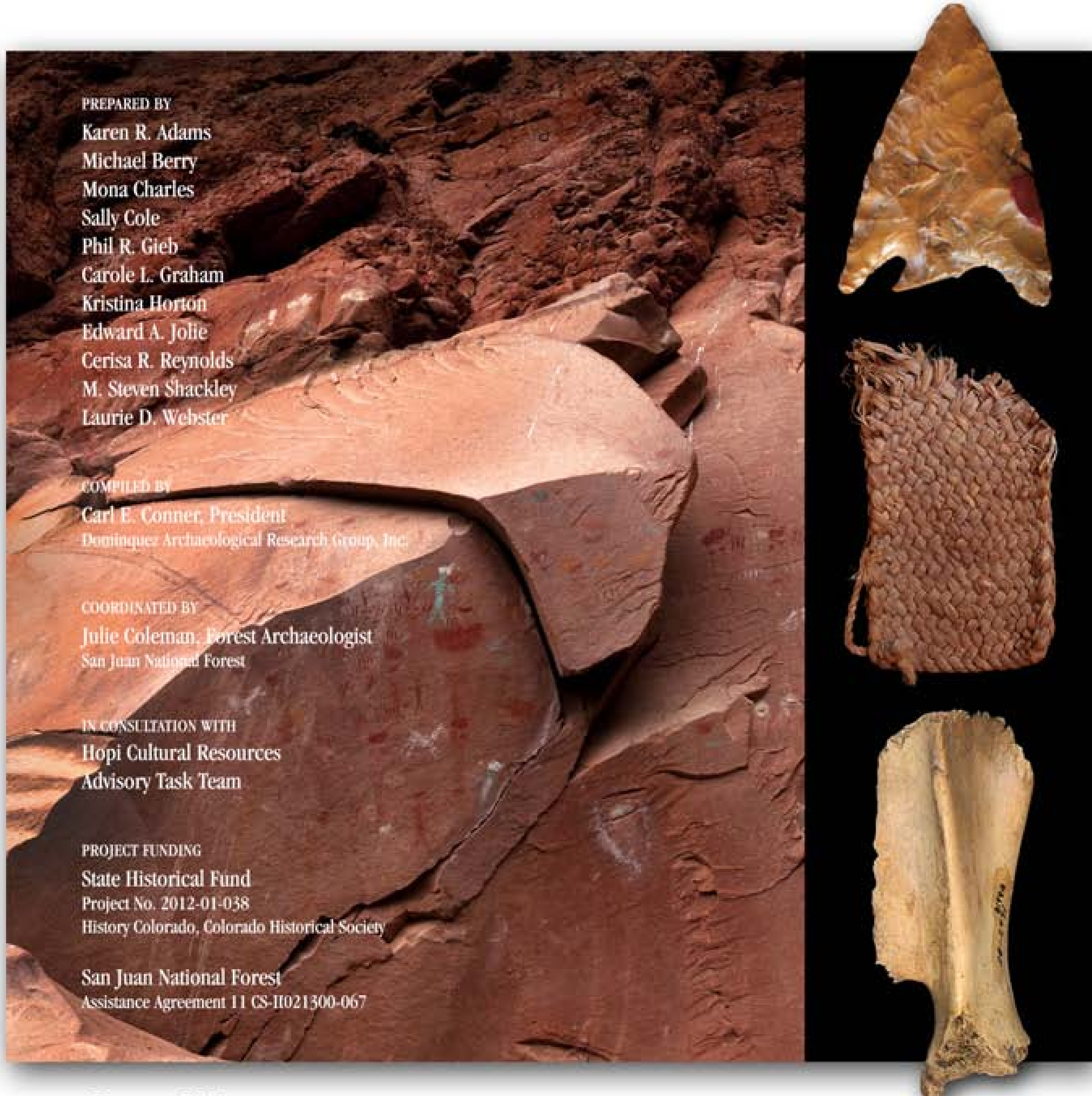
Falls Creek Rockshelters Archaeological Assessment Project – Phase II



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DARG

Dominguez Archaeological Research Group, Inc.

FALLS CREEK ROCKSHELTERS
ARCHAEOLOGICAL ASSESSMENT PROJECT – PHASE II

STATE HISTORICAL FUND GRANT PROJECT #2012-01-038
SAN JUAN NATIONAL FOREST ASSISTANCE AGREEMENT 11 CS-II021300-067

31 OCTOBER 2014

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INTRODUCTION

Dominguez Archaeological Research Group, Inc. (DARG) and their associated researchers partnered with the San Juan National Forest and the State Historical Fund to conduct the "Reevaluation of Basketmaker II from the Falls Creek Rockshelters, Phase II" as outlined in the State Historical Fund grant (Project # 2012-01-038) This second phase of the Falls Creek Rockshelter project focused on the analyses of the non-NAGPRA Basketmaker II materials from the Falls Creek Rockshelter. The first phase of the project, which was completed in 2012, focused on the analysis of the NAGPRA related collections from the Falls Creek Rockshelters. With the completion of this project, we now have a more holistic understanding of the Basketmaker II occupation of Falls Creek. The Falls Creek Basketmaker II project has contributed very significant data regarding the earliest phase in the development of agricultural societies in the Southwest. DARG would like to thank the State Historical Fund and the San Juan National Forest for their support of this important research.

DARG would also like the thank the dedication and expertise that the research team brought to this project. DARG is happy to present the following reports submitted by the experts in their respective field of study: Karen R. Adams - paleobotany, Michael Berry - chronology, Mona Charles - bone tools and gaming pieces, Sally J. Cole - rock art, Phil R. Geib - lithic analysis, Kristina Horton - data base development; Cerisa R. Reynolds - faunal analysis, Edward A. Jolie and Laurie D. Webster - textile, basketry, hide and perishable analysis, and M. Steven Shackley - obsidian source provenance. Julie Coleman, Forest Archaeologist, provided technical support for the project.

The results of Phase I and Phase II were shared with other professionals at the 2012 American Association of Physical Anthropologists Meeting, the 2013 Society of American Archaeology (SAA) annual meeting, and in 2014 with the Hopi Cultural Resource Advisory Task Team (CRATT).

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CHAPTER 1:CHRONOLOGY

Michael Berry

1.0 Introduction

The excavations of the Falls Creek Shelters have an important place in the history of Southwestern archaeology. Similarly, the data recovered and reported have had a significant impact on our understanding of the dispersion of maize agriculture. And, understandably, the various conceptions of that dispersion have changed over the seventy years that have passed since the publication of *Basket Maker II Sites Near Durango, Colorado* (Morris and Burgh 1954).

> As Morris noted in his conclusions:
> Basket Maker II culture as delineated in the preceding pages constitutes but a chapter in the history of aboriginal peoples of the Durango vicinity in particular and of the San Juan drainage as a whole. Just where this section will fit into the story as it will be filled out by future research cannot now be stated, but for the present stands as the initial chapter. That it so should rank is obvious. Long centuries of slow development were necessary to bring the components of a culture to the degree of advancement that they exhibit in Basket Maker II. Did this gradual unfolding take place within the San Juan area, or did the Basket Makers move in, lock, stock, and barrel, from some other area (Morris and Burgh 1954:80)?

Indeed, subsequent research has expanded our knowledge at a rate probably not conceivable to Morris in the 1950s. However the question he posed regarding autochthonous local development versus migration from adjacent regions is far from resolved (cf. Irwin-Williams 1973, Berry 1982, Berry and Berry 1986, Smiley and Robbins 1997, Matson 1991, Vierra and Ford 2006). This chapter will examine the issue from the perspective of chronometry. This may seem to be an overly unilateral approach but, as will be seen, chronometry provides the necessary context for interpretation of the extensive Falls Creek Shelters museum collections that follow.

1.1 The Treatment of Chronometric Data

A tremendous amount of tree-ring and radiocarbon data relevant to Morris' question is available for analyses. We will be considering the temporal placement of events at the Falls Creek Shelters and the Animas Valley as well as the relationship of these events to the prehistory of the greater Southwest. Temporal distributions will be depicted as histograms at both ten-year and 25-year increments.

Tree-ring histograms are generated in straightforward manner. For any region under analysis the number of dates falling within, for example, a ten-year increment on the X-axis is counted and shown on the Y-axis. Cutting dates and “v” dates are displayed in black. The less reliable “vv” dates are displayed in red. The resultant histogram depicts the varying intensity of construction activity through time. Periods represented by red bars are given less credibility than those represented in black. This is because “vv” dates tend to date older than the target events due to missing outer rings.

Generation of radiocarbon histograms is a bit more involved. First, each conventional radiocarbon date is a probability-based determination with a mean and standard deviation. It is necessary to incorporate the standard deviation in the construction of the histogram; not merely the mean date. Second, conventional radiocarbon dates must be calibrated for comparison with tree-ring distributions. Otherwise the two types of data would not share a common calendric time scale.

Many conventional dates have multiple intercepts on the calibration curve, hence each date my produce more than one possible calendric range and each is assigned a relative probability. A conventional date with a single intercept will produce a calendric range with a probability of 1.0. A conventional date with two intercepts will produce two calendric ranges with, for example, one assigned a relative probability of 0.850 and the other a relative probability of 0.150 (the sum of relative probabilities is 1.0). Some conventional dates that fall in especially erratic portions of the calibration can produce a half-dozen or more intercepts and associated range and probabilities.

The histogram is produced by adding up the relative probabilities for each temporal increment (either ten or twenty-five year) on the X-axis and entering the sum on the Y-axis. Unlike tree-ring dates, each calendric range considered will cross multiple temporal increments on the X-axis. High (annual plants, hides, bone collagen, etc.) and medium (pine cones, bark, outer ten rings of wood, etc) credibility dates are displayed in black. Low credibility dates (charcoal) are colored red. The resultant histogram is a display of variation in probability density through time. It lacks the granularity of tree-ring distribution due to the date ranges resultant from the original standard deviation of measurement and subsequent calibration uncertainty.

The two dating methods, used in conjunction, can provide insights more powerful than either used in isolation. Tree-ring dating is limited in time depth to the first few centuries B.C. and therefore does not address the events preceding the introduction of agriculture to the Colorado Plateau. Radiocarbon has no such limitation and may therefore be critical to answering the questions raised by Morris regarding the origins of Basketmaker II culture.

Radiocarbon samples are also likely to be preserved in situations where datable timbers are unavailable. On the other hand, tree-ring data can effectively point to relatively brief intervals in local occupational sequences indicating probable abandonment. This becomes especially critical when comparing tree-ring dated fluctuations in occupation with high resolution climatic data such as the Palmer Drought Severity Index (PDSI). Occupational gaps of less than 100 years will be effectively masked by radiocarbon coverage – indicated only by a downward probability trend – and thus go undetected. In order to minimize the masking factor, conventional dates with standard deviations greater than fifty years will be excluded from ten-year increment histogram representations. The threshold for twenty-five year increment histograms will be set at seventy-five years.

The analyses that follow will demonstrate the complementary functionality of these two dating methods.

1.2 Falls Creek Shelters Chronology

Morris' initial interest in the Falls Creek Shelters was the possibility of shedding light on the nature of Basketmaker II architecture.

> All previous excavating among the Basket Maker II remains had been in caves used principally as burial grounds and caching places, but rarely for even temporary camps. Grading of the floor of North Shelter into definite terraces suggested the probability that it had been a residential site. If so, it could be expected to yield an array of commonplace utilitarian tools of sorts that seldom would have been cached or used as burial accompaniments. And, moreover, it might shed light on the kind of houses in which the early Basket Makers lived, provided they had any at all, which had long been a moot point, with dominant opinion to the contrary. That a site offering such promise of increasing the knowledge and understanding of Basket Maker culture should be thoroughly explored was both obvious and imperative (Morris and Burgh 1954:1-2).

Morris' assessment of the site potential was confirmed and the Falls Creek Shelters, along with Talus Village, were the first sites to demonstrate the occurrence of Basketmaker II domestic architecture.

The other significant accomplishment was the extension of the southwestern master tree-ring chronology to the first few centuries B.C. The 175 tree-ring samples from North and South Shelters provide an accurate understanding of occupation spans even though the provenience information available is less than ideal. As Dean notes:

> The wide range of dates from the various excavation units within the rock shelters is a consequence of the disturbed nature of the deposits, the weak provenience control on many of the samples, and the specimen and recordation confusions caused by the distribution of the material among several collections … Despite the apparent lack of order in the dates, a few comments can be made on some of the provenience units (Dean 1975:29).

Dean summarizes the occupation sequences: North Shelter witnessed a long Basketmaker II presence from the third century B.C. to A.D. 272 with trace evidence of an early sixth century Basketmaker III component; South Shelter also had a lengthy Basketmaker II occupation from 216 B.C. to A.D. 413 followed by the construction of a Basketmaker III pithouse at A.D. 651 (there is also a single date of A.D. 866 with no apparent association). There is a significant temporal gap between Basketmaker II and III and also a gap of over a century between the early and late Basketmaker II sequence.

> Both shelters are characterized by a gap in the sequence of dates between roughly A.D. 50 and A.D. 150. Whether this represents a hiatus in the use of the caves, a lull in wood-use activity, or a quirk of archaeological sampling is not known. Both shelters were used for habitation in the third century A.D., and the occupation of South Shelter seems to have extended on into the fifth century. Both caves were apparently abandoned during most of the fifth and sixth centuries and were reutilized in later centuries by Basketmaker III people (Dean 1975:31).

Dean also notes that no recognizable house floors were associated with the early (pre A.D. 50) Basketmaker II component, hence the onset of domestic architecture for both shelters was in the late second and early third centuries A.D.

Independent support for an occupational hiatus between the pre-architectural and architectural Basketmaker II components is found in the available paleoclimatic evidence in the form of the Palmer Drought Severity Index (PDSI). I rely here on Cook's unpublished data (Edward Cook, Lamont-Doherty Earth Observatory, personal communication 2007) that improves the accuracy of the gridded network of PDSI reconstructions originally created by Cook et al. (2004). The relevant PDSI nodes for the American Southwest are shown in Figure 1.1. Nodes 103 and 118 bracket the Northern San Juan region occupied during the Western and Eastern Basketmaker II periods.

Figure 1.2 juxtaposes the climatic reconstruction for nodes 103 and 118 with the combined Falls Creek Shelters tree-ring record. The late first and second century drought is the most severe in the entire 2000 year PDSI record and correlates precisely with the dating hiatus noted by Dean. So it appears that an initial occupation, associated with maize (see below) but not domestic architecture, was followed by a period of abandonment which was, in turn, followed by a span of nearly two centuries during which the terracing and pithouse construction was accomplished by Basketmaker II farmers.

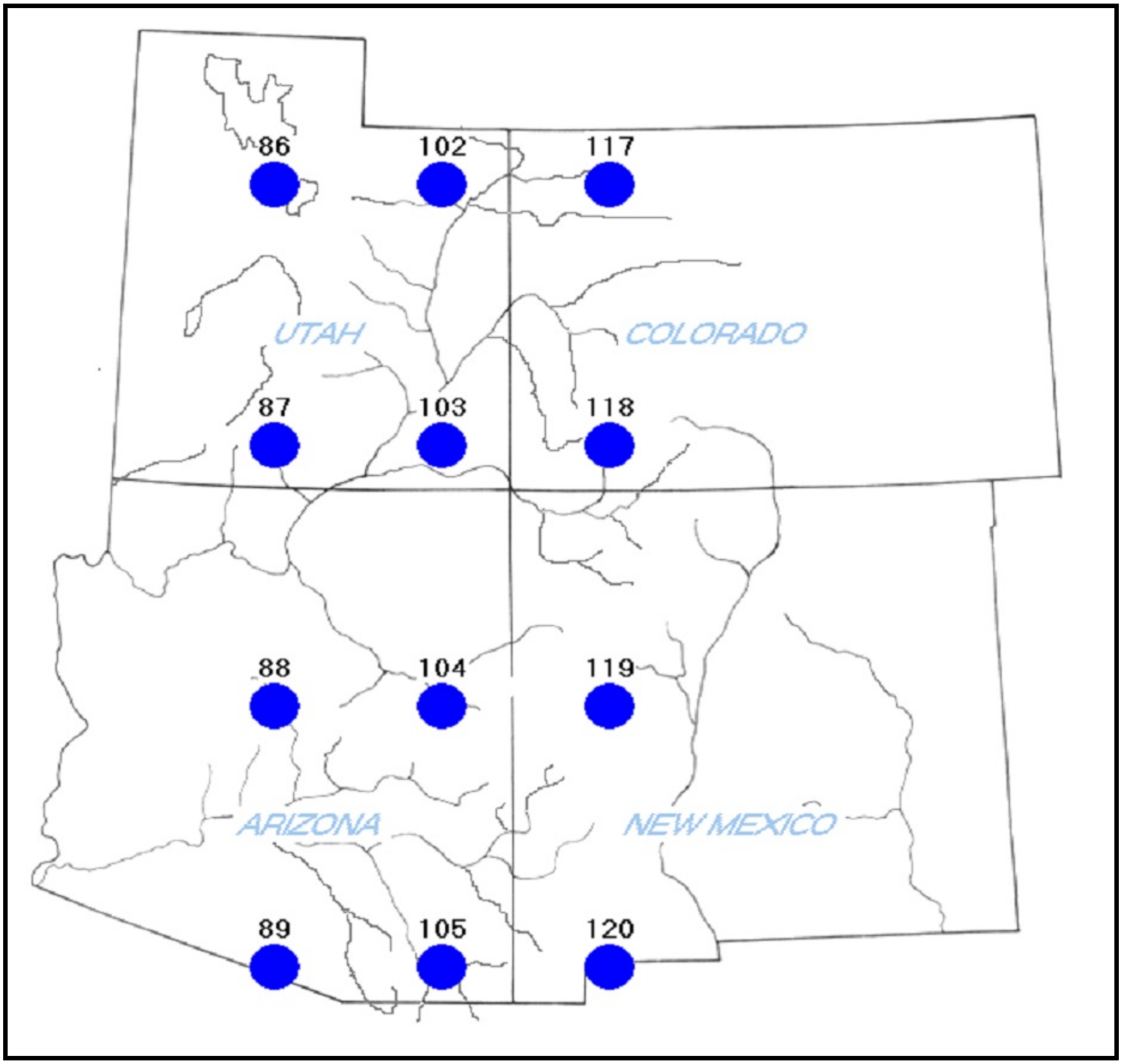
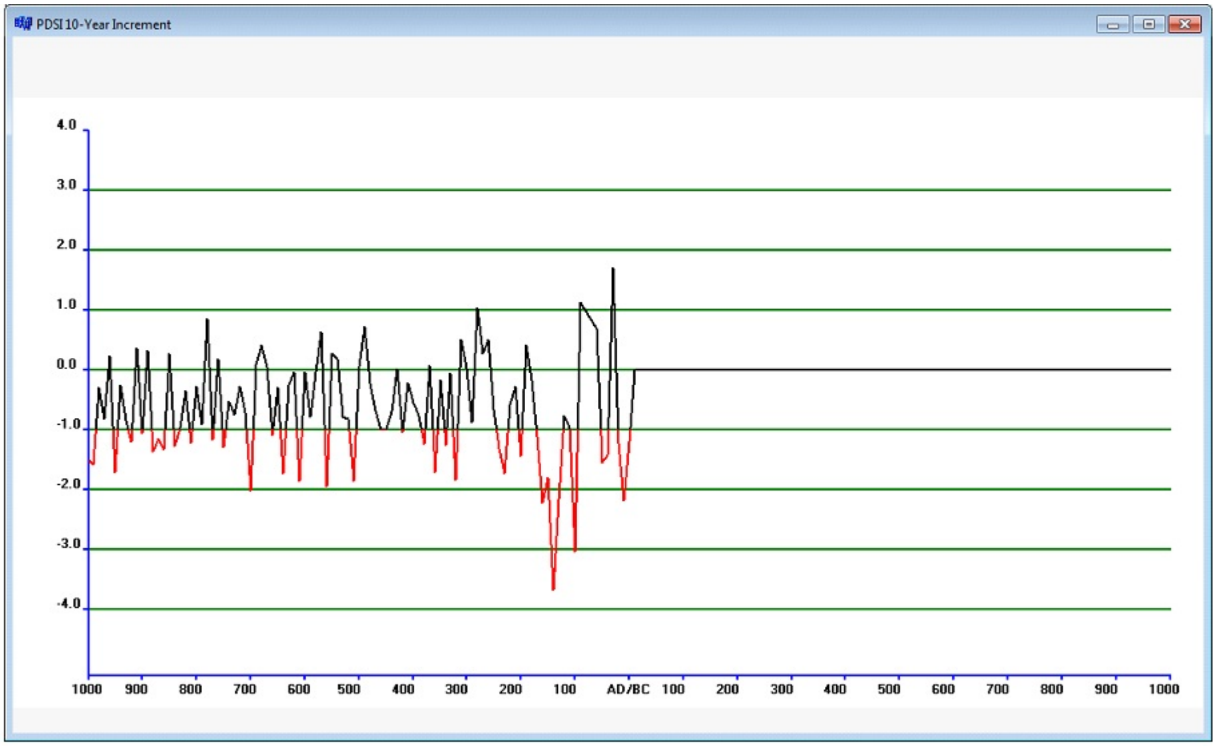


Figure 1.1. Twelve PDSI Reconstructed Climatic Nodes for the American Southwest.



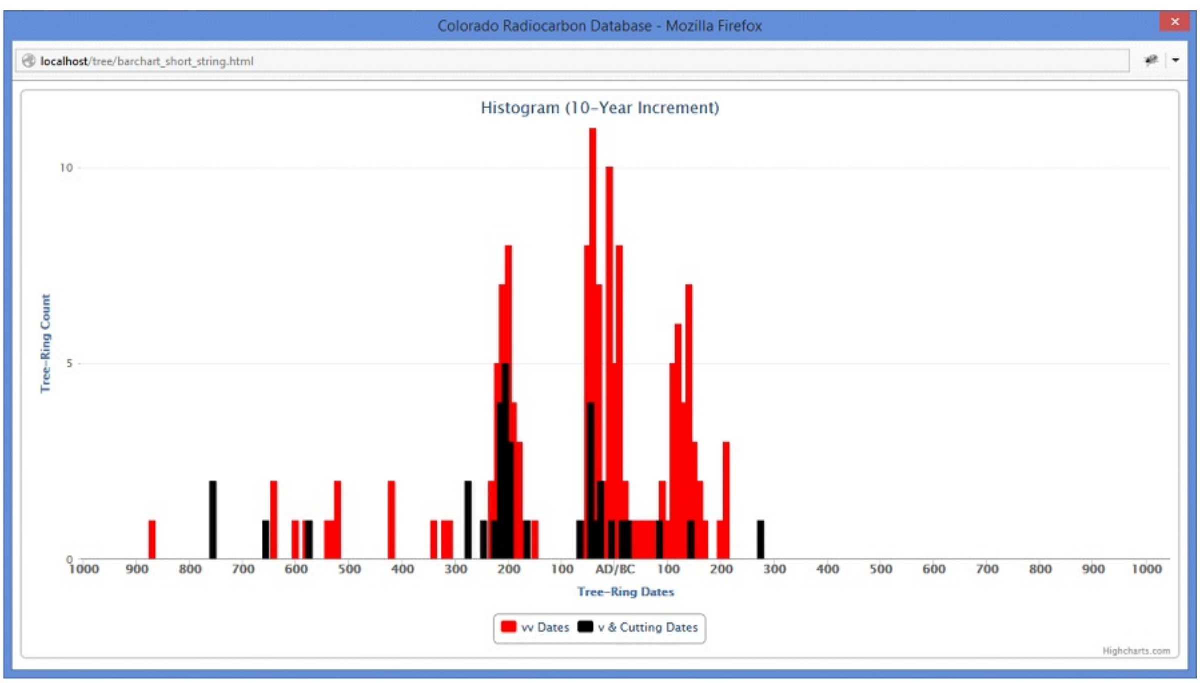


Figure 1.2. PDSI Climatic Data Compared to the Falls Creek Shelters Tree-Ring Record.

The question now emerges as to the nature of the pre-architectural occupation. Our best evidence is found in the radiocarbon record. Thirty radiocarbon dates are currently available for the Falls Creek Shelters (Table 1.1). Three of these (BETA-75863, BETA-75864 BETA-75865) on maize were first reported by Lister (1997) who noted that the dates resolved two important issues. First, the dating supported the pre-Christian tree-ring record as representative of actual occupation rather than the use of long-dead wood. Second, the dates established the very early use of maize at the shelters.

> Corroborative evidence that humans occupied the locale this early comes from corn recovered from trash brushed into the burial crevice. Three samples of corn kernels gathered by the Carnegie crew as it cleaned up after Flora's rummaging recently were radiocarbon accelerator dated to 181 B.C., 368 B.C., and 377 B.C. Other corn scattered in the fill of both overhangs might even be older. These dates make clear that some people in the vicinity were at least attempting to grow corn at a period earlier than previously known for this part of the Southwest, and they were doing so at a high altitude in a marginal climate (Lister 1997:134).

Lister did not publish the conventional dates, just the calibrated intercepts that had been calculated by Francis E. Smiley using the then available calibration curve (Stuiver and Pearson 1986). In order to credibly use these dates in the current study we used the reported intercepts to work backward through the Stuiver and Pearson curve to estimate the conventional date mid-points. As shown in Table 1.1 these were, respectively, 2140, 2240 and 2260 BP. We then applied an estimated 40-year one sigma standard deviation and recalibrated the dates using Calib 5.1 (Stuiver, Reimer and Reimer 2005) using the Intcal09 calibration curve. This transformed the Lister dates to the same calibration baseline as the other radiocarbon determinations referenced herein. These recalibrations have been done in the interest of consistency but do not markedly change Lister's interpretations.

Twelve of the dates from North Shelter listed in Table 1.1 are on samples from the museum collections associated with burials in the burial crevice. Another nine dates are from sandals recovered during an ARPA investigation that are believed to have come from the burial crevice. The artifacts were mounted on a display board with a descriptive tag in I.F. Flora's (the original excavator) hand writing (Webster 2014 personal communication). All but one (UGA-15256) significantly predate the burial dates and appear to represent an earlier Archaic component that has, until now, gone unrecognized.

As these earlier dates suggest, the term "burial crevice" may be something of a misnomer. Rather, it is a feature that, fortuitously, was the only portion of the site where perishables were preserved. The crevice was apparently used as a receptacle for refuse,

Table 1.1. Radiocarbon Dates from North and South Shelters.

Site	Lab Number	Conv. Date	One Sigma	Delta 13C	Two Sigma Calibration	Probability	Material	Provenience
North Shelter[1]	AA-99890	2062	31	-24.5	BC 171-AD 3	1.000	Coiled Basketry	Morris' burial 26.
North Shelter[2]	BETA-75863	2140	40	?	BC 356-BC 284 BC 254-BC 249 BC 235-BC 50	0.234 0.004 0.762	Maize	Burial Crevice
North Shelter[2]	BETA-75864	2240	40	?	BC 392-BC 335 BC 329-BC 204	0.284 0.716	Maize	Burial Crevice
North Shelter[2]	BETA-75865	2260	40	?	BC 399-BC 344 BC 323-BC 205	0.371 0.629	Maize	Burial Crevice
North Shelter[3]	BETA-95301	2120	60	-15.5	BC 358-BC 275 BC 260-BC 17 BC 15-AD 0	0.181 0.801 0.017	Amaranth Seeds	Burial crevice
North Shelter[3]	BETA-95302	2300	50	-13.5	BC 485-BC 339 BC 328-BC 204	0.588 0.412	Yucca Cordage	Burial crevice.
North Shelter[4]	UCR-3883	1960	70	-25.0	BC 157-BC 135 BC 114-AD 222	0.020 0.980	Apron Strands	Burial crevice
North Shelter[4]	UCR-3884	2120	40	-24.5	BC 352-BC 296 BC 228-BC 220 BC 212-BC 43	0.110 0.008 0.883	Leaf Debris	Burial crevice
North Shelter[4]	UCR-3885	2740	70	-26.1	BC 1051-BC 796	1.000	Cedar Bark Fragment	Burial crevice
North Shelter[1]	UGA-15250	2460	25	-11.7	BC 756-BC 679 BC 671-BC 603 BC 600-BC430	0.333 0.214 0.453	Yucca Sandal	Burial crevice[6]
North Shelter[1]	UGA-15251	2470	25	-12.6	BC 767-BC481 BC 442-BC 433	0.991 0.009	Yucca Sandal	Burial crevice[6]

Site	Lab Number	Conv. Date	One Sigma	Delta 13C	Two Sigma Calibration	Probability	Material	Provenience
North Shelter[1]	UGA-15252	2450	25	-11.9	BC 752-BC 682 BC 669-BC 633 BC 629-BC 613 BC 593-BC 412	0.299 0.121 0.026 0.554	Yucca Sandal	Burial crevice[6]
North Shelter[1]	UGA-15253	2500	25	-12.3	BC 776-BC 726 BC 724-BC 701 BC 696-BC 540	0.208 0.035 0.757	Yucca Sandal	Burial crevice[6]
North Shelter[1]	UGA-15254	2440	25	-9.6	BC 750-BC 684 BC 667-BC 638 BC 590-BC 409	0.252 0.085 0.664	Yucca Sandal	Burial crevice[6]
North Shelter[1]	UGA-15255	2550	25	-13.6	BC 800-BC 748 BC 684-BC 667 BC 641-BC 587 BC 581-BC 556	0.682 0.085 0.182 0.051	Yucca Sandal	Burial crevice[6]
North Shelter[1]	UGA-15256	1860	20	-27.2	AD 85-AD 221	1.000	Yucca Twined Basket	Burial crevice[6]
North Shelter[1]	UGA-15257	5990	25	-27.4	BC 4943-BC 4822 BC 4820-BC 4800	0.934 0.066	Yucca Sandal	Burial crevice[6]
North Shelter[1]	UGA-15258	2500	25	-21.7	BC 776-BC 726 BC 724-BC 701 BC 696-BC 540	0.208 0.035 0.757	Yucca Sandal	Burial crevice[6]
North Shelter[1]	UGA-15425	1880	25	-20.5	AD 71-AD 214	1.000	Rabbit Fur	Burial crevice
North Shelter[1]	UGA-15426	1940	25	-20.5	AD 8-AD 13 AD 15-AD 125	0.014 0.986	Weasel Fur	Burial crevice
North Shelter[1]	UGA-15427	2010	20	-20.8	BC 49-AD 31 AD 37-AD 51	0.942 0.058	Muledeer Fur	Burial crevice
South Shelter[1]	UGA-17946	1760	20	-10.3	AD 231-AD 339	1.000	Yucca Cordage Apron	General refuse

Site	Lab Number	Conv. Date	One Sigma	Delta 13C	Two Sigma Calibration	Probability	Material	Provenience
South Shelter[1]	UGA-17947	1020	20	-15.2	AD 987-AD 1029	1.000	Yucca Sandal	General refuse
South Shelter[1]	UGA-17948	1840	20	-24.6	AD 125-AD 237	1.000	Bulrush Tumpband	General refuse
South Shelter[1]	UGA-17949	1310	20	-23.4	AD 660-AD 717 AD 742-AD 766	0.752 0.248	Bulrush Sandal	General refuse
South Shelter[3]	BETA-95165	2660	160	-24.3	BC 1207-BC 1139 BC 1135-BC 403	0.032 0.968	Tule Mat	General refuse
South Shelter[3]	BETA-95303	1790	110	-11.3	BC 34-BC 31 BC 21-BC 11 BC 2-AD 434 AD 454-AD 470 AD 487-AD 534	0.001 0.004 0.962 0.007 0.025	Corn Stalk Fragment	Floor 11
South Shelter[3]	BETA-95304	2100	50	-24.6	BC 352-BC 296 BC 228-BC 220 BC 212-AD 7 AD 12-AD 16	0.077 0.006 0.914 0.003	Cucurbita Fragment	General refuse
South Shelter[3]	BETA-95305	1980	50	-28.2	BC 107-AD 129	1.000	Cucurbita Fragment	General refuse
South Shelter[5]	CAMS-41467	3160	110	?	BC 1683-BC 1152 BC 1150-BC 1127	0.987 0.013	Black Pigment	Panel 4 Anthropomorph

[1]This Volume
[2]Lister 1997
[3]Smiley and Robbins 1997
[4]Owsley 2013
[5]Powell et al. 1998
[6]Sample recovered during ARPA investigation

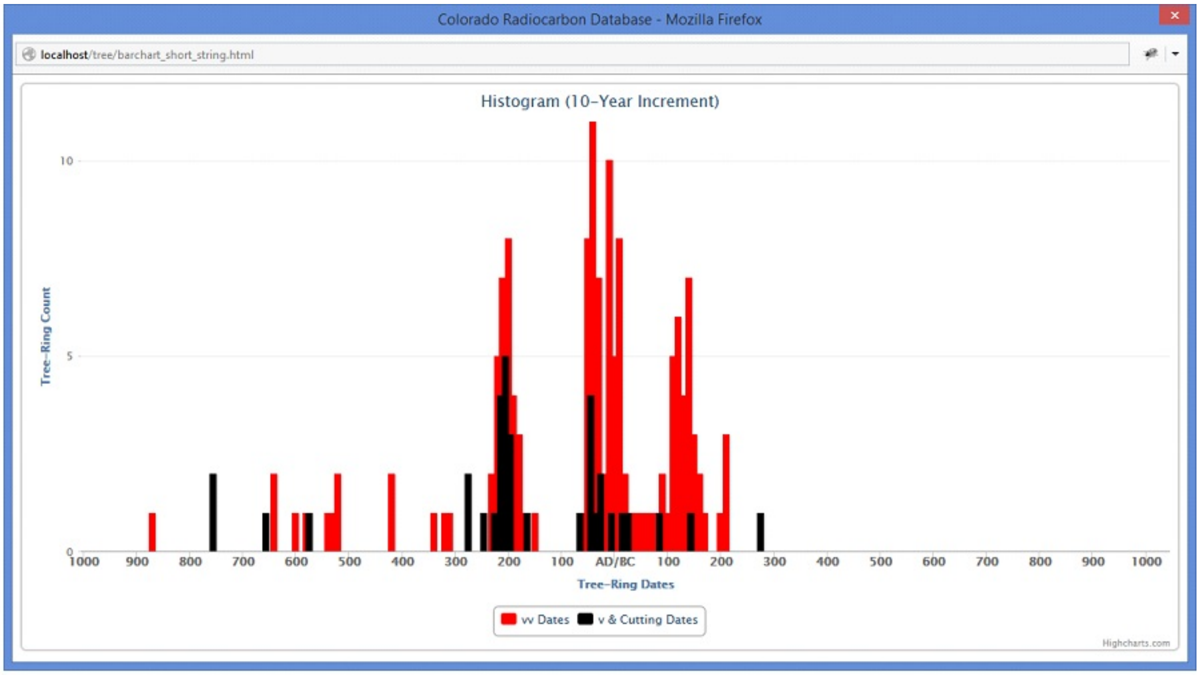
including burials, for a significant period of time prior to the Basketmaker II terracing and pithouse construction.

The nine dates from South Shelter are not nearly as informative. One date on a tule mat (Beta-95165) stands out as anomalously early and has a very large standard deviation (hence it will not be displayed in histograms). A second date (CAMS-41467) is on black pigment from a pictograph. It seems highly unlikely that this is a valid date (What material constitutes pigment? How old was the source material?) given the fact that it is several centuries older than associated dates on annuals (maize, cucurbita, yucca sandals). It has been coded as credibility "None" and does not appear in histograms.

Figure 1.3 juxtaposes the tree-ring and ten-year increment radiocarbon histograms for North and South Shelters and demonstrates the complementarity of the two dating methods.

The radiocarbon record from approximately 700 B.C. to A.D. 400 forms a tripartite probability patterning, likely separated by occupational hiatuses. The earliest occupation from 700–400 B.C. (beyond the range of tree-ring dating) is evidenced by the Archaic sandals attributed to I.F. Flora's excavation. The remainder of the radiocarbon sequence conforms very well to the tree-ring record, beginning at 300 B.C. with a marked reduction in the first century A.D. followed by a significant peak during the architectural period, A.D. 150-400. There is no evidence that the earliest of the three occupations is associated with maize. The second occupation is associated with early maize as well as the burials. The third is associated with Basketmaker II architectural and farming pursuits.

In sum, the first component of the Falls Creek Shelters was previously unrecognized and represents the presence of Archaic hunter-gatherers. The second component appears to conform to Morris initial characterization of Basketmaker II sites as …"caves used principally as burial grounds and caching places." The later architectural component, following a hiatus of 150 years, may or may not have been culturally or biologically related to its temporal predecessors.



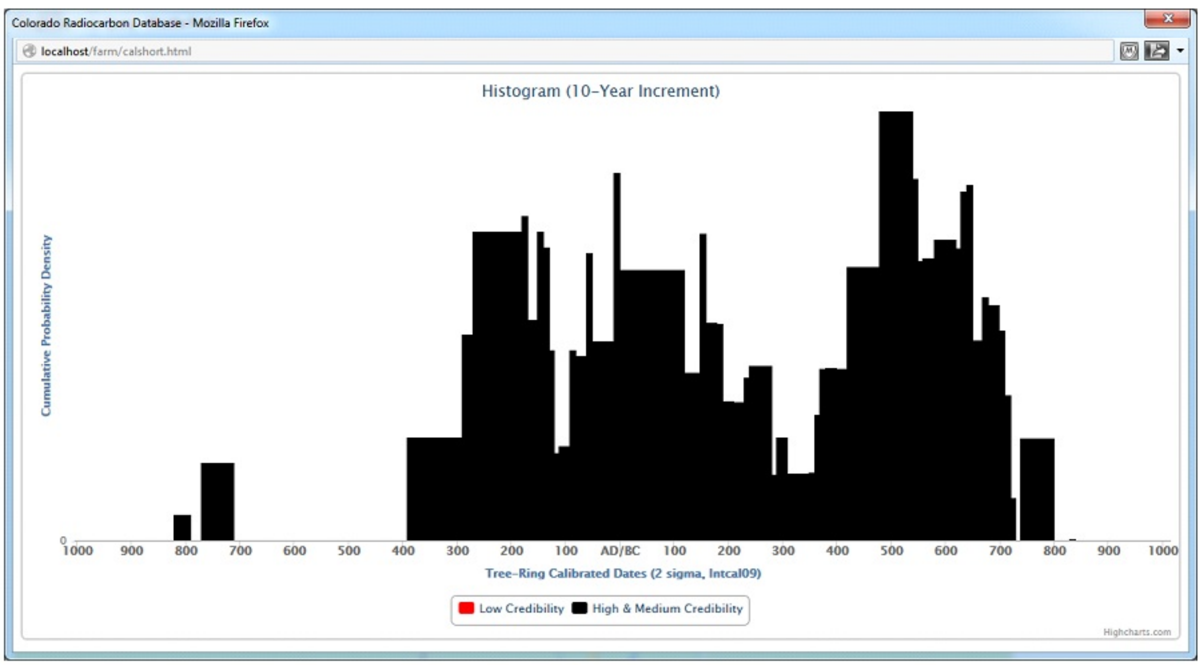


Figure 1.3. Tree-Ring and Radiocarbon Histograms for North and South Shelters.

1.3 The Local Chronology

The early prehistoric occupation of the Animas Valley (excluding the Falls Creek Rockshelters data) is depicted in Figure 1.4 which juxtaposes the available tree-ring and radiocarbon evidence. Both histograms display very limited occupation prior to A.D. 150, increased Basketmaker II habitation sites from A.D. 150 (i.e., after the first century drought)to A.D. 400, a subsequent decline in construction activity and a resurgence during early Basketmaker III from A.D. 500 to A.D 600 (the latter reflected primarily in the radiocarbon record). The tree-ring data also indicate a late Basketmaker III occupation (Carlson 1963) not captured by the available radiocarbon evidence. The areas represented by these two charts are shown in Figures 1.5a and 1.5b. The tree-ring dates are published in Dean (1975) and include Talus Village, Ignacio 7:12, 7:23, 7:25, 7:31, 7:36, 12:1, 12:4, 12:10, 12:23, 12:24, 12:27, 12:58, 12:59, 12:60 and 12:64. The radiocarbon dates are listed in Table 1.2.

The pre-architectural component so well represented at the Falls Creek Shelters is virtually absent from the other Animas Valley sites. The Talus Village radiocarbon record may represent the only exception. Two of the twelve dates (AA-57753 and AA-57754) are clearly outliers that fall within the range of the North Shelter burial crevice samples and just as clearly well outside the range of the Talus Village architectural chronometry. These dates were run on samples of skeletal material from burials of unspecified provenience. Two explanations seem possible.

First, the dates may simply be erroneous. They were run by the University of Arizona lab based on collagen extraction and stable isotope analyses accomplished by Joan Coltrain (Coltrain, Janetski and Carlyle 2006). Geib and Hurst (2013) have expressed some concerns on the validity of the Arizona lab results in another similar context. Coltrain, Janetski and Lewis (2012) used the same pre-treatment process and lab for dating skeletal material from Whiskers Draw Cave 7 in southeastern Utah. Geib and Hurst (2013) submitted eleven same-sample collagen extractions (obtained from Coltrain) to another lab that returned significantly different results.

Second, the dates may be accurate and the original excavators may simply not have recognized an earlier, pre-architectural component given the considerable aboriginal terracing and complex remodeling of structure floors described by Morris and Burgh. The actual proveniences of the two samples in question – Burials 15 and 19 – are not reported in Morris and Burgh (1954), so we do not know if they were directly associated with structures or some other stratigraphic context. Another line of evidence, inconclusive but nonetheless interesting, suggests that the Talus Village occupation may parallel a portion of North Shelter sequence. The study by Coltrain, Janetski and Carlyle (2006) was done, in part, to investigate the dietary

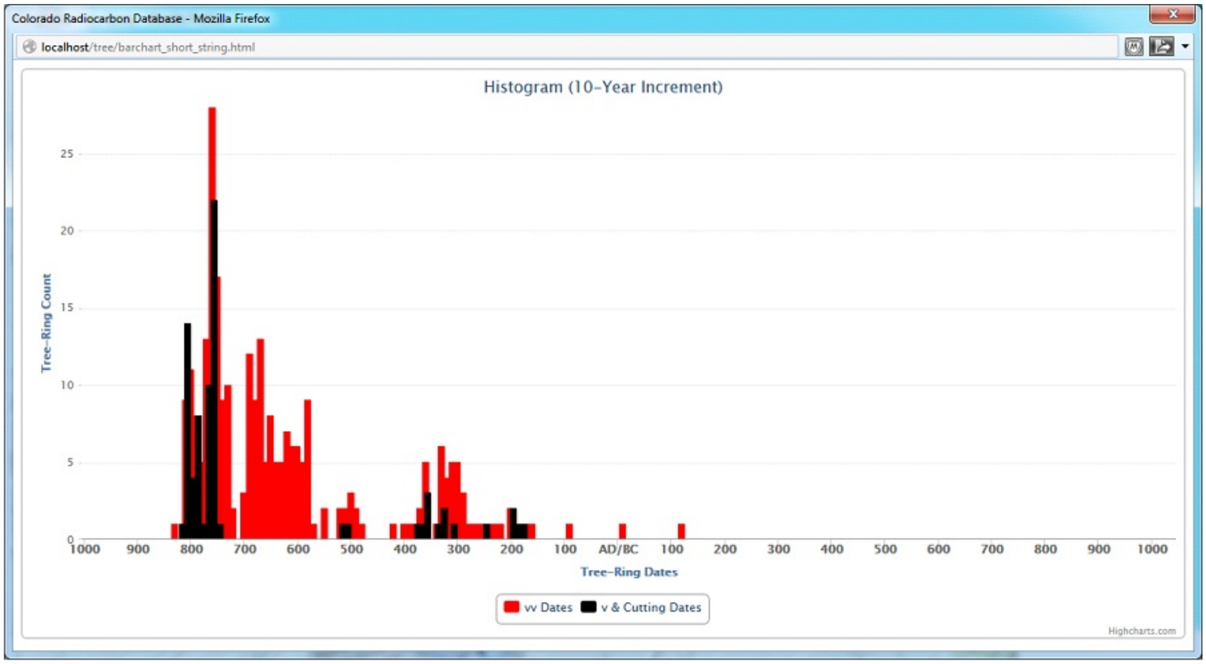


Figure 1.4a. Tree-Ring Histograms for the Animas Valley (Excluding Falls Creek Shelters).

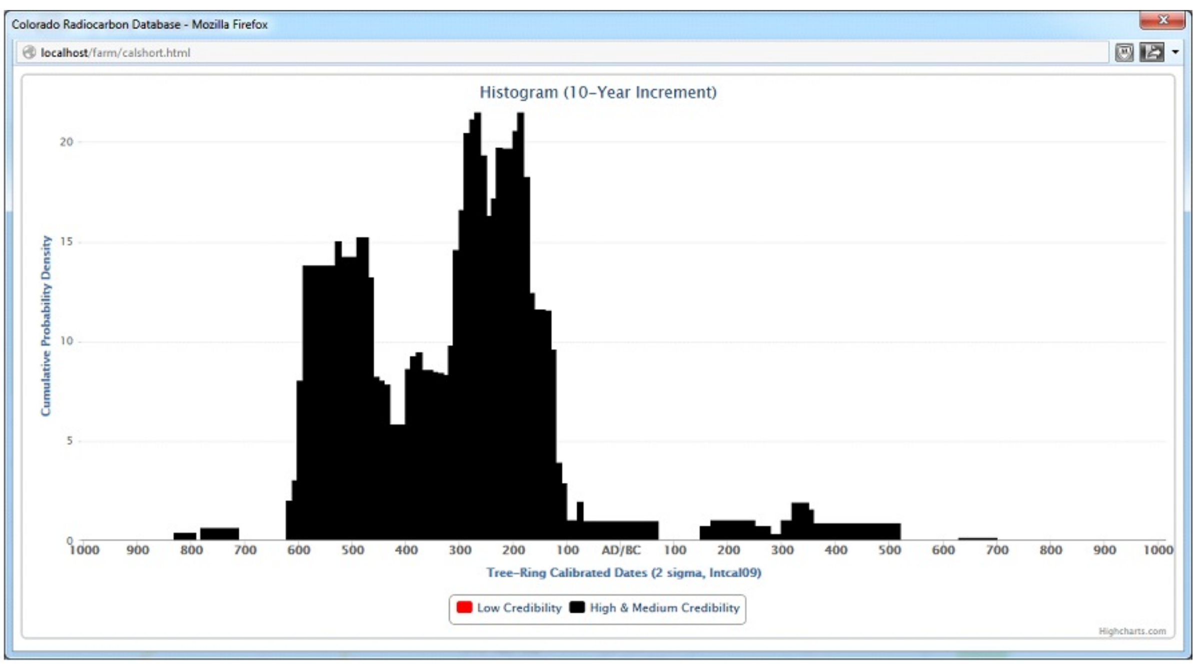


Figure 1.4b. Radiocarbon Histograms for the Animas Valley (Excluding Falls Creek Shelters).

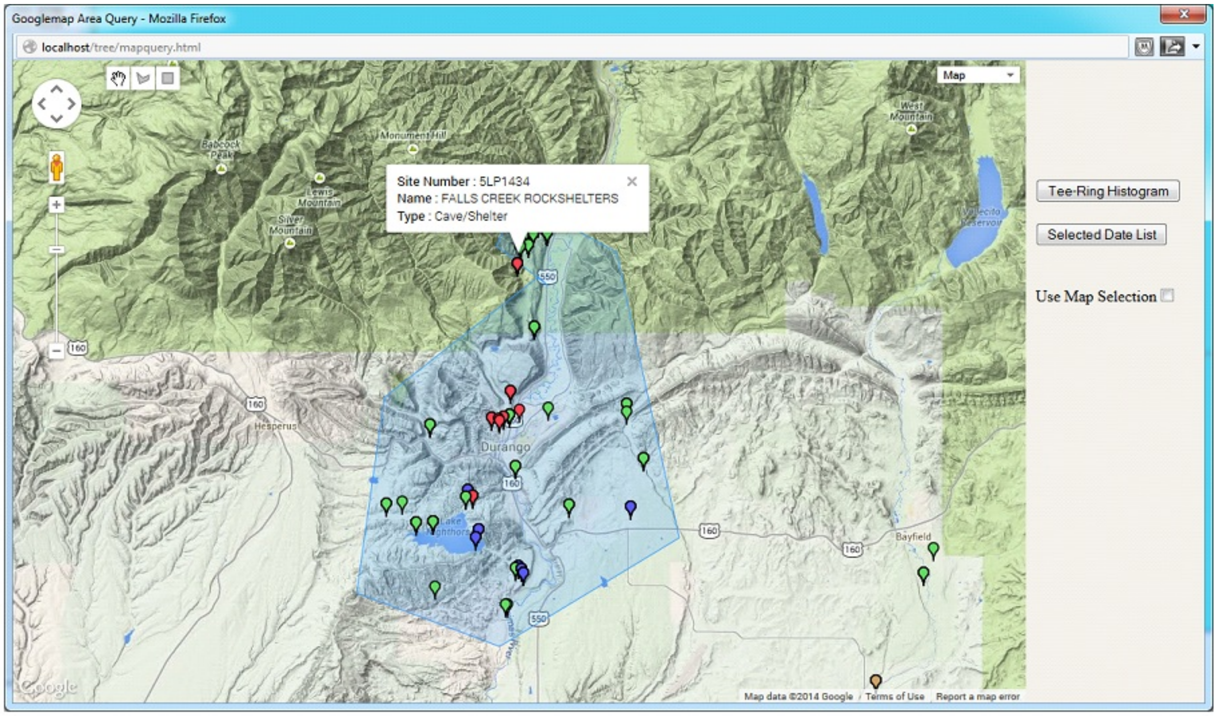


Figure 1.5a. Animas Valley Tree-Ring Dates Sites.

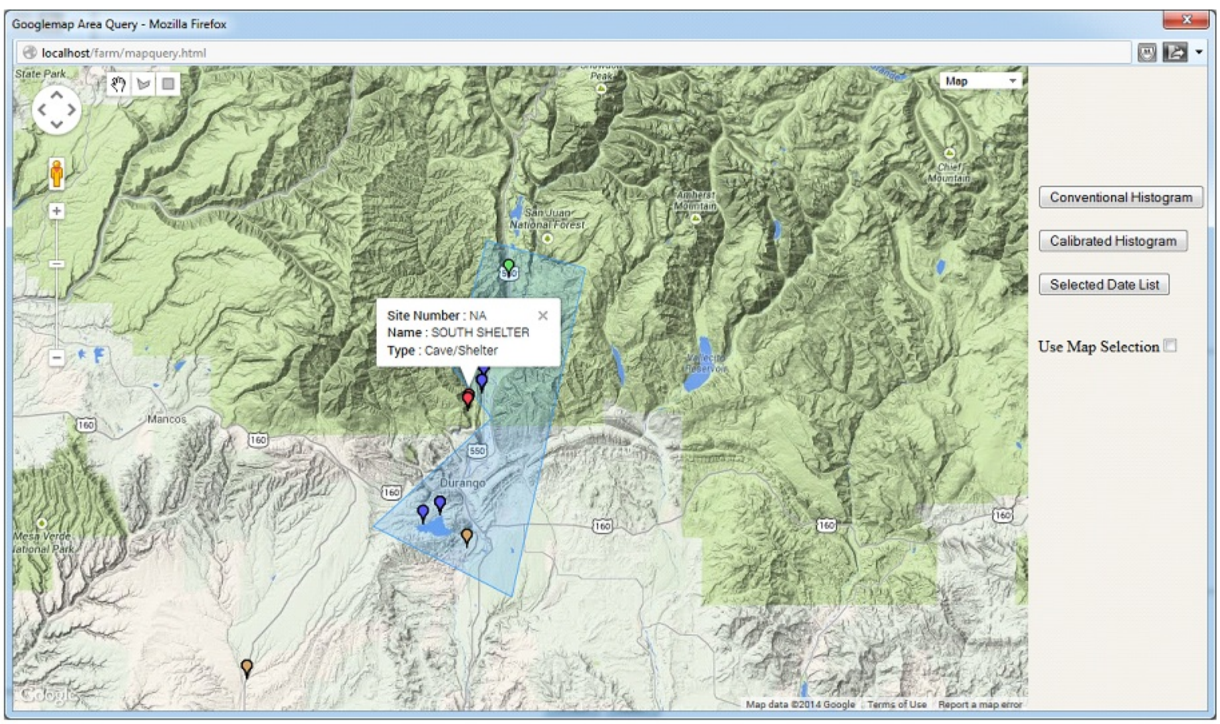


Figure 1.5b. Animas Valley Radiocarbon Dated Sites.

reliance on maize as indicated by $\delta^{13}C$ measurements. As shown in Table 1.2, the four dates on skeletal material that fall within the range of the architectural tree-ring dates (AA-57752, AA-61209, AA-61210, AA-61211) have $\delta^{13}C$ measurements ranging from -7.7 to -8.1, indicating high reliance on maize. The two dates in the B.C. range (AA-57733, AA-57734) measure -10 and -9.2 respectively, indicating somewhat less maize dependence. In the current study we unfortunately were not able to obtain $\delta^{13}C$ information from the North Shelter burials that might have lent support to this pattern. That is, were the initial settlers of Animas Valley somewhat less dependent on maize than the later Basketmaker II villagers?

We do not know which of these two explanations for the early Talus Village dates is the most credible. Either way, the evidence strongly supports the second or third century onset of domestic architecture at Talus Village. We cannot agree with a third option proffered by Coltrain et al.:

> The two-sigma range of early Talus Village burials does not overlap that of the later burials from this site … However, the calibrated 2-sigma range of dates on Talus Village maize obtained by Francis Smiley bridges these gaps nicely suggesting an unbroken sequence of maize cultivation in the Durango area from ca. 700 BC until abandonment of the Four Corners region (Coltrain, Janetski and Carlyle 2006:285).

Simply stringing the extreme end points of radiocarbon ranges together does not demonstrate continuity for millennial periods. Such an approach leads to conclusions that are at odds with the realities of maize farming in a marginal environment. Occupation of the Animas Valley in prehistory was a thing of fits and starts and anything but continuous. Probability densities, as in the histograms used herein, are much more reliable indicators of occupational trends, especially when used in conjunction with tree-ring data.

The fifty-three radiocarbon dates from the Darkmold Site (Charles personal communication) dominate the Figure 1.4B histogram. The vast majority of dates is on annuals or other judiciously selected samples and constitutes a coherent pattern consistent with the Animas Valley tree-ring dating of architectural sites for the Basketmaker II. The Basketmaker II component begins after the first century drought (the few dates prior to that are in the very low probability range) and terminates at A.D. 400. The next component begins around A.D. 475 and terminates at A.D. 600. Though I have termed it "early Basketmaker III" above, the final cultural placement must await Charles' full analysis of the site. Over most of the northern San Juan Basin, classic Basketmaker III begins at A.D. 600 and there are precious few components dated to the A.D. 500-600 period. The two high credibility tree-ring dates for this period shown in Figure 1.2A shed very little light on the situation. One date of A.D. 510(IF-701-3 from Ignacio 7:12) is interpreted by Dean (1975:39) as a reused beam or use of

Table 1.2. Animas Valley Radiocarbon Dates (excluding Falls Creek Shelters).

Site	Lab Number	Conv. Date	One Sigma	Delta 13C	Two Sigma Calibration	Probability	Material	Provenience
5LP188[1]	BETA-197181	1620	40	-10.7	AD 345 to AD 372 AD 376 to AD 541	0.056 0.944	Maize	Slab-lined pit. Locus 1.
5LP188[1]	BETA-197182	1600	40	-10.8	AD 384 to AD 556	1.000	Maize	Slab-line pit (Fea. 13.18) within Feature 13 pitstructure.
5LP188[1]	BETA-197183	1840	40	-10.5	AD 75 to AD 254 AD 301 to AD 316	0.981 0.019	Maize	Slab-lined pit that was partially truncated by the Fea. 13 pit structure.
5LP2029[2]	BETA-175857	1730	70	-25	AD 126 to AD 430 AD 492 to AD 513 AD 516 to AD 529	0.979 0.013 0.008	Charcoal	Feature 3 roasting pit.
5LP570[3]	BETA-202830	1830	60	-21.7	AD 58 to AD 340	1.000	Charcoal	Feature 4.08, a conically shaped pit, slab lined, with a coiled clay dome.
5LP570[3]	BETA-202831	1750	40	-24.7	AD 143 to AD 154 AD 168 to AD 195 AD 210 to AD 392	0.011 0.032 0.957	Charcoal	Feature 4.09, slab lined pit in Feature 4 pit structure.
5LP570[3]	BETA-202832	1550	50	-21.1	AD 404 to AD 606	1.000	Charcoal	Floor fill of Feature 3 pit structure.
5LP570[3]	BETA-202833	1620	50	-20.3	AD 265 to AD271 AD 332 to AD 557	0.007 0.993	Charcoal	Floor fill of Feature 3 pit structure.
5LP570[3]	BETA-202834	1650	60	-21.1	AD 252 to AD 308 AD 310 to AD 542	0.116 0.884	Charcoal	Floor fill of Feature 4 pit structure.
5LP570[3]	BETA-202835	1600	40	-10.4	AD 384 to AD 556	1.000	Maize	Floor fill of Feature 4 pit structure.
5LP570[3]	BETA-202836	1620	60	-23	AD 265 to AD271 AD 332 to AD 557	0.007 0.993	Charcoal	Feature 4.03 pit fill in Feature 3 pit structure.
5LP570[3]	BETA-202837	1870	60	-22.7	AD 8 to AD 13 AD 15 to AD 258 AD 283 to AD 322	0.005 0.955 0.040	Charcoal	Feature 3.01 hearth fill in Feature 3 pit structure.

Site	Lab Number	Conv. Date	One Sigma	Delta 13C	Two Sigma Calibration	Probability	Material	Provenience
5LP570[3]	BETA-202838	1700	70	-22.6	AD 139 to AD 198 AD 207 to AD 437 AD 445 to AD 473 AD 486 to AD 535	0.053 0.858 0.026 0.063	Charcoal	Fea. 4.05 central hearth in Feature 4 pit structure.
DARKMOLD[4]	Beta-129182	1930	80	0	BC 157 to BC 134 BC 115 to AD 254 AD 302 to AD 315	0.013 0.980 0.007	Charcoal	Feature 4, Trench 2.
DARKMOLD[4]	Beta-129183	2170	80	0	BC 396 to BC 39 BC 7 to BC 6	0.999 0.001	Charcoal	Pit Structure 3, sample is charcoal and corn.
DARKMOLD[4]	Beta-140328	1780	50	0	AD 129 to AD 381	1.000	Charcoal	Feature 25, Burial 13
DARKMOLD[4]	Beta-140329	1920	50	0	BC 37 to BC 27 BC 25 to BC 9 BC 3 AD 219	0.098 0.007 0.895	Charcoal	Feature 10, Layer 2 Charred material from burials.
DARKMOLD[4]	Beta-140330	1450	60	-9.7	AD 430 to AD 493 AD 510 to AD 517 AD 529 to AD 672	0.098 0.007 0.895	Maize	Feature 17, full cut.
DARKMOLD[4]	Beta-140331	1710	60	0	AD 138 to AD 200 AD 205 to AD 429 AD 493 to AD 510 AD 518 to AD 528	0.050 0.931 0.012 0.007	Charcoal	Feature 23 fill
DARKMOLD[4]	Beta-140332	1590	70	-9.5	AD 262 to AD 276 AD 328 to AD 614	0.011 0.989	Maize	Feature 26 fill.
DARKMOLD[4]	Beta-140333	1880	60	0	BC 19 to BC 13 BC 1 to AD 257 AD 296 to AD 321	0.004 0.975 0.021	Charcoal	Feature 15, Burial 7.
DARKMOLD[4]	Beta-170573	1850	40	-10	AD 68 to AD 251	1.000	Maize	Pit Structure 2, Layer 2.

Site	Lab Number	Conv. Date	One Sigma	Delta 13C	Two Sigma Calibration	Probability	Material	Provenience
DARKMOLD[4]	UCIAMS-131983	1805	20	-10.7	AD 133 to AD 254 AD 302 to AD 315	0.960 0.040	Maize	Corn cob from 100N 74E Grid Unit Excavation fill.
DARKMOLD[4]	UCIAMS-131984	1760	15	-10.8	AD 237 to AD 267 AD 270 to AD 332	0.297 0.703	Maize	Zea cupule from Feature 99, small ash-filled feature.
DARKMOLD[4]	UCIAMS-131985	1595	20	-9.5	AD 412 to AD 479 AD 481 to AD 536	0.454 0.546	Maize	Zea kernel from Feature 16, Burial 12.
DARKMOLD[4]	UCIAMS-131986	1835	20	-17.4	AD 129 to AD 235	1.000	Maize	Zea cupule from Feature 98, large bell-shaped storage feature.
DARKMOLD[4]	UCIAMS-131987	1775	15	-9	AD 218 to AD 264 AD 273 to AD 331	0.465 0.535	Maize	Zea from Feature 46, slab-lined storage pit.
DARKMOLD[4]	UCIAMS-131988	1295	15	-10.3	AD 668 to AD 720 AD 741 to AD 766	0.646 0.354	Maize	Zea kernel-cob from Feature 48, slab-lined cist (terminal occupation).
DARKMOLD[4]	UCIAMS-131989	1880	20	-10.2	AD 72 to AD 178 AD 188 to AD 213	0.919 0.081	Maize	Zea cupule from Feature 47, bell-shaped oval pit with portions of two burials on the feature floor.
DARKMOLD[4]	UCIAMS-131990	1770	20	-11.1	AD 214 to AD 338	1.000	Maize	Zea cupule from Pit Structure 3.
DARKMOLD[4]	UCIAMS-131991	1875	20	-10.6	AD 76 to AD 180 AD 185 to AD 213	0.878 0.122	Maize	Zea cupule from Feature 25, Burial 13, large bell-shaped feature.
DARKMOLD[4]	UCIAMS-131992	1850	15	-26	AD 91 to AD 99 AD 124 to AD 230	0.019 0.981	Other	Scirpus seed from Feature 33, Burial 21, large bell-shaped feature.
DARKMOLD[4]	UCIAMS-131993	1770	20	-9.1	AD 214 to AD 338	1.000	Maize	Zea kernel from Feature 7, slab-lined roasting pit.
DARKMOLD[4]	UCIAMS-131994	1895	15	-10.5	AD 70 to AD 131	1.000	Maize	Zea cupule from Feature 4, large deep pit.
DARKMOLD[4]	UCIAMS-131995	1830	15	-9.6	AD 133 to AD 231	1.000	Maize	Zea cupules from Pit Structure 1, Floor fill E1-2 (terminal occupation).

Site	Lab Number	Conv. Date	One Sigma	Delta 13C	Two Sigma Calibration	Probability	Material	Provenience
DARKMOLD[4]	UCIAMS-131996	1880	15	-10.4	AD 74 to AD 171 AD 193 to AD 209	0.961 0.039	Maize	Zea cupules from Feature 90, slab-lined hearth.
DARKMOLD[4]	UCIAMS-131997	1840	15	-10.7	AD 129 to AD 229	1.000	Maize	Zea cupules from Pit Structure 2.
DARKMOLD[4]	UGA-4220	1590	30	-9.2	AD 405 to AD 541	1.000	Maize	Feature 51, Hearth.
DARKMOLD[4]	UGA-4221A	1580	25	-8.2	AD 418 to AD 541	1.000	Maize	Feature 47. Oval pit, Burials 25 and 26
DARKMOLD[4]	UGA-4222A	1610	25	-7.8	AD 395 to AD 477 AD 482 to AD 536	0.562 0.438	Maize	Feature 80, Storage cist, Burial 29
DARKMOLD[4]	UGA-4223A	2040	25	-10	BC 158 to BC 135 BC 114 to AD 24	0.042 0.958	Maize	Feature 45, Large storage pit.
DARKMOLD[4]	UGA-4224A	1590	25	-9.2	AD 412 to AD 539	1.000	Maize	Feature 80, Bell-shaped cist.
DARKMOLD[4]	UGA-4225A	1620	25	-8	AD 386 to AD 475 AD 484 to AD 535	0.652 0.348	Maize	Feature 100, Cist, Burial 31.
DARKMOLD[4]	UGA-4226	1800	30	-8.6	AD 131 to AD 260 AD 279 to AD 326	0.829 0.171	Maize	Feature 10, Bell-shaped pit, Burial 4.
DARKMOLD[4]	UGA-4227	1890	25	-8.4	AD 59 to AD 178 AD 188 to AD 212	0.941 0.059	Maize	Feature 10, Bell-shaped pit, Burial 4.
DARKMOLD[4]	UGA-4228	2290	30	-23.4	BC 404 to BC 354 BC 292 to BC 231 BC 216 to BC 216	0.741 0.258 0.001	Other	Feature 99, Twigs from hearth.
DARKMOLD[4]	UGA-4229	1860	25	-8.4	AD 83 to AD 225	1.000	Maize	Feature 60; Pit structure 2, Burial 23.
DARKMOLD[4]	UGA-4231	1660	25	-8.1	AD 266 to AD 271 AD 332 to AD 426	0.007 0.993	Maize	Feature 19, Bell-shaped pit, Burial 20.
DARKMOLD[4]	UGA-5242	1825	25	-10.3	AD 125 to AD 251	1.000	Maize	Feature 58, Oval possible roasting pit.
DARKMOLD[4]	UGA-5243	1595	25	-9.4	AD 409 to AD 537	1.000	Maize	Feature 27; Slab-lined roasting pit.
DARKMOLD[4]	UGA-5244	1560	25	-9.3	AD 424 to AD 554	1.000	Maize	Feature 6, Burials 6a, 6b, 6c

Site	Lab Number	Conv. Date	One Sigma	Delta 13C	Two Sigma Calibration	Probability	Material	Provenience
DARKMOLD[4]	UGA-5245	1890	25	-9.9	AD 59 to AD 178 AD 188 to AD 212	0.941 0.059	Maize	Feature 78; Storage cist, Burial 27.
DARKMOLD[4]	UGA-5246	1875	25	-9.3	AD 74 to AD 217	1.000	Maize	Feature 70; Large roasting pit, Burial 28.
DARKMOLD[4]	UGA-5247	1775	30	-9.1	AD 138 to AD 200 AD 206 to AD 339	0.137 0.863	Maize	Pitstructure 2; Floor
DARKMOLD[4]	UGA-5248	1780	25	-10.2	AD 141 to AD 196 AD 209 to AD 332	0.133 0.867	Maize	Structure 3; Above floor
DARKMOLD[4]	UGA-6175	1620	25	-10.4	AD 386 to AD 475 AD 484 to AD 535	0.652 0.348	Maize	Feature 26; Corn cob from Bell-shaped pit.
DARKMOLD[4]	UGA-6176	1610	25	-24	AD 395 to AD 477 AD 482 to AD 536	0.562 0.438	Wood	Feature 26; Bell-shaped pit
DARKMOLD[4]	UGA-6177	1850	25	-10.9	AD 86 to AD 109 AD 117 to AD 234	0.082 0.918	Maize	Feature 36; Bell-shaped pit.
DARKMOLD[4]	UGA-6178	1610	25	-9.2	AD 395 to AD 477 AD 482 to AD 536	0.562 0.438	Maize	Feature 50; No description
DARKMOLD[4]	UGA-6179	1820	30	-8.5	AD 90 to AD 99 AD 124 to AD 257 AD 296 to AD 320	0.010 0.951 0.039	Maize	Feature 46; Slab-lined cist.
DARKMOLD[4]	UGA-6180	1580	25	-11.6	AD 418 to AD 541	1.000	Maize	Feature 59 Use surface, Large pit or small structure.
DARKMOLD[4]	UGA-6181	1800	25	-12.6	AD 133 to AD 257 AD 284 to AD 290 AD 295 to AD 322	0.879 0.012 0.109	Maize	Feature 72; Storage cist.
DARKMOLD[4]	UGA-6182	1930	25	-25.4	AD 22 to AD 127	1.000	Other	Feature 89; Twig and seed from Slab-lined cist.

Site	Lab Number	Conv. Date	One Sigma	Delta 13C	Two Sigma Calibration	Probability	Material	Provenience
DARKMOLD[4]	UGA-6183	1850	25	-23.9	AD 86 to AD 109 AD 117 to AD 234	0.082 0.918	Wood	Structure 3, Floor 1.
DARKMOLD[4]	UGA-6184	1580	30	-10.4	AD 410 to AD 546	1.000	Maize	Feature 57, large oval roasting pit
DARKMOLD[4]	UGA-6185	1820	30	-10.3	AD 90 to AD 99 AD 124 to AD 257 AD 296 to AD 320	0.010 0.952 0.039	Maize	Feature 85; Rock slab feature.
TALUS VILLAGE[5]	AA-57752	1720	43	-7.7	AD 229 to AD 414	1.000	Human Bone	Peabody Accession #41-16-10/N3869.0.2
TALUS VILLAGE[5]	AA-57753	2375	46	-10	BC 748 to BC 685 BC 666 to BC 641 BC 587 to BC 579 BC 560 to BC 372	0.106 0.032 0.005 0.857	Human Bone	Burial 15, Peabody Accession #41-16-10/N3872.0.1 Date appears to be an outlier.
TALUS VILLAGE[5]	AA-57754	2248	44	-9.2	BC 396 to BC 336 BC 329 to BC 204	0.318 0.682	Human Bone	Burial 19, Peabody Accession #41-16-10/N3875.1.1
TALUS VILLAGE[5]	AA-61209	1750	45	-8.1	AD 141 to AD 160 AD 165 to AD 196 AD 208 to AD 393	0.027 0.049 0.925	Human Bone	Burial 11, Peabody Accession #41-16-10/N3869.0.1
TALUS VILLAGE[5]	AA-61210	1814	45	-7.9	AD 85 to AD 264 AD 273 to AD 331	0.846 0.154	Human Bone	Burial 17, Peabody Accession #41-16-10/N3873.0.1
TALUS VILLAGE[5]	AA-61211	1752	45	-7.7	AD 141 to AD 160 AD 165 to AD 196 AD 208 to AD 391	0.029 0.052 0.919	Human Bone	Burial 25, Peabody Accession #41-16-10/N3877.0.1
TALUS VILLAGE[6]	BETA-35306	1740	70	-10.2	AD 88 to AD 103 AD 122 to AD 428 AD 497 to AD 505	0.008 0.989 0.003	Maize	Charred corn kernels from Area 3.
TALUS VILLAGE[6]	BETA-95167	1910	80	-26	BC 92 to AD 260 AD 279 to AD 326	0.966 0.034	Basketry	Charred frag. from a coiled basket

Site	Lab Number	Conv. Date	One Sigma	Delta 13C	Two Sigma Calibration	Probability	Material	Provenience
TALUS VILLAGE[6]	BETA-95307	2010	50	-11.4	BC 165 to BC 126 BC 125 to AD 81	0.059 0.941	Maize	Charred corn kernels from Area 3.
TALUS VILLAGE[6]	BETA-95308	1700	130	-10.6	AD 60 to AD 609	1.000	Maize	Charred corn kernels from Area 3.
TALUS VILLAGE[6]	BETA-95309	1800	100	-10.3	BC 34 to BC 31 BC 21 to BC 11 BC 2 to AD 428 AD 497 to AD 505 AD 525 to AD 525	0.001 0.004 0.991 0.003 0.001	Maize	Charred corn kernels, Floor 2a.
TALUS VILLAGE[6]	BETA-95310	2160	70	-10.6	BC 382 to BC 45	1.000	Maize	Charred cob fragments, Floor 2a.
TAMARRON SITE[7]	BETA-315861	1740	30	-20.9	AD 237 to AD 384	1.000	Antler	Feature 2, a large slab-lined storage cist in the eastern portion of the pithouse.

[1]Eisenhauer et al. 2008A
[2]Chuipka et al. 2007
[3]Eisenhauer et al 2008B
[4]Charles personal communication
[5]Coltrain, Janetski and Carlyle 2006
[6]Smiley and Robins 1997
[7]Reed 2012

old wood. The other (GP-3821 from North Shelter) is A.D. 577 and interpreted as "Basketmaker III utilization of the shelter" (Dean 1975:30). These circumstances underscore the significance of this component at Darkmold to an understanding of local prehistory.

1.4 Regional Perspectives

The major events in the prehistory of the Animas Valley clearly had precursors elsewhere in the Southwest. In this section we will deal, briefly, with the broad geographic and temporal trajectories of maize and domestic architecture with the intent of placing the Animas Valley in context.

Figure 1.6 displays the regions of the Southwest that we will use to generate radiocarbon histograms showing the trends from south to north in first, the temporal trends for maize and second, the trends for domestic architecture. The 25-year increment histograms for maize are shown in Figure 1.7 and those for domestic architecture in Figure 1.8.

Direct dates on maize show a strong trend from the Southern Basin and Range to the southern Colorado Plateau and finally to the northern Colorado Plateau (Figure 1.7). Interestingly, the earliest maize in the Southwest occurs initially on the southern Plateau centered at 2000 B.C. The site in question is The Old Corn Site (Huber and Van West 2006) which consists of a series of bell-shaped storage pits, many of which contained maize. The dates form a strong, isolated cluster, apparently discontinuous with later maize dates. The next cluster on the southern Plateau is centered on 1250 B.C. and, again, is discontinuous with the earlier as well as the more robust later occurrences of maize. The sites in question are San Luis de Cabazon (Vierra and Ford 2006), Lukachukai (Gilpin 1994) and Jemez Cave (Vierra and Ford 2006). These appear to have been failed attempts to establish agriculture on the Plateau prior to the robust expansion beginning at 750 B.C., peaking in the first century B.C.

The Southern Basin and Range evidences maize as early as 2000 B.C. with very strong occupation beginning at 1250 B.C. The histogram then declines, peaking again during the first century B.C., coincident with the first major peak of the southern Colorado Plateau.
Maize on the northern Colorado Plateau may date as early as 400 B.C., first peaking in the second and third century A.D.

The chronology of domestic architecture (Figure 1.8) closely mirrors the expansion of maize agriculture. Huckell (1995) has termed this lengthy prehistoric sequence the Early Agricultural Period. Basketmaker II represents the northernmost and most recent manifestation of this agricultural expansion. Basketmaker II lasted approximately 1000 years and witnessed the development of a distinctive cultural amalgam.

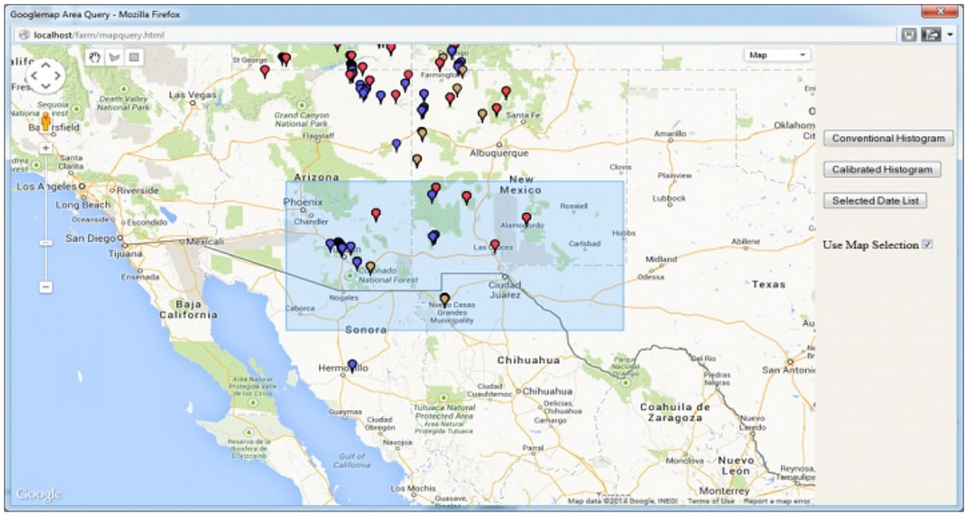


Figure 1.6A. Southern Basin and Range.

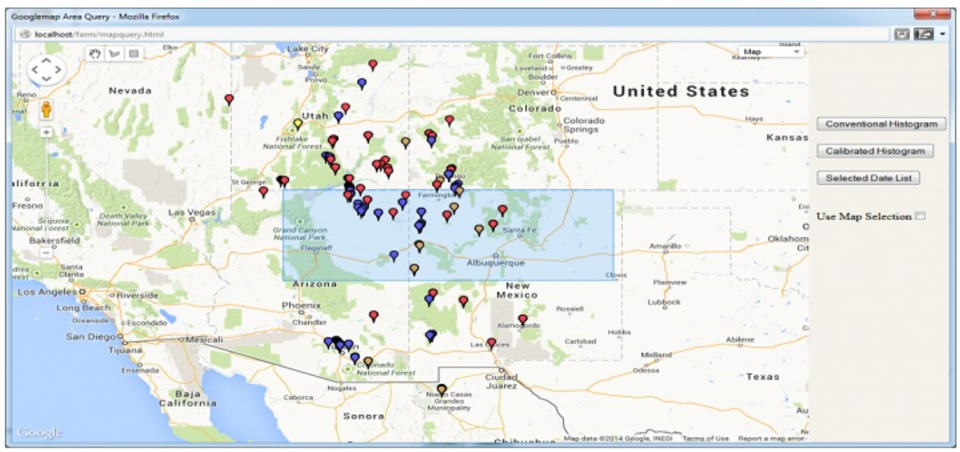


Figure 1.6B. Southern Colorado Plateau.

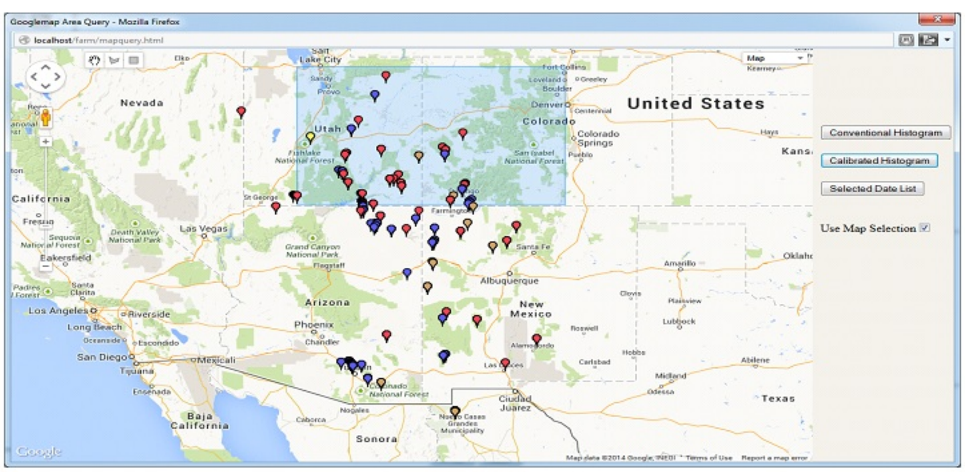


Figure 1.6C. Northern Colorado Plateau.

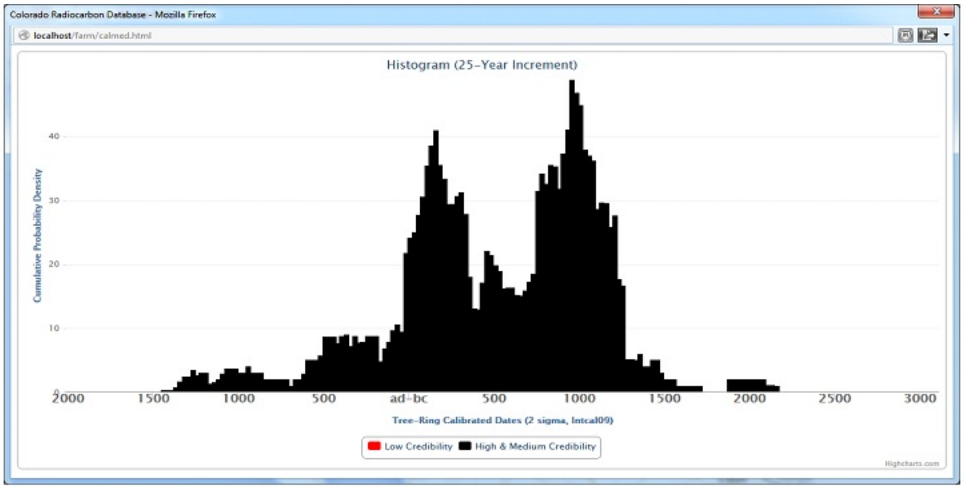


Figure 1.7A. Maize, Southern Basin and Range.

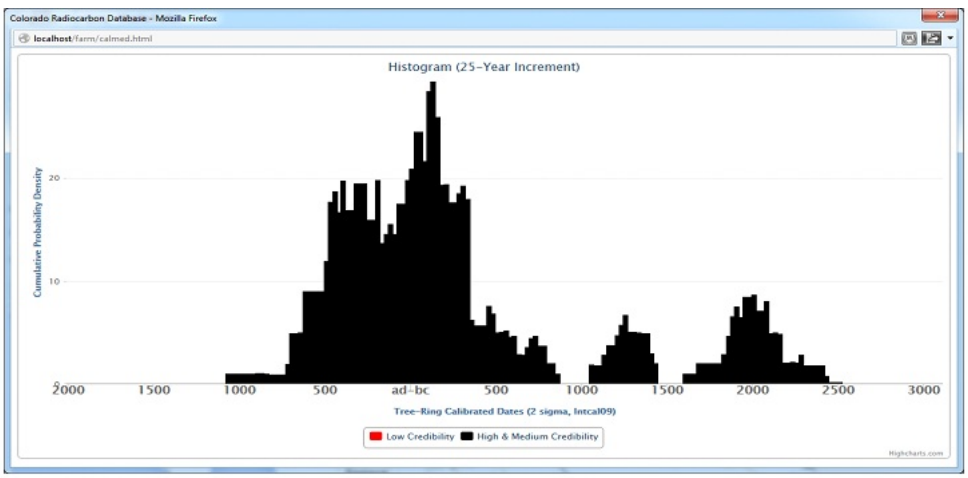


Figure 1.7B. Maize, Southern Colorado Plateau.

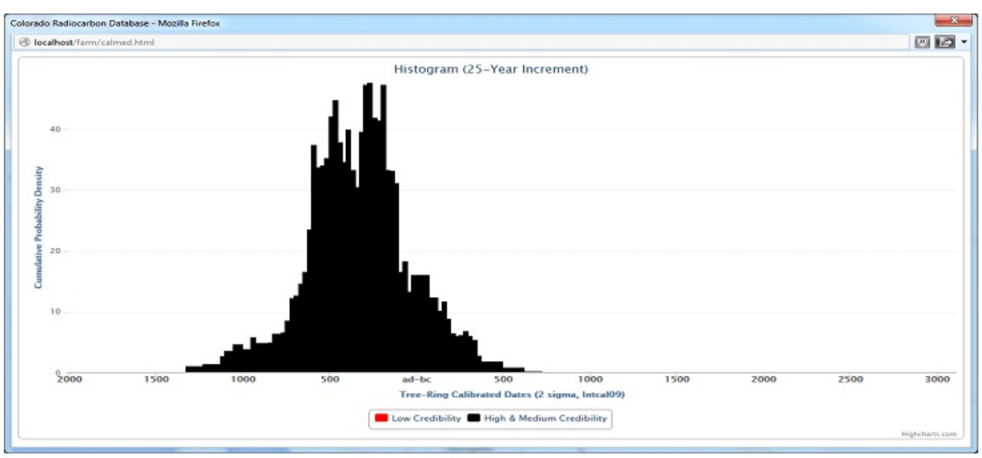


Figure 1.7C. Maize, Northern Colorado Plateau.

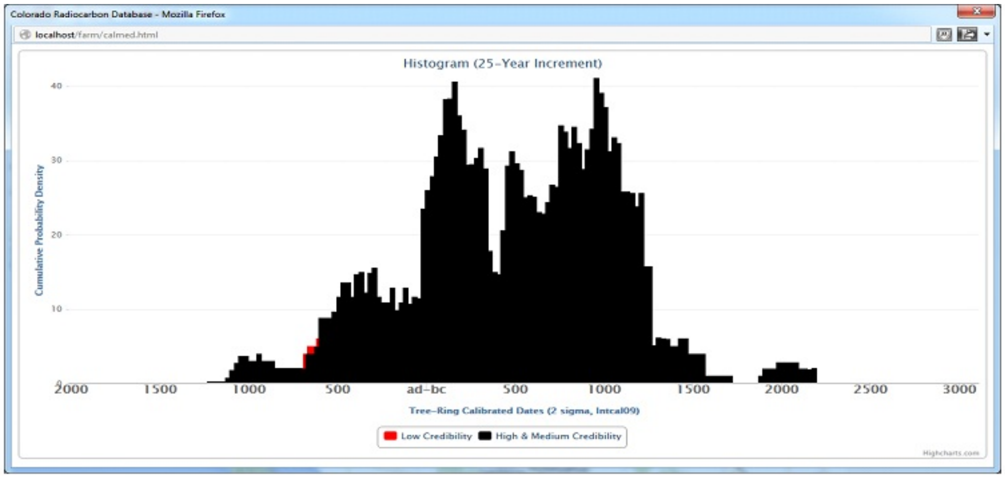


Figure 1.8A. Southern Basin and Range Architecture.

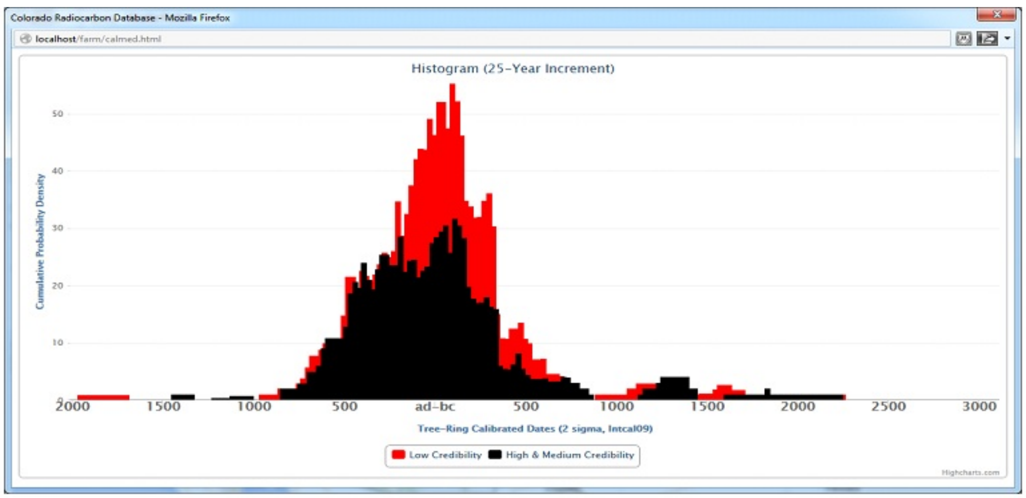


Figure 1.8B. Southern Colorado Plateau Architecture.

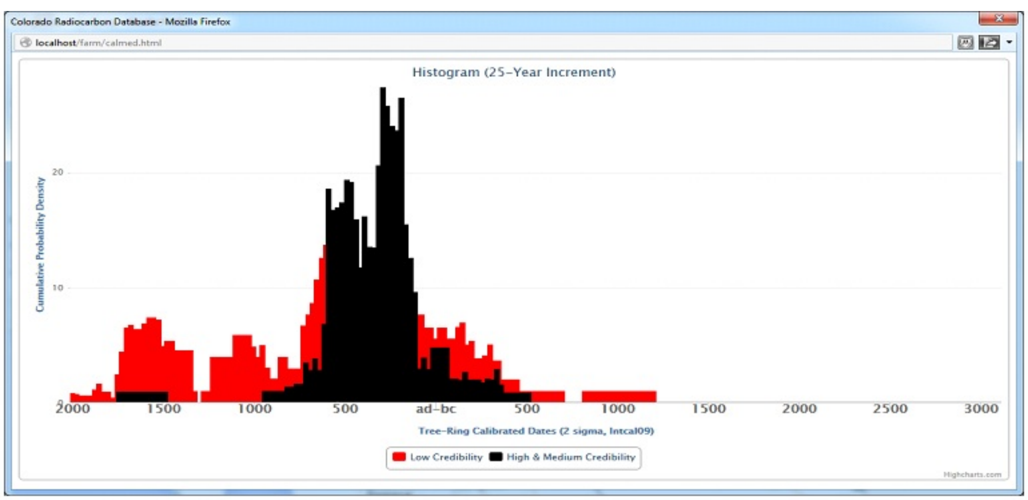


Figure 1.8C. Northern Colorado Plateau Architecture.

Questions regarding the underlying processes of the broad patterns displayed in Figures 1.7 and 1.8 continue to be the subject of intense debate. For example Hill (2001, 2002) sees it as a migration of Uto-Aztecan speakers out of central Mexico whereas Merrill et al. (2009) argue for and expansion of Uto-Aztecan hunter-gatherers from the Great Basin that subsequently adopted agriculture via diffusion from Mexico. Both positions have supporters and detractors (cf. Wheeler and Whiteley 2014) and we will make no attempt to resolve these issues here other than to note that resolution will require sophisticated syntheses of chronometric, biological, linguistic, ethnographic and material culture evidence.

1.5 Concluding Note

This chronometric analysis casts the prehistoric timing of events at the Falls Creek Shelters and the Animas Valley as a whole in a new light, significantly different from historically accepted views. It has benefitted from the large suite of radiocarbon dates generated during Phases I and II of the Falls Creek Project. Unfortunately, this summary was not available to the other analysts for discussion and debate prior to the preparation of the specialists' chapters that follow. As will be seen, some statements regarding temporal spans and cultural affiliations will differ from the perspective developed herein. Whether these statements reflect the lack of opportunity to review this analysis or a genuine difference of opinion no attempt has been made to make editorial changes regarding temporal matters. I am hopeful that all authors can come to agreement on a common chronometric/cultural sequence of events as we move forward during the Phase III synthesis and publication of this multi-year study of the fascinating prehistory of the Durango area.

CHAPTER 2:
STONE ARTIFACTS OF THE FALLS CREEK ROCKSHELTERS

Phil R. Geib

2.0 Introduction

Stone artifacts were the most abundant cultural remains recovered from the Falls Creek Rockshelters with Morris and Burgh (1954:54-60) reporting well over 500 items. This number actually underrepresents the quantity of lithic artifacts since no count of flakes is provided and screens were little used hence many smaller artifacts were doubtless overlooked. For certain classes of large tools only select specimens got collected with the rest left in the field. For example, Morris and Burgh (1954:54) report that "choppers and hammerstones were so numerous that it was regarded as prohibitive to transport all of them to the laboratory." Even for large flakes the report makes it clear that not all were saved; in their description of "flake knives" Morris and Burgh (1954:57) state that there are "about 50 examples but there might have been many more had every sizable flake been saved." Their categorization of the recovered stone artifacts recognized four basic groups: 1) choppers and hammerstones; 2) chipping waste consisting of cores, spalls and flakes that went uncounted and unanalyzed; 3) chipped stone tools; and 4) ground stone. Chipped stone tools, which included such classes as "blanks, notched points and knives, drills, scrapers and flake knives," comprised well over half of the stone artifacts from the shelters. The ground stone included both metates and manos and a few additional items such as stone pipes and atlatl weights.

This chapter concerns all of the stone artifacts from the two shelters that were in the collections at the Anasazi Heritage Center excluding those from the burial crevice and items classified as ornaments by Morris and Burgh. This includes artifacts that traditionally get grouped together as flaked or chipped stone and those lumped together as ground stone. The total count of individually analyzed items is 2384. These items were initially separated into five general classes so that appropriate analytical routines could be applied to each. The basic approach was modified from that used on the Navajo Mountain Road Excavation Project (Geib 2011; Geib and Spurr 2007). The five classes of stone artifacts consist of flakes or debitage (n=1778), flaked facial tools (n=438), cores/nodular tools (n=108), grinding tools, all of which are manos (n=46), and other tools or miscellaneous items (n=14). The means for separating items into these classes are further discussed below under methods.

Lithic artifacts are an important source of information for addressing a variety of study domains including basic documentation of prehistoric lifeways, behavioral variation, and culture change. They are also significant for trying to identify cultural affiliations and relationships through time and across space since they represent the more commonly recoverable imperishable component of material culture. As such, considerable attention was devoted to providing a detailed record for stone artifacts of all type including photo documentation of most formal artifacts along with a sample of the flakes. Production technology and function were primary orientations of the lithic analysis under the working assumption that describing how stone artifacts were made and used is essential for other inferences. I also attempted to characterize the life history of tools after production and prior to deposition into the archaeological record, involving resharpening, recycling, and exhaustion.

Given the reductive nature of stone tool manufacture, lithic artifacts retain many traces of manufacturing processes. Even when tools have been reused or taken away the durable byproducts of lithic manufacture usually remain in place to provide information about aspects of production technology and other activities. The technological and functional attributes recorded on stone artifacts allow for low-level inferences about prehistoric human behavior by using as interpretative framework the experience and understanding obtained through experimental and replicative work in stone tool production and use (see Clark [2002] for a clear statement of theory, and Flenniken [1981] for an excellent application). Because of the mechanical and physical properties of rock, a suite of technological and functional attributes exhibited by debitage and tools can be produced by very specific and replicable techniques. The suite of attributes, for example, produced by bipolar flaking is diagnostically different from those produced by direct freehand percussion. Likewise, scraping wood with a flake produces use-wear that is minimally diagnostic of that general activity and perhaps the general type of substance worked (e.g., papers in Hayden 1979; Tringham et al. 1974), with more specific inferences of work substances possible (e.g., Keeley 1980; Vaughan 1985; but see Grace 1996).

This chapter describes the lithic analysis methods and presents a synthetic treatment of the data. A limited budget coupled with the number of lithic artifacts for analysis precluded detailed comparisons within or between the two shelters; nor was it possible to make broad comparisons with other Basketmaker assemblages both near and far. Here I look at trends in raw material use, production technology, and tool function for the two shelters as a single unit. The overall focus is on general trends rather than the characterization of individual tools although a few salient points concerning certain tools are presented.

I also tried to control for recent damage either during recovery (trowel retouch) or thereafter such as microflaking from rough handling.

Analysis Methods and Definitions

2.1 Variability in Stone Tools and Assemblages

Variability in lithic artifacts results from the complex interaction of a host of factors including production technology, raw material constraints, functional requirements, stylistic considerations or historic traditions of tool producers, situational constraints, and settlement and technological organization. Then there are morphological changes during artifact life history, as tools are used, rejuvenated, broken, and recycled (e.g., Frison 1968). Morphology provides a fundamental point from which many other kinds of lithic analyses can proceed. Standard measurements—such as length, width, thickness, and weight—are used by most lithic analysts, but specific technological characteristics also contribute to the morphology or shape of debitage and tools. Different technologies give rise to different flake and tool morphologies. Likewise, the intended function of a particular tool may dictate the technological steps necessary for the production of an artifact capable of fulfilling that function. Morphological variability as it reflects technology, function, and style forms the foundation of the lithic analysis. The recognition of this variation both synchronically and diachronically is crucial to further interpretations of prehistoric human behavior.

