2.70	1.40	0.30	7-8W/0-1N	30-40
2008-28	Projectile point (inc)	OBS	2.90	1.74	0.43	8-9W/1N-1S	0-10
2008-31	Projectile point (tip)	OBS	0.61	0.70	0.15	SCREEN	
2008-37	Cobble (frag)	QZT	6.28	2.81	1.78	7-8W/0-1N	50-60
2008-39	Projectile point (tip)	OBS	0.50	0.34	0.20	8-10W/0-1S	10-20
2008-40	Biface (frag)	OBS	1.13	1.13	0.36	8-10W/0-1S	10-20
2008-42	Projectile point (inc)	OBS	2.45	1.00	0.30	6-7W/0-1N	20-30
2008-47	Projectile point (mid)	OBS	2.05	2.20	2.10	6-7W/0-1N	40-50

Desert Side-Notched (Figure 7, e). Number of Specimens: 1. Artifact Number(s): 2008-19.

Form: Triangular, side-notched points with expanding stems. Blade edges are slightly convex in outline and bases are slightly indented. Cross-sections are lenticular to plano-convex.

Description: Specimen 2008-19 is incomplete, missing the tip section and partial tang on one side. Base is only slightly concave with a single notch. Blade edges exhibit evidence of additional flaking along margins. Material is cryptocrystalline and size range is indeterminate but fits the ranges for those of known specimens. Specimen was modified using a pressure flaking technique.

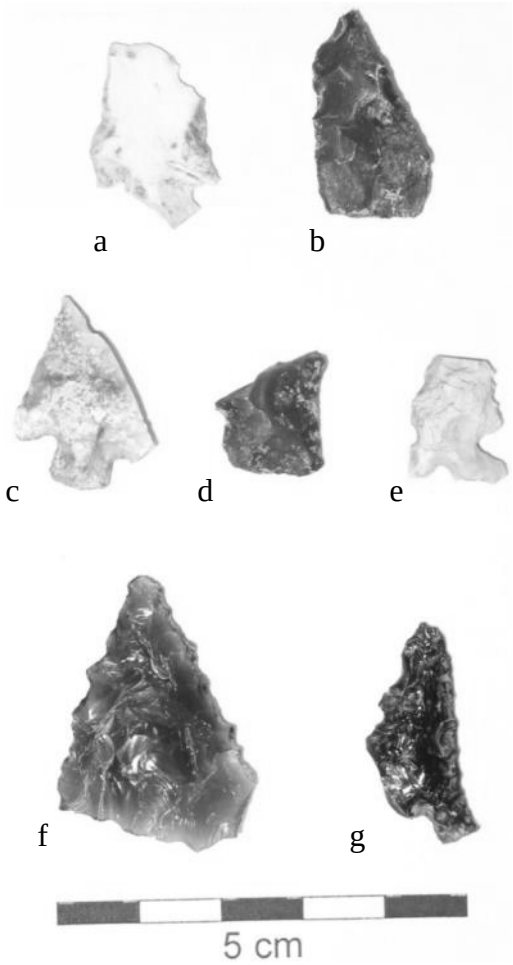


Figure 7. Projectile point fragments recovered from excavations at 10-CN-05, a-g. Indistinguishable, a and b; Rose Spring (incomplete), c; base, d; Desert Side-Notched (incomplete), e; large tip, f; indistinguishable projectile point fragment, g.

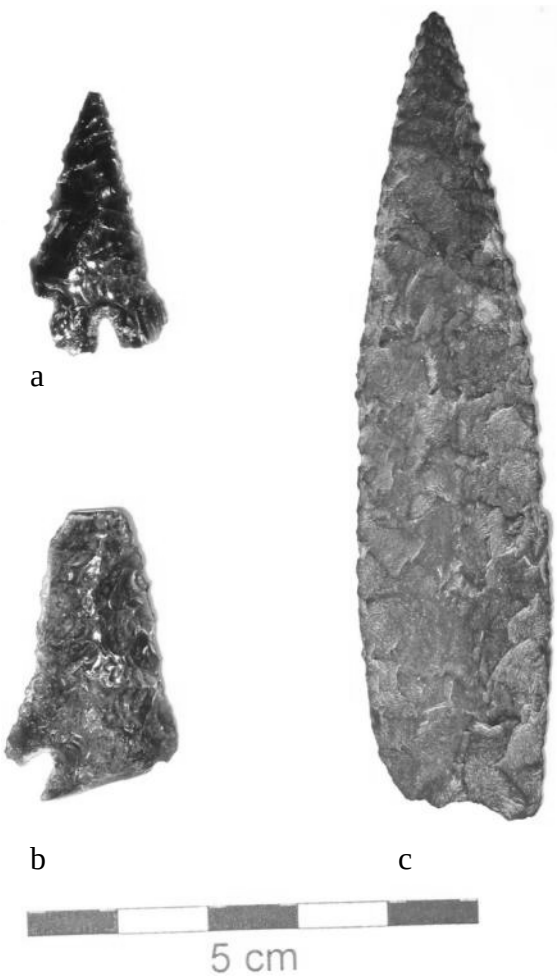


Figure 8. Projectile points recovered from excavations at 10-CN-05, a-c. Rose spring, a; triangular corner-notched, b; knife, c.

Rose Spring series (Figure 7, c; Figure 8, a).

Number of specimens: 2. Artifact number(s): 2008-16, 2008-27.

Form: Triangular points exhibiting two variations of notching; side-notched and corner-notched. Side-notched specimens exhibit straight to slightly expanding stems. Blade edges are straight to convex in outline. Bases vary from slightly concave to slightly convex. Corner-notched specimens exhibit downward sloping shoulders with straight to indeterminate stems. Blade edges are straight to slightly convex in outline with indeterminate bases.

Description: Both specimens are incomplete but fit the corner-notched variety. Specimen 2008-27 is complete in length but is missing a portion of the tang and base. Blade edges are straight with and exhibit signs of retouching via pressure flaking technique. Specimen 2008-16 is incomplete, missing the tip and portion of one blade edge. Specimen 2008-27 is obsidian, 2008-16 is cryptocrystalline. Size range is based on 2008-27 specimen only: length 2.70 cm, width indeterminate, thickness 0.3 cm.

Triangular Corner-Notched (Figure 7, g; Figure 8, b).

Number of specimens: 2. Artifact number(s): 2008-28, 2008-42.

Form: Triangular, corner-notched points not fitting standard types or are incomplete.

Description: Incomplete specimens, triangular in outline and with visible corner-notching evident on at least one side of the base. Both specimens are concave along blade edges. Specimen 2008-28 exhibits an expanding base and is slightly larger than specimen 2008-42 in which the base is indeterminate. Both specimens show signs of retouching along blade margins and 2008-42 exhibits damage along one blade margin. Material for both specimens is obsidian. Size ranges are indeterminate.

Triangular Side-Notched (Figure 7, a)

Number of specimens: 1. Artifact number(s): 2008-04.

Form: small, triangular, side-notched points not fitting standard types or are incomplete.

Description: incomplete specimen, outline suggesting triangular in shape with one notch visibly evident along one side. Specimen appears unifacial in blade flaking along one margin, opposite

margin is damaged along with basal portion. Material is cryptocrystalline and white in color with redish-brown tints along margins.