Assemblage-level variability cannot be easily accounted for by technological, functional, and cultural factors alone. Other important sources of variation at the assemblage level include those related to variation in the duration and intensity of site occupation or reoccupation (occupational variability), those related to variation in mobility patterns and the organization of subsistence-settlement systems (organizational variability), and variability in depositional and post-depositional processes (variability in formation processes). Therefore, interpreting inter-assemblage variability requires that the many factors that contribute to variation be recognized and controlled for (see Sullivan 1987).

2.2 Nature of the Sample

The sample of stone artifacts from the two shelters is biased to an unknown extent since not all materials were collected and of those that were found or documented, not all were saved. Of the specimens that were saved, some portion has been "lost" through one means or another such that the few thousand items studied might not exhaustively characterize the diversity of lithic artifacts once made and used at the sites. Nonetheless, the sample is certainly sizable enough that some solid conclusions can be reached. What cannot be talked about is say the proportion of flakes to cores or flakes to flaked facial tools since not all were collected, especially for flakes.

At the time of my study all tools were individually contained in reclosable plastic bags but it is clear from the recent-looking damage on artifact edges or surfaces that this was not always the case. Large tools such as manos, battering tools, and cores exhibited signs of transport together that resulted in rubbed and abraded surfaces. On fine siliceous stone such as chert, stone on stone rubbing can result in minute areas of bright polish on faces; these were observed on cores, flaked tools, and flakes. The edges of flakes and flaked tools can also have small detachments removed by banging into each other in bags or drawers and numerous examples of this occur in the collection. Damage of a frequently more significant scale can also occur during excavation by contract from trowels or shovels, and this too was observed. Recent damage was most often quite obvious since the recovery or post-recovery flake scars or artifact fractures were clean and unpatinated.

Few of the stone artifacts from the two shelters had clean surfaces and some were heavily encrusted by calcium carbonate and sediment. Few if any items appear to have been washed in the laboratory; perhaps they were quickly rinsed in plain water but without any light scrubbing to remove dirt. Although this can be useful for the preservation of residues, it present problems especially when surfaces are heavily grimed or encrusted with carbonate since it limits the identification of use wear and flaking patterns. Adding to this difficulty was the ink labeling present on all tools and many flakes. The labels were done in black or white ink sealed with lacquer; many artifacts had two different labels: a field number and catalogue number. Almost invariably for flakes and many flaked tools the label was placed close to a tool edge rather than on the face and the thickly applied lacquer wicked along the margin totally obscuring potential use-wear. The ink labels and lacquer were applied over whatever grim was already present on the artifacts making a bad situation worse. Generally I did not try to clean tools in order to expose obscured features, but in select cases items were washed under tap water, sometimes dipped in white vinegar to loosen carbonate and at times lightly cleaned on coated edges with zero VOC nail polish remover. The sample of obsidian flakes or tools submitted for XRF analysis were thoroughly cleaned of carbonate, grime and labels by a combination of all three applications (Chapter 2 Appendix).

Technically this was an analysis of materials from the Falls Creek Shelters rather than Talus Village, which was excavated as part of the same project and reported together with the materials from the shelters. Several of the artifacts that I analyzed had field numbers prefixed by 40 rather than 38. This was true for at least seven of the flaked tools. The former was used to designate artifacts from Talus Village with 38 used for artifacts from the two shelters. In each case where I compared my images of the tools with a 40 prefix against those of Morris and Burgh they listed the provenience as Talus Village, consistent with their numbering system. Some tools, such as many of the manos, lacked field numbers so there was no indication from labeling that they did not originate from the shelters, and the catalogue numbers that were present on the manos did not match any of those listed by Morris and Burgh for their photos of these tools, either from the shelters or Talus Village.

2.3 Analytic Procedures

All of the stone artifacts that the author had on loan were analyzed individually to record a series of variables concerning raw material, production technology, shape and size, and function. Stone artifacts were separated into five classes for analysis: debitage, flaked stone tools, cores/nodular tools, grinding tools (manos only since no metates were examined and most were left in the field), and miscellaneous stone artifacts. Analytic routines specific to each class were used to collect data. The information for each artifact was entered directly into an Access database along with the FCRS# (the 5-digit numeric ID for each line of data that serves as the primary key [unique value] for tying all data tables together), and the CU Catalog Number and CU Field Number when present. Also recorded for all items was the photo number sequence for any images taken (some images in any given sequence were subsequently deleted because of exposure, focus, or other issues). Tools and specific flakes were described individually to augment the standardized information. All debitage and tools were analyzed with the aid of a low-power binocular microscope operating at magnifications between 7x and 30x. Identification of use-wear minimally requires this level of microscopic examination. This analysis was informed by over 30 years of producing and using stone tools of all kind and by previous analyses of Basketmaker II stone artifacts and those of other periods.

Since the author had little firsthand knowledge of the lithic raw materials potentially available in the Durango area and along the Animas River, time was spent sorting and examining several large bags of flakes and larger flaked tools to become familiar with resource types. Rather than relying on provisional types, raw material characterization was handled by three separate variables. The first of these involved a general identification of stone type such as obsidian, chert, silicified wood, siltstone, quartzite, rhyolite, coarse igneous, and the like. This was followed by a second variable that refined the general classification by specifying either a provisional material type such as fossiliferous (a variety of chert), hornfels (a variety of siltstone), or fine gray (a variety of rhyolite), or just a color such as yellow, dark, and chalcedonic varieties of silicified wood. Some raw materials lacked such varietal specification but obsidian was the opposite. Obsidian was visually identified to source based on both surface and internal characteristics using the binocular microscope with both reflected and transmitted light (the latter refers to light passing through the glass to illuminate internal features). Most obsidian was identifiable to sources that the author is quite familiar with but sometimes flakes or flaked tools were of an unrecognized glass and hence designated as unknown. A third raw material variable concerned rock texture with identification based on a Wentworth scale ranging from clay/silt to conglomeritic (some fraction larger than very coarse) but also including glassy and crypto/microcrystalline.

The one specialized form of analysis for stone artifacts was obsidian sourcing via non-destructive X-ray fluorescence (XRF) (Chapter 2 Appendix). This was done for a sample of 40 flakes and flaked tools. This work was subcontracted to Steven Shackley, Geoarchaeological X-ray Fluorescence Spectrometry Laboratory of Albuquerque, NM. His report is appended and the findings are summarized below and compared with the visual source identifications.

2.3.1 Debitage. Debitage or flakes are defined as culturally fractured pieces of stone removed during the production and modification of lithic artifacts by flaking. All stone reduction methods (flaking, pecking, and grinding) result in the accumulation of debris, but generally only flaking byproducts are easily recognized as cultural and commonly recovered by normal field procedures[1]. Flakes exhibit evidence of intentional force application (e.g., ring crack, bulb of force, ripple marks) and separation from a larger or equal-sized piece of material (i.e., they are flakes rather than cores). Flakes also exhibit attributes from either of three types of initiation and propagation—Hertzian cone, bending, or bipolar (wedging) (Cotterell and Kamminga 1979, 1987). Debris with blocky unorientable fractures were also included as debitage; such angular shatter can result from any of the three general types of flake initiation but are most common with bipolar and simple core reduction. Explicit recognition of bipolar debris results in fewer items classified as angular shatter because a specific reduction technique can be identified. In the Falls Creek assemblage no debitage had the characteristic traits of bipolar reduction. Any piece of debitage can be used as a tool no matter how it was created or its condition. Such artifacts provide data relevant to both debitage and tools; they were analyzed as flakes with information about use-wear recorded as necessary.

All debitage was analyzed as individual items rather than using some form of mass analysis (Ahler 1986, 1989) or by characterizing flakes in lots. On the recording form each

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[1] Debris from pecking may be retrieved in soil samples collected from floor and activity surfaces or trash middens.

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Variable	Description	Values
Width	measured orthogonal to length.	nearest 0.1 mm
Thickness	maximum thickness, orthogonal to L & W.	nearest 0.1 mm
Weight	flake weight	nearest 0.1 g for < 300 g, or 25 g > 300 g
Raw Material	General geological classification of raw material.	Obsidian; Chert; Chalcedony; Silicified wood; Siltstone/mudstone; Quartzite; Quartz; Rhyolite; Coarse Igneous; Limestone; Sandstone
Material ID	More specific identification of raw material to refine the general classification by specifying characteristics of color, texture, inclusions or, for obsidian, probable source.	Diverse but included fossiliferous for chert, hornfels and greenish metasediment for siltstone/mudstone; Cerreo del Medio and El Rechuelos for obsidian, often just a color
Grain Size	Rock texture identification based on a Wentworth scale plus two other classes for siliceous rocks	Glassy ;Crypto/microcrystalline; Silt; Very Fine; Fine; Medium; Coarse; Very Coarse; Conglomerate (some fraction larger than VC)
Cortex	Is dorsal cortex present? (excludes platform)	Presence, Absence, or Indeterminate
Cortex Type	Identification of the type of cortex present	None; Alluvial (incipient cone); In Situ; Lag (smoothed even polished but not alluvial); Patina (highly weathered but not alluvial).
Thermal Alteration	Identification of the thermal alteration to the raw material either intentionally or accidentally.	Absent (no evidence); Burned (uncontrolled heat indicated by potlid and crenated fractures, and the like); Possibly heat treated (overall high luster & possible change but no differential luster or color); Heat treated (differential luster among flake scars on dorsal or dorsal and ventral, perhaps accompanied by differential color).
Inferred Function 1	Inference of general activity type based on observable use-wear characteristics in conjunction with edge morphology.	Cutting/Sawing; Scraping; Planing; Whittling; Drilling; Engraving; Chopping; Piercing (proj pt); Wedging; Other
Inferred Material 1	Inference of general material type worked based on observable use-wear characteristics.	Soft (pliant materials such as hide); Medium (green wood, green bone, etc.); Hard (dry bone; dry hard wood; stone, etc.); Other/unknown
IF 2	ditto	ditto
IM 2	ditto	ditto
Verbal Description	Text description to augment the information captured above.	
Use-wear Observations/Notes	Text description about use-wear traces or problems with observation.	
Comments	Any additional observations or inferences	
XRF?	Was item submitted for XRF analysis?	Yes/No

Technological category or flake type is an assessment of the reduction stage or objective represented by a flake and provides a principal attribute used for inferences about reduction activity at the shelters. There are both advocates and detractors of using flake types for technological analysis (see reviews in Andrefsky 1998:118–122; Shott 1994:75–79) and I am in the former camp. Although flake types are criticized as not being "empirical units of observation" (Shott 1994:77), there is actually little difference in practice between how flake types are recognized and, say, how a faunal analyst goes about identifying bone fragments to part, genus, and species. It is based on a sum of observations grounded in years of experience with faunal remains and supported by a comparative collection of known specimens. The same applies to the flake types used here: they are based on the sum of observations about the morphology of a flake, such as platform and dorsal characteristics and the nature of flake initiation, following Cotterell and Kamminga (1987). These observations are grounded by over 30 years of direct experience in stone tool production and replication experiments, which also provide flakes from known reduction strategies and objectives for a comparative collection. I do not assume that all flakes can be categorized and indeed 15% (n=266) of the overall assemblage of 1778 flakes from the rockshelters were considered indeterminate. More will be said about flake types later in this chapter, but for those that want to use variables other than inferred reduction technique to make technological inferences there are such observations as debitage condition, platform type, size class, four size variables (length, width, thickness and weight), and cortex occurrence.

Flakes that exhibited use-wear were analyzed as debitage and not included with the intentionally retouched tools analyzed using the separate routine presented next. This approach coincides with Odell (2003:64-65) since I only included items in the retouched tool class if they have purposeful flake detachments, not incidental flaking from use. Used flakes are tools in the broadest sense but they lack "enhanced cultural input" in the form of intentional edge modification. This sort of separation is generally easily done for most specimens based on quick inspection, whereas deciding if a flake is used or not takes close inspection with a microscope.

2.3.2 Flaked Facial Tools. This class includes all items such as unifaces and bifaces that have been shaped in plan or thinned in section by intentional flaking. They have flattened cross-sections and a distinct plane of greatest area with just two principal opposing faces (faciality). Production input on these tools might be quite minimal, as in a unidirectionally edged flake, or substantial, as with a projectile point that had been bifacially thinned by percussion flaking and then shaped by pressure flaking. The term *edged* means noninvasive flaking or what Odell (2003:65) refers to as marginal retouch.

All flaked facial tools were analyzed as individual items with each evaluated or measured according to the 33 variables presented in Table 2.2. These variables were selected to characterize aspects of production technology, artifact use-history, raw material selection and treatment, and functional use traces. The variable of morphological-functional class, especially when combined with the second variable of subclass specification provides a principal means for discussing the "types" of flaked facial tools recovered from the two rockshelters. The general classes consist of such seemingly unambiguous items as projectile point, biface, drill, scraper, chopper and the like, categories regularly used by archaeologists both in the past and to this day. These categories are a clear mix of inferred function and descriptors of morphology or technology but as of yet no one has devised a useful alternative for simple characterization of assemblages.

Table 2.2. List of variables recorded for the flaked facial tools from the Falls Creek Rockshelters.

Variable	Description	Values
Morphological/ Functional Class	Inferred overall morphological and functional classification of tool based on categories regularly used by archaeologists but informed somewhat by use-wear.	Unknown; Retouched Flake (something other than below); Notch Spokeshave; Denticulate Saw; Scraper; Unifacial Knife; Engraver; Perforator; Drill; Chopper; Biface thick; Biface thin; Bifacial knife; Point preform; Projectile Point
Subclass Specification	Refinement of the above groups to the extent possible based on production technology or morphology such as retouch placement for scrapers, reduction stage for bifaces & "style" for projectile points.	Diverse but includes End or Side specification for scrapers; Expedient, Formal Short Bit and Formal Long Bit for drills; Biface Stages 1-4 according to Whittaker (1994:199-203, except that Stage 4 does not include notched items); and various notched point styles
Technological Class	Technological classification of tool based on faces worked and whether flaking is marginal (edging) or invasive (thinning) along with the extent of facial thinning.	Unknown/Unidentifiable; Unifacially Edged; Unifacially Thinned; Unifacially Thinned & Shaped; Bifacially Worked-NFS; Bifacially Edged; Bifacially Thinned Initial; Bifacially Thinned Advanced; Bifacially Thinned & Shaped; Bifacially Thinned, Shaped & Notched (or otherwise prepared for hafting)
Condition	Assessment of what portion of the tool is present for analysis.	Indeterminate; Internal fragment; Margin; Corner; Medial Complete X-Section; <1/3 Terminal; <1/3 Tip; <1/3 Base; >1/3 Terminal; >1/3 Tip;>1/3 Base; Nearly Complete; Complete
Use Phase	Assessment of tool use history: manufacture, use, breakage, exhaustion, recycling, etc.; basically a characterization of the state of the tool just prior to deposition in the archaeological record while factoring in evidence for prior uses.	Unfinished & Unused (often tool portions that represent production waste); Unfinished but Used; Finished & Used but Whole & Unexhausted; Finished & Used but Broken or Exhausted; Recycled Tools Whole & Unexhausted; Recycled Tools, Broken or

Variable	Description	Values
		Exhausted; Indeterminate
Resharpening	Assessment of whether primary finished tool form was modified by resharpening.	Absent; Present; Indeterminate
Previous Function	For recycled tools an inference as to prior morpho-functional type (e.g., projectile point prior to becoming a drill).	None; Projectile Point; Scraper; Knife; Drill; Indeterminate
Length	Complete length only measured parallel to long axis or for flake tools down axis of detachment.	nearest 0.1 mm
Frag Length	For tools that have an incomplete length.	nearest 0.1 mm
Width	Complete width only measured orthogonal to length.	nearest 0.1 mm
Frag Width	For tools that have an incomplete width.	nearest 0.1 mm
Thickness	Maximum complete thickness.	nearest 0.1 mm
Frag Thick	For tools with incomplete thickness.	nearest 0.1 mm
Weight	Tool weight	nearest 0.1 g for < 300 g, or nearest 25 g > 300 g
Blank Morphology	Assessment of the original blank form that the tool was made on.	Indeterminate (extensive flaking obscures diagnostic criteria); Thin Slab; Split Cobble; Core; Flake-NFS; DFP Flake; Bipolar Flake; Biface Flake
Percussion Flaking?	Was percussion flaking a significant part of tool production? This does not refer to initial creation of the tool blank.	Yes/No
Pressure Flaking?	Was pressure flaking a significant part of tool production? This does not refer to initial creation of the tool blank.	Yes/No
Bipolar Flaking	Was bipolar flaking a significant part of tool production? This does not refer to initial creation of the tool blank.	Yes/No
Raw Material	Same as for debitage	Same as for debitage
Material ID	Same as for debitage	Same as for debitage
Grain Size	Same as for debitage	Same as for debitage
Cortex	Is cortex present?	Presence, Absence, or Indeterminate
Thermal Alteration	Same as for debitage	Same as for debitage
Inferred Function 1	Same as for debitage	Same as for debitage
Inferred Material 1	Same as for debitage	Same as for debitage
IF 2	ditto	ditto
IM 2	ditto	ditto
Verbal Description	Text description to augment the information captured above.	
Use-wear Observations/Notes	Text description about use-wear traces or problems with observation.	
Comments	Any additional observations or inferences.	
Neck Width	For notched points/knives measured across narrowest part of notches/stem.	nearest 0.1 mm
Neck Thickness	For notched points/knives measured orthogonal to neck width.	nearest 0.1 mm
Stem Length	For notched points/knives measured from top of notch/stem to lowest part of stem.	nearest 0.1 mm

Variable	Description	Values
Stem Width	For notched points/knives measured at widest point of notch/stem (usually at base).	nearest 0.1 mm
Notch Opening	For notched points/knives measured across widest point of notch at tool margin.	nearest 0.1 mm
Top of Notch	Assessment of distal notch shape.	Angled up; Straight; Slightly Concave; Concave; Markedly Concave; Indeterminate
XRF?	Was item submitted for XRF analysis?	Yes/No

I classified tools according to their inferred primary form at the time of discard. A projectile point is obviously a biface, but the former is a more specialized case of the latter, having been "stylized" by the addition of hafting features (generally notches). These tools clearly could have been used for other tasks besides being a projectile, and this clearly seems to have been a common practice for Basketmakers, whose large darts were frequently used in a variety of tasks, some of which ultimately precluded the projectile function altogether (boring stone pipe bowls for example). A point so heavily modified for use in a non-projectile task or simply from such use was classified as that (a drill from example) rather than as a projectile point.

Drills are also almost invariably bifaces but like projectile points, a more specialized form thereof. Bifaces may have had a variety of functions and these may have shifted as tool morphology changed, especially as they got thinner, lighter, and more acutely edged. As a quick means to parse out this aspect, bifaces were further specified as being either thick or thin. This is in contrast to items classified as unifacial scrapers, which have a rather steep edge angle and often micro-scarring indicative of scraping use. There are also tools evidently used for scraping that have been marginally flaked on both faces, hence the class bifacially edged scraper. The unifacial scraper class was also further specified as being either small or large. A few items, often fragmentary, could not be specifically identified as a given tool form and thus got lumped into the indeterminate category.

2.3.3 Cores & Nodular Tools. Included in this group are chunks or cobbles of rock that were flaked either purposefully or fortuitously through use, often both, or that were modified through use in other ways such as battering. These items lack faciality that was the product of purposeful flaking are usually blocky and heavy. If scars of purposeful flake detachments are present then the intent was not to achieve thinness or section symmetry, but merely to shape or create a working edge (e.g., pecking stones and cobble choppers) or simply to produce flakes for use (unused cores). This class also includes naturally angular chunks of stone used for pecking or hammering on stone or other materials, resulting in battered edges sometimes accompanied by use-spalls of various sizes. All cores/nodular tools were analyzed as individual items with each evaluated or measured according to the 20 variables presented in Table 2.3. There is great deal functional ambiguity for many of the tools of this group perhaps in part because of multiple uses for any single item and the lack of any specific morphology for the tasks that these items were commonly used for. As such, I used a very simple morphological-functional classification and made detailed observations about use-wear that I documented verbally and coded as to inferred activity for two possible independent uses. This differed from the procedure for flakes where separate edges/surfaces (EUs) with evidence of the same activity such as scraping were each coded; for cores/nodular tools I only coded distinct tasks such as a nodule used both as hammerstone (battering attrition) and for crushing (facial abrasion).

Table 2.3. List of variables recorded for the cores/nodular tools from the Falls Creek Rockshelters.

Variable	Description	Values
Morphological/ Functional Class	Inferred morphological and functional classification of tool based on categories regularly used by archaeologists but informed by macroscopically obvious use-wear.	DFP core; Chopper; Scraper/Plane; Hammerstone
Condition	Assessment of core/tool condition.	Indeterminate; Fragment; Complete
Length	Length measured parallel to longest axis.	nearest 0.1 mm
Width	Width measured orthogonal to length.	nearest 0.1 mm
Thickness	Maximum thickness orthogonal to L & W.	nearest 0.1 mm
Weight	Tool weight	nearest 0.1 g for < 300 g, or nearest 25 g > 300 g
Raw Material	Same as for debitage	Same as for debitage
Material ID	Same as for debitage	Same as for debitage
Grain Size	Same as for debitage	Same as for debitage
Cortex	Same as for flaked facial tools	Same as for flaked facial tools
Thermal Alteration	Same as for debitage	Same as for debitage
Core Technology	Assessment of the reduction technique responsible for flake detachments.	None (unflaked tool such a hammerstone lacking spalls); Use-spalled nodule (tool such as a hammerstone with accidental flake detachments); Direct Freehand Percussion (DFP); Bipolar (none observed for this assemblage)
Flaking Pattern	Assessment of any patterning in purposeful flake detachments.	None (no purposeful flake detachments); Unpatterned (flakes initiated from random platform surfaces, evidently whatever was available) ; Unidirectional; Bi-directional; Multi-directional (discoidal)
Flake Scar #	Count of purposeful flake scars according to a four scale ranking.	None;1-3 scars;4-6 scars;7+ scars
Inferred Function 1	Same as for debitage but evaluated for the	Same as for debitage

Variable	Description	Values
	tool as a whole rather than individual units thereof	
Degree of Use 1	Assessment of how intensively the tool was used based on the extent of use-wear	Indeterminate; None; Light; Moderate; Heavy
IF 2	ditto	ditto
IM 2	ditto	ditto
Verbal Description	Text description to augment the information captured above.	
Use-wear Observations/Notes	Text description about use-wear traces or problems with observation.	

2.3.4 Grinding Tools. Grinding tools are restricted to manos and metates, items whose principal use was for seed grinding. These include everything from informal expedient manos and grinding slabs to formal, high-production-input items such as bin-type slab metates and two-hand manos. The identification of tools used for this purpose is based on both morphology and use-wear traces consisting of obvious grinding slicks with striations from use in a consistent back and forth manner. The analytical routine for this class of tools included the 29 variables listed in Table 2.4. Only manos from the Falls Creek Shelters were studied so the variables and codes for metates are not relevant to this analysis but they could be once metates from the sites are analyzed.

Table 2.4. List of variables recorded for the grinding tools (manos and metates) from the Falls Creek Rockshelters (only manos were analyzed but the routine is also designed for metates).

Variable	Description	Values
Morphological/ Functional Class	Inferred morphological and functional classification of tool based on categories regularly used by archaeologists.	Unknown Grinding Tool; Mano NFS; Small (1-hand) mano; Large (2-hand) mano; Metate NFS; Basin metate; Basin Trough; Trough metate; Slab metate
Condition	Assessment of tool condition.	Unknown fragment; Internal fragment; Margin fragment; Corner fragment; Medial fragment full x-section; End fragment < half; End fragment >half; Complete; Refit whole
Use Phase	Same as for flaked facial tools	Same as for flaked facial tools
Previous Function	For recycled tools an inference as to prior morpho-functional type (e.g., large mano).	None; Large mano; Metate; Indeterminate
Secondary Use	Crushing Use of end/edge	Presence/Absence
Secondary Use	Anvil pitting face	Presence/Absence
Secondary Use	Anvil pitting edge/end	Presence/Absence
Secondary Use	Battering edge/end	Presence/Absence
Secondary Use	Pigment staining	Presence/Absence
Secondary Use	Shaft abrasion	Presence/Absence
Secondary Use	Sharpening grooves	Presence/Absence
Secondary Use	Grinding of edge/end (not trough wear)	Presence/Absence
Raw Material	Same as for debitage	Same as for debitage

Variable	Description	Values
Grain Size	Rock texture identification based on a Wentworth scale with Conglomerate for textures larger than very coarse and with categories for rocks with bands of different textures	Clay-Silt; Very Fine; Fine; Medium; Coarse; Very Coarse; Conglomerate; Banded fine & medium; Banded medium & coarse; Banded coarse & conglomerate; Banded coarse & very coarse; Indeterminate
Vesicularity	Assessment of the extent of natural voids or vesicles present in the rock	None; Sparse vesicles; Moderate vesicles; Numerous vesicles; Indeterminate
Mano Class	Classification of manos based on a combination of plan and X-section shape.	Not applicable; Unclassified small mano; Small cobble mano w/ rocker bevel; Small ovoid mano w/ rectangular x-section; Small rectangular mano w/ rectangular x-section; Recycled frag of a large mano; Unclassified large mano ;Large mano with faceted or airfoil x-section; Large mano with thin rectangular x-section; Large mano with thick rectangular x-section; Large mano with thick trapezoidal x-section; Large mano with thick D-shaped x-section; Indeterminate
Metate Class	Classification of metates based on X-section shape and formalization	Not applicable; Unformalized slab (non-bin type); Formalized slab (bin-type); Trough incipient; Trough shallow; Trough deep; Basin; Basin trough (Basketmaker style); Indeterminate
Faces Used	Count of faces used for grinding	None; One; Two; Indeterminate
Face 1 Grinding Surface Area	sq cm measurement calculated from length & width of grinding slick; Face 1 is the only or largest use surface of tool	rounded to nearest whole cm
F1 Pecked?	Pecking marks present?	Presence/Absence
Face 2 Grinding Surface Area	ditto	ditto
F1 Pecked?	ditto	ditto
Length	Length measured parallel to longest axis; for metates measured parallel use direction; for manos measured perpendicular to use direction	nearest 0.1 mm;
Width	Width measured orthogonal to length.	nearest 0.1 mm
Thickness	Maximum thickness orthogonal to L & W.	nearest 0.1 mm
Weight	Tool weight	nearest 0.1 g for < 300 g, or nearest 25 g > 300 g
Verbal Description	Text description to augment the information captured above.	
Use-wear Observations/Notes	Text description about use-wear traces or problems with observation.	
Comments	Any additional observations or inferences.	

2.3.5 Miscellaneous Artifacts. The miscellaneous category includes all other types of modified stone such as ornaments, pipes, anvils, and abraders, and the like. Since there were so few of these items in my sample, just 14, each was coded for general morphological type, condition, production technique, raw material, and basic measurements along with a verbal description.

2.4 Raw Material Sources and Use

Stone displays a diversity of physical properties that prehistoric people used to good advantage. Properties such as crystal structure or the lack thereof, density, grain size, brittleness, and hardness allow for a wide range of potential usages and influence what purposes a specific material is best suited for due to mechanical and production constraints. The selection process is also influenced by the geographical distribution of material types and their relative abundances and mode of occurrence, such as nodule size and shape.

In certain geographical settings the choice of raw material for stone tools can be limited. This is not the case within the vicinity of the Falls Creek rockshelters and the greater Durango area. The region is quite geologically diverse, containing sedimentary, igneous & metamorphic rocks dating back to the Precambrian (Steven et al. 1974). Not only is there great heterogeneity of rock types, but glacial and alluvial outwash from the San Juan Mountains have deposited congeries of these rocks in valley bottoms ensuring that people had a ready supply of cobbles and boulders of different qualities to choose from. Locally available materials include varieties of sandstone, quartzite, granite and other intrusive igneous rock, silicified wood, silicified siltstone, chert, and various metamorphic rocks (Gerhardt 2003; Hooten 2003; Morris and Burgh 1954).

In such circumstances, it seems reasonable to assume that raw material selection was partially conditioned by functional suitability. The essential reasoning is that grain size and silicification affect functional suitability as follows: with increasing grain size there should generally be a change in tasks from cutting, piercing, and scraping to tougher jobs such as grinding, pounding, chopping, and abrading. For fine cutting of soft material such as meat or hide a noncrystalline highly siliceous material like obsidian is preferable, but for sawing bone a tough microcrystalline chert or even coarser quartzite is well suited. Preferences extend to rocks for other tasks as well, such as raw material for grinding tools. Different textures for grinding tools have been ethnographically documented as having relevance to Puebloan groups for processing corn (Bartlett 1933). Within this framework, raw materials for grinding tools would be specially selected based on texture in order to meet corn processing needs.

Some tasks place more stringent demands on raw material properties than do other tasks where almost any stone will suffice. For tasks with minimal requirements, the lithic landscape is rich and opportunities abound. A pecking stone provides a useful example. Almost any dense hard rock will suffice (minimal requirements) and little production investment is needed, with cobbles often used effectively simply as found. As such, raw materials suitable for pecking stones can be secured nearly anywhere, with no need to travel far, especially outside the normal foraging area around a habitation. Durango Basketmakers could acquire rock for pecking stone in a casual manner close to home. Shaving is at the opposite end of the spectrum. This task is difficult to achieve with stone tools except those of volcanic glass, and obsidian has very limited distribution on the Colorado Plateau. For a razor sharp edge the lithic landscape is severely constrained. Because this task has low tolerance for substitution, one either does not shave or one finds a means to procure obsidian from great distances. Between these two extremes are general cutting tasks and killing large game, the former requiring no more than a sharp-edged flake and the latter a large dart point during Basketmaker II times. Cryptocrystalline silica such as chert or silicified wood are excellent for either task, but nodules of either suitable to make simple flakes for expedient cutting are usually far more ubiquitous than nodules well suited for large dart points. The latter require rocks with properties beyond simply being conducive to Hertzian fracture and feather termination to form sharp edges. Principal among these are adequate nodule size and lack of internal flaws. These requirements automatically raise the standards-bar such that the lithic landscape appears far more improvised.

Whether selecting sandstone for grinding tools or chert for cutting and piercing tools, functional suitability concerns are only part of the equation. Other important aspects concern the degree of residential and logistic mobility and the costs of having to procure resources from distance sources. It is also worth remembering that there can be less mundane reasons behind suitability, reasons that relate to spiritual beliefs, social posturing, or other aspects. In Australia, for example, men highly value stone from quarries "at or near … totemic 'dreaming' places" (Gould 1977:164). Factoring in these sorts of beliefs is admittedly difficult for archaeologists, but for the bulk of rock acquired for tools such beliefs are probably far less significant than concerns with making a living. Related to the cost of obtaining raw material is who is performing the task for which a stone tool is used, with particular importance being gender-differentiated roles in the economy. Whether men or women are the principal users of a tool type can have a bearing on the process of stone procurement. The chief importance here concerns the potential for different mobility patterns, with men probably having a much larger lithic procurement territory than women. The simple tools commonly used by Puebloan women for any function, and especially pecking stones for grinding tool production (as supported by ethnographic evidence [Bartlett 1933] and tool assemblages from mealing rooms), can usually be procured close to most habitations because literally almost any hard dense rock that has natural acute edges or that can be flaked to produce these edges will do. As it turns out, this is perhaps where Puebloan women spent much of their time, around the house, given their reduced mobility in being tethered to the home base. If stone of good quality for points/bifaces occurred close to home then men would have exploited it for this purpose. If not, men probably could have picked up more distant stone with more specific qualities (ease of flakability, nodule size, color) in their normal travels for hunting or they could have gone on special extractive or exchange trips.

Table 2.5 lists the general geological classification of raw material for the analyzed stone artifacts for each of the 4 general tool classes. The raw materials are arranged with the more brittle and easily flaked resources first followed by the coarser and less easily flaked materials. There is an obvious and expected trend for the debitage and flaked facial tools to be mostly of the former materials with the cores/nodular tools and grinding tools mostly or wholly of the latter materials. Indeed grinding tools are entirely of sandstone and coarse igneous. The handful of flakes of quartz and limestone all appears to be incidental byproducts of tool use—fortuitous spalls from battering tools.

Table 2.5. Representation of General Raw Material Type for the Stone Artifacts from the Falls Creek Rockshelters.

Raw Material	Debitage		Flaked Facial Tools		Cores/Nodular Tools		Grinding Tools	
	n	%	n	%	n	%	n	%
Indeterminate	1	0.1	0	0.0	0	0.0	0	0.0
Obsidian	297	16.7	37	8.4	0	0.0	0	0.0
Chalcedony	78	4.4	20	4.6	0	0.0	0	0.0
Chert	304	17.1	99	22.6	5	4.6	0	0.0
Silicified wood	310	17.4	111	25.3	5	4.6	0	0.0
Rhyolite	43	2.4	20	4.6	0	0.0	0	0.0
Siltstone/Mudstone	618	34.8	103	23.5	20	18.5	0	0.0
Quartzite	114	6.4	47	10.7	48	44.4	0	0.0
Quartz	1	0.1	0	0.0	1	0.9	0	0.0
Coarse Igneous	0	0.0	1	0.2	13	12.0	5	10.9
Sandstone	4	0.2	0	0.0	4	3.7	41	89.1
Limestone	8	0.4	0	0.0	12	11.1	0	0.0
Grand Total	1778	100.0	438	100.0	108	100.0	46	100.0

Table 2.6 provides data about the count and proportion of flakes and flaked facial tools for each material type that retained some cortex. Cores/nodular tool were not included here since virtually all of them retained some evidence cortex and many of these were not flaked to remove this exterior rind. Although it is commonly assumed that cortex is best removed lose to where a raw material is acquired so as to eliminate extraneous weight, the incidence of cortex for the exotic obsidian shows that is not necessarily the case.

Table 2.6. Presence of cortex by raw material for debitage and flaked facial tools from the Falls Creek Rockshelters.

Raw Material	Debitage Cortex		Flaked Tool Cortex		Total Cortex	
	Present	%	Present	%	Present	%
Indeterminate	1	100.0	0	0.0	1	100.0
Obsidian	105	35.4	9	24.3	114	34.1
Chalcedony	18	23.1	2	10.0	20	20.4
Chert	93	30.6	28	28.3	121	30.0
Silicified wood	71	22.9	21	18.9	92	21.9
Rhyolite	3	7.0	0	0.0	3	4.8
Siltstone/mudstone	63	10.2	25	24.3	88	12.2
Quartzite	39	34.2	4	8.5	43	26.7
Quartz	0	0.0	0	0.0	0	0.0
Coarse Igneous	0	0.0	1	100.0	1	100.0
Sandstone	2	50.0	0	0.0	2	50.0
Limestone	8	100.0	0	0.0	8	100.0
Grand Total	403	22.7	90	20.5	493	22.2

2.4.1 Obsidian. Obsidian accounts for almost 17 percent of the flakes in my sample and 8 percent of the flaked facial tools (by weight the proportions are 11.2% and 3.1% respectively) (Figure 2.1). This is a substantial representation given that the material has to originate at a considerable distance from the sites. Tool quality obsidian is not available anywhere within less than about 200 km from the sites (see Shackley 2005; http://www.swxrflab.net/swobsrcs.htm). The closest known source is from the Jemez Mountains in north-central New Mexico with the Mount Taylor Volcanic Field in northwest New Mexico as the second closest source area at about 240 km away. Morris and Burgh (1954:55) reported that obsidian is available from Engineer Mountain, near Ouray, only about 90 km to the north of the shelters but this is not factual. Certainly there is no tool quality obsidian available there or elsewhere in Colorado (Steven Shackley, personal communication 2014).

Figure 2.1 Examples of obsidian artifacts from the Falls Creek Shelters: El Rechulos = b, d, e, g & i; Cerreo del Medio = a, c, f, h. FCRS numbers: a, 1811; b, 1191; c, 485; d, 2625; f, 4851; g, 983; h, 1076; i, 1615.

During the analysis I inspected all obsidian artifacts under a microscope using both transmitted and reflected light in order to attempt visual identification of source. Transmitted light is essential for disclosing the internal characteristics (inclusions, flow patterns, etc.) of the obsidian whereas reflected light allows inspection of surface texture and features such as cortex. Both aspects can be essential when it comes to attempting visual source identification. It is also important to have extensive experience with samples from diverse obsidian sources and to not identify beyond the level of familiarity (I readily used the "unknown" category for artifacts of unfamiliar looking glass). Blind tests are a critical part of generating useful visual identification data and allow for a specification of overall error rate. If success rates of known specimens are in the 90% realm or better then visual identification can have real interpretive value. In this study the blind test was performed by submitting a sample of obsidian for XRF analysis (results reported in Shackley 2014) after completion of my visual IDs. As reported below, the results are encouraging since 100% of the artifacts visually identified to known sources were also chemically assigned to those same sources and this accounted for more than 90% of the obsidian artifacts.

The obsidian at the Falls Creek shelters exhibits a high degree of redundancy in that most appears to derive from two source locations in the Jemez Mountains: Cerro del Medio and El Rechuelos (Table 2.7). Just 7% of the artifacts could not be identified to a source and got classified as unknown. Over 30% of the obsidian resembles the highly distinctive gray-looking glass from the El Rechuelos source locality. This material is also known as Polvadera obsidian, the name commonly used when I first flaked the material in the early 1980s.

Table 2.7. Visual identification of obsidian source for debitage and flaked facial tools from the Falls Creek Rockshelters.

Obsidian Source	Debitage		Flaked Facial Tools		Total	
	n	%	n	%	n	%
Cerro del Medio	178	59.9	18	48.6	196	58.7
Cerro del Medio?	5	1.7	0	0.0	5	1.5
El Rechuelos	93	31.3	16	43.2	109	32.6
unknown	21	7.1	3	8.1	24	7.2
Total	297	100.0	37	100.0	334	100.0

In transmitted light the glass matrix is actually clear but contains a profusion of minute black to gray crystals (microlites, Ross 1962) and it is these that impart the gray coloration in reflected light. These particles also result in a somewhat "sugary" texture to the glass, which is also distinctive when compared to the highly vitreous glasses of the other source locations in the Jemez Mountains. El Rechuelos can occur in large pieces up to the size of a small cooler (boulder at the Bandelier Visitor Center), although such massive pieces are exceptional.

A full 60% of the of the obsidian assemblage is identified as deriving from Cerro del Medio inside the Valles Caldera of the Jemez Mountains. Unlike El Rechuelos, the obsidian from Cerro del Medio is highly glassy and usually transparent but with variable amounts of "clouded" streaks or patches caused by exceedingly fine stretched-out bubbles. In reflected light the glass appears black or with a somewhat silvery chatoyancy. There can also be sparse small spherulites but these vary depending on quarry location at the actual source. Overall I think that Cerro del Medio glass quality exceeds that of El Rechuelos, which might be why this material has greater representation at the Falls Creek Shelters despite the fact that El Rechuelos is technically closer since secondary deposits of nodules from this source occur along Polvadera Creek, which flows north into the Rio Chama. If obsidian was procured directly by the occupants of Falls Creek Shelters or other intermediate Basketmaker II groups, such as those living along the lower Los Pinos and Piedra Rivers, then it seems likely that foot travel to the obsidian sources would have brought them down the Rio Chama to the northern foot of the Jemez Mountains where El Rechuelos nodules occur in secondary contexts.

The interesting part about the obsidian artifacts at the Falls Creek Shelters is the incidence of cortex, the size of some flakes and tools, and the occurrence of production breaks on unfinished bifaces. All aspects imply procurement and transport of flake blanks or unfinished bifaces acquired directly from the source locations. Not only do more than 30% of the obsidian flakes or tools retain some cortex (Table 2.8), but in many cases this cortex is of the type that indicates either acquisition directly from a source (in situ cortex) or proximate to the source (lag cortex). Alluvial (incipient cone) cortex was observed on a small proportion (5.5%) of the El Rechuelos obsidian but a higher proportion of the Cerro del Medio artifacts (~13%). Since Shackley (2005) has documented that that Cerro del Medio glass does not erode outside the caldera proper as nodules usable for tools, the alluvial cortex represented is likely from nodules collected from San Antonio Creek within the Valles Caldera.

Table 2.8. Type of cortex present on visual identified obsidian source for debitage and flaked facial tools from the Falls Creek Rockshelters.

Obsidian Source	None		Alluvial		Lag/In Situ		Grand Total	
	n	Row %	n	Row %	n	Row %	n	Row %
Cerreo del Medio	128	65.3	26	13.3	42	21.4	196	100.0
Cerreo del Medio?	2	40.0	1	20.0	2	40.0	5	100.0
El Rechuelos	75	68.8	6	5.5	28	25.7	109	100.0
unknown	14	58.3	2	8.3	8	33.3	24	100.0
Total	219	65.6	35	10.5	80	24.0	334	100.0

The overall fairly large size of the obsidian debitage from the two shelters is evident in Table 2.9, which lists the flake size classes and the average weight per class according to the visually identified sources. Although there were no flakes greater than 2" square, this was also true for nearly all local raw materials such as fossiliferous chert, silicified wood, and hornfels (silicified siltstone). Indeed there were just three flakes of this size in the collection. But 57 of the obsidian flakes or almost 20% are in the 1-2" size class with an average weight of more than 3 g for Cerro del Medio obsidian. Over 66% of the obsidian flakes are within the ½-1" size class. Doubtless the number of small obsidian flakes is greatly underrepresented because of the lack of sediment screening but this does not detract from the fact of fairly numerous large flakes, which supports the notion that obsidian did not just arrive at the site as finished tools that were then resharpened or modified but as flake blanks and roughed out bifaces. As discussed in greater detail under flake types, a majority of the obsidian flakes that could be classified derived from biface reduction (73%). Given that there are low proportions of both obsidian core flakes (1.7%) and core edge preparation flakes (3.4%), it also seems likely that a few cores or tested nodules of glass also ended up at the shelters.

Table 2.9. Flake size class and average weight (g) according to visual identified source for debitage from the Falls Creek Rockshelters.

Obsidian Source	1 - 2"		1/2 - 1"		1/4 - 1/2"		Grand Total		
	n	aver Wt	n	aver Wt	n	aver Wt	n	Aver Wt	Total Wt
Cerreo del Medio	21	3.08	131	0.93	26	0.28	178	1.09	194.1
Cerreo del Medio?	5	3.38	0	0.00	0	0.00	5	3.38	16.9
El Rechuelos	28	2.74	48	0.90	17	0.28	93	1.34	124.9
unknown	3	2.80	18	1.01	0	0.00	21	1.27	26.6
Total	57	2.93	197	0.93	43	0.28	297	1.22	362.5
Percent	19.2%		66.3%		14.5%		100.0%		
Total Wt (g)		166.8		183.7		12.0			

Forty obsidian artifacts were selected for nondestructive XRF analysis: 20 flakes and 20 flaked tools, mostly projectile points or bifaces (Table 2.10). This sample consisted of 11 thought to be from the Cerro del Medio source, 2 tentatively assigned to the Cerro del Medio source, 16 thought to be from the El Rechuelos source, and 11 that were unknown but with three of these speculated to be from the Cerro del Medio source. The 11 unknown specimens comprise close to half (45.8%) of the obsidian that could not be visually identified to a source. The artifacts were submitted to Steven Shackley who analyzed them at the Geoarchaeological X-ray Fluorescence Spectrometry Laboratory in Albuquerque, NM. Detailed methods and results of his analysis are included in his appended report but source provenance assignment is presented in the second column of Table 2.10 and summarized in Table 2.11.

Table 2.10. Obsidian artifacts from the Falls Creek Rockshelters submitted for XRF analysis; artifacts are ordered by visual source identification followed by XRF source assignment.

Visual ID	XRF Source ID	FCRS #	Class[a]	Description
Cerro del Medio	Cerro del Medio	281	FFT	biface tip
Cerro del Medio	Cerro del Medio	735	FFT	dart point base
Cerro del Medio	Cerro del Medio	738	FFT	dart point base
Cerro del Medio	Cerro del Medio	859	FFT	biface midsect
Cerro del Medio	Cerro del Medio	1044	Deb	flake frag
Cerro del Medio	Cerro del Medio	1918	Deb	flake
Cerro del Medio	Cerro del Medio	2650	Deb	flake
Cerro del Medio	Cerro del Medio	4651	FFT	retouched flake
Cerro del Medio	Cerro del Medio	4849	Deb	flake
Cerro del Medio	Cerro del Medio	4851	FFT	retouched flake
Cerro del Medio	Cerro del Medio	4852	FFT	retouched flake
Cerro del Medio?	Cerro del Medio	1198	Deb	flake
Cerro del Medio?	Cerro del Medio	2651	Deb	flake frag
El Rechuelos	El Rechuelos	278	FFT	dart point base
El Rechuelos	El Rechuelos	282	Deb	flake frag
El Rechuelos	El Rechuelos	666	Deb	flake
El Rechuelos	El Rechuelos	734	FFT	biface
El Rechuelos	El Rechuelos	739	FFT	biface tip
El Rechuelos	El Rechuelos	900	FFT	dart point tip
El Rechuelos	El Rechuelos	983	FFT	dart point
El Rechuelos	El Rechuelos	1043	FFT	dart point tip
El Rechuelos	El Rechuelos	1049	FFT	dart point base
El Rechuelos	El Rechuelos	1113	FFT	dart point base
El Rechuelos	El Rechuelos	1115	FFT	retouched flake
El Rechuelos	El Rechuelos	1191	Deb	flake frag
El Rechuelos	El Rechuelos	2625	FFT	biface tip
El Rechuelos	El Rechuelos	4846	Deb	flake frag
El Rechuelos	El Rechuelos	4847	Deb	flake
El Rechuelos	El Rechuelos	4850	FFT	retouched flake
unknown	Cerro del Medio	1219	Deb	flake frag
unknown	Cerro del Medio	1811	FFT	dart point base
unknown	Cerro del Medio	4271	Deb	flake frag
unknown	Cerro del Medio	4823	Deb	flake frag
unknown	Cerro del Medio	4824	Deb	flake
unknown	Cerro Toledo	1078	Deb	flake
unknown	Cerro Toledo	1194	Deb	flake frag
unknown	Cerro Toledo	706	FFT	biface tip
unknown (perhaps CdM)	Cerro del Medio	4821	Deb	flake frag
unknown (perhaps CdM)	Cerro del Medio	4822	Deb	flake
unknown (perhaps CdM)	Cerro del Medio	4848	Deb	flake

[a] FFT = flaked facial tool; Deb = debitage

Table 2.11. Cross tabulation of XRF source provenance (columns) by visual assignments for obsidian artifacts from the Falls Creek Rockshelters.

	Cerro del Medio	El Rechuelos	Cerro Toledo
Count	21	16	3
Percent	52.5	40.0	7.5
Visual ID			
Cerro del Medio	11	0	0
Cerro del Medio?	2	0	0
El Rechuelos	0	16	0
unknown	5	0	3
unknown, CdM?	3	0	0

The basic conclusion is that three source locations from the Jemez Mountains are represented: Cerro del Medio accounting for 52.5% (n=21), El Rechuelos accounting for 40.0% (n=16), and Cerro Toledo accounting for 7.5% (n=3). The latter includes 3 of the artifacts that I listed as source unknown. The Cerro Toledo source includes Obsidian Ridge, which is the glass that I am familiar with, as well as that occurring on other ridges to the west as reported by Shackley (2005; and http://www.swxrflab.net/jemez.htm), some of which is visually distinctive but was unfamiliar to me. The Cerro Toledo glass that I am familiar with from Obsidian Ridge is not represented at the Falls Creek shelters. Five artifacts that I listed as source unknown and three others as source unknown but perhaps Cerro del Medio were chemically sourced as Cerro del Medio. While a small proportion of flakes from Cerro del Medio were not visually identified as such, most of them were and all artifacts visually identified as coming from this source actually turned out to be from it as indicated by the XEF results, even the three unknowns tentatively identified as such. For El Rechuelos obsidian, all artifacts identified as this type turned out to be from this source and there were no unknowns so attributed. These findings further support the visually distinctive nature of the El Rechuelos glass.

There is no doubt that trace element sourcing provides the most robust results and if funds are unlimited or obsidian artifacts few in number then it would be best to analyze all of them this way. But even with just a small number of artifacts funding for archaeological research is usually quite limited such that it pays to maximize the research results in any way possible. Visual Identification validated by elemental sourcing does just this. Moreover, size matters with XRF analysis such that very small flakes can be left out, potentially biasing where obsidian is sourced to. An example of this occurred for late Archaic sites near Navajo Mountain, Utah where, based on what could be chemically sourced, one would conclude that obsidian originated mostly from NE Arizona when in fact only the flakes of sufficient size for XRF analysis came from this area, with most originating from other sources (Geib 2011). Since very small debris was clearly not collected from the Falls Creek Shelters, it is possible that very distant obsidian sources might also be present in low proportions. Because obsidian artifacts were so abundant from the Falls Creek Shelters some sort of sampling of was clearly called for. Selection by simple random sample would be highly unlikely to include artifacts from the third poorly represented Cerro Toledo source; they are simply so rare that a sample size far larger than 12% (40 artifacts) would need to be analyzed. By having visual groups to work with, one can sample from these thereby ensuring that seemingly rare sources get included by using proportional representation. In this case I heavily sampled the flakes considered unknown and only selected a representatives of visually identified sources for purposes of testing the accuracy of my visual results.

Although not necessary in this case, a stepwise procedure is a potentially fruitful approach. First all artifacts would be visually identified or at least separated into visual groups with samples from these then sent for chemical analysis. Selection by random sampling within groups based on proportional representation would ensure that rare sources get included. With the chemical results in hand, the rate of correct visual classification can be calculated and if sufficiently high this can provide confidence in extending the sourcing results for the entire assemblage. If the rate of correct classification is poor it might be possible to refine the visual characteristics and then go back through the assemblage to refine the visual identifications. A second round of XRF analysis could be done to see if the classification rate has improved sufficiently. If not, then just use the chemical results for interpretation purposes. In the case of the Falls Creek assemblage the XRF results support using the visual results to talk about obsidian use at these sites.

2.4.2 Chalcedony. Chalcedony is a variety of micro-/cryptocrystalline quartz just like silicified wood, jasper, flint, and agate and all can be lumped under the umbrella term chert (Luedtke 1979, 1992). Yet chalcedony has a distinct crystal structure termed fibrous quartz (Rapp and Hill 2006:197) and is usually distinguishable enough in hand specimen that it is worth separating it from chert. The chief identifying characteristic that archaeologists regularly use is having microcrystalline quartz that is translucent, sometimes almost transparent, and usually whitish in color. The lack of color results from a near lack of impurities but sometimes color is imparted by small inclusions (e.g., red spots) or by an overall cast, but the rock remains translucent. The “fibrous” crystal structure of chalcedony can make conchoidal fracture more difficult than for other varieties of micro-/cryptocrystalline quartz, but the material is readily improved by heat treatment, which usually can occur at moderately low temperatures (~230°C or 450°F). There is unambiguous evidence for heat treatment of chalcedony at the Fall Creek shelters.

As Table 2.5 shows, chalcedony accounts for a rather low proportion of the flakes and flaked tools from the Falls Creek shelters (less than 5%). There are no cores of this material although, as with obsidian, there are low proportions of core reduction (7.7%) and core edge preparation (11.5%) flakes. Half of the chalcedony flakes are identified as derived from biface thinning and virtually all of the flaked tools of this material are bifaces at some phase of production or use such as unfinished waste products, finished whole items, or recycled portions.

In contrast to the assuredly exotic obsidian that was transported a considerable distance, chalcedony has even less cortex representation with 80 percent of the flakes and tools lacking this rind (see Table 2.6; 76.9% for flakes and 90% for tools). Forty percent of the cortex cover is of the incipient cone type indicating that the nodules came from secondary sources. The other cortex types consist of lag and a highly patinated surface; no in situ cortex was identified. A patinated cortical rind can occur on highly weathered alluvial cobbles especially on concave surfaces or other areas somewhat protected from banging into other cobbles during stream transport and on surfaces exposed when nodules fall apart along incipient fracture planes and then sit exposed for millennia.

Almost 30 percent of the chalcedony artifacts from the two shelters exhibited differential luster from heat treatment (Table 2.12) while another 44 percent exhibited an overall highly lustrous surface that is potentially indicative of heat treatment. An example of the former is shown in Figure 2.2, a stage 4 biface of chalcedony broken in production by a perverse fracture while the item was being thinned and shaped by percussion flaking. This specimen exhibits the differential luster that is diagnostic of purposeful heat treatment.

Table 2.12. Evidence for thermal alternation of chalcedony artifacts from the Falls Creek Rockshelters.

Thermal Alteration	Debitage	Flaked Facial Tools	Total	Percent
Absent	14	3	17	17.3
Burned	7	3	10	10.2
Possibly Heat Treated	33	10	43	43.9
Heat Treated	24	4	28	28.6
Total	78	20	98	100.0

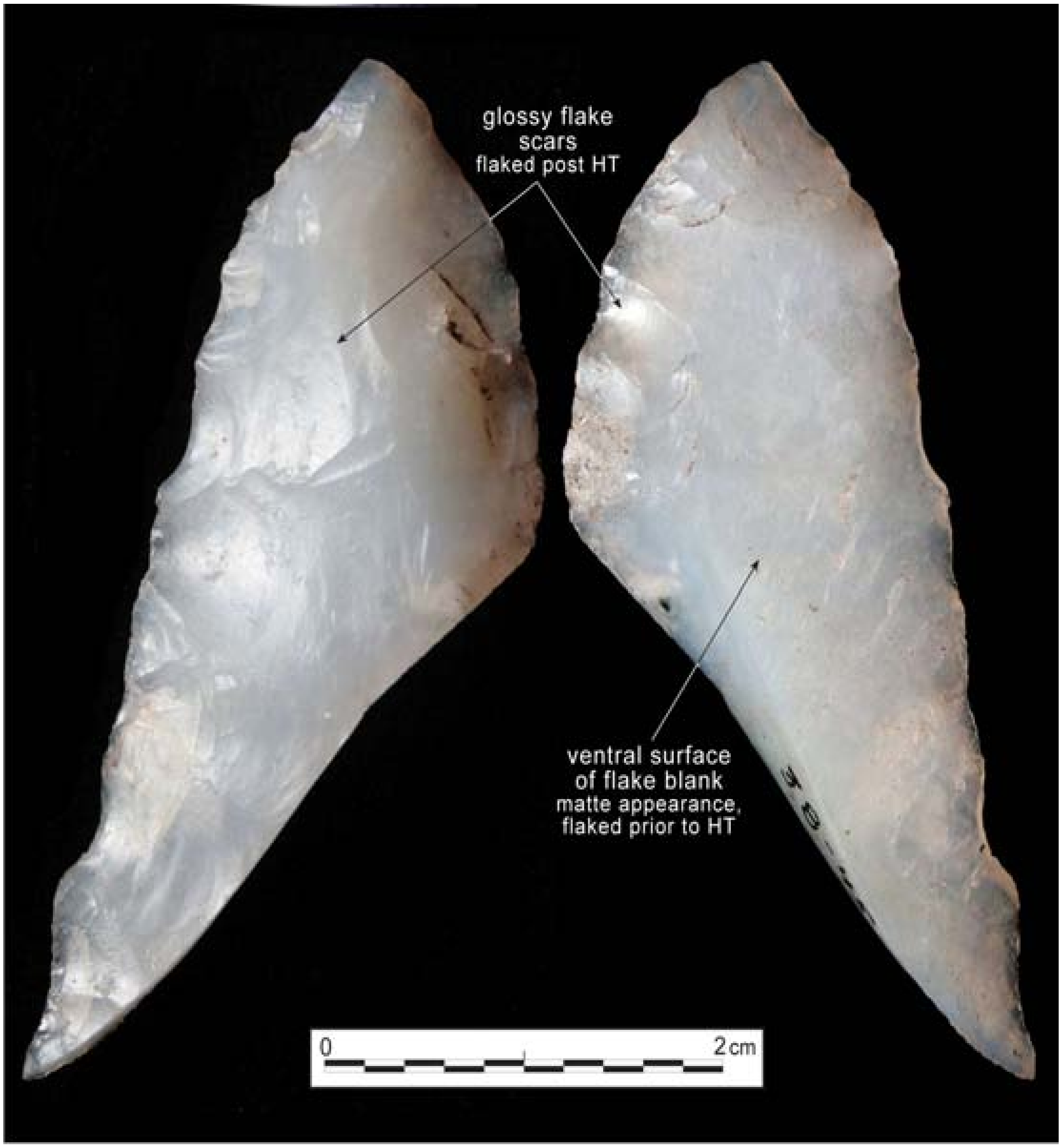


Figure 2.2 Stage 4 biface fragment of chalcedony (FCRS # 675) broken in production by perverse fracture that initiated at a crystal pocket; made on a thin flake blank that was heat treated then percussion flaked to both thin and shape simultaneously. Tool exhibits the unmistakable differential luster on flake scars that results from purposeful heat treatment of the stone to enhance the ease of flake detachment.

The tool was made on a flake, the ventral surface of which is plainly visible and exhibits a matte-like appearance. This is the usual surface quality of raw (unheated) chalcedony. In contrast, all flake scars on the ventral surface and those on the dorsal are highly lustrous with a wet-like appearance. It is this sort of evidence that I used to identify purposeful heat treatment of chalcedony and other raw materials. In this instance, it is evident that a fairly thin flake blank well over 5 cm long (the tool fragment length is 48 mm) was 'cooked' in a controlled way prior to further reduction. Had the tool not snapped in production, then flaking to finish the piece likely would have removed the entire matte-like ventral surface leaving a biface with an overall high gloss appearance. There were 10 such glossy flaked facial tools of chalcedony from the shelters and all are well thinned items with most being finished and used projectile points. In contrast, the three flaked tools of chalcedony that clearly lack any evidence for heat treatment (all flake scars matte-like) were bifaces in early reduction (stages 1 & 2).

Example of chalcedony artifacts with overall glossy appearances are shown in Figure 2.3, a small overshot flake from a biface and an Elko Corner-notched dart point recycled as a drill. The lustrous appearance of all flake scars on both artifacts strongly suggests that the material was heat treated but lacking differential luster both items were listed as possibly heat treated. For a flake detached so late in the reduction sequence as the overshot example it is highly unlikely that pre-HT scars remain and the same applies to finished small tools such as projectile points and drills. The tip and blade of the recycled point was clearly reflaked some for this secondary use but this was well after all traces of pre-HT scars had been flaked over since all of the interior scars of this tool are lustrous like those that modified the very edge and tip. In the case of the overshot flake shown in Figure 2.3 the reddened band is also a potential indicator of heat treatment—the oxidation of a streak of iron impurities within the stone. Yet some chalcedony in the southwest naturally has reddish or other colors and the point exhibits some hints of light red that were perhaps that way without any affects of heat. Marked color change with heat is indicated on some of the other materials discussed below.

It is important to point out that an overall high luster on artifact surfaces can be mimicked by gloss patina (Rottlander 1975; Howard 2002), which has nothing to do heat treatment. This potentially confounding aspect can be evaluated if there are any recent flake removals such as often occur on excavated artifacts. Also, the fact that tools with differential luster and those totally lacking any luster came from the same provenience indicates that gloss patina is unlikely to be the cause for the lustrous chalcedony artifacts from the two shelters. This is also supported by which flake types and tool types exhibit the overall luster. As mentioned previously, late stage bifaces have this property and of the three that do not they are early stage bifaces. Of the 14 flakes that lack any evidence of thermal alteration 64% are from

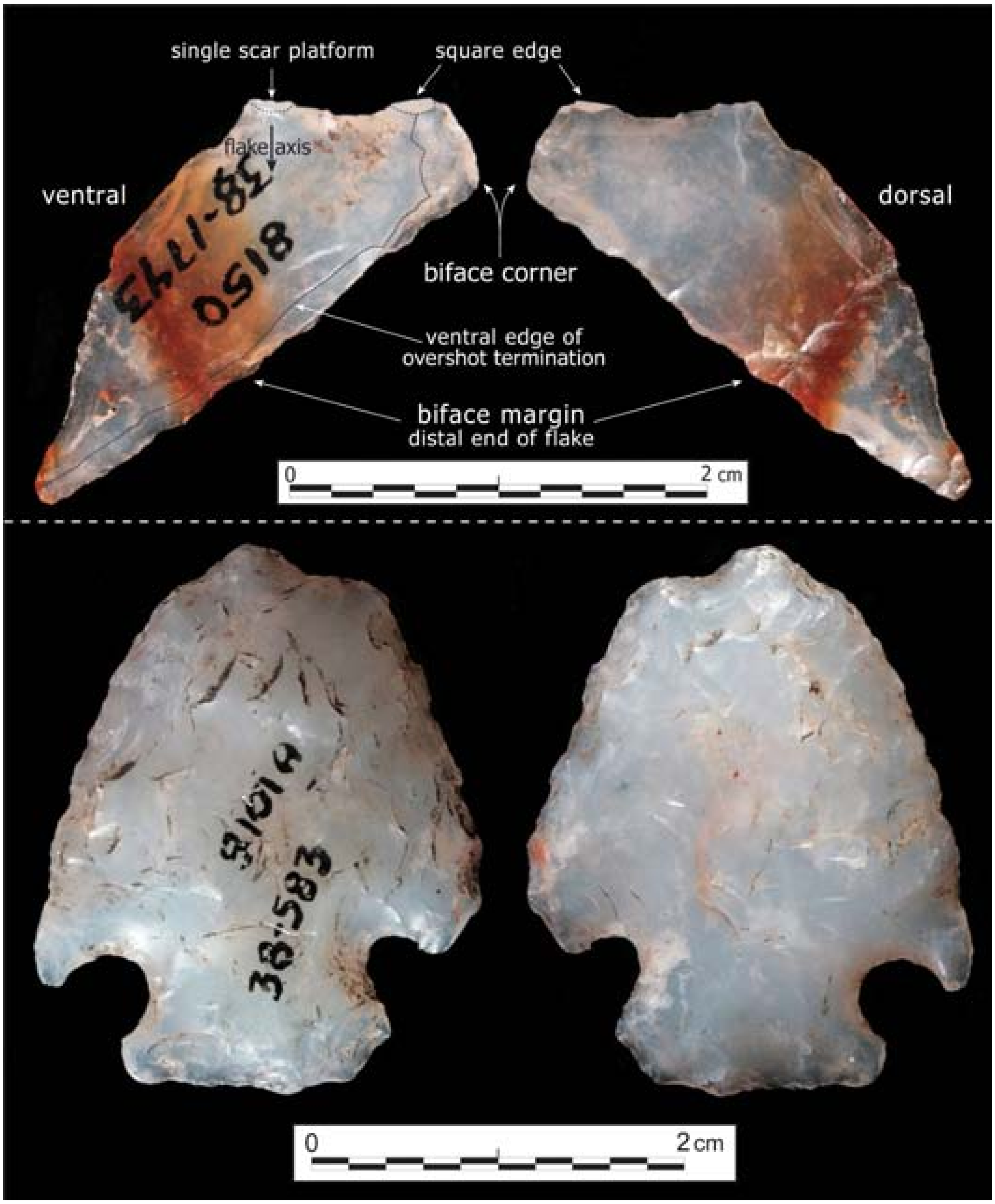


Figure 2.3 Examples of chalcedony artifacts that appear heat treated because of overall glossy appearance but that lack differential luster; **a**, whole but small overshot flake from biface (FCRS # 1810); **b**, recycled Elko Corner-notched, the tip of which appears impact broken with the tool repurposed as a drill (FCRS # 933). The overshot flake has an unusual morphology because one margin and a corner of the biface were detached with both at an odd angle to the single scar platform. A square edge next to the biface corner matches the platform scar and suggest that this flake was detached while reworking the biface fragment.

simple cores whereas just 1 of the 33 (3%) chalcedony flakes with overall high luster is from simple cores with 67% derived from biface thinning.

Most of the chalcedony artifacts were of the typical translucent white material shown in Figure 2.2, but some exhibited inclusions or color and this was differentiated in the "Material ID" column of the database. Eventually such differences might allow for specification of general source. The most common "subtypes" of chalcedony included material with diffusely scatter tiny reddish spots that imparted a somewhat overall pinkish cast to the stone, those with dark splotches or dendrites that can be designate as moss agate, and some with whitish or yellowish blobs or mottling like the flake of Figure 2.3. Some of the splotched or mottled chalcedony might actually be silicified wood where the cell structure was essentially destroyed prior to being replaced with silica.

2.4.3 Chert. Luedtke (1979, 1992) designates all forms of micro-/cryptocrystalline quartz as chert, which also applies in this study except for the differentiation of chalcedony and silicified wood. As Table 2.5 shows, chert accounts for a sizeable proportion of the flakes (17%) and flaked facial tools (23%) from the shelters as well as several of the cores/nodular tools (5%). Chert was third in abundance behind siltstone/mudstone and silicified wood for both debitage and flaked tools. Chert has great diversity, sometimes even within a single geologic formation, and the chert present at the Falls Creek shelters is no exception. Yet the vast majority seems to be fairly local in origin and derives from alluvial cobbles. Cortex is represented on 31% of the chert debitage and flaked tools (see Table 2.6) and 90% of this cortex is alluvial (incipient cone).

Two varieties of chert account for most of alluvial cortex, one that is fossiliferous and generally white to cream or buff in color, although it can also be yellowish and reddish, and the other that lacks obvious relict fossils and is simply white in color. Both are opaque even at thin edges. The fossiliferous chert is generally rather tough and can have incipient fracture planes that make the material less desirable for stone tool reduction. A number of the reduction failures or rejects of chert were of this fossiliferous material. The white chert overall has a finer texture, less fracture planes and seems better suited for tool production, nonetheless, fossiliferous chert had far greater representation. Sixty percent of the debitage and flaked tools were of fossiliferous chert compared to just 18% for white chert (Table 2.13). It is possible that the white chert partially represents a finer variety of the fossiliferous material but further study is needed in this regard of primary and secondary sources.

Table 2.13. Chert 'variety' for debitage and flaked facial tools from the Falls Creek Rockshelters.

Chert Variety	Debitage		Flaked Facial Tools		Total	
	n	%	n	%	n	%
Fossiliferous	176	57.9	67	67.0	243	60.1
White	61	20.1	12	12.0	73	18.1
Other	67	22.0	21	21.0	88	21.8
Total	304	100.0	100	100.0	404	100.0

The fossiliferous chert appears to have been regularly heat treated (Table 2.14), perhaps because without this it was difficult to produce the bifaces that appear to have been a principal reduction objective. Evidence of heat treatment occurred on 40% of the debitage and 52% of the flaked tools made of this material. Figures 2.4 and 2.5 show two typical examples for each artifact type. As with chalcedony the evidence for heat treatment consisted of differential luster and this was sometimes accompanied by a color change, especially when the chert had a yellowish cast from iron staining. Figure 2.5 shows a good example of this with a pronounced oxidation of iron on the surface, especially for the alluvial cortex. For this particular specimen the heat was either too excessive or cooling was too rapid yet a series of flake detachments occurred after heating, especially on the non-cortical face.

Table 2.14. Evidence for thermal alternation of chert artifacts from the Falls Creek Rockshelters.

Thermal Alteration	Fossiliferous		White		Other		Total	
	n	%	n	%	n	%	n	%
Absent	36	14.8	23	31.5	40	45.5	99	24.5
Burned	3	1.2	3	4.1	13	14.8	19	4.7
Possibly Heat Treated	99	40.7	23	31.5	13	14.8	135	33.4
Heat Treated	105	43.2	24	32.9	22	25.0	151	37.4
Total	243	100.0	73	100.0	88	100.0	404	100.0

Figure 2.4 shows two flakes of fossiliferous chert detached from heat-treated cores, likely bifacial ones. Their ventral surfaces are both lustrous like some of the dorsal flake scars, which is what indicates that they were detached after heat treatment of the cores. The flakes exhibit different levels of change in luster that likely correspond to differences in flakeability. Such differences may well have been there prior to heat treatment since stone quality clearly varies judging from the unheated specimens of this material type, though overall this chert is clearly on the tough side. The stage 3 biface fragment of Figure 2.5 exhibits a soot staining of

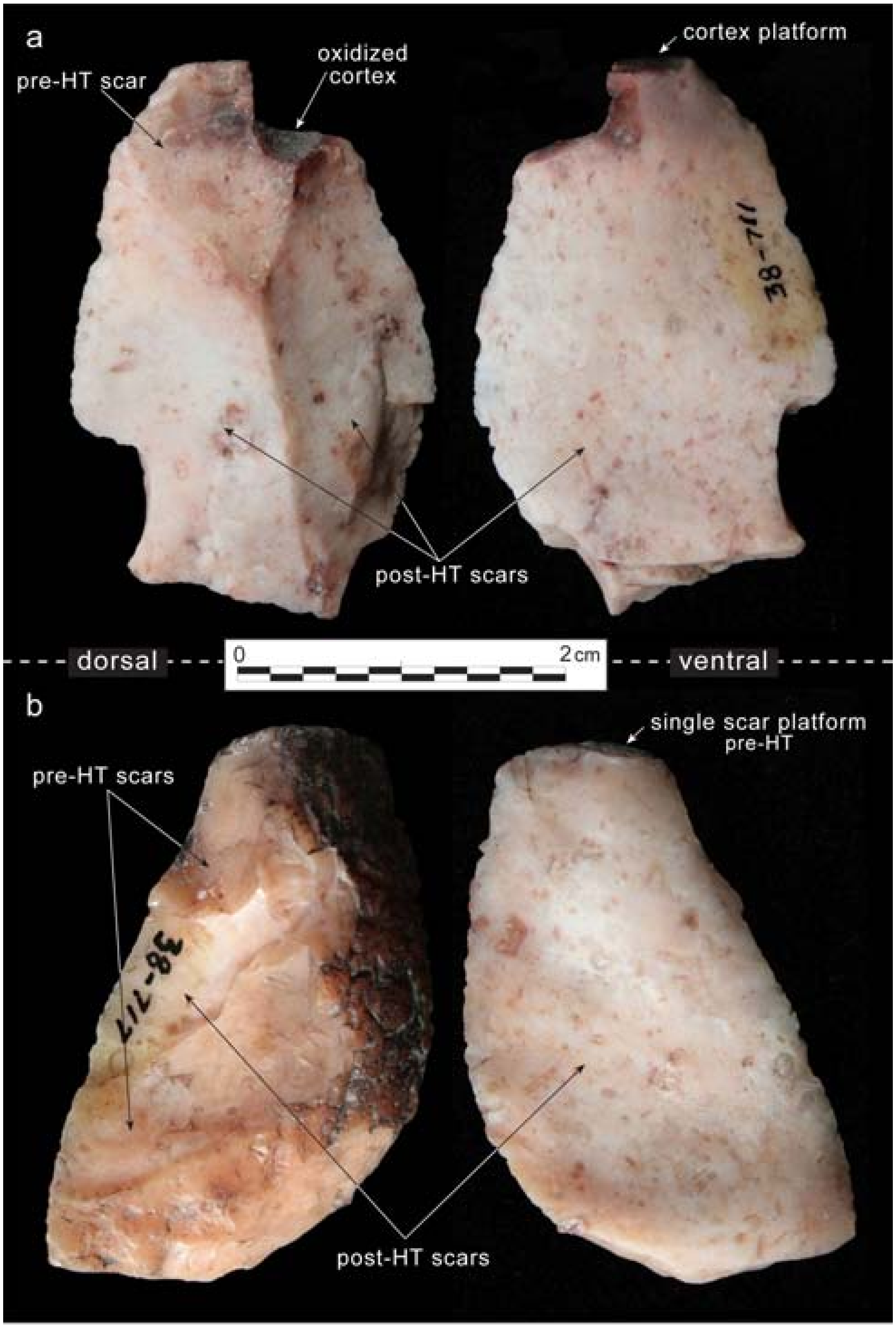


Figure 2.4 Two flakes of fossiliferous chert detached from heat-treated cores: **a**, FCRS # 989; **b**, FCRS # 995. Flakes exhibit different levels of change in luster from slight (a) to marked (b) that likely correspond to differences in ease of fracture. Heat treatment did not result in significant color change except for the cortical surface of a.

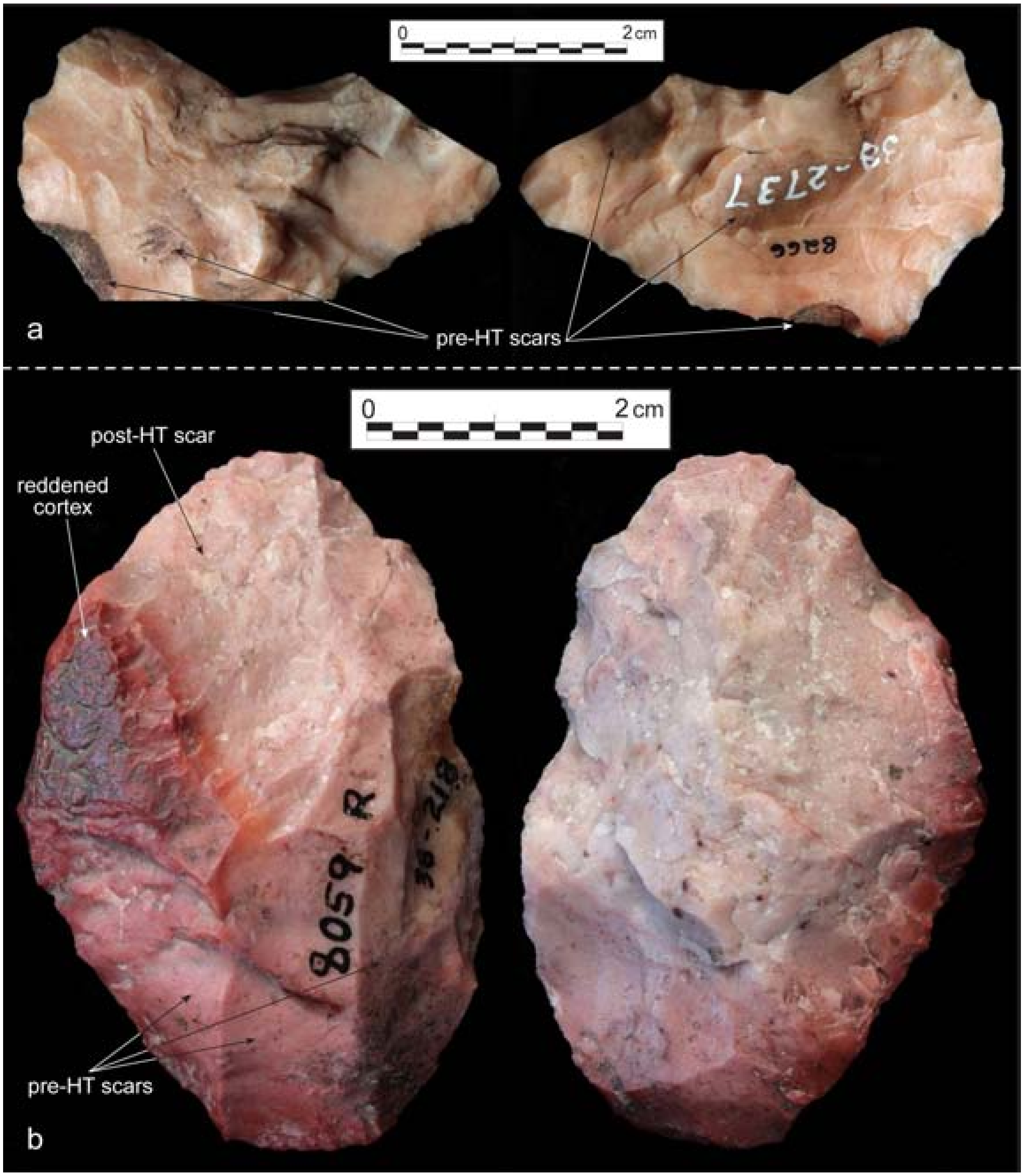


Figure 2.5 Bifaces of heat treated fossiliferous chert; **a**, Stage 3 biface fragment (FCRS # 02732); **b**, whole Stage 2 biface (FCRS # 00742). The stage 3 biface has differential luster with soot coating the pre-heat treatment flake scars. The stage 2 biface has marked reddening from oxidation of iron, especially on the cortex. The scars of flakes detached after heating are lustrous but have a somewhat hackley fracture surface from excessive heat or too rapid cooling.

pre-heat treatment flake scars, a characteristic observed somewhat commonly on heat treated examples of the both the white and fossiliferous chert as well as other materials such as silicified wood and chalcedony. This must derive from a method of heat treatment that differs from 'traditional' ones that I have used where a layer of sand/sediment separates the stone pieces from a bed of coals both below and above the items being cooked.

2.4.4 Silicified Wood. Silicified wood is a specific variety of micro-/cryptocrystalline quartz where the silica replaces the cell structure of the buried and decaying logs. Depending on the degree of cellular decay while silicification is taking place the resulting raw material can be "fibrous" and difficult to flake or of very fine quality and easily flaked. In the latter case wood cells can be difficult to see and might be visible only in tiny areas. This is most often the case for what I term chalcedonic wood (agatized wood is another common used term for such material). Sometimes small flakes detached from the highest quality wood can lack any remnant cell structure whatsoever, in which case they might get classified as chalcedony or chert depending on the degree of translucency. Even in a single piece of silicified wood the texture can vary from micro-/cryptocrystalline quartz to macrocrystalline and fracture planes are common in most woods.

Silicified wood has slightly greater representation than chert for the stone artifacts from the shelters: 17.4% of the flakes, 25.3% of the flaked facial tools, and 4.6% of cores/nodular tools (see Table 2.5). Since even single pieces of silicified wood can be quite diverse in texture and color it is no surprise that the material used by shelter occupants is also variable. Different color varieties of silicified wood were recognized during the analysis and Table 2.15 lists the most common of these. Whether these have any meaningful relationship to sources seem unlikely given what I have seen from silicified wood outcrops in the Southwest. Several different formations contain petrified wood, some is great abundance. The Triassic Chinle and Jurassic Morrison Formations are chief among these and both outcrop in the Durango area (locally the Chinle is known as the Dolores Formation, Lucas and Heckert 2005), but various Cretaceous formations local to the area also contain silicified wood and then there are secondary deposits such as the basal conglomerate of the McDermott Formation (Gerhardt 2003).

The largest proportion of the silicified wood at the shelters is designated as dark brown, a material that can be very high quality (easily flaked) but that is more commonly somewhat tough and fibrous. Sometimes this material grades into white or occurs as dark and white mottled wood, both of which are counted separately. The yellow wood, which is the second most numerous variety, seems distinct from the brown in that no gradational examples between the two were observed. This is an almost uniformly high quality material further improved by heat treatment, which resulted in a pronounced color change (reddening), at least on the surface. The yellow wood appears to include much of what Morris and Burgh designated as "jasper." Although there are some examples of red and yellow chert from the shelters, most of the yellow colored micro-/cryptocrystalline quartz present in the collection retains obvious or subtle cell structure; this is also true for a good proportion that is red. Any of the yellow wood that was heat treated displayed a marked surface oxidization of the iron. The red tended to be only a rind that got removed by post heat treatment flakes, which exposed a lustrous yellow surface underneath. Figures 2.6 and 2.7 illustrate examples of this for flakes and a tool. There are specimens of red silicified wood in raw form but much of the red wood pieces are also heat treated suggesting that this color is more commonly a byproduct of cooking the stone; Figure 2.8 shows an example.

Table 2.15. Data on silicified wood debitage and flaked facial tools from the Falls Creek Rockshelters.

	Debitage	Flaked Facial Tools	Total	%
"Variety"				
Dark Brown	113	27	139	33.3
Yellow	61	28	89	21.1
Chalcedonic	64	13	77	18.3
Gray	22	14	36	8.6
White	12	10	22	5.2
Other	38	19	57	13.5
Total	*310*	*111*	*421*	*100.0*
Cortex				
None	239	90	329	78.1
Alluvial	7	2	9	2.1
Lag	58	14	72	17.1
In Situ	6	5	11	2.6
Total	*310*	*111*	*420*	*100.0*
Thermal Alteration				
Absent	126	39	165	39.2
Burned	30	16	46	10.9
Possibly heat treated	92	23	115	27.3
Heat treated	62	33	95	22.6
Total	*310*	*111*	*421*	*100.0*

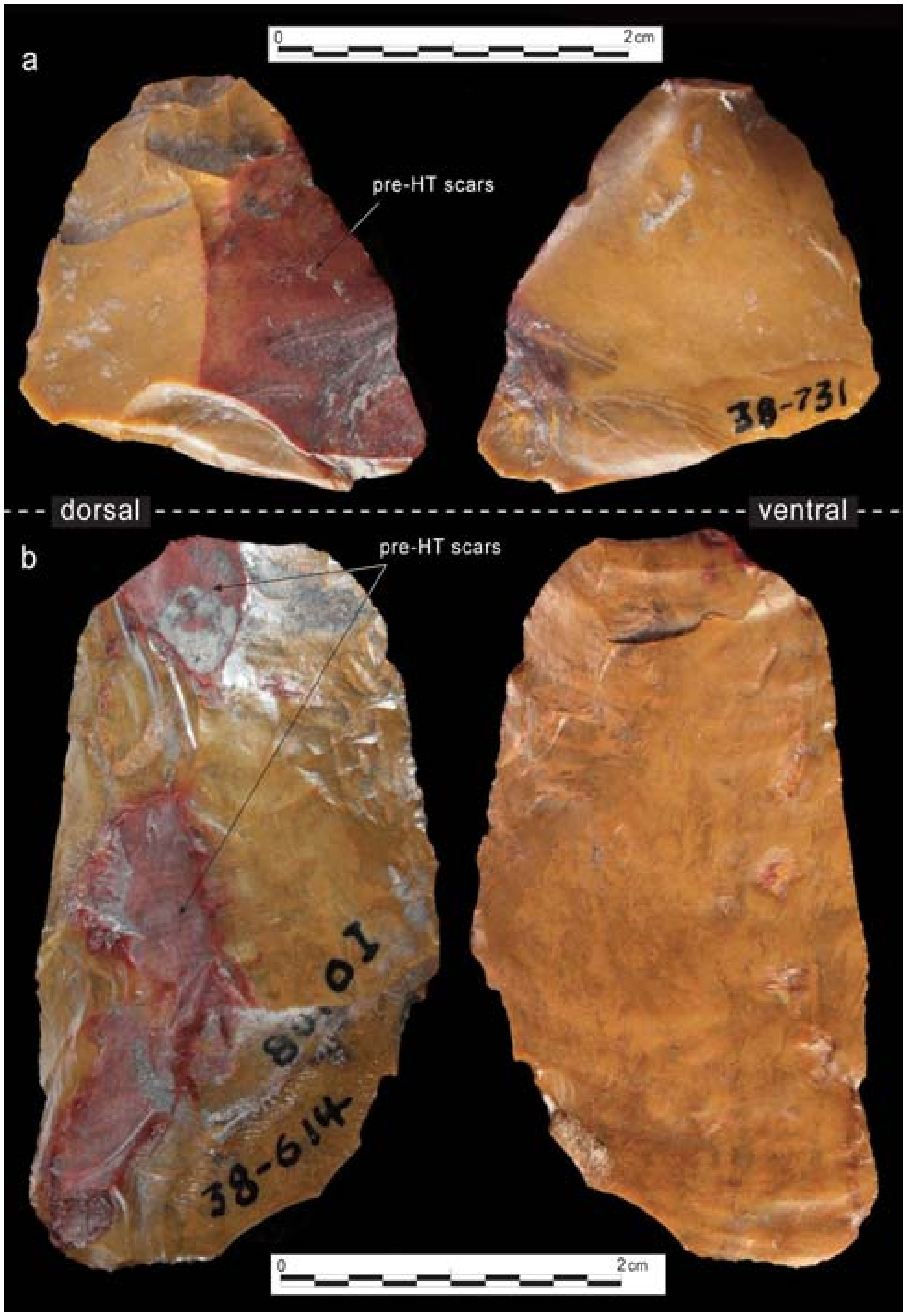


Figure 2.6 Flakes from heat treated bifaces of silicified wood: **a**, broken flake (FCRS # 1006); **b**, flake fragment (FCRS # 531). The flake scars from the original tool blanks that were heat treated are oxidized red with a matte-like appearance (pre-HT) while the scars of flakes detached after heat treatment are yellowish and lustrous. The flake fragment (b) was identified by Morris and Burgh (1954: Fig.83-4i) has a flake knife and indeed this item exhibits use-wear consistent with cutting/sawing use.

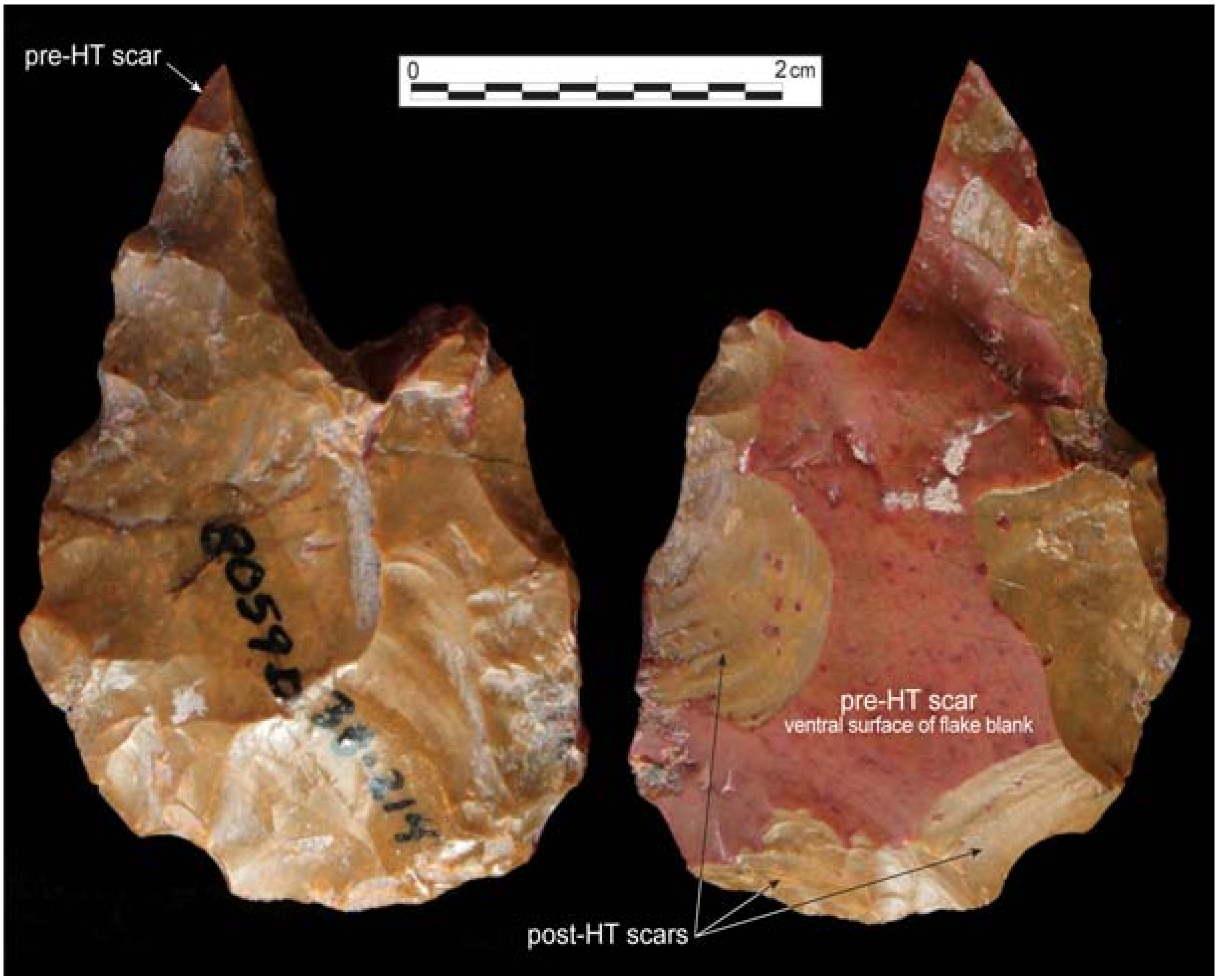


Figure 2.7 Basal portion of partially thinned biface (stage 3) of heat treated silicified wood (FCRS # 737). Made of flake that was cooked then percussion flakes; **tip** portion removed by a break that initiated at an incipiant fracture place. Biface exhibits differential luster and color between the flake scars detached prior to heat treatment (pre-HT), which are red and matte-like, and those detached after heat treatment (post-HT), which are yellow and lustrous.

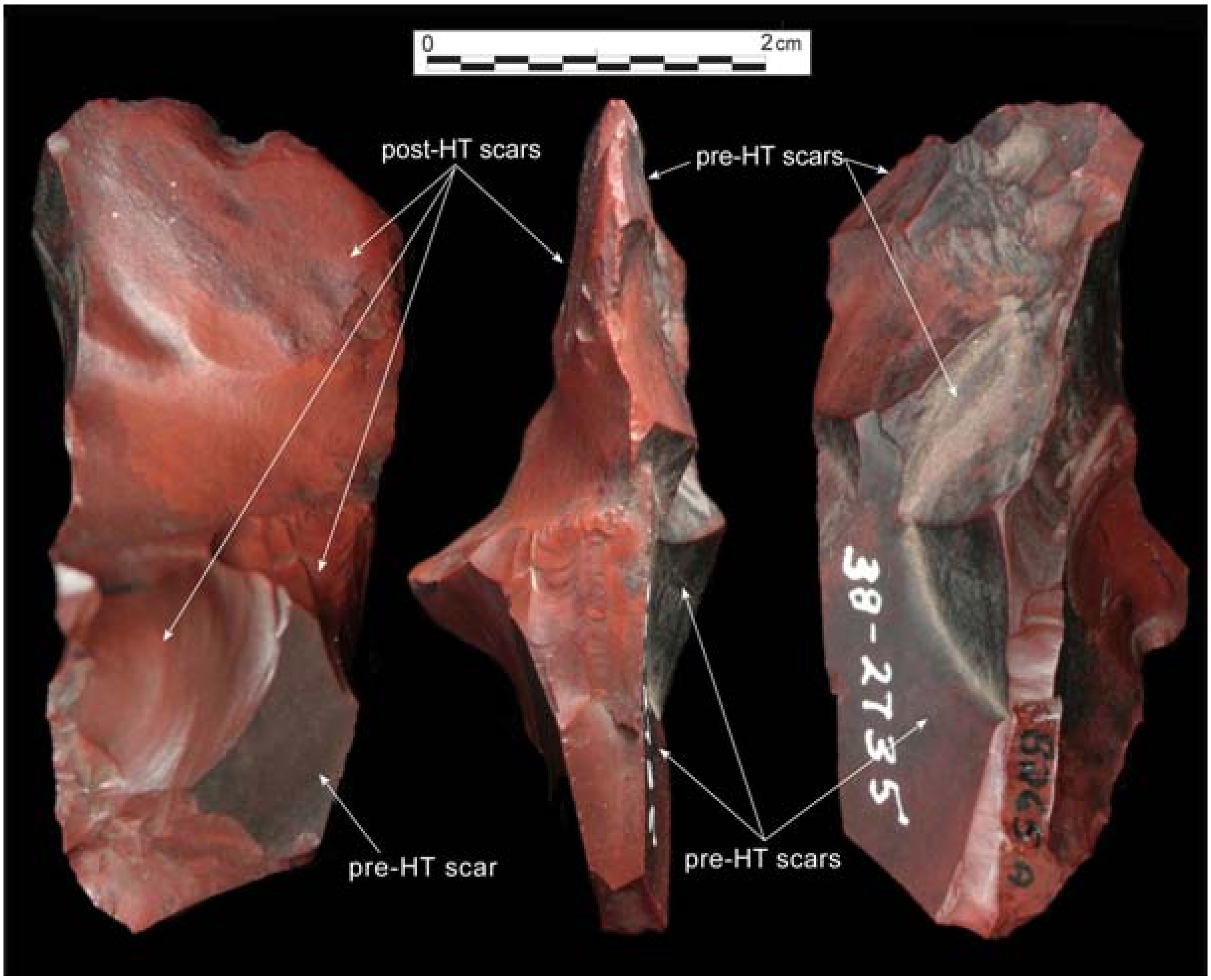


Figure 2.8 Unclassified flaked tool of heat treated red silicified wood (FCRS # 2730). Tool exhibits differential luster and soot staining between the flake scars detached prior to heat treatment (pre-HT), which are black stained and matter-like, and those detached after heat treatment (post-HT), which are lustrous and red.

The overall incidence of heat treatment for silicified wood is less than for chert, perhaps because this material is generally easier to flake than the commonly tough fossiliferous chert derived from local outwash gravels. Still, certain evidence was observed in more than 20% of the flakes and flaked tools and 27% of the same exhibited an overall high luster suggestive of heat treatment. It is also true that some of the highest quality wood, such as the yellow and chalcedonic, generally had a high incidence of heat treatment, 47.7% and 36.8% respectively. In contrast, the dark brown wood, which often had a macrocrystalline and somewhat fibrous texture, had a very low incidence of heat treatment at just 6.3%. It seems that the Basketmaker knappers knew that attempting to heat the somewhat coarse wood likely as not made little improvement and that such extra effort was best used on material that would benefit far greater.

Most artifacts of silicified wood lacked cortex but when present it tended to be of the "lag deposit" variety, which is a smoothed and often polished surface that results when materials have eroded from their primary depositional context and drop horizontally but with little vertical movement. This kind of surface is best represented on materials exposed on the ground surface for a prolonged duration. Alluvial cobble cortex was poorly represented with 2% occurrence.

2.4.5 Rhyolite. Rhyolite is an extrusive silica-rich igneous rock with a fine groundmass (aphanitic) and variable amounts of phenocrysts, with mica common. It is a frequently used raw material for flaked stone tool production in some areas of the Southwest but is poorly represented at the Falls Creek Shelters. It is perhaps even more poorly represented than Table 2.5 indicates since most of what is included here (95%) might not actually be rhyolite but a very fine variety of silicified sandstone. The latter is quite distinctive and was consistently recognized during the analysis. It consists of a chert-like gray groundmass that is sprinkled with transparent quartz grains up to a coarse size fraction (Figure 2.9). Conchoidal fracture is smooth through the matrix and the quarts grains making the stone well suited to facially thinned tools such as projectile points and hafted knives. True rhyolite is poorly represented accounting for just three artifacts. Since all were facially flaked tools and no debitage of this material was recovered it seems clear that the tools were produced elsewhere. The fine gray material included both flakes (n=43) and tools (n=17) but the ratio of these along with the low incidence of cortex and near lack of core flakes (most from biface thinning) suggests that this material was also likely brought to the shelters as finished or partially finished tools produced elsewhere. Three flakes of the fine gray material had cortex, which was of the lag variety.

Figure 2.9 Example of the distinctive material designated as fine gray rhyolite (perhaps a very fine silicified sandstone); bulb of force removal flake (FCRS # 2391).