Projectile Point Fragments (Figure 7, d and f; Figure 9, a-c; Figure 10, a-j).

Number of specimens: 19. Artifact number(s); 2007-05, -06, -07, -15, -16, -17, -19, -21, -22, -23, -30, 2008-14, -18, -22, -23, -31, -39, -40, -47.

Form: specimens appear to be from triangular or lanceolate blades represented by the distal (tip), medial (midsection), and proximal (base) portions of the points. All specimens are lenticulare in cross-section and exhibit bifacial flaking patterns.

Description: Specimens 2007-05, -06, -07, -15, -16, -10, -21, -22, -23, -30, 2008-14, -18, -22, -31, and -39 are tips. Specimens 2007-17, 2008-23, and 2008-47 are midsections, and 2008-40 is a base. Eleven of the tip specimens are obsidian, three are cryptocrystalline and one is basalt and range in size from 0.5 cm to 1.62 cm in length by 0.34 cm to 1.24 cm in width with an average thickness of approximately .56 cm. Dimensions are with the exception of a large obsidian tip (2008-18, Figure 7, f) which exhibits irregular flaking patterns and measures 4.39 cm by 2.5 cm by 0.79 cm. Midsections materials are represented by two obsidian and one basalt and range in lengths from 1.14 cm to 2.08 cm, 1.92 cm to 2.8 cm wide, and .59 cm to 2.2 cm in thickness. A single base specimen (2008-40, Figure 11, D) of basalt measures 1.53 cm in length, 1.13 cm in width, and 0.36 cm in thickness.

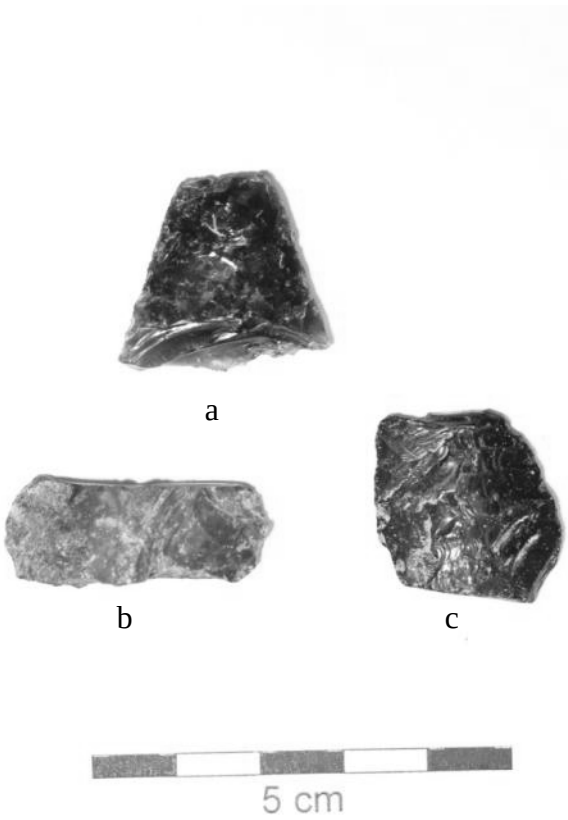


Figure 9. Projectile point mid-sections recovered from excavations at 10-CN-05, a-c.

Bifaces (Figures 7, b; Figure 11)

Number of specimens: 2 Artifact number(s): 2008-05, 2008-17

Form: Bifacially flaked specimens of non-specific forms.

Description: specimen 2008-05 is a triangular, basalt object with no defining characteristics typical of standard categories for chipped-stone implements. Specimen shows signs of large flaking scars on both sides along the lateral margins. Dimensions are: 2.4 cm by 1.3 cm by .3 cm. Specimen 2008-17 (Figure 12) is a large cryptocrystalline flake, exhibiting large flaking

scars in oblique and irregular patterns. A bulb of percussion is visible at the distal end on one side. Dimensions are: 7.65 cm long, 4.2 cm wide and 1.4 cm thick.

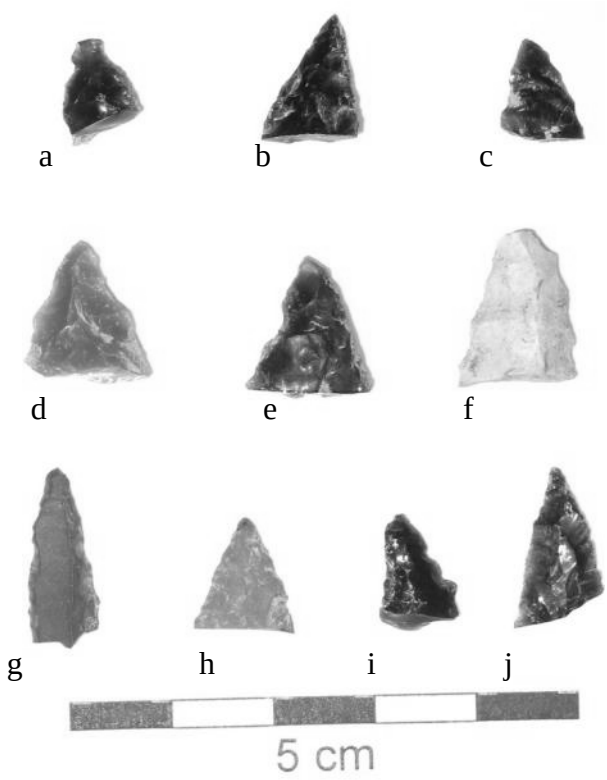


Figure 10. Projectile point tips recovered from excavations at 10-CN-05, a-j.

Knives (Figure 8, c)

Number of Specimens: 1. Artifact number(s): 2007-03

Form: Specimens are elongated, ovate-shaped bifacial flaked specimens typically biconvex in cross-section. Specimens typically exhibit evidence of retouching along margins from pressure flaking technique.

Description: Specimen is an elongated, narrow basalt artifact. Blade edges are slightly serrated along both margins. Base is appears to have been damaged but was likely concave. Flake

scarring is irregular but evidence of retouching is visible along lateral margins. Measurements for this specimen are 8.2 cm long, 2 cm wide and 0.66 cm thick.

Figure 11. Large Biface recovered from excavations at 10-CN-05.

Scrapers (Figure 12; Figure 13, a and b)

Number of specimens: 3. Artifact number(s): 2008-02, -15, -24.

Form: Specimens exhibit biface or uniface modification to the edges lateral to either the distal or proximal ends.

Description: one specimen (2008-17, Figure 12) is complete. Specimen is ovate in shape, with a point on the distal end. Blade margin exists on along one side and is highly convex, extending from the distal tip arcing around the basal section. Blade margin exhibits bifacial flaking and shows evidence of retouching along margin by pressure flaking technique. Specimen measures

7.65 cm long, 4.2 cm wide and 1.4 cm thick, and material is cryptocrystalline. Specimens 2008-02 and 2008-24 (Figure 13, a and b) are fragments. Both specimens exhibit flake scaring along both sides of one margin, additional retouch exists on dorsal side only of both specimens. Materials are cryptocrystalline and basalt and specimens range in sizes from 2.96 cm to 4.16 cm by 1.82 cm to 2.36 cm by .34 to .38 cm.

Figure 12. Large Scraper recovered from excavations at 10-CN-05.

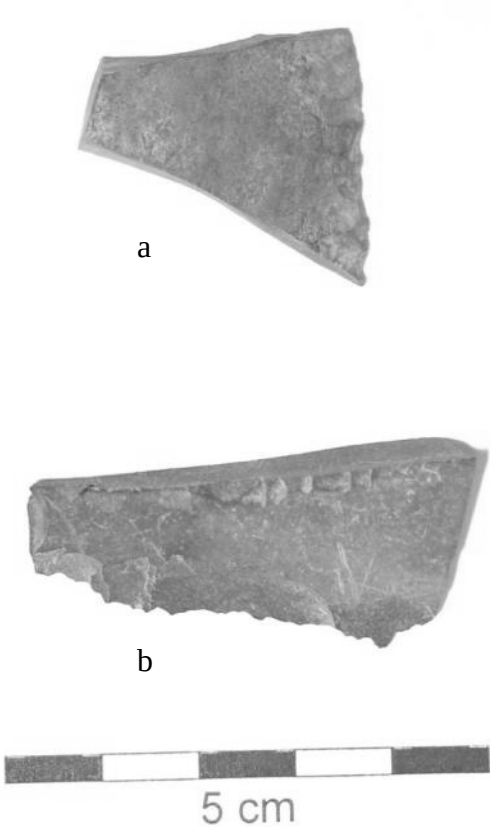


Figure 13. Scraper fragments recovered from excavations at 10-CN-05.

Groundstone (Figure 14, a and b).

Number of specimens: 2. Artifact number(s): 2008-09, 2008-37.

Form: cobbles that exhibit evidence of use through ware (abrasion) or striking (impact) and typically show signs of patina, or 'polishing' along worn areas. Shapes can range from ovate, typically hammerstones, manos and mortars, or can exhibit a concave surface, abraders, matate and pestles. Materials can include basalt, quartzite, granite, and cryptocrystalline.

Description: Specimens are incomplete and show signs of impact due to striking and/or polishing due to ware. One specimen, 2008-37 (b, Figure 14), has fractured down the longitudinal axis and

is missing the distal portion. The other specimen (2008-09, Figure 14, a) is fragmented along two surfaces horizontal to each other but exhibits signs of battering on one margin. Both specimen materials were field described as being quartzite.

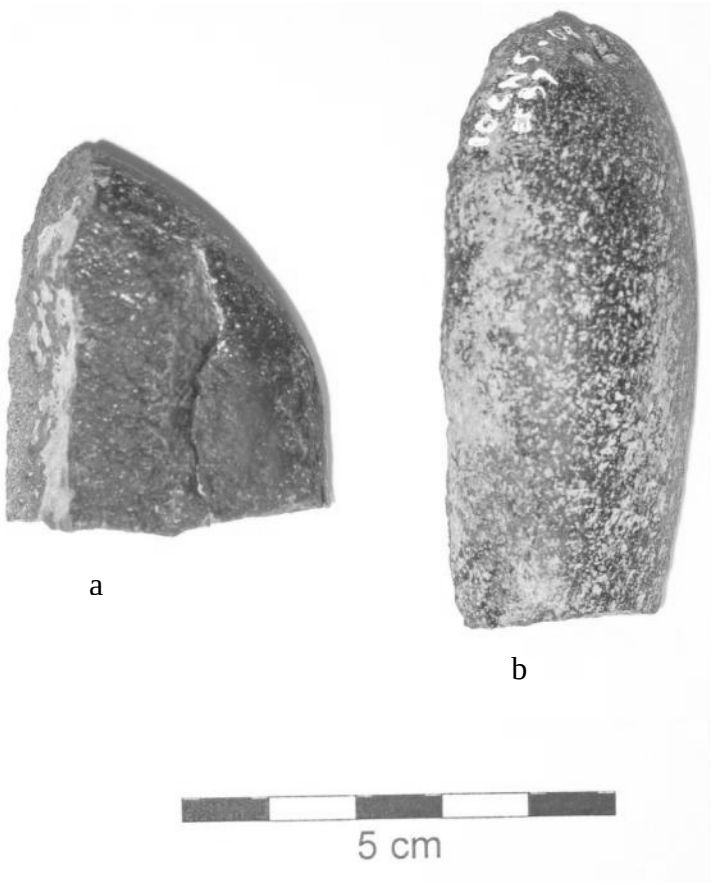


Figure 14. Groundstone fragments recovered from excavations at 10-CN-05, a and b.

Cores.

Number of specimens: 1 Artifact number(s): 2008-45.

Form: specimens are generally conical ovate to round forms and exhibit largely unidirectional primary and secondary stage flake scares although can exhibit multidirectional flaking patterns.

Description: specimen 2008-45 is a small, “exhausted” obsidian core exhibiting unidirectional flaking scares. Specimen is ovate and plano-convex in cross section and also retains portions of the rind. Specimen is 4.79 cm in length, 2.3 cm in width and 1.34 cm in thickness.

Non-Lithic Artifacts

Modified Bone (Figure 15, b and c).

Number of specimens: 2. Artifact number(s): 2007-01, 2007-12.

Form: functional or decorative modified bone exhibiting evidence of modification through shaping, use, or polishing.

Description: specimen 2007-01 (Figure 15 b) is a fragmented tip of a bone needle or awl measuring 1.74 cm by 0.32 cm by 0.29 cm. Specimen exhibits evidence of modification and polishing. Specimen 2007-12 (Figure 15, c) is a small, ovate bone exhibiting evidence of polishing and measures 0.94 cm by 0.61 cm by 0.39 cm.

Figure 15. Bone and shell artifacts recovered from excavations at 10-CN-05, a-c. Shell bead, a; bone needle/awl, b; polished bone, c.

Modified Shell (Figure 15, a)

Number of specimens: 1 Artifact number(s): 2007-04.

Form: generally modified shell tablets for use as decorative beads.

Description: Small, circular tablet manufactured from mollusk shell exhibiting a center-drilled perforation. Specimen is plano-convex in cross-section with smoothed edges. Measures 0.58 cm by 0.51 cm and 0.24 cm in thickness. Center-drilled perforation measures approximately 0.25 cm.

Ceramics (Figures 18 and 19, A-D)

Number of specimens: 4. Artifact number(s): 2007-02, 2007-20, 2008-01, 2008-06.

Form: generally Intermontain Ceramic Ware pottery or sherds.

Description: four sherds classified as Shoshone Ware pottery generally of poor quality. Materials include shell and sand as temper materials with flakes of mica evident. Core color

ranges from light grayish-brown (2007-02, 2008-01, 2008-06) to slightly reddish-orange (2007-20). Specimen 2008-01 (Figure 16, c) exhibits dark coloring on one side. Size ranges are 1.99 cm to 3.1 cm in length, 1.95 cm to 2.16 cm in width and 0.66 cm to 1 cm in thickness.