2.4.6 Siltstone/Mudstone. This category of stone accounts for the largest proportion of debitage by far (34.8%), the second highest proportion of flaked facial tools (23.3%) and a fair proportion of the cores/nodular tools (18.5%) (see Table 2.5). Most of this material, almost 90%, consists of a distinctive black or dark gray, matte-like silicified siltstone that Morris and Burgh (1954:55) called *hornfels* referencing a petrographic analysis of the material by Anne Shepard (Table 2.16). I retain this name as a useful shorthand referent for this particular variety of siltstone. She noted relict sedimentary structures, spots of pyrite, micaceous crystals including along fine veins, and quartz grains of silt size; several USGS geologists that she consulted with concluded that it was a slightly metamorphosed siltstone. Hooten (2003:9.5) designated this material as meta-siltstone and noted that it contains "cored ooids." These features are usually only seen in hand specimen on what mainly appear to be weathered artifacts since they are not visible on flake scars of these same artifacts that resulted from recovery or post-recovery damage. Figure 2.10 shows an example of this on a stage 3 biface of hornfels with tip broken transversely by bending fracture; the weathered surface is densely covered with light gray spots except for recent flake removals from trowel retouch on the margins. Many of the artifacts of this material lack these features in hand specimen although they might be visible in thin section with a petrographic microscope. The fine veins filled with micaceous minerals that Shepard mentioned are often places where tools broke in production or use as shown in Figure 2.11.

Table 2.16. Data on siltstone/mudstone debitage, flaked facial tools, and cores/nodular tools from the Falls Creek Rockshelters.

	Debitage	Flaked Facial Tools	Cores/Nodular Tools	Total	%
"Variety"					
Hornfels	560	92	7	659	89.1
Greenish metased	57	8	11	76	10.3
Other	1	2	2	5	0.7
Total	*618*	*102*	*20*	*740*	*100.0*
Cortex					
None	555	77	2	634	85.7
Alluvial	0	3	3	6	0.8
Lag	57	19	12	88	11.9
In Situ	6	3	3	12	1.6
Total	*618*	*102*	*20*	*740*	*100.0*
Thermal Alteration					
Absent	607	97	20	724	97.8
Burned	11	5	0	16	2.2
Total	*618*	*102*	*20*	*740*	*100.0*

Hornfels was clearly flaked rather intensively by the occupants of the Falls Creek shelters and the focus seems to have been on the production of bifaces, especially projectile points and hafted knives. Since flake edges of this material seem to crush easily, it appears that hornfels flakes, though produced in great abundance, were not commonly selected for expedient use. Relatively few of the hornfels flakes exhibited obvious use-wear traces, just 4.1 % (23 of 560); this contrasts with 12.8% of the chert flakes (39 of 304) and 14.5% of the silicified wood flakes (45 of 310).

A low proportion of the hornfels debitage had cortex, just 7%, but 20.7% of flaked facial tools of this material (19 of 92) and 71.4% of hornfels cores/nodular tools (5 of 7). There was one example of alluvial cortex on a bifacial chopper made on a large hornfels core flake, but the rest of the cortex was either of the lag deposit variety or in situ. The latter appeared to be poorly represented but without having actually sampled this material from a primary or secondary source it is admittedly difficult to be certain that what I classified as lag deposit is indeed that and not in situ cortex. Nonetheless the type of cortex present suggests that the occupants of Falls Creek shelters were procuring this material directly from sources fairly close at hand, either from outcrop or likely from scree deposits. The virtual lack of alluvial cortex suggests that hornfels was not procured from alluvial terraces like much of the other lithic resources. A potential caveat would be if large alluvial cobbles of hornfels broke apart on bedding planes but it still seems likely that some additional alluvial cortex would have been recognized. If the hornfels is a flakable siltstone because of contact metamorphism it's worth noting that there is a concentration of igneous intrusions into the Cutler Formation on Monument Hill just to the NW of the Falls Creek Shelters, intrusions that could result in silicified siltstone.

From my experience with other examples of silicified siltstone, heat treatment is not an option since it will only degrade the stone; this seems true for the Durango hornstone as well. No examples of heat treatment were identified but evidence indicative of uncontrolled heating (thermal shock) was noted in 1.6% of the hornfels flakes and 5.4% of the hornfels flaked facial tools; none of the hornfels cores were fire damaged.

A greenish metasediment accounts for 10% of the siltstone artifacts. This material was quite variable in quality and initially I had included some items as possible chert, others as possible quartzite, but most as most siltstone. Eventually, after encountering enough specimens of this material including those with variable textures in single pieces, I simply lumped it all together as one diverse group designated greenish metasediment. The chief characteristic is its light greenish color that also often includes yellowish spots or mottles. In

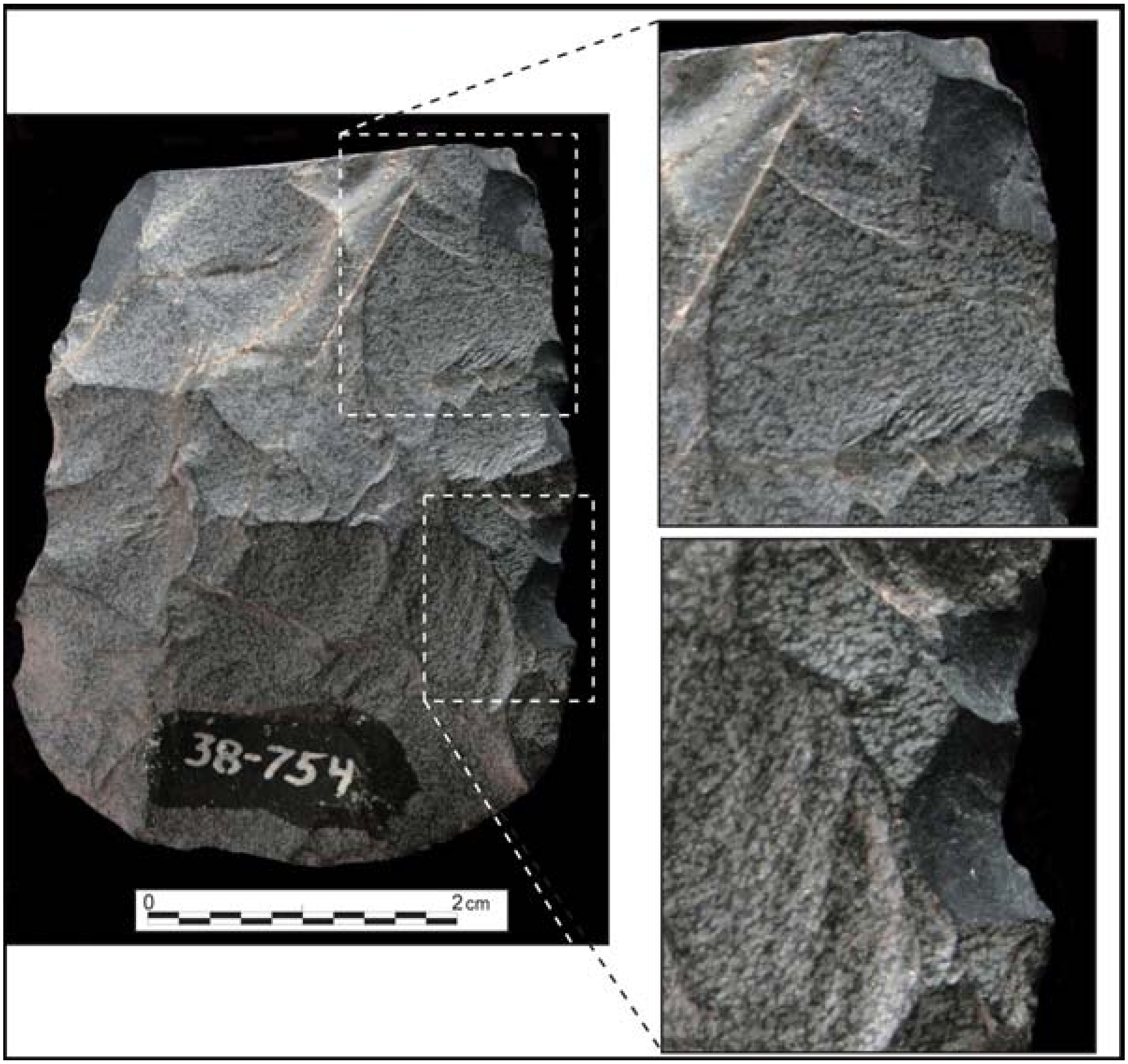


Figure 2.10 Base portion of thinned biface (stage 3) of hornfels (silicified siltstone) that exhibits ooids on the weathered surface, features that are not evident on recent flake detachments along the edge (FCRS # 1026). Biface broken in production by bending fracture fine vein filled with micaceous minerals. Material appears somewhat tougher flaking (less silicified) than usual for the hornfels used at the North Creek Shelters.

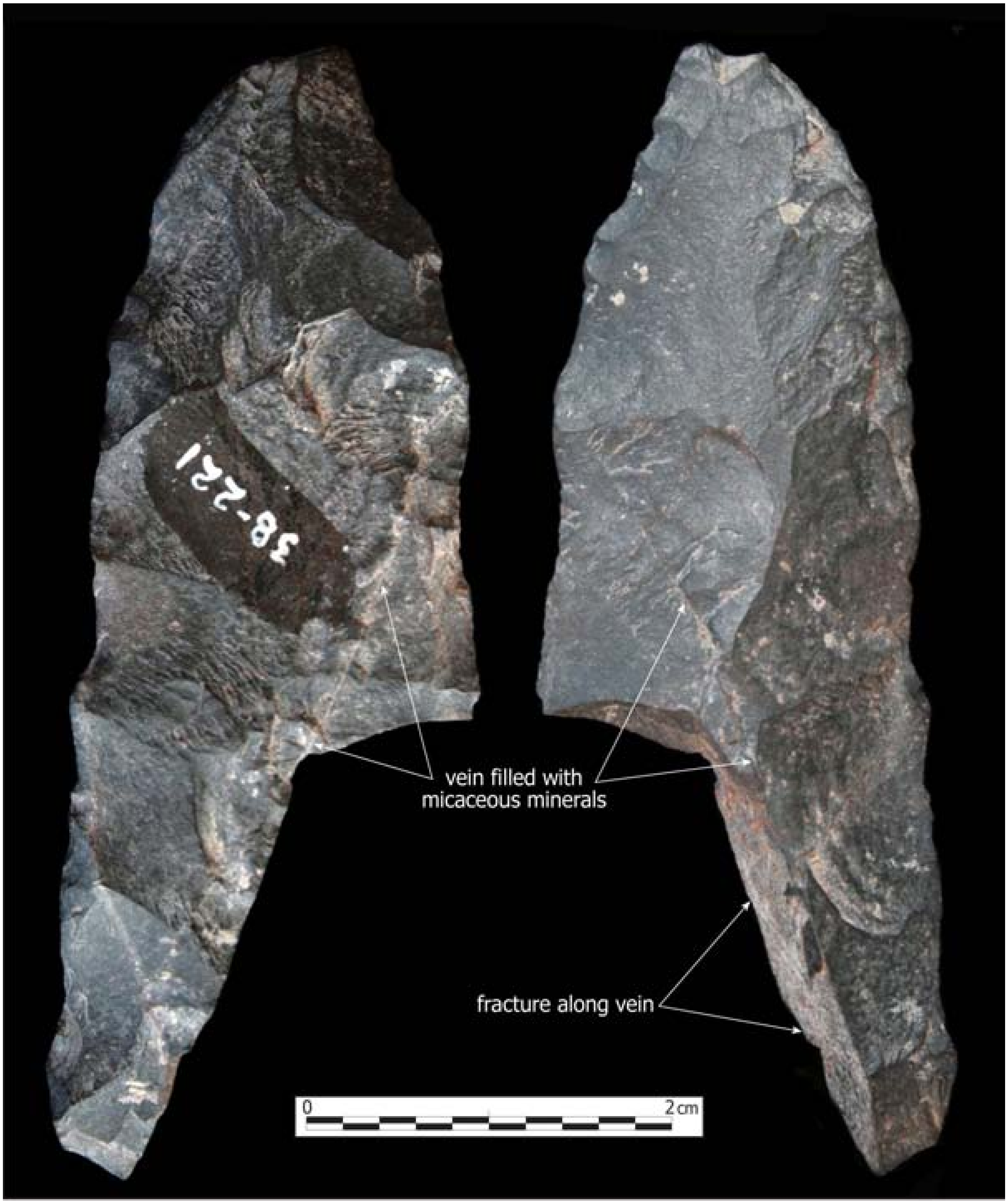


Figure 2.11 Much of a thinned and shaped biface (stage 4) of hornfels (silicified siltstone) that broke in production along fine vein filled with micaceous minerals removing a large corner of the tool (FCRS # 729). Material appears somewhat tougher flaking (less silicified) than usual for the hornfels used at the North Creek Shelters.

the chert-like material relict sedimentary structures such as bedding planes seem absent or subtle but these are usually evident in the coarser examples of the material. Some have fine detrital quartz grains. This material is **not** chert or silicified mudstone from the Brushy Basin member of the Morrison Formation, at least not that I am familiar with from SE Utah. It might be derived from this member as it outcrops in the Durango or the overlying Burro Canyon Formation, since both are known for greenish silt-/mudstones. The cortex on this material was either lag or in situ. In general this material is not easily flaked and thus poor for bifacial facially thinned tools such as projectiles and knives; it seems to have been used for larger "cruder" tools but even so it seems an inferior tool stone that was perhaps used more like a last resort.

2.4.7 Quartzite. This category includes all the obvious quartzites, both those resulting from metamorphosed sandstones and those that result from sandstones cemented together by precipitating silica. Several good sources of silica cemented sandstone are widespread throughout the Four Corners area such as from the Dakota Sandstone, a material that is also widespread on the Great Plains (Banks 1990). The Morrison Formation is another source of quartzite throughout the Four Corners but there are also more localized deposits. Silicified sandstones are generally better suited for facially thinned tools such as projectile points and knives, especially if the parent sandstone consisted of very fine to fine quartz grains. The fracture on such material tends to pass fairly easily through both the cement matrix and the welded grains resulting in rather smooth flake scars. Metaquartzites are generally not as easily flaked and have rough textured flake surfaces and edges; both aspects can be advantageous in specific instances since toughness of fracture makes the material suited to heavy duty tools such as choppers or even thin-edged tools used for tough tasks such as wedging apart bone and grains along edges act like a natural serration which can be useful for cutting/sawing certain materials.

Quartzite accounts for a fairly low proportion of the debitage from the two shelters, just 6.4%, a slightly larger proportion of the flaked facial tools (10.7%), but a substantial proportion of the cores/nodular tools (44.4%) (Table 2.17 and 2.5). Varieties of quartzite were recognized based mainly on color but also including material identified as silicified sandstone from either the Dakota or Burro Canyon Formations. This material tends to be fairly high quality and is thus commonly used to produce bifaces and forms of flaked facial tools.

2.4.8 Sandstone. The discussion of this material is largely different until the section on manos. As might be expected, sandstone was largely restricted to grinding tools with a few cores/nodular tools and flakes but no flaked facial tools. Sandstone flakes from tool production can be common is some settings (Navajo Mountain, for example) but not at the Falls Creek Shelters and judging from the manos it is evident that appropriate sized alluvial cobbles were selected for use that required only pecking modification and no flaking. The sandstone flakes that occurred at the shelter could come from incidental spalling of grinding tools or from the albs used for structures and features. The Durango area has a great diversity of sandstone from even the geologic units in the immediate vicinity of the shelters and the glacial and alluvial outwash from the San Juan Mountains increases this. Judging from the materials used for manos, there sandstones were available that ranged from very fine to conglomeritic and with rounded grains to angular. Much of the sandstone consisted of angular to subangular feldspar mixed with quartz and mica with a calcite cement but there were also sandstones consisting of nearly pure quartz grains, nearly all of which were angular, often with little cement but sometimes with a silica cement.

2.5 Debitage

2.5.1 Flake Types. Technological category or flake type is an assessment of the reduction stage or objective represented by a flake and provides a principal means for inferring reduction behavior. There are both advocates and detractors of using flake types for technological analysis (see reviews in Andrefsky 1998:118–122; Shott 1994:75–79). Although flake types are criticized as not being "empirical units of observation" (Shott 1994:77), there is little difference in practice between how flake types are recognized and, say, how a faunal analyst would identify bone fragments to part, genus, and species. It is based on a sum of observations grounded in years of experience with faunal remains and supported by a comparative collection of known specimens. As a proponent of technological classification of debitage, Root (2004) mounts a strong defense of the approach in the face of criticisms from various quarters such as Sullivan and Rozen (1985). He takes what amounts to an essentialist view that flakes have inherent technological meaning and that we need only to properly identify these types for this meaning to be revealed—flakes contain the inferences to be discovered once we have named them: bifacial thinning flake, notching flake, etc. This is an interesting philosophical debate but one not pursued here. Root explicitly defines his flake types and illustrates them, which is useful, especially since his types closely parallel the types used here. It is also worth observing that most archaeologists would readily admit that a Folsom flute or prismatic blade can be recognized but other flakes likewise have morphologies distinctive of their reduction goal, sequence or technology.

I assigned flake types based on the sum of observations about the morphology of a flake, such as platform and dorsal characteristics and the nature of flake initiation, following Cotterell and Kamminga (1987). Constructive application of flake types in lithic analysis is dependent upon modern replication experiments, which also provide flakes from known reduction strategies and objectives for a comparative collection. The accuracy of flake type analysis is enhanced by the degree to which an analyst has direct experience in stone tool production; the more one experiments with different reduction sequences and objectives the greater is one's ability to recognize the characteristic technological attributes of flakes. Of course, I do not assume that all flakes can be correctly classified and indeed 15% of the overall assemblage of 1778 flakes from the Falls Creek Shelters were considered indeterminate. Interpretation of the flake type variable is based on trends in the data. As such, a certain sample size (number of flakes) is required to make firm inferences about reduction activity at a particular site or component thereof.

The list of flake types used in this analysis is sufficiently simple to preclude much confusion, yet detailed enough to reveal technological patterns of behavioral significance. Classification of the 1778 pieces of debitage from the Falls Creek Shelters is presented in Table 2.17 according to both count and weight representation. The columns of adjusted percent exclude the flakes that could not be classified, many of which were fragments, though some were whole flakes of unusual form. Specific characteristics such as condition, cortex, platform type, and dimensions for each of five principal flake types are presented in Table 2.18. Table 2.19 lists the general raw material for these five principal flake types with proportions calculated within each general material type.

It is important to mention that the flake types listed in Tables 2.18-2.20 could have included bipolar reduction. This technology is relatively common for later Puebloan assemblages in some areas of the Four Corners but no certain examples of bipolar flakes or bipolar cores were recognized in the Falls Creek assemblage. Definitions of bipolar flakes are almost as ubiquitous as for bifacial thinning flakes (Binford and Quimby 1972; Hayden 1980; Honea 1965; Shott 1989). A principal defining characteristic is flake initiation and propagation by wedging and compression (Cotterell and Kamminga 1987). Because of this, bipolar flakes lack bulbs of force, have very flat ventral surfaces that can be markedly rippled, and are often fractured or crushed at the point of initiation. Crushing might be present on the distal end but often is absent although it is readily visible on both ends of bipolar cores. Many bipolar flakes have triangular or blocky sections resulting from cores or flakes being sheared into several pieces. This technique creates an abundance of angular shatter (see Flenniken 1981:43, Figure 24), but familiarity with the resulting debris allows a bipolar identification when those unfamiliar with the technique might consider the debris as undiagnostic.

Table 2.17. Classification of debitage from the Falls Creek Shelters according to flake type as represented by both count and weight and including mean flake weight; adjusted (Adj.) percent omits flakes of indeterminate or nondescript technology.

Flake Type	Total	%	Adj %	Weight	%	Adj %	Mean Wt.
Indeter/Nondescript	267	15.0		340.5	10.5		1.3
DFP core[1]	131	7.4	8.7	988.3	30.6	34.2	7.5
Core edge prep	185	10.4	12.2	265.8	8.2	9.2	1.4
Alternate	216	12.1	14.3	373.8	11.6	12.9	1.5
Bulb Removal	17	1.0	1.1	26.2	0.8	0.9	1.7
Biface thinning	922	51.9	61.0	1109.2	34.3	38.4	1.2
Pressure	5	0.3	0.3	0.8	tr.	tr.	0.2
Rejuvenation	7	0.4	0.5	43.4	1.3	1.5	6.2
Tool spall	28	1.6	1.9	83.7	2.6	2.9	3.0
Grand Total	1778	100.0	100.0	3231.7	100.0	100.0	1.8

. [1] includes 1 core top flake

In a general sense, flake count provides an indication of the intensity that a resource was reduced and weight measures the amount of a resource brought to the site. Although count is often used for the latter purpose, this can be misleading. Flakes are rarely brought to sites as such, but are produced there. Since materials are often selected for specific tool types and are differentially reduced, quantity might merely represent variable reduction intensities. Change in proportional representation is essentially due to differences in flake frequency and size across resources resulting from reduction intensities and different core/tool sizes. Differences in proportional representation between count and weight in Table 2.17 reflects differences in the average size of flakes of different technology with core flakes comparatively larger relative to most other flake types, something appreciated by the mean flake weights of Table 2.18. Core flakes, for example, are more than 6 times heavier on average than biface thinning flakes and as a result their proportional representation increases dramatically from less than 9% by count to more than 30% by weight.

Biface Thinning Flakes. Flakes from percussion biface reduction, often known as biface thinning flakes or flakes of bifacial retouch, account for the highest proportion of the FCS debitage by both count and weight representation. As many authors have observed, these flakes often have the following characteristics: faceted (multi-scar) platforms; bending initiations (although Hertzian initiations also occur), hence platform lips and diffuse bulbs of force; multiple and complexly patterned dorsal flake scars; expanding flake outlines with relatively narrow platforms and maximum flake widths midway or more distally; ventral flake curvature. They are also moderately thin, with maximum thickness usually away from the bulb of force, especially if the flake recovered previous step or hinge terminations.

Table 2.18. Attribute data for whole flakes of specific flakes types, Falls Creek Shelters.

Variables	Biface thinning		Alternate		Bulb Removal		DFP core		Core edge prep	
Flake Condition	n	%	n	%	n	%	n	%	n	%
Whole	329	35.7	130	60.2	12	70.6	60	46.2	109	58.9
Whole Split	8	0.9	1	0.5	0	0.0	13	10.0	22	11.9
Broken flake	258	28.0	48	22.2	2	11.8	27	20.8	38	20.5
Flake fragment	327	35.5	37	17.1	3	17.6	30	23.1	16	8.6
Total	922	100.0	216	100.0	17	100.0	130	100.0	185	100.0
Cortex	n	%	n	%	n	%	n	%	n	%
Absent	816	88.5	109	50.5	14	82.4	69	52.7	136	73.9
Present	106	11.5	107	49.5	3	17.6	62	47.3	48	26.1
Total	922	100.0	216	100.0	17	100.0	131	100.0	184	100.0
Platform	n	%	n	%	n	%	n	%	n	%
Cortex	7	1.2	15	8.3	0	0.0	19	19.0	15	8.9
Single scar	83	13.9	84	46.4	5	35.7	59	59.0	88	52.1
Double scar	69	11.6	49	27.1	4	28.6	19	19.0	55	32.5
Faceted	395	66.4	24	13.3	5	35.7	1	1.0	5	3.0
Crushed	41	6.9	9	5.0	0	0.0	2	2.0	6	3.6
Total	595	100.0	181	100.0	14	100.0	100	100.0	169	100.0
Flake Length (mm)										
Mean	25.2		21.1		23.4		31.4		17.9	
Std. Deviation	7.5		8.7		6.9		7.6		5.7	
Median	24.6		19.1		24.0		30.4		18.1	
Smallest	8.5		5.7		12.7		18.3		7.0	
Largest	56.7		47.7		35.0		56.1		33.3	
n=	326		125		12		59		109	
Flake Width (mm)										
Mean	19.0		19.4		18.1		29.6		19.3	
Std. Deviation	6.4		6.8		5.3		8.9		6.5	
Median	18.2		18.1		15.7		28.3		18.4	
Smallest	6.6		5.5		13.0		13.5		8.7	
Largest	51.1		44.6		30.4		51.5		37.0	
n=	327		126		11		59		109	
Flake Thickness (mm)										
Mean	3.1		5.1		3.6		7.5		3.8	
Std. Deviation	1.3		2.4		1.5		2.9		1.8	
Median	2.9		4.6		3.1		6.7		3.5	
Smallest	0.8		2.0		2.1		3.5		1.0	
Largest	10.3		15.3		6.8		16.4		10.6	
n=	329		130		14		59		109	
Flake Weight (g)										
Mean	1.7		2.1		1.7		8.0		1.5	
Std. Deviation	1.7		2.3		1.3		5.7		1.3	
Median	1.3		1.5		1.2		7.1		1.0	
Smallest	0.1		0.1		0.3		1.5		0.1	
Largest	19.4		13.9		4.5		32.3		6.4	
n=	329		130		14		59		109	

Table 2.19. Raw material of specific flakes types, Falls Creek Shelters.

Raw Material	Biface Thinning		Alternate		Bulb Removal		DFP core		Core Edge Prep		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Obsidian	185	74.0	46	18.4	4	1.6	5	2.0	10	4.0	250	100.0
Chalcedony	39	57.4	14	20.6	0	0.0	6	8.8	9	13.2	68	100.0
Chert	160	64.0	42	16.8	4	1.6	22	8.8	22	8.8	250	100.0
Silicified wood	153	61.7	44	17.7	4	1.6	22	8.9	25	10.1	248	100.0
Rhyolite	31	79.5	1	2.6	2	5.1	1	2.6	4	10.3	39	100.0
Silt-/Mudstone	349	64.9	67	12.5	3	0.6	42	7.8	77	14.3	538	100.0
Quartzite	12	15.4	2	2.6	0	0.0	28	35.9	36	46.2	78	100.0
Sandstone	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0	1	100.0
Limestone	0	0.0	0	0.0	0	0.0	4	80.0	1	20.0	5	100.0
Total	929	62.9	216	14.6	17	1.2	131	8.9	184	12.5	1477	100.0

Biface thinning flakes account for 61% of the identifiable debitage by count and 39% by weight. The proportional reduction by weight reflects the overall smaller size of this debris relative to core flakes, especially in maximum thickness. Average thickness for whole biface thinning flakes from the shelters is 3.1 mm, which is less than half that of core flakes with their average thickness of 7.5 mm (Table 2.18). Biface flakes come from the percussion thinning and shaping of bifacial tools and they can be detached during initial preparation of a tool or during its subsequent modification, especially by resharpening worn edges (Frison 1968:149–150). None of the bifacial reduction flakes in the FCS assemblage were identified as derived from resharpening a worn biface though this is a likely reason why some of them were detached (such an identification usually requires higher power magnification than used for this analysis along with sustained use of the tool prior to being resharpened). Biface flakes can often be differentiated according to their approximate placement in the reduction sequence from initially thinned to finished tool, such as early stage vs. late stage; such an inference was at times made in the comments but it was not formally recorded.

Depending on the size and shape of raw materials being used for biface reduction, along with the size of the tools being produced, thinning flakes might or might not have much dorsal cortex. Within the FCS assemblage 11.5% had some cortex including several flakes that were substantially cortical. This appears to be a result of producing bifaces from flake blanks derived from fairly small nodules in the case of chert and from relatively thin tabular pieces for both hornfels and silicified wood. In such cases overall flake morphology can be totally consistent with biface thinning even though cortex is present to some degree. Figure 2.12 shows an example of this for a flake of fossiliferous chert from an alluvial cobble. The platform of this flake is faceted and abraded on the edge and likely was detached from the dorsal surface of a flake blank. The overall high luster of the flake scars on this artifact suggests that the flake blank had been heat treated prior to flake detachment.

Alternate & Bulb of Force Removal Flakes. Commonly related to biface reduction are alternate flakes and bulb of force removal flakes (Figures 2.13 and 2.14). The former are detached in alternate fashion along a margin to eliminate a square or irregular edge from a nodule, flake, or broken tool for the purpose of preparing a bifacial edge suitable for detaching more invasive (thinning) flakes (Crabtree 1972:33). Alternate flakes generally have the following characteristics: simple platforms (single scars mostly but also double scars or cortex); Hertzian initiations (except for alternate pressure flaking); marked asymmetry because detachment force is delivered such that it runs a prominent ridge (cortical or angled flaked surface) at an acute angle to platform surface (the flakes are usually wider than they are long). The one example of this flake type shown in Figure 2.13 exhibits the marked asymmetry; it has a single flake scar platform and near total dorsal cortex. Although some flakes with this morphology might be detached for other purposes, they are a common part of bifacial reduction and likely most were the byproduct of this reduction strategy at the North Creek Shelters.

Bulb removal flakes are quite distinctive since they retain bulbs of force on both dorsal and ventral surfaces. These are flakes struck from the ventral side of flake blanks in such a way as to detach all or much of the bulb of force and often the platform of the parent flake. This is almost always an essential step in transforming a flake blank into a thinned tool with a symmetrical long section such as a projectile point or knife. Distal flake curvature is often an issue but the bulb of force and platform are usually the single biggest challenge to fabricating a thinned biface from a flake blank, especially with a pronounced rink crack and bulbar swelling from hard hammer percussion. A common method for dealing with this is to establish a platform on the dorsal surface along one margin of the flake blank adjacent to the original point of force application. When done successfully a flake detached from such a platform will remove the original bulbar swelling in a single blow although sometimes multiple removals are necessary. The original ring crack and cone are then on the dorsal surface of the new flake usually at a 45 degree angle or more to the new platform, bulb and flake axis.

Seventeen examples of this flake type were observed in the NCS assemblage. Other flakes were seen that retained much of the original ventral surface of a flake blank but only those that had the rink crack and bulb were classified as bulb removal. Three different examples are shown in Figures 2.13 and 2.14. The two of microcrystalline silica (silicified and wood chert) in Figure 2.14 are both from flake blanks that had been heat treated prior to

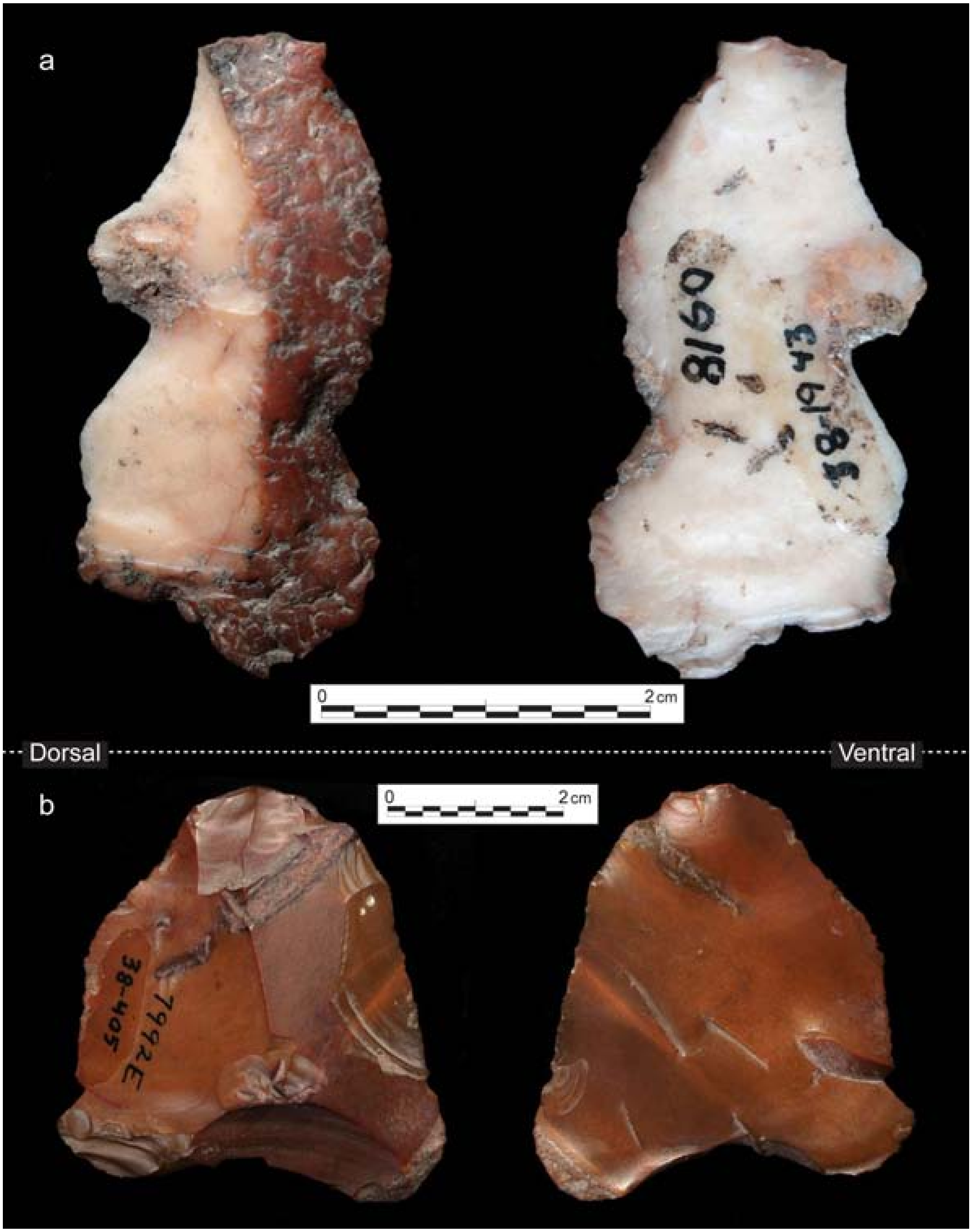


Figure 2.12 Two examples of early stage biface thinning flakes; **a**, fossiliferous chert (FCRS # 2006); **b**, silicified wood (FCRS # 430).

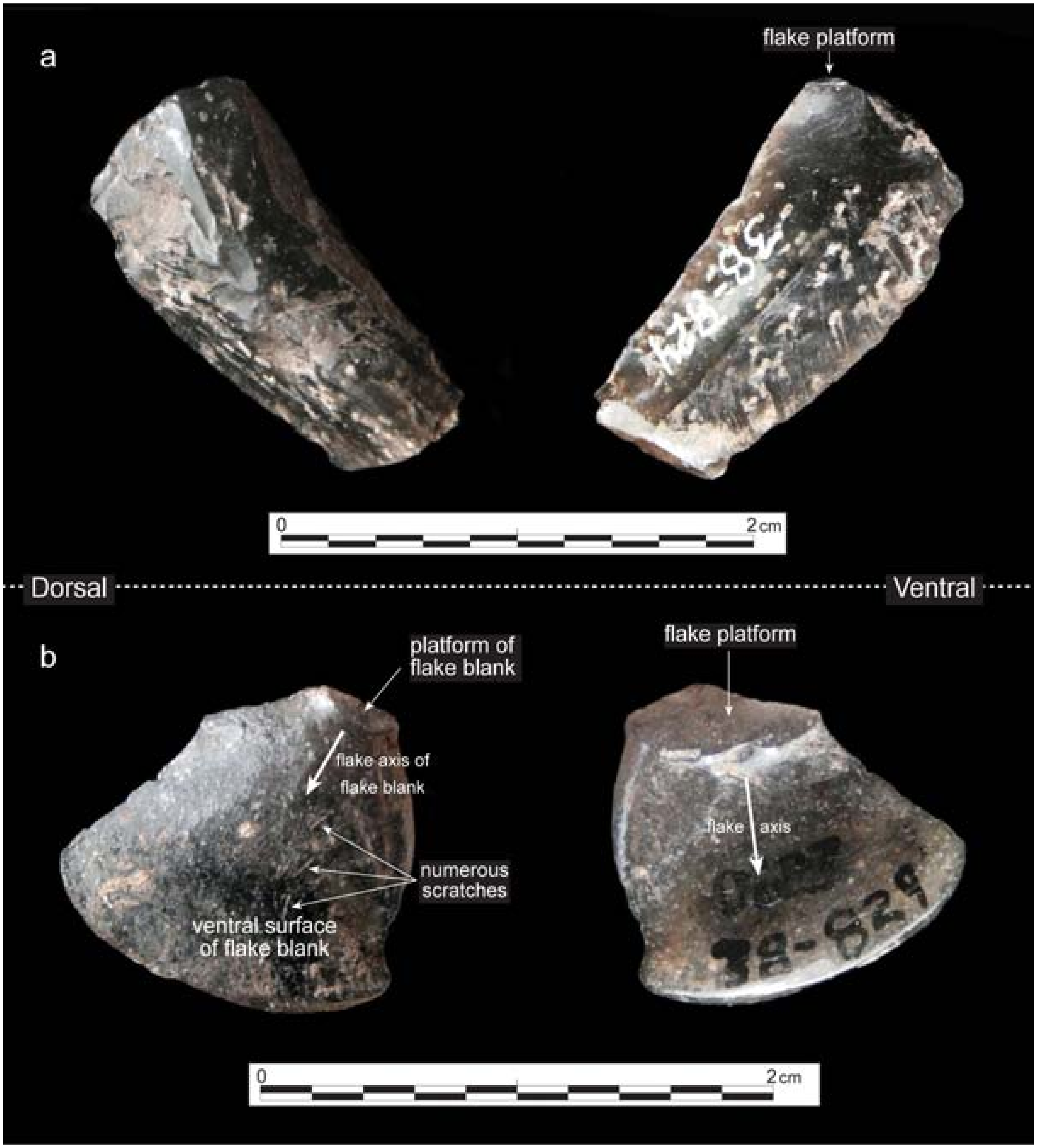


Figure 2.13 Examples of an alternate flake (a, FCRS # 1078) and bulb of force removal flake (b, FCRS # 1083) of obsidian with the latter removed from a biface thinning flake at roughly the same angle as the original detachment; 'a' is chemically sourced to the Cerro Toledo source and 'b' visually identified as El Rechuelos.

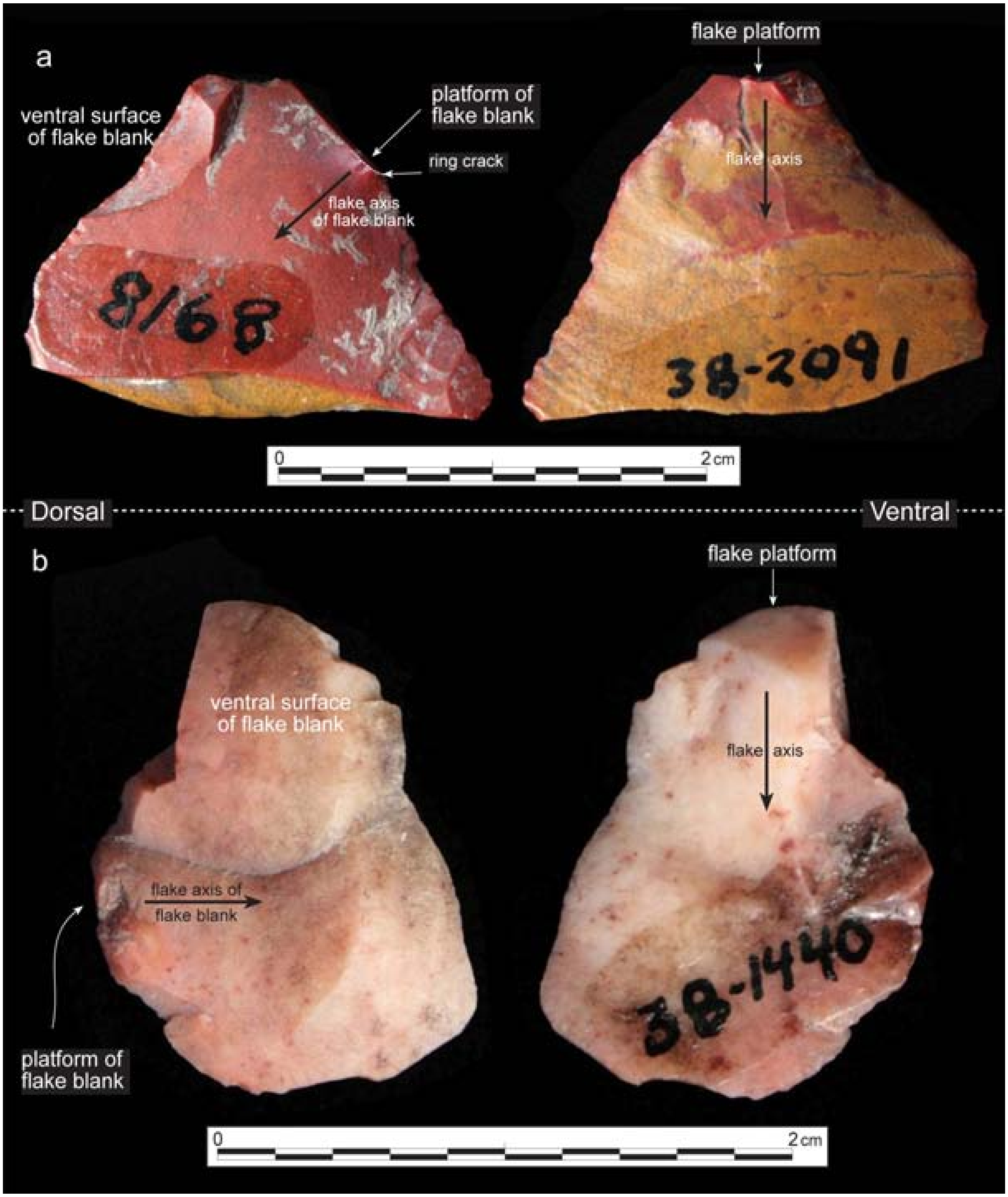


Figure 2.14 Two examples of bulb of force removal flakes: **a** silicified wood (FCRS # 2321); **b**, fossiliferous chert (FCRS # 1515); both flakes were detached from heat treated flake blanks as evidenced by differential luster and color change, which is pronounced for the wood.

detachment of the bulb removal flakes. The silicified wood example illustrates what I had mentioned previously about the pronounced color change on the surface of yellow wood, an oxidation rind that got removed by post-heat treatment flaking. Both of these examples clearly show how these flakes are struck from the side of the original flake blank such as to remove the bulb and platform. The bulb removal flake of obsidian shown in Figure 2.13 is interesting for at least two reasons. First, this flake was detached from almost the same orientation as the original detachment. This is usually difficult but since the flake blank was evidently a large biface thinning flake with diffuse bulb of force it was possible. The second aspect is that the ventral and dorsal surfaces of this flake exhibit marked differences in weathering and wear-traces. The dorsal surface is hydrated and scratched/abraded whereas the ventral is not like this but has a more “freshly” flaked appearance. This suggests that an older obsidian flake had been scavenged and flaked to produce a new tool. Other artifacts of obsidian also seemed weathered and abraded and there was one obvious Archaic style side-notched dart point of obsidian that was also weathered and abraded.

Core & Core Edge Preparation Flakes. The two other flake types that account for most of the FCS debitage assemblage are direct free-hand percussion core flakes and core edge preparation flakes. I usually refer to the former simply as core flakes since the direct free-hand percussion is essentially redundant. The characteristics of core flakes are their large, often flat, single flake scar or cortical platforms, Hertzian-cone initiations, common large bulbar swelling, simple dorsal flake scar pattern with scars often oriented in the same direction as the axis of percussion, low dorsal scar count, comparatively great thickness that occurs at the bulb of force, often straight-sided margins, and often minimal flake curvature except perhaps near the distal termination. Core reduction flakes account for 8.7% of all classifiable debitage by count but fully 34.2% percent by weight (Table 2.17), and that reflects the comparatively large size of core flakes relative to most other flake types, something appreciated by the mean flake weights of Table 2.18. Core reduction flakes appear to be derived from a few different reduction strategies or objectives. Obvious is the simple flaking of nodules to produce flakes for expedient use (used flakes) or to serve as blanks for retouched tools. The creation of large core tools was another principal objective, in particular the preparation of choppers and similar heavy duty tools such as pecking stones. Use of the latter and other kinds of pounding tools also resulted in fortuitous spalls, some of which are likely represented in the core or core edge preparation flakes but with others classified as tool spalls when obvious battering or other use-wear occurred on the dorsal (discussed below).

Core edge preparation flakes are similar but much smaller and thinner than core flakes and can be derived from other reduction objectives than those mentioned for core flakes. These are flakes commonly detached from the cores in an effort to remove overhangs and to regularize margins and also for refurbishing the edges of choppers and similar core tools. Whether edge preparation flakes can be recognized as resulting from tool resharpening depends on the identification of use-wear on the dorsal and especially the platform edge. Edge preparation flakes can also come from early stages of biface reduction when regularizing an uneven margin and removing high areas between large thinning flake detachments. Evidence of this is seen in the platform characteristics for the edge prep flakes of FCS assemblage, which includes over 30% with double flake scars and 3% with multiple scars (faceted platforms). The interpretation that a fair proportion of the edge preparation flakes come from core tools such as choppers is indicated by the raw materials represented for each flake type (Table 2.19).

The raw materials represented by different flake types reflect different reduction strategies/objectives (Table 2.19). Obsidian for example is overwhelmingly represented by biface thinning and alternate flakes. In contrast, quartzite is poorly represented by these flake types (less than 20% combined) but with high proportions of core and core edge prep flakes (just under 40% and over 45% respectively). The proportion of core edge prep flakes of quartzite is similar to the proportion of core tools of this material (44%, Table 2.5).

Obvious pressure flakes were poorly represented in the FCS assemblages, with just 5 examples so designated. Pressure flakes come from producing and resharpening flaked facial tools, particularly bifacial tools such as knives, projectile points, and drills, but also unifacial tools like scrapers. Identifying pressure flakes usually requires an intact platform. These flakes commonly have bending initiations, shallow or no bulbs of force, often high flake scar counts relative to flake size, and somewhat complex scar patterning. Many pressure flakes represent miniature biface thinning flakes, having been detached from bifaces by pressure rather than percussion. Pressure flakes from unifacial tools such as scrapers can be differentiated from those removed from bifaces.

The near absence of pressure flakes in the FCSS assemblage does not mean that pressure flaking was not conducted at the shelters because the flaked facial tools clearly indicate that it was. The scarcity is likely a consequence of archaeological recovery technique since there seems to have been relatively little sediment screening and probably nothing under 1/4" in size. Experiments by the author have shown that much pressure flaking debris passes through 1/4" mesh and this would certainly apply to the sort of pressure flakes that occur on the flaked tools of the FCR assemblage. One of the pressure flakes recovered from the shelters resembles a notching flake following Titmus (1985) and Towner and Warburton (1990). Given the number of finished dart points recovered, this specialized form of pressure flake likely would have been more common had fine mesh screens been used.

Rejuvenation Flakes and Tool Spalls. The final flake types to consider are those purposefully or accidentally detached from tools with the former designated as rejuvenation flakes and the latter as tool spalls. In both cases these flakes either retain use-wear from the original tool form or they retain an identifiable part of the original tool such as a biface edge or projectile point barb. Frison (1968) drew attention to tool resharpening flakes, identifying five different types. Frison's rejuvenation flakes are all derived from flaked facial tools such as scrapers and bifaces. Many of the rejuvenation flakes at sites on the Colorado Plateau came from heavy-duty core/nodular tools, especially pecking stones or pounders. These exhibit extensive battering and crushing of the platform/dorsal juncture and often battering on a portion of the dorsal surface as well. Use-wear traces on rejuvenation flakes might also occur along the margin that removes the edge of a tool such as a scraper or larger form like an adze (Crabtree's [1972:95] tranchet blow; also "orange peel" flakes [Shafer 1976]). Just seven rejuvenation flakes were identified in the FCS assemblage: four from some sort of pounding tool, one from a chopper and two from a scraper or scraper-plane like tool (Table 2.20).

Overlapping somewhat with rejuvenation flakes are items identified as tool spalls. These are flakes inferred to have been accidentally detached from tools during production or incidentally detached during tool use. Differentiating between these two processes can be difficult. Good examples of this are biface edges removed either by overshot or by bending "bites" (a good illustration of these occurs in Phagan 1980:Fig. 6-1). Both can occur during biface production but also perhaps during resharpening. Yet for the FCS assemblage most biface resharpening seems to have been by pressure flaking, a technique less likely to result in either overshot or a bending bite so all biface margins removed by either method were considered as tool spalls. Differentiating purposeful flakes from accidental spalls derived from pounding tools might also seem problematic. Because these tools are often used against hard objects including stone with the force usually directed straight into the tool edge or surface, use-derived fractures can expand and eventually result in detachment of spalls that retain battering use-wear traces on the platform (and dorsal) surface. These may resemble flakes purposefully detached to resharpen the blunted edge of a pecking stone, except that the latter usually has a defined bulb of force from conchoidal fracture whereas the incidental spalls lack this because of wedging initiation. It is abundantly clear from the numerous use-spalled pounding tools in the FCS assemblage that inadvertent flakes with battering should be present at the shelters and indeed this turned out to be the case, although just nine such specimens were identified.

The most common tool spall was that from bifaces with nine of these identified (Table 2.20). Included in the bifacial thinning category are overshot flakes, items that are expectable features of percussion biface reduction. There were 10 examples of biface overshot flakes in the FCS assemblage and some of these had previously been identified as flaked stone tools. Figure 2.15 shows one of these identified as a graver by Morris and Burgh (1954: Figure 83.1g), no doubt because of the acute flaked projections especially on one side. These are a natural result of an overshot termination on a biface edge and although they could make a useful tool the example shown in Figure 2.15 lacked any evidence of use. Another example from the sites, however, exhibited use-wear inferred to result from engraving (FCRS# 990). The incidence of spalls from bifaces is to be expected given the evidence that this was a principal reduction objective. The materials represented by the biface edge spalls consist of four each for chalcedony, chert, obsidian, and silicified wood but just one for hornfels. The single example of the latter is unexpected given that this material was frequently used for biface reduction and indeed seems to have been used almost solely for this purpose rather than expedient flakes or other tool forms. Perhaps the fracture properties of this material make it less prone to overshot termination.

Table 2.20. Tool types represented by rejuvenation flakes and tool spalls, Falls Creek Shelters.

Tool Type	Rejuvenation	Tool Spall	Total	%
Battering	4	9	13	37.1
Biface	0	17	17	48.6
Chopper	1	1	2	5.7
Scraper/ Scraper-plane	2	1	3	8.6
Total	7	28	35	100.0
Percent	20.0	80.0	100.0	

2.5.2 Used Flakes. All debitage was inspected for traces of use with a variable 7–30x binocular microscope. At low power, micro-scarring is the primary form of use-wear that can be systematically identified; polish and striations can also be observed if the use was sustained, with these traces more easily observed on fine-textured materials such as chert. The location of use-wear on a flake was key to differentiating between used flakes and those detached to refurbish the worn edges of tools. Used flakes exhibited wear traces that accumulated after flake detachment. It is worth mentioning that the author takes a cautious approach to the identification of use-wear, ignoring obvious random damage from trampling and more recent processes such as excavation and "bag wear" (Gero 1978), the often hard jostling that flakes receive resulting in minute detachments, especially on thin edges. Recent damage was usually quite easily seen because the flake scars were clean and "fresh" looking while the original flake scars were variably begrimed and weathered (see Figure 2.10).

Figure 2.15 Distal end of biface overshot flake of chert (FCRS # 507).

Table 2.21 presents the types of flakes from the North Creek Shelters that exhibited evidence of use. Overall just under 10% of the recovered debitage was used, which is high compared to some Basketmaker assemblages; for example, just 1.6% of the debitage from Basketmaker II sites on the Rainbow Plateau exhibited use-wear (Geib and Warburton 2007:Table 5.15; Geib 2011). One likely reason for this is the more judgmental nature of the NCS collection, which likely left much small debris in the field. Although small flakes certainly have utility such as for microdrills, when it comes to expedient handheld flake tools size matters, therefore collections that are biased toward larger flakes are more likely to also be biased toward used flakes. The mean weight of used and unused flakes from the shelters clearly supports this argument since most used flakes weigh more than their unused counterparts on average.

Table 2.21. Flakes from the Falls Creek Shelters that do and do not exhibit evidence of use at low power magnification.

Flake Type	Used				Unused			
	n	%	Row %	Mean Wt.	n	%	Row %	Mean Wt.
Indeter/Nondescript	13	7.4	4.9	3.0	254	15.9	95.1	1.2
DFP core[1]	39	22.2	29.8	7.8	92	5.7	70.2	7.5
Core edge prep	5	2.8	2.7	3.2	180	11.2	97.3	1.4
Alternate	16	9.1	7.4	4.4	200	12.5	92.6	1.5
Bulb Removal	1	0.6	5.9	4.5	16	1.0	94.1	1.4
Biface thinning	96	54.5	10.4	2.4	826	51.6	89.6	1.1
Pressure	0	0.0	0.0	0	5	0.3	100.0	0.2
Rejuvenation	1	0.6	14.3	2.1	6	0.4	85.7	6.9
Tool spall	5	2.8	17.9	2.5	23	1.4	82.1	3.1
Total	176	100.0	9.9	3.9	1548	100.0	90.1	1.6

Preferential selection of certain flake types for use is clearly indicated. Core flakes comprise more than 20% of the used flakes yet just 7% of the assemblage overall and almost 30% of the core flakes exhibit evidence of use. In contrast, the numerically abundant biface thinning flakes were used in essentially the same proportion as they were represented in the assemblage overall, comprising about 55% of the used flakes and 52% of all flakes, with just 10 percent of the biface flakes exhibiting evidence of use. Core flakes on average tend to both larger and thicker than biface thinning flakes and thus more employable generally because of being easier to hold and having edges suitable for a variety of expedient tasks. Biface reduction results in a considerable number of flakes but many are quite small (late-stage thinning and shaping), thus poorly suited for use. It is clear from mean weight that the thinning flakes selected for use were more than twice as heavy as those that were not used.

The edges on biface flakes are naturally quite sharp, making them well suited for cutting tasks, but they can also be exceedingly thin and fragile and therefore less suitable than it might appear. Also, late stage thinning flakes often have irregular margins because of the complex flakes scar geometry on the dorsal surface, which also limits utility. Core flakes, like some early stage thinning flakes with their simple flake scar patterns, result in more uniform margins (e.g., Figure 2.12b). Another factor is that a sizable proportion of the biface thinning flakes were of the hornfels (38%) a material that seems poorly suited for expedient use since the edges appear to readily crumble. Just over 4% of the hornfels flakes exhibited evidence of use (4.1%) whereas for chert this was almost 12.8%, for silicified wood it was 14.5%, and for obsidian it was 16.5%. Flakes that are generally quite small such as core edge preparation flakes and alternate flakes have a relatively low incidence of use although those that were used are substantially larger than the unused specimens.

Table 2.22 presents the inferred activity (or use action) of the first two employable units of used flakes. Any flake with just a single use was coded on EU1 and if a second non-contiguous margin also exhibited evidence of use then it was coded on EU2. Therefore, the total count of used flakes at the shelters (n=176 or 9.9%) is only based on EU1 since any flake with an inferred use on EU2 was already factored in. There is far greater evidence for the expedient use of flakes for cutting/sawing than for scraping (just over 60% compared to under 30% respectively), which seems noteworthy since scraping use on almost all but the softest of materials readily results in microflaking of the edge and hence identification at low power. For example, a similar type of analysis identified far more scraping wear at Basketmaker II sites of NE Arizona and SE Utah (53% scraping and 42% cutting/sawing; Geib and Warburton 2007:Table 5.15; Geib 2011).

Inferred general material type reflects the diversity that might be expected for residential sites where all sorts of tool use likely took place. This is a very general sort of classification of worked material in that wood might range from medium to hard depending on whether it is green or dry and also the same for bone. Soft means pliable materials but this too can cover quite a range. Suffice it say that the evidence documented provides just a hint of the diversity of activities that flakes were used for, a good place to start should a more in depth analysis be called for. If this occurs then time will have to be spent on artifact cleaning including the removal of labels since the lacquer coating almost invariably obscured the edges of greatest interest to use-wear analysts.

Table 2.22. Inferred function and general worked material class for the first two "employable units" of used flakes from the Falls Creek Shelters (use-wear identification based on low-power magnification).

	1st EU	2ed EU	total	%
Inferred Function				
Cutting/sawing	115	29	144	61.3
Scraping	43	20	63	26.8
Engraving	6	2	8	3.4
Whittling	3	3	6	2.6
Planing	2	2	4	1.7
Wedging	2	0	2	0.9
Other/unknown	5	3	8	3.4
Total	*176*	*59*	*235*	*100.0*
Inferred Material				
Soft	33	9	42	17.9
Medium	131	44	175	74.5
Hard	6	1	7	3.0
Other/Unknown	6	5	11	4.7
Total	*176*	*59*	*235*	*100.0*

2.6 Flaked Facial Tools

As discussed under methods, the formal tools of the Falls Creek stone artifact assemblage were separated into four general classes, each of which was analyzed using a separate format. Flaked facial tools have flattened cross-sections and just two principal opposing faces (faciality) and were shaped in plan or thinned in section by intentional flaking. This includes all items such as unifaces and bifaces. Production input on these tools might be quite minimal, as for a unidirectionally edged flake, or substantial, as with a projectile point that was bifacially thinned by percussion flaking and then shaped by pressure flaking.

The 438 items from the North Creek Shelters that I analyzed as flaked facial tools are listed by condition and use-phase assessment in Table 2.23. Fragments of various kind are represented in the collection but a sizable proportion of the tools are whole (36.3%) and almost another 10% are nearly complete with just a small portion missing, usually part of the tip. The large number of whole or near whole tools including those that are fully functional and far from being exhausted, likely stems from the recovery contexts for much of the overall assemblage, which consisted of structure floors and feature fill. Consequently, there are likely tools that were inadvertently lost or cached for future use rather than just discarded trash with little or no utility. Many of the tool fragments are portions from unfinished tools, basically production waste but others are fragments from finished tools such as projectile point bases snapped across the notches or slightly above or projectile point tips. End fragments that could not be specified as either base or tip portions are listed as terminal; in some cases these are tools that simply lack any specified orientation but in most cases they are bifaces that are either small fragments or not sufficiently finished to have a recognizable base or tip.

Table 2.23. Cross tabulation of condition and use-phase assessment of flaked facial tools from the Falls Creek Shelters.

Condition	Indeter.	Unfinished & Unused	Unfinished but Used	Finished & Used but Whole & Unexhausted	Finished & Used but Broken or Exhausted	Recycled Whole & Unexhausted	Recycled Broken or Exhausted	Total	%
Indeterminate	1	0	2	0	0	0	0	3	0.7
Margin	1	6	0	0	7	0	0	14	3.2
Corner	0	12	2	0	2	0	1	17	3.9
Medial	0	2	0	0	9	1	0	12	2.7
<1/3 terminal	0	25	4	0	1	0	0	30	6.8
>1/3 terminal	0	8	5	0	5	0	0	18	4.1
<1/3 tip	0	6	1	0	19	0	0	26	5.9
>1/3 tip	0	9	7	0	27	1	0	44	10.0
<1/3 base	0	4	0	0	18	0	0	22	5.0
>1/3 base	1	15	12	0	19	0	3	50	11.4
Nearly complete	0	11	0	17	9	4	2	43	9.8
Complete	1	36	19	72	14	13	4	159	36.3
Total	4	134	52	89	130	19	10	438	100.0
%	0.9	30.6	11.9	20.3	29.7	4.3	2.3	100.0	

The assessment of use history in Table 2.23 is an inference about the state of the tool at the time of deposition in the archaeological record while factoring in evidence for prior use: was a tool finished or not and regardless of this was it used or not? For any finished tool, were they subsequently recycled into another tool form? Obviously the inference of recycling requires that evidence of the prior tool form be retained but because of the reductive nature of flaked stone tools this is often not the case. Nonetheless, over 6% of the flaked facial tools had evidence of recycling. In most cases these consisted of projectile points (n=22) with many that continued in use as point tips by rebasing above a break (often snapped across the notches) or that got turned into drills. Morris and Burgh illustrated some of the dart points recycled as drills (1954: Figure 83.1a, 83.3n,o) and also a hafted knife recycled as a point (1954: Figure 83.3q).

2.6.1 Technological Type. The extent of production investment in the FCS flaked tools is documented in Table 2.24, which presents tool count according to a technological classification. This variable accounts for the faces worked (unifacial or bifacial) and whether the flaking was marginal (edging) or invasive (thinning) along with the extent of facial thinning achieved. The types can be treated as a relative ordering from the least effort to the most (Phagan 1980). Tools produced by unidirectional marginal retouch (also termed unifacially edged) have the lowest level of investment, whereas those that were bifacially thinned, shaped, and stylized (a.k.a., projectile points and hafted knives) have the highest level of investment. Since this variable is based on the observable characteristics of flake scars, their invasiveness or lack thereof, and section/plan symmetry even small tool fragments can be classified, those that might be indeterminate according to a standard morpho-functional typology. Of course, a whole tool might be classified in a different technological category than a fragment therefrom, but there is unlikely to be a shift of more than 1 or 2 categories and generally only in a downward direction for this list. Given that production investment generally increases with these technological categories, it might be expected that items lower on the list would be discarded less easily or would be more likely to be maintained and recycled. The relatively low-investment tools might be considered more expedient.

Table 2.24. Cross tabulation of technological type by cortex for the flaked facial tools from the Falls Creek Shelters.

Technological Type	None			Present			Total	
	n	%	Row %	n	%	Row %	n	%
Unifacially Edged	14	4.0	46.7	16	17.8	53.3	30	6.8
Unifacially Thinned	3	0.9	60.0	2	2.2	40.0	5	1.1
Bifacially Worked, nfs	3	0.9	100.0		0.0	0.0	3	0.7
Bifacially Edged	28	8.0	48.3	30	33.3	51.7	58	13.2
Bifacially Thinned, Initial	28	8.0	58.3	20	22.2	41.7	48	11.0
Bifacially Thinned, Advanced	29	8.3	69.0	13	14.4	31.0	42	9.6
Bifacially Thinned & Shaped	145	41.7	96.0	6	6.7	4.0	151	34.5
Bifacially Th., Sh., & Notched	98	28.2	97.0	3	3.3	3.0	101	23.1
Total	348	100.0	79.5	90	100.0	20.5	438	100.0

The Falls Creek assemblage is characterized by a large proportion of high input tools, close to 60%, those that are bifacially thinned and shaped with many that are notched for hafting (“stylized”). This pattern is also reflected by the relatively high proportion of whole and unexhausted tools as mentioned previously. The incidence of cortex patterns in an expectable way with very little representation on the highest input tools, just 3% and 4% (row percent in Table 2.24). Cortex presence exhibits a steady decline, from just over half for edged bifaces to 10 percent less for initially thinned bifaces and another 10 percent less for advanced thinned bifaces. There is a substantial reduction between bifaces with advance thinning and those that are thinned and shaped.

An assessment of the original blank form (Table 2.25) shows that close to half of the flaked facial tools were made on flakes with less than 3% made on chunks or nodules. Just under half of the tools were so extensively flaked that original blank morphology was indeterminate. This was true for more of the thinned and shaped bifaces (73.5%) than for those that were thinned, shaped and notched (55.4%). This might seem unusual since the latter have one additional production step (notching), but it reflects two different production trajectories of bifacial tools. One of these was for dart points and the other for substantially larger bifaces that became hafted knives (Figure 2.16). The former could be made from relatively small and thin pieces of material with flake blanks not only ideally suited for this but the most efficient means of meeting this need in terms of both raw material and production time. Starting with a thin flake requires less to thin and shape it and there is also less opportunity to totally remove the diagnostic traces of the original blank morphology. Larger bifaces necessitate a substantially larger piece of raw material, either a sufficiently large flake blank or, if this was not an option, then by starting with an entire nodule/chunk of material. Either way, more extensive flaking is required for both thinning and shaping resulting in finished pieces with no traces left of the original blank morphology. Obviously a broken large biface could be recycled into a smaller dart point but this does not negate the two distinct biface trajectories. As I will discuss later, the production of dart points from flakes also seems to have involved two largely different reduction strategies, one where pressure flaking was used almost exclusively if not totally and another where percussion flaking was used almost exclusively.

Table 2.25. Cross tabulation of technological type by blank morphology for the flaked facial tools from the Falls Creek Shelters.

Technological Type	Indeterminate		Chunk/Nodule		Flake		total	
	n	Row %	n	Row %	n	Row %	n	%
Unifacially Edged	1	3.3	3	10.0	26	86.7	30	100.0
Unifacially Thinned	0	0.0	0	0.0	5	100.0	5	100.0
Bifacially Worked, nsf	2	66.7	0	0.0	1	33.3	3	100.0
Bifacially Edged	3	5.2	6	10.3	49	84.5	58	100.0
Bifacially Thinned, Initial	21	43.8	2	4.2	25	52.1	48	100.0
Bifacially Thinned, Advanced	22	52.4	1	2.4	19	45.2	42	100.0
Bifacially Thinned & Shaped	111	73.5	0	0.0	40	26.5	151	100.0
Bifacially Th., Sh., & Notched	56	55.4	0	0.0	45	44.6	101	100.0
Total	216	49.3	12	2.7	210	47.9	438	100.0

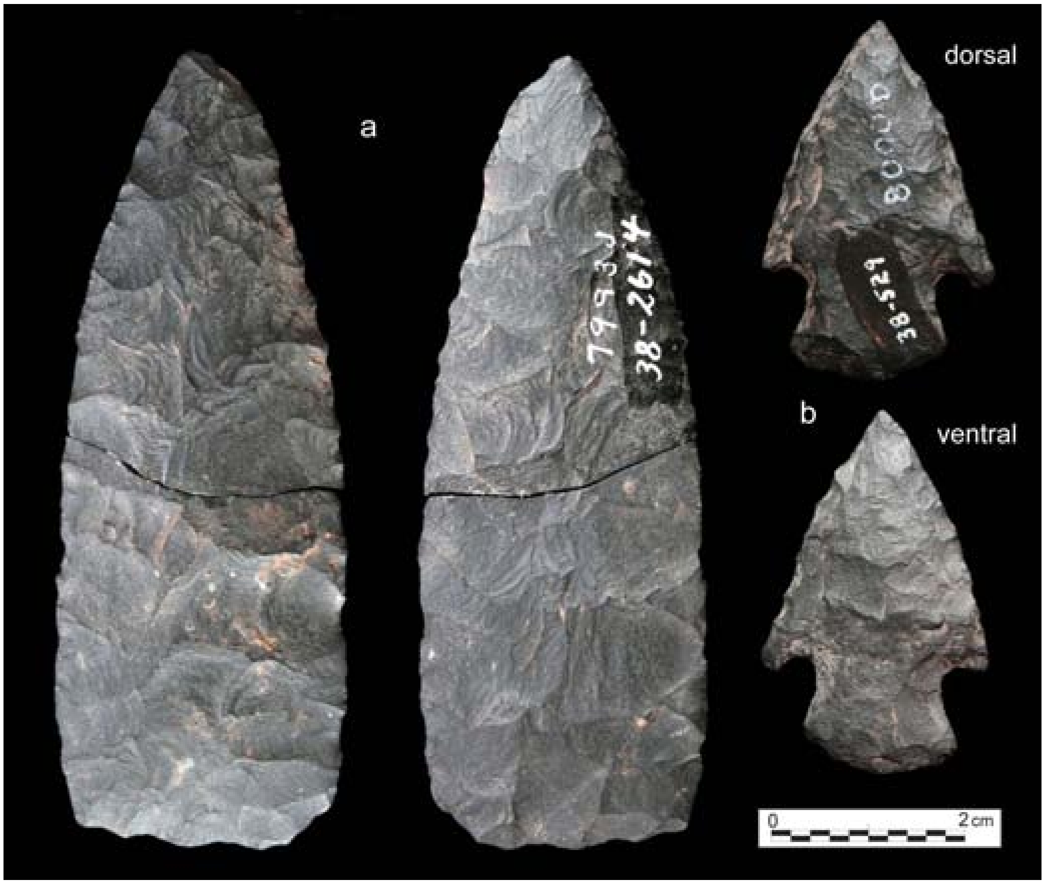


Figure 2.16 Two bifaces of hornfels that exemplify different production trajectories of bifacial tools, one for large bifaces that became hafted knives (a, FCRS # 437) and the other for substantially smaller dart points (b, FCRS # 464). The latter could be made from relatively small and thin pieces of material with flake blanks not only ideally suited for this but the most efficient means of meeting this need in both raw material and production time.

For those tools clearly made on flake blanks, core flakes were more frequently recognized when identification of flake type was possible with biface thinning flakes accounting for slightly over 10% (Table 2.26). The latter, being characteristically thin and often with longitudinal curvature, mainly occurred with minimally or marginally flaked items— unifaces and bidirectionally edged tools such as denticulate saws. Tools like this often do not require section symmetry. A few thinned and shaped bifaces including those that are notched were also made on biface thinning flakes; an example is shown in Figure 2.17. The tool in this figure also exhibits a mix of flake scars from both percussion and pressure flaking. Table 2.27 presents the predominant reduction mode for the flaked facial tools, whether percussion, pressure, or combination of both. This is an indication of the principal or only reduction technique that is evident from flake scars, with the presence/absence of pressure flaking nested within the presence/absence of percussion flaking. There are tools produced essentially by pressure flaking alone (22.6%) and also those produced by percussion flaking alone (37%), but with more retaining evidence of both techniques (40.2%). Tools with pressure flaking alone include not just marginally worked items but facially thinned projectile points where thinning and shaping appears to have been accomplished solely by pressure flaking. Some of these perhaps had percussion flakes scars removed by subsequent pressure flaking but for most this does not seem to be the case. There is a single tool listed as lacking both pressure and percussion flake scars; this is an unusual snapped flake fragment that somewhat resembles a gun flint.

Table 2.26. Cross tabulation of technological type by flake type for those flaked facial tools from the Falls Creek Shelters that were clearly made on flakes.

Technological Type	Flake-NFS		Core flake		Biface flak		Total	
	n	%	n	%	n	%	n	%
Unifacially Edged	5	19.2%	11	42.3%	10	38.5%	26	100.0%
Unifacially Thinned	2	40.0%	1	20.0%	2	40.0%	5	100.0%
Bifacially Worked-NFS	1	100.0%	0	0.0%	0	0.0%	1	100.0%
Bifacially Edged	17	34.7%	23	46.9%	9	18.4%	49	100.0%
Bifacially Thinned Initial	13	52.0%	12	48.0%	0	0.0%	25	100.0%
Bifacially Thinned Advanced	14	73.7%	4	21.1%	1	5.3%	19	100.0%
Bifacially Thinned & Shaped	36	90.0%	2	5.0%	2	5.0%	40	100.0%
Bifacially Th., Sh., & Notched	42	93.3%	1	2.2%	2	4.4%	45	100.0%
	130	61.9%	54	25.7%	26	12.4%	210	100.0%

Table 2.27. Cross tabulation of technological type by principal reduction technique for flaked facial tools from the Falls Creek Shelters; the presence/absence of pressure flaking is nested below the presence/absence of percussion flaking.

Technological Type	**Percussion Flaking**				Total
	Absent		Present		
	Pressure flaking		**Pressure flaking**		
	Absent	Present	Absent	Present	
Unifacially Edged	1	16	11	2	30
Unifacially Thinned	0	2	3	0	5
Bifacially Worked-NFS	0	1	2	0	3
Bifacially Edged	0	29	26	3	58
Bifacially Thinned Initial	0	0	44	4	48
Bifacially Thinned Advanced	0	0	33	9	42
Bifacially Thinned & Shaped	0	26	41	84	151
Bifacially Th., Sh., & Notched	0	25	2	74	101
Total	1	99	162	176	438
Percent	0.2	22.6	37.0	40.2	100.0

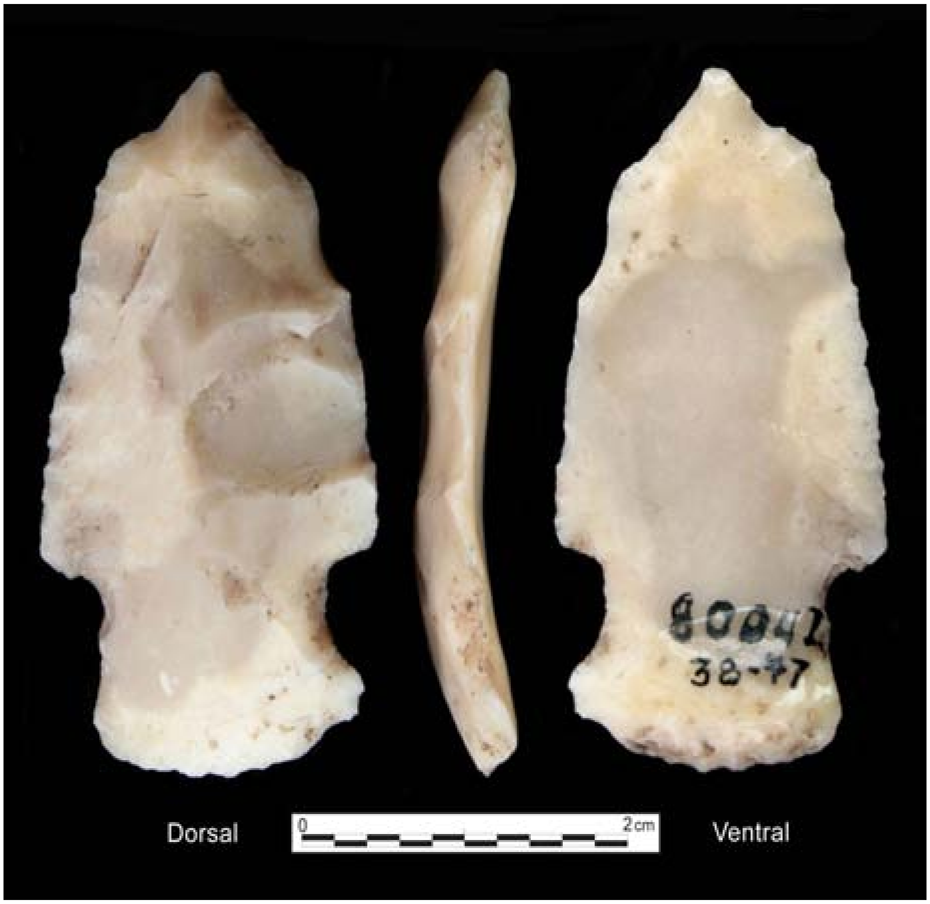


Figure 2.17 Drill that appears to be recycled dart point of fossiliferous chert with the tip flaked to form a small bit (FCRS # 495). Tool was made on biface overshot flake with the distal end as the drill/point base and the platform flaked away to make the tip. Although notched for hafting and resembling dart point in plan, the longitudinal curvature would limit effectiveness as a projectile tip.

Close to 20% of the flaked tools exhibited clear evidence of having been heat treated with almost another 16% possibly heat treated (Table 2.28). There are a high proportion of early stage bifaces with certain evidence of heat treatment because identification was based on the occurrence of differential luster among flake scars and there is far less likelihood for this on late stage bifaces such as finished dart points (thinned, shaped and notched bifaces) and point preforms (thinned and shaped bifaces). This aspect was explained earlier with Figures 2.2 and 2.7 illustrating early stage bifaces with unmistakable evidence of heat treatment, evidence that would have been eliminated by the removal of further thinning flakes. Not all rock requires heat treatment (obsidian is obvious) nor can all materials be heat treated since it can simply ruin some stone (e.g., hornfels), and for some flaked tools the increased brittleness that results from treatment can be a detriment (e.g., choppers). Nonetheless, it is clear that heat treatment was an important aspect of flaked stone tool production for the occupants of the Falls Creek Shelters.

Table 2.28. Cross tabulation of technological type by evidence of thermal alternation for flaked facial tools from the Falls Creek Shelters.

Count of ID	Absent		Burned		Possible HT		Heat treated		Total	
Row Labels	n	%	n	%	n	%	n	%	n	%
Unifacially Edged	20	66.7	2	6.7	4	13.3	4	13.3	30	100.0
Unifacially Thinned	3	60.0	0	0.0	0	0.0	2	40.0	5	100.0
Bifacially Worked-NFS	0	0.0	2	66.7	0	0.0	1	33.3	3	100.0
Bifacially Edged	45	77.6	0	0.0	4	6.9	9	15.5	58	100.0
Bifacially Thinned Initial	27	56.3	0	0.0	2	4.2	19	39.6	48	100.0
Bifacially Thinned Advanced	17	40.5	3	7.1	4	9.5	18	42.9	42	100.0
Bifacially Thinned & Shaped	83	55.0	16	10.6	37	24.5	15	9.9	151	100.0
Bifacially Th., Sh., & Notched	62	61.4	9	8.9	18	17.8	12	11.9	101	100.0
Total	257	58.7	32	7.3	69	15.8	80	18.3	438	100.0

2.6.2 Morpho-Functional Types. Table 2.29 presents an overall morphological and functional classification of tools from the Falls Creek Shelters. Most of these categories are regularly used by archaeologists and they largely overlap with those used by Morris and Burgh (1954) to characterize this assemblage and that from Talus Village. The categories are a clear mix of inferred function and descriptors of morphology or technology, but as of yet no one has devised a useful alternative for simple characterization of flaked tools. Denticulate saw is a rather specific functional label, as is drill, whereas biface has no necessary implication for tool use, except in a very general sense and, if anything, the connotation is that these items are unfinished, therefore potentially unused. Differentiating bifaces as either thick or thin can relate to different potential use capacities of the tools but also reflects the general reduction trajectory for bifaces from a generic or less specialized form to a more specialized form. In this sense, a point preform is a more specialized version of a thin biface, one that has been flaked such that it is almost ready to be hafted. This was a common practice for Basketmaker II flintknappers as Guernsey and Kidder (1921:87) first observed, designating them as ". . . dart heads completed up to the final step of flaking out the deep notches on the lower side. . ." Morris and Burgh referred to such items as blanks but they also included under this heading all unnotched bifaces, so those that were clearly far less along towards being finished. A projectile point is an even more specialized form of a biface, having been "stylized" by the addition of hafting features (generally notches in this instance). Yet, the projectile point designation does not preclude other tasks, and Basketmakers clearly seem to have used their dart points for a variety of tasks, some of which ultimately superseded the projectile function altogether (boring stone pipe bowls for example). A point so heavily modified for use in a non-projectile task or simply from such use was classified according to that role rather than as a projectile point. For example, the tool shown in Figure 2.17 was classified as drill; the base on this example is similar to many of the notched dart points from the shelters but the tip has clearly been reworked into a short drill bit that also exhibits rotational striations. This particular specimen is somewhat anomalous in that its longitudinal curvature would have rendered it a rather ineffective for projectile penetration; it was perhaps never intended to be a dart point and the blade margins exhibit use-wear indicative of cutting/sawing.

Table 2.29. Cross tabulation of general morpho-functional tool type by condition for the flaked facial tools from the Falls Creek Shelters.

Tool Type	Indeter.	Other Fragments	Terminal	Tips	Bases	Nearly Complete	Complete	Total	%
Unknown	3	3	1	0	0	0	2	9	2.1
Retouched Flake	0	0	2	0	0	1	5	8	1.8
Notch Spokeshave	0	0	0	0	0	0	1	1	0.2
Scraper	0	1	0	2	0	1	13	17	3.9
Scraper-plane	0	0	1	0	0	0	1	2	0.5
Denticulate Scraper	0	0	0	0	0	0	1	1	0.2
Denticulate Saw	0	0	4	0	0	1	9	14	3.2
Drill	0	0	0	8	8	4	16	36	8.2
Perforator	0	0	0	0	1	1	2	4	0.9
Engraver	0	0	0	0	0	0	1	1	0.2
Chopper	0	0	0	0	0	1	10	11	2.5
Biface, nfs	0	2	0	0	0	0	0	2	0.5
Biface, thick	0	6	24	3	7	3	22	65	14.8
Biface, thin	0	17	15	19	15	2	8	76	17.4
Bifacial Knife	0	5	0	9	5	3	9	31	7.1
Point Preform	0	2	1	4	8	4	27	46	10.5
Projectile Point	0	8	0	24	29	22	31	114	26.0
Total	3	43	48	70	73	43	158	438	100.0
Percent	0.7	9.8	11.0	16.0	16.7	9.8	36.1	100.0	

The tool uses implied by the categories of Table 2.29 were partially informed by observable use-wear. For example, the category bifacial knife consisted of large well-thinned bifaces that even if lacking haft elements exhibited obvious use-wear. But I also characterized such traces independently of the tool type and used them to infer activities so that correlations between tool types and functions could be explored. To continue with projectile points, some of them clearly displayed impact fractures consistent with use as tips on hunting darts but many did not and some exhibited other traces of use such as cutting. Generic bifaces also may have had a variety of functions, which may have shifted as the tool morphology changed, especially as they got thinner, and the assessment of use-wear allowed an examination of this.

Table 2.29 reveals a heavy focus on bifacial technology with relatively few unifacial tools and next to no examples of typical end and side scrapers. All together, bifaces account for almost 85% of the flaked facial tools or almost 77% if drills are excluded. As discussed in greater detail below, all drills in the FCS assemblage are minimally bifacially edged but most are extensively worked on both faces (bifacially thinned and shaped). Finished projectile points account for 26% of the assemblage and almost another 11% more by adding in point preforms. The cross tabulation of morpho-functional type by technological type shows that some of the finished projectile points and point preforms have minimal flaking including some with just unifacial flaking (Table 2.30). An example is shown in Figure 2.18, a nearly whole notched point that was made on a flake of quartzite by unidirectional pressure flaking onto the dorsal surface, including a few invasive flakes but with essentially no flaking on ventral. The morphology of this item is that of a projectile point but whether it was ever used that way seems unlikely and indeed the artifact lacks any sort of use-wear obvious at low magnification; it may well have been something made for a small child (made by a child seem unlikely given the invasive pressure flaking on the dorsal for a material that is relatively hard to pressure flake).

Table 2.30. Cross tabulation of general morpho-functional tool type by technological type for the flaked facial tools from the Falls Creek Shelters.

Tool Type	Uni. Edged	Uni. Thinned	Bi. nfs	Bi. Edged	Bi. Thin., initial	Bi. Thin., advanced	Bi. Thin. & Shap.	Bi. T. S. & Notch	Total
Unknown	4	1	1	3	0	0	0	0	9
Retouched Flake	4	0	0	4	0	0	0	0	8
Notch Spokeshave	1	0	0	0	0	0	0	0	1
Scraper	10	2	0	2	0	0	0	3	17
Scraper-plane	0	0	0	2	0	0	0	0	2
Denticulate Scraper	1	0	0	0	0	0	0	0	1
Denticulate Saw	5	0	0	9	0	0	0	0	14
Drill	0	0	0	6	1	0	17	12	36
Perforator	0	0	0	4	0	0	0	0	4
Engraver	1	0	0	0	0	0	0	0	1
Chopper	2	0	0	6	3	0	0	0	11
Biface, nfs	0	0	2	0	0	0	0	0	2
Biface, thick	0	0	0	22	43	0	0	0	65
Biface, thin	0	1	0	0	0	40	35	0	76
Bifacial Knife	0	0	0	0	0	0	25	6	31
Point Preform	0	0	0	2	1	2	41	0	46
Projectile Point	0	1	0	0	0	0	33	80	114
Total	28	5	3	60	48	42	151	101	438

Figure 2.18 Poorly made projectile point of silicified siltstone (FCRS # 2623); produced on a flake with minimal retouch on the ventral surface.

The raw material used for the various tool types presented in Table 2.5 reveals a few interesting patterns. Perhaps most notable is an evident selection preference for certain resources for drills, as well as a bias against certain materials. Silicified wood is by far the favored stone for drills, comprising almost half of the sample (48.6%, or 17 of 35). Chert too is represented but the frequency is what would be expected by proportional representation (22.9% or 8 of 35). Poorly represented and seemingly purposefully avoided for drill production is siltstone with just a single specimen of hornfels (FCRS# 1116) that is only tentatively classified as a drill (a small bidirectionally pressure flaked tool fragment that was not readily classified as a tool type but that might be a drill base with use-snapped tip). By simple proportional representation siltstone should have accounted for 23% of the drills rather than just 3%. This seems unlikely to be simple happenstance but purposeful avoidance by the Basketmaker II occupants of the Falls Creek Shelters of a material poorly suited to their drilling tasks. In line with this argument is near absence of obsidian drills, a material that is extremely brittle. Indeed, the single obsidian drill is a recycled dart point so this represents a secondary and perhaps expedient use of a tool originally designed for a purpose for which obsidian is well suited. Given that the point was perhaps hafted in a foreshaft it would have been readily deployable for a drilling task even if not necessarily an optimal material choice. Consistent with this argument is the higher than expected incidence of drills of quartzite, a far tougher material than either siltstone or obsidian; six of the 35 drills were of quartzite (17.1%) more than would be expected by proportional representation.

Morris and Burgh (1954:57) stated that "obsidian was too brittle for effective drilling and hornstone was too unmanageable to shape into a delicate, slender shaft." They are certainly correct on the first account but not so the second. Basketmaker knappers "managed" this material quite adeptly and flaked it into well-thinned bifaces. It was not a lack of flakeability to make a slender thin bit from hornfels but rather that such a bit once made was not very useful for the task.

The tools of obsidian are largely concentrated toward the bottom of the list, in the high input end, with finished projectile points accounting for 43% of the obsidian tools and actually more than half once the point preforms and the one previously mentioned point recycled as a drill are added in. It is noteworthy that there is just a single thick biface of obsidian (FCRS# 1051), one made from a partially cortical flake of El Rechuelos glass that was bidirectionally edged but broken during production. This stands in contrast to most of the other materials that were clearly more local in origin for which thick bifaces account for 16-20% of the tools. This finding generally accords with Morris and Burgh's (1954:55) observation that obsidian was ". . . imported in the form of blanks and primary flakes, reduced at the source to minimum weight." Yet, as observed earlier, the incidence of cortex for obsidian indicates that it was probably acquired directly rather than "imported."

There are four obsidian tools identified as scrapers. One of these items (Figure 2.19) was identified as a "corner-tanged knife" by Morris and Burgh (1954:58, Fig 83.1b) who suspected that it was either an idiosyncratic production or a chance find of an earlier age artifact that had been recycled. The current analysis certainly supports the notion that the item has been recycled and perhaps even that most of the tool was the product of an earlier time since the notches seem more recent, with much of the glass appearing somewhat weathered/patinated at least when compared with the notching flake scars. If true, then the "corner-tang" is actually not original to the item but a later addition, which only further emphasizes Morris and Burgh's (1954:58) caution that the corner-tang knife should not be considered a Basketmaker II trait. If the stem is original to the piece then the tool was a hafted knife with a rounded base and not a corner tang; it only looks this way because of the perverse fracture that truncated the piece creating the odd symmetry. The tool was made on a flake of El Rechuelos obsidian that retains a small patch of cortex. The flaked margin exhibits heavy edge wear consisting of macroscopically obvious edge rounding, which has leveled the margin, with striations perpendicular to edge and extending more onto one face than the other (rounded use-wear facet is up to 1.1 mm thick). The use wear appears consistent with extensive use in scraping hides, perhaps dry hide scraping. In this regard, there were several obsidian flakes in the FCRS assemblage that exhibited heavy abrasive striations and edge rounding from apparent hide scraping.

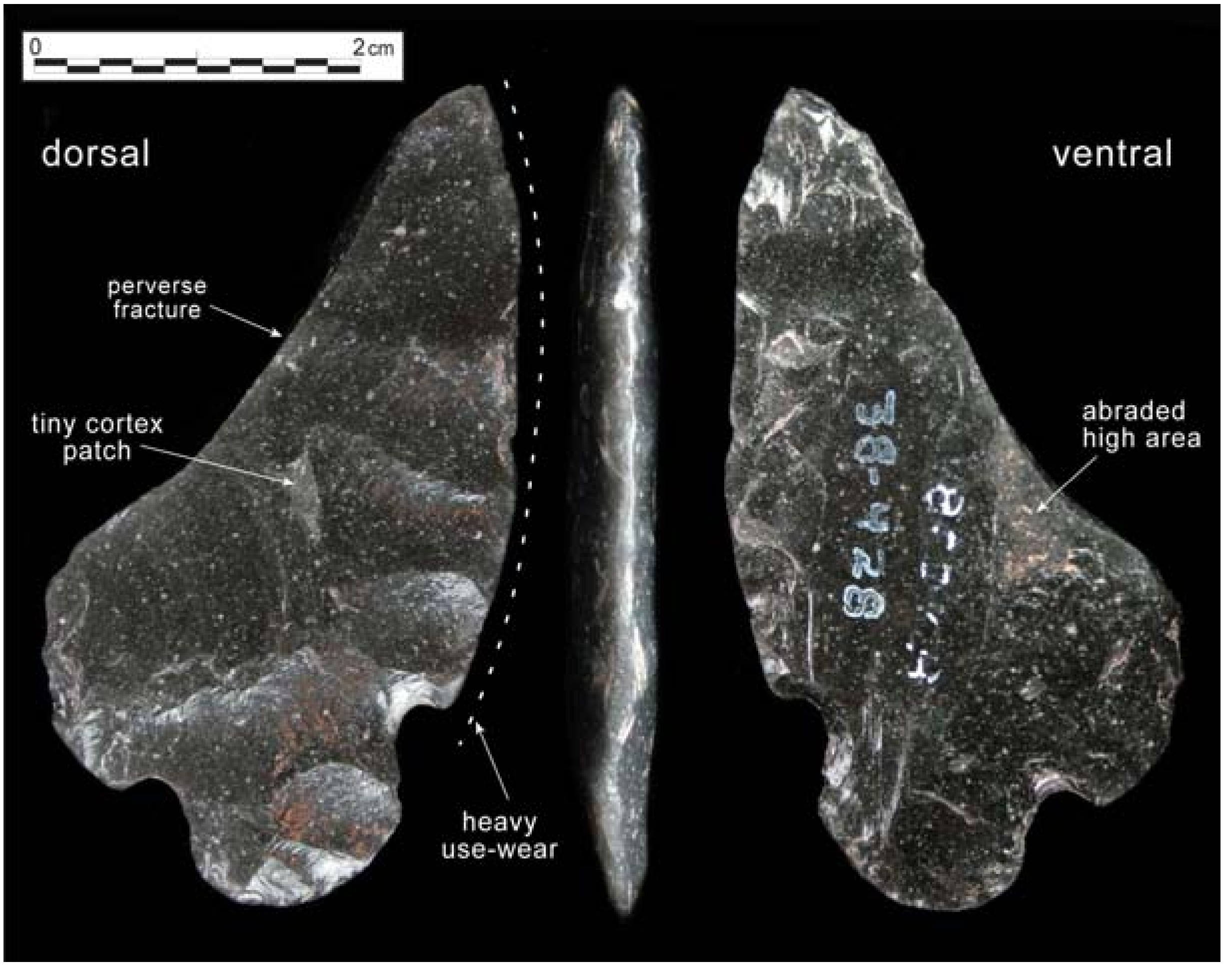


Figure 2.19 Stemmed biface of El Rechuelos obsidian (FCRS # 503) broken by perverse fracture and then recycled as a scraper.

Indeterminate Flaked Tools. Eight flaked facial tools had such odd morphology or minimal retouch that they did not readily match the criteria of other types. One of these was shown previously in Figure 2.8 when discussing heat treatment of silicified wood. This oddly shaped piece (almost a tri-face) appears to be both core and flake, with a large positive scar on one face but also negative scars on this and the opposite face. This artifact is not typical of the indeterminate tools since their only commonality is being unclassifiable. Other examples were significantly less flaked but equally unpatterned and consisted of four with unidirectional noninvasive flaking and three with bidirectional noninvasive flaking. Six of the eight tools lack any obvious use-wear but two appear to have been used for cutting. One of these resembles a snapped blade segment something like an insert for a sickle or a gun flint although this seems to be totally fortuitous and the probable result of accidental breakage of a flake.

Retouched Flakes. Classifying a tool as a retouched flake meant that flaking was present on at least one face but without an obvious tool form. Function might be clearly evident in use-wear traces but it was not inferable from gross morphology. Figure 2.20 shows three examples of these from the Falls Creek Shelters, one on a flake of silicified wood and two on flakes of El Rechuelos obsidian. There were five other examples of retouched flakes for a total of eight. One of the additional five was also of obsidian (Cerreo del Medio), two were of hornfels, one was of chalcedony and there was one additional tool of silicified wood. Both of the hornfels flakes lack any obvious traces of use and appear to simply be production debris, portions of tools that broke and were never used. The rest of the retouched flakes exhibited evidence of use for various tasks such as cutting and scraping; although for the silicified wood flake of Figure 2.20a the evidence was ambiguous (sawing is a possibility). Some of these tools such as both Figure 2.20a, b might have been retouched as denticulate saws but with sustained use wearing down the serrations so extensively that they did not clearly resemble this type.

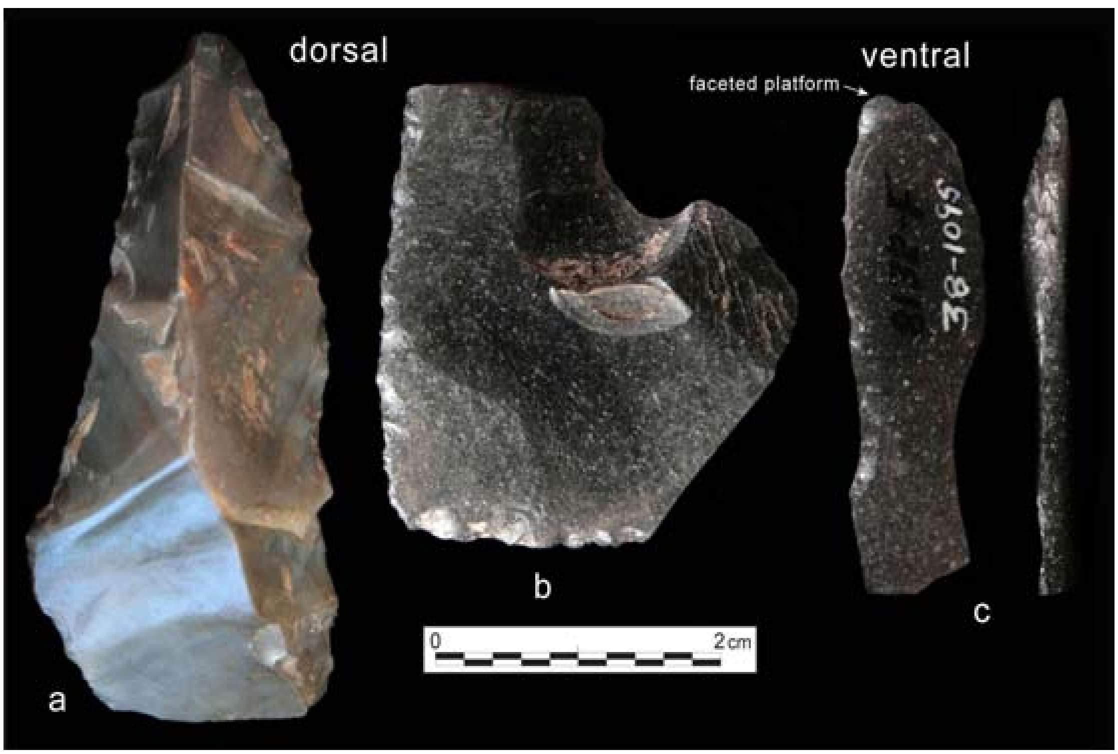


Figure 2.20 Examples of retouched flakes from the Falls Creek Shelters: **a,** narrow flake of silicified wood with triangular cross-section and distal end removed by bending fracture (FCRS # 902); **b**, early stage biface thinning flake fragment of El Rechuelos obsidian (FCRS # 4850); **c**, narrow biface thinning flake of El Rechielos obsidian (FCRS # 1115).