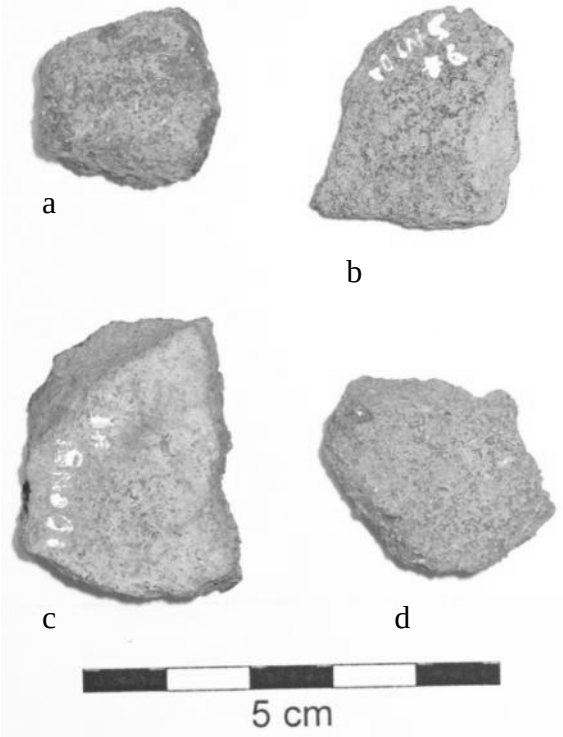


Figure 16. Ceramic sherds recovered from excavations at 10-CN-05, a-d.

Historic Artifacts

Historical artifacts (Table 3) are consistent with early to late twentieth century activities. Rusty nails, historic glass, and unidentified rusted iron dominate the

Table 3. Distribution of post-prehistoric materials recovered during excavations at 10-CN-05 during the 2007 and 2008 field seasons.

No.	Decription	Material	Unit	Depth
2007-08	Purple Glass (frag)	Glass	9-10E/0-1N	0-10
2007-09	Purple Glass (frag)	Glass	13-14E/0-1N	0-10
2007-10	Glass (frag)	Glass	9-10E/0-1N	20-30

2007-11	Nail	Iron	9-10E/0-1N	20-30
2007-14	Unidentified Historic	Iron	15-16E/01S	20-30
2008-07	Glass (frag)	Glass	6-7W/0-1N	0-10
2008-08	Nail	Iron	6-7W/0-1N	0-10
2008-10	Nail	Iron	9-10W/0-1S	10-20
2008-11	Unidentified Historic	Iron	9-10W/0-1S	10-20
2008-12	Nail	Iron	9-10W/0-1S	10-20
2008-13	Purple Glass (frag)	Glass	9-10W/0-1S	10-20
2008-20	Shell casing	metal	7-8W/0-1N	10-20
2008-21	Nail	Iron	7-8W/0-1N	10-20
2008-25	Snap	metal	6-7W/0-1N	40-50
2008-26	Snap	metal	6-7W/0-1N	40-50
2008-29	Nail	Iron	10-11W/0-1N	0-10
2008-30	Nail	Iron	10-11W/0-1N	0-10
2008-32	Unidentified Historic	metal	10-11W/0-1N	10-20
2008-33	Nail	Iron	10-11W/0-1N	10-20
2008-34	Glass (frag)	Glass	10-11W/0-1N	10-20
2008-35	Nail	Iron	10-11W/0-1N	10-20
2008-36	Glass (frag)	Glass	10-11W/0-1N	10-20
2008-38	Bullet (slug)	Lead	10-11W/0-1N	10-20
2008-41	Unidentified Historic	metal	9-10W/0-1S	20-30
2008-43	Glass (frag)	Glass	8-9W/1N-1S	10-20
2008-44	Unidentified Historic	metal	8-9W/1N-1S	10-20
2008-45	Core (exhausted)	OBS	10-11W/0-1N	0-10
2008-46	Purple Glass (frag)	Glass	8-9W/1N-1S	0-10
2008-48	Glass (frag)	Glass	0W/8S	Probe
2008-49	Unidentified Historic	metal	8W/4S	Probe
2008-50	Unidentified Historic	metal	8W/4S	Probe
2008-51	Glass (frag)	Glass	8W/4S	Probe

collection. Nearly all glass, metal, and plastic recovered from excavations were classified as "Historic". These materials were recovered throughout most levels at depths up to 40-50 cm and were most dominant in the upper 20 cm. No historic materials were recorded between 30-40 cm, or deeper than 50 cm.

Non-Artifact Analysis

Lithic Debitage Analysis

Lithic remains, the by-products of chipped-stone tool production and modification, provide insights into the past activities that may have occurred at the site. Size and raw material distributions can provide indications into the developmental stages of tool reduction or modification and material preference. Lithic debitage collected from 10-CN-05 was comprised of over 4,000 flakes (n=4,558). Obsidian dominates the material type, comprising 68% of the total, followed by 20% basalt, and finally 12% cryptocrystalline (Figure 17). Distribution by level indicates the highest percentage of material recovered between ten and twenty centimeters below the surface (Figure 18 and Table 4). Size analysis conducted in the field laboratory shows a dominance of flakes smaller than 1 cm (Table 5).

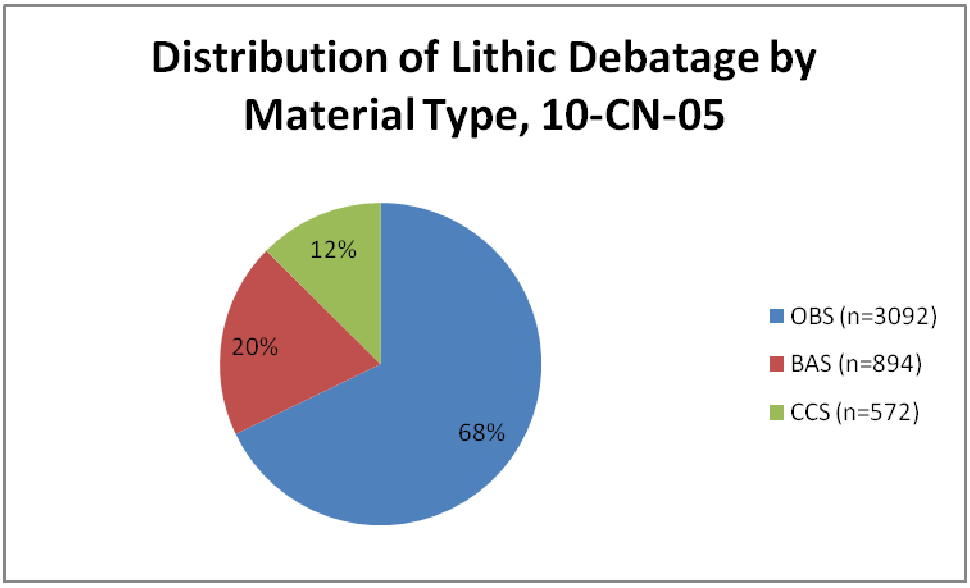


Figure 17. Distribution of lithic debitage recovered from excavations at 10-CN-06.