Spokeshave. A single tool was classified as a spokeshave and is shown in Figure 2.21. It consists of a large bending initiated flake detached from the corner of a thin hornfels slab; the material seems tougher than much of the hornfels. One margin of the detachment was percussion flaked unidirectionally to produce a notch 39 mm wide and 4.4 mm deep; these were all small flake removals. The notch exhibits scraping use-wear that consists of unidirectional microflaking along with edge abrasion and smoothing. This seems consistent with using the edge in a manner of the type name, as a spokeshave. Basketmakers clearly produced a variety of wooden artifacts for which a tool such as this would have come in quite handy, such as the atlatl that Morris and Burgh (1954:68) recovered. The spokeshave retains quite a bit of cortex on the dorsal side that appears to of the lag deposit variety; this is part of the evidence for suggesting that hornfels was collected somewhere rather close at hand from scree or similar deposits rather than as alluvial cobbles.

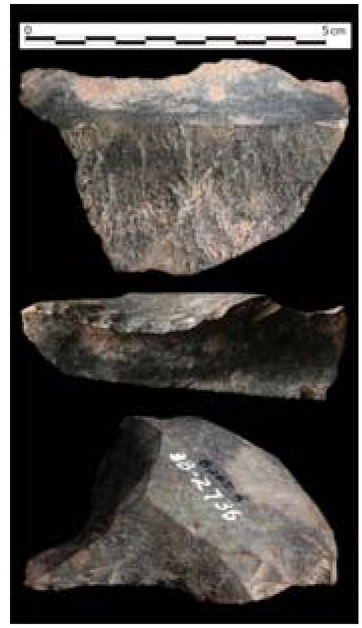


Figure 2.21 Spokeshave of hornfels from the South Shelter (FCRS # 2731).

Scrapers. Seventeen flaked facial tools were classified as scrapers. This is far more than the single specimen Morris and Burgh (1954:57) identified from the shelters. Their specimen is a fairly typical end scraper (Figure 2.22a) and is included in my count, but evidently we have different inclusion criteria with mine based on more than formal morphology but also use-wear combined with production technology. Seven of the scrapers listed here are retouched along the lateral margin (side scrapers), such as shown in (Figure 2.22d) and Morris and Burgh (1954:57) only discussed end scrapers, those with retouch on the distal end. Yet three of the scrapers in my list are end varieties, including the one that they recognized, and one is retouched on both the end and one side of the original flake blank. The two end scrapers that were not identified before seem like fairly typical specimens (Figure 2.22b, c*)* but both are absent the platform end of the flake blank and perhaps this is why they were not classified as scrapers.

Three of the scrapers are made on recycled dart points, the previously mentioned stemmed obsidian point (corner-tanged knife) and two others—one a corner-notched point similar to Elko and a clear side-notched form that seems more like western Basketmaker II although not as deeply notched as one commonly sees (Figure 2.23a). The latter (Figure 2.23b) is illustrated as a "spatulate-tipped notched blade" by Morris and Burgh (1954:Fig. 83.1l) and described as having a "spadelike blade whose function is unknown" (Morris and Burgh 1954:56). The tip of this point is blunt and rounded and was reflaked this way, thus the tool clearly appears to have been recycled; the use-wear on the tip includes striations parallel to point long axis along with unidirectional microflaking and some edge rounding. It appears that the tool was used in a "pushing" manner likely when still in the foreshaft, perhaps in hide working or some other task. The other recycled point, shown in Figure 2.23a, is the base with tip snapped transversely; the broken edge exhibits extensive unidirectional microflaking forming minute stacked step fractures along with some edge abrasion. The snapped point was evidently extensively use in a scraping fashion on semi-hard material likely while the item was hafted. The tip of this point clearly seems to have been reworked some prior to breaking and being recycled; the post also exhibits clear evidence of heat treatment.

Aside from the end and side scrapers, I classified three tools as part of this class that had more unusual morphology. One of these was just a small corner fragment of a much larger tool that might have been easily classified as a scraper if complete, but the other two were whole. Both of the latter are oddly shaped items, one a core flake of greenish metasediment and the other an early stage biface thinning flake of obsidian. The latter is a partially cortical flake of Cerreo del Medio obsidian with the platform end removed by unifacial flaking onto the ventral surface with this prepared edge then used for scraping (unidirectional microflaking along with abrasion).

Despite the identification of far more scrapers from the Falls Creek Shelters than originally reported, it still seems true that this tool form is poorly represented especially when compared with bifaces of various sort. Other analyses have also found relatively few scrapers within Basketmaker II assemblages, such as those around Navajo Mountain (Geib and Warburton 2007; Geib 2011). It is likely that simple unretouched flakes were mainly used for most tasks where scraping was required and certainly it seems that formal stone scrapers were seldom used in hide preparation as was common for certain places such as on the Great Plains and even during the Archaic on the Colorado Plateau. The large number of hide working tools made of bone that Morris and Burgh (1954:61-63) perhaps limited the need for stone tools for this task.

Denticulate Scraper. A special type of scraper, one with distinct serrations, sometimes occurs in tool assemblages of the Colorado Plateau are those. These serrations are not simply the incidental result of retouch but purposefully and carefully produced. Geib et al. 2001:236, Figure 6.35) describe and illustrate some good examples of denticulate scrapers from the Kaiparowits Plateau of south-central Utah. These tools are usually made on the distal portions of thin flakes, most often those detached from bifaces. The example from the Falls Creek Shelters (FCRS# 1001) appears to be fairly typical except that lacquer used to seal the ink label obscures most of denticulate edge so no photo was taken. This tool consists of a distal

Figure 2.22 Examples of scrapers from the Falls Creek Shelters: **a**, end scraper made on a flake of silicified wood (FCRS # 530); **b**, end scraper made on a flake fragment (or proximal end snapped) of fossiliferous chert (FCRS # 837); **c**, end scraper made on a flake fragment (or proximal end snapped) of a fossiliferous chert (FCRS # 149); **d**, scraper made on a one side of a large flake fragment of hornfels (FCRS # 4655).

Figure 2.23. Examples of dart points recycled as scrapers: a, fossiliferous chert (FCRS# 679; b, silicified wood (FCRS# 509).

fragment of a biface thinning flake of silicified wood that was unidirectionally flaked noninvasively onto the ventral surface to create small serrations. Because of the lacquer use-wear was not clearly observable. The pressure flake scars making the "teeth" removed a high gloss patina seen on rest of the flake surface, which indicates the reuse of an old flake.

Denticulate Saws. Fourteen artifacts are classified as denticulate saws and Figure 2.24 illustrates three examples. These tools mainly consist of thin flakes with serrations along at least one relatively straight margin; these “teeth” were produced by pressure flaking in a bidirectional (n=9) or sometimes unidirectional manner (n=4). Tools like this are well suited to sawing twigs, small branches and green bone when a precision bisection is needed using the “saw-and-snap” technique, which is nearly universal when using stone tool used and in evidence at Falls Creek Shelters in bone, antler, and wooden artifacts. Depending on the nature of the stone and on the material being worked, the serrations can wear down rapidly and this can make identification difficult since purposefully created edge can start to resemble an unretouched flake that merely received hard and sustained use.

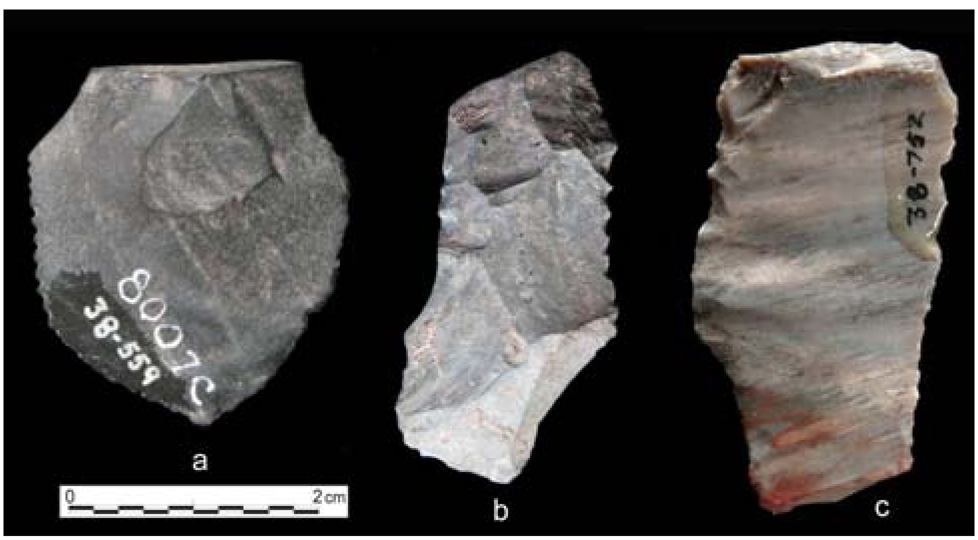


Figure 2.24 Examples of denticulate saws from the Falls Creek Shelters: **a**, core flake of hornfels (FCRS # 504); **b**, biface thinning flake fragment of fine gray rhyolite(?) (FCRS # 1483); **c**, early stage biface thinning flake fragment silicified wood (FCRS # 4004).

The illustrated saw examples include two with very sharp teeth and both happen to be of materials that are prone to crumble—hornfels and fine gray rhyolite. The hornfels example was \photographed and briefly mentioned by Morris and Burgh (1954: Fig. 83.1c) who describe it as “a flake of unknown purpose . . . having a blunt point and minutely serrated edges.” It is serrated on two edges in addition to the obvious one, but use microfracturing has nearly worn away the teeth. The intact serrations on this tool measure 0.2 mm high and the straight edge with them is 14.1 mm long with a total of 11 teeth created by 10 minute notches. These had to be made with a very sharp-tipped and delicate tool perhaps even another flake edge. Certainly none of the bone flakers described by Morris and Burgh (1954:62; Fig. 91.2) with their relatively broad tips could have producing such fine denticulations; the awls from the shelters would have worked and careful study of their tips might disclose some that were used in flintknapping. This saw is made on a small core flake but the one of rhyolite is a biface thinning flake fragment (platform was removed recently perhaps in recovery). The serrations on the slightly concave margin of this tool were produced by unidirectional pressure flaking onto dorsal; the small teeth measure 0.5 mm in maximum height and the retouched edge is 14.3 mm long with 8 teeth created by 7 notches.

The saw of silicified wood is also made on a biface thinning flake fragment with the platform missing and evidently snapped off. The principal retouched edge is the straight lateral margin partially obscured by lacquer and also damaged slightly by trowel retouch; the edge was bidirectionally pressure flaked to make serrations. Use of this tool for sawing has worn them down through microfracturing and abrasion such that counts of teeth or notches or measurements thereof are uninformative.

Drills. Morris and Burgh (1954:57) reported 36 drills from the North Creek Shelters and close to the same number from Talus Village (30 for 66 in all), making it clear that this was an important tool type to the Durango Basketmakers. My analysis obtained similar results with 35 drills from the shelters. My count is similar even though several of the drills that they identified were not in my sample. For example, one of the missing drills is the only one that Morris and Burgh (1954: 27) claimed had a sufficiently narrow bit to bore the tiny holes that occurred in the numerous stone beads and other ornaments from the sites (CU Field # 38-682, CU Catalog # 8009H) shown in Fig. 83-3h. It was for this reason that I was especially interested to study this tool to see if its use-wear was consistent with stone drilling; perhaps eventually if this item resurfaces. Other examples of their drills were also not in my sample but because I based identification of this tool type on more than having a narrow bit, which seems to have been Morris and Burgh’s criterion, our count of this tool form is almost the same. Besides gross tip morphology, I also used use-wear, especially rotational striations and edge faceting to recognized drills. As such, tools that Morris and Burgh included in other morpho-functional forms are here classified as drills. This was most common for dart points that had been recycled for drilling, some examples of which are shown in Figure 2.25. Morris and Burgh recognized some of these recycled forms as drills if they had narrow bits but not all, especially those with wide blades.

Figure 2.25 Dart points recycled as drills used on hard abrasive material, likely for making stone pipes: a, side-notched point of silicified wood (FCRS # 500); b, broadly-notched point of red chert (FCRS # 493); c, broadly-notched point of silicified wood (FCRS # 508).

Morris and Burgh identified two basic forms for the drills: “the spindle, a slender shaft tapered at both ends . . . or squared off and notched at one end. . . [and] a usually slender shaft with flaring base. . .” (1954:57). Variants of the second form included reworked dart points or hafted knives as well as those with flared bases (T-shaped). They thought that the former was hafted onto a wooden shaft but that the latter was likely held in the hands and used to drill that way rather than being hafted. While manual use without a haft probably did occur, the sort of tip snaps seen on drill bits strongly indicates haft use, a topic that I will detail below. Morris and Burgh (1954:57) state that “no chipped drills have been reported from other San Juan BM II sites” but Guernsey and Kidder (1921:95) actually do report on drills used for hollowing the bowls of stone pipes. Geib (2011:273-275) has recently detailed how common drills are for Basketmaker II sites on the Rainbow Plateau, where they occur in a variety of forms used for a diversity of drilling tasks. Some of this variability is also seen in the FCS assemblage.

Morris and Burgh’s classification of drills is one way that these tools might be organized but I emphasize different aspects, focusing more on bit morphology and use-wear rather than on what the overall morphology looks like; base form is largely insignificant. Drill bit length and diameter are critical variables since both are directly related to the sorts of holes that can be made. Bit diameter usually means just width as measured perpendicular to the flaked edges since most Basketmaker stone drills are wider than they are thick and the maximum dimension is what controls hole size. This also means that use-wear for most drills is chiefly restricted to the flaked edges, although with sustained use, and especially with narrow bits, wear can also be occur on the flaked surfaces that define bit thickness. As is clear from the numerous drills that Morris and Burgh photographed in Fig. 83, narrow, long-bitted drills were common, indeed the most numerous form. In my sample, 22 of the 35 drills (62.9%) were of this sort. Figure 2.26 shows a representative sample from the North Shelter.

The classic form of these drills has what Morris and Burgh called a flaring base, the shape of which appears largely inconsequential to function, merely representing that portion of the flake blank or biface that was left unmodified during production of the actual drill bit (a drill made on a biface or recycled dart point would obviously have a retouched base but this was incidental to drill production). These tools have long parallel or nearly parallel tips with the longest specimen (2.26a) having a bit length of 39.3 mm before flaring, with a width of 8-9 mm and thickness of 4-6 mm over most of this distance (less at tip more toward base). The overall tool measures 51.9 mm long with a maximum width and thickness at the base of 20.7 mm and 5.9 mm respectively. The other whole specimen shown in this Figure 2.26c has a bit 32.3 mm long that is 8-9 mm wide and 5-6 mm thick over most this distance whereas the nearly whole specimen (b) is more gradually tapering from a 10.5 mm max width below the flare to 4.8 mm wide at the break. Bit length for this specimen is 29.5 mm long and was probably around 32-33 mm prior to break, with a maximum thickness of 3.8 mm. The two tip fragments duplicate these dimensions with 'd' measuring 36.1 mm long and 7-9 mm wide by 4 mm thick over most of this length while 'e' measures 36.8 mm long and 9-10 mm wide by 3.5-4 mm thick over much of this length. Both of these fragments have a distinctive fracture type that appears to be the result of flexing the drill while it is deeply embedded in an unyielding material. These types of tip fractures are common for stone drills with long bits and have implications for whether or not the tools were hafted and for how the drilling was likely done.

As to hafting I find it highly improbable that such fractures could result with the drills held only in the hand. Based on personal drilling experiments, the amount of force needed to snap a bit of microcrystalline quartz is such that the worker quickly realizes he is flexing the tool in the wrong direction and breakage is averted. Once a drill is hafted that part works as a lever and the flexing force is not only increased but the hand no longer directly feels the misdirected force. This would be exacerbated if the tools were hafted like a few examples that have been recovered from dry shelters, one of which is shown in Figure 2.27a. Such a haft makes it possible to immobilize the drill itself and to rotate the object being drilled, something that makes efficient sense if that object is dowel-shaped. Basketmakers had an endless number of such items in the form of atlatl darts that required a conical hole in the distal end to accommodate the foreshaft. Guernsey and Kidder's (1921:84) description of Basketmaker atlatl dart main shafts, states that "in the distal or large end of the shaft is drilled a cone-shaped hole 5/16 of an inch in diameter [~7.9 mm] at the mouth and 1 inch to 1.5 inches in depth [~25-38 mm]" (1921:84). The drills just described and shown in Figure 2.26 are exactly

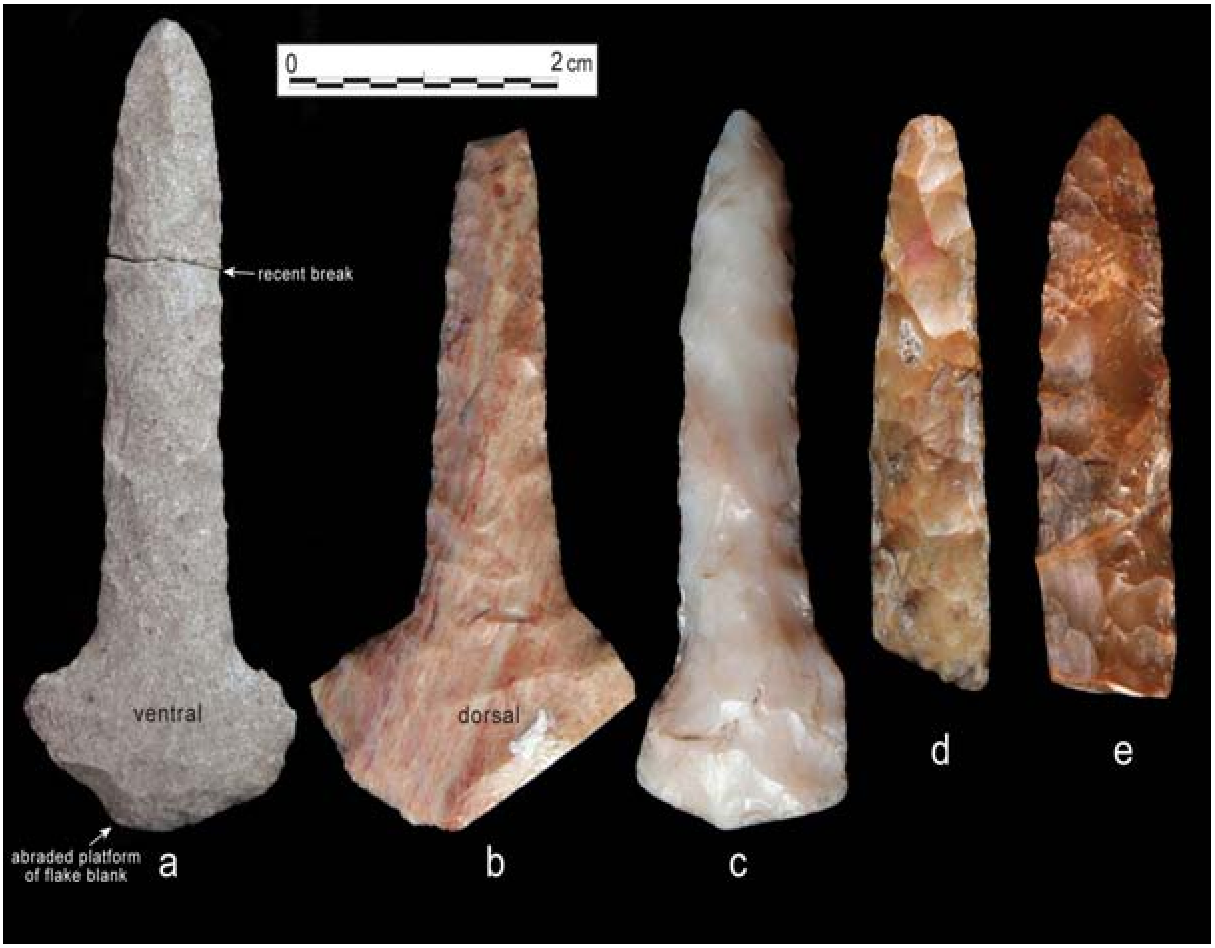


Figure 2.26 Long bit drills from North Creek Shelter: **a**, whole drill made of flake blank (biface thinning) of silicified sandstone (FCRS # 520, tip once glued); **b**, nearly whole drill made on flake blank of silicified wood with tip snapped off during use (FCRS # 523); **c**, whole drill of chert probably made on a biface fragment (FCRS # 528); **d**, **e**, drill tips of silicified wood snapped in use while deeply embedded in some unyielding material (FCRS # 512 and FCRS # 511).

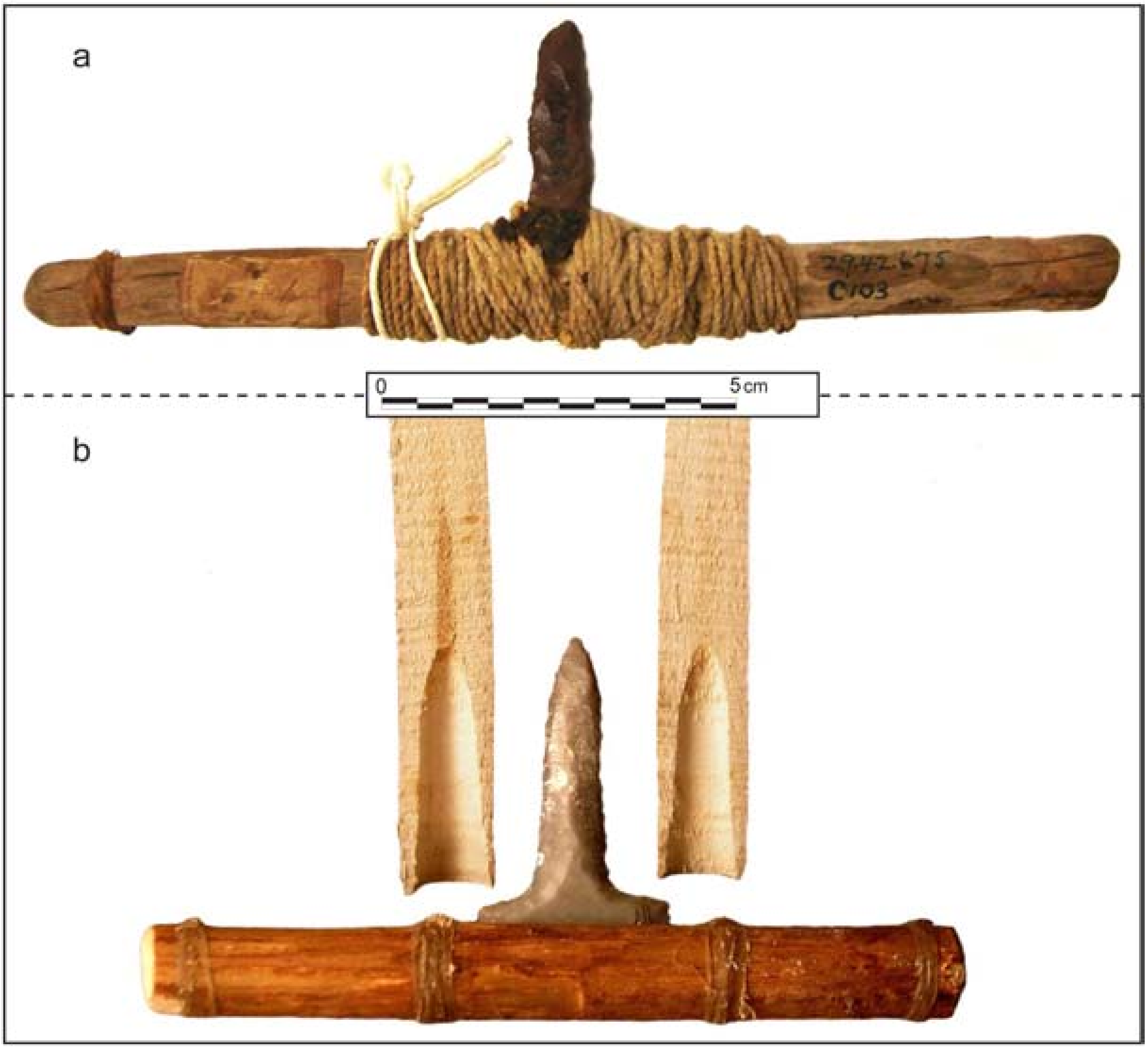


Figure 2.27 Hafted long bit drill with flaring bases that illustrate a probable common hafting method for this type of drill, especially for use in drill dart mainshafts to accommodate foreshafts: **a**, prehistoric specimen from unknown site in SE Utah (Catalog # 29-42-675, collections of the Penn Museum); **b**, replicated drill of chert showing the conical hole that is produced in willow (photo curtsey of Chuck LaRue, who made and used the tool).

what would be needed for creating such foreshaft sockets and if mounted such as the illustrated example with the cross piece pinned under knee or foot, then the darts could be quickly twirled down onto the drill making short work of the task. The body mechanics of using a drill like this would be natural to people that regularly started fires by hand with fire drills. Figure 2.27b shows a replicated example of this type of drill haft arrangement and the hole that it fashioned in a willow shaft. This hole is a good match for those seen in the distal end of Basketmaker II atlatl darts and willow is the usual wood used for them. When drilling such a hole if the shaft is inadvertently tilted too far off axis when the tool is deeply embedded (near the end of the task), then a flex fracture can occur and tip fragments like those shown in Figure 2.26d,e result. It's worth noting in passing that the dimples on the proximal end of darts could have been made more easily with a stubby, broad tipped drill or even a small conical piece of sandstone.

The use-wear that occurs on some of the long bit drills, including all but 'c' of Figure 2.26 seems consistent with the drilling of atlatl shafts as just hypothesized. First, use-wear is observable for most of the bit length indicating deep penetration in some material. The drills were made purposefully long because deep holes were needed for secure foreshaft seating. Not only is use-wear indicative of deep penetration but the wear suggests that the material was not all that hard, it was not the sort of use-wear seen on drills used on stone, antler, bone, or dense wood. The use-wear consists of microfracturing & rounding of the edges along with some smoothing but **no** rotational striations, at least not at low magnification. Rotational striations were, however, plainly obvious on some of the drills from the Falls Creek shelters, in some cases even without magnification. The use-wear on the long bit drills pictured in Figure 2.26, except for the middle specimen, seems totally consistent with working a non-dense, light wood like willow. If the drills were used as suggested, then the tiny debris from edge and tip fractures would naturally fall from the hole rather than being left in places to serve as abrasives.

The use-wear exception for the middle drill of the long bit grouping (c) exhibits extensive smoothing and even polishing of edges and faces along with subtle rotational striations. This might simply be a result of more extensive drilling of dart foreshafts compared to the others and perhaps in a manner that retained microdebris within the holes being created. Yet this drill also exhibits a white residue impacted in the edges and cracks on faces, a residue that appears original to the tool rather than post-depositional or after recovery. The powder appears to be mineral in nature and closely resembles what has been deposited on tools that I have used to drill soapstone. Morris and Burgh (1954:59) mention a steatite pipe fragment from Talus Village so there is the possibility that soapstone was available to the shelter occupants to be worked into pipes or ornaments. The residue might instead be calcium carbonate and shell ornaments with drill holes of a size similar to this tool were found at North Shelter, such as the breast ornament from Burial 8 (Morris and Burgh 1954:71, Figures 96-4m and 103b). In any event, the use-wear of this long-bit drill seems consistent with a different drilling purpose than for the other specimens. It might have also been used on atlatl darts, but its role just prior to deposition seems to have been for another material.

Three other examples of drills with long bits from the North Shelter exhibit even more pronounced use-wear of the type indicative of drilling stone, two tip fragments and one that is whole (Figure 2.28a-c). Only the first of these (a) is morphologically comparable to the drills just considered because the other two have expanding blades and both are far wider than atlatl darts foreshaft holes. The small tip fragment of white chert slightly expands for the full fragment length of 20.3 mm with the bit largely 6.1-8.3 mm wide and a maximum of 3.6 mm thick at the break. Heavy use-wear extends along the full length of the fragment but is missing in places from where it has fractured off, something that occurs when drilling stone (tool also has a heat spall from one face). Where the edges are intact they exhibit an abraded facet up to 1.6 mm thick with clear rotational striations. Some of this facet is fractured away near tip but is well developed along both lateral margins and they have been leveled or made even by abrasion. The width of this bit is too great for making the holes in the stone beads that Morris and Burgh measured from the North Shelter: they report that “the perforations range from 4 to 4.5 mm in diameter at the face of the stone” (1954:72), which means probably around 3 mm at the center. They reported only one tool with a sufficient narrow bit to make such small holes yet their specimen has an excessive long bit (Fig 83-3h), not only far more than what would be needed but of a length that would have reduced efficiency. A short tipped drill such as shown in Figure 2.17 would have been far more effective at this and indeed this specimen has the tip diameter to have perforated the beads.

The other drill tip fragment of Figure 2.28 is made of silicified sandstone a difficult material to wear down yet it exhibits heavy rotational abrasion along the full length of the intact edges (28.2 mm as measured along the longest edge, for a penetration depth of at least 27 mm). The abraded facet at this depth is up to 0.9 mm wide. The bit is constantly expanding over intact length with a width of at least 12 mm and probably more than 20 cm by extrapolating the edge angle. The heavy rotational use-wear is of the sort common to drilling stone and the one artifact that had required such a large diameter bore hole is a pipe. Steatite does not result in this sort of abrasive wear but Basketmakers also used much harder stones for pipes, such as the fine grained sandstone specimen that Morris and Burgh (1954:59) describe,and drilling the bowls of such stones would produce this sort of use-wear. The angled break of the bit was initiated from longest side perhaps from being wrenched longitudinally against the resistant side of the drilled object while embedded.

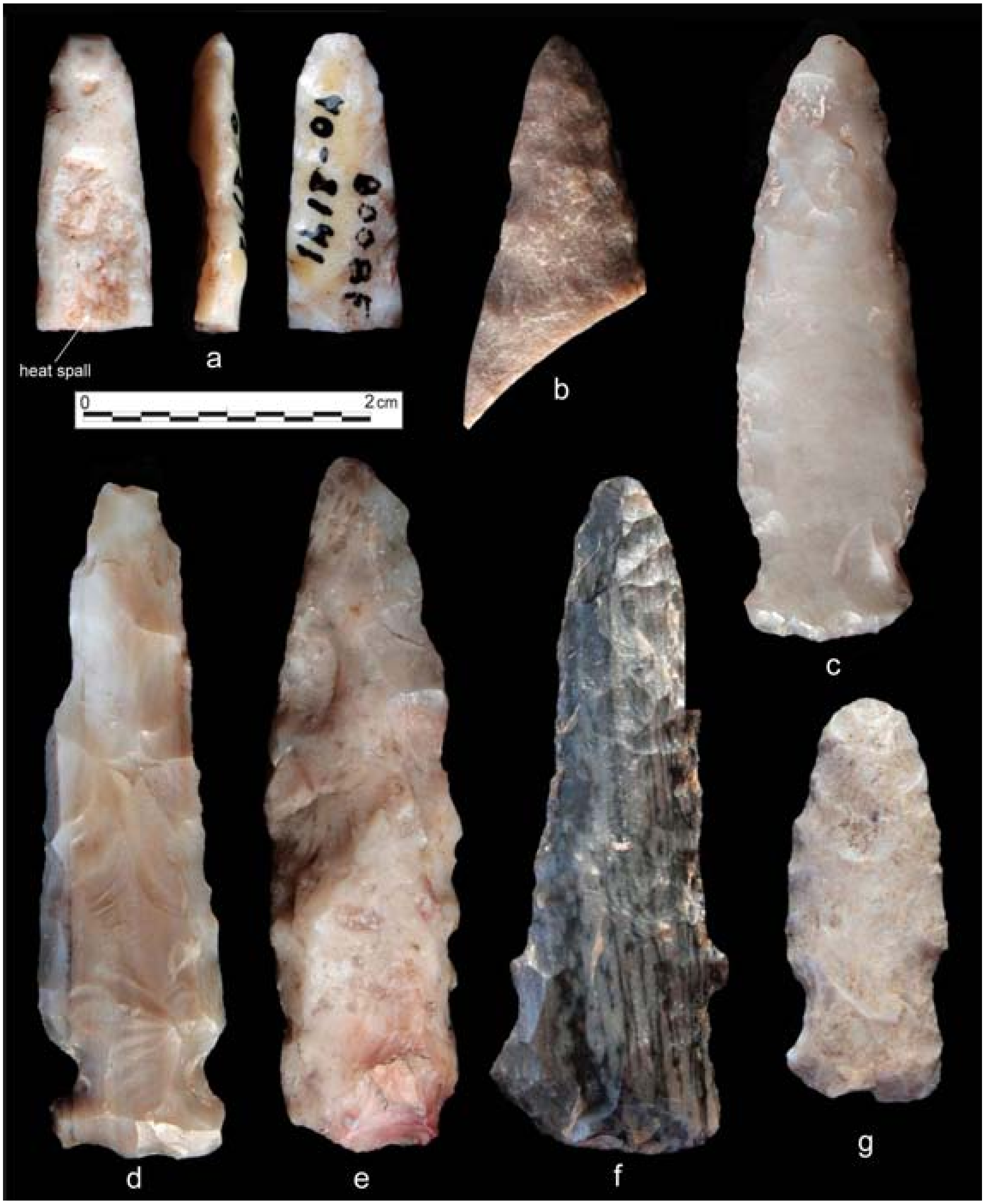


Figure 2.28 Examples of other drills: **a**, tip portion of chert (FCRS # 514); **b**, tip portion of silicified sandstone (FCRS # 1025); **c**, side-notched of silicifed wood (FCRS # 526);**d**, side-notched of silicified wood (FCRS # 524); **e**, whole spindle type of chert (FCRS # 516); **f**, drill made on recycled dart point of silicified wood (FCRS # 525); **g**, side-notched of silicified sandstone (FCRS # 527); a-c were used on hard abrasive material, likely stone; d & e lack obvious drilling use-wear; f & g used on material such as wood.

The whole drill of these three is one of Morris and Burghs notched spindles. It is made on a thin flake of silicified wood that was bidirectionally pressure flaked. The tool measures 40.7 mm long overall and use-wear extends for a distance of 30.8 mm from the tip and at this juncture the bit is 13.2 mm wide and 3.3 mm thick; maximum thick of 4.8 mm occurs about 13 mm from the tip and maximum width is 13.4 mm just above the shallow side-notches. The bit edges exhibit heavy use-wear with ground & polished facets up to 0.7 mm wide with rotational striations. With a penetration depth of 13 mm into a hard abrasive substance stone pipe production is a possibility although bowls tend to be larger in diameter than this (the whole specimen from the North Shelter measures 17 mm interior diameter at the surface to a depth of 38 mm (Morris and Burgh 1954:59). However, a bit like this could be used for the lower part of a pipe and Morris and Burgh report that the fragment from Talus Village had a change in bore diameter at a depth of 26 mm from the mouth.

Tools in all likelihood were used for drilling stone pipe bowls include the three recycled dart points shown in Figure 2.25. None of these tools were previously classified as drills but as notched dart points, which certainly appears to have been their primary form. Nonetheless, all three, as well as a previously mentioned notched dart point of obsidian (see Figure 2.1), exhibit obvious use-wear of tip and both margins of full blade length to the notches. The tips of all three are microfractured straight into piece from pressure against very hard material, evidently stone. The tip and edges have been worn down into blunt facets up to 3.7 mm thick (this for 'a'; maximum facet thickness for 'b' is 1.5 mm and 2.8 mm for 'c'). These facets are thickest at the tips and lessen proximally but the wear occurs on the full length of tool edges. Maximum bore diameters of these tools range from 15.4 mm (a) to 18.9 mm (b) for those of Figure 2.25 and 19.9 mm for the obsidian drill bit of Figure 2.1, which provides a good match for the diameters of Basketmaker II pipes, including the specimen from North Shelter. The pipe drill reported by Guernsey and Kidder (1921:95) was hafted to a short wooden handle, but the foreshafts that these points were hafted to in primary form could have functioned equally well as handles and provides an efficient way to recycle a dart point no longer serviceable as a killing tip. For these three points and the obsidian specimen of Figure 2.1 this secondary drilling use reduced the width of the blade margins and resulted in points considerably different in morphology than how they would have appeared when initially made.

Aside from these more formal looking drills, there were a few examples of drills made in a more expedient way by rather minimal retouch of a flake. There were also examples of tools that had the overall narrow form suggestive of a drill but no use-wear evident at low magnification to confirm such an interpretation. Several off the tools that Morris and Burgh had identified as drills were like this, such as those shown in Figure 2.28d, e, and I identified other examples. Some of these might have been made as drills but never actually used or used so little that no use-wear developed.

Perforators. I identified four items as perforators and two are shown in Figure 2.29. These have sharply pointed small tips carefully-made by bidirectional pressure flaking. The upper example was shown by Morris and Burgh in their Fig. 83-1.d, where it is listed as a “graver.” They identified two tools of this type from the North Shelter, with the other depicted in Fig. 83-1.g. The latter is the distal end of an overshot flake that I previously discussed. They state that “no function for these is evident; they are too fragile for scribing wood; no incised stone or bone objects were found at the sites; and no tattoo marks have been observed on desiccated humans bodies from Southwestern caves” (Morris and Burgh 1954:57). They are certainly right on the first and if true for wood then this would also apply to incising stone and bone even if such items were present.

Figure 2.29 Examples of perforators: **a**, made on one side of the distal part of a flake fragment of heat treated silicified wood (FCRS # 505); **b**, made on the corner of a flake fragment of heat treated silicified wood (FCRS # 1859).

There is some potential overlap between perforators and drills and they have a somewhat similar task but the delicate tips of perforators are well suited to piercing soft, pliable, thin materials, chiefly animal hide (i.e., to forcing a hole in material rather than fashioning a hole by hollowing out material). Perforators were probably held between thumb and index finger and given a slight back and forth while in use. All four examples are made on thin flakes, two of silicified wood (shown) and two of hornfels, with tips fashioned by bidirectional pressure flaking (the tip apex is missing from one of the hornfels tools so its identification as a perforator is tentative). Piercing soft material is unlikely to develop wear traces unless there is sustained use and none of the perforators exhibited evidence of this. Also, the delicate tips are easily damaged which could remove traces; two of the tools have this problem.

Engraver. A single flaked tool was identified as a possible engraver. It consists of a biface thinning flake of chert with a thin projection fashioned on the distal end by unidirectional pressure flaking. It is possible that the retouch was incidental to use of the flake for some other task but it seems unlikely to leave such a long projecting spur without purposeful flaking. The tool lacked obvious use-wear at low magnification but the very tip of projection seems fractured. The tip would have been delicate and suitable for creating a groove ca. 3 mm wide or less. Basketmakers actually had a need for engraving tools with narrow tips for the longitudinal grooves that occur on S-shaped sticks of the sort that Guernsey and Kidder (1921:88-89) recovered from White Dog Cave and elsewhere. Earl Morris also recovered two sticks like this, one from Moqui Canyon, Utah that is on display at Mesa Verde and another from Canyon del Muerto that is at the American Museum of Natural History. There is no evidence for such artifacts from the eastern Basketmaker II area but this could largely be a preservation issue. An engraving like tool might also prove useful for making the groove and spur on atlatls, perhaps especially for working wood from around the spur.

Chopper. As a functional type choppers straddle the line between flaked facial tools and cores/nodular tools. Some choppers have distinct faciality and seem part of a bifacial reduction trajectory whereas others lack this. Since slightly more choppers were analyzed as cores/nodular tools (n=15) than as flaked facial tools (n=11), I will forego their discussion until later and proceed to bifaces.

Bifaces. Tools in this class were made by controlled and often sequenced flaking on both faces to produce artifacts that were thin and symmetrical in long-section and cross-section, both of which tend to be biconvex or flattened. As a general rule, section symmetry and thinness requires *facial thinning*, or flakes that travel past the midline of a tool. Almost invariably this requires flakes to be removed from both faces. The investment in this bifacial thinning process can be improved by starting with thin tool blanks, especially thin flakes, but there are raw material constraints to this (are nodules sufficiently large to detach thin flakes?) and thin flakes can be impossible to make symmetrical (too curved as with the example shown in Figure 2.17). The process of producing a thinned and shaped biface is a linear continuum but one that is commonly conceived as occurring in stages and Callahan (1979) provides a detailed discussion of this as applied to fluted point production in the eastern United States. Stages are in some sense arbitrary, although there can be marked by changes is how flakes are detached and with what sorts of flaking tools, and bifaces can usually be recognized as to their general placement in the progression. Callahan's general model and initial reduction stages are applicable to most types of biface production; however, I used Whittaker's (1994) numbering system for analysis of the FCRS assemblage since Callahan's first stage is simply a nodule of raw material or a flake blank and thus analytically unrecognizable as a biface or as part of such a trajectory.

Definitions for the five biface stages are provided in Table 2.31 with Table 2.32 providing a breakdown of the frequency of these stages by condition categories for the 335 bifaces that I analyzed. As previously mentioned, bifaces comprise a large proportion of the flaked facial tools from the shelters and production of these tools clearly accounted for a majority of the debitage at the sites. In a general sense early stage bifaces are expected close to where a raw material is procured since tool discard at this stage tends to be for reasons that make them poorly suited for any further reduction. Later stage bifaces often fail for knapping mistakes (perverse fractures, stacked step fractures, etc.) and might take place at a distance from where the material was procured. The tools that fail from knapping mistakes can usually be transformed into something useful but whether this will occur depends on fragment size and raw material availability among other issues. Given that large tool fragments and whole items generally have more 'utility' in them, both for direct use and for further reduction, the occurrence of so many whole items at the shelters, including those in early reduction stages, indicates either considerable inadvertent loss or the caching of tools. Given the larger number of abandoned and overlapping houses with superimposed floors that occurred in the shelters it seem probable that both of these depositional processes were at play. Morris and Burgh (1954:56) report on a few obvious biface caches from South and North Shelters and one of these from the South Shelter (Cist 67 of Floor 11) seemed ritual in that the three large thinned and shaped bifaces of hornfels found together were each snapped in the middle.

Table 2.31. Definitions of bifacial stages. Morris and Burgh (1954) classified all items in stages 1-4 as "blanks" and items in stage 5 as "notched points and knives."

Stage 1, Bifacially Edged: Flattened nodules or flake blanks that exhibit non-invasive flake scars on both faces, usually those detached in an alternate manner, to remove square edges and establish appropriate platforms for driving off initial thinning flakes. Percussion flake scars are the norm for nodules or large core flakes but pressure flake scars alone can be present for thin flake blanks. Margins are usually sinuous, with high edge angles, and cross sections and plan outlines exhibit major irregularities. Thinning is preliminary so items are thick relative to their width and cortex is often present on at least one face. Tools of this stage are Callahan's (1979) Stage 2 but Whittaker's (1994:201-202) Stage 1, Edged Blank.

Stage 2, Bifacially Thinned, Initial: Bifaces with major cross section irregularities removed. Faces are noticeably smoother and flatter than for previous Stage 2 bifaces. Most cortex is removed. Thinning flakes were detached from prepared platforms involving edge beveling and abrasion. Flake scars usually extend past the midsection. Average thickness is roughly three to four times less than average width. Bifaces of this stage are Callahan's (1979) Stage 3 but Whittaker's (1994:202) Stage 2, Preform.
Stage 3, Bifacially Thinned, Advanced: Tools of this stage have essentially been maximally thinned with an average width five times or more the average thickness. Flake scars commonly extend past the midsection. Plan and section symmetry is well established. Edges might be beveled and abraded to facilitate the removal of flakes principally by percussion, but pressure flaking might have been used to isolate platforms. Bifaces of this stage are Callahan's (1979) Stage 4 but Whittaker's (1994:202) Stage 3, Refined Biface.
Stage 4, Bifacially Thinned and Shaped: Faces are smooth and quite flat, and cross sections are thin and regular, with an average width five times or more the average thickness. Some flake scars invade past the midsections, but shorter scars are more numerous, and may be detached by both pressure and percussion. Edges have been maximally regularized and sharpened by removing platform remnants and irregular edges. Distal and proximal portions are usually discernible. Bifaces of this stage are Callahan's (1979) Stage 5 but Whittaker's (1994:202) Stage 4, Finished Biface, though he also includes items modified for hafting that I have included as Stage 5.
Stage 5, Bifacially Thinned, Shaped, & "Stylized": Stylized means that a Stage 4 biface has been modified for hafting, which usually means notched in some manner. Tools in this stage might be differentiated as either projectile points or hafted knives.

Table 2.32. Frequency of bifaces from the North Creek Shelters according to stage classification and condition.

Biface Stage	Other Frags	Terminal	Tips	Bases	Almost Comp	Complete	Total	%
Unknown	2	0	0	0	0	0	2	0.6
Stage 1	4	9	0	1	2	8	24	7.2
Stage 2	2	15	3	6	1	17	44	13.1
Stage 3	9	12	5	10	0	6	42	12.5
Stage 4	14	4	29	16	7	30	100	29.9
Stage 5	9	0	22	31	24	37	123	36.7
Total	40	40	59	64	34	98	335	100.0

A large percentage of the almost complete bifaces are stage 5, 24 of 34 or 70.6% with most of the rest being stage 4, another 29.2%. The high proportion of stage 5 bifaces represents finished and used tools that have some relatively slight damage, chiefly to the tip. Many of these items likely are still functional or could easily be made functional again thus most are not refuse. Early stage bifaces with just a small part of an end missing likely could have undergone further reduction.

Morris and Burgh (1954) classified all bifaces of my stages 1-4 as “blanks” and items in stage 5 as “notched points and knives.” They recognized three idealized principal forms of blanks: triangular, triangular with rounded base, and ovoid (1954:55, Fig. 28); these only partly relate to the stage classification used here. The first two of them seem to be maximally thinned bifaces with well formed shapes although lacking hafting features (unnotched), thus they are all likely to be my Stage 4 bifaces. Their count of these from the two shelters is 21 whereas my count is 100, but if just whole items are included, which is perhaps what they did, then I recognized 30 stage 4 bifaces from the shelters. The ovoid bifaces appear to be those that have less of a finished shape, which also generally means less thinned and thus mainly within stages 2 or 3, mostly the latter. Morris and Burgh did not include all of the bifaces in one of their three blank forms since there were also items “. . . too varied and shapeless to classify . . . thick, ungainly specimens studded with flaws and hinge fractures. These appear to be rejects, discarded because it was impossible to reduce them to the desired form” (Morris and Burgh 1954:55). These ungainly items are clearly those that would be in stages 1 and 2 although their count of these items from the shelters is just 10 and by my tally there are at least 68.

Additional descriptive information about the biface stages is provided in Tables 2.33 and 2.34. The presence of cortex shows a predictable decline—66.7% representation on stage 1 bifaces to just 1.6% on stage 5 bifaces. There was a marked drop in cortex incidence from stages 3 to 4 reflecting the transition to the fully thinned biface of stage 4 that was in the process of being shaped or was fully shaped. Evidence for heat treatment exhibits a different pattern. There is a modest proportion of Stage 1 bifaces that retain evidence of heat treatment but this increases substantially to just over 40% for stage 2 bifaces and then 45% for stage 3; after this there is sharp decline to just fewer than 10% for bifaces of stages 4 and 5. As mentioned earlier, this trend reflects removal of the pre-HT flake surfaces eliminating the evidence that I used to positively identify the practice. The incidence of possibly heat treated bifaces, those with overall high luster, goes up to more than 20% for stages 4 and 5 and if I had a more definitive way to test for this attribute for those tools that are more completely flaked then it is likely that the proportion of heat treated late stage bifaces would be considerably greater. Nonetheless there is a ceiling on this that is just under 50% since so many bifaces are made of materials that do not benefit from the practice, namely obsidian, rhyolite, siltstone (hornfels), and quartzite. Consequently, if the tools that were possibly heat treated actually were and these are combined with those that retain evidence of this practice, then the proportion of heat treated stage 4 and 5 bifaces that could actually benefit from the practice is high indeed, on the order of 67-70%.

Table 2.33. Cortex, thermal alteration and raw material type by biface stage for the classifiable bifaces from the North Creek Shelters. Column percentages are given for cortex and thermal alternation but row percentages are provided for raw material except for the total column where the column percent is given.

Variable	**Stage 1**		**Stage 2**		**Stage 3**		**Stage 4**		**Stage 5**		Total	
Cortex	**n**	**C %**	**n**	**C %**	**n**	**C %**	**n**	**C %**	**n**	**C %**	**n**	**C %**
None	8	33.3	25	56.8	29	69.0	96	96.0	121	98.4	279	83.8
Present	16	66.7	19	43.2	13	31.0	4	4.0	2	1.6	54	16.2
Total	*24*	*100.0*	*44*	*100.0*	*42*	*100.0*	*100*	*100.0*	*123*	*100.0*	*333*	*100.0*
Thermal Alteration												
Absent	18	75.0	24	54.5	16	38.1	58	58.0	74	60.2	190	57.1
Burned	0	0.0	0	0.0	3	7.1	11	11.0	10	8.1	24	7.2
Poss HT	2	8.3	2	4.5	4	9.5	22	22.0	28	22.8	58	17.4
Heat treated	4	16.7	18	40.9	19	45.2	9	9.0	11	8.9	61	18.3
Total	*24*	*100.0*	*44*	*100.0*	*42*	*100.0*	*100*	*100.0*	*123*	*100.0*	*333*	*100.0*
Raw Material		**R %**		**R %**		**R %**		**R %**		**R %**		**C %**
Obsidian	1	3.6	0	0.0	1	3.6	9	32.1	17	60.7	28	8.4
Chalcedony	2	11.1	2	11.1	2	11.1	3	16.7	9	50.0	18	5.4
Chert	4	5.3	16	21.1	15	19.7	19	25.0	22	28.9	76	22.8
Silicified wood	8	10.1	11	13.9	11	13.9	22	27.8	27	34.2	79	23.7
Rhyolite	0	0.0	0	0.0	3	16.7	4	22.2	11	61.1	18	5.4
Siltstone	8	9.9	13	16.0	7	8.6	34	42.0	19	23.5	81	24.3
Quartzite	1	3.0	2	6.1	3	9.1	9	27.3	18	54.5	33	9.9
Total	*24*	*7.2*	*44*	*13.2*	*42*	*12.6*	*100*	*30.0*	*123*	*36.9*	*333*	*100.0*

Obsidian is known to be an exotic stone brought in from a considerable distance from north central New Mexico. As such it makes sense that there are few early stage bifaces of this material, just 2 or 28 bifaces are stage 3 or earlier (7.1%). Chert and silicified wood, in contrast, are known to be locally available and early stage bifaces are well represented, 46.1% of chert bifaces are stage 3 or earlier and 38% for silicified wood. The siltstone used for the bifaces is almost entirely the hornfels that Anna Shepard identified for Morris and Burgh, 78 of 81 or 96.3%. Morris and Burgh did not know of a local source for this material and that situation has not changed but the abundant flaking debris of this material certainly hints at a local source. So too does the proportion of early stage bifaces, which account for 34.6%, not quite as high as for the acknowledged local chert or silicified wood but comparable. The rhyolite is more like obsidian with a heavy bias toward late stage bifaces. This bulk of this stone type (83.3%) consists of a distinctive fine gray material that I have never seen in lithic assemblages from SE Utah, NE Arizona, or NW New Mexico (it is perhaps a silicified sandstone rather than rhyolite). The debris of fine gray rhyolite is also quite small and largely from biface thinning with only a single small core flake, plus 93% lacks cortex and none of the rhyolite tools have cortex. All together this evidence suggests that the fine gray rhyolite, like obsidian, is exotic. Given that a source from the south or west seems unlikely the rock probably derives from somewhere in the mountains of Colorado.

Table 2.34 presents basic measurements of length, width, thickness and weight for whole examples of bifaces from each stage. Stages 1 and 3 and have such low counts, 8 and 6 respectively, that the averages should be viewed with caution. As expected, there is a clear reduction in weight from stage 1 to stage 4, from an average of 22 g to 7 g. The lack of change between stages 1 and 2, indeed slight increase in average weight, is perhaps because the whole specimens of stage 1 are not representative of whole stage 1 bifaces overall. Weight reduction is clearly related to the removal of thinning flakes since the dimension that most significantly changes on the bifaces is thickness, from a mean of 11 and 13.4 mm for stages 1 and 2 respectively to a mean of 5.8 mm thick for stage 4. Since thinning flakes are commonly detached from the biface margins there is a noticeable reduction in average width, from 32.6 mm for stage 1 to 24.8 mm for stage 4. Weight and thickness reduction is achieved with little loss of length and in fact the mean between stages 1 and 4 is almost the same at 46 and 45.7 mm. Since some of the stage 4 bifaces are longer than any bifaces in previous stages it is clear that the largest of the early stage bifaces were continually reduced and passed into later stages. Projectile points and hafted or unhafted knives were common objectives of bifacial reduction. Thus, there is a tendency to view the various stages prior to Stage 5 as simply preliminary steps culminating in a final finished tool. Yet early stage bifaces have plenty of potential utility as multi-purpose portable tools prior to being "finished" (Kelly 1988). In such a strategy, thinning is a by-product of tool resharpening but thinning is not necessarily an immediate end goal, rather tool use and resharpening is the focus (although without losing sight of the ultimate outcome). Identifying use-wear on bifaces is complicated by the microflaking and edge abrasion associated with platform preparation along with fracturing that occurs with detachment of thinning and shaping flakes. The proportion of FCS bifaces that exhibited use-wear evident at low power magnification is as follows: 33.3% for stage 1; 31.8% for stage 2; 24.4% for stage 3; 39.2% for stage 4; and 67.8% for stage 5 (this excludes indeterminate cases). Presumably all off the stage 5 tools were used since all had been modified for hafting, principally by notching, but this proportion reflects those that exhibited telltale traces of such use. Nonetheless, this serves to highlight that the proportion of used bifaces in other stages might also be underrepresented. As the bifaces become thinner their functions likely changed somewhat from heavy duty to more light duty tasks. This appears to be reflected in the inferred activities of the FCS bifaces since tasks such as adzing, chopping, planning and wedging occurred for biface stages 1-3 (although just a few cases total are represented), whereas scraping was identified through stage 4 and cutting/sawing was common in stages 4 and 5.

Table 2.34. Summary data on basic dimensions of whole bifaces from the Falls Creek Shelters according to stage classification.

Variable	Stage 1	Stage 2	Stage 3	Stage 4
Length (mm)				
mean	46.0	48.3	52.9	45.7
std	9.7	10.3	9.1	14.6
median	43.4	45.0	52.2	41.5
smallest	35.7	33.0	38.7	25.3
largest	60.6	69.1	65.3	83.2
n=	8	17	6	30
Width (mm)				
mean	32.6	33.0	30.3	24.8
std	9.2	5.4	8.2	4.1
median	34.3	34.4	29.7	24.5
smallest	18.8	23.3	22.5	14.9
largest	45.6	44.5	45.2	32.1
n=	8	17	6	30
Thickness (mm)				
mean	11.0	13.4	9.1	5.8
std	5.2	3.8	1.4	1.0
median	11.0	13.9	8.7	5.7
smallest	3.3	6.7	8.1	4.4
largest	18.3	19.5	11.8	8.5
n=	8	17	6	30
Weight (g)				
mean	22.4	23.3	15.1	7.1
std	14.9	11.3	5.1	4.3
median	24.2	23.2	13.8	5.2
smallest	2.8	8.4	8.4	2.4
largest	44.5	45.6	21.7	18.1
n=	8	17	6	30

Early stage bifaces also have utility as prepared cores for flake production (Goodyear 1979; Kelly 1988), especially the larger flakes from initial and advanced thinning. As Table 2.21 disclosed, biface thinning flakes accounted for greater than half of the used flakes and biface thinning flakes also served as flake blanks for some of the flaked facial tools. Proportionally more core flakes were used than biface thinning flakes, just under 30% compared to 10%, but then biface reduction generates far more small debris that is generally unsuited for expedient use, being too small or with edges too thin and irregular.

Production Trajectories for Stage 4 Bifaces. Stage 4 bifaces are maximally thinned and shaped with symmetrical sections both longitudinally and transversely—basically all that is needed is notching in order for these tool to be finished and to enter stage 5. They might also require slight tip sharpening so as to avoid inadvertent damage prior to hafting, especially since it seems that these finished-except-for-notching bifaces were stored and likely carried together in bags where damage to delicate tips might occur. Basketmaker flintknappers, including those of the Falls Creek Shelters, clearly produced many examples of bifaces like this, which I call dart point preforms, and Guernsey and Kidder (1921:87) first described this characteristic pattern.

Based on the bifaces present at the North Creek Shelters, it appears that the Basketmaker II flintknappers used three different approaches to arriving at stage 4 bifaces. Two of these are largely similar and involved mainly percussion flaking but with a probable difference in percussion method with indirect punch used on the smaller stage 4 bifaces, those destined to be dart point preforms (Geib 2002; 2011:269-271). The third approach emphasized pressure flaking alone and started with thin flake blanks that were turned into finished dart points.

Biface size was a critical factor since large examples that ended up as hafted knives necessitated extensive percussion thinning. These appear to have followed the common model for arriving at a stage 4 biface, one that is spelled out by Whittaker (1994) and Callahan (1979). This is where a nodule or large flake blank is bifacially thinned and then shaped with percussion flaking critical for the thinning stage followed by either this or pressure flaking for the shaping stage. The shaping flakes are marginal in nature, merely serving to regularize the plan. The basic format though is thinning first then shaping. Good examples of this reduction trajectory are the three large stage 4 bifaces of hornfels that were purposefully broken before placement within in Cist 67 associated with Floor 11 in the South Shelter (Figure 2.30). These items measure between 7 and 8 mm in length, 29-30 mm in width and 5-7 mm in thickness. They exhibit invasive flake scars extending to the midline or past from percussion thinning followed by small percussion flake removals that regularized the margin and shaped the pieces. Although the thinning flakes of these tools might have been detached by indirect punch flaking, the bifaces are also sufficiently large that free-hand percussion does not present a problem.

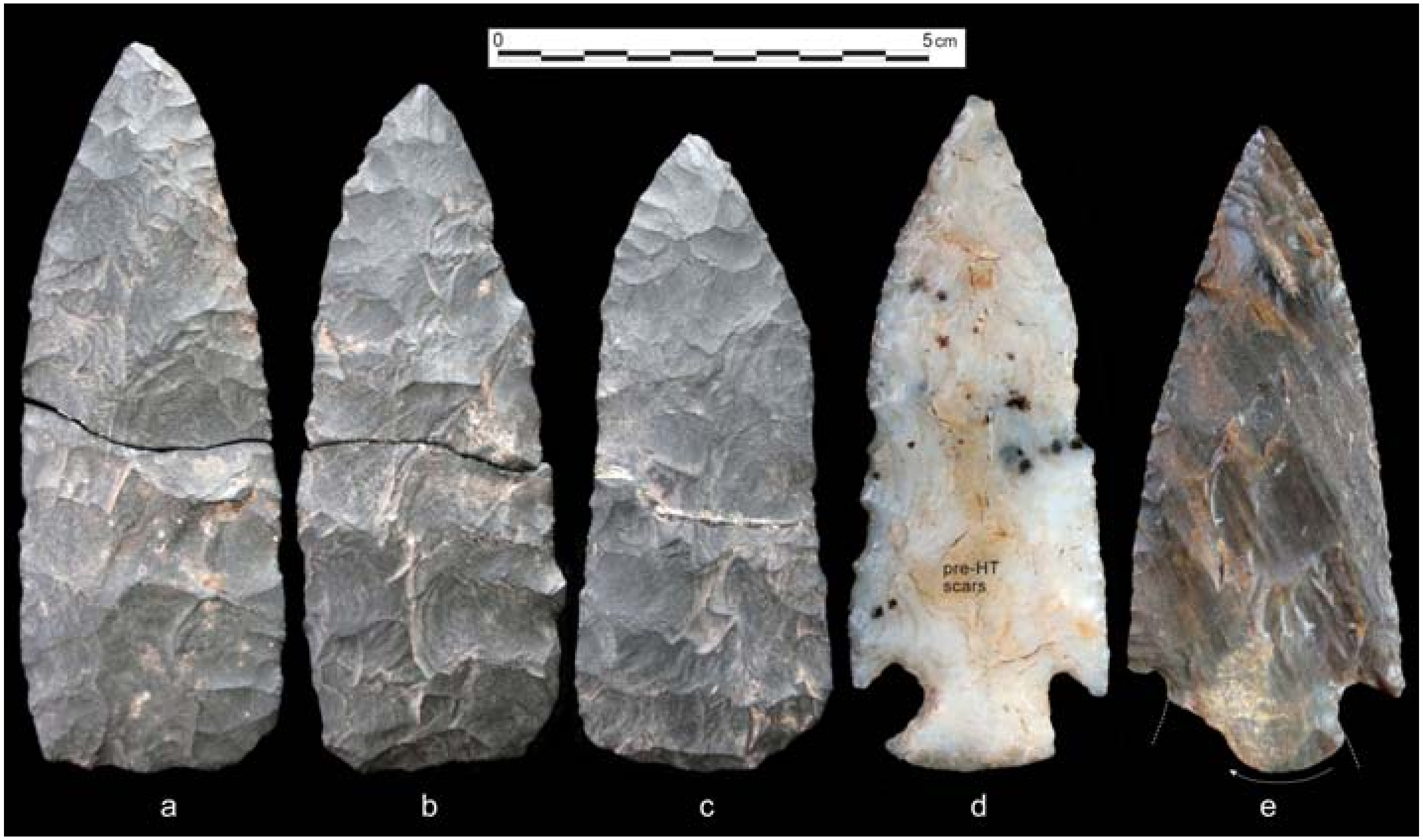


Figure 2.30 Three large stage 4 bifaces of hornfels found together broken in half in Cist 67, Floor 11, South Shelter and two corner-notched knives from the North Shelter; **a**, FCRS # 437; **b**, FCRS # 438; **c**, FCRS # 439; **d**, heat treated chalcedony, FCRS # 458; **e**, silicified wood, FCRS # 457. Tool 'd' exhibits pre-heat treatment flake scars down midline. Tool 'e' is snapped across notches by "rolling burination" originating in one notch and terminating in the other, likely while hafted and from leverage in use.

Such large stage 4 bifaces were likely intended for the production of hafted knives like the two examples also shown in Figure 2.30. Guernsey and Kidder (1921:93–95, Plate 35j–l) first described this sort of tool for Basketmaker II assemblages and noted their corner-notched form as distinct from the side-notching of the smaller sized dart points that they found. A broken corner-notched knife that they recovered from White Dog Cave was still hafted to a stout short handle, as likely were the two specimens like this in Figure 2.30. Both are basically the same size as the stage 4 biface of hornfels and exhibit large and small percussion flake scars but they also exhibit numerous small marginal pressure flakes from edge resharpening. The chalcedony tool measures 80.7 mm long but was probably about 82 mm prior to the small tip fracture; it is 32.0 mm wide and 6.2 mm thick and is made on a flake that was heat treated and then percussion flaked. The silicified wood knife measures 76.9 mm long but was probably around 79 mm in length prior to the base fracture; it is 32.3 mm wide and 5.7 mm thick. The silicified wood for this tool lacks evidence of heat treatment and provides a good example of well controlled percussion thinning of raw microcrystalline quartz.

Smaller bifaces, those destined to become dart point preforms and then dart points are another issue since small size limits the utility of direct free-hand percussion for both thinning and shaping. A common strategy then is to use direct free-hand percussion as needed for thinning purposes but then switch to pressure flaking to shape the biface. Western Basketmaker II flintknappers had another strategy that consisted of indirect punch percussion wherein flake blanks were both thinned and shaped simultaneously (Geib 2002; 2011:269-271). This was done with punches chiefly made of mountain sheep horn, although antler punches are also known, with a good example recovered from Broken Roof Cave (Geib 2002). The horn punches created the distinct flaking pattern best appreciated on western Basketmaker II point preforms but also seen on finished projectile points in primary condition (see Geib 2002:Figures 18.9–18.12 and Geib 2011: Figures 5.34 and 5.36). Figure 2.31a shows 1 of the 16 preforms from cache 1 of Sand Dune Cave (Lindsay et al. 1963) that occurred together with indirect percussion punches of mountain sheep horn (see Geib 2002, 2004). It is evident from the flake scars that occur on this and other western Basketmaker II point preforms and finished points in primary form that indirect punch flaking was used to thin and shape these tools at the same time with little need for any additional flaking except for that used to fashion notches. The flake scars serve to distinguish western Basketmaker II points from most Archaic corner-notched and side-notched dart points of the same region since the latter were usually finished by pressure flaking and have narrow flake scars and far more extensive edge trimming (see discussion in Geib 2002).

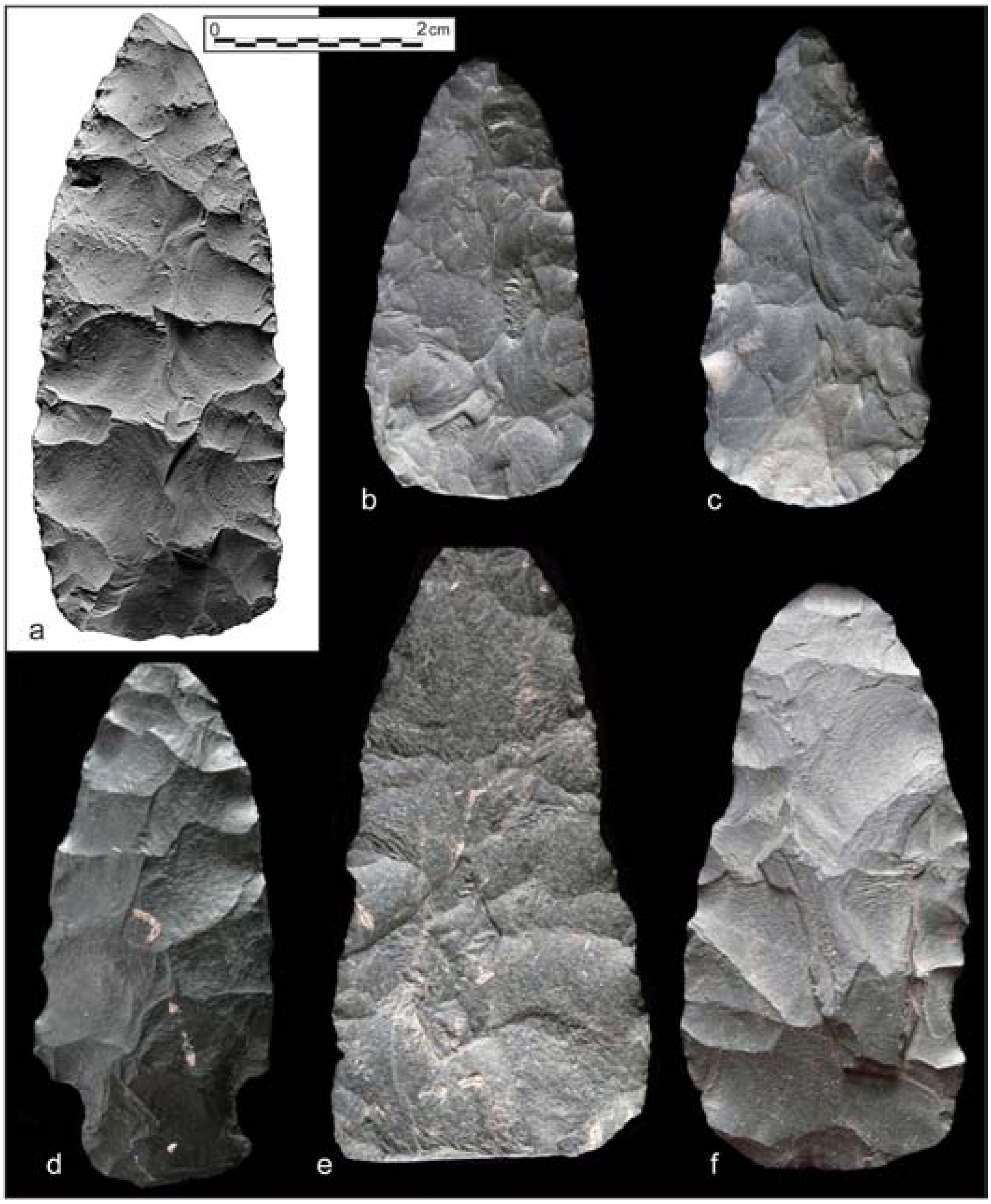


Figure 2.31 Examples of bifaces simultaneously thinned and shaped by percussion flaking, likely indirect percussion; **a**, 1 of 16 preforms from cache 1 of Sand Dune Cave that occurred together with indirect percussion punches of mountain sheep horn (see Geib 2002, 2004); **b, c, e, f** bifaces of horfels from the Falls Creek Shelters (FCRS # 935, 934, 978 & 979); **d**, dart point from North Shelter finished by notching a preform like the specimens shown here (FCRS # 497).

This approach to the production of dart points seems anomalous with regard to the Archaic strategy and is one potential piece of evidence for farmer migration to the Colorado Plateau (Geib 2002). In this regard, because of the suggested ethnic distinctiveness of Durango Basketmakers from western Basketmakers (Matson 1991, 2002, 2006) I had assumed that the strategy for dart point production at eastern Basketmaker II sites, such as the Falls Creek Shelters, would be characterized by a non-western Basketmaker II approach, that of pressure flaking alone or perhaps pressure following direct free-hand percussion. A study by Bryce (2010) of flakes from western and eastern Basketmaker II sites supported the idea of distinct reduction techniques. It came as something of a surprise then as I came across one example after another of dart point preforms or finished points that appeared to have a flaking pattern indicative of indirect punch percussion. I am convinced that this is the case because of the percussion flake scars that are observable on some of the dart points and especially dart point preforms from the two shelters, detachments that served to both thin and shape the bifaces simultaneously. This is clearly seen on the four preforms and one finished dart point shown in Figure 2.31. All of these bifaces are of hornfels, the matte surface of which reveals flake scars quite well without a film from the smoke of ammonium chloride such as was used on the Sand Dune Cave point preform of Figure 2.31a. Similar flake scars occur on point preforms and points of other materials such as chert and silicified wood.

The third biface reduction approach that is clearly evident in Falls Creek Shelter tool assemblage is simple pressure flaking, perhaps following some percussion thinning but also evidently as the sole technique to thin, shaped and finish point preforms and finished points. Figure 2.32 shows two examples of this in the form of finished points. Both are made on thin flakes of heat treated silicified wood that were thinned and shaped by pressure flaking using a narrow tipped tool. A very narrow flaking tool is also indicated by the nature of the notches, which are driven deep but with little width. It is perhaps significant that these production characteristics occur on points that resemble Elko Corner-notched an Archaic style with a great time depth on the Colorado Plateau (e.g., Holmer 1980, 1986).

2.6.3 Notched Points and Knives. After Stage 4, bifaces are modified for hafting, principally by notching. I use Morris and Burgh's (1954) term as the heading for this discussion of the stage 5 notched bifaces from the Falls Creek Shelters. The Stage 5 items can be differentiated as either projectile points or hafted knives based principally on size (see Figure 2.30) with the realization that no matter the label that both tools may have been used for other tasks as well. Use wear clearly supports the multiple use aspect.

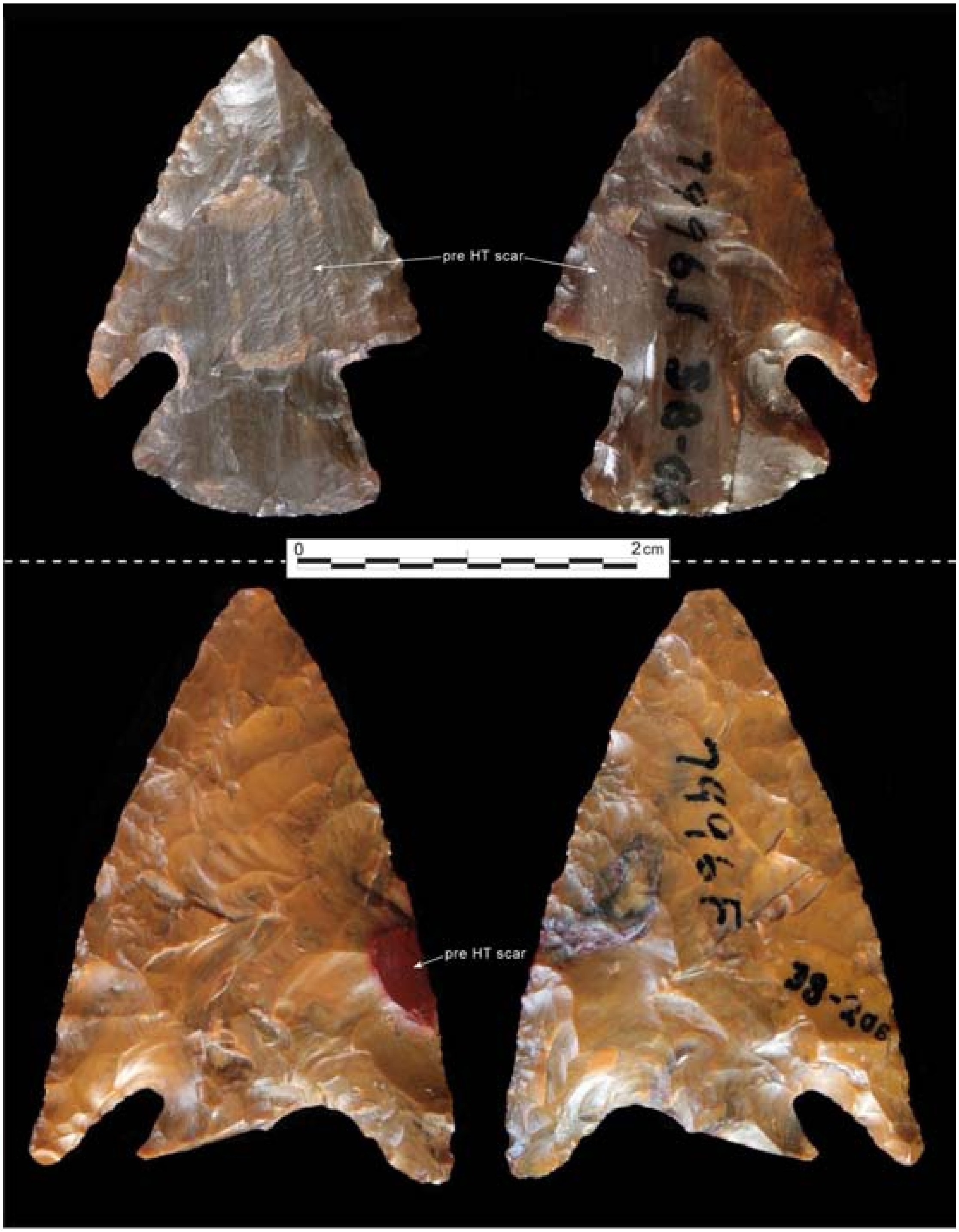


Figure 2.32 Examples of dart points made on thin heat treated flakes of silicified wood that were thinned and shaped by pressure flaking using narrow-tipped flaking tools: **a**, FCRS # 452; **b**, FCRS 452, with stem snapped across the notches.

Notching Dart-Sized Points. The dart points from the Falls Creek Shelters and Talus Village have played a role in discussions of cultural relatedness among the first agriculturalists on the Colorado Plateau, a part less important than for perishable artifacts (more of a bit part), but a significant one nonetheless because points are so much more common. Morris and Burgh (1954:56) saw little similarity between the typical dart points of their Durango Basketmaker II sites, which totaled more than 200, and the common though numerically limited kind of dart point that Guernsey and Kidder (1921; Kidder and Guernsey 1919; Guernsey 1931) recovered from the Kayenta-region caves of NE Arizona. They used the term "San Juan Basketmaker II" for the points from the western Basketmaker II sites. An argument for the distinctiveness of western Basketmaker II points was elaborated by Claudia Berry (1984:71) who saw little similarity between western or San Juan Basketmaker II points and Archaic period Elko points. She based her analysis on site excavations that ensued with the advent of contract archaeology when larger samples of dart points were recovered from open Basketmaker II sites of the western region. A sample of some of the points that she examined are shown in Figure 2.33. Berry and Berry (1986:319) continued this argument, maintaining that Basketmaker II dart points, which they called San Pedro/Basketmaker II, bore only faint similarity to Elko points, supporting cultural discontinuity with the advent of maize agriculture on the Colorado Plateau. Matson (1991:45, sidebar) noted that the corner-notched forms from the Durango Basketmaker II sites, especially those with parallel, moderately narrow notches, two of which were just shown in Figure 2.32, are what many archaeologists today would type as Elko Corner-notched. Matson (1991:46, sidebar) suggests that there is more overlap in point styles than Morris and Burgh would lead one to expect, yet with such a large assemblage of points it is perhaps meaningful that so few resemble the typical dart point from White Dog Basketmaker contexts. Yet it is also important to recognize that there is variability in point style within the greater area considered to be western Basketmaker II with more of a corner-notched variety typical north of the San Juan River in SE Utah.

Morris and Burgh (1954:56) considered nine-tenths of the points that they recovered from the Durango sites as corner-notched with the rest designated as "eccentric" or side-notched, with few of the latter. They separated the corner-notched points into 10 principal forms that they illustrated in their Fig 29 (a-i and k), which has been reproduced here in Figure 2.34. They saw forms a and i representing the "opposite extremes of corner-notching," but with the intermediate forms b-i grading "so imperceptibly from one into the other that we may have been splitting hairs in recognizing so many different forms" (Morris and Burgh 1954:56). Although I am in favor of splitting when this seems to make sense, I think that several of the forms can be lumped together. More importantly though is the notion that all of these forms are notched from the corner. I contend that many of them are notched from the side, in some cases rather high on the side, with the notch sometimes clipping the corner of the stem and

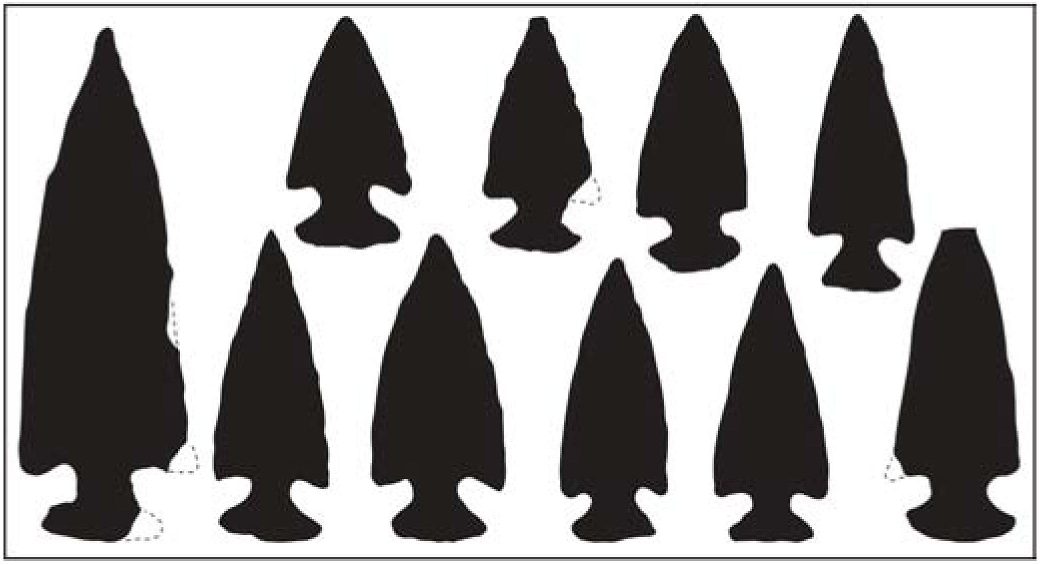


Figure 2.33 Examples of Western Basketmaker II side-notched dart points from the upper Little Colorado River drainage; outlines for 10 of 25 dart points shown in Berry (1987: Figure 43), including specimens from a burned pithouse (NA14, 646) with contemporaneous radiocarbon dates in the first few centuries cal. BC (Berry 1982: 36-37, Table 8).

thus imparting a corner-notched appearance. Placement of the notch opening along the blade, direction of flaking, and notching tool tip diameter all play a critical role in final notch morphology, but it is also important to take into account notching mistakes and use or recovery/post-depositional damage.

Figure 2.35 shows examples of notched dart points from North Creek Shelter that illustrate the extremes in notch placement and size from very narrow and deep corner-notches to both relatively narrow and very wide side-notches. Point 'e' is what Morris and Burgh use as the basis for their representative example of a side-notched point, but this is an exceptional specimen and no other dart point from the shelters is remotely similar. Made on a flake of Cerreo del Medio obsidian, this point strongly resembles the high side-notched middle Archaic style of Sudden Side-notched (Holmer 1986:104; this includes his previously identified Rocker Side-notched [Holmer 1980:76]). This point is more likely to be representative of how Archaic flintknappers notched points than Basketmakers. The surface of this point exhibits heavy abrasion and scratches, perhaps from long surface exposure, which supports the idea of either reuse of an ancient artifact or one that was deposited in the shelter by an earlier occupant and inadvertently mixed with the Basketmaker II materials. Point 'd' of this group is shown in Fig. 81-3j of Morris and Burgh (1954) and is a representative of their corner-notched "form e," which are characterized by "expanding stem, rounded notches, short sharp barbs." The notches of this specimen originated just slightly below the adjacent high

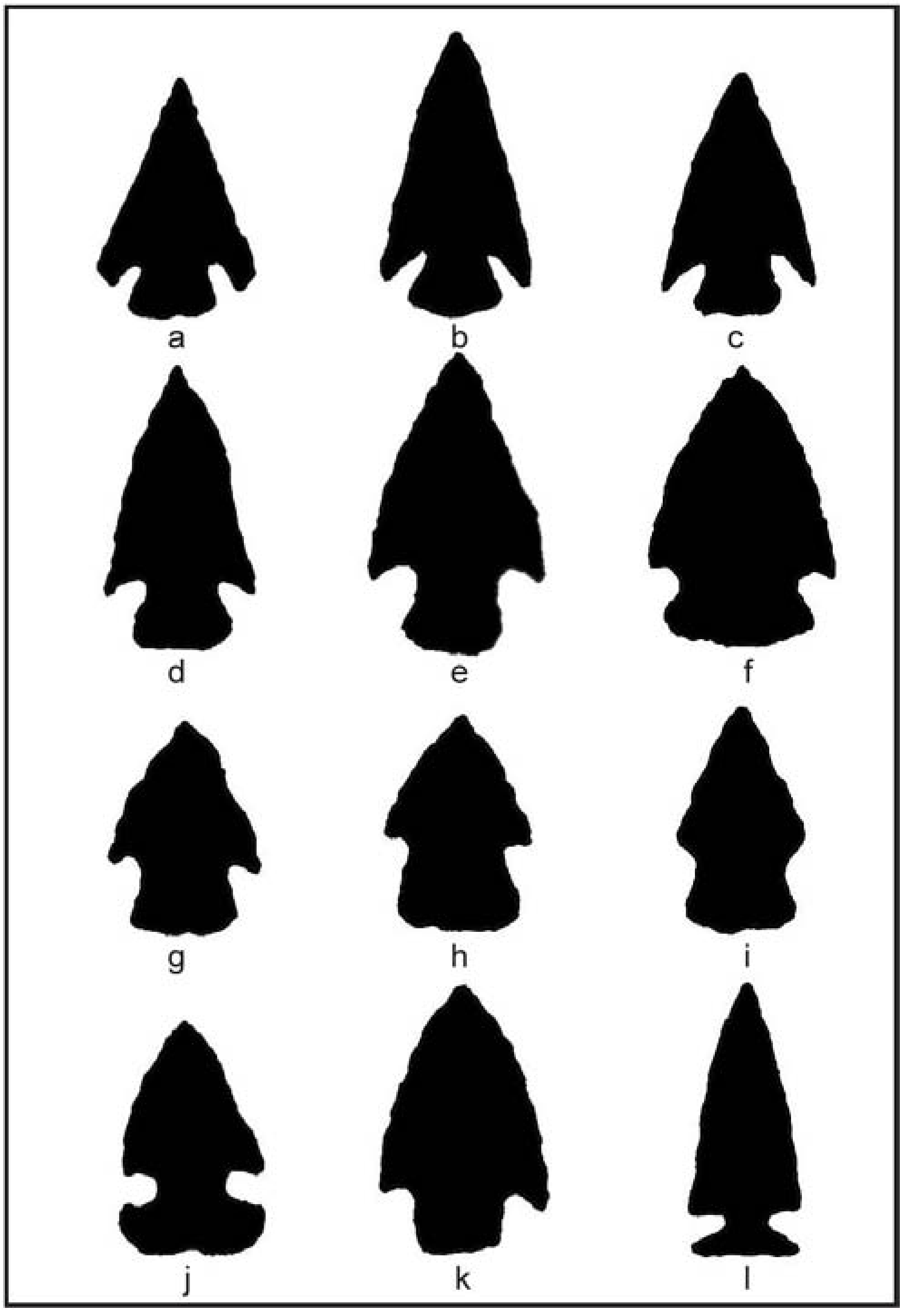


Figure 2.34 Principal forms of notched bifaces identified by Morris and Burgh 1954: Fig. 29; **I** is what Guernsey and Kidder described as the typical Basketmaker II dart point form for NE Arizona.

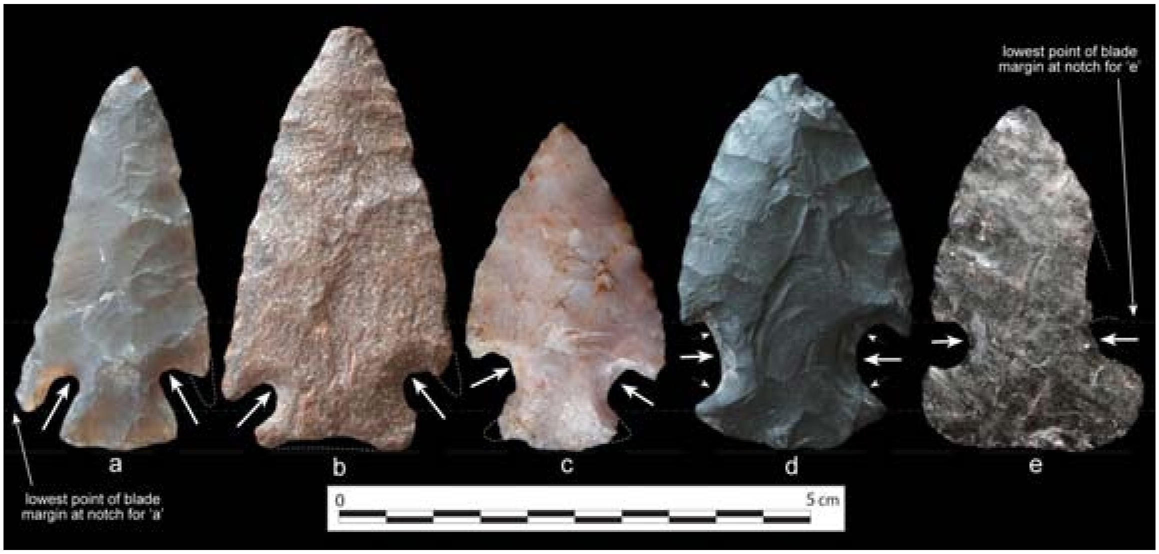


Figure 2.35 Examples of notched dart points from North Creek Shelter showing the examples in notch placement and size, from corner-notched (a) to side-notched (e) and from narrow notches (a) to wide notches (d): **a**, silicified wood (FCRS # 443); **b**, quartzite (FCRS # 447); **c**, chert (FCRS # 462); **d**, hornfels (FCRS # 463); **e**, Cerreo del Medio obsidian (FCRS # 499).

side-notched point. Two additional dart points from the North Shelter identified by Morris and Burgh as corner-notched are shown at the same scale in Figure 2.36. These particular specimens were identified as 'form f,' which had rounded notches and short blunt barbs (see Morris and Burgh 1954: Figure 81-4j, k). I have provided silhouettes of these two points to highlight the blade portions of the original stage 4 biface (point preform) that were removed in notching along with 10 unit scales stretched to the proportions of each point. Notching commenced on both points at almost 2/10s up from the base along the blade margin and proceeded horizontally leaving the original base configuration of the preform unmodified. In my mind these are side-notched points and point 'a' resembles western Basketmaker points from NE Arizona except that the notches extend less deeply than usual, which in this case might be a consequence of the tough silicified sandstone used for production. The top portions of the notches are essentially straight or even have a slightly upward angle and the one slightly concave or downward trending barb of 'a' is nowhere near as strong as for some of the western Basketmaker II side-notched points shown previously in Figure 2.33.

The width of the notches indicates that the notching tool used on both points was relatively wide, especially for 'b', resulting in what Morris and Burgh called "rounded notches." The flakers that Morris and Burgh (1954:62) identified for the Durango sites and pictured in Fig. 91-3 are just the sort that would result in wide notches. This stands in contrast to the narrow notched points from the Durango sites, two examples of which were shown previously, with the outline for one of them superimposed at the same scale on both of the

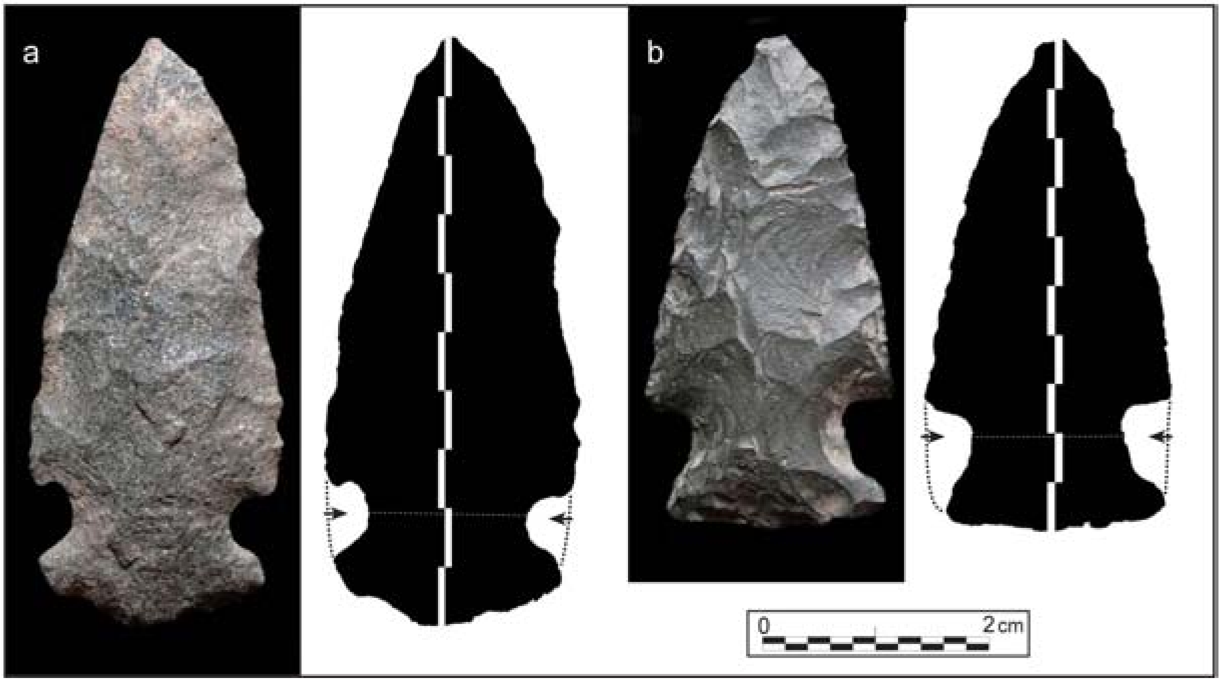


Figure 2.36 Two examples of darts points from North Shelter that Morris and Burgh (1954) classified as corner-notched: **a**, silicified sandstone (FCRS # 468); **b**, hornfels (FCRS # 467). Both are shown at the same scale with the 10 unit bars supimposed over the point silhouettes individually scaled to the length of each point to illustrate that notching originated slightly less than 2/10s up the side of each point.

broadly notched points in Figure 2.37. Although it might be possible to make the broad notches with the narrow-tipped tool that produced the narrow notches the reverse is not true. The other noteworthy aspect is that most points that have narrow notches also exhibit flake scars indicating that a fine tipped flaker was also used to fashion the overall preform whereas those with the broad notches tend to exhibit mostly percussion flake scars, including many that are broad and invasive yet their margins are unmodified by shaping flakes (this aspect clearly shows in 'b' of Figure 2.36).

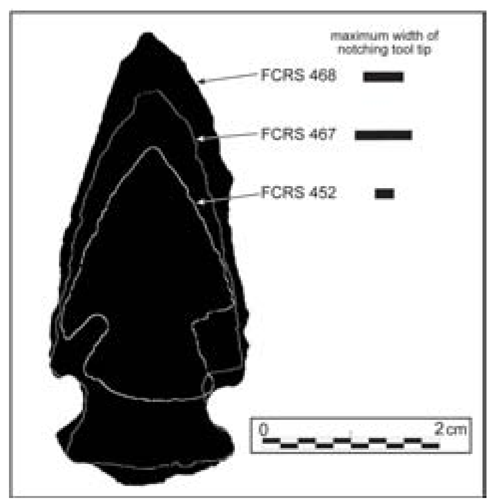


Figure 2.37 Superimposed outline of corner-notched point from Figure 2.32 and one of the side-notched points of Figure 2.36 over a silhouette of the other side-notched point of Figure 2.36; also shown is the maximum width or diameter of the notching tool tip.

The overall blade shape of point 'a' is also a good match for what I have previously described as the common form of western Basketmaker II dart point preforms (Geib 1996; 2002:287–293). Without going into too much detail here, the important characteristics include a general lanceolate rather than triangular shape with curved margins such that maximum blade width is usually achieved roughly one-third from the base with the margins more- or- less parallel but often slightly constricting towards the base. This aspect is clearly seen on preforms and finished points in primary form that lack obvious use-damage or resharpening such as those of Figure 2.33. In contrast, Elko points are usually made on a triangular preform where maximum width is at the base. Point 'b' of Figure 2.36 is made on more of a triangular shaped preform but one where the maximum width is still above the base. The preform shape of the obviously corner-notched dart points is markedly more triangular as the previous Figure 2.32 shows and also below in the description of Elko points.

Figure 2.38 shows two dart points from North Shelter that illustrate two distinct technological traditions in notching that characterized the North Creek Shelters as well as Talus Village; these traditions are evident in different orientations of notch execution using flakers with different sized tips and likely in two different manners. Point 'a' shows true corner-notching using a narrow-tipped flaking tool with the notch driven on an upward angled toward the dart tip. The notch opening measures 3.6 mm across and the tip of the flaker had to measure less than 3 mm across. The notch was extended to a depth of 6 mm on the intact side and more than 7 mm on the snapped side. Given the depth and narrowness of these notches the flaker used must have had a specially prepared tip and even then an "edge of tool" notching technique as described by Titmus (1985:248-249, 252-258) might well have been used. Point 'b' was side-notched much like the two points previous discussed, but in this case one corner of the stem is clearly missing, perhaps truncated from leverage in the haft but since the fracture surface looks slightly less weathered, perhaps post depositionally. In any event, the notching appears done with a broad-tipped flaking tool with notch driven horizontally but tapering back toward corner of base. Below the points are two preforms of different form, triangular and lanceolate, showing the hypothetical results of applying both notching styles by duplicating the outlines of the intact notches. With the corner-notches their angle was rotated in relation to the blade margin, something that is evident for all of the corner-notched points from the site: those with a highly acute vertex angle such as Figure 2.35a also had more steeply angled notches (as measured from a line parallel to the base) than points with a less acute vertex angle and more acute base angles such as Figure 2.35b. Basically, the corner notches were driven at an angle that had a close correspondence to the average angle of the blade margins. Consequently, the overall form of the blade clearly matters in that corner notching the lanceolate preform results in a morphology that is not seen for those points from the shelters with true corner notches. Points with notches executed on an angle from the corner had blades that were triangular in form prior to being notched. The broad side notches are seen on both blade forms but far more lanceolate than triangular.

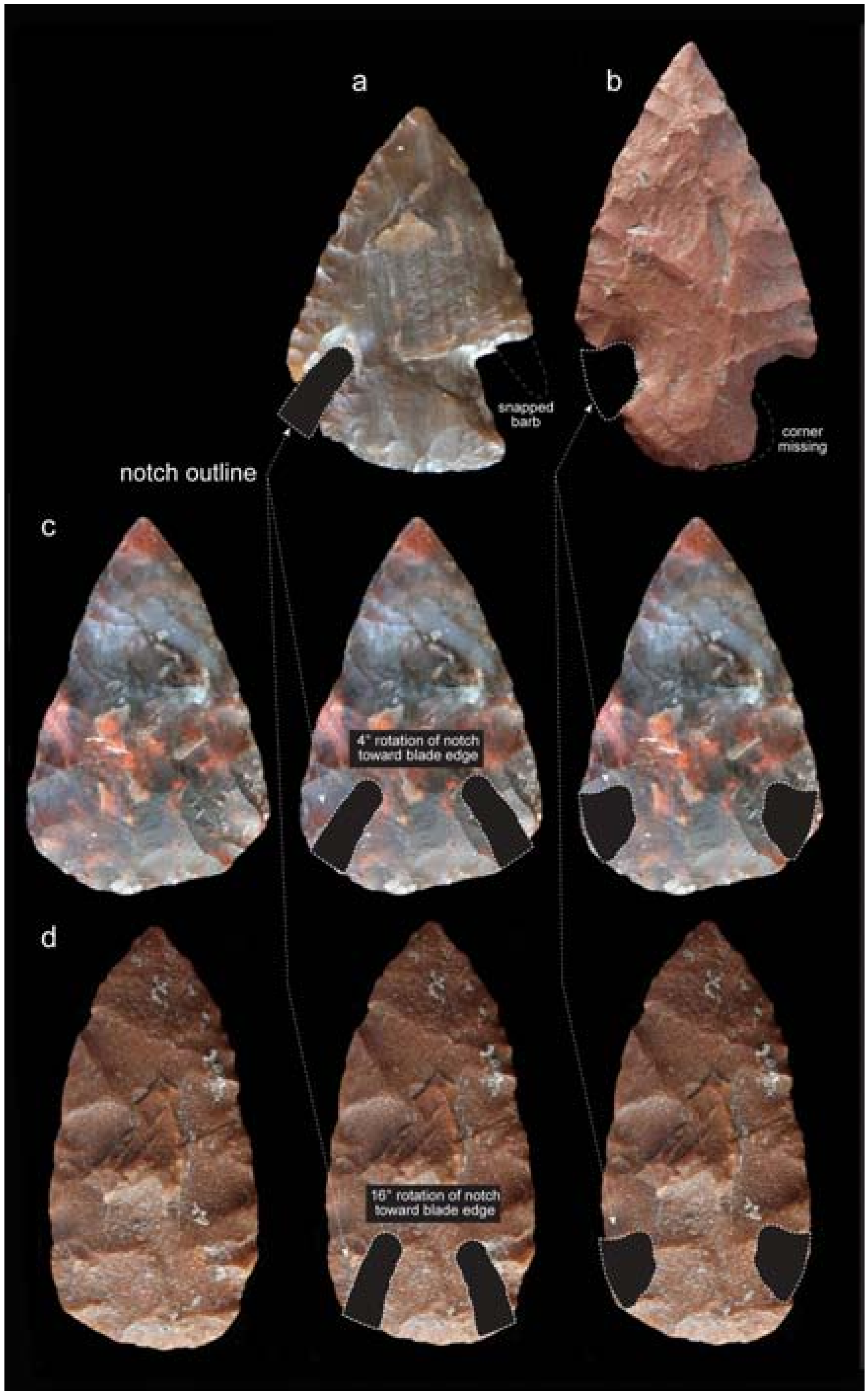


Figure 2.38 Two notched dart points from North Shelter that illustrate distinct technological traditions concerning notch placement and size along with two point preforms of different form, triangular and lanceolate, showing the hypothetical results of notching according to these traditions: **a**, FCRS # 452; **b**, FCRS # 1803; **c**, FCRS # 274; **d**, FCRS # 1804.

With the foregoing as background I will now turn to a description of the various notched dart points from the two rockshelters.

Elko Corner-notched. Projectile points classified as part of the Elko Series were relatively common from the North Creek Shelters, with 29 examples identified in the analyzed sample (Figure 2.39). Heizer et al. (1968; Heizer and Baumhoff 1961) named the Elko Series for distinctive points from excavations at rockshelters such as Wagon Jack, in Elko County, Nevada, within the western Great Basin. Of the four types or variants recognized by Heizer et al., corner-notched, side-notched and eared are still used. The contracting stem type is now designated as Gypsum or Gatecliff Contracting Stem (Thomas 1981). Holmer (1986:102) argues that "the corner-notched and side-notched varieties are not separate forms but constitute a continuum between the two extremes … all should be referred to as Elko Corner-notched." In any large sample of Elko points the gradational nature of notching angle might be evident, yet to the point producer there is clear distinction between a corner-notch and a side-notch. The basic motions and tools might be the same but it is not just a random choice to start notching either above the preform base, extending the notch horizontally (resulting in a side-notch) or from the corner and extending the notch at an upward angle (resulting in a corner-notch). Enculturation and internalized standards of what is acceptable certainly play a role in the choice and there may also be somewhat of a difference in how the foreshaft is configured to accommodate the different stem lengths and shapes. Mistakes in notching are common enough and then there is damage from use, recycling, or post-depositionally, all of which can help generate intermediate forms. A side-notching mistake that removes a corner of the stem will result in a point that looks corner-notched. The reverse, however, is not true—a mistake in corner-notching that removes the barb does not create a point that looks side-notched.

The Elko Series points from the Falls Creek Shelters do not reveal a continuum between corner-notching and a side-notching. Moreover, nearly all points that I classified as part of this series are clearly corner-notched (n=29) with just a few side-notched specimens (n=3) and none that were eared. A single eared-looking specimen that was shown previously in Figure 2.35b only looks this why fortuitously because of a break that made a concavity in the base. The Elko Corner-notched points likely include all of Morris and Burgh's point forms 'a' and 'b', both of which have narrow notches with either long square-tipped barbs (a) or long sharp-tipped barbs (b). The distinction between these seems insignificant since the shape of delicate barbs is often difficult to control during production and is then subject to easy damage in use. A few specimens that Morris and Burgh included as representative of other point forms such as 'c' (narrow notches, but with *short* sharp-tipped barbs) I also included as Elko Corner-notched such as Fig. 81-2a, Fig. 81-4e and 82-1d.

Figure 2.39 Representative examples of Elko Corner-notched dart points from the Falls Creek Shelters: **a**, made on thin flake of silicified wood (FCRS # 443); **b**, silicified wood, perhaps a flake blank (FCRS # 442); **c**, made on thin flake of silicified wood (FCRS # 444); **d**, made on thin flake of silicified wood (FCRS # 446); **e**, fine gray rhyolite(?) (FCRS # 445).

Figure 2.39 shows five whole or nearly whole examples of the Elko Corner-notched from the North Shelter, three of which have slightly damaged tips and three with damaged barbs on one side. These points all have narrow notches as do all the specimens that I classified as Elko, although in some cases the notches expand distally. Fourteen of the Elko Corner-notched points were whole or nearly so such that I could make reasonable estimates of length and width. Other points were fragmented to varying extents and Figure 2.40 shows some of these; despite breakage many portions has a few useful measurements. Some basic measurements for the Elko Corner notched points are provided in Table 2.35. As a group the Elko points are triangular in shape and tend to be made on thin flakes. The materials represented consist of silicified wood (n=14), chert (n=6), chalcedony (n=3), obsidian (n=2), quartzite (n=2), and single specimens of rhyolite and siltstone. The latter is the single case of hornfels used for Elko Corner-notched, a material commonly used for other points and bifaces. The Elko Corner-notched points at the shelters commonly exhibited pressure flaking scars alone or just scant traces of percussion scars with pressure flaking used to both thin and shape the tools. The narrow flake scars along with narrow notches indicate flaking with finely tipped tools, much more so than in evidence on some other points.

Unlike the probable Sudden Side-notched point shown previously, the Elko points clearly seem to be part of the Basketmaker II lithic assemblages at the shelters and likely too at Talus Village. The Elko points are not only common but came from secure Basketmaker II feature contexts including caches of points and bifaces. For example, the point of Figure 2.39d is part of a cache of seven flaked tools from Cist 46 of Terrace III in North Shelter that

Table 2.35. Summary data on basic dimensions of Elko Corner-notched and Basketmaker II Broad-notched dart points from the Falls Creek Shelters.

Variable	Elko Corner-notched	BMII Broad-notched
Length (mm)		
mean	37.2	38.1
std	6.5	6.7
median	39.6	37.0
smallest	24.8	23.7
largest	47.0	54.0
n=	15	28
Width (mm)		
mean	23.7	22.9
std	3.7	3.1
median	24.3	23.1
smallest	17.4	13.7
largest	30.1	28.7
n=	24	33
Thickness (mm)		
mean	4.5	5.8
std	0.9	0.8
median	4.4	5.8
smallest	2.9	4.3
largest	6.9	7.6
n=	29	36
Neck Width (mm)		
mean	10.9	14.5
std	2.6	2.3
median	9.9	14.9
smallest	7.6	8.2
largest	19.6	18.8
n=	29	36
Neck Thick (mm)		
mean	3.8	4.8
std	0.7	0.7
median	3.9	4.8
smallest	2.2	3.5
largest	5.1	6.4
n=	29	36
Stem Length (mm)		
mean	9.2	11.7
std	1.5	2.4
median	8.4	11.2
smallest	5.8	8.7
largest	13.1	21.1
n=	24	36
Stem Width (mm)		
mean	14.0	18.3
std	2.3	2.7
median	14.0	18.4
smallest	10.3	12.2
largest	19.0	24.4
n=	22	36
Notch Opening (mm)		
mean	4.5	7.1
std	1.0	1.6
median	5.0	6.8
smallest	2.7	3.9
largest	5.6	11.8
n=	22	29

Figure 2.40 Other, more fragmented, examples of Elko Corner-notched dart points from the Falls Creek Shelters: **a**, silicified wood (FCRS # 909); **b**, silicified wood (FCRS # 923); **c**, silicified wood (FCRS # 680); **d**, silicified wood (FCRS 449); **e**, silicified wood (FCRS # 448); **f**, fossiliferous chert (FCRS # 907); **g**, fossiliferous chert (FCRS # 453).

included five stage 4 bifaces that resemble typical preforms for Basketmaker II dart points (see Morris and Burgh 1954:Fig. 80-3f-j). The common occurrence of Elko points at Talus Village and the Falls Creek rockshelters stands in marked contrast to western Basketmaker sites and is one of piece of evidence that RG Matson (1991) used to argue for ethnic distinctiveness among western and eastern Basketmakers and for cultural continuity between Archaic foragers and eastern Basketmaker farmers.

***Basketmaker II "Broad Notched*.**" Rather than split hairs, I have lumped together a large number of dart points from the two shelters that share the wide notches that I introduced in the previous general discussion of notching as well as other production characteristics that set them apart from examples of Elko Corner-notched. Examples of these points are shown in Figure 2.41. The broad notches of these points almost invariably originate from the side but taper back toward the base, at times clipping the corner of the stem. Even when the stem corner is left intact, the nature of the notching imparts a somewhat corner-notched appearance, especially if top of the notch (shoulder) is somewhat concave resulting in a short barb. The top concavity results from the same effort that created the bottom taper and is simply part of the process of opening up the notch likely with a broad tipped pressure flaker such as those recovered from the shelters and using an end of tool notching method as described by Titmus (1985:249-250, 258-260). As he observes, "If the object being notched is thick in cross section, narrow and deep notches are difficult to achieve using this method because of the weakness of small antler and bone tools" (Titmus 1985:260). These points are thicker on average than the Elko points though some are certainly thin enough that an Elko style of notch could have been achieved given the proper tool and notching method. On some of these points the shoulder slopes up, on some it is straight, on some it hangs down slightly, and on some there is a mix. Because the broad notches also co-occur with production characteristics that are also generally distinctive from the Elko series points, a separate technological tradition seems evident. Specifically the points with wide notches almost invariably exhibit obvious percussion flake scars often little modified by pressure retouch except for notching and some tip sharpening. More importantly, the flake scars on some of the points seem to be good matches for production by indirect percussion flaking, a technique that was also seemed evident for dart point preforms from the shelters.

I classified 36 dart points from the North Creek Shelters as Basketmaker II Broad Notched although this was tentative for eight of these. Seventeen of these where whole and 10 were almost whole. Unlike Elko Corner-notched, siltstone and specifically hornfels was the mostly commonly represented raw material with 10 points so identified. The other materials represented in decreasing order of representation are chert (n=8), silicified wood

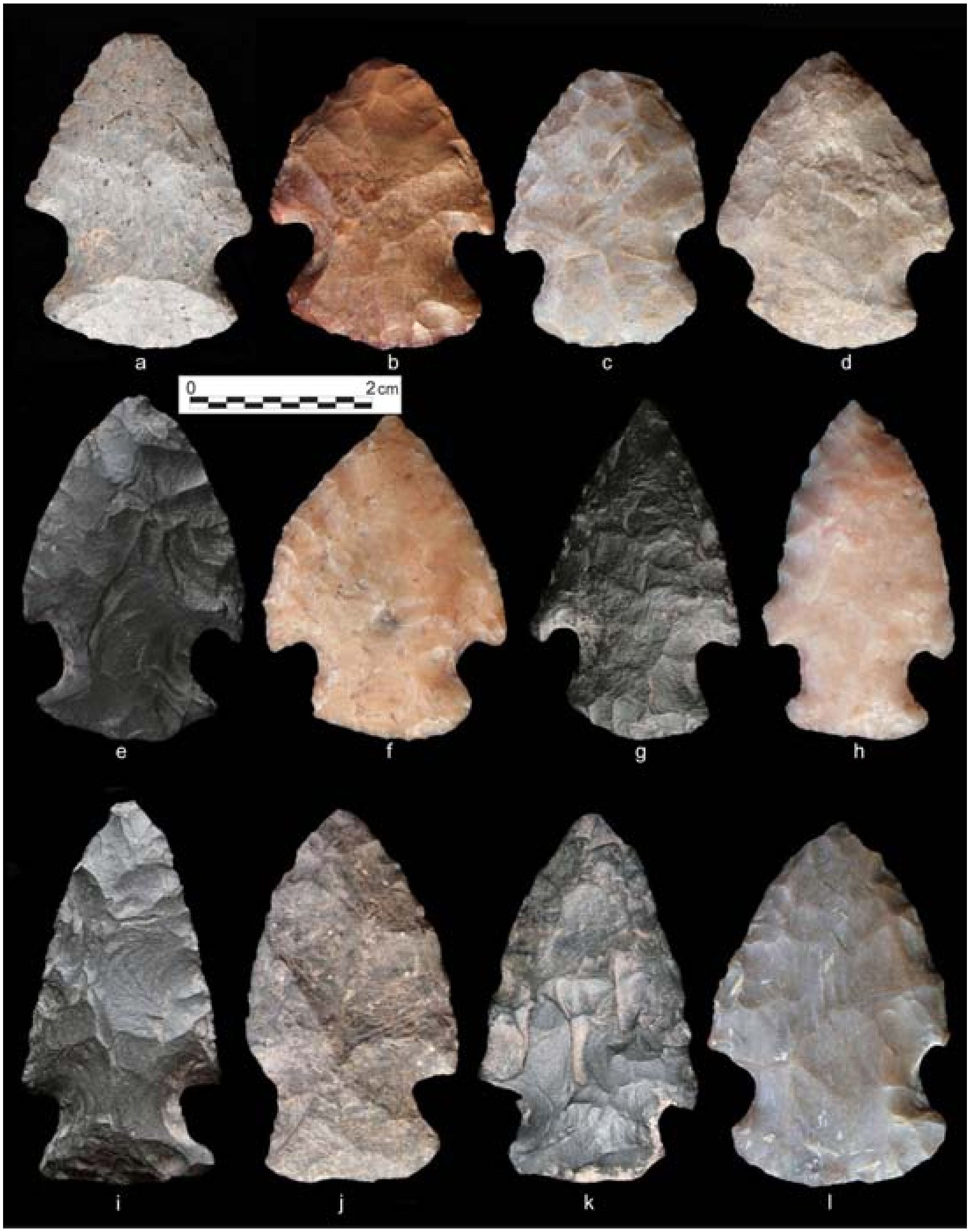


Figure 2.41 Representative examples of Basketmaker II Broad Notched dart points from the Falls Creek Shelters: **a**, FCRS # 490; **b**, FCRS # 466; **c,** FCRS # 491; **d**, FCRS # 459; **e**, FCRS # 463; **f**, FCRS # 461; **g**, FCRS # 464; **h**, FCRS # 470; **i**, FCRS 467; **j**, FCRS # 480; **k**, FCRS 469; **l**, FCRS # 460.

(n=7), rhyolite and quartzite (both with 4 each), obsidian (n=2), and chalcedony with a single representative.

Western Basketmaker Side-notched. Just four of the numerous dart points from the Falls Creek Shelters are potentially classifiable as western Basketmaker II Side-notched. Guernsey and Kidder first described this type of point noting that “almost all our finished points are notched at right angles to their long axes, the notches having a depth equal to about one-third of the total width of the base” (1921:87). One of the potential western Basketmaker II points was shown previously in the general discussion about notching. It is the specimen of silicified sandstone with clear side-notches but lacking the deepness often seen on points Basketmaker II points of NE Arizona, notches that created narrow and delicate looking necks. As I mentioned the toughness of the raw material good have limited notch depth for this FCS specimen. Another of the possible western Basketmaker II points is such a small fragment that classification is less than secure. This item consists of just the base snapped across the notches. The deep side-notches resulted in a neck width of just 8.2 mm, which is quite different from the broad side notched and even less than the average or median neck width of Elko Corner-notched.

Western Basketmaker Corner-notched. I use this heading not to describe more points from the Falls Creek Shelters, because the rest of the specimens from the sites are unclassified, many because they are small nondescript fragments. Here I am concerned with making a case that there is important variability in the points that are part of the western Basketmaker II area, variability that is lost when one assumes that the specimens described and illustrated by Guernsey and Kidder and common to Basketmaker II sites of NE Arizona typify all western Basketmaker II dart tips. Justice (2002:211) refers to these points as “Black Mesa Narrow Neck” and provides various illustrations (Figure 2.27) but I prefer to designate them as White Dog Basketmaker. Projectile points from north of the San Juan River in SE Utah are a case in point. Although this is apparent based on collections made by the Cedar Mesa Project (RG Matson, personal communication 2012), these also consist largely of fragmented and reworked specimens. The dart points from Cave 7 are far more informative since so many are whole and in primary form; a sample of these are shown in outline form in Figure 2.42, with the outlines generated from digital photographs. All but the lower left specimen (FN252) included here are within the potential size range for projectile points found hafted to Basketmaker foreshafts. The adjacent specimen (FN253) is long for a dart point, measuring almost 8 cm in length, but it has the narrower width of a dart point. Again, it is worth repeating that just because an item is within the class regularly hafted to atlatl dart foreshafts does not mean that they were excluded from other uses; at least seven of these dart-sized hafted bifaces exhibited obvious use-wear from cutting or other non-projectile tasks.

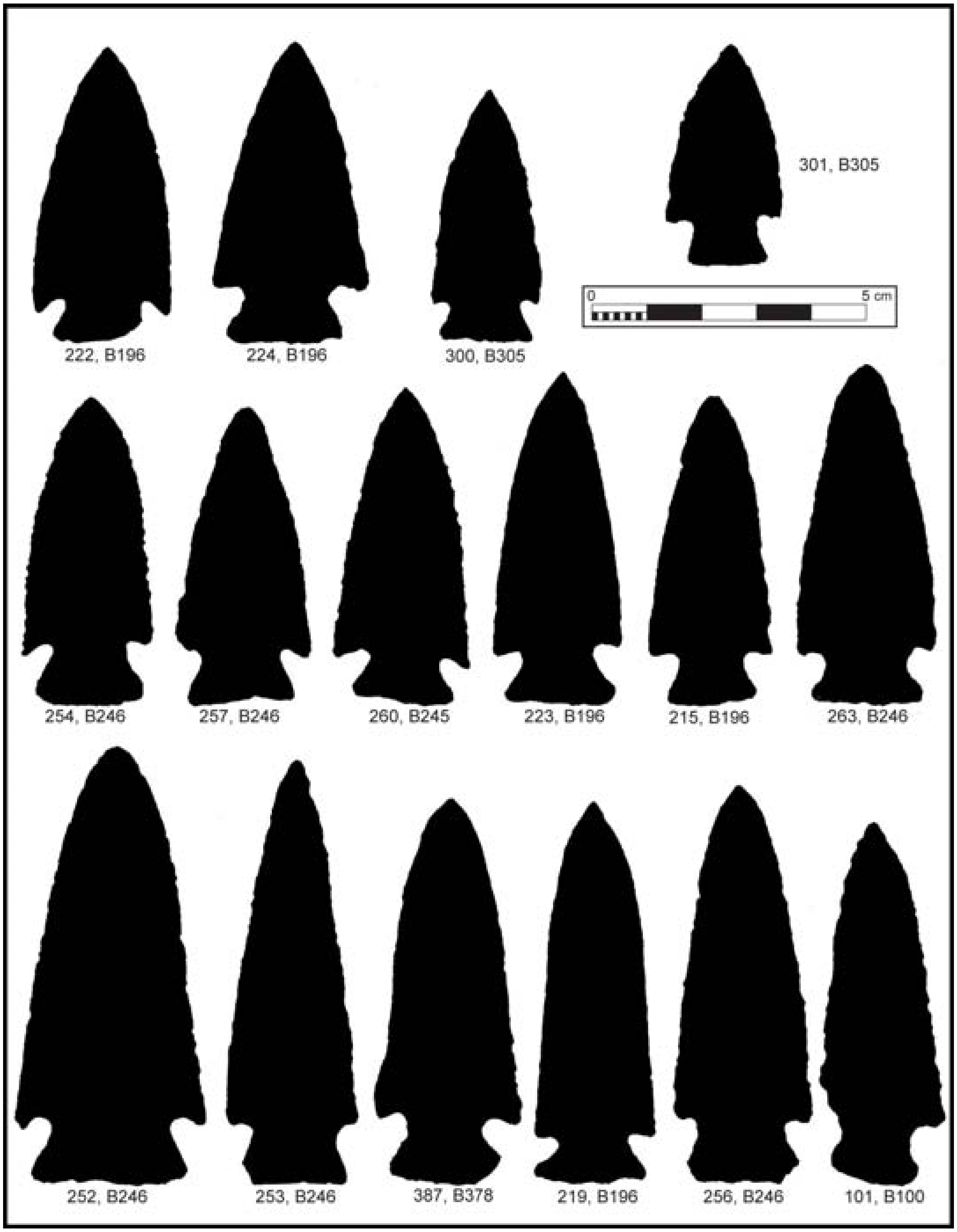


Figure 2.42 Sixteen hafted bifaces from Cave 7, all but the lower left specimen (FN252) are within the size range for Basketmaker dart points hafted to foreshafts. The lower right specimen (FN101) was found in the ribs of Burial 100 and exhibits a possible impact break to one shoulder.

The lower right specimen (FN101) was found in the ribs of Burial 100; it has a probable impact break to one shoulder.

The most striking aspect of the Cave 7 dart points is that few, if any, closely resemble a typical example of the horizontally-notched points common at Basketmaker sites of NE Arizona, Indeed, none of the Cave 7 points that I was able to analyze were side-notched in a strict sense like classic White Dog Basketmaker points and a few somewhat resemble Elko Corner-notched. Most of the Cave 7 points appear to have been notched from the side starting at the base or some distance above, but with the notches clearly driven at an upward angle (for some just in the last few notching flake removals), resulting in a slight barb at the shoulder. Notches started on the side near the base imparted a more corner-notched appearance and this occurs on about 40% of the Cave 7 dart points whereas when notching started farther up the margins this imparts a more side-notched appearance and this occurs on over half of the Cave 7 dart points. Hurst and Turner (1993:162) also noted as “interesting” “the near absence of horizontally-notched points” at Cave 7.

Aside from the lack of typical White Dog Basketmaker points the reduction technology of the Cave 7 points appears characteristically western Basketmaker. They clearly exhibit the broad percussion flake scars that were likely removed by the indirect punch method based on the regularity of their spacing and the extent to which the carefully controlled initiations achieved simultaneous thinning and shaping of the bifaces. These percussion flake scars are largely unobscured by subsequent pressure flaking. The flake scars on the Cave 7 dart points correspond exactly to those of the hafted dart points and dart point preforms in the Sand Dune Cave hunter’s bag (cache 1), tools that occurred together with indirect percussion punches and pressure flakers of mountain sheep horn (Geib 2002, 2004). Judging from both the notched and unnotched bifaces at Cave 7, the producers of these items were evidently enculturated in the western Basketmaker II flintknapping tradition (see Geib 2002).

2.7 Cores/Nodular Tools

There are 108 items from the North Creek Shelters that I analyzed as cores/nodular tools with Figure 2.43 showing some examples. These are angular chunks or rounded cobbles of often heavy rock that either have purposeful flake detachments (nodular cores) or that exhibit use modification such as battering and incidental flake detachments (a use-spalled hammerstone). If purposefully flaked, the intent was not to achieve thinness or section symmetry (to create a tool with faciality), but merely to produce flakes for use (unused direct free-hand percussion cores) or to shape or create a working edge such as cobble choppers and pecking stones (those hammerstones with flaked edges used for dressing manos and metates).

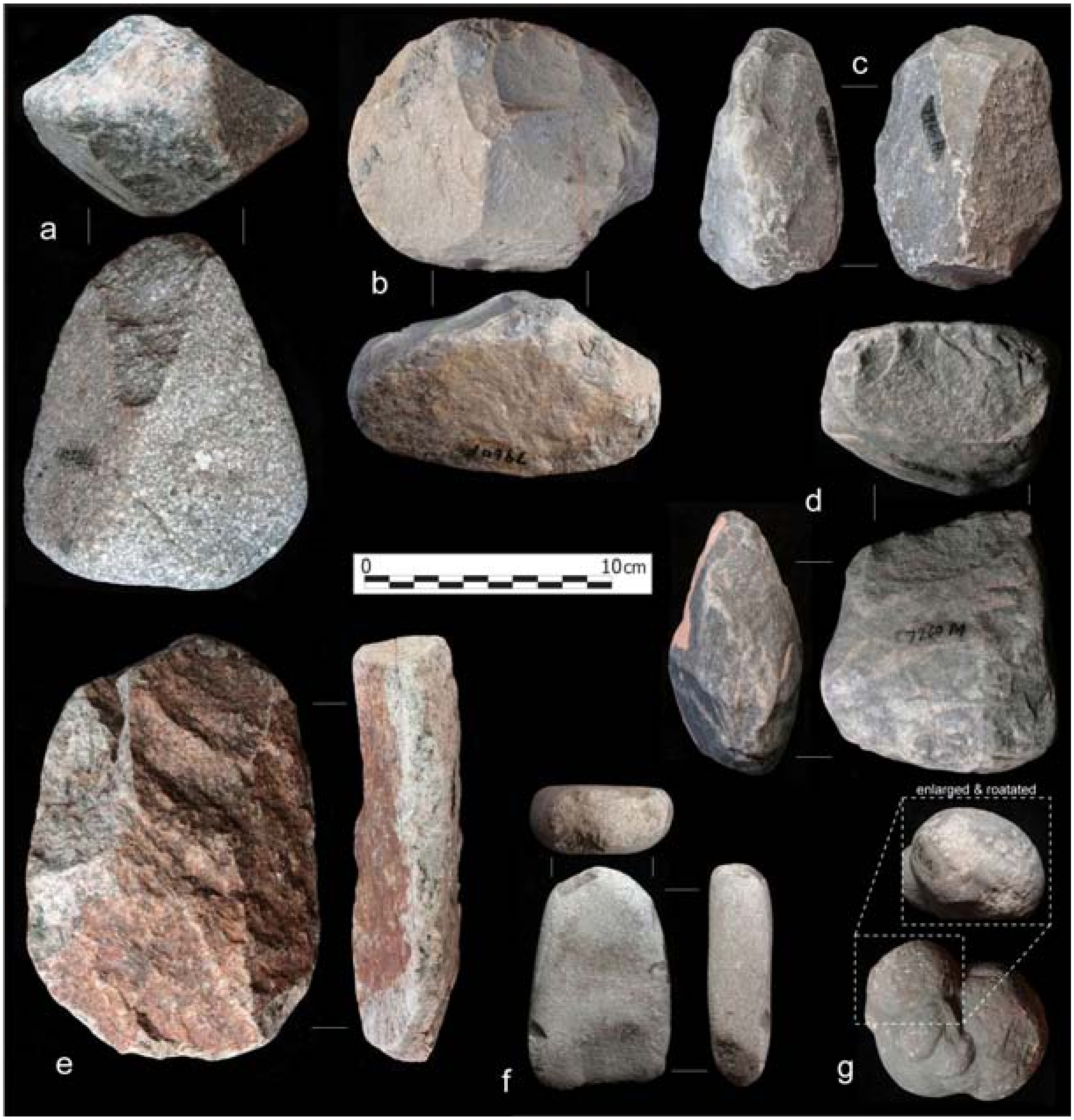


Figure 2.43 Examples of different hammerstones from the Falls Creek Shelters: **a**, use-spalled cobble of diorite (FCRS # 396); **b**, purposefully flaked quartzite nodule (FCRS # 361); **c**, use-spalled angular block of limestone (FCRS # 373); **d**, spall from alluvial cobble of quartzite with one end flaked (single detachment) to prepare an acute edge that is battered and use spalled (FCRS # 368); **e**, tabular block of granite (FCRS # 368); **f**, sandstone cobble that closely resembles hammer for flaking stone including abrasion likely from biface platform preparation (FCRS # 674); **g**, sandstone concretion that also resembles hammer for flaking stone (FCRS # 364).

This class of tools largely corresponds with what Morris and Burgh (1954:54) identified as "choppers and hammerstones," those ". . . unstandardized general-purpose tools with which nearly all rough work was done. The worn and battered edges clearly attest how arduous was their use." They go on to list such possible uses as heavy work on stone, wood, and bone as well as digging in hard earth such as the substrata in the rockshelters during structure and feature creation. These are the sort of tools that immediately bring to mind Gary Larson's cartoon with the punch line: "Damn these stone tools." As Morris and Burgh (1954:54) caution, "there is no sharp differentiation in function between cutting and pounding tools. As a cutter lost its sharp edges through use, it became progressively more rounded in form and unsuited to its original purpose, but was still entirely serviceable as a pounding instrument." As one way to partially circumvent the functional ambiguity issue, I inspected each tool for use-wear with observations documented verbally and coded as to inferred activity for two possible independent uses—not just separate edges/surfaces (EUs) for the same activity (as was done for flakes), but distinct tasks such as a nodule used both as a chopper and as a hammerstone.

Despite the functional ambiguity of these tools, I separated the cores/nodular tools into several general types based on overall morphology and use-wear. For this study I identified just four morpho-functional types: direct free-hand percussion core, chopper, scraper/plane, and hammerstone. Table 2.36 presents a count of these for the Falls Creek Shelters along with the incidence of cortex, purposeful flaking, and incidental spalling (obvious use-related flake detachments) for each tool type. Given the large size for most of these tools and the fact that most are made from nodules rather than flakes it comes as no surprise that cortex occurs on nearly all.

Table 2.36. Count of cores/nodular tools from the Falls Creek Shelters according to general morpho-functional tool type, listing the incidence of cortex, purposeful flaking, and incidental spalling (obvious use-related flake detachments) (R% = row %).

	Total		Cortex		DFP Flaking		Use Spalling	
Tool Type	n	%	n	R%	n	R%	n	R%
DFP core	25	23.1	24	96.0	25	100.0	0	0.0
Chopper	15	13.9	14	93.3	14	93.3	1	6.7
Scraper/Plane	2	1.9	2	100.0	2	100.0	0	0.0
Hammerstone	66	61.1	65	98.5	18	27.3	29	43.9
Total	108	100.0	105	97.2	59	54.6	30	27.8

Over 60% of the items are classified as hammerstones, which are tools that exhibit battering use-wear—the crushing, pitting and spalling of that results from stone-on-stone contact. In the past I have always restricted the hammerstone label to those tools with battering on an unprepared rounded surface and have designated those tools with battering on an acute edge or projection, whether natural or produced, as pecking stones. I still favor such an approach but it was proving impractical for this assemblage because there was such overlapping morphology of battered edges ranging from acute to slightly rounded to heavily rounded, often on single tools. Nonetheless, the use-wear of each core/nodular tool was also individually evaluated using separate data columns that allowed specification of two different inferred functions. In this way hammerstones can be differentiated into those likely used as pecking stones, those more likely used for flaked stone tool reduction, and those with evidence of other uses such as crushing.

Direct free-hand percussion cores are the second most numerous "type," accounting for over 20% of the cores and nodular tools. These items might or might not exhibit use-wear (40% did not), but if such traces were present, this use appeared secondary to their principal role in flake production. In some cases, such secondary use was not immediately obvious but took microscopic inspection to detect. In the case of cores used as pecking stones (seven cases) the use-wear was obvious. Direct free-hand percussion cores reused as pecking stones are sometimes called battered cores a term that adequately captures the notion of a core first then hammering tool. A few of the direct free-hand percussion cores appear to have been used for chopping but the items identified as choppers appear to have been flaked primarily for the purpose of creating a chopping tool. Most of the examples of what Morris and Burgh (1954:54) designated as "core choppers" also seem to have been purposefully flaked to create a chopping tool rather than their suggestion of chopping as a secondary use and most or all of these were probably analyzed as the 11 choppers of flaked facial tools.

The choppers analyzed as cores/nodular tools are blocky with at least three principal sides or faces rather than just two principal faces. They have a prepared (flaked) acute edge with small use-flakes that have been detached by percussive blows directly into the edge; other use-wear such as edge smoothing or rounding is often present. Fifteen tools like this were identified for the cores/nodular tools that when combined 11 items with similar use-wear in the flaked facial tools gives a total of 26.

Scrapers/planes can closely resemble choppers in overall morphology (though they can have steeper spine angles), but they lack the small use-flakes directed straight into the edge because of deployment in a non-percussive mode. Just two examples were identified as this specific type of core tool and one of these only provisionally because it lacked use-wear.

Nonetheless, use-wear potentially indicative of this form of activity was also observed on nine other cores/nodular tools all but one of which was identified as a direct free-hand percussion core.

The raw materials represented by cores/nodular tools are listed in Table 2.37. As I would expect, the toughest materials, those that are most difficult to flake, were preferentially used for the heavy-duty percussion tasks. Direct free-hand percussion cores are all of the more siliceous and finely textured rock. The incidental spalling of hammerstones of coarse igneous and limestone likely account for the much of the sparse flakes of this material recovered as debitage. Over 40 percent of direct free-hand percussion cores are of siltstone, which includes about equal numbers of hornfels (n=6) and greenish metasediment (n=5). The latter was poorly represented in debitage while the former accounted for a large proportion of flakes. Quartzite was clearly preferred for choppers likely because an effective tool of this type requires a material that is flakable but still tough and that occurs in sizable chunks.

Table 2.37. Raw material of cores/nodular tools from the Falls Creek Shelters according to general morpho-functional tool type.

Raw Material	DFP core	Scraper/Plane	Chopper	Hammerstone	Total	%
Chert	5	0	0	0	5	4.6
Silicified wood	4	1	0	1	6	5.6
Siltstone/mudstone	11	0	3	5	19	17.6
Quartzite	5	0	8	35	48	44.4
Quartz	0	0	1	0	1	0.9
Coarse Igneous	0	0	0	13	13	12.0
Sandstone	0	0	0	4	4	3.7
Limestone	0	1[a]	3[b]	8	12	11.1
Total	25	2	15	66	108	100.0

a The limestone of this particular tool is partially silicified and perhaps metamorphosed (?)
b The limestone of one chopper is partially silicified with abundant oolites

As mentioned earlier, each core/nodular tool was inspected for use-wear and based on this evidence an inference was made concerning the type of activity or activities (maximum of two) that the tool was used for. This information is presented in Tables 2.38 and 2.39. Just because an artifact lacked obvious use-wear, which was true for 11 percent of the cores/nodular tools, does not mean that they were not used, just that traces of such use were no obvious at low power magnification. There are several reasons while this can occur but principally from limited use of tough stone on semi-yielding materials. Stone on stone contact immediately results in use traces, so this activity is unlikely to be underreported. The reflaking of worn edges and the continued use of a tool for new tasks also likely played a role. The latter is what Morris and Burgh mentioned as choppers became pounders and this later task erased the use-wear of the former task.

Table 2.38. Primary inferred function based on use-wear for the cores/nodular tools from the Falls Creek Shelters according to general morpho-functional tool type.

Inferred Activity	DFP core	Chopper	Scraper/Plane	Hammerstone	Total	%
None	10	1	1		12	11.1
Cutting				1	1	0.9
Scraping/planing	6		1		7	6.5
Chopping	2	14			16	14.8
Crushing				3	3	2.8
Hammering				38	38	35.2
Pecking	7			24	31	28.7
Total	25	15	2	66	108	100.0

Table 2.39. Secondary inferred function based on use-wear for the cores/nodular tools from the Falls Creek Shelters according to general morpho-functional tool type.

Inferred Activity	DFP core	Chopper	Scraper/Plane	Hammerstone	Total	%
None	17	9	2	35	63	58.3
Scraping/planing	3	1			4	3.7
Chopping	1				1	0.9
Crushing	3			24	27	25.0
Rubbing				1	1	0.9
Rubbing?				1	1	0.9
Hammering				4	4	3.7
Pecking	1	5		1	7	6.5
Total	25	15	2	66	108	100.0

Although hammerstones may seem like a rather uniform and uninteresting lot, the tools of this sort from the Falls Creek Shelters exhibited evidence of task other than simply pounding. This was clearly the primary role and the hammerstone often displayed very heavy battering attrition, but many also exhibits abrasion from using the tools in some sort of crushing mode. In some cases the abrasion occurs on flat faces suggesting that the hammerstones were used against a rock slab or metate to crush substances; Figure 2.44 shows two examples of this for tools of different material. The striations evident on these tools are **not** as patterned as those occurring on manos that result from reciprocal grinding but have more random orientations as would be expected from crushing use, likely with an occasional twisting motion. Abrasion from probable crushing use is also evident on fairly elongated acute margins of several somewhat flattened hammerstones. In these cases the abrasion has leveled the margin making it look evenly rounded when viewed from the side. Figure 2.45 shows one example like this on a granite block and there are at least four other examples. For most of these tools the abrasion appears to have been longitudinally along the edge although I remain unsure of this since I had trouble examining the edge under my microscope. One tool like this of limestone exhibited macroscopically obvious striations and these occurred perpendicular to the long edge (Figure 2.46), indicating that the tool was used in a transverse manner. This latter specimen perhaps may have had a different role than most of the other edge abraded tools but perhaps they were all used transversely.

One possible use of these tools is for the initial crushing of yucca leaves, perhaps after retting, in the production of cordage. Morris and Burgh (1954:62) actually describe just such a process (minus the retting) in an experiment of using notched scapulas and ribs for yucca fiber extraction. They talk about hammering the yucca leaves with a cobble to macerate the tough epidermal layer and break apart the fibers. In some experiments that I have done with mass processing of leaves I used the rounded side of a mano; this was effective but I can easily envision the benefit of having a slightly more acute edge for this task and the tabular battering tools with the crushing wear on the edge seem ideal. Whether they were actually used this way could be determined perhaps with phytolith or other forms of residue analysis. Needless to say, many of the hammerstones seem to be multipurpose tools and the same is also evident for the manos considered next.

2.8 Grinding Tools

As defined for this analysis grinding tools are restricted to items whose principal use was for seed/grain processing. This could potentially mean everything from informal expedient manos and grinding slabs to formal bin-type slab metates and two-hand manos. Abrading stones and the like were analyzed separately along with other miscellaneous stone artifacts that did not match the criteria for inclusion in the previous stone tool classes. This discussion is limited to just manos since these were the only tools available for analysis. Any mention made of metates is based on the information presented by Morris and Burgh (1954:58).

Morris and Burgh (1954:58-59) report 55 manos from the two rockshelters with more than twice this from Talus Village, but I had just 46 tools for analysis. Some basic information about these manos is presented in Table 2.40 organized by whether the tools are small or large. I used 16 cm as the arbitrary separation point in the size continuum. Over half of the tools are in the small size range but surprisingly almost 40% are large or two-hand varieties.

Figure 2.44 Hammerstones that also exhibit evidence of crushing use on a flat face of the tool: **a**, rounded, flattened cobble of porphytritic andesite with battering use of rounded edges and also brasion of both faces (FCRS # 416); **b**, flattened nodule of limestone with heavy battering attrition around entire circumference including numerous use-spalls and also abrasion of one face (FCRS # 415).

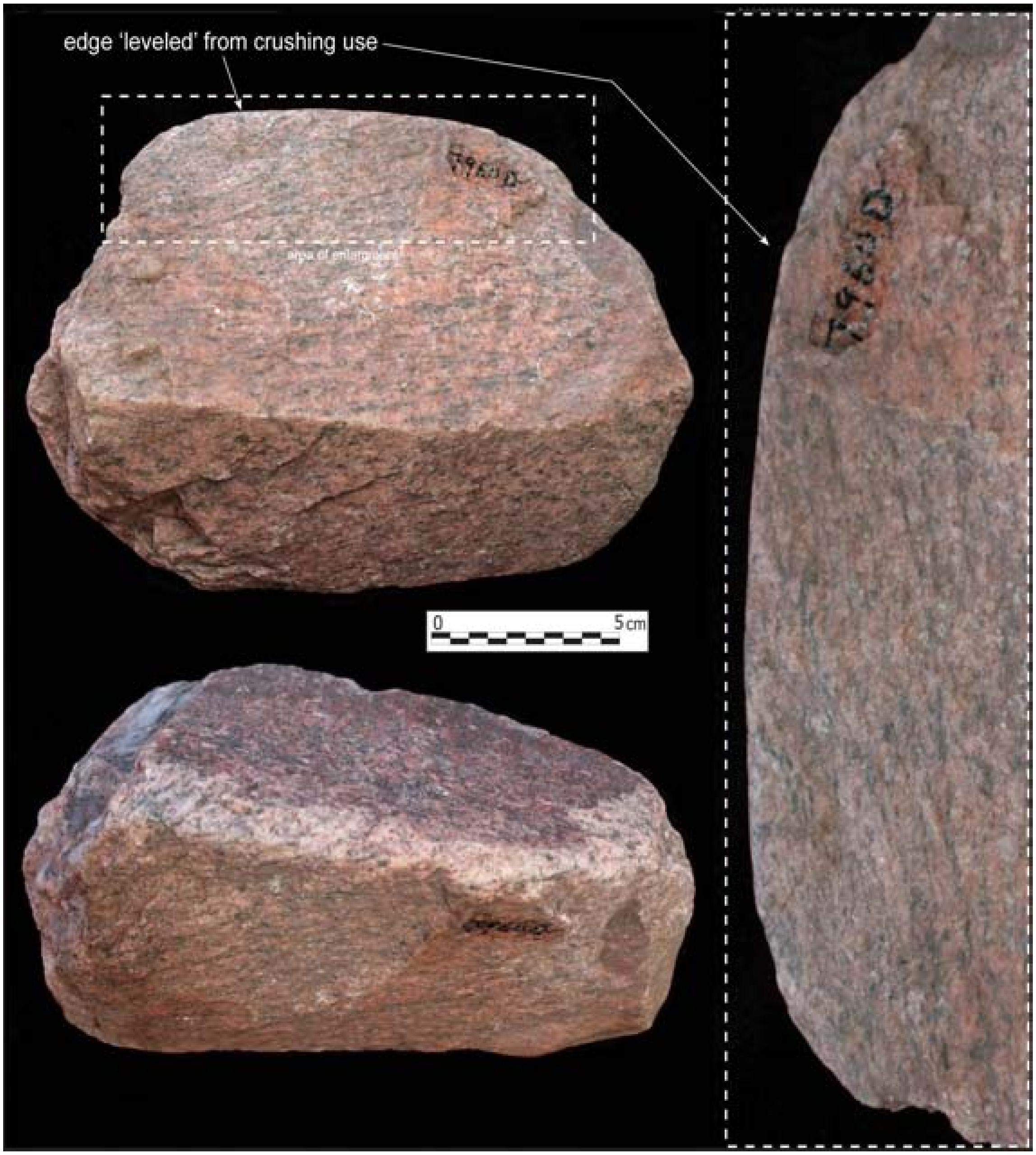


Figure 2.45 An example of hammerstone with "rocker-like" worn edge from probable crushing use (FCRS # 359). Large angular block of granite (~1350g) with rhombus cross-section that exhibits heavy battering attrition on ends and one edge, but with one acute lateral margin leveled by crushing abrasion.

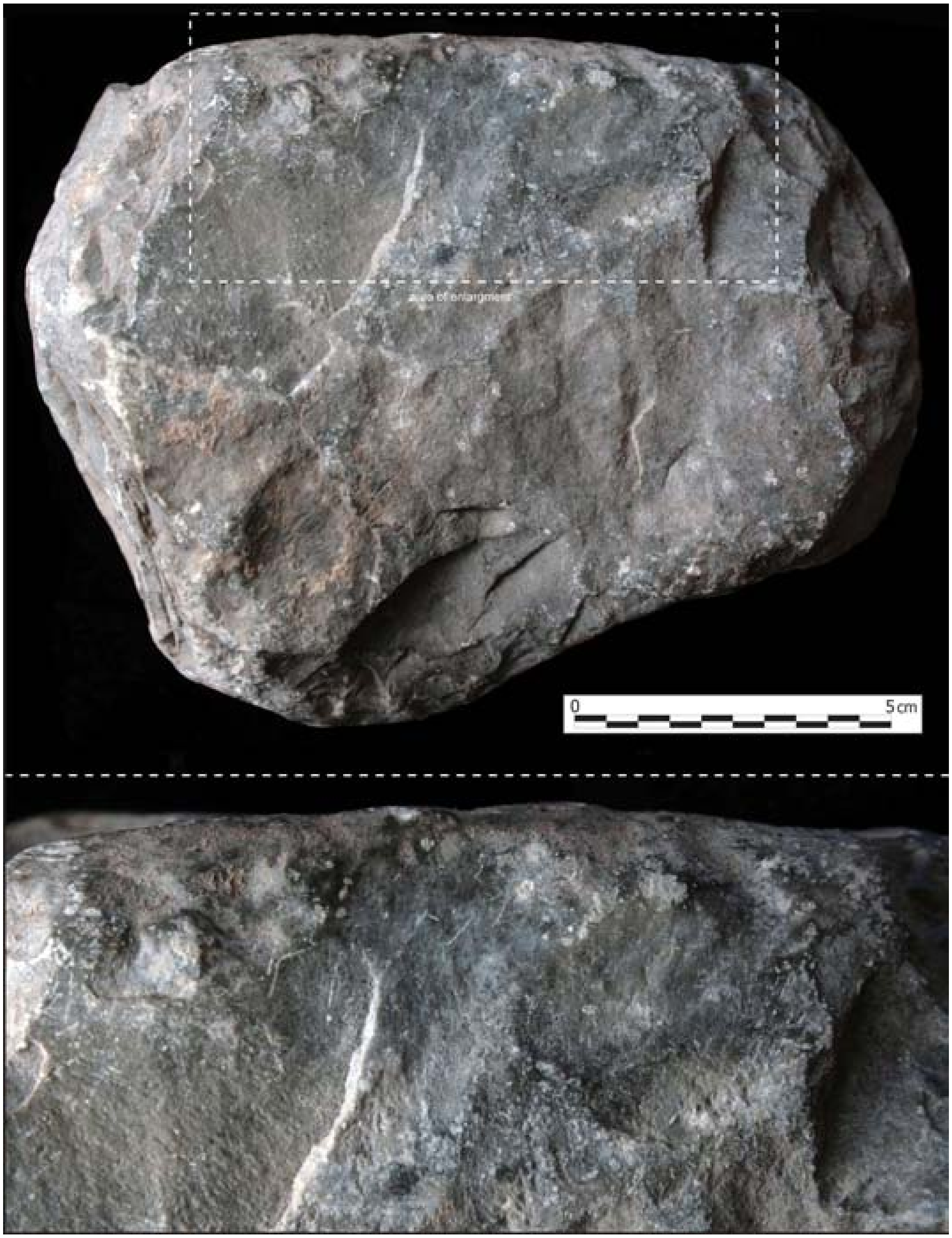


Figure 2.46 Large sub-rectangular block of limestone (FCRS # 383) with extensive battering use on corners and edges but also abrasion from crushing on faces and one semi-acute edge (~75 deg); this edge is somewhat leveled and polished from use and exhibits obvious striations perpendicular to the edge and extending up to 20 mm onto one face (other face obscured by carbonate); striations occur on both high and low places suggesting contact with same pliable substance.

The large manos are not just slightly over the 16 cm size limit but very much so, with many examples that I would have assumed came from a later Puebloan context. Most of the collection consists of whole tools (84.8%), which is markedly different from the usual highly fragmented and recycled tools that are normally recovered from sites. I assume that this partially reflects some selective collection in the field but it is also likely a result of depositionally processes whereby whole items were cached for later use but never retrieved as structures and features fell into disuse and were built over. This aspect is also reflected in the assessment of tool life history since 67% of the manos were considered to be finished items in working condition (whole and unexhausted) and less than 20% as exhausted or broken. Fragments of large manos are well suited for reuse as small manos, a practice that was common during the Puebloan period, and there are five examples like this for the Falls Creek Shelters.

Table 2.40. Condition, use phase assessment, raw material, and number of faces used for manos from the Falls Creek Shelters, with manos differentiated between small (one-hand) and large (two-hand).

Variable	Small Mano		Large Mano		Total	
	n	%	n	%	n	%
Condition						
Corner	1	3.6	0	0.0	1	2.2
End, < half	0	0.0	1	5.6	1	2.2
End, >half	4	14.3	1	5.6	5	10.9
Complete	23	82.1	16	88.9	39	84.8
Total	*28*	*100.0*	*18*	*100.0*	*46*	*100.0*
Use Phase						
Unfinished but used	0	0.0	1	5.6	1	2.2
Finished, whole & unexhausted	17	60.7	14	77.8	31	67.4
Finished, used up or broken	6	21.4	2	11.1	8	17.4
Recycled, whole & unexhausted	5	17.9	1	5.6	6	13.0
Total	*28*	*100.0*	*18*	*100.0*	*46*	*100.0*
Raw Material						
Coarse Igneous	4	14.3	1	5.6	5	10.9
Sandstone	24	85.9	17	94.4	41	89.1
Total	*28*	*100.0*	*18*	*100.0*	*46*	*100.0*
Faces Used						
1	1	3.6	5	27.8	6	13.0
2	27	96.4	13	72.2	40	87.0
Total	*28*	*100.0*	*18*	*100.0*	*46*	*100.0*
Column %	*60.9*		*39.1*		*100.0*	

Sandstone is the common mano raw material (Table 2.41) and it is likely that alluvial cobbles that were a close approximation of the desired form got selected as the tool blanks. Yet, few retain surfaces that were little modified from production or use and all seem to have been shaped to some extent in both plan and section prior to use. One unfinished large mano exhibits pecking marks on sides and 1 face whereas most finished manos are extensively pecked on sides, ends, and faces. There was no evidence that mano production required flaking but judging from the photos of metates in Morris and Burgh it appears that some of the slabs used for these larger tools were roughly flaked to shape them. Aside from sandstone, there were five manos made of coarse igneous rock; this was all intrusive material with some resembling granite and single specimens of probable diorite and andesite. Alluvial cobbles of these rock types are common to the Animas drainage as are cobbles of sandstone.

Table 2.41. Mano raw material texture with tools differentiated by rock type and size class, Falls Creek Shelters (texture classes according to the Wentworth scale).

Texture	Igneous	Sandstone	Total	%	Small	Large
Very Fine	0	2	2	4.3	1	1
Fine	0	10	10	21.7	5	5
Medium	0	6	6	13.0	5	1
Coarse	1	12	13	28.3	8	5
Very Coarse	3	5	8	17.4	5	3
Conglomeratic	1	2	3	6.5	3	
Banded, coarse & very coarse	0	3	3	6.5	1	2
Banded, coarse & conglomeratic	0	1	1	2.2		1
Total	5	40	45	100.0	27	18

The textures for the manos include a diversity of grain sizes from very fine to conglomeratic including some tools with distinct banding of different sized grains (Table 2.41). Morris and Burgh (1954:59) claim that manos were generally of rocks that were “finer grained and harder than the metates,” which might well be true but these manos are overall quite coarse since 60% have grains at least 0.5 mm in size (start of the coarse sand range) and more than 30% have grains at least 1 mm in size (start of the very coarse sand range). As one point of comparison, the manos at Basketmaker II sites excavated on the Rainbow and Shonto Plateaus had very few tools in the coarse range or greater, just 13% (6 of 46) (data in Geib 2011). In certain places texture choices might be limited but this is clearly not true for the Durango area because of the diversity of sandstones available from outcrop, talus, and both alluvial and glacial gravels. Selection for coarse textures seems well suited to maize kernel processing.

Foreshadowing much of the recent discussion about mano size and agricultural dependency, Guernsey and Kidder (1921:93, Plate 38d–f) stated that Basketmaker manos "are intimately related to the domesticate life of corn-growing Indians, and in a measure furnish an index to their progress as agriculturalists." They characterized the oval Basketmaker manos recovered from White Dog Cave and other Basketmaker sites of NE Arizona as being of the type "used by people of less firmly established corn-eating habits" (Guernsey and Kidder 1921:93). I wonder what their conclusion might have been had the manos from their sites been of the size of those at the Durango Basketmaker II sites (Figure 2.47). Not only are a significant number of the manos greater than 16 cm in length, hence in the large size class, but the average size of even the small manos is greater than average for western Basketmaker II manos (Table 2.42). From Basketmaker II habitations on the Rainbow and Shonto Plateaus in NE Arizona and SE Utah (Geib 2011) only three of the 31 whole manos recovered were in the large size class with the largest of these measuring 19.7 cm long. The other two manos classified as two-hand are fragments, but portion length suggests that both probably measured more than 16 cm long when whole, but probably not by much. In comparison, 26.9 cm is the maximum length Basketmaker II manos from the Falls Creek Shelters and the median for the large manos is 19.8 cm so over half are longer than the longest example from these western sites. The other 28 whole Basketmaker manos from the Rainbow and Shonto Plateaus included three between 15 and 16 cm in length and seven between 12 and 14 cm, but the mode at 11 is manos 8–10 cm long and three are less than 8 cm long. In contrast, the smallest Falls Creek Shelter mano measures 8.6 cm, with just two in the 8–10 cm range; there are six in the 10–12 cm range, five in the 12–14 cm range, and 11 in the 14–16 cm range.

One measure of mano size is grinding surface area, which is almost always less than the overall size of a tool based on its length and width. I recorded surface area as an approximate square centimeter value for each used grinding surface of a mano. Table 2.42 presents this information for each face of small and large whole manos and Table 2.43 compares this information against that for manos from the Rainbow and Shonto Plateaus organized by the three major temporal periods: Archaic, Basketmaker II and Puebloan (Pueblo II-III). The Puebloan data is segregated according to small and large manos like that for the Falls Creek Shelters. Figure 2.48 presents a frequency histogram of the mano grinding surface area data. The Falls Creek assemblage is far more similar to the Puebloan manos of the Rainbow and Shonto Plateaus than to the Basketmaker II manos of that area. Even the small Basketmaker II manos of the Falls Creek Shelters tend to have markedly greater grinding surfaces than the Basketmaker manos from the western sites represented in this sample, manos that seems quite typical for Basketmaker assemblages from NE Arizona and SE Utah. The vast increase in mano surface area from Basketmaker to the Puebloan period is muted once the Durango Basketmaker II manos are added.

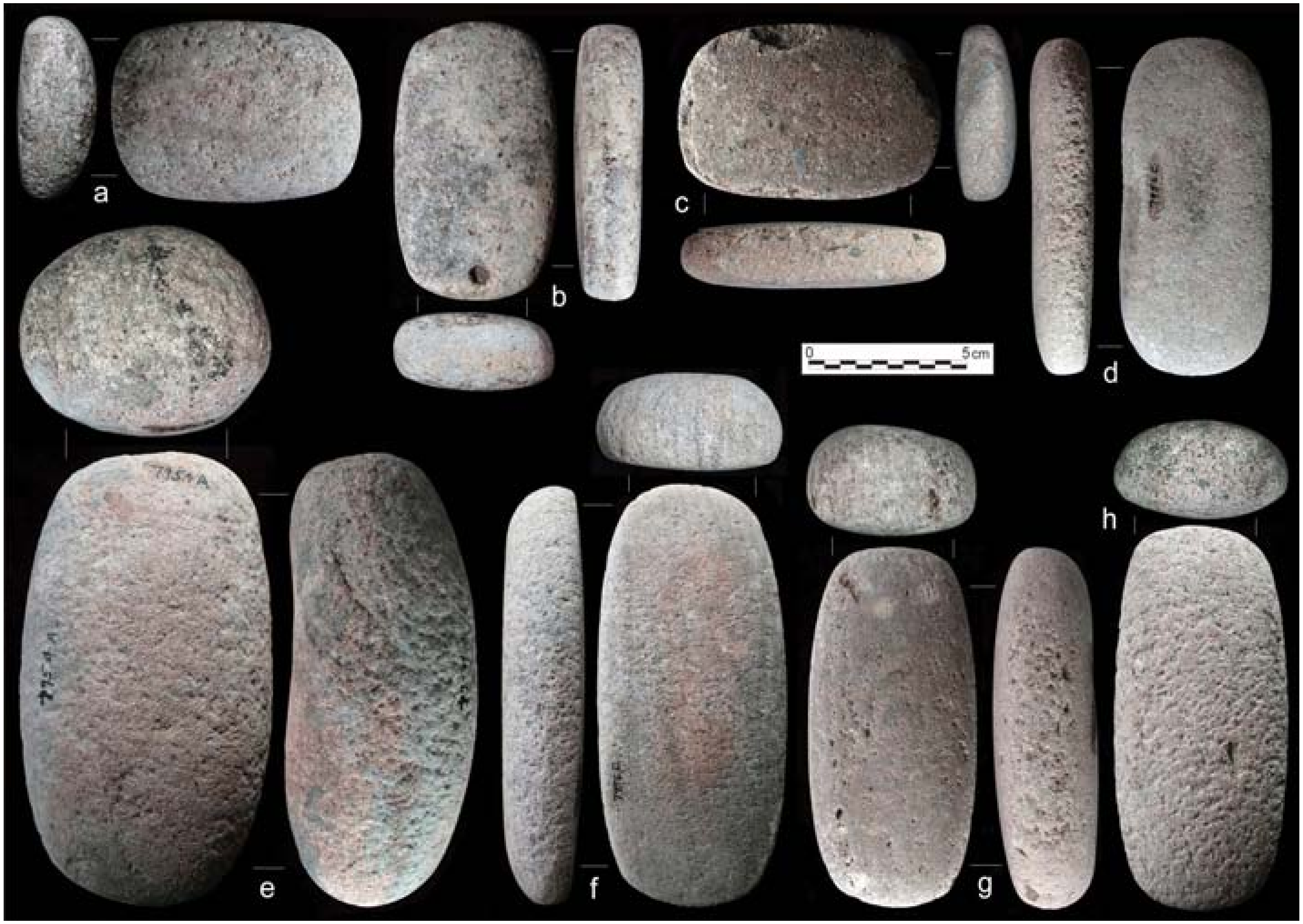


Figure 2.47 Examples of small (a-c) and large (d-h) sandstone manos from the Falls Creek Shelters: **a**, FCRS # 313; **b**, FCRS # 303; **c**, FCRS # 318; **d**, FCRS # 320; **e**, FCRS #290; **f**, FCRS # 321; **g**, FCRS # 301; **h**, FCRS # 300.

Table 2.42. Summary data on basic dimensions of small and large manos from Falls Creek Shelters (excludes incomplete measurements, so counts vary among variables).

Variable	Small	Large
Length (mm)		
mean	130.1	200.5
std	21.8	27.9
median	137.1	198.0
smallest	85.8	160.0
largest	156.6	269.0
n=	24	16
Width (mm)		
mean	92.9	103.0
std	11.9	11.3
median	95.8	103.5
smallest	59.5	82.6
largest	113.8	130.0
n=	27	17
Thickness (mm)		
mean	47.9	56.7
std	9.4	19.2
median	45.3	52.1
smallest	33.7	31.8
largest	66.1	105.0
n=	27	18
Weight (g)		
mean	930.2	1936.9
std	265.7	897.2
median	900.0	1587.5
smallest	500.0	1000.0
largest	1500.0	4080.0
n=	24	16
F1 Area (sq cm)		
mean	91.6	148.1
std	27.9	45.5
median	89.0	140.0
smallest	42.0	77.0
largest	146.0	225.0
n=	22	16
F2 Area (sq cm)		
mean	82.4	117.1
std	24.2	43.3
median	80.0	105.0
smallest	40.0	42.0
largest	117.0	192.0
n=	21	11

Table 2.43. Comparison of grinding area (sq cm) for Basketmaker II manos from the Falls Creek Shelters against manos of three temporal periods from the Rainbow and Shonto Plateaus with Puebloan manos segregated by size class (includes only the primary or largest surface for tools used on both faces).

Statistics	Falls Creek Shelters		Rainbow & Shonto Plateaus			
	BMII 1-hand	BMII 2-hand	Archaic	BMII	PII-III 1-hand	PII-III 2-hand
Mean	91.6	148.1	52.0	67.8	75.5	210.5
Std Dev	27.9	45.5	21.3	32.8	27.9	53.9
Minimum	42.0	77.0	23.0	26.0	16.0	98.0
1st Quartile	72.8	108.0	44.0	40.0	57.3	168.0
Median	89.0	140.0	47.0	56.0	76.0	220.0
3ed Quartile	113.5	183.8	72.0	92.0	90.0	242.8
Maximum	146.0	225.0	74.0	172.0	158.0	324.0
N	22	16	5	33	110	72

Mano use area has been interpreted as a measure of reliance on maize (e.g., Hard 1990; Mauldin 1993) and certainly the increase after the introduction of agriculture seems to fit such an interpretation, especially once the Durango Basketmaker manos are contrasted with the manos of Archaic foragers. Yet both the macroremains from feces and the stable carbon isotope date from skeletons suggest that maize was nearly as important a subsistence item during Basketmaker times as Puebloan times (e.g., Aasan 1984; Coltrain et al. 2006, 2007; Martin et a. 1991; Matson and Chisholm 1991; Minnis 1989). Thus, mano surface area increases even though there is little or no evidence in support of a major increase in the importance of maize from Basketmaker II to Pueblo II and III. There is also no evidence in isotope data to support an argument that the Durango Basketmakers were more dependent on maize than western Basketmakers. Therefore, the increase in mano size from Basketmaker II to Pueblo III or the greater mano size between eastern and western Basketmakers cannot be attributed to greater reliance on maize, but rather on efficiency in processing and to new recipes for preparing maize, especially fine flour (Adams 1997).

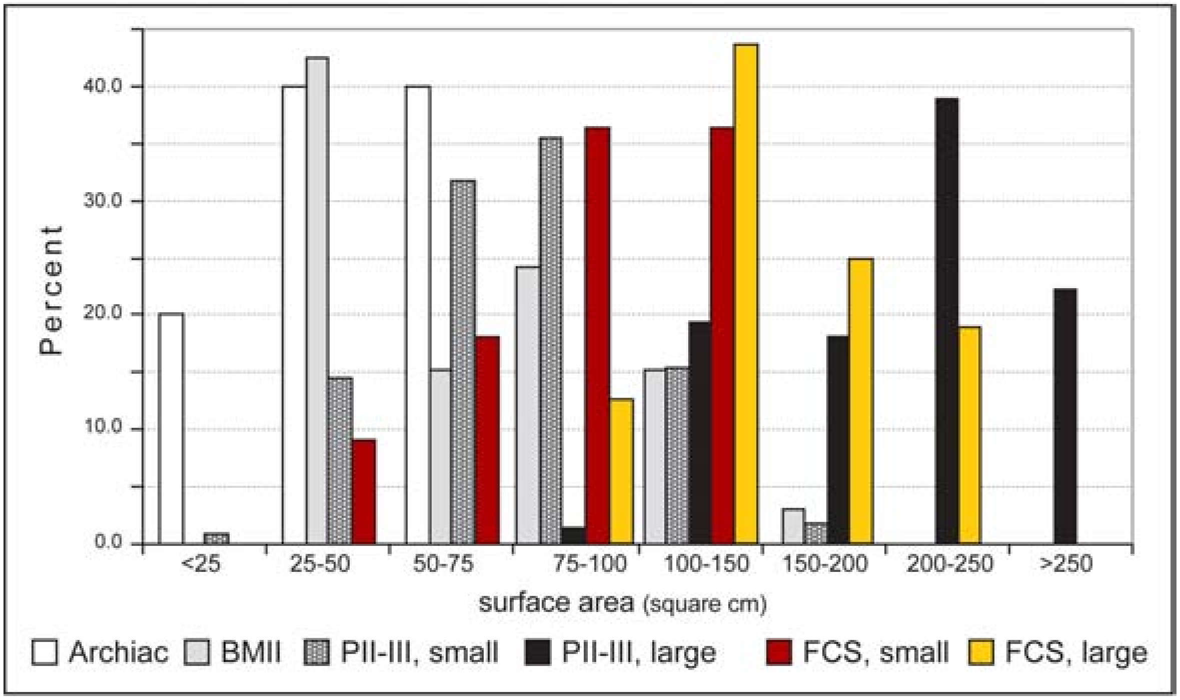


Figure 2.48 Grinding surface area for small and large manos of the Falls Creek Shelters in comparison with the surface area of Archaic, Basketmaker, and Puebloan manos of Rainbow & Shonto Plateaus in SE Utah and NE Arizona.

There can be increased intensity of processing a subsistence item without necessarily an increase in dependence on that item. It is also important to factor in changes in the nature of corn from Basketmaker to Puebloan times. For one thing, grains tended to be larger on average during Puebloan times and to contain more flour varieties (Karen Adams, personal communication 2007). It is certainly possible that Puebloans placed a far greater emphasis on fine flour production than did Basketmakers, and women could have helped meet the labor demands of this by increasing mano size and innovating in other designs features. More corn might have been eaten green by the Basketmakers, as with the historic Mohave, limiting the need for grinding, but the dietary signature of the isotope data implies a year-round maize diet as do the numerous large-volume storage pits and cists at Basketmaker sites. Or corn could have been pit-baked green and then dried as the Hopi do, which makes for easy use later in stews with no need for grinding or with hot soaking and minimal crushing to make a mush. More corn might have been popped and consumed this way, evidence of which occurs in a Basketmaker basket from Grand Gulch. An unrelated and potentially contributing factor might be the degree of residential mobility in Basketmaker times compared to later Puebloan times, especially after mealing bins started to be common. If manos formed part of the mobile personal gear that women had to carry with them from one site to another, transportability might be a factor limiting the size of Basketmaker manos despite heavy maize dependence. In this regard it is interesting to note that Morris and Burgh (1954:58) report two instances of trough-like metates plastered into place on pedestals of structure floors, one of which is clearly the prototype of a mealing bin. Creating permanent mealing facilities in houses in addition to larger and heavier manos might imply a somewhat greater degree of residential permanence (less residential mobility) for Durango Basketmakers than was true for their contemporaries in the west.

In Puebloan assemblages, length is the principal dimension that determines mano grinding surface area because widths are far less variable—generally as wide as can be tolerably gripped by the average female hand. The average width of the large manos from the Falls Creek Shelters is essentially no different than that for large Puebloan manos; the former is 10.3 cm as reported in Table 2.42 and the latter is 10.5 cm based on data from the Rainbow and Shonto Plateaus (n = 76). At more than 13 cm, the widest used Puebloan manos are extreme outliers and indeed manos wider than 12.5 cm are exceptions. This is also true for the FCS assemblage, since the widest mano is 13 cm, but it is an unfinished mano blank that exhibits only slight use on one face. The used manos from the shelters are less than 12 cm wide, with three that are at between 11 and 12 cm and six that are between 10 and 11 cm wide. This is no different than for Puebloan assemblages, so it is clear that Puebloans increased their mano surface area by increasing mano length, something that necessitated a corresponding change in metates. The basin-like trough metates of the Falls Creek Shelters and Talus Village are variable in widths with variable widths of their grinding slicks such that the longest manos would not have fit certain metates.

According to Morris and Burgh (1954:58), the Basketmaker manos from Talus Village and the shelters are so varied as to defy morphological classification. The two common features that they noted were milling surface that were "pitted" (pecked) "for effective grinding" and that were slightly convex in both long- and cross-section (Morris and Burgh 1954:59). The latter resulted from the reciprocal grinding in the characteristic metates with their basin-like troughs with trough depth serving to increase the degree of longitudinal convexity. These metates are like those from western Basketmaker sites (see Geib 2011: Figure 5.42) but with much wider troughs on average because of greatly increased mano lengths at Durango Basketmaker sites.

Although there is considerable morphological variability, I classified manos according to several discrete "types" based on a combination of plan and X-section shape. The frequency of the types represented by the intersection of these two aspects is presented in Table 2.44. Some manos, both large and small are unclassified and some of the small manos consisted of recycled portions of large manos, hence their current shape is largely a consequence of the prior mano form. There are several examples of cobble manos with "rocker bevels," small rounded facets that develop from a "rocking-like" motion during push and pull strokes while seed grinding. This distinct form of mano is common to the Archaic period and is likely a consequence of commonly using a single hand while grinding with small cobbles. Most small manos can be effectively used with two hands (e.g., Euler and Dobyns 1988:254, 256; Gould et al. 1971:164), but Archaic-style cobble manos, which are generally quite small, are easily used with just a single hand with the other for body support and to help position the processed seeds. Such one-handed use commonly results in the formation of rocker bevels unless conscious effort is made to avoid their formation or to eliminate them after they form. The six cobble manos with rocker bevels from the shelters might be earlier artifacts scavenged for use or they might be tools from earlier occupations of the site that got mixed in with the Basketmaker materials because of the extensive digging in the shelters to create level living surfaces (terraces) for houses.

Table 2.44. Frequency of mano types from the Falls Creek Shelters as defined by overall morphology with plan and X-section as the defining traits.

Mano Type	1-hand		2-hand		Total	
	n	%	n	%	n	%
Unclassified small mano	1	3.6	0	0.0	1	2.2
Small cobble mano	1	3.6	0	0.0	1	2.2
Small cobble mano w/ rocker bevel	6	21.4	0	0.0	6	13.0
Small ovoid mano w/ rocker bevel	1	3.6	0	0.0	1	2.2
Small ovoid mano w/ plano-convex X-sect	1	3.6	0	0.0	1	2.2
Small ovoid mano w/ rectangular x-section	4	14.3	0	0.0	4	8.7
Small rectangular mano w/ rectangular x-section	8	28.6	0	0.0	8	17.4
Small rectangular mano w/ D-shaped x-section	1	3.6	0	0.0	1	2.2
Recycled fragment of a large mano	5	17.9	0	0.0	5	10.9
Unclassified large mano	0	0.0	4	22.2	4	8.7
Large mano with thin rectangular x-section	0	0.0	3	16.7	3	6.5
Large mano with thick rectangular x-section	0	0.0	6	33.3	6	13.0
Large mano with thick D-shaped x-section	0	0.0	3	16.7	3	6.5
Large mano w/ thick rounded X-sect	0	0.0	1	5.6	1	2.2
Large mano with airfoil x-section	0	0.0	1	5.6	1	2.2
Grand Total	27	100.0	18	100.0	46	100.0

Basketmaker manos differ in general from those of the Archaic period in being larger and having more regularized plans and sections that derive from greater production input (see Geib 2011 Figure 5.40). A sandstone cobble was the starting point for both Archaic and Basketmaker manos, but besides somewhat different preferences for cobble size and shape (longer, wider, and somewhat thinner during the Basketmaker period), Basketmakers tended to shape their manos far more. The typical form of western Basketmaker mano is either oval or rectangular in plan with subrectangular (gently convex) cross-sections (they lack pronounced rocker bevels). Manos like this are described and illustrated by Guernsey and Kidder (1921:93, Plate 38d–f) with Geib (2011:276-277, Figure 5.40) describing and illustrating other examples. This sort of mano is well represented at the Falls Creek Shelters, accounting for over 40% of small manos and 26.1% of all manos, with the rectangular plan more common than the oval plan.

Large mano types are rare in western Basketmaker II assemblages but a few examples with thick rectangular X-sections and thick D-shaped X-sections are known from the Rainbow and Shonto Plateaus (Geib 2011). Manos like this and with other X-sections are more numerous at the Falls Creek Shelters. Obviously, sufficient use of a thick rectangular mano would reduce to the thin type and even the D-shaped specimens could have the domed faces worn flat and thus changed in morphology. The latter seems less likely since the curved face was always little used. The large manos with rectangular X-sections appear to be simply greatly elongated versions of the small mano types. Given how long these are they naturally appear subrectangular rather than oval. As Bartlett (1933) noted long ago, manos with a rectangular cross-section become faceted through use because greater force is exerted on the trailing edge during the push stroke when grinding. They are somewhat analogous to rocker-bevels on one-hand manos. When well developed the cross-section resembles a markedly obtuse scalene triangle but during initial formation it can have an airfoil shape. There is a single large mano with an ‘airfoil’ cross-section such as seen on some Puebloan manos but none have true grinding facets so Morris and Burgh (1954:59) are correct in stating that manos with “keeled grinding surfaces” are absent. It seems probable that method of use or maintenance steps limited the formation of grinding facets on the Basketmaker manos and it is also clear even during the Puebloan period not all rectangular manos end up faceted since there are examples of exceedingly thin and exhausted rectangular manos and also rectangular manos in coarse and conglomeritic grain sizes that are absent in faceted manos. The interpretive significance of the various two-hand types is open to debate, but certainly some of them may have had different roles in food processing, such as use of robust blocks of coarse grain materials for the initial cracking of maize kernels and thinner manos with finer textures for more advanced grinding to flour.

2.9 Miscellaneous Stone Artifacts

Stone artifacts within the collections that did not meet the classification criteria for the inclusion in the other four tool groups were individually characterized in a separate analytical routine. There are only 15 items, in part because most other ornamental objects of stone were included in the materials analyzed by other analysts. These 14 items consist of tools or probable tools, ornaments, possible ceremonial items, and a manuport (Table 2.45). The ornaments consist of an unfinished bead of lignite and probable production debris of soft blue-green stone, probable copper ore, with abrasion facets. The tools or probable tools include the following: 1) an lenticular sandstone alluvial cobble used as an abrading stone but also for battering; 2) two metamorphic pebbles used as burnishing stones and one that appears unused (the manuport); 3) two sandstone disks that were perhaps covers for gourd containers; 4) a large wedge-shaped slab of sandstone that was used on one 'rocker-like' acute edge for crushing; and 5) a conical piece of quartz (elongated sub-isosceles triangle) that is heavily abraded on the corners and battered some on the blunt tip and corners of the base. The abrasion that occurs around the circumference of the latter item appears use-related rather than for shaping purposes and it is conceivable that this conical piece of quartz could have been used something like a drill for widening the bore of stone pipes. This fourth tool listed above was evidently used similarly as several of the hammerstones with rocker edges used for crushing, though this particular item lacked evidence of battering. The two possible ceremonial items consist of an abraded rectangular piece of hornfels that might be a possible blank for an atlatl weight and an abraded small chunk of mica crystals.

Table 2.45. Miscellaneous stone artifacts from the Falls Creek Shelters.

FCRS #	Class	Descriptive Type	Raw Material
04862	Ceremonial?	Abraded crystal	Biotite mica crystals
00549	Ceremonial?	Abraded object (atlatl wt blank?)	Hornfels
02738	Tool	Abrading stone (& battering)	Sandstone (very fine)
02645	Tool	Burnishing stone	Metamorphic pebble
00940	Tool	Burnishing stone	Metamorphic pebble
00410	Tool	Acute crushing edge	Sandstone (fine)
00768	Tool?	Thin disk (container cover?)	Sandstone (very fine)
00557	Tool?	Pecking stone (& other)	Quartz (massive)
00558	Tool?	Thin disk (container cover?)	Sandstone (very fine)
01059	Ornament	Bead blank	Lignite
01721	Ornament	Ornament production debris	Blue-green stone (copper ore?)
01720	Ornament	Ornament production debris	Blue-green stone (copper ore?)
01503	Ornament	Ornament production debris	Blue-green stone (copper ore?)
04650	Manuport	Manuport	Metamorphic pebble

CHAPTER 3:
FALLS CREEK PHASE II, BONE TOOLS AND ORNAMENTS

Mona Charles

3.0 Introduction

A previous grant from the SHF was completed in 2011. That Phase I grant entailed analysis and reporting of perishable and non-perishable artifacts from the Burial Crevice and from burial contexts outside the burial crevice that were excavated by amateur archaeologists I.F. Zeke Flora and Helen Sloan Daniels and to a lesser extent artifacts excavated by professional archaeologists Earl Morris and Robert Burgh. Excavations by both parties occurred over a period from between 1937 and 1939. The goals of the Phase I reevaluation project were to: 1) gather the archaeological and archival collection together to one repository in the Durango area; 2) thoroughly document and analyze the artifacts and human remains, and pictographs and petroglyphs using current scientific methods, 3) conduct comparative analysis of the material culture, ethnobotanical samples, and petroglyphs and pictographs; 4) identify cultural affiliations and relationships over time; 5) collect interpretive comments on the site function and significance of the pictographs and material culture from Hopi and other Puebloan consultants; 6) re-associate the human remains and re-unite them with the appropriate funerary objects in preparation for repatriation and; 7) provide Native Americans, professional archaeologists, and the general public with a greater understanding of Basketmaker II society (Coleman 2011 A-3).

A majority of the Phase I artifacts was obtained from amateur diggings in the Burial Crevice. These included all artifacts within the Burial Crevice, although some of these could not be confidently assigned to burials. Fundamental to this reevaluation project was a re-analysis of the human remains from both the North and South Falls Creek Shelters (Mulhern 2011). Of no less importance to Phase I was the creation of a database (Horton 2011) that established a much needed system whereby the artifacts, analytical data, archival data, maps, and rock art could be managed and tracked efficiently and effectively. Other components of the reevaluation included documentation, analysis, and interpretation of rock paintings and petroglyphs (Cole 2011) and stratigraphic documentation and archaeological context of the Burial Crevice (Graham 2011). Karen Adams and Judy Patterson (2011) analyzed the macrobotanical samples, while Laurie Webster and Ed Jolie (2011) analyzed the perishable remains, and I analyzed the ornaments and bone tools (Charles 2011a).

The Phase II grant from the SHF was awarded to complete the analysis and reporting of the non- funerary objects from the Falls Creek Shelters. Among the artifact categories in Phase II are the bone tools and ornaments, which is the topic of this chapter. Due to the nature of the artifacts in the Burial Crevice, there was not considerable overlap between Phase I and Phase II artifacts in the bone tool and ornament categories. Phase I bone tools and ornaments were mostly related to ornaments such as pendants and beads of shell, stone, bone, and juniper berry, and to a lesser extent bone artifacts that were assigned to the category of jewelry. Bone tools while rare in the Phase I burial assemblage, are the vast majority of artifacts from this Phase II study.

3.1 Methodology

To insure comparison between Phase I and Phase II, the same categories defined for Phase I analysis and recording are applied to Phase II with some minor exceptions. The worked bone and ornaments category for the current study was subdivided into nine main artifact categories which include the following: Stone Pipe; Bone Bead; Bone Gaming Piece; Notched Bone Tool; Pointed Bone Tool; Worked Bone General; Shaped Stone; Shell Pendant; and Shell Bead. An Excel spreadsheet was created for each artifact group with corresponding Fields to facilitate the analytical process. For each artifact category the Falls Creek Rock Shelter (FCRS) number assigned by Kristina Horton was the first field recorded, followed by the CU catalog number and the CU field number. The worked bones were placed into larger bags because there was so many and this bag number was recorded. Other Fields common to all artifact categories included the Feature number, Provenience, References, and Photographs. The Reference field was specifically for the references from the Basket Maker II Sites Near Durango, Colorado, report by Morris and Burgh (1954). A comments Field was common to all the artifact categories as was a field for Photograph numbers from the current study. For each artifact category individual Fields were designed to provide reliable and replicable means of recording the analytical data. These Fields were organized such that quantitative and qualitative data would be recorded consistently for each artifact. Quantitative data collected included measurements and weight. Measurements were collected with digital calipers or a micrometer to the nearest 10th of a millimeter or 10th of a centimeter depending on the artifact size. An Ohms digital scale was used to collect weights to the nearest 10th or 100th of a gram. A hand-lens and a microscope were used to examine surface attributes more carefully. Artifacts were photographed with a Cannon EOS SRL at the Anasazi Heritage Center in Cortez. Some of the artifacts were examined and photographed with a DinoLite which has a zoom capacity to 200x.

The comparative faunal collections at the Anasazi Heritage Center (AHC) and to a lesser extent those from Fort Lewis College were used to identify species, element, and whenever possible side. Another important source for faunal identification was Adams and Crabtree's Comparative Osteology (2011). Shell ornaments were typed using Vokes (2006) and the classifications of Bennyhoff and Hughes (1987:116-121) for bead types. Arthur W. Vokes, curatorial/museum specialist, Arizona State Museum, University of Arizona, Tucson, kindly identified some shells in my private collection and supplied me with some of the comparative shells that I lacked.

The data were collected in hard copy format and entered into Excel spreadsheets which are included as Appendix with this report along with the codes used for data collection. Specific data were collected on each of the groups and these data are specified in the discussion below for each artifact group. Thirteen artifact groups were analyzed under this study totaling 290 individual artifacts. A few artifacts were not re-located during analysis. Due to the very large number of artifacts separating into bags with large numbers and diverse types, it was difficult to keep track of the artifacts from each bag. Most likely the missing artifacts are in there but were not in their assigned bags. This could have happened during initial cataloging, but it is more likely that it happened during analysis.

The assemblage includes ornamental artifacts constructed from stone such as stone beads, a stone pipe, and some miscellaneous shaped stone. Several artifacts of marine shell are included in this assemblage such as include shell pendants, shell beads, and some miscellaneous shell. Bone artifacts constitute the single largest material type category for this Phase II study. Artifacts constructed of bone include jewelry and items of leisure and utilitarian items or bone tools. The bone tool categories are subdivided into pointed tools (awls, reamers, drills, punches, etc.), notched tools (ribs, scapulae, tibia), and worked bone general (chisels, scrapers, fleshers, flakers, wrenches, and indeterminate). Bone gaming pieces, bone beads, and bone tubes complete the assemblage. Data collected from each artifact are outlined below for each artifact category.

Stone Pipe:

The following data were collected for the stone pipe specimen: Artifact Subtype (Pipe or Shaped Stone General), Material Type, Distal Diameter, Distal Proximal Length, Width, Thickness, Weight (gm), Hole Diameter (mm), Provenience, Comments, References, and Photographs.

Shaped Stone:

The following data were collected from each artifact in this category: Artifact Subtype (Bead, Pendant), Material Type, Inside Hole Diameter (mm), Outside Hole Diameter (mm), Length (mm), Width (mm), Thickness (mm), Weight (gm), Provenience, Comments, References, Photographs.

Shell Pendant:

The following data were collected from each artifact in this category: Complete (Yes or No), Ornament Type (Pendant or Bead), Shell Type (Species if possible), Length (cm) Width (cm), Thickness (cm), Perforation Diameter (cm), Weight (gm), Provenience, Comments, References, Photographs.

Shell Bead:

The following data were collected from each artifact in this category: Ornament Type (Bead or Pendant), Species, Length (cm), Diameter (cm), Perforation Diameter (cm), Size (Bennyhoff and Hughes 1987), Class (Bennyhoff and Hughes 1987), Complete (Yes or No), Provenience, Comments, References, Photographs. Shell bead size is based on maximum diameter rather than length, which is much more variable because of the extent of end grinding and natural wear. Size and class categories used are consistent with Bennyhoff and Hughes 1987 116-117). Sizes are Small: 3.0 - 6.5 mm; Medium: 6.51 - 9.5 mm; and Large: 9.5 - 14 mm.

Bone Beads:

The following data were recorded for each bone bead/tube: Completeness (Yes or No), Species, Element, Side, Location of Wear, Manufacturing Attributes (Cut marks), Length (mm), Width (mm), Thick (mm), Weight (gm), and Hole Diameters on both ends (mm), Provenience, Comments, References, Photographs.

Bone Gaming Pieces:

The following data were collected for each artifact in this category: Weight, Complete (Yes or No), Weight (gm), Length (mm), Diameter (mm), Thickness (cm), Burned (Yes or No), Shape, Hachuring, Punctate or Dimple, Polish, Convex/Concave, Provenience, Comments, References, and Photographs.

Notched Bone Tools:

The following data were collected on each of the artifacts in this category: Complete (Yes or No), Element, Side, Species, Age, Condition, Portion of the Bone represented, Weight (gm), Length (cm), Width (cm), and Striae, Manufacture Marks, Other marks, Origins, Serrations (measurement in mm), Provenience, Comments, References, and Photographs.

Pointed Bone Tools:

The following data were collected on each of the artifacts in this category: Complete (Yes or No), Element, Side, Species, Age, Condition, Portion of the Bone Remaining, Weight (gm), Length (cm), Width (cm), Tip type (Morris and Burgh 1954:Fig.34), Tip Diameter (mm), Type (Morris and Burgh 1954:Fig.34), Splinter, Split, or Whole, Burned (Yes or No), Articular Head Present (Yes or No), Tip Striae, Interior Striae, Margin Striae, Exterior Striae, Use or Function, Provenience, Comments, References, and Photographs.

Worked Bone General:

The following data were collected from each of the artifacts in this category: Complete (Yes or No), Species, Element, Side, Age, Portion, Location of Wear, Manufacturing Attributes, Length (cm), Width (mm), Thickness (mm), Weight (gm), Striae interior, Striae Type, Striae Exterior, Striae Type, Tool Type, Provenience, Comments, References, and Photographs.

3.2 Results

This report on the results of the bone tool and ornament analyses is organized by the major material categories defined above. Each material category is described and empirical information provided in tabular format. Accompanying photographs are included in the text of the report as examples, but the majority of photographs are appended to the end of the chapter. General discussions follow the empirical information and the photographs. Pertinent historical and spatial knowledge important to placing the categories into their archaeological and cultural contexts is the focus of the discussion sections.

Two-hundred and ninety bone tools and ornaments were analyzed from the Phase II study (Table 3.1). Nearly half (42.41%) of the collection is from the pointed bone tool category and the vast majority of these are awls. Notched bone tools and worked bone general account for 43% of the total. This leaves a small percentage for the remaining categories. The overwhelming majority (85.86%) were assigned a provenience of the North Shelter, which is not surprising because the South Shelter was only minimally excavated by Morris and Burgh (1954). The stone pipe, a bone gaming piece, and a piece of worked bone have no known proveniences.

Table 3.1. Bone Tools and ornament artifact categories for Phase II, Falls Creek Shelter by general provenience.

Artifact Group	North	South	Provenience	Total	Percent Total
Stone Pipe			1	1	.35%
Bone Beads	5	2		7	2.41%
Bone Gaming Pieces	21	1	1	23	7.93%
Notched Bone Tools					
Notched Ribs	42	6		48	
Notched Scapula	11	2		13	
Notched Tibia	1			1	21.38%
Pointed Bone Tools	108	15		123	42.41%
Worked Bone General	50	12	1	63	21.72%
Shaped Stone General	5			5	1.72%
Shell Pendant	4			4	1.38%
Shell Beads	2			2	.69%
Total	249	38	3	290	99.69%
Percent Total	85.86%	13.1%	1.04%	100%	

The current analysis of non-funerary bone tools and ornaments draws heavily on the previous work by myself for Phase I analysis (Charles 2011a), from Cerisa Reynolds' work on bone tools from the Darkmold Site (Reynolds 2014a), from my analysis of bone gaming pieces and bone and shell ornaments from the Darkmold Site (Charles 2014a), as well as the work of Beach and Causey 1984; Geib (2004); Geib and Spurr (2000), Gooding (1980), Griffiths (1993), Janetski (2003); Mobley-Tanaka (1997), and of course Morris and Burgh (1954).

3.3 Material Culture Categories

Bone Beads

Seven bone beads were analyzed as part of this collection (Table 3.2). Two beads were from the South Shelter (FCRS 00632 CU8033p and FCRS 00634 CU8033u). Bead FCRS 00634 CU8033u is manufactured from a long bone of a large bird. It is more like a bone tube with very little signs of wear (Figure 3.1). Because bird bone is essentially hollow, the two end hole diameters are quite similar (Table 3.2). The second bead (FCRS 0632 CU8033p) is a short tubular bead with large holes, and manufacture marks from grinding and notable polish. It is made from the long bone of a small mammal (Figure 3.1). The difference in the diameter of the two end holes is over 1.5 mm suggesting the bead was drilled from separate ends (Table 3.2). Bead FCRS 0632 CU8033pis similar to a broken bead recovered from the assemblage in the Burial Crevice and reported in Charles 2011a. The remaining five bone beads/tubes were found in the refuse of Terraces II and III in the North Shelter. One of these, FCRS 00633 CU803e, is made from the long bone of a bird. It is light weight, very thin, long, with one flat side (Table 3.2, Figure 3.1). The bead/tube shows trace signs of having been worked. The last four tubes/beads were manufactured from small mammal bones (Table 3.2, Figure 3.1). One of these, FCRS 00635, is a long tube bead with visible cut marks

Figure 3.1. Bone beads from Phase II, Falls Creek Shelters. Top Row left to right: FCRS 00632 CU8033p; FCRS 00629 CU8033d; and FCRS 00631 CU8033j. Bottom Row left to right: FCRS 00634 CU8033u; FCRS 00633 CU8033t; and FCRS 00635 CU8033w.

and trimming (grinding) evident. The hole goes the entire length of the artifacts but is very small for the size of the bone. Bead FCRS 00630 is short and is broken lengthwise such that the hole diameter is an estimation. The two remaining beads, FCRS 00629 CU8033d and FCRS 0631 CU8033j, are short and squat. Polish is evident on both (Figure 3.1).

Table 3.2. Descriptive data for the bone beads, Phase II, Falls Creek Shelters.

FCRS	CU No.	Catalog No.	Complete	Species	Element	Side	Length (mm)	Width (mm)	Thick (mm)	Weight (gm)	Hole Dia (mm)	Hole Dia (mm)
00634	8033u	38-2628	Yes	Large bird	Long bone	NA	38.12	6.4	0.64	0.85	4.87	4.79
00632	8033p	38-2620	Yes	Mammal	Long bone	NA	15.33	13.4	2.5	2.01	6.87	8.42
00629	8033d	38-0458	Yes	Mammal	Long bone	NA	11.25	5.31	1.48	0.3	2.85	2.85
00630	8033e	38-0459	No	Mammal	Long bone	NA	12.24	6.110	1.210	0.18	3.05	3.05
00631	8033j	38-0510	Yes	Mammal	Long bone	NA	15.82	5.78	1.28	0.53	2.84	7.75
00633	8033t	38-0345	No	Bird	Long bone	NA	51.49	4.83	0.65	0.8	4.68	3.12
00635	8033w	38-0484	Yes	Mammal	Long bone	NA	55.2	6.21	1.06	1.77	2.23	2.45
Range							5.2-55.2mm	4.83-13.4mm	.64-1.48mm	.3-2.01gm	2.23-6.87mm	2.45-8.43mm
Average							28.49mm	6.86mm	1.12mm	.92gm	3.91mm	4.63mm

Bone Beads - Discussion

Bone beads are common artifacts from prehistoric sites through time and across space. Bone beads are often made from the long bones of small rodents such as cottontails and jackrabbits, small mammals, sometimes from canids, and commonly from various species of birds. Bird bones are hollow and require only cutting and grinding to make them into beads, whereas mammal bones have to be hollowed which could be accomplished by pushing something through the soft marrow or possibly sucking the marrow out (Reynolds 2014a). Bone beads are often referred to as tubes if they are long and narrow and barrel beads if they are short and squat. They can occur in burial contexts or are found scattered throughout the midden and feature fill. They occur singularly or in groups.

In addition to being used for necklaces, bracelets, and ankle bracelets, they have been found adorning clothing and items such as hair combs. The bone bead assemblage from the Falls Creek Shelters is small in numbers as compared to the Darkmold Site, another Basketmaker II site and just south of Talus Village. Talus Village and the Darkmold Site are habitation sites located on terraces just above the Animas River valley. Bone beads at the Darkmold Site, numbered seventy-four (Charles 2014a) compared to seven from the non-funerary objects from the combined North and South shelters and the approximately 26 from Talus Village. The simple explanation for the disparate numbers is that the occupants of the shelters and from Talus Village did not make, wear, or possess bone beads in the numbers like those at the Darkmold Site. This simple explanation should be viewed with caution because the field techniques practiced at excavations of the three sites was quite different. On the average, the bone beads and tubes were much smaller at the Darkmold Site than at the shelters and Talus Village (Charles 2014a). Most of the Darkmold Site bone beads were retrieved from feature and pitstructure excavations where fine-screening and flotation were the standard screening techniques. Although it cannot be empirically demonstrated that the collection of bone beads from the shelters is not an accurate reflection of their numbers at the time of occupation, one can surmise that if the screening techniques had been consistent with those at the Darkmold Site that additional smaller beads and tubes would have been collected. There is nothing remarkable about these beads/tubes and these types occur throughout prehistory and are not considered to be cultural or temporal markers.