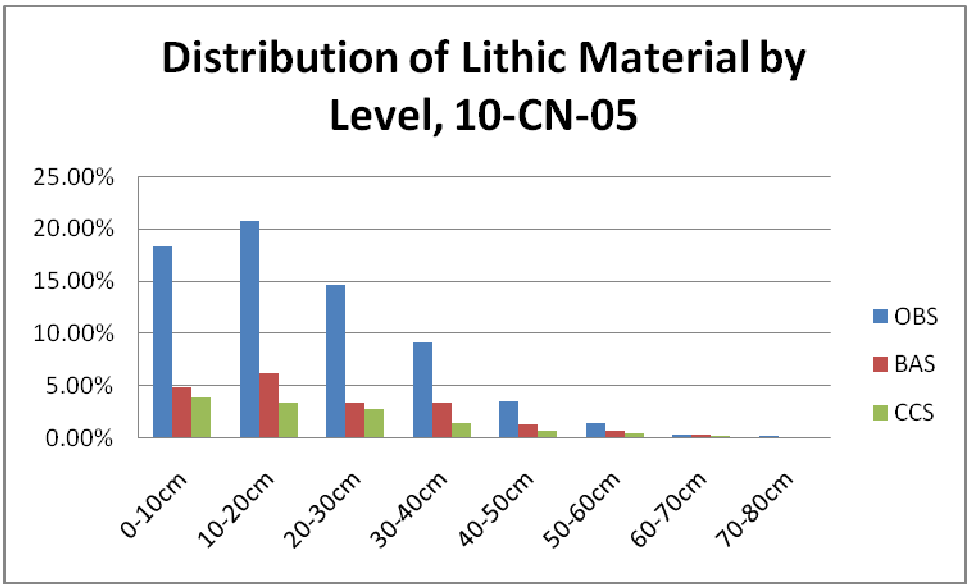


Figure 18. Graph showing the distribution of lithic debitage recovered from excavations at 10-CN-05. OBS- obsidian, BAS- basalt, CCS- cryptocrystalline. Levels are relative to arbitrary 10 centimeter archaeological levels below pit datum. Percentages of material by level are relative to the total number of flakes recovered (n=4,558). Total counts of material types recovered by level are illustrated in Table 4.

Table 4. Total counts of lithic material type distribution by level. OBS- obsidian, BAS- basalt, CCS- cryptocrystalline. Levels are relative to arbitrary 10 centimeter archaeological levels. Percentages of distribution by level are illustrated in Figure 18.

	OBS	BAS	CCS	Lithic Total
0-10cm	831	218	173	1222
10-20cm	946	277	153	1376
20-30cm	662	153	124	939
30-40cm	414	152	66	632
40-50cm	158	54	28	240
50-60cm	61	29	18	108
60-70cm	13	11	8	32
70-80cm	7	0	2	9

Table 5. Results of size analysis on lithic debitage. OBS- obsidian, BAS- basalt, CCS- cryptocrystalline.

LITHIC ANALYSIS, 10-CN-05			
	OBS	BAS	CCS
< 1cm	2516	616	334
2 cm	638	267	194
3 cm	54	37	40
4 cm	0	12	2
> 5 cm	0	0	1

Faunal Remains

Evidence of diet breadth and prey choice can be evaluated through faunal remains recovered during excavations. These remains may also provide insights into when and what activities were conducted at the site. A total of 2661 bone and bone fragments were recovered at 10-CN-05, of these, 34 were classified as identifiable. The majority of these were the remains of small mammals (Figure 19) likely associated with krotovinas. Three specimens were likely from small- to medium-sized mammals; one was charred and another was split into two halves along the longitudinal axis (Figures 20 and 21, a and b).

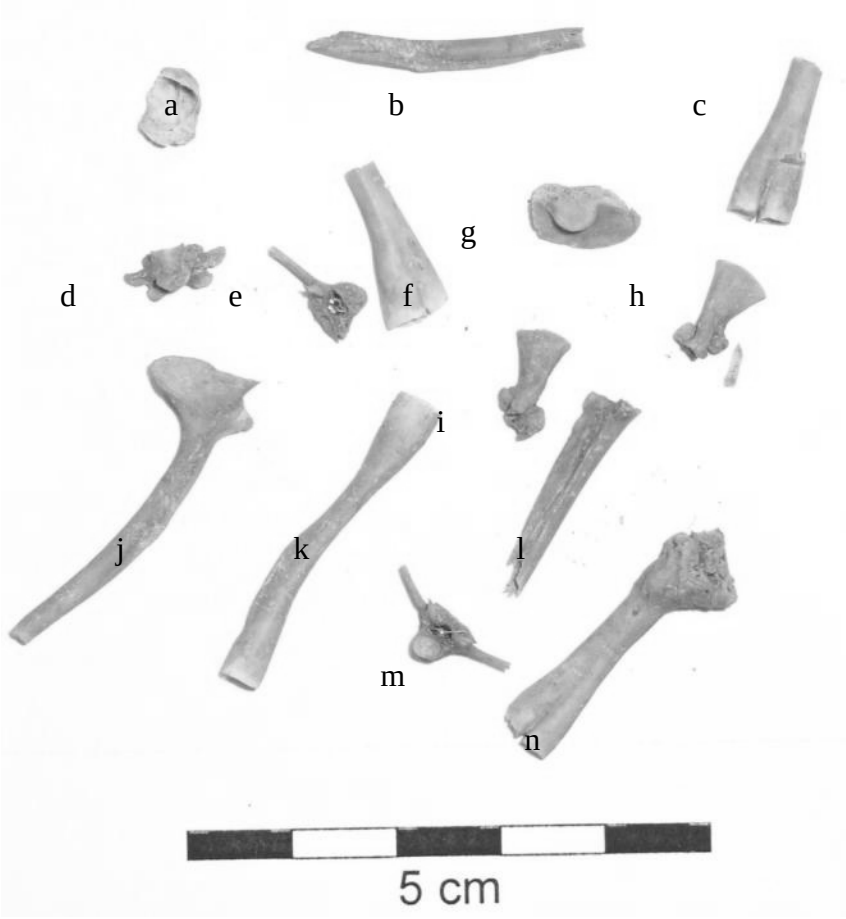
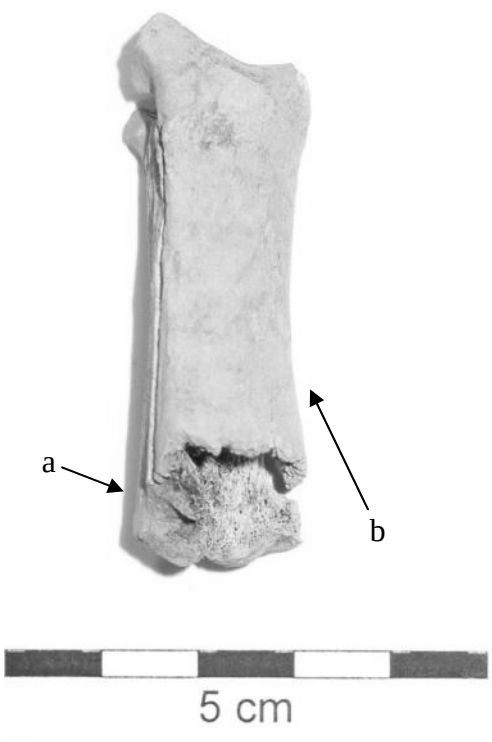
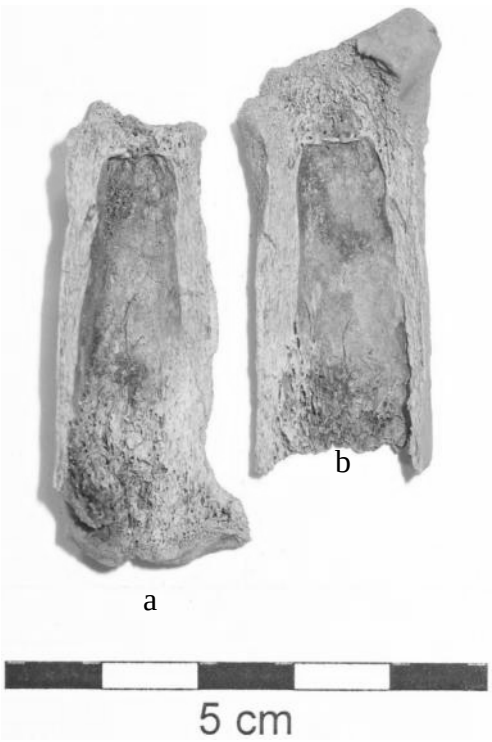


Figure 19. Sample of small mammalian remains from excavations at 10-CN-05, a-n.

Of the unidentifiable remains (n=2,527), approximately 48% were as charred as a result of exposure to fire. Mussel shell was recorded in all levels of excavation at depths up to 80 cm. Over 3,000 pieces of shell (n=3,385) were collected, ranging in sizes from complete half-shells to approximately 2 cm in diameter.





Figures 20 and 21. Articulated faunal remains from excavations at 10-CN-05, a and b.

ASSEMBLAGE ANALYSIS SUMMARY

A total of 10,203 remains were collected from excavations at 10-CN-05 during the 2007 and 2008 field seasons. Artifacts were categorized according to stylistic and morphological characteristics. Lithic debitage was sorted according to material type and flake size. Faunal remains were categorized as bone or shell (mussel). Bone was sorted according to identifiable (retaining at least one articulated surface) or unidentifiable, and then sub-divided as charred (by exhibiting evidence of having been exposed to fire) or green (non-charred).

Table 6. Summary of material remains recovered during excavations at 10-CN-05.

Summary of material remains from excavations at 10-CN-05							
Level	Historic	Prehistoric	Lithics	ID bone	Bone	Shell	Total
0-10cm	8	10	1165	6	629	954	2772
10-20cm	14	13	1298	10	824	1329	3488
20-30cm	4	8	939	2	462	515	1930
30-40cm	0	3	632	7	334	319	1295
40-50cm	2	4	167	5	131	172	481
50-60cm	0	1	67	4	96	69	237
Total	28	39	4268	34	2476	3358	
						GRAND TOTAL	10203

Artifacts, prehistoric and historic, comprised less than one percent (0.65%) of the entire assemblage (prehistoric artifacts accounting for 0.38%) with 7% of the historic artifacts occurring at the 40-50 cm level. The prehistoric artifact assemblage of 10-CN-05 can be described as meager at best with only three identifiable, albeit incomplete, projectile points, twenty-three point fragments, one knife, three scrapers, and two groundstone fragments . After cultural materials were classified by their morphological and technological attributes, a

distribution of artifact types based on Winter's (1969) classification (Figure 22) shows a heavy dominance of weapon class artifacts and a relatively even distribution of general purpose and domestic artifacts (n=7 and 6, respectively). With respect to the tool assemblage, obsidian is the preferred material (Figure 23).

Tables 5 and 6 indicate the greatest densities of material (approximately 34%) occur between ten to twenty centimeters (10-20 cm). Lithic debitage dominates all recovered materials (41.83%) and 73.57% of the debitage flakes measure less than one centimeter with obsidian flakes less than one centimeter in the greatest abundance, equaling 53.1% of the total debitage collected. Faunal remains are dominated by mussel shell. All the charred bone remains are shattered and fragmentary. Lacking from the faunal remains is any evidence of fishing. Also absent from the record is any evidence of features such as fire or storage pits, structures, or areas where concentrated materials may suggest activity areas.

Table 7. Distribution of material remains collected from excavations at 10-CN-05.

Summary of material remains from excavations at 10-CN-05							
Level	Historic	Prehistoric	Lithics	ID bone	Bone	Shell	Total
0-10cm	0.08%	0.10%	11.42%	0.06%	6.16%	9.35%	27.17%
10-20cm	0.14%	0.13%	12.72%	0.10%	8.08%	13.03%	34.19%
20-30cm	0.04%	0.08%	9.20%	0.02%	4.53%	5.05%	18.92%
30-40cm	0.00%	0.03%	6.19%	0.07%	3.27%	3.13%	12.69%
40-50cm	0.02%	0.04%	1.64%	0.05%	1.28%	1.69%	4.71%
50-60cm	0.00%	0.01%	0.66%	0.04%	0.94%	0.68%	2.32%
Total	0.27%	0.38%	41.83%	0.33%	24.27%	32.91%	
						GRAND TOTAL	100.00%

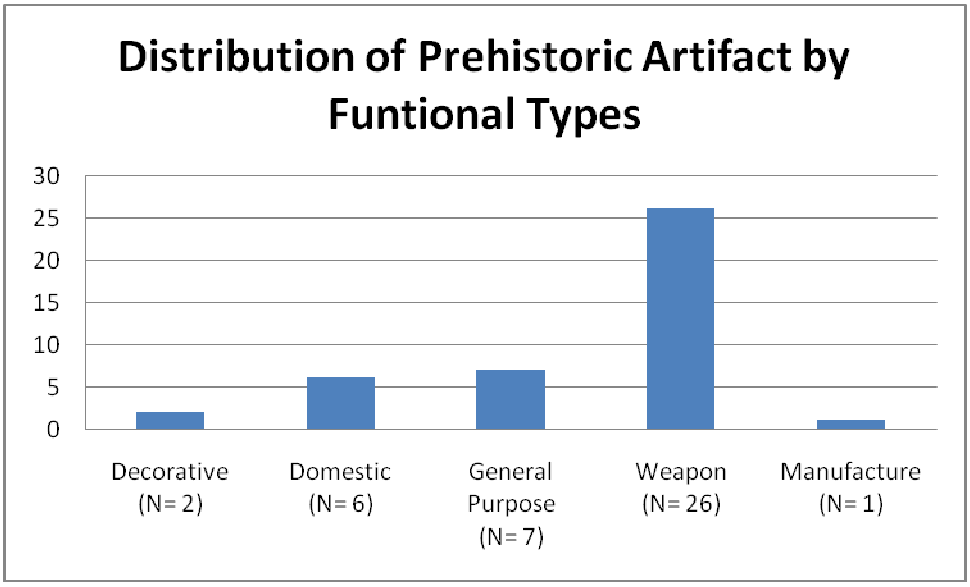


Figure 22. Distribution of prehistoric artifacts from 10-CN-05 based on Winter's (1969) functional types.