Worked Shell, Shell Pendant, and Shell Beads

Four pieces of worked shell other than shell beads were analyzed, although one, FCRS 0641 CU8034j, is from Talus Village and is not included in this chapter. All of the worked shell was made from oceanic bivalves (Table 3.3, Figure 3.2). Only one of these is a definite pendant. The other two are most likely from a pendant or bead but they are broken with no diagnostic features as to their original purpose. All of the worked shell is from the North Shelter. One of these, FCRS 00636 CU8034a is made from Haliotis shell. The other two are from indeterminate sources. FCRS 0812 CU8151 is an eroded piece from what appeared to have been a large shell (Figure 3.2). It is very thin and does not exhibit any holes; although, it could have been part of a pendant at one time. FCRS 00636, a piece of Haliotis is very thin and may have been a fragment of a pendant even though there are no signs of intentional drilling. Finally, FCRS 0637 CU8034c is a complete small shell pendant (Figure 3.2). It is made from a piece of a bivalve shell but there are no diagnostic marking on the shell to identify species. The shape is sub-rectangular and it has a single off-center hole. The worked shell items in this study were reported as coming from refuse layers and not directly associated with burials (Morris and Burgh 1954:128, 96-4).

One Olivella dama shell bead and one broken piece of Conus shell that could have been a bead or a bangle complete the worked shell, pendant, and bead material class assemblage (Table 3.4). The Olivella shell bead, FCRS 1055 CU8119, is white and flaking from exposure, but it retains enough of the exterior to type it as an O. dama shell from the Sea of Cortez (Figure 3.3). The shell bead is simple diagonal lopped (A1), and medium in size (Bennyhoff and Huges1987). Its provenience is the North Shelter, Terrace IV, in the refuse. An incomplete Conus ximenes shell, FCRS 00638, was also recovered in the refuse of Terrace IV at the North Shelter (Figure 3.3).

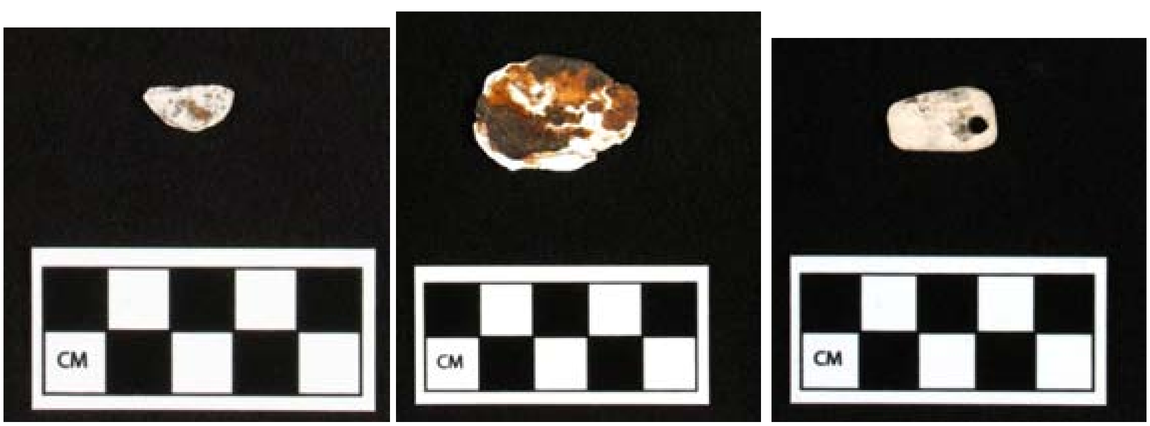


Figure 3.2. Worked shell from Phase II, Falls Creek Shelters. From left to right: FCRS 0812, CU8151 worked shell; FCRS 0636, CU 8034a worked *Haliotis*; and FCRS 0637, CU8034c, shell pendant.

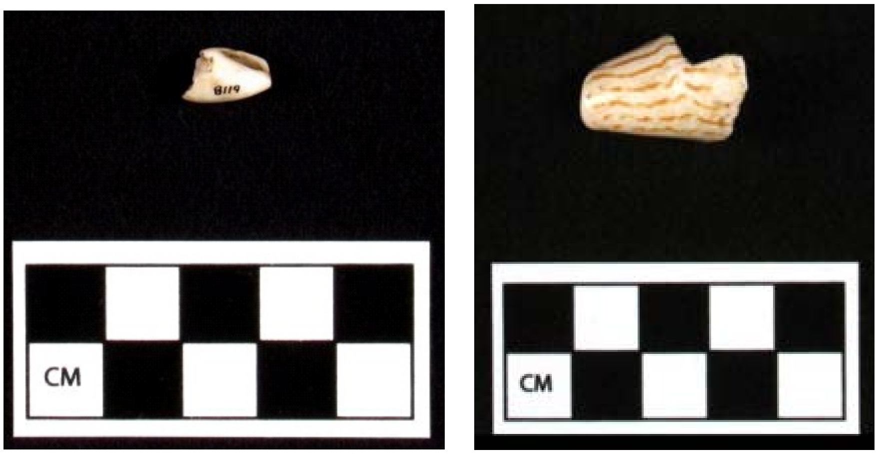


Figure 3.3. Shell beads from Phase II, Falls Creek Shelters. Left to right: FCRS 1055 CU 8119 Olivella dama shell bead; and FCRS 00638 CU 8034d Conus xiacmcuells bead, bangle, or pendant.

<u>Worked Shell and Shell Bead - Discussion</u>

Worked shell and shell beads mostly from the Pacific coast and the Sea of Cortez are not uncommon artifacts from prehistoric sites throughout the Greater Southwest, Great Basin, and other parts of the Colorado Plateau. The ability for the shells, especially the bivalves, to survive to the present in archaeological contexts limits their numbers as does distance from the source area. The later is well documented in the local archaeology of central and southern California, the Hohokam of southern Arizona, and the Mogollon of southeast Arizona and southwest New Mexico for example. Cut and ground or simply polished bivalves in these regions are common items of personal adornment (Jernigan 1978). It may not be a stretch to suggest that most of the worked shell that comes from archaeological contexts is found with burials. An example although not from the Four Corner's is the University Village complex in central California, where 43 graves dating from between 1500 and 1000 B.C. were excavated through a combination of controlled archaeological excavation and salvage work near Stanford University (Gerow 1968). Of this burial assemblage, 35 had associated funerary objects. Excepting the ochre, these objects were marine shell employed strictly as non-utilitarian items. Apart from uncertain utilitarian uses, shell was employed exclusively in a perforated form as an item of body ornamentation (Gerow 1968:50). Gerow provides a very useful and informative discussion of classification of shell beads and ornament types (1968:49-57). The few pieces of bivalve shell from this assemblage by themselves are not particularly informative. Together with the shell from burials at the North Falls Creek Shelter (Charles 2011a), Talus Village (Morris and Burgh 1954), and the Darkmold Site (Charles 2001; 2014a), their use and association with burials is better understood. Small pieces of bivalve shell were found with Burial 5 from the North Falls Creek Shelter. Burial 8, a young male, possessed a large half-circle shell disk which was placed on the chest and this position confirms that it was worn on a neck cord (Charles 2011a and Morris and Burgh 1954). Two burials from the Darkmold site had an impressive array of shell pendants all made from oceanic bivalves (Charles 2002).

Table 3.3. Descriptive data for worked shell from Phase II, Falls Creek Shelters.

FCRS	Accession	Catalog No	Shell Type	Length (mm)	Avg Width (mm)	Avg Thick (mm)	Perf. Diameter (mm)	Perf. Diameter (mm)	Weight (gm)	Complete
01812	8151	38-1745	Bivalve	14.42	4.74	1.71	NA	NA	0.23	No
00636	8034a	38-0448	*Haliotis*	30.06	17.48	2.48	NA	NA	1.42	No
00637	8034c	38-0793	Bivalve	18.48	9.20	2.06	2.71	2.69	0.83	Yes

Table 3.4. Descriptive data for shell beads from Phase II, Falls Creek Shelters.

FCRS	Accession	Catalog No	Species	Length (mm)	Diameter (mm)	Perf. Diameter (mm)	Size	Class	Complete
01055	8119	38-0796	*Olivella dama*	11.17	6.84	4.48	Medium	A1	Yes
00638	8034d	38-0795	*Conus ximenes*	25.02	15.64	NA			No

Use of Olivella sp.shell in personal adornments either strung on cords or perhaps sewed to clothing was common throughout the Southwest with the Durango area being no exception to this. During analysis of the burial assemblages from Phase I approximately 400 Olivella sp. shell beads were analyzed (Charles 2011a). One exceptionally long strand (restrung) held 368 Olivella dama shells. Because the majority of shell beads from the burial assemblage at the North Shelter were recovered from the protected and essentially dry environment of the Burial Crevice, the beads were in excellent condition, unlike those from the one in this current study and those from Talus Village and the Darkmold sites.

Oceanic shell trade began during the Archaic period, long before the Basketmakers. Shell beads have been found from the Great Basin in contexts dating to 7000 B.C. (Bennyhoff and Hughes 1987:109- 111). The primary shell species in Basketmaker II contexts is the Olivella sp., which includes dama, baetica, biplicata and two species of Oliva (spicata and incarssata), Conus (princeps, ximeniconus), Haliotis, Glycymeris, and Laevicurdium. Beads and pendants were made from the Olivella, Oliva, and Conus, while pendants were mostly fashioned from the larger bivalves. Due to the fragile nature of the shell, many Basketmaker II sites do not produce shell. It is unlikely that shell was unavailable to the Basketmakers but it may not have survived the elements. The Basketmaker caves of Arizona and Utah have produced many sites with shell artifacts (Kidder and Guernsey 1919, Guernsey and Kidder 1921; Lockett and Hargrave 1953; and Morris 1980).

Sources of the beads are the Gulf of California or Sea of Cortez, and the coast of California. Shell was traded over long distances through a number of routes beginning (Jernigan 1978:Fig. 96). Jernigan (1978) maps out probably major prehistoric trade routes through the Gila, Verde, Salt, and Little Colorado Rivers continuing up these major waterways and overland to the San Juan and spreading north and east from there. The Gila River trade route continued to the Rio Grande in New Mexico where trades went both north to Colorado and south to Texas. Although Jernigan does not extend the map into the Durango area, it is presumed that a likely trade route would be via the San Juan to the Mancos, La Plata, Animas, Los Pinos, and Piedra tributary drainages.

Bennyhoff and Hughes (1987) note that there are sites which appear to have been dedicated to the task of making beads. If so, beads could have been manufactured long distances from where they are found archaeologically. Transporting beads, particularly the small ones, would have been easier if they were pre-strung, worn, or placed in a bag or pouch and carried to their destinations.

Rock art imagery and decoration on unfired clay figurines dating to the Basketmaker II period show probably shell necklaces (Cole 2009; Morris 1980). They are pecked into the rock or punched into the soft clay. Many show what I believe to be shells worn in the fashion of bandoliers. The over-the- shoulder draping was probably a common style, but given the contexts of bead necklaces from most archaeological investigations, it is difficult to determine exactly the method of weaving the necklace. It would be an interesting study to gather data on the style of necklaces and bandoliers and to compare these to sex. Sex can be determined at times in the rock art examples but more clearly in the clay figurines.

Bone Gaming Pieces

Twenty-three artifacts previously documented as bone gaming pieces are part of the non-funerary assemblage at the Shelters (Table 3.5). Specimen FCRS 1434 CU8140g (Figure 3.4), possesses extensive scratches and striae that probably resulted from use rather than intentional etchings as is the case with the generally accepted criteria for gaming pieces. Several other specimens were analyzed under the criteria for gaming pieces although it is recognized these are missing some of the main criteria for the precedence set for gaming pieces such as etching or scoring. Examples of these can be seen in Figure 3.5 below.

The vast majority of what have been called gaming pieces in the Basketmaker II literature are made from pieces of bone whittled and thinned to a final shape. Some are considered to be more like buttons with convex backs and concave fronts and others are simple flat. One side, the front, is usually etched while the back is smooth and often polished perhaps as much from wear as from manufacture (Figure 3.6). On the flat round pieces, an intentional dimple or punctate in the center is likely to be present while the other shapes rarely show evidence for dimples.

Gaming pieces come in a variety of shapes with lenticular or ovate, round, square, and rectangular being the most popular. Occasionally a pentagonal piece can be found such as one piece from the Darkmold Site (Charles 2011a:4.7). In the assemblages from the Falls Creek Shelters and Talus Village rectangular and lenticular or ovate shapes are the most uncommon. Shapes represented in this study include 12 rectangular, 7 lenticular or ovate, 2 round, and 2 square (Table 3.5, Figure 3.6).

Figure 3.5. Worked bone described under gaming pieces which do not fit accepted criteria for gaming pieces due to lack of etching, Phase II, Falls Creek Shelters. From left to right: FCRS 0620 CU8032k; FCRS 0619 CU8032g; and FCRS 0628 CU8032z.

Table 3.5. Descriptive data for bone gaming pieces, Phase II, Falls Creek Shelters.

FCRS	CU Catalog	CU Field	Morris Feature	Weight (gm)	Measurements Length (mm)	Width (mm)	Diameter (mm)	Avg. Thick (mm)	Complete	Shape	Punctate	Provenience	Comments
00614	8032a	38-0275		0.53	16.9	13.69		1.46	Yes	Rectangular rounded edges	No	North Shelter, Terrace II refuse	1 corner slightly broken and polished
0615	8032b'	38-0789		0.29	12.96	9.82		1.18	Yes	Rectangular	No	North Shelter, Terrace IV refuse	
0616	8032c	38-0277		0.23	16	8.66		1.17	No	Rectangular	No	North Shelter, Terrace II refuse	Straight cross
0617	8032c'	38-0790		2.31	34.17	14.71		3.14	Yes	Lenticular or ovate	No	North Shelter, Terrace IV refuse	Diagonal cross, well executed, slightly concave, unusually large, may have broke and been reworded
0618	8032f	38-0447		0.59	19.67	8.04		2.32	No	Rectangular	No	North Shelter, Terrace II refuse	Broke but straight lines, not random and not cross-hatching
0619	8032g	38-0448		1.39	26.87	9.86		3.7	Yes	Ovate	No	North Shelter, Terrace II	Shallow groove
0620	8032k	38-0452		0.52	16.28	13.72		1.52	Yes	Rectangular	No	North Shelter, Terrace II refuse	No design

FCRS	CU Catalog	CU Field	Morris Feature	Weight (gm)	Measurements Length (mm)	Width (mm)	Diameter (mm)	Avg. Thick (mm)	Complete	Shape	Punctate	Provenience	Comments
0621	8032l	38-0453		0.59	17.4	12.25		1.71	Yes	Rectangular	No	North Shelter, Terrace II refuse	
0622	8032n	38-0455		0.39			19.1	1.22	No	Round	Yes	North Shelter, Terrace III	Hole goes through the thin
0623	8032q	38-0512		1.23	18.82	16.01		2.31	Yes	Rectangular	No	North Shelter, Terrace III	May not be a gaming piece
0624	8032t	38-0515		0.64	17.78	9.22		2.25	Yes	Rectangular	No	North Shelter, Terrace III	
0625	8032u	38-0582	C 46	0.49	20.14	8.09		1.73	No	Rectangular	No	North Shelter Terrace III	
0626	8032x	38-1005		0.22	20.53	7.7		1.4	No	Lenticular or ovate	No	North Shelter, Stratigraphic Section, Level 5	
0627	8032y	38-2621	F11	0.61	15.96	13.63		1.85	Yes	Square	No	South Shelter	Slightly convex
0628	8032z	38-0787		0.79	23.62	8.93		2.41	Yes	Ovate	No	North Shelter	Very slightly convex?
01428	8140	38-1347		0.26	22.38	6.51		1.11	Yes	Ovate	No	North Shelter stratigraphic section, Level G	
01429	8140a	38-1346		0.14	18.68	6.32		0.97	No	Ovate	No	North Shelter stratigraphic section, Level G	Tiny break to one end, linear incisions not hachuring
01430	8140c	38-1348		0.19	18.55	8.67		0.9	Yes	Rectangular	No	North Shelter stratigraphic section, Level G	

FCRS	CU Catalog	CU Field	Morris Feature	Weight (gm)	Measurements				Complete	Shape	Punctate	Provenience	Comments
					Length (mm)	Width (mm)	Diameter (mm)	Avg. Thick (mm)					
0 1431	8140d	38-1399		0.42	16.37	15.75		1.38	Yes	Square	No	North Shelter stratigraphic section, Level G	
01432	8140e	38-1350		0.41			20.13	1.51	No	Round	No	North Shelter stratigraphic section, Level G	
01433	8140f	38-1351		0.97	24.11	6.52		1.68	Yes	Ovate	No	North Shelter stratigraphic section, Level G Groove in piece, no hachuring, fine tool marks	
01434	8140g	38-1352		1.59	25.97	14.28		2.7	Yes	Rectangular	No	North Shelter stratigraphic section, Level G	Worked but not gaming piece, fine straight lines that may be from use
01813	8152a?	38-1938		0.43	15.69	8.96		1.73	No	Rectangular	No		

Neither of the two round pieces is complete. FCRS 0622 CU8032n has a tiny hole in the center which appears to be the result of a punctate or dimple that wore completely through (Figure 3.6). A second round piece, FCRS 1432 CU8140b, is broken such that a punctate or dimple would not be visible (Figure 3.6). Given the percentage of round pieces that have this attribute, it is acceptable to posit that this one also had a punctate or dimple. Although neither of the round pieces is complete determining an accurate diameter is possible. The two pieces have a diameter of 19.1mm and 20.93mm respectively. The average diameter for the round gaming pieces from the Darkmold Site is 16.47mm (Charles 2014a:4.8).

A table (Table 3.6) was constructed to demonstrate the average dimensions and weight for the assemblage of gaming pieces for this study. Fifteen pieces were considered to be complete. One piece, FCRS 1434 CU8140g was omitted from this sample because it is believed that is definitely not a gaming piece and its large size and ample thickness would skew the data. The data are shown below in Table 3.6. The quantitative data were calculated again this time omitting FCRS 1434 CU8140g but also three others that do not fit the general criteria for gaming pieces. The omitted specimens include FCRS 0619 CU8032g, FCRS 0620 CU8032k, and FCRS 0628 8032z. The average of these twelve sample size is presented in the table below and both sets of the Falls Creek Phase II data are compared to the Darkmold Site complete gaming pieces.

Table 3.6. Average weight and measurements for the Phase II, Falls Creek Shelters and the Darkmold Site complete gaming pieces. *

	Average weight	Average length	Average width	Average thickness
Falls Creek Phase II (minus	.822gm	20.54mm	11.57mm	1.95mm
	Average	Average	Average	Average
Falls Creek Phase II (minus FCRS 0621, FCRS 0619, FCRS	.803gm	20.11mm	11.76mm	1.81mm
	Average	Average	Average	Average
Darkmold, 5LP4991 N=20	.67gm	18.14mm	12.52mm	1.95mm

* Darkmold Site specimens include complete pieces with shapes of rectangular, lenticular or ovate, and square. Round were omitted from the table because there is no comparable sample in the Falls Creek Phase II collection.

My general observation after analyzing over 100 gaming pieces from the Durango Basketmaker II sites is that the collection from the Falls Creek Shelters differs from other sites. Differences are observed in the overall shape and in the limited variety of designs. Comparative quantitative data are presented in Table 3.6 for comparisons between the Darkmold Site complete gaming pieces and those from this study. The Darkmold Site sample shows an average weight of from .13gm to 1.5gm less than the Falls Creek assemblages. On average the length of the Darkmold Site pieces is from 1.97mm to 2.4mm less than the Falls Creek sample. Average width though is slightly greater for the Darkmold Site specimens than for the Falls Creek specimens (.76mm to .95mm). Thickness was averaged on three places for each piece form both

Figure 3.6. A sample of bone gaming pieces from Phase II, Falls Creek Shelters. Top Row left to right: FCRS 0614 CU8032a; FCRS 01430 CU8140c; FCRS 0617 CU8032c'. Middle Row left to right: FCRS 0624, CU8032t; FCRS 0627 CU8032y; FCRS 01428 CU8140b. Bottom Row left to right: FCRS 0622 CU8032n; FCRS 0626 CU8032x; and FCRS 01432 CU8140e.

samples so these data should reflect good approximations between the two samples. The differences in thickness are the least variable between samples. Sample size is too small to statistically compare the assemblages from Falls Creek Phase II and the Darkmold Site but there is some value in comparing the average weight and dimensions as these could reflect differences in manufacture, artisan, trade, or perhaps social differences.

Typical scoring patterns are simple straight lines, diagonal lines, and variations on these three elements. Falls Creek, Phase II designs include diamond and cross hachuring, straight lines, and multi-directional or random etchings (Figure 3.6 and Figure 3.7). Assemblages from other sites in and near Durango display much more variety in design elements than does the Falls Creek collection. At high magnification, the nature of the incising becomes apparent (Figure 3.7). The cuts are deep and not necessarily finely executed. Often the etchings are discontinuous and sometimes the lines are doubled.

One gaming piece, FCRS 0627 CU8032y, was found in the South Shelter excavations and the remainder is from the North Shelter except for one, FCRS 0813 CU8152?, for which the provenience is not recorded. Most often the provenience within the North Shelter is listed as North Shelter Terrace II or Terrace III, refuse, but seven pieces were retrieved from Stratigraphic Section, Level G from the North Shelter. Gaming piece FCRS 0625 CU8032u, is listed as having been recovered from Cist 46 in Terrace III at the North Shelter (Morris and Burgh 1954:128).

Bone Gaming Pieces - Discussion

Bone gaming pieces, dice, or disks similar in size, shape, and decoration have widespread visibility at archaeological sites from the Greater Southwest with a presence in the Great Basin and other parts of the Colorado Plateau. Sites where gaming pieces have been found include Sand Dune Cave (Lindsey et. al 1968:Fig. 37), the Marsh Pass shelters (Kidder and Guernsey 1919;Plate 86g), and Woodchuck Cave (Lockett and Hargrave 1953:Fig. 4), Kanab (Nusbaum 1922), Desha Cave (Schilz 1979), the Lukachukai Mountains (Kearns et al. 1998; Freuden 1998), Navajo Reservoir (Eddy 1966), and Tabequache Cave in Southwest Colorado (Hurst 1940, 1941, 1942) to name a few . The Durango Basketmaker II sites that have produced gaming pieces including the 23 in this study, 67 from Talus Village (Morris and Burgh 1954), 48 from the Darkmold Site (Charles 2014a),11 from 5LP4333 (Charles 1996), and a single specimen from the Tamarron Site (Reed and Kainer 1978). Two distinctive bone disks found at the Goshen Site along the shoreline of the Great Salt Lake are similar to Basketmaker II bone gaming pieces previously described. Janetski hypothesizes that their presence north of the

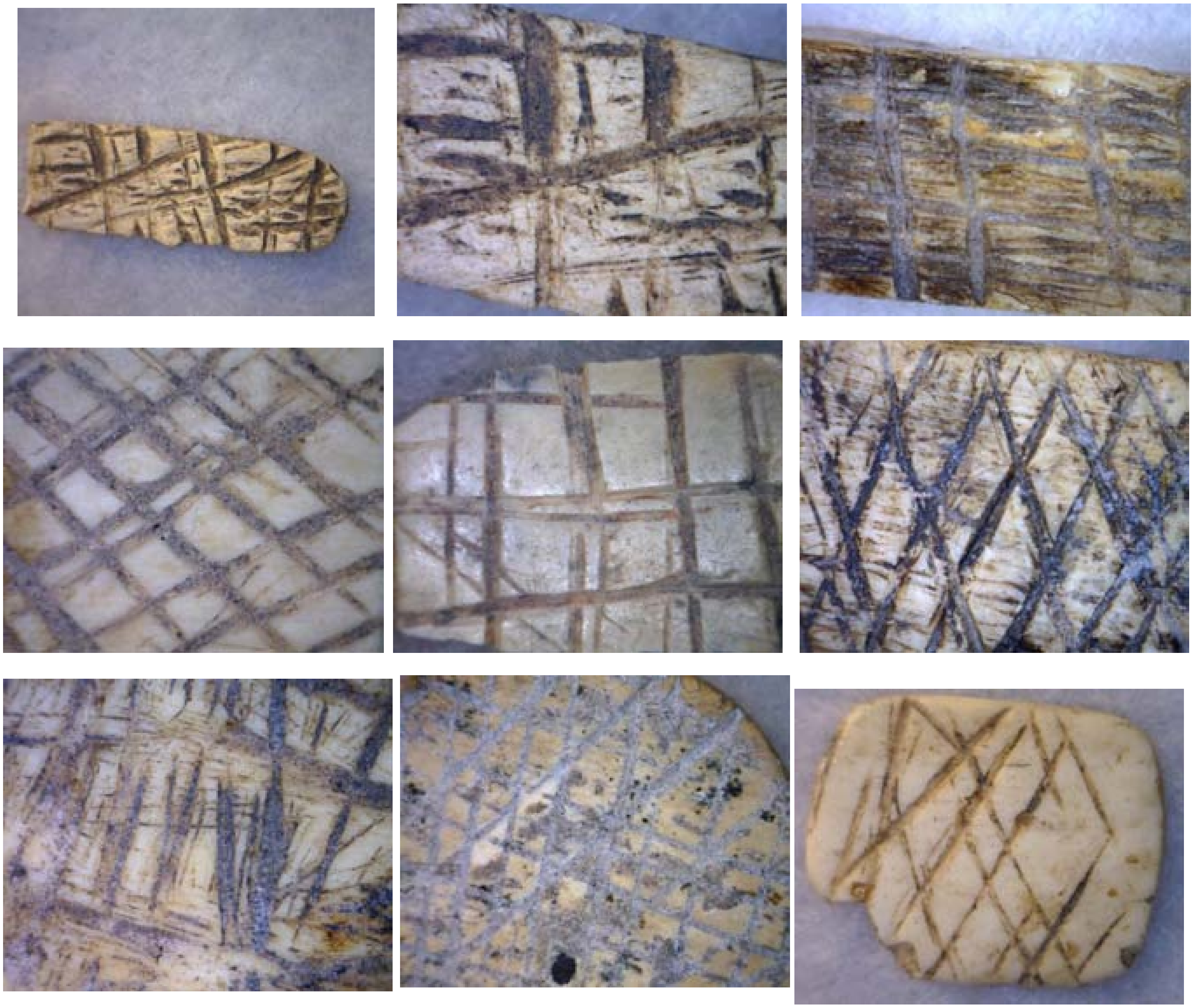


Figure 3.7. Photo micrographs of bone gaming pieces from Phase II, Falls Creek Shelters. Top Row left to right: FCRS 0626 CU8032x; FCRS 0626 CU8032x detail of etching; and 0625 CU8032u. Middle Row left to right: FCRS0615 8032b'; 0616 8032c; and FCRS 0617 CU803c'. Bottom Row left to right: FCRS 0621 CU8032l; 0622 CU8032n; and FCRS 0614 CU8032a.

Virgin- Colorado River in Utah, indicates cultural connections between central and southern Utah, northeastern Arizona, and southwestern Colorado during the Basketmaker II period (2003:306). Their presence so far from the Basketmaker II core area lead Janetski (2003) to speculate on the possibility of social interaction that could include the exchange of people and/or ideas including products and knowledge of farming practices as far north as the Great Salt Lake. According to Janetski (2002), bone gaming pieces from Fremont sites constitute the second largest bone artifact class, surpassed only by bone awls.

Dating these small artifacts is predominately through contextual association. The apex of bone gaming pieces may have occurred during the Basketmaker II period and waned with the transition to the fully sedentary ancestral Puebloan lifestyle. At the Darkmold Site many gaming pieces were found in contexts with good radiocarbon dates (Charles 2014a, 2014b, 2014c). Twelve gaming pieces were recovered from a large bell-shaped pit with two radiocarbon dates. These dates are A.D. 59-A.D. 179 and A.D. 130 - A.D. 260. Feature 36 at this site with dates from A.D. 118 - A.D. 235 produced a single gaming piece. Three gaming pieces were recovered from Feature 47 with radiocarbon dates from A.D. 422 - A.D. 541. A single gaming piece was found in the fill of Feature 70. Burned corn from this features returned a radiocarbon date of A.D. 74- A.D.128. In the fill of Feature 89 were two gaming pieces. This feature dates from A.D. 20 - A.D. 128. Eleven gaming pieces were recovered from the fill of a largely damaged Basketmaker II pitstructure with associated radiocarbon dates from A.D. 129 - A.D. 229 and A.D. 205 - A.D. 340. One of the best contextual dates on gaming pieces comes from Sand Dune Cave (Lindsey et. al. 1969) where a hide bag contained, among other objects, a set of thirteen bone gaming pieces. An AMS date on separate components of the bag produced radiocarbon dates from A.D. 80 - A.D. 330 (two-sigma average dates (Geib 2004:278-279). These dates demonstrate the use of these enigmatic bone artifacts as early as the first century A.D. and continuing through the late Basketmaker II period in Durango, which is about A.D. 500.

Although the apex of bone gaming pieces may be the Basketmaker II period, they are found at later sites. Bone gaming pieces are found at Penasco Blanco in Chaco Canyon, New Mexico (Judd 1954), Tanner Springs, Arizona (Culin 1975) and Grass Mesa, Colorado (Dolores Archaeological Program 2014) to name a few. One of the more interesting sets of gaming pieces is a group of five turtle plastron from the Rocky Arroyo Site (LA25277) near Roswell, New Mexico (Wiseman 2013: Figure 14:29). Plastron is the bony plate forming the ventral part of the turtle's shell. The Rocky Arroyo Site dates from between A.D. 1300 - A.D. 1350, much later than the Basketmaker period in the Southwest. The later occurrences might suggest that their function continued well beyond the Basketmaker II period. However, they could represent items curated or passed down with little memory of their original function. Moreover, the only means to determine the true antiquity of these objects is to date them directly. I am not aware if this has been done.

Scoring or incising for gaming pieces as a whole are finely executed or they are sloppy and consist of a random lines or simple straight lines. In some cases, tedious and careful attention was paid to the detail inscribed to the pieces. The size of the piece limits the style of decorations. Round and square pieces show the most variability and lenticular and rectangular, the least. Although there is no means to know exactly what tools were used to score the pieces, it would need to have been a small sharp tool such as a burin or graver or perhaps a very sharp flake made from material such as obsidian. Gaming pieces were perhaps time consuming to whittle, grind, and smooth to a final shape, and incising or scoring these small pieces although probably not that difficult would have been painstaking.

Although these bone artifacts are referred to in the literature as bone gaming pieces their exact function remains inconclusive. On the subject of gaming pieces, Stewart Culin in Games of the North American Indians writes about many versions of historic Indian dice games played by both men and women (1975:44-225). He strongly emphasizes a long antiquity for games of chance using such items as bone gaming pieces and citing ethnographic analogies with the Zuni and Hopi tribes (Culin 1975:46-49).

Gaming pieces are most often found as isolated occurrences and not often associated with burials. They occur in sets or as single items and are found associated with other types of artifacts. At Talus Village, Morris found a group of 13 with a burial and a group of 9 in a cist (Morris and Burgh 1954:63), while a group of 7 gaming pieces were found with a burial in Bodo Park near Durango, Colorado (Charles 1996). Kidder and Guernsey describe the contents of a small skin bag from Kinboko Cave I in the Marsh Pass Shelters, Arizona, which contained a set of eight lenticular and three circular gaming pieces (1919:Plate 86g). A set of eight dice were found in a small coiled basket with a multiple burial at Woodchuck Cave (Lockett and Hargrave 1953: Fig 4). Although these authors note that the dice are made of wood, they appear be very similar or identical to bone gaming pieces from other sites. It would be worthwhile to re-examine these pieces and determine if they are made from wood and not bone. The 48 gaming pieces excavated at the Darkmold Site were found in the fill of features, in trash deposits, and scattered throughout the soil matrix. Several were found within the fill of the same features and others were found as solitary items. Some were found in fill from burial cists but were not deemed funerary objects. Their occurrence in sets or groups suggests that these artifacts were used in some form of game whereby shape and side played some role. From the set of eight from Sand Dune Cave, the set of thirteen from Talus Village, the set of eleven from Kimboko Cave, and the set of three from 5LP4533, it is not unrealistic to suggest that the game was played with a combination of shapes and scoring patterns. They may have been tossed to and fro between baskets or within a single basket. They could also have been tossed onto hide playing surfaces. Polish and smoothness may have resulted from handling or from rubbing against baskets and hides.

Several gaming pieces were found at Grass Mesa site near Dolores, Colorado, which dates between A.D. 700 and A.D. 925. Archaeologists with the Dolores Archaeological Project consulted with the Zuni tribe in hopes of shedding light on the function of these artifacts. Zuni tribal member James Enote remembered a game where bone dice similar to the archaeological examples were used as propos for a gambling game. As a member of the Corn Clan, Enote also noted that they resembled an ear of corn, especially from their proximal end. Perhaps they had a dual purpose, gaming piece and representations of corn (Dolores Archaeological Program 2014).

One idea that I put forth for the use of these enigmatic artifacts is that they were used in a communal game of chance and similar to that of Pogs, the school yard craze of the early 1900s (Charles 2014d). Like Pogs, archaeological specimens could be identified through visual recognition. The round bone gaming pieces are usually the only ones with a punctate or dimple on the backside, they are thick and weight more. These pieces may have held a different role within the game(s). Moreover, Morris and Burgh (1954:63) put forth the idea that the two sets from Talus Village were the work of two individual craftsmen. This could be true, although this could be difficult or impossible to determine. What does stand out is the uniqueness of each piece. Individual artisans certainly knew their own pieces but through time, the pieces likely exchanged hands and over a long period of time, the memory of individual ownership faded.

Stone Artifacts

<u>Shaped Stone</u>

A conical stone pipe and five pieces of shaped stone were analyzed in this category. One shaped stone is a pendant and two are stone beads. The two other artifacts are interpreted to be possible atlatl weights. This section begins with the results of analysis and discussion of the stone pipe.

<u>Stone Pipe</u>

One complete pipe (FCRS 0272, 43944/11) in excellent condition was analyzed as part of this collection. It is long and thin and the lithic material is a dark grey to black fine-grained, probably igneous, material. There is black residue around the edge and in the inside (Figure 3.8). The pipe is very smooth (polished) with scratches that look both original and recent (Figure 3.8). There are abundant small manufacturing marks, root etchings, glue, and a white substance that may indicate it was once mounted onto something for display (Figure 3.8). Recent scrapes may be accidental or could be intentional to see the material type (Figure 3.8). There is no reference to this pipe in Morris and Burgh (1954) nor is there a CU catalog number or CU field Number. There is an "other bag number" 43944/11. The provenience of this artifact is questionable. It would seem to me that if Morris and Burgh found it during their excavations it would not have escaped their attention or their subsequent analysis. Another avenue to pursue is the possibility that it was discovered by Zeke Flora or Helen Sloan Daniels in during their investigations.

The quantitative data for this pipe were compared to the data from the single siltstone pipe from Falls Creek Phase I, Individual 1 (Mulhern 2011) or Burial 26 (Morris and Burgh 1954). The two are strikingly different in several dimensions and in material type (Table 3.7 and Table 3.8). FCRS 00272 CU43944/11 from the Phase II analysis is made from a black igneous material is about half the weight of the one from Phase I which is made from a pink and cream banded siltstone and very similar to the naturally occurring pink/red banded siltstone and arkosic sandstone from the local Permain age sedimentary formations. While the length of the Phase II pipe is 20mm longer than the Phase I specimen, it is considerably thinner throughout and weighs about half that of the Phase I pipe. The distal hole diameters differ by as much as 5mm with Phase I being larger. The proximal hole diameter difference is only .44m. The chlorite schist pipe from the Darkmold Site is longer by 20mm than the Phase I pipe and 40mm longer than the Phase II pipe. Both distal and proximal hole diameters for the Darkmold Site artifact are larger than the two from Falls Creek Shelters. Although no weight is provided for the Darkmold Site pipe, it would undoubtedly weigh more than either of the Falls Creek Shelter specimens.

Stone Pipe - Discussion

Stone pipes are one of the more interesting and uncommon objects found in the Basketmaker II sites of the Southwest. They are morphologically similar to stone and ceramic pipes from Basketmaker III sites and from contemporary Hopi sites (Charles 2011a: Figures G12 - G17). These conical (tubular) pipes are found in the assemblages from Sayodneechee Burial Cave and Kinboko Cave I (Kidder and Guernsey 1919:Fig. 94,188), two from Cave du Point (Nusbaum 1922:134-136), one from Broken Roof Cave (Guernsey 1931), two from Woodchuck Cave (Lockett and Hargrave 1953; Fig.14a, b), and several from the Prayer Rock caves (Morris 1980:Fig. 41, 78) to name a few. There was a very similar pipe recovered from Talus Village (Morris and Burgh1954: Fig. 964r), the Hidden Valley sites (Carlson 1963:80), and in a burial from the Darkmold Site, 5LP4991 (Charles 2002; Charles and Cole 2006:Fig.7, 176). Conical clay pipes are found in the same context as the stone pipes (Carlson 1963: Plate 24; Morris 1980: Fig 41; and Kidder and Guernsey (1919: Fig. 94), although after Basketmaker II, clay pipes or cloud blowers, replace stone pipes almost exclusively.

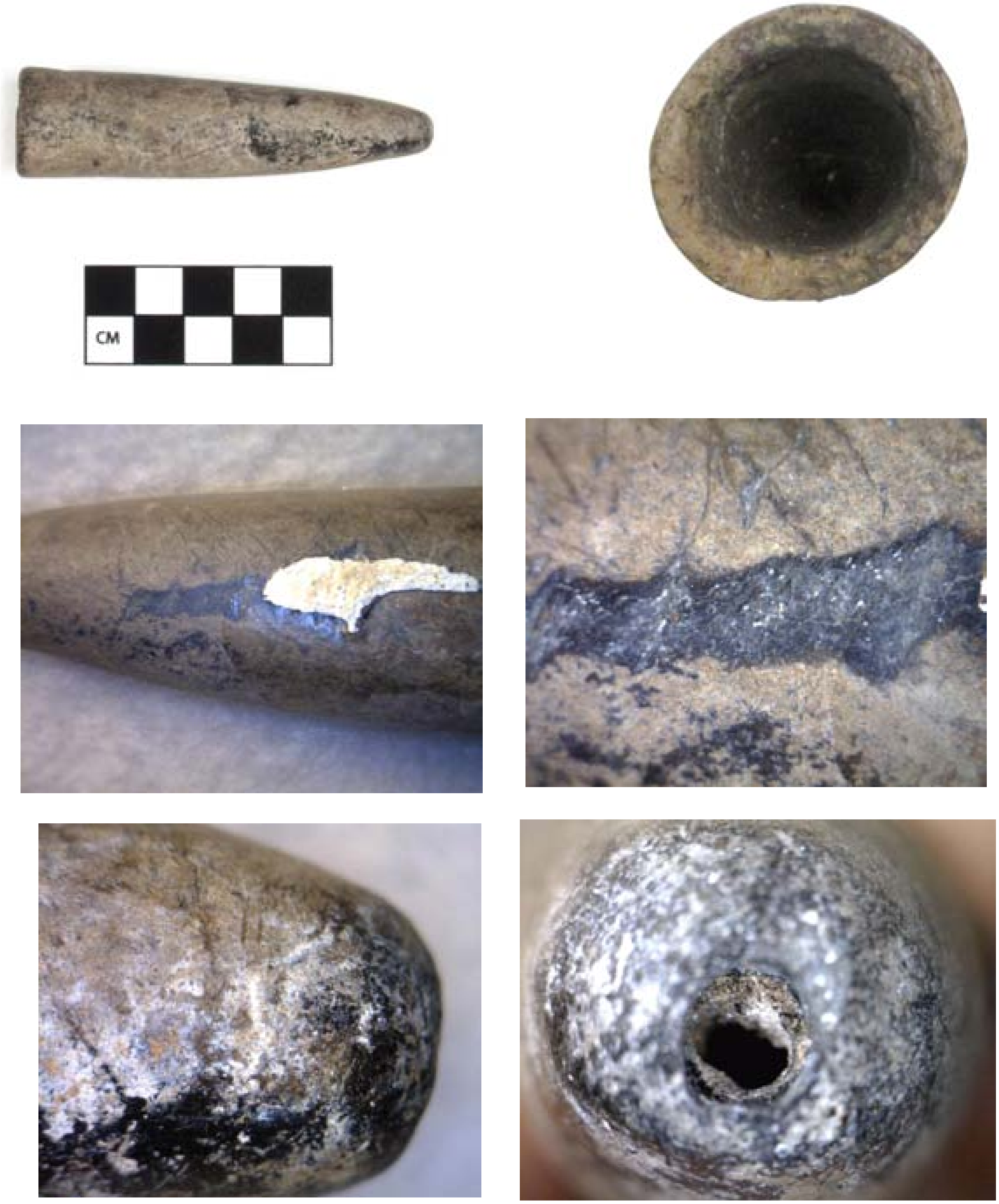


Figure 3.8. Stone pipe, FCRS 0272 43944/11 from Phase II, Falls Creek Shelters. Top Row left to right: photograph of entire pipe; and photograph of the distal end of the pipe. Middle Row left to right: photo micrograph of pipe near proximal end with white substance and glue; and photo micrograph of recent scratch in the pipe which may have been done historically to determine the material type. Bottom Row left to right: photo micrograph of proximal end of pipe; and photo micrograph of proximal end of pipe with residue adhering to inside.

Table 3.7. Stone pipe from Phase II, Falls Creek Shelters.

FCRS	CU Catalog	Material Type	Distal Hole Dia (mm)	Proximal Hole Dia (mm)	Length (mm)	Width (mm) Distal	Width (mm) Center	Width (mm) Proximal	Thickness (mm) Distal	Weight (gm)
00272	43944/11	Black heavy igneous?	11.57	2.83	82.45	21.05	19.81	9.29	3.64	31.21

Table 3.8. Stone pipe from the Phase I, Falls Creek Shelters, Burial Crevice, Individual 1.

FCRS	CU Catalog	Material Type	Distal Hole Dia (mm)	Proximal Hole Dia (mm)	Length (mm)	Width (mm) Distal	Width (mm) Center	Width (mm) Proximal	Thickness (mm) Distal	Weight (gm)
	3647	Pink/ cream banded siltstone	16.64	3.27	61.78	28.92	28.78	16.08	6.44	63.67

The pipe from Individual 1 (Mulhern 2011) from the Burial Crevice at the North Falls Creek shelter was placed in a hide pouch in a small basket and snugly fit in the crotch of the left arm of an elderly adult female, the oldest person thus identified from the Burial Crevice remains. Members of the Hopi tribe suggested that this burial accoutrement would have probably been used by men during ceremonies. They noted that in the Hopi matrilineal society women are the keepers of the pipe. During consultation, members of the Hopi tribe asked about the contents of the pipe. This particular artifact exhibited charred encrustations in the inside of the distal end. These Hopi tribal members requested that the pipe be submitted for non-invasive analysis to determine, if possible, what combination of plant materials may have been smoked in this pipe.

The pipe from Phase I was submitted for pollen, starch, phytolith, and organic reside (FTIR) analysis by PaleoResearch Institute in Golden, Colorado (Cummings et al. 2011). Results of residue analysis from the pipe yielded consistent evidence for the presence of a mixture of plants represented by Zea mays (maize), Poacea sp. (grass), Pinus sp. (Ponderosa pine most likely), Ephedra (Mormon tea), Nictotiana (wild tobacco), Hordeum (barley) or Elymus (wildrye) grasses, and Datura (Jimsonweed). Starches, phytoliths, and pollen from other cultigens and from surrounding vegetation include raw beeweed, prickly pear cactus, and acorns. Possible charred beans and prickly pear cactus are perhaps attributable to processing these plants on the same groundstone as the maize that was used in the mixture (Cummings et al. 2011)[1]. Smoking was and remains integral to the Hopi culture. The smell of smoke is the most sincere message to the gods and for this reason most of the smoking is not done in public but in the confines of the kivas and during ceremonies (Broder 1978:83 in Cummings et al. 2011).

Similarly, the pipe from the Darkmold Site was cleaned of the dirt collected within the orifices and the dirt was submitted to PaleoResearch for analysis (Logan et.al. 2011). The results were not as demonstrative as those from the Phase I project, although they are somewhat enlightening. The residue was sieved in preparation for the microscopic work and this allowed for identification of several types of charcoal, including Douglas fir, oak, and willow, which may have been burned in the pipe. Willow and oak are present at the site and in the surrounding areas but the elevation is too low for Douglas fir. Douglas fir was undoubtedly used for construction materials at the site as well as for fuel. Pollen analysis found primarily amorphous organic fragments. The pipe had been exposed to heat which nearly destroyed most of the pollen. The heat was not high enough to destroy it in its entirety and three types of pollen were identified including sagebrush, members of the sunflower family and plants in the Cheno-am group. Their presence suggests that they represent local plants and were not part of the smoking recipe. Starches identified during analysis were limited to angular starch interpreted as originating from Zea mays glumes and Poacea seed starch. The presence of roots was indicated by the recovery of an eccentric starch.

According to Logan et al. (2011:23) despite the high total pollen concentration the low count is the result of poor preservation of the majority of the pollen. This is most likely a resulted from exposure to heat during the smoking process. The heat would have been high enough to damage the pollen but not extreme enough to remove the pollen entirely. From the analysis of the starch, pollen, and phytoliths, a possible recipe emerges represented by grass seeds, maize, ground roots, and sunflower seeds. Tobacco leaves and dried pine needs were discovered during FTIR analysis adding to the ingredients.

Examining the contents of the pipe residues from the Falls Creek Shelter, Phase I and the Darkmold Site, it is clear that some plant species are common to both while others are found in one but not the other pipe. Common ingredients include Poacea (grasses), Zea mays, and Nicotiana (native tobacco). The Falls Creek Phase I pipe included several plants not present or that did not survive in the pipe from the Darkmold Site. Cleome, prickly pear cactus, wild barley or wildrye grasses, Ephedra (morman tea) and Datura (Jimsonweed) found in the Falls Creek Phase I pipe did not appear in the Darkmold Site pipe. Both pipes indicate that wood was used probably in a manner of starting and retaining the mixture. Datura is not a native plant in the Durango area, but can be found in abundance in surrounding area where the elevation is lower, temperatures are higher, and moisture is less abundant. Also known as

[1] Beans do not appear at this time period; therefore this identification should be viewed with caution.

Angel's trumpet, this plant is highly hallucinogenic, causing severe illness and even death if used improperly.

The two pipes from known proveniences in the Durango Basketmaker II collections were found with burials. Falls Creek Shelter, Phase I pipe was found with an older female and the Darkmold Site pipe was recovered from a commingled burial with two probable adult males and one probable adult female. Stone pipes were not common at any time in the prehistory of the Southwest and their presence in burials is an indication of their spiritual and ceremonial value.

A recommendation for the Phase III grant or any funds that might be available would be to send the contents (scrapings) from this pipe for comparative analysis and possibly for radiocarbon dating if possible. Perhaps if a date was available for this pipe, it may shed some light on its temporal context at least.

Stone Pendant

One stone pendant was analyzed in the Phase II shaped stone assemblage (Table 3.9). It is elongated, flat convex in profile, and well made. It is smooth and polished (Figure 3.9). The material is an unusual lithology for the Durango Basketmaker II stone types-- possibly a green chlorite schist. Source material is banded, is soft enough to be ground, shaped, and drilled. It measures 44.45mm in lenght, is 18.7mm wide and 7.45mm thick. The weight is 8.5gm. Offset at the top of the pendant is a neatly drilled hole with an inside diameter of 5.23mm and an outside hole diameter of 2.65mm. The differences in the two hole sizes is evident in the photograph in Figure 3.9.

Stone Beads

Two stone beads are represented in the Phase II collection (Table 3.9, Figure 3.9). They differ considerably because one is a disk bead (FCRS 0640 CU8034h) and the other a cylindrical bead (FCRS 0639 CU8034f). In addition they are different in color but may have derived from a similar banded siltstone or indurated shale. The disk bead is of a greenish color and the cylindrical bead is gray (Figure 3.9). FCRS 0640 CU8034h is incomplete and is broke such that the hole is not present. It measures 15.57mm in diameter and is 2.68mm thick. It has ground edges and is smooth but not highly polished. Cylindrical bead FCRS 0639 CU8034f is complete and it has a maximum diameter of 9.45mm, is 4.88mm thick, and weights .58gm. The hole diameters for the two ends are for all practical purpose uniform (4.77mm and 4.73mm). A very similar bead although slightly larger is reported from the excavations at the Darkmold Site (Lark 2014:5,18-5.19). The Darkmold Site bead is also made from a dark siltstone or indurated sandstone. It measures 9.6mm in length, is 9.1mm in diameter, is 6.3mm thick, and weighs .66gm.

Stone Bead and Pendant- Discussion

The sample size of two stone beads from Phase II is too small to be of much interpretive value. Disk beads and cylindrical beads are common at Basketmaker II sites across the Southwest. Within the Burial Crevice there were an impressive number of disk beads of indurated shale and banded cream and reddish/orange siltstone intermixed with more cylindrical beads of lignite. See a discussion of the stone beads and pendants from Phase I for a more thorough analysis of these artifacts (Charles 2011a). Strands of stone beads were often placed with burials; otherwise, they can be found in small numbers and from about any context including refuse and feature fill. With the exception of the pipe, all shaped stone from Phase II was found loose in the refuse of Terraces II and IV from the North Falls Creek Shelter. A similar stone bead to FCRS 0639 CU8034f were found at the Darkmold Site, also from the general fill (Lark 2014: Figure 5.18). Stone beads and stone pendants are necessarily temporally or culturally diagnostic in the Southwest. They are found throughout time and across space. Stone work continues into the present for most Native American cultures in the Southwest.

Possible Atlatl Weights

Two oblong small groundstone artifacts are interpreted as possible atlatl weights. Both are ground and polished and plano-convex. The first one, FCRS 0643 CU8034p (Table 3.9, Figure 3.9) is similar in size and shape to the stone pendant described above. This artifact is made from a different material, than the stone pendant. It is very similar to the other possible atlatl weight, FCRS 0644 CU8034q, which may be made from the same gray banded stone (possibly siltstone or indurated shale). It is longer, wider, a little thinner but it weighs about 3gm more than the pendant (Table 3.9, Figure 3.9). It also exhibits signs of flaking and is not smoothed and polished to the same extent as the pendant. The second possible atlatl weight is longer still than the first one and longer than the pendant by 11mm, it is more narrow than the pendant, and is thicker and weighs more than the other two. Both of these artifacts were found in the refuse of Terrace II.

Table 3.9. Shaped stone artifacts (other than the stone pipe) from Phase II, Falls Creek Shelters.

FFCRS	Accession	Catalog No.	Subtype	Material Type	Inside Hole Dia (mm)	Outside Hole Dia (mm)	Diameter (mm)	Length (mm)	Width (mm)	Thickness (mm)	Weight (gm)
00640	8034h	38-0801	Bead	Siltstone or indurated shale?	NA	NA	NA	15.57	7.96	2.68	0.56
00639	8034f	38-0457	Bead	Siltstone or indurated shale?	4.77	4.73	9.45			4.88	0.58
00642	8034o	38-0794	Pendant	Green chlorite schist?	5.23	2.65		44.45	18.7	7.45	8.5
00643	8034p	38-0271	Possible atlatl weight	Gray banded siltstone				49.73	20.17	7.13	11.43
00644	8034q	38-0439	Possible atlatl weight	Gray banded siltstone ?				53.2	14.53	10.17	12.48

Figure 3.9. Shaped stone artifacts from Phase II, Falls Creek Shelters. Top Row left to right: pendant FCRS 0624 CU8034o; reverse side FCRS 0624 CU8034o; and bead FCRS 0639 CU8034f. Middle Row left to right: pendant preform or atlatl weight FCRS 0643 CU8034p; reverse side FCRS 0643 CU8034p; and bead FCRS 0640 CU8034h. Bottom Row left to right: possible atlatl weight FCRS 0644 CU8034q; and reverse side FCRS 0644 CU8034q.

Possible Atlatl Weights - Discussion

Morris and Burgh classify these two artifacts as possible atlatl weights recognizing that without marks for lashing this interpretation is inconclusive (Morris and Burgh 1954:59). Atlatls with hafted dart points are unequivocally the weapon in use during the Basketmaker II period. Bow-and-arrow technology entered into the prehistoric weaponry near the end of Basketmaker II period. By the Basketmaker III period the bow-and-arrow was so common that it is in the trait list that helps define the period. A well- preserved proximal fragment of an atlatl shaft was analyzed with Phase I artifacts (Graham 2011: H-11), and the typical point type for the Durango Basketmakers is the dart point. Although there have been no atlatl weights found attached to atlatl shafts at any of the Durango Basketmaker sites, they are reported from other San Juan Basketmaker II sites such as White Dog Cave, and Broken Roof in northeastern Arizona (Guernsey and Kidder 1921: 81-83, pl. 33b and d; Guernsey 1931:71-72, pl. 50). The two possible atlatl weights in this study are compared to the two definite atlatl weights from Broken Roof Cave in Table 3.10. The lengths of all four are comparable and the widths are relatively close with the exception of FCRS 0644 CU8034q, which is narrower than the rest by as much as 5.5mm. The thickness on FCRS 0643 CU8034p is 3mm less than FCRS 0644 CU8034q but between 4 and 5mm less than the two from Broken Roof Cave. Weight is not available for the Broken Roof Cave specimens because they were intact on the atlatl. Weight was probably the deciding variable as to their potential to be atlatl weights.

Despite the lack of lashing marks, their presence in the refuse, and the slight inconsistencies in dimensions between the artifacts in this study and those from Broken Roof Cave, it cannot be ruled out that these were used or were to be used as atlatl weights.

Table 3.10. Comparative data from Phase II, Falls Creek Shelters possible atlatl weights and the Broken Roof Cave atlatl weights.

Context	Length (mm)	Width (mm)	Thickness (mm)
Falls Creek, Phase II FCRS 0643	49.73	20.17	7.13
Falls Creek, Phase II FCRS 0644	53.2	14.53	10.17
Broken Roof Cave	50.8	22.225	12.7
Broken Roof Cave	53.975	19.05	11.125

3.4 Bone Tools

The bone tool category was separated into pointed bone tools (awls, daggers, drills), notched tools (ribs, scapula, tibia), worked bone general (scrapers, fleshers, chisels, flakers), non-specific worked bone tools, and an antler wrench. A total of 248 bone tools were analyzed as one component of the SHF grant for Phase II of the Falls Creek Shelters analysis and documentation. The following discussion is separated into three major bone tools categories: Notched bone tools, Pointed Bone Tools, and General Worked Bone tools. Data tables for these categories are presented in Appendix to this report because of their lengthy nature. Summary tables are presented in the body of this report along with photographic examples.

Notched Bone Tools

Notched bone tools fell into three sub-categories: notched ribs, notched scapula, and a notched tibia. A total of 62 notched bone tools were analyzed from Phase II. This accounts for 21.38% of the total artifacts in this study (Table 3.1). Of the 62 artifacts, 48 are notched ribs (77%), 13 (21%) are notched scapula, and 1 (2%) is a notched tibia. Three (23%) left scapula and 7 (54%) right scapula are identified with 3 (23%) indeterminate for a total of 13. The one notched tibia is likely from the right side.

Each artifact was examined at the macroscopic level and most were examined at the microscopic level. Basic dimensions were recorded that included length, width, and maximum thickness, all in centimeters. Weights were recorded in grams. More often than not, striae were present on two sides of the tool. Notches or serrations were determined by sight and by slightly brushing across the tool whereby very shallow serrations might be recognized by feel. Notches were counted per side and general width and depth measurements were taken as the minimum and maximum widths and depths in millimeters.

Other observations included presence of striae, manufacture marks, other marks, adhering materials, and general comments. A representative number of photographs are presented in the body of this text.

All notched bone tools are manufactured from large artiodactyla or even-toed ungulates. There are four artiodactyla that would have been present in this area at this time-Odocoileus hemionus (mule deer), Antilocapra americana (pronghorn antelope), Cervidae (elk) and Ovis canadensis (bighorn sheep). In her analysis of the faunal remains and the bone tools from the Darkmold Site, Cerisa Reynolds (2014a, 2014b) exercised caution with her species identification (Reynolds 2014a, 2014b) for the bone tools from this site. Reynolds applied the following four taxon categories: large mammal, Artiodactyl, cf. mule deer, and antelope or bighorn sheep (2014a). If, in her opinion there was any doubt that an element belonged to a said species, it was not assigned to the said species, but the assignment of cf. was frequently used to denote a close/likely but not positive identification. For this study, determining the element, species identification, and age were the responsibility of two Advanced Osteology students from Fort Lewis College, Dave Hencmann and Jane Cooper. The students worked in a controlled environment under the supervision of me and Dr. Dawn Mulhern. Analysis was completed at the AHC where a comparative collection was available for our use. With three exceptions, the species for the notched bone tools was determined as cf. mule deer. Two scapulas (FCRS 0942 CU8103 and FCRS 0950 CU8108a) were determined to be from cf. bighorn sheep, and one scapula remains as indeterminate. Cervidae or elk is ruled out because all notched tools were classified as having originated from adult animals. There was no specimen that would have been big enough to have been from an elk. In addition, it is likely that elk were not present or if present only in small numbers at the time of the Basketmaker II occupation of the Durango area.

All of the 48 notched ribs were broken at the proximal most portion and appear to have been broken from the carcass while fresh (Reynolds 2013b:3.4). Twenty-five (52%) of the notched ribs are from the left side, 19 (40%) are from the right side, and 4 (8%) are indeterminate. From these numbers it seems that there was no clear preference for which side the rib came from although there may be a slight preference for the left side. Thirteen of the 25 (52%) were notched on both sides while 8 (42%) of the right ribs exhibited use on both sides. Completeness of the notched ribs ranged from broken to very lightly broken (Figure 3.10). Notches occurred on both sides of the tools 25 (52%) of the time. All ribs were identified as originating from adult large mammals and most probably mule deer (Odocoileus hemionus) although these were recorded as cf. mule deer. There is no good way to determine the minimum number of individuals from the ribs due to the presence of so many ribs per side in this animal. However, in our identification of the rib assemblage, we recognized 11 specimens that were believed to be 6th ribs-six left and five right. If this identification is correct on the 6th ribs, a minimum number of individuals would be six. This number most probably grossly underestimates the actual number of individual animals represented in this assemblage. Habitation of the Falls Creek Shelters continued at least sporadically over a long period of time noted by radiocarbon dates and tree-ring samples that span a period from nearly 2000 B.C. to A.D. 300. At what point in this occupation were notched tools used is not fully understood at this time.

Figure 3.10. Four examples of notched ribs from Phase II, Falls Creek Shelter. From Top to Bottom: FCRS 0595 CU8028a', lightly broken, double sided notching, one edge moderate and the other edge lightly notched; FCRS 0500 CU8028f, broken, one edge deeply notched, the other edge moderately notched; FCRS 0502 CU8028o, broken, both edges moderately notched; and FCRS 0953 CU8109c, lightly broken one side lightly notched.

One fragment of a notched right tibia was present in this assemblage (Figure 3.11). The tibia had four notches that ranged in depth from 5mm – 5.15mm. The notches are well defined and polished. At one point the two pieces were glued. The tibia was split while fresh. It was recovered from the stratigraphic section in the North Falls Creek Shelter. This piece is atypical of the Basketmaker II notched tools because it is a piece of a tibia. There are a few other tools made from long bones of large mammals that possess some notching but they are compound tools and are discussed with general worked bone.

Figure 3.11. Worked tibia fragment FCRS 2552 CU8182, Falls Creek Phase II.

Thirteen scapulas were analyzed as part of this study. Ten of the thirteen are identified as coming from cf. mule deer, two are identified as coming from cf. mountain sheep, and one is indeterminate. Most were lightly broken to mostly complete (Figure 3.12). The glenoid cavity is present on three of the specimens although all have intact caudal borders with notching along the more cranial portions of the blade. The medial portion was the most commonly used.

Six left scapulae, five right scapula, and two indeterminate scapulae were identified. Two of the left scapulae are almost complete and two of the right scapulae are nearly complete. The minimum number of individuals in this assemblage is conservatively estimated at two. Two notched scapula were identified as originating from cf. big horn sheep, one, FCRS 950 CU8108a, is nearly complete with a glenoid cavity (Figure 3.12). At least one big horn sheep is represented in the assemblage.

Notches for the scapulae were similar to those for the ribs. One notched scapulae, FCRS 0951 CU8108b, possesses a total of eight notches from three parts of the bone, one has notches on both sides, and the remaining eleven have notches on one side only. On average the notched scapulae have 3.5 notches. The maximum depth of the notches ranges from .5mm to 7.47mm. Two specimens are questionable as to whether the notches are intentional or are simply ragged breaks.

Notching on both ribs and scapulae could occur on one or two sides with unevenness of use represented in the depth of the notches. It is common in the tools for one side to be heavily notched and the other side only lightly notched. Perhaps as one side became overly

Figure 3.12. Examples of portions of scapulas used for notched tools, Falls Creek Shelter, Phase II. Top Row left to right: FCRS 0594 CU8027i (left, medial); FCRS 0879 CU8086 (right, medial). Bottom Row left to right: FCRS 2639 CU8198a (left, complete with glenoid cavity broken); and FCRS 950 CU8108a (right, complete with glenoid cavity).

notched the tool was flipped over to continue its use life. Numerous and deep notches on both sides would perhaps indicate that the tool was nearing the end of its use life (Reynolds 2014a:3.4).

General descriptive data on the notches for all the tools was collected during analysis. These data document the number of notches serrations from each tool by side. The notches for all these tools were measured for maximum and minimum depths and maximum and minimum widths (Table 3.11). Some of the notches were only identifiable by feel and accurate measurements could not be taken on these.

Very shallow notches were indicated as either less than 1mm or less than .5mm if any measurement could be taken at all. These numbers were entered into the data set as 1mm or .5mm. If they could not be measured at all, there were not entered into the data set. Notches per side for all the notched ranged from 1 to 15 with an average of 5 notches per side and a median number of 5 per side. Linear plots for minimum and maximum measurement of the notches were constructed (Figures 3.13 and 3.14) and simple statistics were generated for the two plots and Pearson's linear correlations coefficients were generated for the two sets of data.

Maximum depth (mm): Mean = 1.7214, Median = 1.47, SD = 1.1358, and Range = .3 to 7.47.

Maximum width (mm): Mean = 6.4951, Median = 4.995, SD = 3.8118, and Range = 2.39 to 21.2.

Pearson's correlation coefficient for these two data sets is .4183. Essentially there is no correlation between the maximum width and maximum depth for the notches.

Minimum depth (mm): Mean = .7714, Median = .5, SD = .7908, and Range = .3 to 5.50.

Minimum width (mm): Mean = 3.09875, Median = 2.74, SD 2.23799, and Range = .5 to 19.6.

Pearson’s correlation coefficient for these two data sets is .1756. There is no correlation between the minimum width and the minimum depth for the notches.

Generalizations from these basic statistics suggest that there is no correlation between the maximum depths and maximum widths of the notches nor is there a correlation between

Table 3.11. Number of notches or serrations and descriptive data for notched bone tools from Phase II, Falls Creek Shelters.

Notch Number	Notches measurement Max. Depth (mm)	Notch measurement Min. Depth (mm)	Notch measurement Max. Width (mm)	Notch measurement Min. Depth (mm)	FCRS	CU	Element
6	1.75	0.84	5.56	3.32	0593	8027d	Scapula
6	2.88	<.5	5.02	2.26	0594	8027i	Scapula
9 14	1.1 1.72	<.5 <.3	8.31 6.19	1.44 2.35	0595	8028a'	Rib
2	1.59	0.75	3.72	2.54	0596	8028a?	Rib
9	1.46	<.3	4.46	2.77	0597	8028b'	Rib
6	3.38	2.05	4.88	3.42	0598	8028c?	Rib
7 2	2.56 <.3	1.06 <.3	4.14 5.71	2.91 2.68	0599	8028e	Rib
5 7	1.48 3.51	<.5 <.5	4.56 3.69	3.17 2.97	0600	8028f	Rib
11	2.41	<.5	4.7	3.52	0601	8028h	Rib
7 7	1.40 1.27	<.5 <.8	6.95 4.61	3.14 2.79	0602	8028o	Rib
19 11	1.25 3.73	<.5 <.5	4.36 7.88	2.93 4.17	0603	8028r	Rib
7 9	1.46 1.88	<.3 .<3	4.47 4.73	3.26 2.67	0604	8028t	Rib
8 11	<.8 1.78	<.5 <.5	3.64 6.24	2.75 2.31	0605	8028u	Rib
5 3	<.8 1.44	<.5 <.5	4.17 4.07	3.0 3.0	0606	8028z	Rib
8 7	1.81 1.61	<.5 <.5	4.09 4.63	2.64 1.63	0695	8050	Rib
9 6	2 1.83	<.5 <.5	10.34 14.06	3.07 1.36	0743	8060a	Rib
5 8	1.76 2.06	<.5 <.5	6.71 5.01	3.38 2.13	0744	8060b	Rib
3 2	NA	NA	NA	NA	0745	8060c	Rib
3 2	<.5 <.7	3.21 4.26	3.04 4.12	<.5 2.20	0746	8060d	Rib
3	0.8	<.5	5.5	2.55	0747	8060e	Rib
3 5	1.86 2.69	0.6 <.5	11.3 4.55	3.68 3.51	0748	8060f	Rib
1 1	<.5 <.5	NA	NA	NA	0749	8060g	Rib
6	1.74	<.5	5.67	3.04	0750	8060h	Rib
1	1.03	1.03	3.03	3.03	0767	8063	Scapula
5	1.11	<.5	6.65	3.52	0770	8067a	Rib
1 6	NA 2.96	NA .77	NA 6.44	NA 2.28	0771	8067b	Rib
11	2	<.5	5.44	<.5	0772	8067c	Rib
8 6	1 .78	<.5 <.5	4.07 4.05	2.15 2.87	0773	8067d	Rib
7	1	<.5	4.36	2.15	0774	8067e	Rib
3 7	2.84 1.85	<.5 <.5	7.39 4.18	NA 3.10	0775	8067f	Rib

Notch Number	Notches measurement	Notch measurement	Notch measurement	Notch measurement	FCRS	CU	Element
	Max. Depth (mm)	Min. Depth (mm)	Max. Width (mm)	Min. Depth (mm)			
8 2	2.34 <.5	<.5 <.5	6.30 4.24	4.21 NA	0776	8067g	Rib
7	1.75 1.05	<.5 <.5	6.08 4.71	3.03 2.22	0777	8067h	Rib
Possibly 1	NA	NA	NA	NA	0818	8071b	Scapula
5	0.99	<.5	4.71	2.22	0819	8071c	Scapula
8	3.26	1.18	8.89	3.02	0879	8086	Scapula
15 8	1.2 2.12	<.5 .6	4.79 6.87	2.08 1.66	0880	8087a	Rib
4	<.5	NA	3.1	2	0881	8087b	Rib
5	0.5	NA	4.79	1.88	0882	8087c	Rib
7 8	1.68 3.46	<.5 <.5	16.8 4.88	1.98 3.11	0883	8087d	Rib
3 6	1.17 1.54	<.5 <.5	3.37 4.34	1.63 1.68	0927	8100a	Rib
1 1	1.58 <1	1.58 <1	13.73 5.12	13.73 5.12	0928	8100b	Rib
3 7	2.31 1.57	<.5 <.5	13.77 5.19	2.95 1.88	0929	8100c	Rib
5	1.41	<.5	9.04	2.28	0930	8100d	Rib
12 6	1.58 .99	<.5 <.5	4.54 4.05	3.57 1.97	0931	8100e	Rib
3 6	<1 1	<.5 <.5	4.98 3.15	2.62 2.62	0932	8100f	Rib
9	1.05	0.64	10.98	2.39	0942	8103	Scapula
3	4.89	<.1	13.22	1.74	0950	8108a	Scapula
2 4 2	1.82 1.36 2.26	1.3 1.29 .92	21.1 6.88 11.25	19.6 2.10 6.06	0951	8108b	Scapula
4	1.03	<.5	5.88	2.73	0952	8109a	Rib
5	1.18	<.5	4.12	2.79	0953	8109b	Rib
7 10	<1 3.17	<.5 <.5	12.3 10.69	3.04 2.45	0954	8109c	Rib
4	7.47	2.43	21.2	5.49	0955	8110	Scapula
Maybe 1	<.5	<.5	2.39	2.39	1297	8136	Rib
1 3	0.99 1.05	0.99 <1	3.3 5.1	3.3 2.85	1728	8146a	Scapula
5	1.19	<1	9.67	2.48	2372	8170	Rib
4	5.51	<.5	4.64	1.79	2552	8182	Tibia
Maybe 1	<.5	<.5	6.26	6.26	2639	8198a	Scapula
Maybe 3	<1	<1	NA	NA	2640	8198b	Scapula
3	1.5	<.5	12.6	1.86	2641	8199a	Rib
5	1.17	<.5	7.29	2.94	2659	8210a	Rib
4	1	<.5	3.31	2.4	2659	8210b	Rib
5	<1	<.5	3.59	NA	2663	8214	Rib

NA = measurements could not be taken because they were too lightly used to provide accurate measurements.

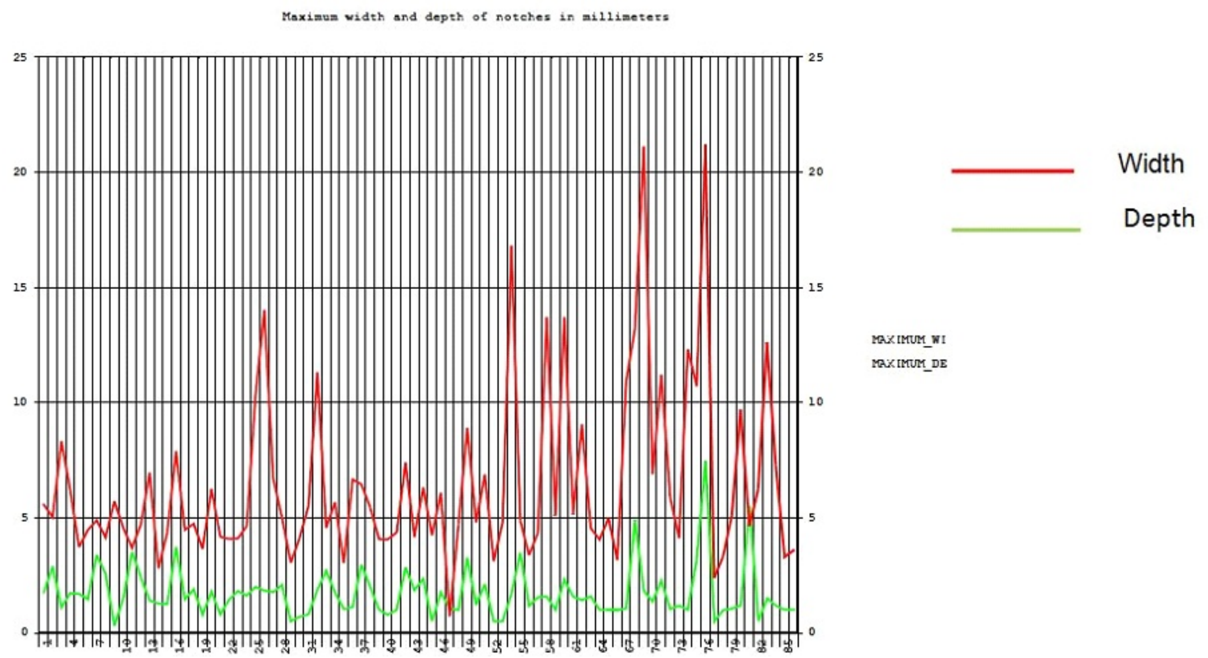


Figure 3.13. Maximum depths and widths of notches in millimeters

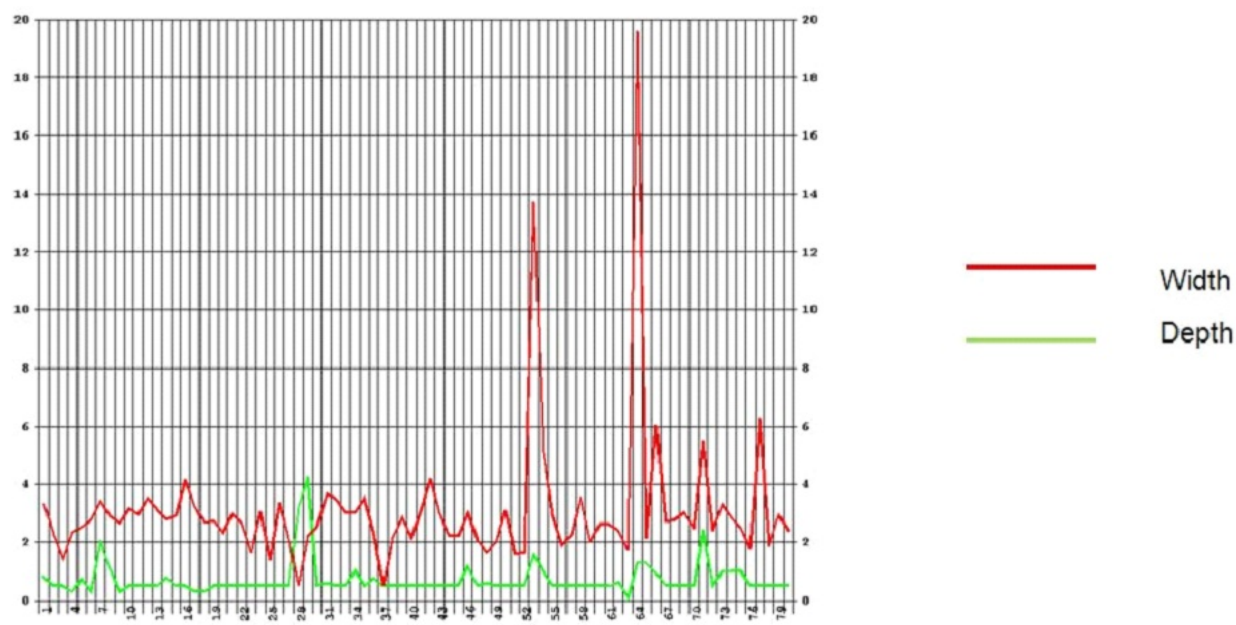


Figure 3.14. Minimum depths and widths of notches in millimeters.

the minimum depths and minimum widths. A final linear regression analysis was conducted on the data comparing maximum width to minimum depth. The results again showed no relationship between these two variables with a Pearson's correlation coefficient of .0958, the lowest relationship of all those run. Depths can be deep without becoming wider and the width can increase without depths increasing.

Ribs have an average of 5.3 notches while scapulae show an average 3.5 notches. The average maximum notch depth for ribs is 1.4014mm and the average maximum width is 5.6mm. The average maximum depth of scapulae is 2.19mm and the average maximum width is 9.09mm. Notches on scapulae are on the average deeper and wider than for the ribs. These two elements were similarly used but may have been used on different materials.

Forty-two notched ribs, and eleven notched scapula are from the North Shelter. Six notched ribs and two notched scapula were recovered from the South Shelter. The one tibia is from the North Shelter. The majority of the notched bone was recovered from excavations in the refuse of Terraces II and III of the North Shelter; however several notched tools were recovered from three cists, Cist 30, and Cist 46 in the North Shelter and Cist 67 in the South Shelter (Figures 3.15, 3.16, and 3.17). Notched tools found in Cist 30 include (FCRS 0599 CU8023e, FCRS 0603 CU8028r, and FCRS 0695 CU8050). Cist 46 had five notched ribs, FCRS 0606 CU8028z; FCRS 0927 CU8100a; FCRS 0929 CU8100c; FCRS 0930 CU8100d; and FCRS 0931 CU8100e. In the South Shelter, two notched ribs were recovered from Cist 67 of Floor II. These are FCRS 2659 CU8210(a) and FCRS 2569 CU8210(b).

It is reasonable to conjecture that the notched bone tools from within the cists were cached there. That so many of the notched bone tools were found in the refuse layers is more interesting. The ones recovered from the cists are not unusual in any way and do not necessary exhibit greater use or better workmanship. Quite to the contrary those from Cist 67 from the South Shelter (Figure 3.16) and Cist 46 from the North Shelter (Figure 3.17) display fewer and more shallow serrations. Contrast these with those from Cist 30 from the North Shelter (Figure 3.16) where the serrations are deep, well polished (from use), and are greater in frequency.

Characteristics other than the notches that were documented for the assemblage include taphonomic observations such as animal gnawing, staining, presence of calcium carbonate, cracks, pitting, and root etching. Cultural indications such as cut marks, scratches, striae, polish, adhering plant material, and burning were noted as well. More modern cultural indicators such as trowel marks and post excavation repairs were recorded. Some of these tools were photographed with the DinoLite digital microscope. Several of the above mentioned characteristics are shown

Figure 3.15. Notched bone artifacts recovered from the South Shelter, Cist 67. FCRS 2659 CU8210(a) and CU8210(b).

Figure 3.16. Notched bone artifacts recovered from North Shelter, Terrace III, Cist 30. Top Row left to right: FCRS 0603 CU28r and FCRS 0599 CU8028e. Bottom Row: FCRS 0695 CU8050.

Figure 3.17. Notched bone artifacts recovered from North Shelter, Terrace III, Cist 46. Top Row left to right: FCRS 0930 CU8100d and FCRS 0931 CU8100e. Bottom Row: FCRS 0929 CU8011c.

in detail in the photo micrographs in Figures 3.18 and 3.19. For example, specimen FCRS 0598 CU8028c? exhibits longitudinal interior cut marks (Figure 3.18). Longitudinal cut marks are also present on FCRS 0602o (Figure 3.18). Glue from post excavation repair is visible in the photo micrograph for FCRS 0628 CU8028r (Figure 3.18). This specimen also had some adhering blue/green material in one of the notches. Other characteristics of this piece were the deep well defined notches on one edge with diagonal and transverse striae believed to result from use wear. FCRS 0695 CU8050 (Figure 3.18) has longitudinal cracks, possible gnaw marks in the interior, a high degree of polish in the notches and on the exterior. Manganese staining is present on artifact FCRS 0879 CU8086 (Figure 3.18). Notches are deep and the artifacts exhibits excellent preservation. There are also gnaw marks and stress cracks noted for this item. Specimen FCRS 0880 CU8087a (Figures 3.18 and 3.19) exhibits extensive diagonal and transverse scratches indicative of heavy use wear. Striae are visible in the notches. The notches are not necessarily deep but they are frequent. The piece was glued presumably in the lab. The most revealing of the notched tools is FCRS 2614 CU8199a (Figure 3.19) from Floor II in the South Shelter. Green plant material is preserved in some of the notches of this notched rib. A very close-up photograph of the green substance shows it to be fibrous plant material and most likely it is from the yucca plant (Figure 3.19). The notches are not particularly deep and other signs of use wear include longitudinal, transverse and diagonal scratches.

Figure 3.18. Photo micrographs for notched bone tools, Phase II, Falls Creek Shelters. Top Row left to right: FCRS 0598 CU8028c(?), FCRS 0602 CU8028o, and FCRS 0603 CU8028r. Middle Row left to right, FCRS 0603 CU8028r, FCRS 0695 CU8050; and FCRS 0695 CU8050. Bottom Row left to right: FCRS 0879 CU8086; FCRS 0879 CU8086; and FCRS 0880 CU8087a.

Figure 3.19. Photo micrographs for notched bone tools, Phase II, Falls Creek Shelters. Top Row left to right: FCRS 0880 CU8087a; and FCRS 0880 CU8087a. Middle Row left to right: FCRS 2641 CU8199a; and FCRS 2641 CU8199a. Bottom Row: FCRS 2641 CU8199a.

Notched Bone Tools - Discussion

Notched ribs and scapulas are common bone tools from the Durango Basketmaker II sites (Morris and Burgh 1954; Charles and Cole 2006; Reynolds 2014a) and are found from a limited number of other Basketmaker contexts (Nusbaum 1922; Hovezak and Schniebs 2002), from earlier sites like Hogup Cave (Aikens 1970), and their presences continues into the historic Hopi culture. Notched tools were likely used to prepare yucca fiber for cordage. A notched rib from the South Falls Creek Shelter analyzed by Earl Morris and Volney Jones, possessed copious and undecayed green fiber embedded in a brownish matrix that was identified as dried yucca fiber (Morris and Burgh 1954; 62).

According to Morris and Burgh (1954:62), to prepare the rib for use, the dorsal end was broken away from the spine when the bone was fresh. Once the bone was cleaned of most flesh, it was probably ready for use. The notches did not have to be started before use. Pulling the yucca fibers across the bone eventually created the notches. The ridges between the notches acted like a comb, reaching down and separating the fibers (Morris and Burgh 1954:62). Experimental studies add substantial support to the function of these enigmatic tools (Griffiths 1993; Mobley-Tanaka and Griffits 1997).

Larger samples such as from Talus Village, those from outside the Burial Crevice at the North Shelter, and from the Darkmold Site show no proclivity for a specific side--left and right ribs were used equally. The Durango Basketmakers needed a considerable amount of yucca for baskets and other textiles. Tools that increased yucca production coupled with the large number of bone awls, leave little double that the Durango Basketmakers were accomplished artisans at the craft and art of making yucca baskets, bags, sandals, aprons, cordage, and other items (Webster and Jolie 2011; Adams and Paterson 2011). It is not a stretch of the imagination to speculate that the large number of awls and notched bone tools reflect specialization and that the Durango Basketmakers may have been trading baskets for non- local goods.

Pointed Bone Tools

A total of 122 bone tools were assigned to the pointed bone tool category (Table 3.1). One artifact (FCRS 0895 CU 8088l) was originally classified as an awl but it was moved to worked bone and one bone awl has a Talus Village number (FCRS 0565 CU8019h), but tag says South Shelter. Neither artifact is included in this report. Fifteen pointed bone tools were recovered from the South Shelter and one hundred-seven are from the North Shelter. One bone awl was found in Cist 67 in the South Shelter and five pointed bone tools (2 awls, 2 drills, and 1 punch or awl) were recovered from Cist 38 in the North Shelter. All other tools were recovered from general refuse or from floors or from fill between floors.

The initial analysis began by examining each of the tools and determining the taxon from which the artifact came from followed by identifying the skeletal element, side, and which portion of the bone was utilized. Species and elements were identified by Advanced Osteology students Jane Cooper and Dave Hencmann from Fort Lewis College under the supervision of Dr. Dawn Mulhern and me. All pointed bone tools were made from large mammals either cf. mule deer (100), cf. bighorn sheep (4), or large mammal not further specified (17). One exception to this is a definite ulna from a bobcat (*Lynx rufus*). Taxon is identified below in Table 3.12. Skeletal elements represented in the pointed bone tool category include ulnas, radii, femurs, metapodia (mostly cannon bones), ribs, tibiae, and general long bones (Table 3.12). Three artifacts are temporarily identified as antler. By elements there are sixty-eight (55.7%) metapodial bones (20 right, 21 left, 27 indeterminate); nine (7.4%) ulnas (7 right, 1 left, and 1 indeterminate); three (2.5%) radii (2 right, 1 left); two (1.64%) left ribs; two (1.64%) right tibiae; one (.82%) right femur, three antlers (3.5%); and thirty-four (27.9%) indeterminate long bones (probably metapodia) represented in this study.

Probable functions for the pointed bone tools were assigned whenever possible using those criteria outlined by Gooding (1980:103-117) for the Durango South Project and modified for this project using information from several other authors including Beach and Causey (1984), Kidder (1932), Morris and Burgh (1954), and Reynolds (2014a). I chose to focus the detailed analysis on Gooding's work at the Durango South project (1980) because I felt that his categories were well-developed through both experimental studies and detailed microscopic work. Another advantage to using this work is the ability to compare materials between local populations, noting that the Durango South and the Falls Creek assemblages are from different temporal/cultural periods. The Durango South sites are dated to the early Pueblo I period while the Falls Creek Shelters are primarily Basketmaker II. In his report on the pointed bone tools from the Durango South project, Gooding recognizes the generalist use for the term bone awl and the historical context of the term bone awl (1980:105). Microscopic analysis of the pointed bone tools from the Durango South project at powers of 6.3x, 10x, 16x, and 25x did not support the common classification of this assemblage as "general" piecing tools or as multifunctional tools on specific.

According to Gooding, the pointed bone tools from the two Pueblo I sites near Durango, Colorado, could be classified into eight functional tool classes based upon the results of the microscopic analysis (Gooding 1980:105-115). To assign function to the pointed bone tools, Gooding identified wear patterns visible on specific portions of the bone where use wear would be most obvious (Gooding 1980:105-110). Use wear, however, is not synonymous with manufacturing attributes. The latter would include characteristics such as chopping, cutting, grinding and so forth. Nor is use wear synonymous with overall stylistic differences like whole, splint, splinter, etc. Often it is difficult to distinguish wear patterns from functional attributes because specific manufacturing processes have signatures that could be mistaken for use wear. This difficulty is acknowledged in the current analysis and even at microscopic levels the two were not always definitive. Caution is used in inferring function to these bone tools because they probably were indeed multi-functional in many cases and in other instances, the tools changed function throughout their use life. Usages could have been concomitant as well as sequential.

Table 3.12. Table of pointed bone tool characteristics for Phase II, Falls Creek Shelters.

FCRS	CU No.	Taxon	Element	Comp*	Tip type **	Type **	Portion	Probable Use	Provenience
00710	8057	cf. mule deer	Metapodia		I	NA	Proximal	Awl	North Shelter
02085	8161	cf. mule deer	Long bone		G	NA	Shaft	Awl	North Shelter
02631	8192	cf. mule deer	Metapodia	X	H	C	Shaft	Awl	South Shelter
02637	8196	cf. mule deer	Long bone		G	NA	Shaft	Awl	South Shelter
02660	8211	cf. mule deer	Metapodia	X	G	C	Proximal	Awl	South Shelter
02661	8212	cf. mule deer	Metapodia	X	F	D	Proximal	Awl	South Shelter
02664	8215	cf. mule deer	Metapodia	X	I	C	Distal	Punch or Awl	South Shelter
02716	8253	cf. mule deer	Metapodia	X	H	B	Distal	Awl	South Shelter
00559	8017c	Lynx rufus	Ulna	X	I	A	Proximal	Punch or Awl	North Shelter
00560	8018c	cf. mule deer	Metapodia	X	G	B	Distal	Awl	North Shelter
00561	8018e	cf. mule deer	Metapodia	X	G	B	Distal	Awl	North Shelter
00562	8019b	cf. mule deer	Metapodia	X	F	C	Proximal	Awl	North Shelter
00563	8019c	cf. mule deer	Metapodia	X	G	C	Proximal	Awl	North Shelter
00564	8019d	cf. mule deer	Radius	X	G	C	Proximal	Awl	North Shelter
00566	8019o	cf. mule deer	Ulna	X	H	A	Proximal	Punch or reamer	North Shelter
00567	8020f	cf. mule deer	Metapodia	X	G	D	Proximal	Awl	North Shelter
00568	8020g	cf. mule deer	Metapodia	X	H	C	Proximal	Punch	North Shelter
00569	8020h	cf. mule deer	Radius	X	G	C	Proximal	Probable Awl	North Shelter
00570	8020i	cf. mule deer	Metapodia	X	I	D	Proximal	Punch or reamer	North Shelter
00571	8021a	cf. mule deer	Rib		F	D	Dorsal	Awl	North Shelter
00572	8021b	cf. mule deer	Rib		F	D	Dorsal	Awl	North Shelter
00573	8021d	cf. mule deer	Metapodia	X	I	D	Proximal	Punch	North Shelter
00574	8021g	cf. mule deer	Metapodia	X	G	E	Medial	Drill	North Shelter
00575	8022f	cf. mule deer	Metapodia	X	G	D	Proximal	Awl	North Shelter
00576	8023b	cf. mule deer	Long bone		E	I	NA	Drill or Punch	South Shelter
00577	8023c	cf. mule deer	Metapodia		NA	NA	Medial	Ind	North Shelter
00578	8023e	cf. mule deer	Long bone	X	F	E	Shaft	Awl	North Shelter

FCRS	CU No.	Taxon	Element	Comp*	Tip type **	Type **	Portion	Probable Use	Provenience
00579	8023f	cf. mule deer	Metapodia	X	E	F	Proximal	punch or reamer	North Shelter
00580	8023h	cf. mule deer	Metapodia	X	H	E	Medial	Awl or reamer	South Shelter
00667	8045b	cf. mule deer	Metapodia		G	E	Medial	Awl	North Shelter
00668	8045c	cf. mule deer	Antler		NA	J	Distal	Punch or Awl	North Shelter
00669	8045d	cf. mule deer	Metapodia		I	E	Fragment	Punch or Awl	North Shelter
00670	8045e	cf. mule deer	Long bone		G	NA	Fragment	Awl	North Shelter
00671	8045f	cf. mule deer	Ulna		NA	A	Proximal	Awl	North Shelter
00696	8051a	cf. mule deer	Metapodia	X	G	C	Proximal	Awl	North Shelter
00697	8051b	cf. mule deer	Metapodia	X	H	B	Proximal	Awl	North Shelter
00698	8051c	cf. mule deer	Metapodia	X	J	C	Proximal	Drill	North Shelter
00699	8051d	cf. bighorn	Metapodia	X	I	B	Distal	Drill	North Shelter
00701	8051f	cf. mule deer	Metapodia		NA	D	Proximal	Punch or Awl	North Shelter
00759	8062a	cf. bighorn	Ulna	X	G	A	Proximal	Awl	North Shelter
00760	8062b	cf. mule deer	Metapodia	X	F	C	Proximal	Awl	North Shelter
00761	8062c	cf. mule deer	Metapodia	X	I	C	Proximal	Awl	North Shelter
00762	8062d	Large mammal	Long bone		I	NA	Shaft	Punch or Awl	North Shelter
00763	8062h	Large mammal	Long bone	X	F	D	Shaft	Awl	North Shelter
00764	8062m	Large mammal	Long bone		J	NA	Shaft	Punch	North Shelter
00765	8062n	Large mammal	Long bone		NA	NA	Shaft	Ind	North Shelter
00766	8062o	Large mammal	Long bone		J	NA	Shaft	Punch or Awl	North Shelter
00778	8068a	cf. mule deer	Metapodia		NA	A	Distal	Punch	North Shelter
00779	8068a'	cf. mule deer	Metapodia	X	G	C	Proximal	Awl	North Shelter
00780	8068b	cf. mule deer	Long bone	X	J	D	?	Drill	North Shelter
00781	8068b'	Large mammal	Long bone		NA	NA	Shaft	Ind	North Shelter
00782	8068c	cf. mule deer	Long bone	X	J	D	?	Drill	North Shelter
00783	8068c'	Large mammal	Long bone		G	NA	Shaft	Awl	North Shelter
00784	8068d	cf. mule deer	Metapodia	X	H	C	Proximal	Punch or Awl	North Shelter
00785	8068d'	cf. mule deer	Metapodia		NA	D	Proximal	Ind	North Shelter
00786	8068e	cf. mule deer	Metapodia	X	J	C	Proximal	Punch	North Shelter
00787	8068e'	Large mammal	Long bone		G	NA	Shaft	Awl	North Shelter
00788	8068f	Large mammal	Long bone		F	NA	Shaft	Awl	North Shelter
00789	8068f'	Large mammal	Long bone		G	E	Shaft	Awl	North Shelter
00790	8068g	cf. mule deer	Long bone	X	G	E	Shaft	Drill	North Shelter
00791	8068h	cf. mule deer	Metapodia	X	H	C	Distal	Awl	North Shelter
00792	8068i	cf. mule deer	Ulna		NA	A	Proximal	Ind	North Shelter
00793	8068j	cf. mule deer	Metapodia		NA	B	Shaft	Ind	North Shelter
00794	8068k	cf. mule deer	Metapodia	X	F	B	Distal	Awl	North Shelter
00795	8068l	cf. mule deer	Long bone		I	NA	Shaft	Reamer	North Shelter
00796	8068m	cf. mule deer	Metapodia		I	C	Proximal	Punch	North Shelter
00797	8068o	cf. mule deer	Metapodia	X	H	B	Distal	Drill or Reamer	North Shelter
00798	8068p	cf. mule deer	Long bone		NA	E	Shaft	Ind	North Shelter

FCRS	CU No.	Taxon	Element	Comp*	Tip type **	Type **	Portion	Probable Use	Provenience
00799	8068q	cf. mule deer	Antler	X	J	D	Shaft	Drill or punch	North Shelter
00800	8068r	cf. mule deer	Metapodia		H	D	Distal	Awl	North Shelter
00801	8068r?	Large mammal	Long bone		H	E	Shaft	Drill	North Shelter
00802	8068s	cf. mule deer	Metapodia	X	G	D	Shaft	Awl	North Shelter
00804	8068u	Large mammal	Long bone		F	E	Shaft	Ind	North Shelter
00805	8068v	Large mammal	Long bone		H	NA	Shaft	Punch or Awl	North Shelter
00809	8068z	Large mammal	Long bone		NA	C	Proximal	Ind	North Shelter
00884	8088a	cf. mule deer	Metapodia	X	H	C	Proximal	Awl	North Shelter
00885	8088b	cf. mule deer	Metapodia	X	G	A	Distal	Awl	North Shelter
00886	8088c	cf. mule deer	Metapodia	X	I	A	Distal	Punch or Awl	North Shelter
00887	8088d	cf. mule deer	Metapodia	X	J	C	Proximal	Punch or Awl	North Shelter
00888	8088e	cf. mule deer	Metapodia		J	NA	Proximal	Punch	North Shelter
00889	8088f	cf. mule deer	Metapodia		H	NA	Proximal	Awl	North Shelter
00890	8088g	cf. mule deer	Metapodia		I	NA	Proximal	Punch or Awl	North Shelter
00891	8088h	cf. mule deer	Tibia	X	H	C	Distal	Awl	North Shelter
00892	8088i	cf. mule deer	Ulna		I	C	Proximal	Punch	North Shelter
00893	8088j	cf. mule deer	Metapodia		H	NA	Proximal	Punch	North Shelter
00894	8088k	cf. mule deer	Metapodia	X	G	C	Proximal	Awl	North Shelter
00944	8105a	cf. mule deer	Long bone		NA	C	Proximal	Ind	North Shelter
00945	8105b	cf. mule deer	Long bone	X	G	D	Shaft	Awl	North Shelter
00946	8105c	cf. mule deer	Metapodia	X	H	C	Proximal	Awl	North Shelter
00947	8106a	cf. bighorn	Radius	X	H	C	Distal	Awl	North Shelter
00948	8106b	cf. mule deer	Long bone	X	G	E	Shaft	Awl	North Shelter
00949	8106c	cf. mule deer	Long bone		G	NA	Shaft	Awl	North Shelter
00957	8112a	cf. mule deer	Ulna	X	G	A	Proximal	Punch	North Shelter
00958	8112b	cf. mule deer	Ulna	X	G	A	Proximal	Punch	North Shelter
00960	8112d	cf. mule deer	Metapodia	X	G	A	Distal	Awl	North Shelter
00961	8112e	cf. mule deer	Metapodia	X	I	D	Proximal	Drill or Reamer	North Shelter
00962	8112f	cf. mule deer	Long bone		H	NA	Medial	Awl	North Shelter
00963	8112g	cf. mule deer	Long bone		NA	NA	Medial	Probable Awl	North Shelter
00964	8112h	cf. mule deer	Metapodia	X	I	B	Distal	Drill or Reamer	North Shelter
00965	8112i	cf. mule deer	Metapodia		NA	C	Proximal	Ind	North Shelter
00966	8112j	cf. mule deer	Long bone		I	E	Shaft	Punch	North Shelter
00967	8112k	cf. mule deer	Metapodia		NA	C	Proximal	Probable Awl	North Shelter
00968	8112l	cf. mule deer	Metapodia		NA	C	Proximal	Probable Awl	North Shelter
01298	8137a	cf. mule deer	Long bone		I	NA	Shaft	Drill or Punch	North Shelter
01300	8137c	cf. mule deer	Tibia		J	D	Proximal	Reamer	North Shelter
01953	8155a	cf. mule deer	Metapodia		NA	C	Proximal	Probable Awl	North Shelter
01954	8155b	cf. mule deer	Metapodia	X	H	C	Proximal	Drill	North Shelter

FCRS	CU No.	Taxon	Element	Comp*	Tip type **	Type **	Portion	Probable Use	Provenience
02438	8174a	cf. mule deer	Metapodia	X	G	C	Distal	Awl	North Shelter
02616	8188a	cf. mule deer	Metapodia		NA	NA	Shaft	Probable Awl	South Shelter
02617	8188b	cf. mule deer	Metapodia	X	I	C	Proximal	Drill	South Shelter
02618	8188c	cf. mule deer	Long bone	X	G	E	Shaft	Drill	South Shelter
02619	8188d	cf. mule deer	Metapodia		I	E	Shaft	Punch or reamer	South Shelter
02655	8208a	cf. mule deer	Metapodia	X	G	B	Proximal	Drill	South Shelter
02656	8208b	cf. mule deer	Metapodia	X	H	C	Proximal	Drill	South Shelter
02657	8208c	cf. mule deer	Metapodia	X	H	C	Proximal	Awl	South Shelter
00752	8062	cf. mule deer	Metapodia	X	G	C	Proximal	Awl	North Shelter
00753	8062	cf. mule deer	Metapodia	X	F	C	Proximal	Awl	North Shelter
00757	8062	cf. mule deer	Metapodia		H	C	Proximal	Ind	North Shelter
00755	8062	cf. bighorn	Antler		I	NA	Medial	Awl	North Shelter
00754	8062	Large mammal	Long bone		H	NA	Medial	Awl	North Shelter
00758	8062	Large mammal	Long bone		I	NA	Medial	Punch or reamer	North Shelter
00756	8062	cf. mule deer	Ulna	X	H	A	Proximal	Awl	North Shelter

Comp*=Complete (X=Yes); Tip Type** = Morris and Burgh (1954:Fig. 34); Type*** = Morris and Burgh (1954: Fig.34).

To begin analysis of the pointed bone tools an Excel file was created with the attributes outlined under the methodology section of this report. Quantitative data including weight, length, width, thickness, and tip diameter were collected on each tool. Following the quantitative analysis, each tool was examined under a microscope at magnification powers .5X to 10X. A few of the artifacts were examined and photographed with a DinoLite portable microscope and camera, which has a magnification power to 200X. Sixteen attributes of wear were identified in Gooding's detailed study of a small assemblage of bone tools (1980:105-110). Some but not all of these attributes are included in the current assemblage from the Falls Creek Shelters. In this study I divided locations of use into four sections of the tool—tip, exterior, interior, and margin. For each of these locations several observations were noted with striae being the most important. Striae were further divided into the following patterns: diagonal; transverse; longitudinal; rotation; counter rotation; cross hatch; and chevron. On the tips other observations were noted including grinding and tip attrition. Polish could be found on any portion of the tool. Following Gooding's definitions six striae are defined as:

Rotation striae are spirals approximately perpendicular (90° - 65°) to the long axis of the tool. This wear indicates a rotary motion and suggests that the tool functioned as a drill or reamer (p. 113, Figure 67).

Counter rotation striae differ from the rotation striae in that the spirals occur in both clockwise and counter clockwise directions. These striae are the result of a reciprocal sideways motion, but also suggest a drill- like function (p. 113-114, Figure 68).

Diagonal striae are generally diagonal (65° to 15°) to the tool's long axis. These striae indicate a twisting and piercing motion that is most commonly associated with the function of an awl (p. 114, Figure 69). Diagonal striae from both directions results in a chevron pattern.

Cross-hatch striae occur through the motion of diagonal thrusting and in different directions (p. 114, Figure 70).

Longitudinal striae are parallel to the long axis at an angle of 15° to 0° and are discontinuous. They are the result of a thrusting motion and functioned as a punch or dagger (p. 114, Figure 71).

Transverse striae are perpendicular to the long axis of the tool and usually present along the interior and margin. They represent a reciprocal back and forth motion (p. 114, Figure 72). This pattern is often observed on matting tools.

A seventh striae pattern was recognized in the Falls Creek collection. The pattern is labeled as chevron. This pattern is very similar to the cross-hatch striae from the Durango South Project. However in the case of chevron pattern, the striae do not cross each other but come in diagonally at angle of 65º to 15º from both sides and meet at the center.

Other characteristics of pointed bone tools recorded included whether the tool was considered to be complete, whether the tool was burned, and any type of taphonomic damage such as rodent or canine gnawing, root etching, staining, and pitting. Taken together these attribute combinations seemed almost limitless. The full analysis of these tools is available in Appendix to this report. Examples of some of these combinations are presented in the photo micrographs in Figure 3.20. In this figure, I mostly concentrated on tip attributes and variations of striae.

Manufacturing attributes were also recorded for each tool. These included broad categories of initial modification of the bone to produce a tool. For example these could include the techniques of splitting (split in half or quartered), splintering (shattered), or whole (complete articular head present). These were recorded on the data sheets in Appendix and then for additional information I followed Morris and Burgh's synoptic forms for awls (1954: Fig 34).

Figure 3.20. A sample of attributes observed and recorded on the pointed bone tools from Phase II, Falls Creek Shelters. Top Row left to right: a) splotchy staining, diagonal and transverse striae on exterior; b) polish and rotational striae on tip; c) transverse striae and polish along margins. Second Row left to right: a) diagonal striae from both directions (chevron) and longitudinal striae; b) impact scar with transverse, rotational striae and polish on tip; c) tip attrition, polish, and rotational striae along tip. Third Row left to right: a) polish, cross-hatching striae along exterior and margin grinding; b) polish, stain, and root etching or pitting along exterior; c) diagonal and longitudinal striae along exterior and margins. Fourth Row left to right: a) diagonal and traverse striae along with gouges along exterior and tip; b) rotation and diagonal striae with tip polish; c) extreme polish and tip attrition.

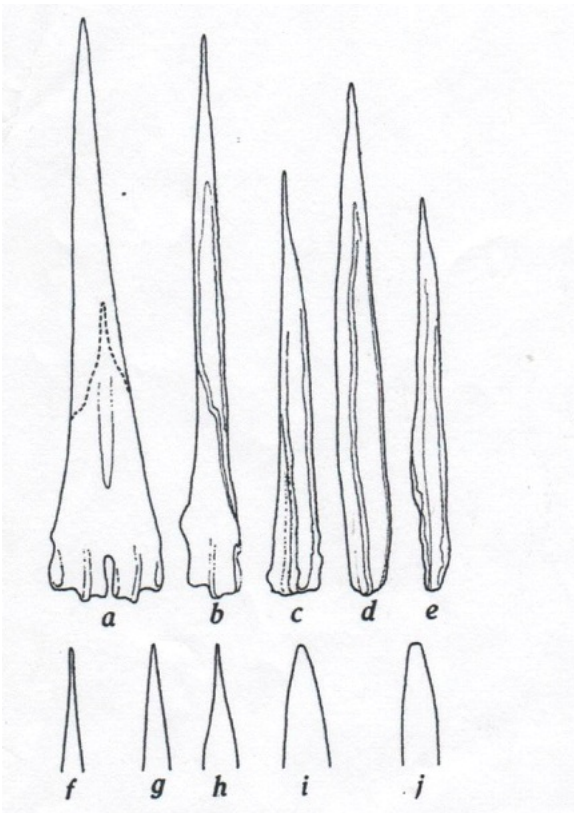


Figure 3.21. Synoptic series of pointed bone tools: a-e, typed according to modification of the bone. f-j, typed according to form of tip. a, head of bone left intact. b, head of bone unaltered except by splitting. c, head of bone partly worked down. d, head of bone wholly removed. e, splinter awls. f, long, very slender, needlelike. g, long, uniformly tapered. h, long, slender, resharpened. i, blunt, with rounded point. j, blunt with flat point. (Taken from Morris and Burgh 1954: Fig. 34).

Figure 3.22. Pointed bone tool types according to modification of the bone, Phase II Falls Creek. Top to Bottom: a, head of bone left intact (FCRS 0960 CU8112d); b, head of bone unaltered except by splitting (FCRS 0561 CU8018e); c, head of bone partly worked down (FCRS 0894 CU8088k); d, head of bone wholly removed (FCRS 2661 CU8212); and e, splintered bone (FCRS CU8023f).

I applied these types to all pointed bone tool types not just those classified as awls (Figure 3.21). In Table 3.12 these are referred to under the "Type" column. For "Tip Type", I also followed Morris and Burgh's synoptic forms for the tip (Figure 3.21). Manufacture marks from cutting, chopping, and grinding were also recorded.

In Figure 3.22 examples from the Falls Creek assemble are presented according to Morris and Burgh's Types A – E (1954:Fig.34). Morris and Burgh's (1954: Fig. 34) tip type categories were used for the pointed bone tools from the Falls Creek assemblage, whether they were determined to have functioned as awls or some other tool type. Examples of the tip types are provided in Figure 3.23 from the Falls Creek assemblage.

Figure 3.23. Examples of tip types in the Phase II assemblage from the Falls Creek Shelters. These types are according to Morris and Burgh (1954 Fig.34). From left to right: f, long very slender, needlelike (FCRS 0562 CU8019c); g, long, uniformly tapered (FCRS 0563 CU8019c; h, long, slender, resharpened (FCRS 0566 CU8019o); i, blunt, with rounded point (FCRS 0669 CU8045d); and j, blunt, with flat tip (FCRS 0799 CU8068q).

<u>Results</u>

The vast majority of pointed bone tools were classified as bone awls or probable bone awls (Table 3.12). Bone awls and probable awls number 60 or 49.18% of the total. Other artifacts in the pointed bone tool category include 12 drills (9.83%), 3 drills or punches (2.46%), 3 drills or reamers (2.46%), 1 awl or reamer (.82%), 2 reamers (1.64%), 5 punches or reamers (4.10%),12 punches (9.83%),12 punches or awls (9.83), and 12 indeterminate pointed tools (9.83%). In the following discussion, five main categories of pointed tools are described and photographs accompany the text. These five categories are drills, reamers, punches, awls, and indeterminate pointed tools.

Drills

Drills (Figure 3.24) are distinguished from general purpose awls by wear patterns at the tip which are dominated by striae perpendicular to the long axis of the tool, and in other cases by

Figure 3.24. Examples of pointed bone tools determined to be drills, Phase II, Falls Creek. Top Row left to right: FCRS 0780 CU8068b and FCRS 0698 CU8051c. Bottom Row left to right: FCRS 0790 CU 8068g and FCRS 0954 CU8155b.

rotational and counter rotational striae (Figure 3.20). Usually drills lack articular heads (Figure 3.24). Attrition and impact scars on the tip are characteristic of drills because of the force used to drill holes in such materials as wood, possibly soft stone such as lignite, and perhaps on shell. They are usually made from quartered or splintered bones. Some may have been hand-held while others were most likely hafted onto stick shafts and used as bow drills or stick drills (Gooding 1980:116). There are few examples of wooden artifacts from the Falls Creek Shelters with holes that could have been made with bone drills. A bark disc, plano- convex is profile with a perforation in the center drilled through from one side and reamed out from the other (Morris and Burgh 1954:69, Fig. 98-2, a) is a likely candidate for the use of a bone drill. Bone drills were probably used on shell and perhaps on soft rocks such as lignite for the purpose of producing holes for stringing. The current collection of non-funerary objects does not reflect the quantity of shell and stone ornaments with drilled holes, but these artifacts are numerous in the report on Phase I artifacts from the Falls Creek Shelters (Charles 2011a:G).

Reamers

Two tools were identified as reamers (Figure 3.25) and several others were identified as reamer or awl (1), drill or reamer (3), and punch or reamer (5). Reamers are characterized by rotational striae but different than that of drills. Striae extend back from the tip as much as a centimeter and the tip most often displays tip attrition. Polish suggests that the tool was used on soft materials. Reamers were perhaps used to enlarge holes. They are hand-held tools and

Figure 3.25. Examples of pointed bone tools determined to be reamers or drill/reamer, Phase II, Falls Creek Shelters. Left to right FCRS 1300 CU8137c and FCRS 0694 CU8112h.

probably were not hafted. Made from mammal (cf. mule deer) metapodia, these long bones were split or quartered often with the gripping portion (distal epiphysis) left intact.

Punches

Twelve punches were identified in the assemblage and several other tools may be punches or may have served as multifunctional tools. These include drills or punches (3), punches or reamers (5), and punches or awls (12). Attributes of punches may include tip attrition, high polish at the tip and longitudinal striae on the shaft and exterior margins. They probably functioned to pierce holes in softer materials with a direct thrust (Gooding 1980:115). As indicated in Figure 3.26, punches were made on both long bones such as metapodia or on other elements such as ulnas. Usually the articular head is missing or in the case of the ulnas they can be worn down through use.

Awls

Awls and probable awls constitute the largest number of the pointed bone tools (60) and several other artifacts are determined to have characteristics of awls or other pointed bone tools such as the twelve punches or awls and one awl or reamer. Awls display characteristics of all of the use wear patterns previously described but the most prominent feature is high polish especially at the tip. Diagonal striae are frequent along the margins and longitudinal striae along the shaft exteriors (Figure 3.20). Chevron patterns and cross-hatching along the margins were noted on some of the tools classified as awls. Awls display the largest diversity in both taxon and element for the pointed bone tools (Table 3.12). By far the most common taxon is cf. mule deer followed by large mammal non-specific. Other taxon used for awls are cf. bighorn sheep, and one awl or punch from a bobcat (Lynx Rufus). Elements used in order of frequency include the metapodia (metacarpus and metatarsus) and ulnas. Occasional usage of the tibiae, radii, ribs, and possibly antlers are present in this assemblage (Table 3.12).

Figure 3.26. Examples of pointed bone tools determined to be punches from Phase II, Falls Creek Shelters. Top Row left to right: FCRS 0966 CU8112j; FCRS 0958 CU8112a; and FCRS 0893 CU8088j. Bottom Row left to right: FCRS 0893 CU8088j; FCRS 0573 CU8021d; and FCRS 0568 CU8020g

Metapodia from large mammals such as artiodactyla are an obvious choice for constructing awls and other pointed bone tools because they are sturdy and the natural grooves on the anterior and posterior sides made it easy to score and split the bone into halves or quarters. Moreover, fracturing mammal long bones for marrow extraction supplied many fragments for splinter awls. In the Falls Creek assemblage all Types A-F of the Morris and Burgh synoptic awl typology (1954:Fig. 43) are represented. By frequency of occurrence for awls and probable awls these include Type A awls (5), Type B awls (5), Type C awls (23), Type D awls (9), and Type E awls (4). The remainder of the awls was broken such that type was indeterminate (14).

Type A awls are the rarest form if constructed from metapodia (2), but the most common form for ulnar awls (3). These awls were made by breaking the bone such that the distal epiphysis is unaltered (Kidder 1932; Morris and Burgh 1954; Reynolds 2014a). The end would then serve as a grip. Some of the Type A awls are long and include most of the length of the bone while others are short (Figure 3.27). It could been argued that some of the longer Type A awls may have been used for other purposed besides basket weaving or hide or leather working. Certainly they would be heavy and not delicate tools. The length of the large Type A awl in Figure 3.27, FCRS 0960 CU8112d is 17.6cm and the weight almost 40gm. It is 10gm heavier than any of the other awls from the collection.

Type B awls occur in the same frequency as Type A awls (5). These awls are unaltered except for the splitting process. They retain half of their distal epiphysis (Figure 3.28). Each of the Type B awls from the Falls Creek assemblage is made from cf. deer metapodia. The longest awl in the collection is 21cm long (Figure 3.28, FCRS 0560 CU8018c). It has been suggested (Hurst and Turner 1993; and Morris 1919:39) that long slender awls such as the one on the left in Figure 3.28 may have served as weapons, specifically as daggers.

Figure 3.27. Examples of Morris and Burgh awl Type A (1954:Fig.34), Phase II, Falls Creek Shelters. Left to right: cf. mule deer FCRS 0885 CU8088b and cf. mule deer FCRS 0960 CU8112d.

Figure 3.28. Examples of Morris and Burgh awl Type B (1954:Fig.34), Phase II, Falls Creek Shelters. Left to right: cf. Mule deer FCRS 0560 CU8018c and cf. Mule deer FCRS 0561 8018e.

Type C awls are by far the most common in this assemblage numbering 23. These awls are made by splitting the long bones and working the head of bone down while leaving less than half of the head intact (Figure 3.29). The bone is then trimmed and worked down to a fine point. These awls are most commonly made from cf. mule deer metapodia but are sometimes made from cf. mule deer tibia (Figure 3.29 FCRS 8088k) and cf. mule deer radii. The average size for a Type C awl from the Falls Creek Phase II collection is approximately 9.7cm long and weighs on the average 9.7gm. The tip types (Morris and Burgh 1954:Fig. 34) observed for Type C awls are dominated by Tip Types G and H (Table 3.13).

Type D awls are very similar to Type C awls except that in the Type D awls the head of the bone is wholly removed (Figure 3.30). Despite the lack of the articular head, these are not considered to be splinter awls. Type D awls have the heads worked down but it is obvious they were made from splitting and not splintering. The grooves are intact. Nine Type D awls comprise this category. One awl (Figure 3.30 FCRS 0802 CU8068s) is typed as a Type D awl even though some of the articular head is visible and this awl could have been typed as either Type C or Type D. Two ribs are typed as Type D awls because the attachment site is broken off but the rib is not splintered. The average dimensions for the complete Type D awls from Phase II are 12cm long and weigh 9.46gm. Tip types F and G are the only types for Type D awls (Table 3.13).

The last type category for Morris and Burgh (1954:Fig. 34) is Type E, splinter awls (Figure 3.31). Splinter awls are made by hammer or anvil blows to fresh bone shattering the bone while leaving sharp points on one or both of the bone splinters. Little more is needed to finish the tool beyond some trimming and grinding. One advantage for splinter awls is that they could be hafted if desired. There are four splinter awls in the Phase II collection and there probably are more Type E awls but these are broken such that the ends were not present to make a clear decision. Phase II Type E awls are all made from cf. mule deer or large mammal long bones. Tip Types F and G are the only types identified for these awls. The average length for the two complete Type E awls is 12.7cm and the average weight is 7.99gm.

The relationship between Tool Types A-E and Tip Types F-I are presented below for the 46 awls where Tool Type could be identified (Table 3.13). Tip Type G accounts for almost half of the awl tips followed by Tip Types H and G. Tip Type I is found only once in this assemblage. Four awls (8.69%) were broken such that Tip Type was indeterminate.

Table 3.13. Awl Tool Types A-E and awl Tip Types F-I for the Phase II, Falls Creek Shelters.

	Tip Type	Tip Type	Tip Type	Type	NA
Type A (5)	1	3	1		1
Type B(5)	1	2	2		
Type C (23)	3	9	7	1	3
Type D (9)	4	4	1		
Type E (4)	1	3			
Total (46)	10 (21.74%)	21 (45.65%)	11 (23.81%)	1 (2.17%)	4 (8.69%)

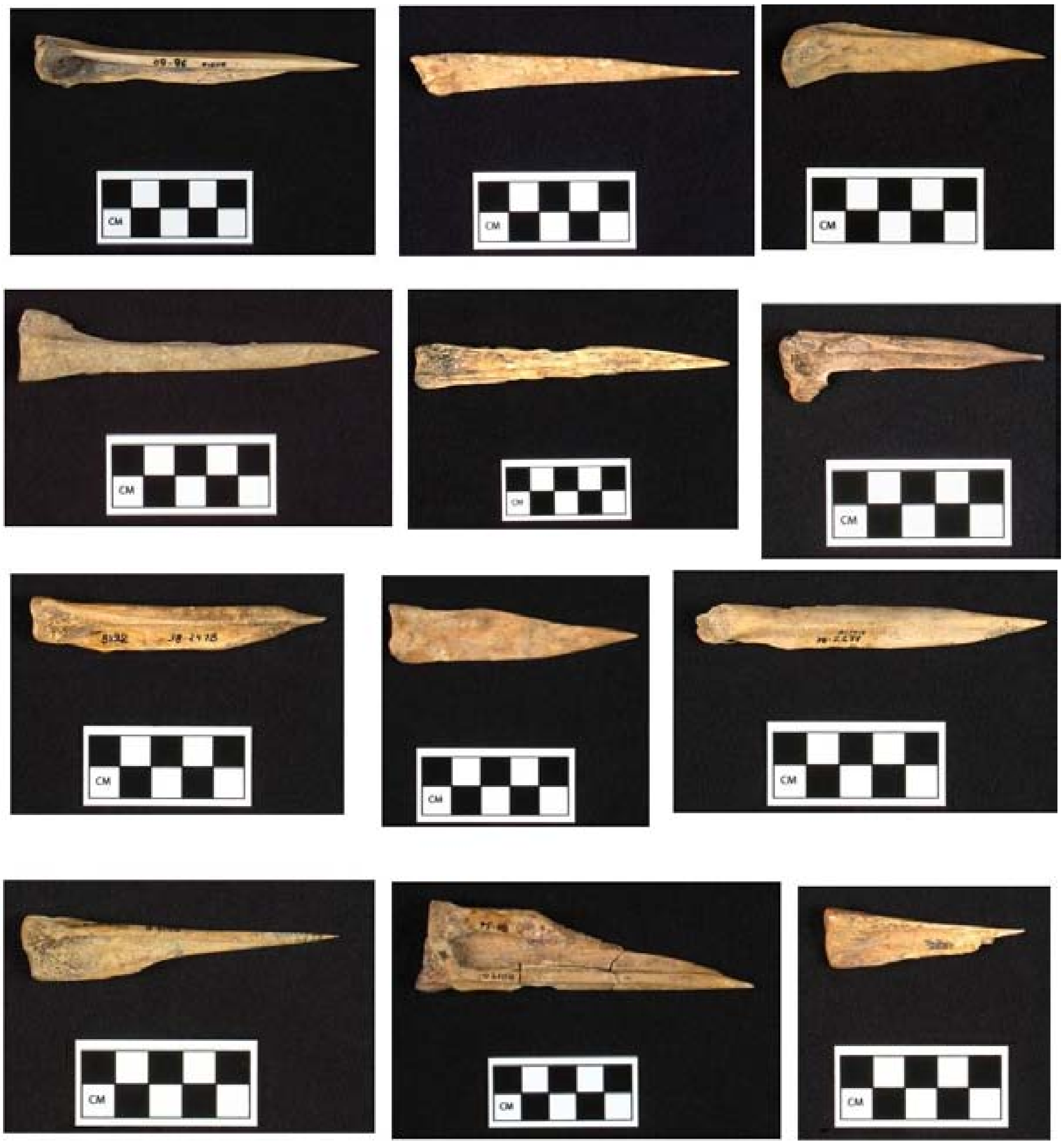


Figure 3.29. Examples of Morris and Burgh awl Type C (1954: Fig. 34), from Phase II, Falls Creek Shelters. Top Row left to right: FCRS 0697 CU80541b,; FCRS 0753 CU8062; and FCRS 0791 CU8068h. Second Row left to right: FCRS 0894 CU8088k; FCRS 0884 CU8088a; and FCRS 0757 CU8052. Third Row left to right: FCRS 2631 CU8192; FCRS 0696 CU8051a; and FCRS 2438 CU8174a. Bottom Row left to right: FCRS 0562 CU8019b; FCRS 0564 CU8019c; and FCRS 0757 CU8062.

Figure 3.30. Examples of Morris and Burgh awl Type D (1954: Fig. 34) from Phase II, Falls Creek Shelters. Top Row left to right: FCRS 2661 CU8212; and FCRS 2657 CU8208c. Second Row left to right: FCRS 0567 CU8020f and FCRS 0948 CU8106b. Bottom Row left to right: FCRS 0575 CU8022f and FCRS 0802 CU8068s.

Figure 3.31. Examples of Morris and Burgh awl Type E (1954:Fig. 34). Top Row left to right: FCRS 0578 CU8023e and FCRS 0576 CU8023b. Bottom Row: FCRS 0667 CU8045b.

Distribution of the bone awls by element and by taxon are presented in Table 3.13. By far the most common taxon used is the cf. mule deer and the most common element is the metapodia. Other elements used include ulnas, tibia, radii, and ribs while other taxons include cf. bighorn sheep, bobcat, and large mammal unspecified. The majority of the awls in Figures 3.27 through 3.31 of the Phase II collection are made from cf. deer metapodia. Examples of awls manufactured from other elements and taxon are shown in Figure 3.32. The bobcat ulna is typed as a possible awl or punch (Figure 3.32). This specimen exhibits polish and tip attrition along with manufacturing striae and what appears to be use wear striae. A similar bobcat ulna was recovered from the Darkmold Site but it was interpreted by Reynolds (2014a:3.1, Figure 3.1 and Figure 3.2) to be manufacturing waste. The missing distal end of this element appears to have been removed through scoring and snapping. Several scoring lines are visible on the remaining distal end, possibly this piece was intended to be used to make beads. Interestingly, the bobcat ulna artifact from Falls Creek is identified as a right ulna while the one from Darkmold Site is a left ulna. Other sites where bobcat ulnas were used as awls include Aldea Sierritas (Kuckelman 1986:303, Figure 5.17) from the Dolores Archaeological Project and Shabik'eschee Village (Roberts 1929: Plate 20f) where a "wildcat" ulna is misidentified as a fibula.

Table 3.14. Taxon and elements used for bone awls from Phase II, Falls Creek Shelters.

	Metapodia	Ulnae	Radii	Ribs	Tibiae	Antler or	Long	Total
Cf. mule deer	34	2	2	2	1		9	50
Large mammal	1						6	7
Cf. bighorn sheep		1	1			1		3
Total	35 (58.33%)	3 (5%)	3 (5%)	2 (3.33%)	1 (1.67%)	1 (1.67%)	15 (25%)	60

Pointed bone tools are the most prevalent bone tool found in Basketmaker II sites from the Durango area. They are common tools from other Basketmaker II sites across the Southwest and continue to be important artifacts throughout Southwest prehistory. Most commonly pointed bone tools are labeled as bone awls and interpreted as multifunctional tools. Mobley-Tanaka and Church (1989:6) conclude that the bone awl was the "Swiss army knife" of prehistory. Unequivocally though these tools were most often used in the tasks of sewing hides or pelts and in textile production.

Pointed bone tools come in various sizes and their striation patterns can reflect use wear although use wear studies in the past are mostly limited to scratches and striae visible to the naked eye. Most awls and other pointed bone tools exhibit polish, manufacture marks, staining, and striae, which may only be visible under magnification. Tips are often broken or show signs of tip attrition from blunt force use. Assigning function to pointed bone tools is difficult on several levels. Many times, use wear is mistaken for manufacturing attributes such as shaping, grinding, and polishing.

At Arroyo Hondo, Beach and Causey (1984:193) divided pointed bone tools into three main types based on tip form: an elongated, sharp tip; a short, quickly expanding, sharp tip, and a blunt, rounded tip. This is a similar typology to that of Morris and Burgh (1954:Fig.34) and the one for the current analysis. Beach and Causey (1984) interpret the elongated, sharp tip awls (Tip Type F in this report) to have been used as perforators to make small holes for sewing. The short quickly expanding tip (Type H in this report) was effective as a punch with a larger hole and less penetration. The blunt, rounded tip (Type I or J in this report) was used to enlarge or stretch holes. Furthermore, size and shape of the tool may come into play when assigning function to pointed bone tools. Long, slender tools with sharp tips are thought to have been used to puncture hides and basketry (Beach and Causey 1984:193), while short study awls such as those made from ulnas would have been used in hide-working. Arguably, the long slender pointed bone tools could also have served as weapons, specifically daggers.

Figure 3.32. Examples of awls made on elements other than metapodia or mammal long bones from Phase II, Falls Creek Shelters. Top Row left to right: cf. mule deer radius FCRS 0564 CU8019d; cf. mule deer radius FCRS 0567 CU8020f; and cf. bighorn sheep ulna FCRS 0759 CU8062a. Second Row left to right: cf. mule deer ulna FCRS 0756 CU8062 and bobcat ulna (awl or punch) FCRS 0559 CU8017c. Third Row left to right: cf. mule deer tibia FCRS 0891 CU8088h; cf. mule deer rib FCRS 0572 CU8021b; and cf. mule deer rib FCRS 0571 CU8021a.

Large pointed bone tools from the Basketmaker II level at Cave 7 in Wiskers Draw, Utah are interpreted to have been used as stabbing knives or daggers in the execution or massacre of a large Basketmaker II community (Hurst and Turner 1993).

Alfred Kidder (1932) typed bone awls from Pecos Pueblo according to modification of the joint end of the bone, not on any perceived use wear identification. Morris and Burgh (1954:Fig. 34) continued with the Kidder's awl types based upon morphological characteristics of the manufacturing attributes. In this report, I continued this trend for the purpose of consistency with other Basketmaker II assemblages-- aware that morphology and function are not always interchangeable. I extended the analysis to include macroscopic and microscopic observations of striae patterns in hopes of providing greater detail to the analysis. High magnification photographs from a sample of the pointed bone tools demonstrate that striae and scratches from both manufacturing and usage are distinguishable (Figure 3.20). Moreover, these would reflect differences in their use as suggested by Gooding for the Durango South Project (1980).

Pointed bone tools are mostly constructed from deer and mountain sheep metatarsals and metacarpals, deer and mountain sheep radii, deer and mountain sheep ulnae, and split long bones from deer, sheep, and other artiodactyla. Occasionally they may have been constructed from antler or horn. Three examples from the Phase II assemblage are identified as possible antler/horn and these may exhibit some use wear (Figure 3.33). Only one of these (FCRS 0755 CU8062) though has visible striae. Striae on this tool includes diagonal, rotational, and longitudinal patterns and most of the tool is polished and would therefore have been used on soft materials The other two antlers were originally categorized with the pointed bone tools and typed as awls. They were analyzed under the pointy bone tool category. Due to their condition-porosity and taphonomic damage---these do not exhibit striae. Although these two bone artifacts were kept with the pointed bone tool category, it is reasonable that they could have served as flakers for lithic tool production.

In analyzing and reporting on the pointed bone tool collection from the Darkmold Site, Reynolds (2014a) developed a two-fold typology for classifying the pointed bone tools (cf. awls) whereby she looked at both form (what portions of which bone each specimen was made out of) and function (what the size, shape, wear, and staining may mean to how and why each specimen was used) (p.3.12). This typology has aspects that are similar to or identical to those from Morris and Burgh (1954:Fig.34) used in this study. Reynolds' separated the tools into three primary groups based on presence or absence of distal and proximal epiphysis (2014a: Figure 3.14). These include PR (proximal epiphysis present); DI (distal epiphysis present); and NO (no epiphysis present). Within each primary group are subdivisions based upon modifications thereof. For example, DI1 is a specimen with the distal epiphysis intact (complete) and unmodified and a PR1 tool has the proximal epiphysis intact (complete) and unmodified. These are equivalent to Type A awls in the current study. A NO3 (No epiphysis present but orientation of the element is unknown-tool produced from shaft or splinter is the same as awl Type E. The primary difference is that Reynolds goes a step further in her classification of the bone awls from the Darkmold collection by separating out those with the distal epiphysis present from those with the proximal epiphysis present. While the current study did not distinguish between the articular ends for typing the awls, this information was collected and is available.

Figure 3.33. Three pointed tools that may be fashioned from antler or horn, Phase II, Falls Creek Shelters. From Left to Right: FCRS 0755 CU8062 (awl); FCRS 0668 CU8045c (punch or awl); and FCRS 0799 CU8068q (drill or reamer).

The collection from the Darkmold Site is very similar to that of the Phase II assemblage. The total number of awls analyzed by Reynolds was 78 awls or awl fragments compared to 122 pointed bone tools in this study. Of the total from the Darkmold Site, 41 were categorized according to taxon and form type. The results from the Darkmold Site are summarized below in Table 3.14. Twenty-five (61%) metapodia, seven (17%); unspecified long bones (probably metapodia) six ulnas (14.7%); two (4.9%) radii; and one scapula (2.4%) are represented in the awl sample from the Darkmold Site. To compare these percentages to those from the Phase II collection, I have included all pointed bone tools not just those classified as awls. These numbers are such: 55.7% metapodia, 27.9% unspecified long bone (probably metapodia); 7.4% ulnas; 2.5% radii; 1.64% tibiae; 1.64% ribs; .82% femurs; and 2.5% antlers. The percentages compare fairly well. In both collections metapodia and unspecified long bones account for the vast majority of the tools. In the Darkmold Site assemblage these account for about 78% of the total and they account for 84% of the total in the Phase II assemblage. Ulnas are represented by 14.7% of the total at the Darkmold Site and 7.4% in the Phase II collection while radii both number two at the Darkmold Site for a total percentage of 4.9% and three or 2.5% of the Falls Creek Shelter collection. One scapula awl was identified at the Darkmold Site while the Falls Creek assemblage had two tibiae, two ribs, one femur, and three antlers. A gross interpretation of this data would be to suggest that there was more use of different elements at the Falls Creek Shelters than at the Darkmold Site, but there were twice as many tools from the Falls Creek Shelters and this could explain the difference in element represented. Because of their environmental setting the Falls Creek Shelters lend themselves to better preservation and they were occupied for a longer period than the Darkmold Site. Perhaps a better comparison would be between the Darkmold Site and Talus Village, another open air Basketmaker II site. Regardless of the kinds of elements used, metapodia and ulnas were the primary elements used for pointed bone tools at both sites. It appears from the data at hand that there was no preference for a particular side and that elements from either side were used similarly.

Table 3.15. Form typology results for awls from the Darkmold site, following the flow chart, modified from Reynolds (2014a: Figure 3.3:3.14).

Skeletal Element (all are from large mammal/artiodactyls	Proximal Epiphysis Present	Distal Epiphysis Present	No Epiphysis Present	Total for Element
Unspecified	5	0	3	8 (19.5%)
Metacarpal	1	1		2 (4.9%)
Metatarsal	7	4	4	15 (36.6%)
Radius	2	0	0	2 (4.9%)
Ulna	6	0	0	6 (14.6%)
Unspecified Long bone (probably	0	0	7	7 (17.1%)
Scapula	0	0	1	1 (2.4%)
Total	21	5	15	41

In this study of pointed bone tools, I focused on tool morphology or form (Kidder 1932; Morris and Burgh 1954; and Reynolds 2014) and on microscopic use wear analysis (Gooding 1980). Tool morphology is more straightforward but it tends to lump most pointed bone tools into the multi-function awl category. While examining the micro striae and scratches to explain tool function can be misleading. Often the striae from use wear can be masked by scratches and striae from manufacture and subsequent reshaping and resharpening. Furthermore, as Reynolds points out, these tools likely changed function throughout their use life:

> …rather than thinking about the different tasks (basketry/sandals versus hide working) that individual awls may have been fashioned for, it instead looks as though Darkmold awls served various functions throughout their use lives, and were refashioned for different tasks as they broke and continued to change shape (see Figure 3.16). As such, many specimens may have started as long, thin, sharp awls, and as the tips broke, the remaining tool was sharpened again, was ground down to a blunt awl, or was refashioned into other tool types, including awls that

> may resemble short punchers used to puncture various materials… This apparent cycle of use and re-use coupled with the suggestion that the site's awls were multi-use tools made the analysis of the Darkmold awls rather difficult, as each specimen is likely part of a continuum rather than belonging to a single "type" of awl.

In her analysis of the Darkmold site, Reynolds (2014a: Figure 3.16) shows the possible use life stages for pointed bone tools. I have replicated her figure below using three examples from the Phase II collection (Figure 3.34). As I will address later in this report, it should be considered that broken fleshers are a likely candidate for resharpening and use as an awl.

Worked Bone General

This category, which includes 64 artifacts, is a catch-all for bone tools that were not included with the ornaments, pointed bone tools, or the notched tools (Table 3.1). Fifty-one of these tools were recovered from the North Shelter and twelve from the South Shelter. A single tool is listed as no provenience (Table 3.16).

The initial analysis began by examining each of the tools and determining the taxon from which the artifact came followed by identifying the skeletal element, side, and which portion of the bone was utilized. Species and elements were identified by Advanced Osteology students Jane Cooper and Dave Hencmann from Fort Lewis College under the supervision of Dr. Dawn Mulhern and me. Most of the worked bone tools were manufactured from whole, split, or splintered long bones of large mammals, most likely from cf. mule deer (*Odocolius hemonius*). Often the bones were broken or did not retain diagnostic markers to enable identification beyond that of large, medium, or small mammal. Skeletal elements represented in the worked bone tool category include ulnas, metapodia (mostly cannon bones), ribs, tibiae, antler, and general long bones nonspecific (Table 3.16).

Assigning function to the worked bone general category is compounded because so many pieces are broken and others were so unusual that examples were hard to come by. Probable function of the worked bone tools was assigned whenever possible using the criteria outlined by Gooding (1980:103117) for the Durango South Project and modified for this project using information from Morris and Burgh (1954) and Reynolds (2014a). To assign function to the worked bone tools, wear patterns were inspected on specific portions of the bone where use wear would be most obvious. Use wear is not synonymous with manufacturing attributes. The latter include characteristics such as chopping, cutting,

Figure 3.34. Example of three pointed bone tools showing possible use life stages modified from Reynolds (2014: Figure 3.16). From Top to Bottom: FCRS 0960 CU8112d is a long slender, complete awl. When this awl broke or became ineffective for its original purpose, it could have been reshaped and resharpened as in FCRS 0885 CU8088b. Finally, as the specimen reached the end of its life it may have been reworked into the short awl or punch-like tool as shown by FCRS 2716 CU8253.

trimming, grinding, and so forth. Often it is difficult to distinguish wear patterns from manufacturing attributes because specific manufacturing processes have signatures that could be mistaken for use wear (Reynolds 2014a). This difficulty is acknowledged in the current study and even at microscopic levels distinguishing between the two was not always obvious. Therefore, caution is used in inferring function to these bone tools because they probably were indeed multi-functional in many cases and in other instances, the tools changed function throughout their use life. Usages could have been concomitant as well as sequential.

To begin analysis of the general worked bone tools an Excel file was created with the attributes outlined under the methodology section of this report. Quantitative data including weight, length, width, and thickness were collected on each tool. Following the quantitative analysis, each tool was examined under a microscope at magnification powers .5X to 10X. A few of the artifacts were examined and photographed with a DinoLite portable microscope and camera, which has a magnification power to 200X. In this study I divided locations of use into the interior and exterior portions of the tool. Striae and polish were noted for both sections. Striae were further divided into the following patterns: diagonal; transverse; longitudinal; rotation; counter rotation; chevron, and cross hatch. Striae types follow those used for the pointed bone tools previously reported and will not be repeated here. Polish could be found on any portion of the tool. The photo micrographs in Figure 3.35 demonstrate several of the characteristics observed for the worked bone tools such as striae, staining, polish, and tip attrition.

Manufacturing attributes were also recorded for each tool. These include broad categories of initial modification of the bone to produce a tool such as the techniques of splitting (split in half or quartered), splintering (shattered), or whole (complete articular head present). Other characteristics recorded for the worked bone tools included whether the tool was considered to be complete, whether the tool was burned, and any type of taphonomic damage such as rodent or canine gnawing, root etching, staining, and pitting.

Results

Similar to the pointed bone tools, subdivisions were made within the overall worked bone category based on probable/possible function. These subdivisions are: fleshers/scrapers (20); chisels (3); flakers (3); matting tools (2); possible ornaments (2); possible handle (1); antler wrench (1); and indeterminate (32). The indeterminate subcategory consists of specimens where function could not be determined, or those that may have been modified but not worked. In the following discussion, these eight subcategories of general worked bone

Table 3.16. General worked bone tools, Phase II, Falls Creek Shelter

FCRS	CU Catalog Number	Complete	Taxon	Element	Side	Age	Portion	Tool Type	Provenience
00581	8024a	No	Large Mammal	Antler or Long bone	NA	NA	NA	Flaker	North Shelter
00582	8024b	Yes	*cf. mule deer*	Metapodia	Ind	Adult	Medial	Flesher	South Shelter
00583	8024c	Yes	*cf. mule deer*	Rib	Left	Adult	Ventral	Flesher	South Shelter
00607	8029a	Yes	*cf. mule deer*	Metapodia	Left	Sub-adult	Distal	Ind	South Shelter
00608	8029b	Yes	*cf. mule deer*	Metapodia	Right	Adult	Distal	Flesher	South Shelter
00611	8029f	No	*cf. mule deer*	Metapodia	Ind	Ind	Fragment	Flesher	North Shelter
00672	8046a	Yes	*cf. mule deer*	Metapodia	Ind	Ind	Shaft	Flesher	North Shelter
00810	8069a	No	Large Mammal	Long	NA	NA	Shaft	Chisel	North Shelter
00811	8069b	Yes	*cf. mule deer*	Long	NA	Adult	Shaft	Flesher	North Shelter
00813	8070b	No	*cf. mule deer*	Long	NA	Adult	Shaft	Flesher	North Shelter
00814	8070c	No	*cf. mule deer*	Long	NA	Adult	Fragment	Flesher	North Shelter
00815	8070d	No	Large Mammal	Antler or Long bone	NA	Adult	Fragment	Flaker	North Shelter
00875	8082	No	Large Mammal	IND	NA	NA	Fragment	Ind	North Shelter
00816	8070e	No	Large Mammal	Long bone	NA	NA	Fragment	Flesher	North Shelter
00878	8085	No	*cf. mule deer*	Long bone	NA	NA	Medial	Flaker	North Shelter
00959	8112c	Yes	Large Mammal	Long bone	NA	NA	Medial	Ind	North Shelter
01054	8118	Yes	Large Mammal	Long bone	NA	NA	Medial	Ornament	North Shelter
01096	8130a	No	*cf. mule deer*	Metapodia	Right	Adult	Proximal	Ind	North Shelter
01097	8130b	No	Large Mammal	Long bone	NA	NA	Medial	Ind	North Shelter
01098	8130c	No	Large Mammal	Long bone	NA	NA	Medial	Flesher	North Shelter
01099	8130d	No	Large Mammal	Long bone	NA	NA	Medial	Ind	North Shelter
01100	8130e	No	Large Mammal	Long bone	NA	NA	Medial	Ind	North Shelter
01101	8130f	No	Large Mammal	Long bone	NA	NA	Medial	Flesher	North Shelter
No card	8130g	No	Large Mammal	Long bone	NA	NA	Medial	Ind	North Shelter
01301	8138	No	Large Mammal	Long bone	NA	NA	Medial	Ind	North Shelter
01952	8154	No	Large Mammal	Long bone	NA	NA	Medial	Flesher	North Shelter
02658	8209	Yes	*cf. mule deer*	Metapodia	Right	Adult	Proximal	Flesher	South Shelter

FCRS	CU Catalog Number	Complete	Taxon	Element	Side	Age	Portion	Tool Type	Provenience
01723	8144	No	Large Mammal	Long bone	NA	NA	Medial	Flesher	North Shelter
02642	8199b	Yes	Large Mammal	Long bone	NA	Adult	Medial	Ind	NA
02086	8162a	No	Large Mammal	Long bone	NA	NA	Medial	Ind	North Shelter
02087	8162b	No	cf. mule deer	Tibia	NA	Adult	Medial	Flesher	North Shelter
02088	8162c	No	Large Mammal	Long bone	NA	NA	Medial	Flesher	North Shelter
02089	8162e	No	Avian	Long bone	NA	NA	NA	Ind	North Shelter
02090	8162f	No	Large Mammal	Long bone	NA	NA	NA	Ind	North Shelter
00673	8046b	No	*cf. mule deer*	Metapodia	NA	NA	NA	Flesher	North Shelter
00812	8070a	No	Large Mammal	Long bone	NA	NA	NA	Ind	North Shelter
0584	8025c	No	Small Mammal	Rib or long bone	NA	`NA	NA	Ind	North Shelter
00585	8025e	No	Large Mammal	Long bone	NA	NA	NA	Ind	South Shelter
00586	8025g	No	Large Mammal	Long bone	NA	NA	NA	Ind	North Shelter
00589	8026e	Yes	Large Mammal	Long or rib	NA	NA	NA	Ornament	North Shelter
00587	8026a	Yes	Large Mammal	Long or rib	NA	NA	NA	Ind	North Shelter
00588	8026c	Yes	Large Mammal	Long or rib	NA	NA	NA	Ind	North Shelter
00590	8026g	Yes	Large Mammal	Long bone	NA	NA	NA	Ind	North Shelter
00591	8026i	No	*cf. mule deer*	Metapodia	NA	Adult	Medial	Ind	North Shelter
00592	8026j	Yes	*cf. mule deer*	Metapodia	Left	Adult	Proximal	Chisel	North Shelter
00707	8053	No	Large Mammal	Long bone	NA	NA	Medial	Ind	North Shelter
00700	8051e	No	Large Mammal	Long bone	NA	NA	Medial	Matting	North Shelter
02438	8174b	No	*cf. mule deer*	Metapodia			Proximal	Ind	North Shelter
02632	8193a	No	*cf. mule deer*	Metapodia	NA	NA	NA	Matting	South Shelter
02633	8193b	No	*cf. mule deer*	Metapodia	Left	Adult	Proximal	Ind	South Shelter
02634	8194b	No	*cf. mule deer*	Radius	Right	Adult	Distal	Ind	South Shelter
02632	8194a	No	*cf. mule deer*	Radius	Right	Adult	Distal	Ind	South Shelter
00751	8061	No	Large Mammal	Long Bone	NA	NA	Medial	Chisel	North Shelter
00803	8068t	No	*cf. mule deer*	Metapodia	NA	Adult	Proximal	Ind	North Shelter
00807	8068w?	No	Large Mammal	Long bone	NA	NA	NA	Ind	North Shelter
00806	8068w	No	Large Mammal	Long bone	NA	NA	NA	Ind	North Shelter

FCRS	CU Catalog Number	Complete	Taxon	Element	Side	Age	Portion	Tool Type	Provenience
00609	8029c	No	*cf. mule deer*	Metapodia	Left	Adult	Distal	Ind	North Shelter
00613	8029h	No	*cf. mule deer*	Long bone	NA	Adult	Medial	Flesher	North Shelter
00610	8029e	No	*cf. mule deer*	Metapodia	NA	Adult	Medial	Flesher	South Shelter
00943	8104	No	Large Mammal	Long bone	NA	NA	Medial	Flesher	North Shelter
00956	8111	No	*cf. mule deer*	Long bone	NA	Adult	Distal	Flesher	North Shelter
00941	8102	No	*cf. mule deer*	Radius	Right	Adult	Distal	Ind	North Shelter
00654	8036a	Yes	*cf. mule deer*	Antler		Adult	Proximal	Wrench	South Shelter
00895	8088l	No	*cf. bighorn sheep*	Ulna	Right	Adult	Proximal	Handle	North Shelter

tools are described and photographs accompany the text. Half (50%) of the worked bone specimens were classified as indeterminate. Fleshers/scrapers are the next largest category representing a little over 35% of the total. Chisels/scrapers and flakers number 3 each for a total of 4.7%. Two matting tools and two possible ornaments each represent 3.124% of the total. One possible handle and one antler wrench complete the inventory with a combined percentage of 3.125%.

Antler Wrench

In the worked bone assemblage was a piece of antler in excellent condition that is interpreted to be an antler wrench or shaft straightener (Figure 3.36). This artifact, FCRS 0654 CU8036a, was recovered from the South Shelter (Morris and Burgh 1965:64, Fig. 98-3a). A similar antler wrench, although slightly larger and in much poorer condition, was placed with Burial 4 and located between Terraces I and II in the North Shelter (Morris and Burgh 1954:64; Charles 2011a:G-18;Graham 2011:H11). Burial 4 or Individual 23 (Mulhern 2011 E-16) is that of a fragmented skull and partial postcranial skeleton of a subadult, about 3-4 years of age. The two artifacts are pictured together in Figure 3.36. Antler wrench FCRS 00224 CU8036b described in Phase I is similar in overall characteristics to FCRS CU8036a but is larger, is broken, has a larger hole diameter, and is in far worse condition. As shown in Table 3.17, the quantitative data for the two wrenches demonstrate that specimen CU8036b from Phase I is longer and wider with a larger hole diameter and weights more. Thickness is so different for the two only because CU8036b was split in half. The primary difference between the two artifacts is that CU8036a is manufactured from a single tine antler while CU8036b is a two tine antler.

Figure 3.35. Photo micrographs of some examples of polish and striae from the worked bone assemblage, Phase II, Falls Creek Shelters. Top Row left to right: a, extreme polish and b, significant impact scars. Second Row left to right: a, diagonal striae and b, diagonal striae coming from two directions, i.e. chevron. Third Row left to right: a, splotchy staining, polish, and diagonal striae on both lateral edges of the interior of the tool and b, multi-directional striae including long longitudinal scratches, and impact fractures.

Figure 3.36. Antler wrenches from Falls Creek Shelters. Top Row is the antler wrench from Phase II, FCRS 0654 CU8036a. Bottom Row is the antler wrench from Phase I, FCRS 0224, CU8036b.

Table 3.17. Quantitative data for two antler wrenches from the Falls Creek Shelters.

	Length (mm)	Width (mm)	Width (mm)	Width (mm)	Thick (mm)	Thick (mm)	Thick (mm)	Weight (gm)	Hole Diameter (mm)
CU8036b FCRS 0224	94.0	24.5	29.7	51.1	11.6	6.2	4.5	32.68	24
CU8036a FCRS 0654	88.5	26.16	21.42	36.37	21.43	16.85	16.6	30.8	18.5

Photo micrographs were taken of the Phase II antler wrench (Figure 3.37). In these photos stress lines are visible on the sides of the holes and polish is clearly visible around the holes. Deep cut marks are visible at the distal end. Trimming of the antler for final shaping is also evident in these photographs.

Antler Wrench - Discussion

Antler wrenches appear to have a long antiquity and are believed to have been used to straighten wooden shafts for darts and arrows. The specimen from Phase I was examined by Carole Graham (2011: H) and is thought by her to possess an opening too small for use on dart shafts. It is outside the range of similar artifacts from Dolores Cave (Hurst 1947:13), Cave du Pont (Nusbaum 1922:123-124), Prayer Rock District (Morris 1970:88 Figure 49.g), and Tabequache Cave (Hurst 1941:17) to name a few sites where bighorn sheep horn antler wrenches were recovered. Graham (2011: H-11) surmises that it may have been used on larger diameter wood objects such as handles. If this is the case, then the antler wrench in this study, which has an even smaller diameter hole may have also served a different purpose than the traditional interpretation of a dart shaft straightener. Information on the hole diameter for these other sites is limited. The horn antler wrench from the Prayer Rock Caves is 1.8cm (Morris 1980:88), which is almost identical to the one from this study. At Cave du Pont the hole diameter is slightly less than 1cm in diameter (Nusbaum 1922:124). Hole diameter for the specimen from Tabeguache is 1.44cm (Hurst 1941:17), which is also smaller than the one from either Phase I or Phase I. An antler wrench from Badger House (Hayes and Lancaster 1975:172) has a hole diameter of 3.5cm. Whatever the purpose of these drilled horn/antler tools, hole diameters vary but seem to be on the small size for dart shafts at least according to Graham (2011:H-11). A good study would be to survey both antler and horn wrenches and dart shafts to determine if indeed these were used with atlatl technology.

Figure 3.37. Micro photographs showing details of antler wrench, FCRS 0654 CU8036a, Phase II, Falls Creek Shelters.

Antler artifacts from the open sites of Talus Village and the Darkmold Site while present are in very deteriorated states and their function(s) is tentative. No antler wrenches were identified at the Darkmold Site or at Talus Village. A badly broken antler wrench was found on the bench of a Basketmaker III/Pueblo I pithouse at the Durango South excavations (Gooding 1980:118-119: Figure 85) and an antler wrench was excavated on the bench of a pithouse at Badger House (Hayes and Lancaster 1975:171: Figure 223). Both of these two wrenches are double-tined. Other sites where antler wrenches were found outside of Colorado include two from Alkali Ridge, Utah (Brew 1946:245), and three from Pecos, New Mexico (Kidder 1932:240). Antler wrenches were in use by the Hopi during historic times (Hough 1915).

Antler wrenches while not common in the archaeological record of the American Southwest, possibly were more numerous but due to the porous nature of antler, it does not preserve as well as bone. The specimen from Phase II discussed here is an exception as it is extremely well preserved. It well may be one of the best preserved artifacts of its kind in the Four Corners and possibly in the Southwest. That the antler wrench found with a child burial from Phase I at the Falls Creek Shelters begs the question as to wether this particular artifact held some specific meaning other than a simple tool.

Matting Tools

Two pieces of worked bone show characteristics that could be interpreted as matting tools or batons. These include transverse (perpendicular to the length of the tool) striae and polish. Both are made on long bone fragments (Figure 3.38). Neither of the two specimens shows compelling evidence that they were used in the process of weaving, unlike the two specimens from the Darkmold Site where deep striae, heavy polish, and extensive use wear suggests repeated use over time implying use in some type of fiber/textile production (Figure 3.38). Heavy use of the tool has resulted in the bone being flatter in cross-section than other bone tools.

<u>Matting Tool or Baton - Discussion</u>

Matting tools or weaving batons are recognized by their deep transverse striae that indicate a reciprocal sideways or up and down motion (Gooding 1980; Lang and Harris 1984; and Reed 1975). They are often associated with the use of looms, which did not come into general practice until several decades after the Basketmaker II period. One of the two matting tools from the Darkmold Site was in a well dated Basketmaker II context. These tools are rare

Figure 3.38. Example of possible matting tools or weaving batons from Phase II Falls Creek Shelters and the Darkmold Site. From Left to Right: a, possible weaving baton FCRS 2632 CU8193a, and an almost definite matting tool from the Darkmold Site, 5LP04991.116.1338.

and their function not completely understood; however, they were in use during the Basketmaker II period.

Possible Bone Ornaments

Two unusual bone artifacts were analyzed with this group of worked bone (Figure 3.39). They had not been originally separated into the ornaments category so they were kept with general worked bone. Both are ovate and show signs of multi-directional striae on both the interior and the exterior. FCRS 1054 CU8118 is made from a mammal long bone. It is very dark brown but not burned. The ends are blunted but the edges beveled. Striae are mostly parallel to width but some are diagonal. It is smooth and could be an ornament or perhaps a rubbing tool.

The second specimen is also long and narrow and made either from a mammal long bone or perhaps a rib. It is very thin with striae on the inside of one edge and on the exterior surface. It possesses slight wavy notches with polish. Morris and Burgh (1954:Fig. 91-4e) simply list this specimen along with the other two in the photograph below and to the right as fragments of worked bone non-specific. These artifacts do not warrant a discussion and possibly they could be included in the indeterminate worked bone category. Similar objects were found at the Darkmold Site and they are classified by Reynolds as objects of unknown function (2014a 3.31).

Figure 3.39. Two possible bone ornaments from Phase II, Falls Creek Shelter. From Left to Right: FCRS 1054 CU8188; and upper right FCRS 0589 CU8026e.

Possible Handle

This piece of worked bone, FCRS 0895 CU8088l, was originally in the awl category but was moved to the worked bone. The tip is broken. There are extensive cut marks all over the bone. It appears to be worked but is not an awl. It is made from a cf. bighorn sheep ulna (Figure 3.40). Possibly this enigmatic piece of worked bone functioned as a handle.

Figure 3.40. Possible bone handle from Phase II, Falls Creek Shelters. FCRS 0895 CU8088l.

Chisels/Scrapers

Three specimens are categorized as chisels/scrapers (Figure 3.41). Each of the three is broken. Specimen FCRS 0810 CU8069a is made from a large mammal long bone. There are no manufacturing attributes remaining on this artifact. It was broken at some point and glued. Striae are present on both the interior and exterior. They are multi-directional and include diagonal, transverse, and chevron.

FCRS 0592 CU8026j is made from the proximal end of a cf. mule deer metapodia. It is wedgeshaped at the working end that angles to a less than sharp point. Striae are present throughout but some may be from manufacture. Diagonal and chevron striae patterns are on both exterior and interior surfaces.

A small fragment of bone, FCRS 0751 CU8061, is interpreted to be the remains of a chisel or perhaps a flesher. It is broken leaving only the worked portion of the tool. It is highly polished.

Figure 3.41. Three chisels from Phase II, Falls Creek Shelters. From left to right: FCRS 0810 CU8069a; FCRS 0592 CU8026j; and FCRS 0751 CU8061.

<u>Chisel/Scraper –discussion</u>

This subcategory of chisels is not well defined and references to chisels in particular are less than common. For example, Reed (1958:138 Fig. 54) describes a bone tool from Kiva 7C at Mancos Canyon as a chisel. The tools are small, worked all over and beveled to a good edge and exhibits extensive polish (Reed: 158:139). Although I do believe these tools should be separated from the flesher/scraper category, I use the term chisel with caution. The primary characteristics of this tool type are the wedge-shaped working surface and the chevron and diagonal striae, which are not all that different from characteristic in defining fleshers/scrapers in this study. The chevron striae suggest a diagonal scraping motion coming in from two directions. Unlike the cross-hatch striae, chevron striae do not cross each other

(Figure 3.20). The specimens in this subcategory do not all extensive polish like the flesher/scrapers which are associated with working on soft materials such as hides. Morris and Burgh (1954) must have been challenged by some of these artifacts as well. For example the artifact FCRS 0592 CU8026j in Figure 3.41 is listed as “worked fragments of bone” byMorris and Burgh (1954:Fig. 914j).

Flakers

Three artifacts from the Phase II worked bone assemblage are identified as flakers for lithic tool production (Figure 3.42). A few other artifacts identified by Morris and Burgh (1954: Fig. 91-2) as flakers are discussed later in this report under fleshers/scrapers. The three specimens identified here as flakers share the following traits—they are all long, rod-like, and flattened, the ends are blunt and exhibit mostly diagonal and longitudinal striae, impact scars, and some polish (Figure 3.42). Elements used for the Falls Creek specimens are most likely large mammal long bones although antler or horn cannot be ruled out. Morris and Burgh (1954:62) describe these three artifacts as being bone while Reynolds (2014a:3.28, Figure 3.30) identifies an almost identical specimen from the Darkmold Site as made of antler. Therefore, I have typed two of these, FCRS 0581 CU8024a and FCRS 0815 CU8070d, as either mammal long bone or antler and typed FCRS 0878 CU8085 as cf. deer long bone.

Figure 3.42. Artifacts identified as possible flakers from Phase II, Falls Creek Shelters. From left to right: FCRS 0581 CU8024a; FCRS 0815 CU8070d; and FCRS 0878 CU8085.

All three of the possible flakers are broken such that no complete measurement is possible. This is unfortunate as the two most important variables, length and weight, are not available from the Falls Creek specimens; therefore, they cannot be compared with any confidence to the ones from Atlatl Cave, Obelisk Cave, and Sand Dune Cave (Geib 2002: Table 18.1). For a starting point for some comparative purposes, the descriptive data for the Falls Creek artifacts is provided in Table 3.18. The two variables that are not affected by the breakage are the thickness and width. Three measurements were taken on both thickness and width for each artifact. The average width for the three specimens is 10.39mm and the average thickness is 5.58mm. Average weight is 5.02gm and average length is 6.70cm for these broken artifacts.

Table 3.18. Descriptive data for possible flakers from Phase II, Falls Creek Shelters.

FCRS	CU Catalog Number	Length (cm)	Width (mm)	Width (mm)	Width (mm)	Thick (mm)	Thick (mm)	Thick (mm)	Weight (gm)
00581	8024a	5.76	9.27	8.86	9.33	6.49	6.62	6.49	4.73
00815	8070d	5.973	10	9.46	8.38	5.04	5.4	5.45	3.42
00878	8085	8.372	12.66	12.94	12.31	5.21	5.24	4.26	6.92
Average		6.70	10.64	10.42	10.01	5.58	5.75	5.4	5.02

Because they are broken, it is not possible to know unequivocally that both ends would have been almost identical as is the case with flakers from Talus Village (Morris and Burgh 1954:Fig. 91-2 e, f, h, and i) or the Darkmold Site (Reynolds 2014a: Figure 3.30). Those from Talus Village are indeed much longer than the ones from the Falls Creek Shelters. If complete, the Falls Creek specimens could have been much longer. Three flakers were found at the Darkmold Site but the one complete specimen measured 9.8cm long. The broken ones from Phase II measure 5.76cm, 5.97cm, and 8.37cm. Extrapolating the original length from what remains of these broken ones from this study would be impractical and of little interpretative value.

The blunted ends of the Phase II specimens in Figure 3.43 show impact scars and this suggests that they were used in a manner that applied direct force on hard materials. The dominate striae pattern for the ends is diagonal combined with less prominent but certainly present longitudinal and transverse striae. Deep diagonal striae and some longitudinal striae are present in the midsection, and transverse striae were present on at least some of the margins. Polish is present on all of the specimens.

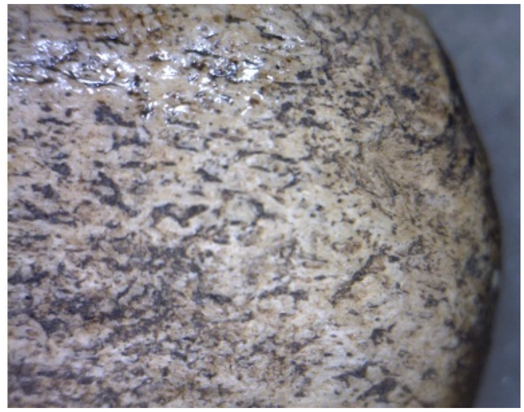


Figure 3.43. Flakers from Phase II, Falls Creek Shelters. Top Row left to right: FCRS 0581 CU8024a; FCRS 0815 CU8070d; and FCRS0878 CU8085. Middle Row left to right: photo micrograph of diagonal and longitudinal striae on flaker FCRS 0581 CU8024a and photo micrograph of impact scars on blunted end of 0581 CU8024a. Bottom Row left to right: photo micrograph of multi-directional striae at the end of flaker FCRS 0815 CU8079d and photo micrograph of bone/antler structure, high polish, and impact scars on flaker FCRS 0878 CU8085.

Flakers-Discussion

Bone and antler flakers are not rare in the archaeological collections and their use continued into historic times. Sites with similar objects include Atlatl Cave (Geib et al. 1999), Sand Dune Cave (Lindsay et al. 1968:62-63), White Dog Cave (Guernsey and Kidder 1921:96-97), Badger House Community (Hayes and Lancaster 1975), Broken Roof Cave (Guernsey 1931:73 Plate 34d), and Obelisk Cave (Morris 1980:89 and Figure 3.49 b and f) to name but a few. Most examples are described as made from antler or horn, and big horn sheep horn seems to be the preference. Big horn sheep (*Ovis Canadensis*) faunal remains have been identified from the Durango Basketmaker II sites of Talus Village, the Falls Creek Shelters (Rodeck 1954), and probably the Darkmold Site (Reynolds 2014a). Several tools described in this report are tentatively identified as being made from big horn sheep bone. The landscape in and around Durango is not the preferred habitat of big horn sheep. It is not surprising that few remains of big horn sheep are positively identified in the archaeological record from the area. This is in stark contrast to sites to the west and southwest where prehistorically these animals thrived. It comes as no surprise that the Durango Basketmakers may not have had ready access to big horn sheep for flakers and used what was available to them like bone and possibly mule deer antler.

Basketmaker II flakers were used in both percussion and pressure flaking according to (Geib 2000, 2002) who reanalyzed the horn flakers from Sand Dune Cave, Obelisk Cave, and Sand Dune Cave and who conducted experimental studies using horn flakers. A samples size of 23 specimens from the above mentioned sites were equally divided between punches (or indirect percussion) and pressure flakers (Geib 2002:Table18.1). Quantitative results showed there to be a significant differences in the variables of length, width, thickness, and weight between the two flaker types. Horn punches used for indirect percussion were over 4 cm longer than the pressure flakers and they weighted over four times as much on the average (Geib 2002:283). According to Geib, punches or indirect pressure flakers were hand-held tool while the pressure flakers were likely hafted. Other defining differences include presence or absence of staining and polish. But the most important distinguishing characteristics are those resulting for use wear. As Geib points out:

> To varying degrees, the punches exhibit crushing, compressional deformation, cracking, and spalling of the working ends, plus pitting, linear gouges, scratches and nicks on the cylindrical shaft. The horn pressure flakers lack these sorts of wear, especially the compressional deformation and shaft damage…A final distinction concerns the use wear on tool ends. The worn ends of indirect percussion punches have a far rougher microtopography than that of the pressure flakers, the result of deeper use-created pits and linear gouges; they also exhibit larger fragments of embedded chert. Percussion blows appear to have driven the punches into the core with more force than was possible or needed with the pressure flakers; thus the punches have deeper use gouges (2002:285-286).

The specimens identified as flakers by Morris and Burgh (1954:62) were for the most part rejected by Geib (2002:299) because they are made of bone not horn, and they have narrow, spatulashaped tips. This is the case for some but not all of the artifacts identified as flakers by Morris and Burgh (1954:62; Fig. 91-2 a-i). The three in the current study all have blunted ends and are not spatulate-like. Comparing the blunted ends with use wear for the Falls Creek specimens (Figure 3.43) to the specimen in Figure 18.2 in Geib (2002:275), I see no difference between them. Moreover at least two of the Falls Creek specimens *could* be made of antler. More work would have to be done to positively identify the source materials. At the level of magnification available to me, I was not able to identify any lithic material embedded in the ends. This is another avenue that should receive future research. Using Geib's published (2002, 2004) and unpublished works (2000) on Basketmaker II horn flakers, I have come to the conclusion that three of the worked bone specimens in the Phase II collection were used as flakers in lithic tool production. Furthermore, examining the overall descriptive characteristics of these three specimens, they are better suited to have been used as punches for indirect percussion than as pressure flakers. This distinction is made based upon overall size and on the visible traits of use wear. Although the three specimens from the current study are broken, their mean length (6.7cm) exceeds that of the average length of the pressure flakers from Geib's sample (2002:Table18.2) which is 5.183cm. Mean widths for the Phase II flakers is 1.037cm while the mean widths for the horn punches is 1.791cm and 1.125cm for the horn pressure flakers. Both of these exceed the mean width for the Phase II flakers. Mean thickness for the Phase II specimens is .558cm and mean thickness for the sample punches and pressure flakers is 1.24cm and .817cm respectively. The differences in the mean width and mean thickness between the two sample sizes are interesting especially because these are the two variables that were not affected by breakage. Weights on the average for the two subdivisions of flakers in Geib's sample are quite obvious, with the pressure flakers being substantially heavier (2002:Table18.2). Phase II samples, although broken, weight on the average about the same as the complete pressure flakers from the western Basketmaker II sample (5.04gm to 5.0gm). Before being broke, the Phase II flakers would have weighted more on average than the pressure flakers from the other sites. How much difference there would have been is difficult to determine.

Some of the quantitative differences between the western Basketmaker II flakers and those from the eastern Basketmaker II sites may reflect the availability of the raw material resources—big horn sheep for the western Basketmakers and mule deer for the eastern Basketmakers– and perhaps differences in tool production, especially in the manufacturing of projectile points. The Talus Village collections contain several complete artifacts, described by Morris and Burgh (1954:Fig. 91-2) as flakers. These should be re-analyzed and this data compared to the data from the Darkmold Site, the Falls Creek Shelters, and the western Basketmaker collections.

As far as I know, there have been no radiocarbon dates obtained directly on these Basketmaker II flakers. An excellent study was conducted by Geib (2004:271-282) on the contents of a Basketmaker II hunter's bag from Sand Dune Cave. This bag (Cache1) contained the horn flakers previously discussed. Radiocarbon dates from organic remains associated with the flakers yielded three AMS radiocarbon dates. The 2 sigma calibrated date range is from A.D. 50 –A.D. 650. The three dates were averaged and the calibrated two-sigma date range is A.D. 80 –A.D. 330 and the one-sigma range is A.D. 130 –A.D. 250.

The dates from the Falls Creek Shelters, Talus Village, and the Darkmold Site all of which produced bone or antler flakers are consistent with the dates from the contents of the bag from Sand Dune Cave.

Fleshers/Scrapers

The subcategory described as fleshers/scrapers is populated by twenty specimens (Table 3.19). About two-thirds of these are broken. In the current study, I have included all of the fleshers previously identified by Morris and Burgh (1954), but I expanded the subcategory to include what could also be scrapers. I also added some tools that Morris and Burgh described as artifact types other than fleshers/scrapers. Five (25%) of the flesher/scrapers were excavated from the South Shelter and the remaining 15 (75%) were recovered from the North Shelter.

Fleshers made from cf. mule deer metapodia and other artiodactyla are the largest and heaviest bone tools from the entire collection. Despite their size and weight this collection has only one complete metapodia flesher (Figure 3.44). Morris and Burgh dedicate an entire figure (1954:Fig. 94) to these tools. Six of the ten photographed by Morris and Burgh (1954:Fig. 94) are from the Falls Creek Shelters. These artifacts are labeled as fleshers and described by Morris and Burgh thusly:

> Bone implements made of deer metapodials, which, in accord with precedent, we call fleshers, were a standard type at Durango. The distal end of the bone served as a handle; part to all of one side of the shaft was split away and the opposite end was ground to form a beveled blade 2-3cm.in widthat right angles to the long axis bone…The high polish on all surfaces, extending sometimes the full length of the shaft, and the frequent splintering of these strong and massive bones indicate use in some more arduous task than skin scraping—perhaps digging and prying in the earth (p. 62).

Table 3.19. Descriptive information for flesher/scrapers from Phase II, Falls Creek Shelters.

FCRS	CU Catalog Number	Complete	Taxon	Element	Location of Wear*	Location of Wear*	Manuf. Attribute	Length (cm)	Width (mm) (avg)	Striae Interior Type**	Striae Exterior Type**
00582	8024b	Yes	*cf. mule deer*	Metapodial		ALL	Cut/Ground	5.28	6.69	DI, LG	DI, CH
00583	8024c	Yes	*cf. mule deer*	Rib		TP	Cut/Ground	10.59	11.98	DI	DI
00608	8029b	Yes	*cf. mule deer*	Metapodial	SI	TP	Trimmed	25.5	27.8	TS, LG	DI, LG
00611	8029f	No	*cf. mule deer*	Metapodial	SI	TP	Trimmed	8.77	18.61	Too polished	LG, DI
00672	8046a	Yes	*cf. mule deer*	Metapodial	SE	TP	Split	13.31	25.11	TS, DI	DI, CH, LG, TS
00811	8069b	Yes	*cf. mule deer*	Long bone	TP	ALL	None	7.79	10.63	NA	LG, DI
00813	8070b	No	*cf. mule deer*	Long bone	TP	ALL	Cut mark	8.46	16.13	LG, DI	DI, TS
00814	8070c	No	*cf. mule deer*	Long bone	TP	ALL	None	4.98	19.63	LG	TS, DI
00816	8070e	No	Large Mammal	Long bone	TP	ALL	None	11.35	8.62	DI, LG	DI, TS, LG
01098	8130c	No	Large Mammal	Long bone			None	4.43	18.43	DI, TS	DI, TS
01101	8130f	No	Large Mammal	Long bone		ALL	None	2.94	14.53	TS	NA
01952	8154	No	Large Mammal	Long bone	TIP	ALL	Split	4.73	8.94	NA	NA

FCRS	CU Catalog Number	Complete	Taxon	Element	Location of Wear*	Location of Wear*	Manuf. Attribute	Length (cm)	Width (mm) (avg)	Striae Interior Type**	Striae Exterior Type**
02658	8209	Yes	*cf. mule deer*	Metapodial		SE	Cut mark	5.11	12.54	NA	LG, DI
01723	8144	No	Large Mammal	Long bone		TP	Split	9.65	16.13	TS	TS
02087	8162b	No	*cf. mule deer*	Tibia	NA		Split	11.32	17.73	NA	NA
00673	8046b	No	*cf. mule deer*	Metapodial	TP	ALL	Split	12.18	22.49	DI	DI
00613	8029h	No	*cf. mule deer*	Long bone	TP		Split	13.2	26.66	LG	LG, DI
00610	8029e	No	*cf. mule deer*	Metapodial	TP	ALL	Splinter	12.84	14.12	LG	LG, DI
00943	8104	No	Large Mammal	Long bone	TP	SI	Splinter	11.96	10.59	NA	NA
00956	8111	No	*cf. mule deer*	Long bone	TP	SI	None	8.64	12.6	LG	LG, DI

*SI=side interior; SE=side exterior; TP=Tip; ALL=all over ** DI=diagonal; LG=longitudinal; TS=transverse; CH=chevron

Figure 3.44. Examples of cf. mule deer metapodia fleshers from Phase II, Falls Creek Shelters. Top and Middle Rows: FCRS 0582 CU8024b. Bottom Row left to right: FCRS 0613 CU8029h and FCS 0611 CU8029f.

These authors go into detail on how these tools were manufactured whereby the first stage in tool production was to cut away one side of the bone and without preliminary channeling. In the second stage a portion of the proximal shaft was broken away and shaping of the bone began with grinding of the bevels on both sides of the blade (Morris and Burgh 1954:62). Characteristics of fleshers and scrapers are not that they are made only from large mammal metapodia as Morris and Burgh suggest (1954:62) but that they exhibit an abundance of striae. In particular the motion of removing flesh and fat would leave, longitudinal, and diagonal striae and perhaps transverse and chevron striae as well (Table 3.19, Figures 3.44 and 3.45). Striae though are second only to the presence of polish. If their function was to remove the flesh and fatty tissue from hides, polish should be a defining characteristic of this tool category. In some cases such as with FCRS 0610 CU8029a the striae were masked because of extreme polish (Figure 3.45).

The flesher/scraper subcategory includes tools that deviate from the strict definition of Morris and Burgh (1954:62). These include fleshers/scrapers made from a tibia, a rib, and generic long bones (Figure 3.46). Among the many interesting tools that were assigned to the flesher/scraper category is artifact FCRS 0816 CU8070e, a long tool make from a large mammal long bone. It has three recent breaks and two of these are glued (Figure 3.46). It may be burned or it is so heavily stained perhaps through dirt and grime that it has the appearance of being burned. Both ends exhibit diagonal, longitudinal, and some transverse striae and heavy polish. The tool looks as if it was split in half.

Specimen FCRS 0582 CU8024b was identified by Morris and Burgh as a flaker (Fig. 91-2.b). I disagree with their classification and have grouped it with the flesher/scrapers. The tool is made from a metapodia. It is wedge-shaped with striae diagonal to the long bone and coming in from the sides to the middle forming a chevron pattern. It also exhibits significant polish (Figure 3.46). The striae patterns and the fact that this artifact is small with a wedge-shaped tip rather than pointed or blunt argue against the classification of a flaker. One of the more intriguing and better known artifacts in this subcategory is a hide-wrapped tool that Morris and Burgh described as a flaker (1954:62 and Fig. 91-2c). This artifact, FCRS 0583 CU8024c, was excavated from the general refuse in the South Shelter (Figure 3.46). I believe that it is made from cf. mule deer rib although it cannot be ruled out that it is made from antler. The curve of the piece resembles a rib bone. It measures 10.60cm in length and weighs 16.32gm. The width ranges from 6.01mm to 16.34mm and the thickness ranges from 2.05mm to 6.75mm with an average around 5mm. The object is thin compared to other flesher/scrapers in the collection. A piece of hide, probably from a mule deer, is wrapped loosely around the center portion of the tool. The hide is a little over 2cm wide and about 4cm long. It is wrapped almost two full turns around the tool. Morris and Burgh (1954:62) suggest

Figure 3.45. Broken fleshers made from large mammal metapodia from Phase II, Falls Creek Shelters. Top Row left to right: FCRS 0610 CU8029a; and FCRS 0672 CU8046ah. Second Row: photo micrographs of extreme luster and polish from flesher FCRS 0610 CU8029a. Bottom Row: Polish on interior of FCRS 0672 CU8046a and chevron striae on exterior of this same artifact.

Figure 3.46. Examples of flesher/scrapers from Phase II, Falls Creek Shelters. Top Row left to right: FCRS 0582 CU8024b and FCRS 0816 CU8070e. Bottom Row left to right: photo micrograph of FCRS 0582 CU8024b and photo micrograph of FCRS 0816 CU8070e.

that the hide or shrunken buckskin strip may have served as a hand protector. When the "flaker" was not in use the the strip was wrapped around the tool for convenience (Morris and Burgh 1954:62). More about this hide wrapping is available in the chapter on textiles and perishables (Webster and Joile this report).

Both ends exhibit use wear. One end is more blunted than the other but both are wedge shaped and not at all like the flakers previously described. The ends do not exhibit impact scars like the flakers. Striae on the ends are almost diagonal to the long axis. Other striae patterns include longitudinal and chevron. The photo micrographs in Figure 3.47 show the detail of the use wear. The blunt end shows more variability in the striae than does the more pointed end. The two ends may have served different purposes. Both ends also exhibit polish on the tips but not to any extreme. The exact function of this tool remains inconclusive. It may have been a fairly specialized tool and as it is the only one of its kind found in the assemblages from any of the Durango Basketmaker II sites thus far.

Fleshers/Scrapers - Discussion

The flesher/scraper category is somewhat of a generic one that includes tools that are mostly wedge shaped, exhibit polish, and have considerable amounts of use wear. Fleshers as described by Morris and Burgh (1954:62) are limited to the long metapodia bone of cf. mule deer as shown in Figures 3.44 and 3.45. However, they also conclude tools that may have been multifunctional. The metapodia fleshers are regularly broken perhaps because they were used for more arduous tasks such as digging and prying. I f these authors are correct and the tools were used for tasks other than removing flesh from hides, it is conceivable that while these tools were made on one of the stronger bones of the cf. mule deer, they would have broken much like a shovel handle. In fact, during consultation with the Hopi tribe, a tribal member demonstrating how such a tool from the Darkmold Site collection would have been used snapped the tool in half. This ethnographic demonstration was in full accordance with the general archaeological interpretation of these tools as hide scrapers.

In the preceding discussion on bone awls and from the work of Reynolds at the Darkmold Site (2014a), a use life sequence was proposed for bone awls made on the complete (Type A) metapodia bones. As the bone was either worn down from use or broke, or both it was reshaped and resharpened extending its use life (Figure 3.34). A similar sequence of reworking and reuse is postulated for the broken fleshers made on complete metapodia bones. Because there are so many broken fleshers, it is possible that once the flesher broke; the distal end may have been retooled into an awl such like the examples in Figure 3.48.

Figure 3.48. Flesher and awl from Phase II, Falls Creek Shelters, showing potential change in function from a flesher to an awl possibly after the flesher broke or when it was nearing the end of its use life as a flesher. From left to right: FCRS 0608 CU8029d and FCRS 0960 CU8112d.

Several other tools were assigned to the flesher/scraper category based on the use wear patterns, the morphology of the tool, and the presence of polish. This category and the category for chisels might also be combined into a single category reflecting use of bone tools primarily made from mammal long bones that could have been used not only for preparing hides but for a variety of activities that would necessitate a tool with a wedge shaped end to be used in general scraping, digging, or prying actions.

Worked Bone –Indeterminate

The final subcategory under general worked bone includes bone items that are definitely worked but the purpose is indeterminate or that were perhaps waste from the manufacture of other tools. In this category are 32 artifacts, exactly half of the subcategory. One of the indeterminate worked bones has no provenience, five are from the South Shelter, and twenty-six are from the North Shelter (Table 3.20). Of the total thirty-two artifacts, nineteen show no signs of use wear. These may be waste from the manufacture of tools or they could represent portions of tools that were broken. A sample of these is illustrated in Figure 3.49. Each of these below is portions of cf. deer metapodia. Most are from elements that were split or scored and initial reduction had begun. FCRS 0609 CU8029c is a broken cf. deer metapodia with no signs of additional work.

Another interesting group of tools in the indeterminate subcategory are the bones that exhibit some notching but not enough to be placed in the notched bone category. There are five artifacts that possess from between one and three notches. Specimen FCRS 2086 CU8162a pictured in Figure 3.50 has two notches with heavy polish on two sides; otherwise there are no additional signs of use wear. Some of the artifacts have very deep and definite notches like the two from specimen of FCRS 0812 CU8070a. A photo micrograph shows the deep cuts made in the bone (Figure 3.50). This artifact possesses no indication for use wear.

Figure 3.49. Examples of bone that were modified but do not exhibit use wear, Phase II, Falls Creek Shelters. Top Row left to right: FCRS 0941 CU8102 and FCRS 0609 CU8029c. Bottom Row left to right: FCRS 0591 CU8026i; FCRS 2632 CU8194a (top); and FCRS 2634 CU8194b (bottom).

Figure 3.50. Worked bone with notches from Phase II, Falls Creek Shelters. Left to Right: FCRS CU8162a and photo micrograph of FCRS 0812 CU8070a.

Table 3.20. Descriptive data for indeterminate worked bone tools, Phase II, Falls Creek Shelters.

FCRS	CU Catalog No	Complete	Species	Element	Portion	Location of Wear	Striation Type (interior)	Striation Type (exterior)	Comments	Provenience
0607	8029a	Yes	*cf. mule deer*	Metapodial	Distal	NA	NA	NA	Tool looks like it was not finished and never used. No striae and no polishing.	South Shelter
0875	8082	No	Large Mammal	Ind	Fragment	TP		DI, LG	Broken tip of small blunt tool. Striae deep and parallel to length of tool.	North Shelter
0959	8112c	Yes	Large Mammal	Long bone	Medial	SE/SI	NA	NA	Not an awl but has been scored and cut at proximal end. Polish along margins. Proximal end has three notches for unknown purpose.	North Shelter
01096	8130a	No	*cf. mule deer*	Metapodial	Proximal	NA	NA	NA	Does not exhibit use wear. May have been an awl at one time but broken.	North Shelter
01097	8130b	No	Large Mammal	Long bone	Medial	NA	NA	NA	Shows 2 notches, but tool is broken and may have been multifunctional. Unusual. Polished, no use wear.	North Shelter
01099	8130d	No	Large Mammal	Long bone	Medial	NA	NA	NA	One lateral edge is smooth perhaps from use, otherwise, no definite use wear, small piece.	North Shelter
01100	8130e	Ind	Large Mammal	Long bone	Medial	ALL	NA	NA	Maybe distal fragment of awl?	North Shelter
No card	8130g	No	Large Mammal	Long bone	Medial	SE	NA	RO	Definite striations along one lateral edge. Maybe fragment of an awl?	North Shelter
01301	8138	No	Large Mammal	Long bone	Medial	SE	NA	LG	Fragment of burned bone with heavy polish and extensive striae.	North Shelter
02642	8199b	Yes	Large Mammal	Long bone	Medial	NA	NA	NA	Does not appear to have been used. Blank. Pitting	Not available

FCRS	CU Catalog No	Complete	Species	Element	Portion	Location of Wear	Striation Type (interior)	Striation Type (exterior)	Comments	Provenience
02086	8162a	No	Large Mammal	Long bone	Medial	SE	NA	NA	Heavy polish in 2 notches. Unusual. Definite polish along two edges.	North Shelter
02088	8162c	No	Large Mammal	Long bone	Medial	SI/TP	TS	NA	Striae present in interior along lateral edge and on very tip, which is also broken.	North Shelter
02089	8162e	No	Avian	Long bone	NA	SE	NA	NA	Small cut on one edge. Finger-nail polish is so heavy; it is difficult to see anything else on this tiny piece of bone.	North Shelter
02090	8162f	No	Large Mammal	Long bone	NA	NA	NA	NA	Small piece of bone that looks like it has been shaped but no use wear visible.	North Shelter
0812	8070a	No	Large Mammal	Long bone	NA	SE	NA	DI	One large and one small deep notch on one edge but unlike the scalloped notches on ribs and scapula.	North Shelter
0584	8025c	No	Small Mammal	Rib or long bone	NA	NA	NA	NA	Perhaps a needle or ornament. No definite use wear.	North Shelter
0585	8025e	No	Large Mammal	Long bone	NA	NA	NA	NA	Perhaps a needle or ornament. No definite use wear.	South Shelter
0586	8025g	No	Large Mammal	Long bone	NA	ALL	TS, LG	TS, LG	Has striae and random scratches. Needle or possible ornamentation (hair pin?) of some kind	North Shelter
0587	8026a	Yes	Large Mammal	Long bone or rib	NA	ALL	DI, TS	DI	Small piece of worked bone with striae. Looks complete. Ornament or gaming piece?	North Shelter
0588	8026c	Yes	Large Mammal	Long bone or rib	NA	ALL	TS, LG	DI, LG, TS	Very thin piece of bone in elongate shape with striae on inside of one edge and on exterior surface. Has slight wavy notches with polish. Maybe ornament.	North Shelter

FCRS	CU Catalog No	Complete	Species	Element	Portion	Location of Wear	Striation Type (interior)	Striation Type (exterior)	Comments	Provenience
0590	8026g	Yes	Large Mammal	Long	NA	ALL	DI, TS	TS	Could be part of reused flesher. One end is blunt the other more spatulate-like but not as defined as a flesher.	North Shelter
0591	8026i	No	*cf. mule deer*	Metapodial	Medial	NA	NA	NA	This piece has been scored and broken and has cut marks and gnaw marks but does not appear to have been used.	North Shelter
0707	8053	No	Large Mammal	Long	Medial	SE	DI	DI	Medial fragment of a tool. Could have been part of chisel/flesher or awl.	North Shelter
02438	8174b	No	*cf. mule deer*	Metapodial	Proximal	NA	TS	NA	May have once been part of an awl but is too badly broken to determine usage.	North Shelter
02633	8193b	No	*cf. mule deer*	Metapodial	Proximal	NA	NA	NA	Bone was split and trimmed but broken such that there is no sign of use.	South Shelter
02634	8194b	No	*cf. mule deer*	Radius	Distal	NA	NA	NA	Bone was split and trimmed but broken such that there is no sign of use except maybe for the very flat end but the end is so thin to make it doubtful that it was utilized.	South Shelter
02632	8194a	No	*cf. mule deer*	Radius	Distal	NA	NA	NA	Bone does not look to have been used except for very flat end but the end is so thin to make it doubtful that it was utilized.	South Shelter
0803	8068t	No	*cf. mule deer*	Metapodial	Proximal	SE	TS	NA	This may not be a tool. It might have a little polish, some cut marks are visible but no definite signs for use.	North Shelter
0807	8068w?	No	Large Mammal	Long bone	NA	NA	NA	DI	Small splinter of a piece of working bone that has a very sharp tip but the tip does not show use wear.	North Shelter

FCRS	CU Catalog No	Complete	Species	Element	Portion	Location of Wear	Striation Type (interior)	Striation Type (exterior)	Comments	Provenience
0806	8068w	No	Large Mammal	Long bone	NA	NA	NA	NA	Long visible scoring line, manufacturing cuts and striae but no definite use wear. Polished.	North Shelter
0609	8029c	No	*cf. mule deer*	Metapodial	Distal	NA	NA	N	Does not evidence signs of being worked. Looks a little polished but no definite wear marks.	North Shelter
0941	8102	No	*cf. mule deer*	Radius	Distal	NA	NA	NA	The piece looks to have been split and perhaps intended as a flesher but there are no signs of finished trimming or use. Taphonomic damage to outside.	North Shelter

*Location of Wear SE=side exterior; TP=tip; SI=side interior; ALL=all over; NA=no use wear.

**Striae: DI=diagonal; TS =transverse; LG=longitudinal; RO=rotational.

Several pieces of bone resemble needles but do not have holes for threading. Morris and Burgh (1954: Fig. 91-b, c, and e) label three of these as problematical bone objects. Three of these are shown below in Figure 3.51. Morris and Burgh (1954:64) interpret these artifacts to have been piercing tools fashioned for a specific but unknown function. I do not believe that these artifacts were used as awls because they are too thin and delicate. It is likely that we may never know their function, but I put forth the idea that they may have had some type of ornamental purpose such as hair or garment pins. In general, these artifacts do not exhibit signs of use wear except in the case of FCRS CU8025g, which has both transverse and longitudinal striae. These striae would not be inconsistent with an object that was used to decorate or hold hair. The remainder of artifacts from the indeterminate subcategory and that demonstrate some indications of use are likely pieces of tools that were broken such that they could not be placed in any specific worked bone category. Some appear to be fragments of awls, fleshers/scrapers, or chisels.

Figure 3.51. Needle-like worked bone from Phase II, Falls Creek Shelters. From Top to Bottom: FCRS 0588 CU8025g; FCRS 0585 CU8025e; and FCRS 0584 CU8025c.

Worked Bone - discussion

Worked bone items described as scrapers, chisels, flakers, and fleshers, while not as common as awls, occur at Basketmaker II sites from Kanab, Utah to the Navajo Reservoir and everywhere in between. Most chisels, fleshers, or scrapers from the Durango Basketmaker sites are made from the metapodial or cannon bone of artiodactyla of which most or all are from cf. mule deer and a few from cf. sheep. When complete they often retain the articular head and most of the long bone. The distal end serves as a handle and the proximal end is cut away in a diagonal fashion almost the length of the tool. The tool end is rounded and beveled. In most cases the end is slightly to significantly concave from use. The ends and edges of these tools can exhibit extensive polish and striae. A more thorough study should be completed on all the artifacts that might be flakers and on the notched antlers referred to as antler wrenches. Bone is durable and relatively easy to find considering how many bones are present in an artiodactyla skeleton. With limited time and resources, bone could be fashioned into any number of tools. Tools often evolved through time. As they neared the end of one use life modifications, simple or complex, could extent their use life several times over.

3.5 Conclusion

The studies of Basketmaker II bone tools coupled with the perishable items from the dry shelters and caves of the Southwest demonstrate unequivocally that the Basketmaker II tradition possessed a wide assortment of hand produced goods such as sandals, bags, containers, feather and hide blankets, cordage, straps, aprons, sashes, baskets and so forth. Items from the Burial Crevice at the Falls Creek Shelters analyzed by Laurie Webster and Ed Joile (2011 Part J) attest to the significant number of sewed and woven items symbolic of the Basketmaker II lifestyle. The perishable artifacts from the Falls Creek Shelters provide a window into a diverse material culture assemblage absent from Talus Village, the Darkmold Site, and other Basketmaker II sites from the Durango area. Environmental conditions at these open sites prevent delicate perishables from being preserved; however, fauna bones including bone tools are well preserved at both sheltered and open sites from the Durango area. A great deal of information is now available from both site types for in-depth studies of the use and function of Basketmaker II bone artifacts.

Although pointed bone tools have been recovered from prehistoric contexts across the Southwest, the sheer numbers from the Durango Basketmaker II sites are impressive indeed. These tools are signatures of a lifestyle where source materials were common and near at hand. The large artiodactyla in the region (i.e. mule deer and bighorn sheep) supplied not only food but the raw materials for many tools. The Basketmakers of the Southwest were forager farmers. As the shift to full time agriculture enabled a larger and more concentrated population, large game animals became scarcer and the supply of readily available bone for tools was limited. Turkeys were present at some Basketmaker II sites but a paucity of turkey bones and egg shells at the Durango Basketmaker II sites might be used as empirical evidence that the turkey was of little importance to the Eastern Basketmaker population. Reynolds (2014b) suggests that during the Basketmaker II period that the local artiodactyla were being pushed to its limits perhaps through a combination of environmental conditions and overhunting. Support for this hypothesis has its basis in the lagomorphs to artiodactyls ratio at the Darkmold Site coupled with the highly fragmented nature of most bone.

As the prehistoric populations evolved into large sedentary residences large game would have become less common and lack of large game meat was supplemented by domestication of the turkey. A transition to turkey bones as sources for bone tools is apparent in the material culture inventory of the Puebloan populations. Bone awls and other pointed bone tools made from bird bones, primarily turkey, increased drastically as did beads and tube beads made from avian bones. Incorporating beans into the corn and meat diet meant a changing emphasis on containers from baskets to pottery vessels. The efficacy of pottery vessels for storage and cooking over the boil-in-bag technique undoubtedly was an impetus for the use of pottery over baskets. Third the introduction of the loom along with the widespread popularity of cotton necessitated a new bone tool kit that included items such as battens, combs, and matting tools. The near extirpation of the notched tools so prevalent at the Basketmaker II sites is direct evidence for a shift from the need to process large quantities of yucca fiber to be used in containers in particular to clay containers and items woven from other fibrous material such as cotton.

CHAPTER 4: DOCUMENTATION, ANALYSIS, AND INTERPRETATION OF ROCK PAINTINGS AND PETROGLYPHS

Sally J. Cole

4.0 Introduction

The present report synthesizes rock art research initiated in Phase I-Reevaluation of Basketmaker II from Falls Creek Rock Shelters Project (Adams et al. 2011) and summarizes methods and results of Phase II investigations conducted under the Falls Creek Rockshelters Archaeological Assessment Project. Goals of the Phase I investigation were to address questions of chronology and cultural affiliation and the social significance of the rock art over time. File searches and new survey and documentation work were conducted to build a Falls Creek Shelters-Rock Art Feature Table and Rock Art Digital Photo and Item Catalog for the project research database.

Phase II investigations were intended to continue building and updating the rock art research database, identify information gaps and problems in survey and documentation data, and finalize the digital feature table and photo and items catalog with the goal of developing a GIS Rockshelter-Rock Art Panel research database. Phase I interpretations of the Falls Creek rock art chronology and cultural and social relationships were assessed and refined in light of new information.