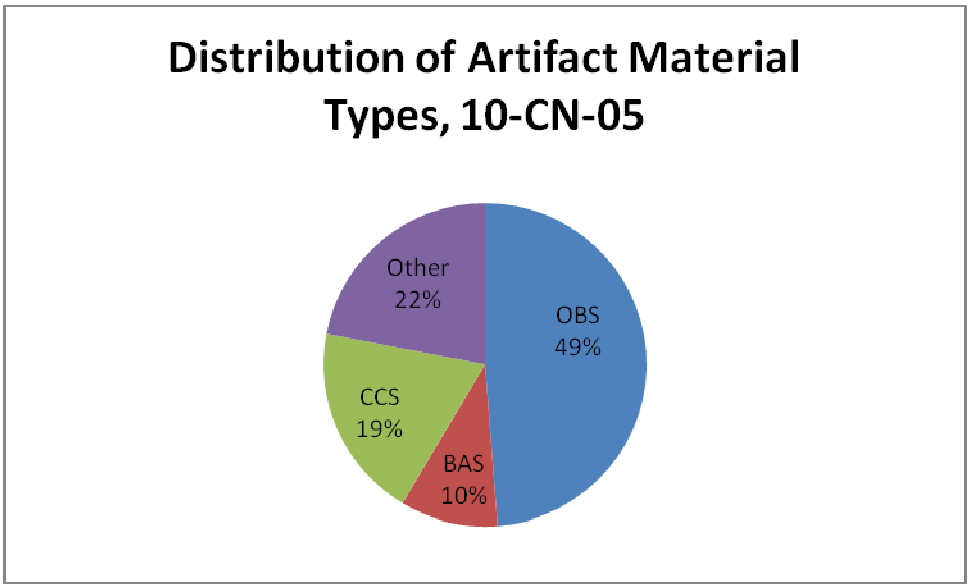


Figure 23. Distribution of Artifact Material Types from excavations at 10-CN-05.

DISCUSSION AND CONCLUSIONS

The depositional context of the terrace at Celebration Park consists mostly of redistributed loess and alluvium which has been deposited over the last 14,000 years and extends to depths of up to three meters (m). Intermixing of materials and the temporal context suggests that the terrace formed in a relatively recent time frame. Occasional inundation during periods of high runoff by the Snake River may account for alluvial deposition. The extent of post-depositional alteration of the site is evidenced by the recovery of two historic artifacts at depths up to 50 cm below the surface. This is associated with a historic homestead and recent refuse disposal. The material remains suggest a Late Archaic and occupation, though earlier analyses at the locality recorded possible Middle and Late Archaic components (Huter et al 2000:33). Excavations at 10-CN-06 also suggest a Late Archaic occupation for the terrace- with the exception of a single point which suggests the possibility of an earlier component (Plew et al. 2006:45-46).

The range of activities exhibited by the artifact assemblage from 10-CN-05 suggests hunting and domestic activities were conducted at the site, with the dominance of weapon class tools in relation to other tool types suggesting hunting was a primary activity. Faunal remains indicate the use of mussel and small- to medium-sized mammals, with no fish remains present. Assemblage diversity is limited and most probably suggests only a few repeated visits to the site during the Late Archaic. This is indicated by a lack of features, that suggests a low intensity in use of the area. The lithic assemblage also indicates retooling activities occurred at the site, as is evidenced by the lack of primary and secondary stage reduction flakes. This coupled with the

dominance of weapon class tools and charred faunal remains indicates hunting and processing of mammalian fauna.

The mobility of 10-CN-05 fits the pattern described by Kelly for high residential mobility, and is consistent with a foraging strategy. Using Kelly's model, examination of the assemblage indicates a fit to 13 of the 14 criteria (Table 8). As with 10-CN-06 and 10-CN-01, lithic material is dominated by obsidian and evidence of bifaces as byproducts is rare, with only 2 being represented in the assemblage. Likewise, only two flake tools are represented but 20 flake fragments. Completely lacking from the assemblage is any evidence of bipolar knapping, fire-cracked rock, complete flakes, or angular debris. Ratios of tools to debitage and bifaces to tools are high (approximately 1:152 and 14:1, respectively). The assemblage size and diversity, as illustrated above, is low. The only criteria not filled by 10-CN-05 for high residential mobility is the rare occurrence of bifaces as cores (n=1).

Table 8 compares the assemblage with those from 10-CN-06, 10-EL-110, and 10-EL-1417. The assemblage from10-CN-05 exhibits the greatest correlation with 10-CN-06 and 10-EL-110, where assemblages vary in the presence of bifaces as cores and, the biface to flake tool ratio. In contrast, the assemblage from 10-EL-1417, differs from those of 10-CN-06 and 10-El-110, 10-CN-05 in the number of bifaces as by-products. Using Kelly's model, 10-CN-05 has the highest correlation to the criteria for high residential mobility.

Table 8. Kelley's lithic assemblages associated with mobility strategies (From Kelly 2001:73). OBS- obsidian, CCS- cryptocrystalline, BAS- basalt, SST- siltstone, TUF- tuff, RYO- rhyolite. Comparisons with 10-CN-06, 10-EL-110, and 10-EL-1417.

	High Mobility	Low Mobility	10-CN-06	10-EL-110	10-EL-1417	10-CN-05
Lithic Material	CCS/OBS	SST/TUF/ RHY	CCS/OBS	CCS/OBS	CCS/OBS/ BAS	OBS

Bifaces as Cores	Common	Rare	Medium	Medium	Medium	Rare
Bifaces as Biproducts	Rare	Common	Rare	Rare	Medium	Rare
Bipolar Knapping/ Scavenging	Rare	Medium/ Common	Rare	Rare	Rare	Rare
Flake Tools	Rare/ Medium	Common	Rare	Rare	Rare	Rare
Fire-Cracked Rock	Rare	Common	Rare	Rare	Rare	Rare
Site Size/Density	Small/ Low	Large/ High	Small/ Low	Small/ Low	Small/ Low	Small/ Low
Tool:Debitage Ratio	High	Low	High	High	High	High
Biface:Flake Tool Ratio	High	Low	Medium	Medium	Medium	High
Complete Flakes	Rare	Common	Rare	Rare	Rare	Rare
Proximal Flake Fragments	Common	Rare	Common	Common	Common	Common
Distal Flake Fragments	Common	Rare	Common	Common	Common	Common
Amgular Debris	Rare	Common	Rare	Rare	Rare	Rare
Assemblage Size/Diversity	Low Curve	High Curve	Low Curve	Low Curve	Low Curve	Low Curve

The pottery recovered from 10-CN-05 is quite similar to sherds from 10-CN-06, and is described as crude, hastily made, thin-walled, and constructed from localized materials including sand, crushed rock and shell. They most probably represent a single vessel. These sherds were recovered from the western portion of the site in the upper 20 cm and, given the disturbed nature of the deposits, lack of features, and the small artifact assemblage. They are more than likely a by-product of activities conducted at 10-CN-06. Whichever the case may be, it is however highly unlikely that mobility is conditioned by specific resource exploitation and time investment as suggested by Simms et al. (1997). Eerkens (2008) argues that ceramics of this nature are

indicative of tethered foraging or a collector strategy. Because of the small sample size, there is insufficient evidence to evaluate this assertion and since relatively few studies have addressed these issues, it is generally concluded that in the context of other data these findings are inconclusive (see also Plew 2008:222).

Excavations at 10-CN-05 indicate that the site was most probably visited during the Late Archaic, and most probably seasonally for hunting and processing activities. Using Kelly's model, analysis of the assemblage collection supports a model of highly mobile foragers. Previous descriptions of the area have suggested an extensive use of the canyon setting (e.g. Keeler and Koko 1971, Murphey 1977, Ames 1982, Pavesic, Follett, and Statham 1987, Meatte 1990). However, the data do not support these assertions. There is of course no reason to believe that prehistoric use of 10-CN-05 could not have coincided with activities at 10-CN-06 or other sites up- and downstream, thus potentially altering the interpretation.

This information is consistent with the common in the Late Archaic pattern in which small groups of highly mobile hunter-gatherers utilized multiple resources at different times, resulting in assemblages that vary relatively little except in general purpose class tools, and faunal remains (Gould and Plew 1996, 2001, Plew et al. 2006). Site 10-CN-05 exhibits a great deal of similarity with sites located up-stream near Swan Falls Dam, in which the assemblages contained relatively little faunal remains and low densities. The relationships with other sites located along the Snake River corridor just up- and down-stream, including 10-CN-01 and 10-AA-188, exhibit this pattern. This however, does not change the nature of the site itself, since these locations are representative of similar foraging strategies and exhibit evidence of high mobility.

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APPENDIX

Distribution of Material Remains, 10-CN-05

	Unit	13-14E, 0-1N		Year	2007		
	OBS	BAS	CCS	Ident	Unident	Shell	Lithic Total
0-10cm	61	12	12	1	15	58	85
10-20cm	95	28	22	1	110	108	145
20-30cm	66	24	8	0	12	84	98
30-40cm	37	34	0	0	10	41	71
40-50cm	15	3	0	0	3	30	18
50-60cm							0
Totals	274	101	42	2	150	321	417

	Unit	15-16E, 0-1S		Year	2007		0
	OBS	BAS	CCS	Ident.	UnIdent	Shell	0
0-10cm	65	36	15	1	105	176	116
10-20cm	97	39	22	2	41	170	158
20-30cm	121	21	28	2	57	60	170
30-40cm	44	49	2	0	47	75	95
40-50cm							0
50-60cm							0
60-70cm	5	8	3	0	0	23	16
Totals	332	153	70	5	250	504	555

	Unit	10-11E, 14-15N		Year	2007		
	OBS	BAS	CCS	Ident.	Unident.	Shell	Lithic Total
0-10cm	37	20	13	3	54	9	70
10-20cm	32	12	9	0	181	10	53
20-30cm	34	22	20	0	136	40	76
30-40cm	16	28	1	0	44	14	45
40-50cm							0
50-60cm							0
Totals	119	82	43	3	415	73	244

	Unit	9-10E, 0-1N		Year	2007		
	OBS	BAS	CCS	Ident.	Unident.	Shell	Lithic Total
0-10cm	35	19	5	0	15	73	59
10-20cm	123	27	2	0	30	63	152
20-30cm	104	7	5	0	54	29	116
30-40cm	75	10	4	0	27	32	89
40-50cm	21	4	0	0	15	2	25
50-60cm	0	3	1	0	1	0	4
Totals	358	70	17	0	142	199	445

	Unit	10-11E, 8-9N		Year	2007		
	OBS	BAS	CCS	Ident.	Unident.	Shell	Lithic Total
0-10cm	40	28	9	0	141	4	77
10-20cm	33	12	5	0	81	15	50
20-30cm	11	3	3	0	12	7	17
30-40cm	2	0	0	0	5	3	2
40-50cm							0
50-60cm							0
Totals	86	43	17	0	239	29	146

	Unit	14-15E, 0-1S		Year	2007		
	OBS	BAS	CCS	Ident.	Unident.	Shell	Lithic Total
0-10cm	54	17	19	0	62	30	90
10-20cm	77	23	33	0	24	24	133
20-30cm	58	22	7	0	34	48	87
30-40cm	42	7	7	2	35	20	56
40-50cm	46	21	6	1	55	25	73
50-60cm	28	9	4	1	29	26	41
Totals	231	69	66	2	155	122	366

	Unit	0-1E, 13-14N		Year	2007		
	OBS	BAS	CCS	Ident.	Unident.	Shell	Lithic Total
0-10cm	27	4	6	0	11	30	37
10-20cm	20	23	2	0	6	23	45
20-30cm	29	17	5	0	75	25	51
30-40cm							0
40-50cm							0
50-60cm							0
Totals	76	44	13	0	92	78	133

	Unit	4-5E, 7-8S		Year	2007		
	OBS	BAS	CCS	Ident.	Unident.	Shell	Lithic Total
0-10cm	7	5	3	0	6	0	15
10-20cm	8	3	3	0	10	3	14
20-30cm	17	0	3	0	1	0	20
30-40cm	25	8	3	0	0	0	36
40-50cm	6	0	3	0	0	0	9
50-60cm							0
Totals	63	16	15	0	17	3	94

	Unit	6-7W, 0-1N		Year	2008		
	OBS	BAS	CCS	Ident	Unident	Shell	Lithic Total
0-10cm	37	4	21		31	14	62
10-20cm	31	8	7		20	700	46
20-30cm	57	10	7		16	116	74
30-40cm	27	3	4	5	25	36	34
40-50cm	29	10	10	4	24	61	49
50-60cm	12	6	9	2	48	17	27
60-70cm	8	3	5		48	18	16
70-80cm	7	0	2		3	4	9
Totals	208	44	65	11	215	966	317

	Unit	8-9W, 5-6N		Year	2008		Lithic Total
	OBS	BAS	CCS	Ident	Unident	Shell	0
0-10cm	32	1	17	0	4	254	50
10-20cm	55	15	11	0	12	67	81
20-30cm	44	8	19	0	24	35	71
30-40cm	19	2	1	0	7	31	22
40-50cm	25	3	4	0	17	32	32
50-60cm					0	4	0
60-70cm							0
Totals	175	29	52	0	64	419	256

	Unit	9-10W, 0-1S		Year	2008		Lithic Total
	OBS	BAS	CCS	Ident	Unident	Shell	0
0-10cm	64	30	8		36	242	102
10-20cm	88	23	16		11	66	127
20-30cm	52	10	15		14	49	77
30-40cm	26	5	31		56	42	62
40-50cm	9	8	2		4	9	19
50-60cm	8	9	0		10	19	17
Totals	247	85	72	0	131	427	404

	Unit	7-8W, 0-1N		Year	2008		Lithic Total
	OBS	BAS	CCS	Ident	Unident	Shell	0
0-10cm	26	3	3	0	25	10	32
10-20cm	40	14	5	4	8	29	59
20-30cm	38	3	4	0	12	18	45
30-40cm	31	6	8	0	35	13	45
40-50cm	7	5	3	0	13	13	15
50-60cm	13	2	4	1	8	3	19
Totals	155	33	27	5	101	86	215

	Unit	10-11W, 0-1N		Year	2008		Lithic Total
	OBS	BAS	CCS	Ident	Unident	Shell	0
0-10cm	38	11	7	0	17	27	56
10-20cm	55	16	7	3	42	30	78
20-30cm							0
30-40cm							0
40-50cm							0
50-60cm							0
Totals	93	27	14	3	59	57	134

	Grand Totals						
	OBS	BAS	CCS	Ident	Unident	Shell	Lithic Total
0-10cm	831	218	173	6	629	954	1222
10-20cm	946	277	153	10	824	1329	1376
20-30cm	662	153	124	2	462	515	939
30-40cm	414	152	66	7	334	319	632
40-50cm	158	54	28	5	131	172	240
50-60cm	61	29	18	4	96	69	108
60-70cm	13	11	8	0	48	23	32
70-80cm	7	0	2	0	3	4	9
Totals	3092	894	572	34	2527	3385	4558