4.1 Phase I Synthesis

The Phase I rock art investigation is described in full in Part D and Appendix D-1 of the Reevaluation of Basketmaker II from Falls Creek Rock Shelters final report (Adams et al. 2011). The work included inventories of site records at the U.S.D.A. San Juan National Forest office and the Center for Southwest Studies at Fort Lewis College in Durango, Colorado; Mesa Verde National Park; and the Anasazi Heritage Center (AHC) in Dolores, Colorado. Well-executed maps, descriptions, drawings, and photographs collectively produced by Morris and Burgh (1954) and the 1997–1998 Basketmaker Images at Falls Creek Shelters Project (Powell, et al. 1998) provided baseline data and direction for updating site survey and documentation records and for spatial analysis and interpretations of the rock art chronology and social significance over time. The research was enhanced by an array of tree-ring, radiocarbon, and obsidian hydration dates summarized by Cole (Part D in Adams, et al. 2011) and Graham (Appendix D-1 in Adams et al. 2011).

Native American consultations were integral parts of the Phase I work and representatives from Hopi and Zuni visited the site and commented on the rock paintings and specific images and subject matter. They also viewed and commented on Basketmaker II artifacts from the shelters. The comments contributed to the U.S.D.A.-San Juan National Forest determination of cultural affiliation under NAGPRA.

Phase I fieldwork comprised re-survey and total station-mapping of four rock art panels at South Shelter (SSP1–SSP4) and eleven panels at North Shelter (NSP1–NSP11- Burial Crevice); extensive digital photography (color and selected infrared), selected drawings, and interpretive field notes. The Rock Art Feature Table outlines spatial relationships between panels and cultural Terraces I–IV, living floors, burials, and artifacts reported by Morris and Burgh (1954). A generalized rock art and pigment-color chronology was developed through stylistic analysis supported by site chronometric data and observations of weathering, superimpositions, and proximities between clusters of rock paintings and tree-ring dated archaeological features and events (Adams, et al. 2011; Dean 1975).

Stylistic analysis indicates Falls Creek rock paintings and the relatively few petroglyphs are predominantly Basketmaker II and date approximately 700-400 B.C. to A.D. 500. Subject matter including broad-shouldered anthropomorphs (some with peaked and ducklike headdresses), slender flute-player forms, mask or face images, and a variety of bird forms in multiple colors parallel those of Basketmaker II populations across the San Juan region and elsewhere on the Colorado Plateau (Charles and Cole 2006; Cole 2009; Grant 1978; Schaafsma 1980). The proposed rock art age corresponds to the generalized site chronology and is directly supported by an AMS-radiocarbon date of ~350 B.C. derived from a black, broad-shouldered human form in South Shelter Panel 4 (S. J. Cole, Part D in Adams et al. 2011; Dean 1975; C. Graham, Part D-1 in Adams et al. 2011; Marvin Rowe, personal communication 1998 and 2010).

Some of the shelters' rock art may date from the Basketmaker III period (and possibly the Pueblo I period) as indicated by tree-ring data and pottery (Dean 1975; Morris and Burg 1954), but this is not apparent. Definitive rock art stylistic data from those periods are not well understood and Basketmaker III material culture embellishments resemble those of Basketmaker II rock art and artifacts (Dean 1975; Morris and Burgh 1941, 1954; Cole 1994, 2009).

Black paintings and a few, mostly-faint red paintings showing broad-shouldered anthropomorphs, slender flute-players and other human forms, a ducklike bird, and linear-geometric forms at South and North shelters are thought to represent the earliest expression at the site. Later origins are proposed for bright red, green-blue, and yellow representations of anthropomorphs and ~70 red masks or faces at North Shelter (only). Distinctive duck-head motifs are associated with this set of images. White thick-line and thin-line paintings of flute players and a variety of other anthropomorphic forms, animals (quadrupeds and birds), and linear-geometric motifs occur in both shelters and appear to be later than the black and faint-red imagery and generally contemporaneous with some or all of the multicolored paintings. .

The advent of the later expressions may correspond with unknown events that are linked to increased wood use in North Shelter after 100-50 B.C. and continue into the era of house construction after A.D. 200 (Dean 1975). The duck-heads and mask or face representations suggest related events and activities at North Shelter were ceremonial in nature. They indicate close interaction with San Juan Basketmaker II populations to the west on Cedar Mesa where similar subject matter is well represented.

Spatial analysis of paintings in the two shelters reveals close correlations between geo-physical settings and use of colors and certain motifs. Black paintings are concentrated (only one known exception) in three confined, small spaces where they occur on low, overhanging ceilings and have a variety of directional orientations indicating use by small, individualized groups. The three small-spaces comprise recesses at the north ends of the two rock shelters and the interior of the North Shelter Burial Crevice (NS Panel 11). Indistinct paintings on the vertical walls of the crevice were well documented, and the wall stratigraphy was mapped to show rela-tionships between rock art motifs, natural accretions, and levels of the burial fill over time (C. Graham, Part D-1 in Adams et al. 2011). Three samples of animal hair in soil attached low on the south wall of the Burial Crevice were collected for radiocarbon dating and reporting during Phase II.

In contrast to the black small-space paintings, bold multicolored paintings in NS Panels 1–5 are displayed on open vertical cliffs in the widest and deepest portion of North Shelter. They are above and adjacent to the long-used Burial Crevice and a series of cultural terraces where activities including house construction took place (Dean 1975; Morris and Burgh 1954). Rows of faint red human forms and a single black figure in this location are thought to be earlier. The faint red forms underlie masks/faces and other subjects. All of the openly displayed paintings were visually accessible to shelter occupants and visitors over time. White paintings cut across the geophysical boundaries and appear with black paintings in small-spaces at both shelters and on open cliffs with multicolored images in North Shelter.

The distinct settings and corresponding colors of Falls Creek rock paintings suggest the presence of three or more sodalities over time. Proprietary use of colors and pigments among historical Pueblo socioreligious groups supports this view (Bunzel 1932; Cole 2004; Fewkes 1927; Ortiz 1968; Smith 1952; Stephen 1969; White 1932, 1962). The small space-black pigment groups were presumably earlier and more private than those making the openly visible imagery. These prominent displays were presumably public in nature and viewed by a range of the site's occupants as well as visitors. Paintings may have provided backdrops for ceremonies attended by outside groups, perhaps from nearby Talus Village and Darkmold site that were contemporaneously occupied (Charles 2011; Morris and Burgh 1954).

4.2 Phase II Scope of Work and Results

1. Conduct digital-infrared photography of all petroglyph and rock paintings panels at the North and South shelters.

Results: Digital infrared photographs by photographer David Manley are included in a collection of special photographs made by Manley at the two shelters during Phase II. Additional work comprises high resolution color details and panoramas of North Shelter paintings including those in high-panels located ~10-15 m above the shelter floor and photographed using a pole-mounted camera and remote computer (Attachment 1 folders: FCRSPhaseII_5LP1434_SpecialPhotographyNS[DManley][SJC2014 and FCRSPhase II_5LP1434_SpecialPhotographySS [Dmanley] [SJC2014])

A more limited number of digital infrared photographs made by photographer Laurel Casjens during Phase I (Anasazi Heritage Center accession 2011.7) are included in an extensive collection of selected images from Phase I and II. The works comprise uncorrected and corrected/enhanced, and color manipulated (for greater visibility) digital photographs and scanned 35mm transparencies (Attachment 2 folders: FCRSPhase II_5LP1434_SelectPhotosNS [SJCole2014] and FCRSPhaseII_5LP1434_SelectPhotosSS [SJCole2014])

Additional Phase II digital photographs comprise images of

(1) Unprovenienced green paintings on a detached sandstone rock in possession of the U.S.F.S.-San Juan National Forest, Durango, Colorado (Attachment 3 folder: FCRS_USFS-unprovenienced rock art [SJC2014])

(2) David Manley with a support crew from the San Juan National Forest and Bureau of Land Management, Durango, Colorado, during high-panels photography at North Shelter (Attachment 4 folder [on file, Anasazi Heritage Center]: FCRSPhase II_5LP1434_NS highpanels photowork [SJC2014])

2. Assist in X-Ray Fluorescent testing of petroglyphs in the North and South shelters to obtain baseline chronological data.

Results: Samples of rock from the two shelters were sent to Professor Marvin W. Rowe, Texas A & M University, Qatar, to analyze for the presence of Mn in sufficient quantities to test the relative age of petroglyphs at the shelters. Dr. Rowe reported Mn levels in the samples were too low to be useful (M. Rowe, 2013 personal communication).

3. Develop image search terminology and links to the GIS Shelter-Panel research database.

Results: Search terminology for numbered rock art panels (P) in North Shelter (NS) and South Shelter (SS) and excavation and burial features and associated chronological data described by Adams et al. (2011), Dean (1975), Fahrni (1998), Morris and Burgh (1954), and Powell et al.

(1998) was developed during Phase I. The panel-feature information appears on the Falls Creek Shelters Rock Art Feature Table.

4. Finalize GIS Rockshelter-Rock Art Panel research database.
Results: The Falls Creek Shelters Rock Art Feature Table and digitized maps showing locations of Panels 1–4 in South Shelter and Panels 1–11A in North Shelter were created during Phase I. Three problems were revealed during Phase II fieldwork. (1) High-panels photographs showed that NS Panel 11A, thought to be a white bird track-like form, is natural accretion or rock spall. The panel was subsequently eliminated from consideration and the Phase I panel documentation and Digital Rock Art Feature Table and photograph and item catalog were corrected. A site reevaluation form was submitted to the San Juan National Forest. (2) The north boundary of NS Panel 9 is incorrectly plotted; the correct location was marked on a draft revised map. (3) A recent survey to relocate and photograph rarely studied components of NS Panel 7 led to the discovery of a small, previously unknown set of white paintings that may be located beyond the north boundary of the panel as plotted. New measurements are needed.

5. Prepare final photo logs, archival contact sheets, and gold CDs for Phase I photographs.
Results: Phase II digital photographs and digitized drawings, analytical records, and reports on gold CDs and DVDs with archival contact sheets and paper documents are in Attachments 1–10. The Phase I digital photographs and archival contact sheets are archived at the Anasazi Heritage Center (AHC accession #2011.7). The Phase I–II Rock Art Digital Photograph and Item Catalog were submitted to the database manager.

6. Scan and label selected 35mm slides of rock art at the North and South shelters (from 1996–1998 and during Phase I) on file at Anasazi Heritage Center.
Results: Selected, distinct 35mm transparencies made in 1997 by the Basketmaker Images at Falls Creek Shelters Project (AHC accession #1999.29) were scanned for the digital research database. The photographs show South Shelter and North Shelter rock art and graffiti (Attachment 5 folders:
FCRS_1997-35mm_NSP1-5,7-9&11BC [SJC2014],
FCRS_1997-35mm_SSP1-SSP4 [SJC2014],
FCRS_1997-35mm_graffiti-betwNS&SS [SJC2014],
FCRS_1997-35mm_NSfeatures&graffiti [SJC2014], and
FCRS_1997-35mm_SSgraffiti-S&cen [SJCole2014])

Additional scanned-digitized documentation:
(1) 1997 4x5 photographs of North Shelter panels 3, 4, 5 (Attachment 6 folder: FCRSPhase II_5LP1434_4x5scans(2014))
(2) 1938 photograph of excavations in North Shelter showing terrace features and paintings

in NS Panel 5 (Attachment 7 folder: FCRS_PHASEII_AZRUNeg.74_1938NSexcavation [SJC2014])
(3) 1997 and 2010 drawings of North Shelter and South Shelter panel details (Attachment 8 folders:
FCRS_NSP1-11BC_1997 Rock Art Panel Drawings [SJC2014],
FCRS_Phase I (2010)_NSP3,5,8,11BCdrawings [SJC2014],
FCRS_Phase I (2010)_SSP1&P4drawings [SJC2014], and
FCRS_SSP1–4_1997 Rock Art Panel Drawings [SJC2014])

7. Produce digital copies on gold CDs with archival quality contact sheets.
Results: See Item 5 results.

8. Assist with Native American Consultation.
Results: Hand delivered two proposals to the Hopi Cultural Preservation Office, Arizona, from researchers interested in radiocarbon dating items of material culture in 2013 and assisted Julie Coleman, San Juan National Forest archaeologist and cultural team lead, for a 2013 consultation with representatives of the Ute Mountain Ute and Jicarilla Apache tribes at the San Juan Public Lands Office in Durango, Colorado.

9. Digitize the 2006 (*correct date*=2007) record for XRF-Testing of paintings at North and South shelters to determine the mineral content of pigments.
Results: Tables of XRF-pigment testing results at South Shelter Panel 4 and North Shelter Panels 5, 8, and 11BC were scanned. Digital photographic diagrams illustrate the sampled motifs (Attachment 9 folder: FCRS_2007 XRF-pigment testing results_SSP4& SP5,8,11BC [SJCole2014])

Additional digitized analysis data:
(1) Reports, photographs, and a stratigraphy map regarding biological identification and dating of three animal hair samples from the south wall of the Burial Crevice (NS Panel 11). Attachment 10: FCRS_PhaseIIC14analysis_NSBurialCrevice (NSP11)-S wall [SJC2014].

10. Prepare draft summary report and final report.
Results: The present report with Chapter 4 Appendix by Carole L. Graham

4.3 Discussion

The digital image database, Phase II analyses, and the relevance of the proposed rock art chronology and cultural and social relationships are considered here. Final comments outline future work to finalize the digital rock art photograph and item catalog and GIS Rockshelter-Rock Art Panel research database.

Digital Data: Photographs and Drawings

Obvious gaps in North Shelter rock art documentation were filled by generating high resolution digital images of paintings located near and on the overhanging ceiling ~10-15 m above floor level. As previously noted, David Manley raised a camera attached to an extension pole and focused and took pictures using a remote computer (Attachment 1) (Figure 4.1). The technique provided proper perspectives and details of images not previously recorded with that exactitude.

Digital infrared photography made by David Manley (Attachment 1) was intended to increase visibility of paintings and yielded mixed results that reinforced observations from more limited experimentation with infrared photography of multicolored paintings during Phase I (Laurel Casjens, photographer) (Attachment 2). Visibility of black and white paintings (some quite faint) was improved but visibility of other colors and forms was not noticeably better. Manley suggested color filters are probably needed for improvement.

A selection of good digital photographs from Phases I and II was compiled to facilitate analysis (Attachment 2). Some were color manipulated to improve visibility of rock art subjects. The process was highly effective in some instances as indicated by use of D-Stretch and other technologies during Phase I to increase visibility of superimposed and eroded forms (Figures 4.2–4.4).

Indistinct black and white painted images and petroglyphs in NS Panel 11-BC (Burial Crevice) are of particular interest to the rock art study because the fill stratigraphy has potential to answer questions about use of that space for making paintings as well as burying 29 individuals from approximately 1100 to 100 B.C. The crevice was investigated during Phase I (Cole, Part D in Adams et al. 2011; Graham, Appendix D-1 in Adams et al. 2011) and study continued during Phase II with collection and radiocarbon analysis of animal hair samples (Chapter 4 Appendix). Heavily eroded paintings on the west wall were covered by the fill at some point in time and others nearly so. Those on an overhead boulder appear to have been accessed by standing on the fill.

The rear of the Burial Crevice is dimly lit and the front walls range from bright and glaring to flat. The difficult lighting presents a challenge for photography and the crevice rock art was extensively photographed during Phases I and II (Attachment 2). Infrared and color modification worked well to better define the nature of paintings and petroglyphs (located just above the fill line on the south wall) (Figure 4.5).

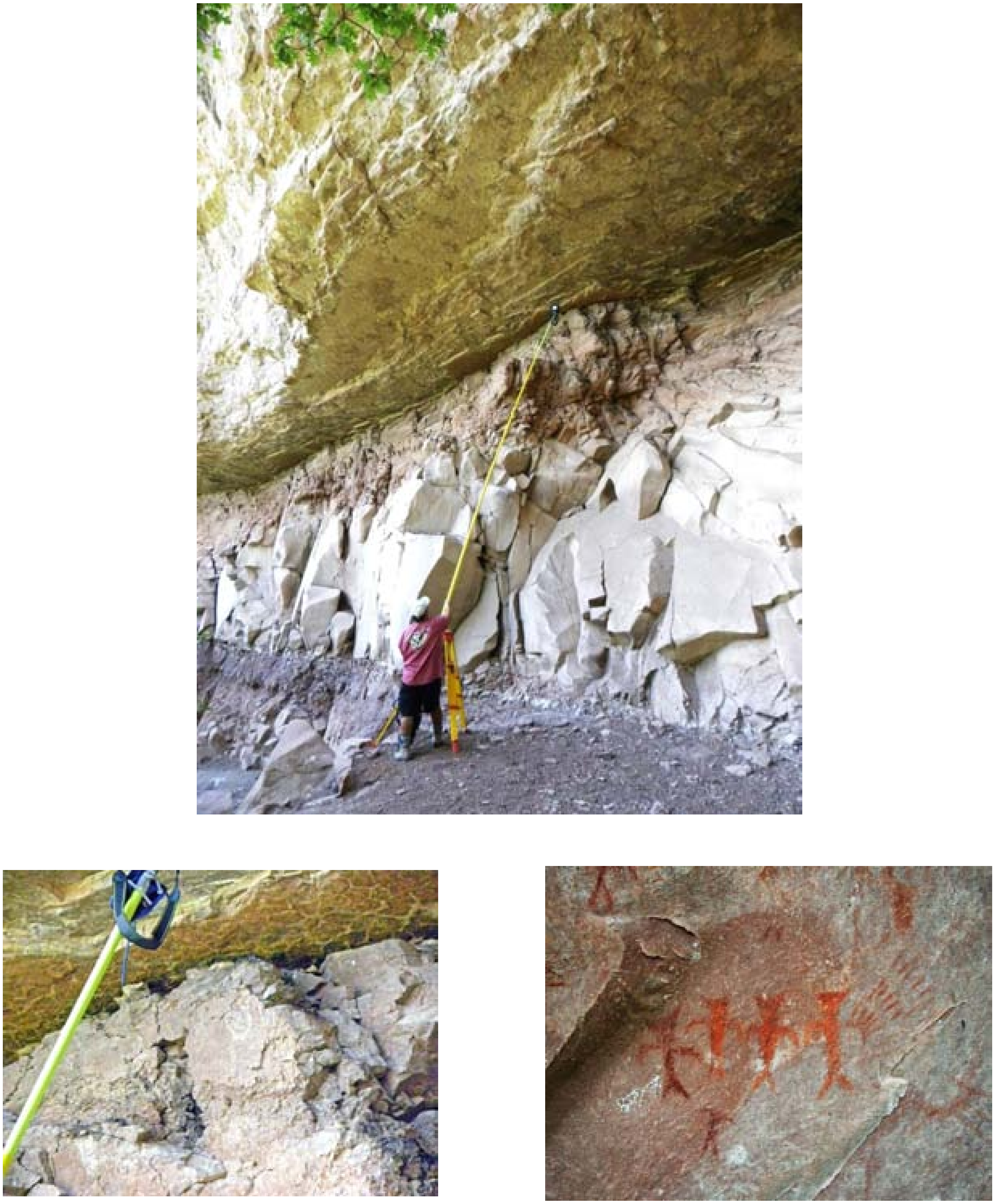


Figure 4.1. High-panels photography: (upper) David Manley making digital photographs of NS Panels 6 and 9, (lower left) pole with camera facing upper NS Panel 6, (lower right) detail of small figures (~10-20 cm long) in the upper, inaccessible part of NS Panel 5.

Figure 4.2. NS Panel 5 details of multicolored images in the widest part of the shelter: (upper left) normal white and red paintings, (upper right) color manipulated, (center) normal color, (lower) D-Stretch technology applied to better reveal underlying broad-shouldered human forms (masks or faces ~10-15 cm in length).

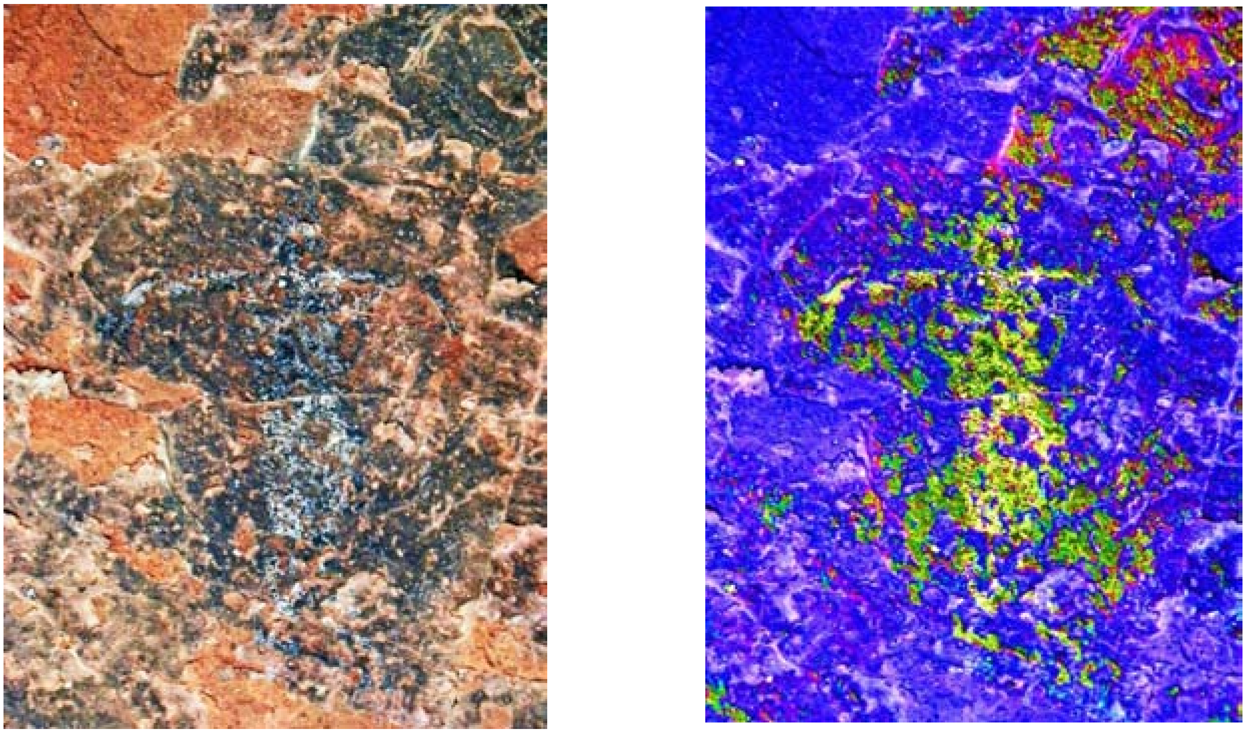


Figure 4.3. Detail of NS Panel 8 showing color manipulation of a white-over-black painted figure, Basketmaker II style: (left) normal color, (right) color manipulated.

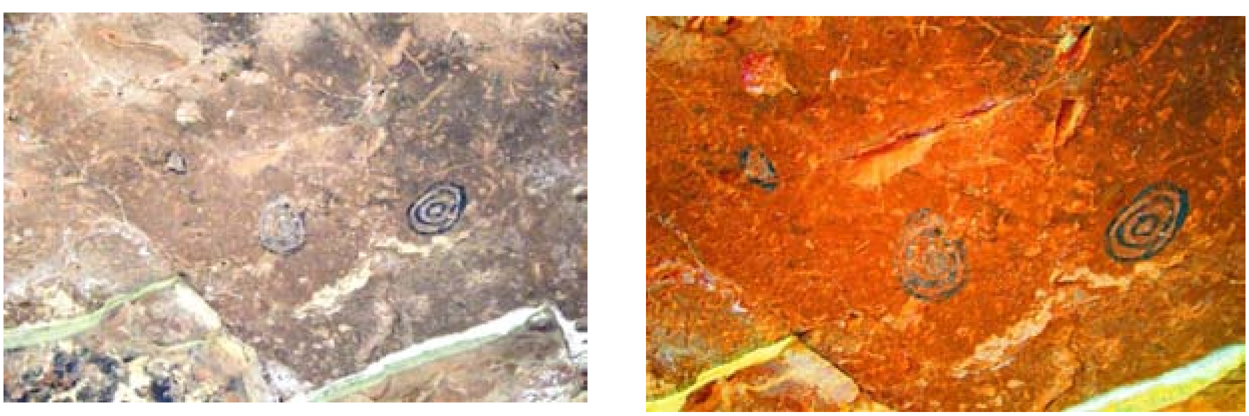


Figure 4.4. NS Panel 10: (left) normal color, (right) color manipulated

Figure 4.5. Burial Crevice images: (upper) color-manipulated black paintings of slender human forms on the south wall, (lower) abraded petroglyphs and natural surface contours just above the upper fill line (digital infrared by L. Casjens).

The research database was furthered by scans of selected 35mm and 4x5 transparencies dating from 1997 (AHC accession#1999.29) (Attachments 5–6). The film provides high quality images of rock art (some of which has proven difficult to digitally photograph) and graffiti at and near the two shelters. The graffiti photographs provide comparative data for site monitoring and condition assessments. Of particular interest are pictures of humanlike forms in NS Panel 7. These were not examined during Phase I but were relocated after the film was scanned and reviewed. Distinctive subjects in the panel include a white, possibly masked, human form that appears to be walking and accompanied by a set of small "twins"; the face of an adjacent white figure has skeletal features (Figure 4.6). Twins or pairs of similar figures are depicted elsewhere at North Shelter and are common subjects of western San Juan Basketmaker II style rock art in the Cedar Mesa area. The panel photography can be improved now that it has been located and the small size of the images and the lighting conditions are known.

Figure 4.6. Small anthropomorphic figures in NS Panel 7 (tallest figure at left ~7 cm in length).

A photographic print of the 1938 Morris and Burgh (1954) excavation in North Shelter was scanned for the image database (Figure 4.7). The image is particularly relevant for the present study of public and more privately composed rock art and the sodalities that created it.

The picture shows the proximity of colorful, openly visible paintings in NS Panel 5 to cultural features on Terrace II (Attachment 8). It demonstrates the impressive height (the panel extends several meters above the visible area) and prominence of the display of masks or faces and a variety of anthropomorphic images shown in color in Figures 4.1 and 4.2.

Figure 4.7. 1938 Falls Creek North Shelter Terrace II excavation with NS Panel 5 paintings above. Credit: AZRU 74, 571.01 BM11 NEAR DURANGO, 08-195774, 571.

Annotated drawings of Falls Creek rock art made in 1997 and selected drawings made during Phase I (AHC accession #1999.29 and 2011.7) were also scanned for the research database (Attachment 7). The 1997 illustrations were reviewed and field-checked during Phase I and a corrective notes and more detailed illustrations were made for the record. The panel drawings were extensively referenced during Phase I Native American consultations and continue to be useful for site survey and monitoring and interpretation of details that are not readily seen in photographs.

Data Analyses: XRF-Pigment Testing and AMS-Radiocarbon Dating

Portable XRF-pigment testing at South and North shelters

Analytical data from Phase II include results from 2007 X-Ray Fluorescence (XRF) testing and identification of selected mineral pigments at South Shelter and pigments and naturally occurring blue-green rock and accretions at North Shelter by Professor Marvin W. Rowe, Texas A & M University at Qatar. He used a portable, hand-held, battery-operated, non-destructive, X-ray fluorescence spectrometer to examine the metal compositions of the rock paintings. The pistol-like device was a commercial Innov-X Systems Alpha Series X-ray spectrometer capable of making measurements of some metals in situ. Secondary X-rays that re-enter the barrel of the device are detected, counted, and sorted by energy that is specific for a particular metal. The intensity (number) of X-rays emitted from a given metal in a sample is proportional to its concentration in the sample, which can be measured (M. W. Rowe in Cole, et al. 2008). The work was assisted by Sally J. Cole and a crew from the San Juan National Forest and BLM offices in Durango, Colorado. Data tables formatted by Rowe were hand populated in the field and copied and made more legible. Field notes provide identification of sampled panels, images, and colors. Copies of the results were submitted to the San Juan National Forest in 2007.

The XRF-testing tables are organized by consecutive page numbers corresponding to work at South Shelter Panel 4 (pages 1–3) and North Shelter Panel 5 (pages 4–7), Panel 8 (page 8-upper), and Panel 11-Burial Crevice (page 8-lower). The tables were scanned for the Falls Creek research database and keyed to digital photographic diagrams of sample images and colors (Attachment 9). Examples of the digitized data tables and diagrams are in Figures 4.8–4.9.

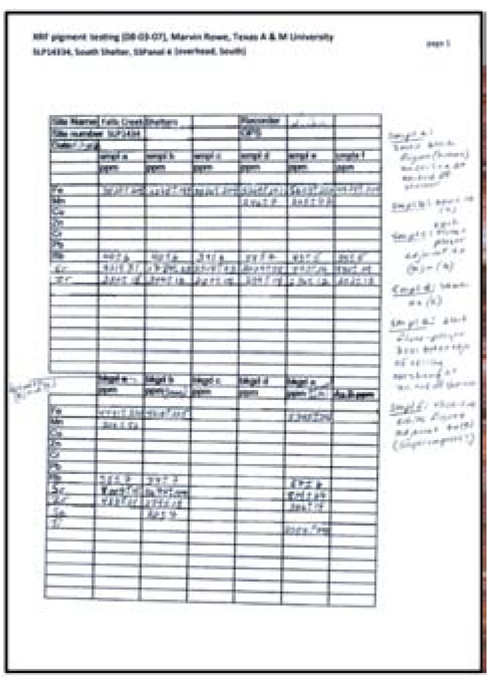
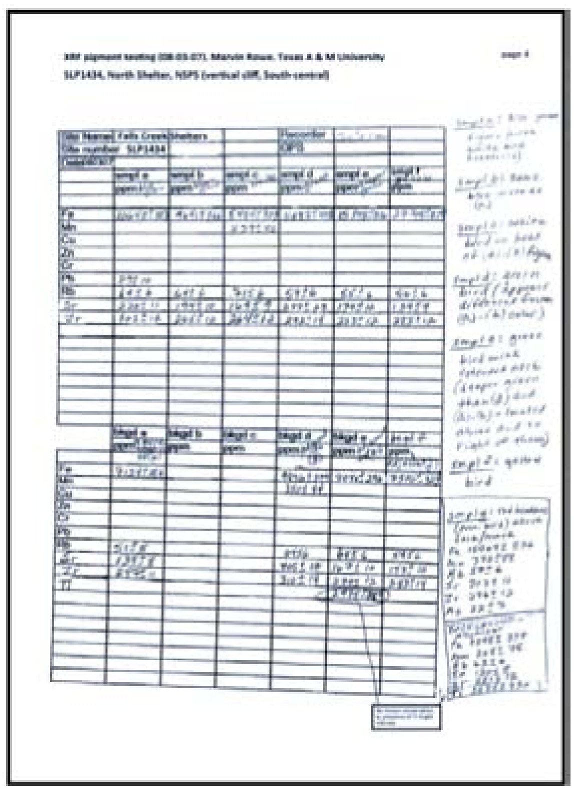


Figure 4.8. Page 1 portable XRF-pigment testing data table from 2007 and a diagram of sample elements in SS Panel 4.



XRF pigment testing (08-03-07), Marvin Rowe, Texas A & M University — page 4

SLP1434, North Shelter, NSP5 (vertical cliff, South-central)

Site Name	Falls Creek Shelters			Recorder		
Site number	SLP1434			DPS		
	smpl a ppm	smpl b ppm	smpl c ppm	smpl d ppm	smpl e ppm	smpl f ppm
Fe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mn			[illegible]			
Cu						
Zn						
Cr						
Pb	[illegible]					
Rb	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sr	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Zr	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Figure 4.9. Page 4 portable XRF-pigment testing table from 2007 and a diagram of sample elements in NS Panel 5.

Black, green-blue, red, and yellow pigments in the two shelters are predominantly iron (Fe) although high quantities of manganese (Mn) are present in some samples of black. This was expected for all black paintings, and the inconsistent presence of Mn may reflect incomplete measurements of eroded pigment (through imprecise placements of the spectrometer) vs. background rock with confirmed high levels of Fe. White pigment is assumed to be calcium carbonate that is typically found in prehistoric Pueblo mural paints (Cole et al. 2014; Smith 1952)—the portable XRF-spectrometer used at Falls Creek was not programed to detect light-weight minerals of that type.

Marvin Rowe tested green-blue rock in the North Shelter wall below paintings in NS Panel 5 and isolated green-blue rocks outside the shelter. He concluded local minerals were likely to be the source of the striking green-blue color displayed in the cluster of North Shelter Panels 1, 3, 4, and 5. The ready availability but restricted occurrence of the color supports the idea that colors and pigments were socially relevant and organized at Falls Creek.

AMS-radiocarbon dating of animal hair from the Burial Crevice (NS Panel 11)

Three small samples of animal hair were collected during Phase I from soil adhering to the south wall of the North Shelter Burial Crevice during stratigraphy mapping by Carole Graham to better define the placement, chronology, and significance of rock paintings on the crevice walls (Graham, Appendix D-1 in Adams et al. 2011). As previously discussed, the crevice is one of the small spaces with predominantly black paintings that are thought to be the earliest color-type at the site. Relationships between the paintings and use of the crevice for burials over time are of considerable interest to the present research.

The animal hair samples were biologically identified and AMS-radiocarbon dated during Phase II. Copies of the analysis reports, photographs and illustrations of the south-wall stratigraphy with samples in-situ, and microscopic photographs of the samples were compiled for the digital research database (Attachment 10). The information was studied by Carole Graham and is reported in Chapter 4 Appendix.

4.4 Final Comments

Additional work is required to finalize the GIS Rockshelter-Rock Art Research Database as reported for the Scope of Work. A few measurements need to be taken at North Shelter to determine the correct boundaries of NS Panel 7, and those of NS Panel 9 need to be verified. The existing North Shelter map needs to be corrected by: eliminating the plot for NS Panel 11A that was removed from consideration, making necessary adjustments for NS Panel 7 and 9, making minor pointer and label changes. The legends on the North and South shelter maps can be clarified by making small changes in the text.

A wrap-up, Phase III project will be helpful for finalizing the maps and reviewing and correcting labeling and other possible problems with regard to the rock art digital photo and item catalog that was still being developed through field and lab work in the weeks leading up to the Phase II report.

An important goal of a third-phase study is to create an interpretive and educational program for the Falls Creek site as encouraged by the Native American consultants. New 3-D scanning technologies and software could create a strong visual experience for the interested public and highlight the archaeological history of the shelters. The complex, multicolored and multi-situated rock art fits well with this approach.

CHAPTER 5: NON-MORTUARY TEXTILES, BASKETS, HIDES, AND OTHER WORKED PERISHABLE ARTIFACTS

Laurie D. Webster and Edward A. Jolie

5.0 Introduction

This chapter describes 141 non-funerary worked perishable artifacts from the north and south shelters at Falls Creek and constitutes a companion piece to our report on the perishable artifacts from the North Shelter burial crevice (Webster and Jolie 2011). Most of the artifacts described herein were collected in 1938 by Earl Morris and Robert Burgh (1954) during their Carnegie Institution excavations. These artifacts were in the collections of the University of Colorado (CU) Museum in Boulder until their recent transfer to the Anasazi Heritage Center in Dolores. All of these perishable artifacts were recovered from trash deposits, primarily from the South Shelter. Five additional artifacts discussed in this report are housed at the Arizona State Museum (ASM) in Tucson. They are part of a small assemblage of stone, bone, botanical, and perishable artifacts collected by local amateur archaeologist I.F. Flora at the Falls Creek Rock Shelters in 1935. The collections was purchased by Harold Gladwin for the Gila Pueblo Archaeological Foundation in Globe, Arizona, that same year, and transferred to the Arizona State Museum after the closure of that institution. Specific provenience information is lacking for these Gila Pueblo collections. Finally, an apron discussed in this chapter was recovered from a private individual as part of an ARPA investigation and turned over to the Anasazi Heritage Center for curation. That artifact was recovered from an unknown provenience in the South Shelter. Most artifacts discussed in this chapter are presumed to date to the Basketmaker II period, although some could date to the Basketmaker III/Pueblo I period. Future AMS dating will help resolve the chronology of some of these collections.

Laurie Webster analyzed the fibers, cordage, twined bags, hides, and wrapped wooden artifacts and wrote those sections of this report, and Edward Jolie analyzed the coiled baskets, straps, matting, and sandals, and authored those sections. Together, we identified 141 unique worked perishable artifacts from the north and south shelters at Falls Creek. The results of our analysis are summarized in Tables 5.1-5.12.

Morris and Burgh (1954) address some but not all of these worked perishable artifacts in their Falls Creek monograph. In addition to the fibers, ties, and cordage examined by Webster for this project, a separate sample of botanical artifacts from the Falls Creek shelters was analyzed by Volney Jones and Robert Fonner (1954) for their botanical appendix in the Falls Creek monograph. Based on the field numbers cited in their chapter and the absence of these artifacts from the current assemblage, it is believed that these items are still in Jones' botanical collections at the Museum of Anthropology at the University of Michigan in Ann Arbor. Unfortunately, recent efforts to locate these collections were unsuccessful. The Jones and Fonner data complement this report, because each describes a different set of artifacts.

5.1 Methodology

Analysis of the Cordage, Textile, Hide, and Wrapped Wood Artifacts

Webster analyzed all of the cordage, woven textiles, hides, and wrapped wood. Most of these objects were sufficiently well preserved to permit the identification of object type, raw material, and cordage or weave structure. Artifacts were visually inspected with the unaided eye or a 10x hand lens. An analysis form was used to record information about provenience, raw material, construction, weave structure, dimensions, condition, and other relevant attributes. When multiple object types were encountered within a single cataloged specimen, a numeric suffix was added to the FCRS number to provide each object with a unique number. A Sony Cybershot digital camera was used to photograph the cordage, textile, hide, and wrapped wood artifacts.

Cordage structure was recorded in a shorthand notation describing the number and direction of successive spins, twists, and plies (Emery 1966:9-11; Kent 1983:23, Fig. 6). Animal hair samples were examined with a portable light microscope at 40x or 100x magnification and compared to photomicrographs for identification (Deedrick and Koch 2004). Most plant fibers and artifacts were identified by gross appearance rather than microscopically. Wood identifications are taken from Karen Adams' analyses (see Adams, this volume).

Analysis of Twined, Coiled, and Plaited Basketry Artifacts

Jolie analyzed all of the basketry artifacts, which here connotes artifacts manufactured using textile techniques and employing rigid to semi-rigid elements. The types of artifacts represented include coiled baskets, twined mats, plaited straps, and plaited sandals. Technological analyses and terminology employed followed Adovasio (2010; see also Webster and Jolie 2011) and Emery (1966), and were conducted via unaided eye and with a 10x hand lens. Metric measurements were taken using Mitutoyo digimatic point calipers and a tailor's measuring tape. Raw material identifications were made by Jolie based on diagnostic botanical features and prior experience. Documentary photos were taken, including overall shots, multiple views, and close-ups, with a Nikon D200 digital SLR camera.

5.3 Raw Materials and Unworked Perishable Artifacts

Six well-preserved bundles of raw materials or unworked perishable artifacts were identified in the assemblage, all from general refuse in the South Shelter (Table 5.1). Karen Adams (this volume) identified the plant materials, and wildlife biologist Chuck LaRue identified the feather. None of these artifacts are specifically discussed in the Falls Creek monograph (Morris and Burgh 1954).

Table 5.1. Raw Materials and Unworked Perishable Artifacts

Raw Material	FCRS No.	Institution Catalog No.	Carnegie Institution Field No.	Provenience	Dimensions	Description/comments
Human hair	FCRS-02707	CU 8247	38-2694	South Shelter, general refuse	8.0 cm long, 1.0 cm wide where wrapped	Clump of dark brown human hair bound crosswise with modern string.
Juniper bark	FCRS-02713.2	CU 8250	38-2699	South Shelter, general refuse	9.0 cm long, 4.0 cm wide, 1.5 cm thick	Small bundle of juniper bark tied in an overhand knot. See also K. Adams, this volume.
Juniper bark	FCRS-02714	CU 8251	38-2700	South Shelter, general refuse	Folded position: 25.5 cm long, 26.0 cm wide, 8.0 cm thick. Straightened out: 110 cm long, 9.0-14.0 cm width (ave. 13 cm wide). Cordage: 3.5 mm in diameter	Large bundle of golden-brown juniper bark, bound crosswise at one end with 2s-Z juniper-bark cordage in a square knot with a self-loop. Other end of bundle is constricted as if formerly bound, but no tie present.
Feather	FCRS-02720	CU 8257	38-2718	South Shelter, general refuse	13.0 long, 2.5 cm wide	Medium-size brown feather with a white tip. Probably the wing feather of a Mallard or Pintail duck (identified by Chuck LaRue).
Bulrush stems	FCRS-02727	CU 8262	38-2730	South Shelter, general refuse	14.5 cm long, 1.0 cm wide, 1.0 cm thick; 5.0 mm ave leaf width	Z-twisted bundle of bulrush stems and several detached pieces.
Rodent tail	FCRS-02704	CU 8244	38-2691	South Shelter, general refuse	5.3 cm long, 0.2 cm wide without hair, 0.5 cm wide with hair	Narrow tail of a small animal, probably a rodent, with remains of tan hair at one end.

Human Hair

FCRS-02707 is a clump of dark brown human hair bound with modern commercial string. It is unknown whether the hair was originally bound with a tie. Presumably, the clump was found loose in the refuse.

Juniper Bark Bundles

Two bundles of juniper bark were recovered from the South Shelter refuse. FCRS-02713.2 is a small bundle of juniper bark loosely tied in an overhand knot. FCRS-02714 is a long, narrow bundle of juniper bark strips twisted together S-wise and folded into a squared hank (Figure 5.1). One end of the bundle is wrapped crosswise with 2s-Z juniper bark cordage tied in a square knot with a half loop (Figure 5.2). The other end of the bundle is unbound, but based on its constricted form, was probably originally wrapped as well.

Figure 5.1. FCRS-02714, bundle of juniper bark. Note tie at upper right.

Figure 5.2. FCRS-02714, close-up of 2s-Z juniper-bark tie.

Twisted Bulrush Bundle

FCRS-02727 is a narrow bundle of Z-twisted bulrush (Schoenoplectus sp.) stems (Figure 5.3). Jones and Fonner (1954:104-105) discuss several examples of bulrush stems in their sample, all from general refuse in the South Shelter, including three examples of bulrush stems twisted together in a counterclockwise (Z) direction, similar to FCRS-02727. They also discuss the general growing conditions, processing, and uses of bulrush stems.

Figure 5.3. FCRS-02727, Z-twisted bundle of bulrush stems.

Duck Feather

FCRS-02720 is a medium-sized brown feather with a thin white band at the tip. It was identified by Chuck LaRue as a right secondary wing feather of a Mallard, or possibly a pintail, duck.

Animal Tail

A long, narrow tail (5.3 cm long and 0.2 cm wide) of a small animal, probably a rodent, was recovered from refuse (FCRS-02704). One end of the tail is covered with straight tan hair.

5.4 Cordage Artifacts

Cordage was the most common perishable artifact recovered by Morris and Burgh during their excavations of the shelters. Eighteen cataloged specimens with cordage were analyzed for the present report: two from the North Shelter (Terrace 1, rat nest level), 15 from South Shelter refuse, and one from an unspecified location. Several cordage specimens were found to contain multiple types of cordage, resulting in the identification of 96 unique cordage artifacts (Table 5.2). Three cordage specimens (FCRS-00534, -02673, and -02714) are ties for composite artifacts (a bark bundle and two wrapped sticks). The most common raw material is yucca (n=89, including 13 yucca cordage specimens wrapped with hide strips, one wrapped with turkey quills, and one wrapped with bird skins), followed by the bast fibers of juniper bark (n=2) and probably apocynum (n=2), and one example each of human hair, animal hide, and bulrush, the latter worked into a 3-strand braid.

Table 5.2. Cordage by Raw Material Type.

Raw Material	FCRS No.	Institution Catalog No.	Carnegie Institution Field No.	Provenience	Structure	Cordage diameter	Knot?	Description/comments
Animal hide	FCRS-02675.2	CU 8219	38-2654	South Shelter, miscellaneous	2z-S	2.0 mm	Square knot	Two narrow hide strips twisted S-wise around each other to make a 2z-S cord. No evidence of yucca cordage inside. At one end, a short, brown (yucca? apocynum?) 2s-Z cord is tied around the hide cord with an incomplete square knot.
Apocynum (Indian hemp) or Juniper Bark	FCRS-02697.3	CU 8237	38-2679	South Shelter, general refuse	2z-S	2.0 mm	Overhand	Fine strand of reddish-brown 2z-S cordage, probably apocynum, tied in an overhand knot at one end.
Apocynum (Indian hemp)	FCRS-02699	CU 8239	38-2682	South Shelter, general refuse	2(2z-S)Z	4.0 mm	no	Long, thick strand of silky, reddish-brown 2(2z-S)Z cordage, probably apocynum. Bits of bark adhere to the fibers.
Bulrush	FCRS-02701	CU 8241	38-2685	South Shelter, general refuse	3-strand braid	5.0 mm	no	Short fragment of a 3-strand braid of bulrush stems.
Human hair	FCRS-02679	CU 8222	38-2658	South Shelter, miscellaneous	2(2z-S)Z	2.5 mm	Overhand	Bundle of 2(2z-S)Z brown-black human-hair cordage composed of four folded strands self-tied in an overhand knot.
Juniper bark	FCRS-02702	CU 8242	38-2687	South Shelter, general refuse	Z-twist	7-13 mm	Granny	Rope of two coarse Z-twisted bundles of juniper bark tied together with a granny knot .
Juniper bark	FCRS-02714	CU 8251	38-2700	South Shelter, general refuse	2s-Z	3.5 mm	Square	Strand of 2s-Z juniper bark cordage tied around bundle of juniper-bark strips with a square knot.
Yucca	FCRS-00534	CU 8011	38-003	North Shelter, terrace 1, rat nest level	2s-Z	1.5 mm	Overhand	Strand of 2s-Z yucca cordage wrapped twice around a narrow *Populus* or *Salix* stick and tied with an overhand knot. See Table 5.5 for additional information.

Raw Material	FCRS No.	Institution Catalog No.	Carnegie Institution Field No.	Provenience	Structure	Cordage diameter	Knot?	Description/comments
Yucca	FCRS-00663	CU 8041	38-0021	North Shelter, terrace 1, rat nest level	2(2z-S)Z	4.5 mm	Square, overhand	Two fragments of coarsely processed yucca cordage, each tied in a square knot. One end of one strand is tied in an overhand knot.
Yucca	FCRS-02673	CU 8218c	38-2649	South Shelter, miscellaneous	2s-Z	3.0-4.0 mm	Square	Two strands of coarse 2s-Z yucca cordage wrapped crosswise around a thick *Quercus* stem and tied with square knots. See Table 5.5 and K. Adams, this volume for additional information.
Yucca	FCRS-02675.4	CU 8219	38-2654	South Shelter, miscellaneous	2s-Z	1.0 mm	no	Short, folded strand of 2s-Z yucca cordage.
Yucca	FCRS-02680.1 and .2	CU 8223	38-2659	South Shelter, miscellaneous	2s-Z	.1 = 1.0 mm; .2 = 2.0-2.5 mm	no	Ten fragments of 2s-Z yucca cordage: five extremely fine (.1) and five relatively coarse (.2). One coarse fragment is coiled 360 degrees as if formerly wrapped around another object. Another coarse fragment has an undulating form as if formerly interlaced with another object. A third coarse fragment is coiled.
Yucca	FCRS-02695.1	CU 8235	38-2676	South Shelter, general refuse	2s-Z	1.0-1.5 mm	no	Fifteen fragments of fine 2s-Z yucca cordage. Moderately processed fiber.
Yucca	FCRS-02695.2	CU 8235	38-2676	South Shelter, general refuse	2z-S	2.0 mm	no	Fragment of coarse, loosely twisted 2z-S yucca cordage.
Yucca	FCRS-02696.1-.3	CU 8236	38-2687	South Shelter, general refuse	2s-Z	.1 = 2.0 mm; .2 = 3.5 mm; .3 = 1.8 mm	no	Seventeen fragments of 2s-Z yucca cordage, ranging in color from medium brown (.1), to dark reddish brown (.2), to off-white (.3). The off-white fragment is highly processed with a cottony texture.
Yucca	FCRS-02697.1	CU 8237	38-2679	South Shelter, general refuse	2s-Z	2.0-3.5 mm	no	Seventeen fragments of 2s-Z yucca cordage, ranging from fine to coarse. In one strand, one ply is 2z-S and the other is 2s-Z.

Raw Material	FCRS No.	Institution Catalog No.	Carnegie Institution Field No.	Provenience	Structure	Cordage diameter	Knot?	Description/comments
Yucca	FCRS-02697.2	CU 8237	38-2679	South Shelter, general refuse	2z-S	3.5 mm	no	Strand of loosely plied 2z-S yucca cordage.
Yucca	FCRS-02698	CU 8238	38-2681	South Shelter, general refuse	2s-Z	1.1 mm	no	Long strand of finely processed 2s-Z yucca cordage with a fluffy texture.
Yucca	FCRS-02733.1 and .2	CU 8267	38-2739	South Shelter, refuse against cliff, south end of cave	2s-Z	.1 = 4.0 mm; .2 = 1.8 mm	no	Four yucca cordage fragments: one coarse (.1) and three fine (.2).
Yucca	FCRS-03713	ASM GP 47361	n/a	unknown	2s-Z	1.8mm	no	Two long undulating fragments of 2s-Z yucca cordage loosely twisted S-wise around each other.
Yucca, tied to hide strip	FCRS-02700	CU 8240	38-2684	South Shelter, general refuse	2s-Z	2.0 mm	Granny knot, square knot	Strand of 2s-Z yucca cordage tied to a narrow strip of hide with a granny knot. A second strand of 2s-Z yucca cordage is also enclosed by the knot. The first strand of 2s-Z yucca cordage is tied to a third strand of 2s-Z cordage with a square knot. Hide unidentified.
Yucca, wrapped (Z-wise with hide strip)	FCRS-02675.1	CU 8219	38-2654	South Shelter, miscellaneous	2s-Z	1.0 mm cordage only, 4.0 mm where hide-wrapped	no	Long strand of 2s-Z yucca wrapped Z-wise with a narrow hide strip. Deteriorated.

Raw Material	FCRS No.	Institution Catalog No.	Carnegie Institution Field No.	Provenience	Structure	Cordage diameter	Knot?	Description/comments
Yucca, wrapped (S-wise with hide strips)	FCRS-02694.1-.3	CU 8234	38-2674	South Shelter, general refuse	2z-S and 2(2s-Z)S	.1 = 3.5-4.0 mm cordage only, 5-6 mm where hide-wrapped; .2 = 1.5-2.0 mm cordage only, 3.0-.35 mm where hide-wrapped; .3 = 4.0 mm cordage only, 5-6 mm where wrapped	no	Eight fragments of 2z-S yucca cordage wrapped S-wise with hide strips. Hide is relatively thick with traces of short white hairs. In three fragments (.1), the yucca cordage is thick and loosely plied. In two fragments (.2), the cordage is extremely fine. In three fragments (.3), the cordage structure is 2(2z-S)Z.
Yucca, wrapped (S-wise with hide strips)	FCRS-02703.1 and .2	CU 8243	38-2690	South Shelter, general refuse	2z-S	.1 = 2.5 mm cordage only, 7 mm where hide-wrapped; .2 = 1.2 mm cordage only, 3 mm where wrapped	no	.1 = loosely plied strand of 2z-S yucca cordage wrapped S-wise with a tanned hide strip. Hide unidentified, but microscopic fiber analysis suggests not deer or rabbit. Hair mostly removed, but some short light tan hairs remain; .2 = strand of 2z-S cordage wrapped S-wise with two narrow hide strips. Hide unidentified. No hair remaining.

Raw Material	FCRS No.	Institution Catalog No.	Carnegie Institution Field No.	Provenience	Structure	Cordage diameter	Knot?	Description/comments
Yucca, wrapped (S-wise with hide strip)	FCRS-02734.1	CU 8268	38-2740	South Shelter, refuse against cliff, south end of cave	2z-S, 2s-Z	1.9 mm cordage only, 5.0 where wrapped	Granny knot, overhand knot	Strand of 2z-S yucca cordage wrapped S-wise with a hide strip, tied to a paired strand of non-wrapped 2s-Z yucca cordage with a granny knot. On one side of the knot, one of the non-wrapped yucca strands is loosely tied in three pendant overhand knots. The other non-wrapped yucca strand is tied around a strand of hide-wrapped 2z-S yucca cordage in an overhand knot. Areas of gray fur appear to be rabbit. The fur trim from a twined blanket?
Yucca, wrapped (Z-wise with hide strip)	FCRS-02734.2	CU 8268	38-2740	South Shelter, refuse against cliff, south end of cave	2z-Z	2.0 mm cordage only; 3.0 mm where wrapped	no	Strand of 2z-Z yucca cordage wrapped Z-wise with a hide strip. Fur missing. Probably not part of same object as 2734.1.
Yucca, wrapped (S-wise with turkey quills)	FCRS-02680.3	CU 8223	38-2659	South Shelter, miscellaneous	2s-Z	2.5 mm cordage only; 2.7 mm where wrapped	no	Strand of 2s-Z yucca cordage with remains of S-wrapped turkey quills at one end.
Yucca, wrapped (S-wise with bird skin strips)	FCRS-02703.3	CU 8243	38-2690	South Shelter, general refuse	2z-S	3-4 mm cordage only, 7 mm where wrapped	no	Loosely plied 2z-S yucca cordage wrapped S-wise with feathers, probably bird skins rather than quills, not turkey. An associated fragment consists of matted feathers and exposed 2z-S yucca cordage twisted around the mass. Remains of a twined feather blanket? No twining structure observed.

Animal Hide Cordage

The assemblage contains one example of animal hide cordage lacking a yucca-cordage foundation (FCRS-02675.2). This short, curved strand consists of two hide strips twisted together S-wise (Figure 5.4). The hide lacks hair, but its thickness suggests deer hide. A short, frayed, brown 2s-Z cord, probably yucca or apocynum, is tied around the strand at one end with an incomplete square knot.

Figure 5.4. FCRS-02675.2, 2z-S cord of two hide strips, wrapped at one end with a 2s-Z plant fiber cord tied in a square knot.

This specimen calls into question Morris and Burgh's (1954:66) statement that "no examples of fur cloth woven of hide strips without a foundation of cordage" were found at the shelters. It is unknown whether FCRS-02675.2 was originally part of a fur blanket, but it is the only example of hide cordage without a yucca foundation reported for the South Shelter. Three other examples, two of deer hide and one of rabbit fur strips, were identified from the Burial Crevice in the North Shelter (Webster and Jolie 2011:J-11). Although never as common as hide strips wrapped around a yucca cordage core, cordage fabricated solely from hide strips is reported from several other Basketmaker II sites in the Southwest (e.g., Kidder and Guernsey 1921:74-75).

Bast Fiber (Apocynum and Juniper Bark) Cordage

Two examples of fine reddish-brown cordage appear to be spun from bast (stem) fibers and are probably apocynum (Apocynum cannibinum) or possibly juniper bark. FCRS-02699 is a long strand of reddish-brown 2(2z-S) Z cordage with bits of bark adhering (Figure 5.5). FCRS-02697.3 is a fine, reddish brown strand of 2z-S cordage tied at one end with an overhand knot. As noted, the cordage fragment tied around hide cordage FCRS-0675.2 may be another example.

Figure 5.5. FCRS-02699, silky reddish-brown 2(2z-S)Z bast-fiber cordage, probably apocynum.

Apocynum fiber has a soft, silky appearance and ranges in color from white to reddish-brown. Finely processed juniper bark, another bast fiber, is also naturally reddish-brown. The silky texture and ribbon-like appearance of these bast fibers visually distinguishes them from the far more common leaf fiber of yucca. In addition to the specimens in the present assemblage, small quantities of apocynum or juniper-bark cordage were identified in the Burial Crevice assemblage from the North Shelter (Webster and Jolie 2011:J-11 and J-12). Jones and Fonner (1954:104) discuss an example of unspun bast fiber from general refuse in the South Shelter, but do not identify the plant source.

The present assemblage also contains two definite examples of juniper-bark cordage. FCRS-02702 consists of two coarse pieces of Z-twisted juniper bark tied together with a granny knot to make a thick ropelike strand (Figure 5.6). FCRS-02714 is 2s-Z juniper bark cordage used to bind the previously discussed juniper bark bundle (Figure 5.2). Jones and Fonner (1954:105) discuss two additional examples of twisted juniper bark, both from general refuse in the South Shelter.

Figure 5.6. FCRS-02702, Z-twisted juniper-bark rope.

Bulrush Three-strand Braid

FCRS-02701 is a short, flat three-strand braid of flattened bulrush stems, recovered from South Shelter refuse (Figure 5.7). The braid is 5.5 cm long and 0.5 cm wide and worked in simple 1/1 oblique interlacing with 3.0 mm-wide stems. This is the only narrow 1/1 braid from the South Shelter, but Jolie (this chapter) discusses a bulrush twill-plaited tumpband worked in 1/1 simple plaiting (oblique interlacing), also from the South Shelter. Excavations in the Burial Crevice of the North Shelter yielded two 1/1 braided bulrush stems and several flat 2/2 braided fiber bands (Webster and Jolie 2011:J19-J22).

Figure 5.7. FCRS-02701, 3-strand bulrush braid.

Human Hair Cordage

A bundle of evenly spun 2(2z-S) Z human hair cordage was recovered from an unidentified provenience in the South Shelter ((FCRS-02679; Figure 5.8). The bundle is 13.5 cm long, 3.0 cm wide and 1.5 cm thick, and consists of four parallel cordage strands, 2.5 mm in diameter, which undulate back and forth and are tied together in an overhand knot.

Figure 5.8. FCRS-02679, bundle of human-hair cordage self-tied in an overhand knot.

Morris and Burgh (1954:65) discuss several examples of human-hair cordage from the Falls Creek Rock Shelters, but not this particular example. Use of this fiber was especially prevalent in the Burial Crevice of the North Shelter, which yielded more than 20 examples of human-hair cordage used as burial bindings, a strap, bead cords, bound bundles, and miscellaneous cordage (Webster and Jolie 2011:J-7 through J-10).

Yucca Cordage

Yucca fiber constitutes the largest proportion of cordage artifacts in the present assemblage, just as it did in the assemblage from the North Shelter Burial Crevice. Of the 96 unique cordage artifacts in the assemblage, nearly 93 percent (n=89) are exclusively or partially composed of yucca fiber. The cordage structures of these yucca cordage artifacts are 2s-Z (82%), 2z-S (11%), 2(2z-S) Z (6%), and 2z-Z (1%). Ninety-four percent of the non-wrapped yucca cordage (i.e., cordage not wrapped with fur or feather strips) has the 2s-Z structure. This reflects the overwhelming preference for the 2s-Z structure in the manufacture of yucca cordage during the Basketmaker II period in the Four Corners region of the Northern Southwest. Jones and Fonner (1954:98-100) provide an in-depth discussion of the varieties of yucca found in the Durango area and various methods for processing the fiber (see also Osborne 1965).

Two yucca cordage artifacts, FCRS-00534 and FCRS-02673, are parts of composite objects. Both consist of 2s-Z yucca cordage tied around sticks, the first tied with an overhand knot, the other with a square knot. These artifacts are more fully described and illustrated in the section on wrapped wooden artifacts.

The yucca cordage in the assemblage varies from very fine (1.0 mm) to coarse (4.5 mm) in diameter (Figure 5.9). One particularly fine strand with a soft, fluffy texture is characteristic of Osborne's (1965:45) Type C yucca cordage and resembles the kind of yarn used as the weft in twined bags and cordage sandals and the fringe in string aprons (FCRS-02698, Figure 5.10). This strand does not appear to have been unraveled from a woven textile, however. Most yucca cordage in the assemblage is tan, but colors range from off-white to medium brown to dark reddish brown. None appears to be dyed or colored with pigments.

In addition to the present assemblage, Jones and Fonner (1954:100-104) analyzed 56 specimens of yucca cordage from the north and south shelters. Like the current assemblage, the vast majority of yucca cordage in their sample has a 2s-Z structure (Jones and Fonner 1954: Table 10), which they describe as two plies with a counter-clockwise twist. Also like the present assemblage, Jones and Fonner found no dyed or pigmented yucca cordage.

Figure 5.9. FCRS-02733, coarse (left) and fine (right) fragments of 2s-Z yucca cordage.

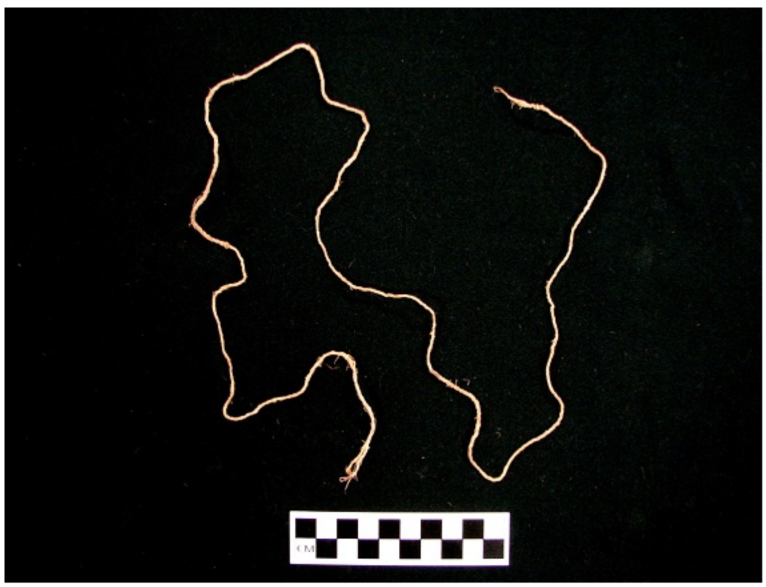


Figure 5.10. FCRS-02698, finely processed 2s-Z yucca cordage.

Hide-, bird-skin, and feather-wrapped yucca cordage.

Sixteen yucca cordage examples are wrapped with hide strips, bird skins, or turkey quills. Of the 14 examples wrapped with hide, eight are wrapped around 2z-S cordage, three around 2(2z-S) Z cordage, two around 2s-Z cordage, and one around 2z-Z cordage. Although Morris and Burgh (1954:66) state that all of the wrapped cordage from the Falls Creek Rock Shelters had their hide or quills twisted S-wise around final S-twist cordage, this is erroneous. Twelve (86%) specimens are wrapped S-wise with hide strips (Figure 5.11), and two (14%) are wrapped Z-wise (Figure 5.12), and both of the latter cords have a final Z-twist. Notably, eight of the 12 cordage fragments with S-wise wrapping are from the same cataloged specimen (FCRS-02694, Figure

5.11) and could be pieces of the same original strand or object. Interestingly, the opposite pattern was observed in the hide-wrapped cordage from the Burial Crevice in the North Shelter, where 73 percent of the hide cordage was wrapped Z-wise, and only 27 percent of the hide cordage was wrapped S-wise (Webster and Jolie 2011:J-15).

Figure 5.11. FCRS-02694, hide strips wrapped S-wise around 2z-S yucca cordage.

Figure 5.12. FCRS-02675.1, hide strip wrapped z-wise around remnants of 2s-Z yucca cordage.

Two hide-wrapped cordage fragments in the present assemblage appear to be wrapped with rabbit skin, one is probably deer, and the rest are unidentified. The first two hide samples (FCRS-02694 and FCRS-02734.1) were examined under magnification and found to have a ladder medulla characteristic of rabbit hair. FCRS-02734.1 is a long strand of fur-wrapped 2z-S yucca cordage tied to two strands of non-wrapped 2s-Z yucca cordage with granny knots (Figure 5.13). Based on other Basketmaker II twined blankets with ornamental trim (e.g., Webster and Jolie 2011:J-25; Kidder and Guernsey 1921:75; Guernsey and Kidder 1921:111; Lockett and Hargrave 1953:3; Guernsey 1931:38), this could be the remains of fur trim from a twined blanket, together with the non-wrapped cordage used to tie it to the selvage.

Figure 5.13. FCRS-02734.1, probable rabbit fur strip wrapped S-wise around 2z-S yucca cordage tied to two strands of non-wrapped 2s-Z yucca cordage with granny knots. Possible ornamental fur trim from a twined blanket.

The remaining two examples are wrapped with bird skins or feathers. FCRS-02703.3, recovered from the South Shelter, consists of two fragments, one a loosely plied strand of coarse 2z-S yucca cordage wrapped S-wise with probable bird skins, the other a mass of feather pile loosely wrapped S-wise with a coarse 2z-S yucca cord (Figure 5.14). Although no twining structure was observed, this could be the remains of a twined blanket with bird-skin-wrapped warps, similar to the two examples identified from the North Shelter Burial Crevice (Webster and Jolie 2011:J-23 through J-26). Although previous researchers have argued that the major role of feather-wrapped cords during the Basketmaker II period was to ornament twined fur blankets (Guernsey 1930:38; Guernsey and Kidder 1921:75, 111; Kidder and Guernsey 1919:174; 1921:75; Lockett and Hargrave 1953:3; Morris and Burgh 1954:66), our re-analysis of the Burial Crevice assemblage from Falls Creek and a recent unpublished survey of Basketmaker II twined blankets from southeastern Utah has documented the wide use of twined blankets with a wild bird feather pile during this period. The bird skins in the Falls Creek examples are unidentified, but an unpublished analysis by wildlife biologist Chuck LaRue of some of the Basketmaker II blankets from southeastern Utah documents the presence of dark-eyed junco, sparrow, mourning dove, American robin, Western bluebird, red tail hawk, pinyon jay, and other bird skins in these blankets.

Figure 5.14. FCRS-02703.3, feather-wrapped 2z-S yucca cordage (left) and matted feather pile (right).

Finally, FCRS-02680.3 is a strand of 2s-Z yucca cordage with the remains of S-wrapped turkey quills at one end. It is unknown whether the quill is from a wild or domesticated bird.

Knots

Several of the cordage specimens are knotted. Of the 14 knot examples in the cordage assemblage, five are square knots, five are overhand knots, and four are granny knots.

5.5 Twined Bags

Two yucca twined bags, one excavated by Morris and Burgh from the South Shelter during their Carnegie Institution excavations, the other recovered by I.F. Flora from an undocumented location in the shelters, were analyzed for the present project (Table 5.3)

Morris and Burgh (1954:67) recovered three fragments, believed to be parts of the same twined bag, from general refuse in the South Shelter. FCRS-02724 is distorted, folded, and layered, and FCRS-02725 contains two better-preserved fragments, one with a probable intact warp selvage (Figure 5.15). All appear to be fragments of the bag wall, and none show evidence of decoration. Two warp or weft strands twist around each other on the surface of one fragment (Figure 5.15, left). The base and start of the bag are missing. The fragments are woven in 2-strand Z-twist twining with a 2s-Z warp and weft. Warp and weft counts are 4-5 warps per cm and 12-13 wefts per cm. In the fragment with the probable intact warp selvage, some warp ends appear to be folded 180 degrees, others obliquely, over the upper weft row and inserted back into adjacent or nearby warp channels for a short distance (Figure 5.16).

Table 5.3. Twined Bags

FCRS No.	Former Institution Catalog No.	Carnegie Institution Field No.	Provenience	Raw material	Warp count	Weft count	Dimensions	Description/comments
FCRS-02724	CU 8260a	38-2724a	South Shelter, general refuse	Yucca fiber	4/cm	12/cm	6.5 cm long, 3.0 cm wide (curled up), 4-5 cm (flattened)	Folded, layered, and distorted fragment of a twined bag. Part of the bag wall. No evidence of decoration. Probably part of same bag as FCRS-02725.
FCRS-02725	CU 8260b	38-2724b	South Shelter, general refuse	Yucca fiber	4-5/cm	13/cm	5.1 cm long and 4.9 cm wide; 3.5 cm long, 4.0 cm wide	Two twined bag fragments, one with an intact warp selvage. Fragments of the bag wall. No evidence of decoration. Probably part of same bag as FCRS-02724.
FCRS-03710	ASM GP-47907	n/a	Unknown	Yucca fiber	3/cm	10/cm	19.0 cm long and 24 cm in diameter	Large fragment of a coarsely woven decorated twined bag with a red and black banded design. Mended with a hide patch.

Figure 5.15. FCRS-02725, twined bag fragments.

Figure 5.16. FCRS-02725, close-up of upper edge showing ends of probable warp elements inserted back into nearby warp channels.

The other bag, FCRS-03710, was recovered by I.F. Flora from the north or south shelter at Falls Creek. This incomplete, coarsely woven twined bag has a partially intact base and is decorated with two black and red self-patterned bands (Figures 5.17-5.20). The fabric is woven in 2-strand Z-twist twining with a 2s-Z warp and weft and has 3 warps and 10 wefts per cm. The base was constructed by shaping seven groups of four 2s-Z warps into a radiating pattern, then twining them with weft yarns. The size of the base was progressively expanded by reducing the number of warps enclosed by each weft pair from four, to two, to a single warp, until 56 warps were created and separately twined (Figure 5.19). The two design bands are 2 cm in width, each composed of two groups of alternating black and tan bars separated by two simple red stripes (Figure 5.20). The bag is mended with a hide patch attached with 2s-Z yucca cordage worked in a running stitch.

Figure 5.17. FCRS-03710, one face of twined bag. Note radiating start (base) at lower end. One red and black self-patterned band faintly visible at top.

Figure 5.18. FCRS-03710, other face of twined bag. Note radiating start in foreground and hide patch at right. One red and black self-patterned band faintly visible above start.

Figure 5.19. FCRS-03710, close-up of remains of radiating start.

Figure 5.20. FCRS-03710 (ASM GP 47907), close-up of interior face of one red and black self-patterned band.

Two relatively complete decorated twined bags and four samples of deteriorated fragments were identified in the Burial Crevice assemblage from the North Shelter (Morris and Burgh 1954:67, Figs. 39-41, 100c, d; Webster and Jolie 2011: J-27 through J-31, Figure J-13). The base construction of these bags differs from that described for FCRS-03710, which more closely resembles the base of a Basketmaker III bag from northeastern Arizona (Guernsey 1931:79-80, Pl. 46d). The warp and weft counts of the Burial Crevice bags compare favorably with FCRS-0274 and FCRS-0275 from the South Shelter, but they are finer than that of FCRS-03710. Morris and Burgh (1954:67) report a coarse example of a carbonized twined bag from nearby Talus Village.

Twined bags are characteristic of Basketmaker II culture in the Four Corners region (e.g., Kidder and Guernsey 1919:28, 78; Guernsey and Kidder 1921:6, 14-19; Sharrock, Day and Dibble 1963:209-210; additional unpublished examples are known from Canyon del Muerto, Grand Gulch, and other drainages in northeastern Arizona and southeastern Utah). Although twined bags are often found in Basketmaker II funerary contexts, the ones in the current assemblage lack a known funerary association. The manufacture of twined bags continued into the Basketmaker III period, but in coarser form (Guernsey 1931:79). Given the base construction and coarser weave of FCRS-03710, it may postdate the other Falls Creek examples.

5.6 Cordage Apron

A nearly pristine yucca cordage apron, FCRS-00002, was recovered from an unidentified provenience in the South Shelter (Morris and Burgh 1954:65-66) (Table 5.4, Figures 5.21-5.24). According to Morris and Burgh, this object "disappeared from the Durango Public Library" at an unspecified date, sometime between its excavation in the late 1930s and the publication of their Falls Creek monograph in 1954. Morris and Burgh (1954:65-66, Fig. 35) were able to study the apron prior to its disappearance, and they provide a good description. In 2000, the apron was recovered by U.S. law enforcement personnel from a private owner and turned over to the San Juan National Forest for curation at the Anasazi Heritage Center, where it was reanalyzed for the current project.

Table 5.4. Cordage Apron.

FCRS No.	Former Institution Catalog No.	Carnegie Institution Field No.	Provenience	Raw material	Yarn structure	Dimensions	Description/comments
FCRS-00002	none (confiscated from private individual)	unknown	South Shelter, no specific information	Yucca fiber, human hair, red pigment	Fringe: 2s-Z; waistcord: 4(2s-Z)S; human hair twining element: 2z-s; red yucca twining element: 2s-Z	57.0 cm long, 92.0 cm wide including waistcord, 10.0 cm wide pendant fringe. All cordage elements 2.0 mm in diameter.	Well-preserved yucca cordage apron with thick multi-strand yucca waistcord. Fringe secured by four rows of two-strand twining worked in brown-black human hair and orange-red yucca cordage elements.

The apron has 142 pendant strands of natural tan, well-processed, yucca 2s-Z cordage fringe, 57 cm in length. The strands fold over a thick tan yucca waistcord at the upper end and back up at the lower end to create a continuous up-and-down loop (Figure 5.21). The waistcord consists of four strands of 2s-Z yucca cordage that are folded at one end to make eight strands (Figure 5.22). Where they emerge from the other side of the pendant fringe, they are twisted into a thick 2-ply Z-twist cord, each consisting of four 2s-Z strands plied S-wise. The complete structure of the waistcord is 2[4(2s-Z) S]Z. The apron was worn by inserting the long, twisted end of the waistcord through the folded strands, then tying it around the loops. The pendant fringe was drawn between the legs and secured to the back of the waistcord.

Figure 5.21. FCRS-00002, yucca cordage apron with twined yucca and human-hair waistband. Note fringe loops joined together at lower end and two crosswise folds across fringe

Figure 5.22. FCRS-00002, upper end of apron showing 2s-Z yucca fringe folded over waistcord and secured with three rows of red yucca and brown human-hair twining. Another row of human-hair twining was originally present below the red rows. Note folded 2s-Z strands of waistcord at right and thick Z-twisted composite strands of waistcord at left.

The upper end of the fringe is attached to the waistcord with four rows of two-strand twining that enclose from 4-12 (mostly 6) strands of fringe within each twining twist. The first and fourth twining rows were dark brown 2z-S human-hair cordage, one of which is now missing. (It was present when examined by Morris and Burgh, but probably succumbed to insect damage after its disappearance.) The two center rows are orange-red 2s-Z yucca cordage, probably colored with hematite. The direction of twining is primarily S, but it changes to Z for a short distance in each red row. The length of the apron is 57 cm, the width of the waistcord is 92.0 cm, and the width of the pendant fringe is 10.0 cm.

At the lower end of the fringe, the loops are bound together with cordage of the same structure and texture (Figure 5.23). They were bound into two bundles, one containing 14 strands, the other the remaining strands, then the two bundles were joined with additional cordage wrapping. The purpose was probably to prevent the fringe from tangling.

Figure 5.23. FCRS-00002, lower end of fringe showing bundles of looped strands joined together with cordage.

The apron exhibits two rows of crimping, about 17 cm apart, that indicate that it was folded into thirds at one time for storage (Figure 5.24). There is no information about how the apron was stored after its disappearance from the Durango Public Library, but the relatively pristine condition of the apron suggests that it could have been folded and carefully cached in a protected location in the South Shelter by its original owner.

Figure 5.24. FCRS-00002, side view of apron folded into thirds along crimp lines.

Guernsey and Kidder (1921:46, Pl. 16c) provide a general discussion of Basketmaker II yucca cordage aprons from northern Arizona. In addition, I have seen two unpublished examples of aprons from southeastern Utah that are nearly identical to this Falls Creek apron, one believed to be from Atlatl Rock Cave at the Edge of the Cedars Museum and the other from Grand Gulch at the Field Museum of Natural History. The latter apron yielded an AMS median date of 144 cal A.D.

5.7 Hide Artifacts

Eighteen hide artifacts were identified in the assemblage (Table 5.5). Most are small fragments, but the assemblage also contains the remains of two probable moccasins and two possible prairie dog skins used as small bags. The hair on ten specimens was microscopically identified as deer hide, and the skins of two artifacts are tentatively identified on the basis of their appearance as members of the squirrel family (probably prairie dog). The other six examples are unidentified.

Table 5.5. Hide Artifacts.

FCRS No.	Former Institution Catalog No.	Carnegie Institution Field No.	Provenience	Object type	Hide ID	Stitching?	Dimensions	Description/comments
FCRS-00662.1	CU 8040	38-0020	North Shelter, Terrace 1, rat nest	Moccasin, probably	Unidentified	Running stitch	9.0 cm long, 5.5 cm wide, 2.8 cm thick, 0.8 cm thick along stitched edge (double thickness)	Large fragment of a probable moccasin of thick, stiff hide composed of two layers stitched together with a leather thong in a running stitch.
FCRS-00662.2	CU 8040	38-0020	North Shelter, Terrace 1, rat nest	Bag?	Squirrel family?	no	9.0 cm long, 4.5 cm wide	Hide fragment composed of three layers of thin, papery hide. No evidence of stitching. Part of a prarie dog bag?
FCRS-00662.3	CU 8040	38-0020	North Shelter, Terrace 1, rat nest	Hide fragments and loose hair	Deer	no	Largest 9.0 cm long, 3.0 cm wide	Five deer hide fragments with remnants of off-white to brown hair, plus a collection of loose deer hair. Hair identified microscopically.
FCRS-00662.4	CU 8040	38-0020	North Shelter, Terrace 1, rat nest	Hide fragment	Unidentified	no	Length 6.0 cm, width 5.5 cm	Hide fragment with brown hair.
FCRS-02636	CU 8195	38-2487	South Shelter, fill between floors 12 and 13	Hide fragment	Unidentified	no	16.0 cm long, 1.6 cm max width	Long, narrow strip of hide. Hair missing.

FCRS No.	Former Institution Catalog No.	Carnegie Institution Field No.	Provenience	Object type	Hide ID	Stitching?	Dimensions	Description/comments
FCRS-02676	CU 8220	38-2655	South Shelter, miscellaneous	Hide fragments	Deer	no	12.8 cm long, 1.6 cm wide; 13.5 cm long, 2.7 cm wide	Two long, narrow hide scraps. Remnants of hair on one fragment, hair missing from the other. Each fragment has one curved and one straight long edge. Straight edges show cutting with a sharp blade. Hair identified microscopically.
FCRS-02677	CU 8221a	38-2656	South Shelter, miscellaneous	Hide fragment	Deer	no	6.0 cm long, 3.8 cm wide	Small scrap of deer hide with tan hair covering approximately half of one face. Hair identified microscopically.
FCRS-02678	CU 8221b	38-2657	South Shelter, miscellaneous	Hide fragment	Deer	no	12.6 cm long, 3.8 cm wide (curled up)	Curved piece of deer hide with tan hair on one face. One finished curved edge, other edge tattered. Holes through hide--insect damage? Hair identified microscopically.
FCRS-02705.1	CU 8245	38-2692	South Shelter, general refuse	Hide fragment	Unidentified	no	19.0 cm long, 2.3 cm max width	Long, narrow hide strip, hair removed. Hair surface textured with rectangular-to-oval raised projections. Straight edges show cutting with a sharp blade.
FCRS-02705.2	CU 8245	38-2692	South Shelter, general refuse	Hide fragment	Deer	no	6.9 cm long, 1.1 cm max width	Small tan strip of deer hide, one face partially covered with straight off-white hairs. Straight edges show cutting with a sharp blade. Hair identified microscopically.

FCRS No.	Former Institution Catalog No.	Carnegie Institution Field No.	Provenience	Object type	Hide ID	Stitching?	Dimensions	Description/comments
FCRS-02705.3	CU 8245	38-2692	South Shelter, general refuse	Hide fragment	Unidentified	no	9.5 cm long, 1.3 cm max width	Narrow strip of brown hide densely covered with straight, light brown hair. Straight edges show cutting with a sharp blade. Hair examined microscopically, but unidentified.
FCRS-02706.1	CU 8246	38-2693	South Shelter, general refuse	Bag?	Squirrel family?	no	16.5 cm long, 5.5 cm (distorted); detached foot fragment 2.5 cm long, 2.0 cm wide	Animal skin bag consisting of the main body, one rear leg, tail, and neck of a probable prairie dog. Another foot is detached. Red staining on the tan fur.
FCRS-02706.2	CU 8246	38-2693	South Shelter, general refuse	Moccasin sole?	Unidentified	Running stitch, probably	19.8 cm long, 9.0 cm max width	Roughly rectangular piece of hide, hair missing, with stitch holes along one long edge and portions of both short edges. A 2s-Z sinew cord is threaded through two stitch holes at one corner. All edges probably intact. Part of a child's moccasin?
FCRS-02706.3	CU 8246	38-2693	South Shelter, general refuse	Hide fragment	Deer	Running stitch, probably	28.0 cm long, 10.5 cm max width	Thick, long, narrow deer hide fragment, rounded at one end. Edges cut with a sharp blade. Remnants of coarse tan hair on one face. Broken hide stitching with a leather thong at one end, terminating in an overhand knot. Hair identified microscopically.

FCRS No.	Former Institution Catalog No.	Carnegie Institution Field No.	Provenience	Object type	Hide ID	Stitching?	Dimensions	Description/comments
FCRS-02706.4	CU 8246	38-2693	South Shelter, general refuse	Hide fragment	Deer	no	19.0 cm long, 6.7 cm wide	Large, thin fragment of deer hide, all hair removed. Straight edges, deep V-shaped cut at one end. Other end perforated with small holes - insect damage? Hair identified microscopically.
FCRS-02706.5	CU 8246	38-2693	South Shelter, general refuse	Hide fragment	Deer	no	17.1 cm long, 7.1 cm wide	Large triangular fragment of well-tanned deer hide, light tan in color. Straight edges. Remants of hair at one corner. Two small (intentional?) holes at upper end. Hair identified microscopically.
FCRS-02706.6	CU 8246	38-2693	South Shelter, general refuse	Hide fragment	Deer	no	17.0 cm long, 3.7 cm wide	Small triangular fragment of deer hide with straight edges and remnants of tan hair, the latter identified microscopically.
FCRS-02706.7	CU 8246	38-2693	South Shelter, general refuse	Hide fragment	Deer	no	5.3 cm long, 3.0 cm wide	Small deer hide fragment with irregular edges and brown hair, the latter identified microscopically.

Moccasins

FCRS-00662.1 and FCRS-02706.2 are interpreted as the probable remains of moccasins. FCRS-00662.1, from Terrace 1 in the North Shelter, consists of a double layer of thick, stiff, tanned hide that appears to be the front portion of a moccasin with a tapered toe (Figures 5.25 and 5.26). Along part of the outer edge, the two layers are stitched together with a hide thong worked in a running stitch (Figure 5.26). Another section, folded over, distorted, and perforated with small stitching holes, appears to be another intact section of the side edge. The fragment is 9.0 cm long, 5.5 cm wide and 0.8 cm thick where stitched. Morris and Burgh (1954:70) describe this object as the toe of a moccasin or the bottom of a small bag, with two layers of leather "sewed along the curving edge with a slender thong in simple-stitch manipulation."

Figure 5.25. FCRS-0662.1, probable upper face of moccasin fragment.

Figure 5.26. FCRS-0662.1, probable lower face of moccasin fragment. Arrow points to hide stitching.

FCRS-02706.2 from general refuse in the South Shelter is a long, narrow piece of tanned hide that appears to be the sole of a child's moccasin (Figure 5.27). Stitch holes are present along one long edge and portions of both short ends, but absent from the other long edge. The sides and ends appear to be intact, suggesting a child's moccasin approximately 19.8 cm long and 9.0 cm wide. A 2s-Z sinew cord, 2.0 mm in diameter, is threaded through a pair of stitch holes at one corner, both free ends tied in an overhand knot. The sinew stitching and parts of the sole are a reddish brown color, suggesting either accidental soil staining or intentional staining with hematite. Morris and Burgh (1954) do not discuss this object in their Falls Creek monograph. Little has been published about Basketmaker II moccasins, but Guernsey (1931:66, Pl. 47f) describes an elaborate pair from Grand Gulch, Utah, and I have seen several unpublished examples from southeastern Utah in museum collections, indicating their important role as footwear during the Basketmaker II period.

Figure 5.27. FCRS-02706.2, probable lower face of moccasin.

Skin Bags

FCRS-00662.2 and FCRS-02706.1 are tentatively identified as animal skin bags. FCRS-00662.2 from Terrace 1 in the North Shelter is a fragmentary hide object consisting of three layers of thin, papery hide (Figure 5.28). One area exhibits five staggered holes that could represent insect damage rather than intentional perforations. No stitching was observed. The upper layer of one layer is folded back upon itself. Identification of this object as a bag is highly tentative.

Figure 5.28. FCRS-0662.2, hide fragment composed of three layers, possibly the remains of a skin bag.

FCRS-02706.1 is a more secure example of an animal skin bag. Recovered from general refuse in the South Shelter, this deteriorated rodent skin consists of the main body, one rear leg, and the neck and tail, and is 16.5 cm long and 5.5 cm wide (Figure 5.29). Part of a rear foot with two intact claws is detached. The head and forelegs are missing. The hide contains areas of light tan fur, some stained brick red from soil or intentional staining. The hide appears to be that of a prairie dog or another member of the squirrel family. A 2s-Z yucca or sinew cord, 1.5 mm in diameter, is wrapped three times around the neck opening. The presence of this cord and comparison with other Basketmaker II examples (e.g., Guernsey 1931:75, Pl. 52b, d) suggest the use of this skin as a bag.

Figure 5.29. FCRS-02706.1, probable prairie dog skin bag. Note bound neck opening at upper end.

Miscellaneous Hide Fragments

Fourteen specimens were identified as miscellaneous hide fragments. Ten were identified as deer hide on the basis of microscopic hair identification. The other four are unidentified. Some were intentionally cut or trimmed with a sharp blade (Figures 5.30-5.32), whereas the edges of others are frayed. One of these fragments, FCRS-02706.3, is long, narrow, thick piece of deer hide (28.0 cm long, 10.5 cm max width), rounded at one end, with areas of white hair on one face and remnants of coarse stitching with a 3 mm-wide hide thong at the tapered end (Figure 5.32). The thong is anchored with an overhand knot. A soft, oblong, tanned hide strip, FCRS-02705.1, has an irregular raised texture on its hair surface (Figure 5.33).

Figure 5.30. FCRS-02678, deer hide fragment with tan hair. Note trimmed edge

Figure 5.31. FCRS-02705.3, deer hide fragment with tan hair. Note trimmed edge.

Figure 5.32. FCRS-02706.3, long, narrow deer hide fragment with remains of hide stitching.

Figure 5.33. FCRS-02705.1, tanned hide strip with raised texture on hair surface.

5.8 Wooden Artifacts with Cordage, Ties, or Other Wrapping

Sixteen wrapped sticks, a repaired atlatl dart fragment, a reed arrow shaft fragment, and a reed game snare were analyzed to identify their form of wrapping (Table 5.6). Wood identifications were provided by Karen Adams (see Adams this volume). The non-wrapped wooden artifacts will be analyzed at a future date.

Table 5.6. Wooden Artifacts with Cordage, Ties, or Other Wrapping.

FCRS No.	Former Institution Catalog No.	Carnegie Institution Field No.	Provenience	Object type	Raw material	Knot?	Dimensions	Description/comments
FCRS-00534	CU 8011	38-0003	North Shelter, terrace 1, rat nest level	Wrapped stick	*Populus/ Salix*stem, yucca fiber	Overhand	16.5 cm long, 0.8 cm diameter; yucca cordage 1.5 mm diameter	Narrow stick, split at one end and wrapped with two circuits of 2s-Z yucca cordage tied in an overhand knot. Free ends of knot are missing. See also Table 5.2 and K. Adams, this volume.
FCRS-00535	CU 8011	38-0004	North Shelter, terrace 1, rat nest level	Wrapped stick	*Populus/ Salix*stem, yucca fiber	Overhand	34.5 cm long, 1.0 cm diameter; yucca strip 1.2 mm wide	Long, narrow stick wrapped z-wise with a fine yucca-leaf strip secured to stick with a loose overhand knot at one end. See also K. Adams, this volume.
FCRS-00536	CU 8011	38-0005	North Shelter, terrace 1, rat nest level	Wrapped stick	*Quercus* stem, yucca leaf	Square?	12.2 cm long, 1.5 cm diameter; yucca strip 2.0--3.0 mm wide	Partially charred stick wrapped crosswise with a narrlow yucca strip tied in an incomplete knot, probably originally a square knot. See also K. Adams, this volume.
FCRS-00537	CU 8011	38-0006	North Shelter, terrace 1, rat nest level	Wrapped stick	*Quercus* stem, yucca leaf tie	no	14,0 cm long, 0.6 cm diameter; yucca strip 1.0 mm wide	Stick wrapped crosswise with a narrow yucca strip. See also K. Adams, this volume.
FCRS-00538	CU 8011	38-0007	North Shelter, terrace 1, rat nest level	Wrapped stick	*Populus/ Salix*stem (probably), yucca leaf	Overhand	17.5 cm long, 0.8 cm diameter; yucca strips 3.0 and 4.0 mm wide	Small stick wrapped crosswise in two places with yucca strips tied in overhand knots. See also K. Adams, this volume.

FCRS No.	Former Institution Catalog No.	Carnegie Institution Field No.	Provenience	Object type	Raw material	Knot?	Dimensions	Description/comments
FCRS-00539	CU 8011	38-0008	North Shelter, terrace 1, rat nest level	Wrapped stick	*Populus/ Salix*stem (probably), yucca leaf	no	11.0 cm long, 1.0 cm diameter; yucca strip 1.5 mm wide	Stick wrapped crosswise with a 1.5 circuits of a narrow yucca strip. See also K. Adams, this volume.
FCRS-00540	CU 8011	38-0009	North Shelter, terrace 1, rat nest level	Wrapped stick	Stick: unknown stem; wrapping: probably bulrush stem	no	14.5 cm long, 0.7 cm diameter; yucca strips 3.0-4.0 cm wide; length of wrapping 4.3 cm	Narrow stick wrapped crosswise with approximately 15 circuits of flattened bulrush stem. Stick pointed at one end. See also K. Adams, this volume.
FCRS-00541	CU 8011	38-0010	North Shelter, terrace 1, rat nest level	Wrapped stick	*Populus/ Salix*stem (probably), yucca leaf	Overhand	13.0 cm long, 1.1 cm diameter; yucca strips 1.0-3.0 mm wide, most 1.0-1.5 mm wide	Medium stick wrapped multiple times with narrow yucca strips terminating in overhand knots in two places. Stick ground flat at one end, broken at other. See also K. Adams, this volume.
FCRS-00542	CU 8011	38-0011	North Shelter, terrace 1, rat nest level	Wrapped stick	*Populus/ Salix*stem (probably), yucca leaf	Square	33.0 cm long, 1.6 cm diameter; yucca strip 1.0 mm wide	Large bark-covered stick wrapped crosswise with a narrow yucca strip tied in a square knot. Knot has appearance of a lark's head knot (structurally equivalent to a square knot). See also K. Adams, this volume.

FCRS No.	Former Institution Catalog No.	Carnegie Institution Field No.	Provenience	Object type	Raw material	Knot?	Dimensions	Description/comments
FCRS-00543	CU 8011	38-0012	North Shelter, terrace 1, rat nest level	Wrapped stick	Unknown stem, yucca leaf	Overhand	14.0 long, 0.5 cm wide; yucca strips 1.0-1.5 mm wide	Small twig wrapped crosswise in three places with narrow yucca strips. One area of wrapping terminates in an overhand knot. The other two are unknotted. See also K. Adams, this volume.
FCRS-00544	CU 8011	38-0014	North Shelter, terrace 1, rat nest level	Wrapped stick	*Populus/ Salix*stem, yucca leaf	Square	23.0 cm long, 0.8 cm diameter; yucca strips 1.5-3.0 mm wide	Narrow stick wrapped crosswise in four places with narrow yucca strips. Three knots are probable remains of square knots. Fourth knot missing. See also K. Adams, this volume.
FCRS-00545	CU 8011	38-0015	North Shelter, terrace 1, rat nest level	Wrapped stick	*Populus/ Salix*stem, yucca leaf	Overhand	14.5 cm long, 0.7 cm diameter; yucca strip 0.7 mm wide	Short stick loosely wrapped crosswise with a fine yucca strip tied in a loose overhand knot at each end. Wrapping broken in several places but probably wraps the stick S-wise. See also K. Adams, this volume.
FCRS-00546	CU 8011	38-0017	North Shelter, terrace 1, rat nest level	Wrapped stick	*Populus/ Salix*stem (probably), yucca leaf	no	11.0 cm long, 1.1 cm diameter	Short stick with three crosswise gouges through bark. Previously wrapped? See also K. Adams, this volume.

FCRS No.	Former Institution Catalog No.	Carnegie Institution Field No.	Provenience	Object type	Raw material	Knot?	Dimensions	Description/comments
FCRS-00648	CU 8035f	38-2646	South Shelter, miscellaneous	Game snare	*Phragmites australis* stem, yucca fiber	Overhand	6.0 cm long, 0.7 cm diameter; cordage 2.0 mm diameter	Short reed bound at one end with 2s-Z yucca cordage to make a free-running noose. Cord extends nearly the complete length of the tube. See also K. Adams, this volume.
FCRS-00655.2	CU 8037a	38-2667	South Shelter, general refuse	Wrapped stick	*Rhus* sp.(?) twig, yucca leaf	half hitch	10.2 cm long, 2.4 cm max. width; twig 6.0 mm max. diameter; yucca strip 1.9 mm max. width	Y-forked stick with at least 8 wraps of longitudinally split yucca leaf around fork. Initial wrap secured with a half hitch. Found in bag with twined mat FCRS-00655.1.
FCRS-00656	CU 8038	38-0019	North Shelter, terrace 1, rat nest level	Arrowshaft	*Phragmites australis* stem, sinew	no	26.2 cm long, 0.8 cm diameter, 0.9 diameter where wrapped	Nock end of reed arrowshaft wrapped crosswise with sinew.
FCRS-02672	CU 8218b	38-2648	South Shelter, miscellaneous	Wrapped stick	Unknown dicotyledon stem, sinew	no	14.3 cm long, 0.5 cm diameter; sinew 1.0-3.0 mm wide	Short, narrow stick, tapered to a blunt point at one end, broken at the other. Wrapped S-wise with sinew at broken end. See also K. Adams, this volume.

FCRS No.	Former Institution Catalog No.	Carnegie Institution Field No.	Provenience	Object type	Raw material	Knot?	Dimensions	Description/comments
FCRS-02673	CU 8218c	38-2649	South Shelter, miscellaneous	Wrapped stick	*Quercus* stem, yucca fiber	Square	17.0 cm long, 1.1 cm diameter; yucca cordage 3.0-4.0 mm diameter	Thick stick, blunt at one end and forked at the other, wrapped crosswise in two places (midsection and near forked end) with coarse 2s-Z yucca cordage tied in square knots. Both ends of stick are finished. See also Table 5.2 and K. Adams, this volume.
FCRS-02674	CU 8218d	38-2651	South Shelter, miscellaneous	Atlatl dart mainshaft fragment	*Populus/ Salix*stem, sinew	no	19.0 cm long (incomplete), 1.0 cm diameter, 1.2 cm diameter where wrapped	Long, smooth, relatively straight stick, recessed at one end and splintered at the other. Longitudinal crack at one end is wrapped crosswise with a desiccated hide (?) strip as a repair.
FCRS-02713.1	CU 8250	38-2699	South Shelter, general refuse	Wrapped stick	Unknown dicotyledon stem, sinew, feather	no	8.5 cm long, 0.5 cm diameter; sinew 3.0 mm ave diameter	Narrow twig, broken at both ends, wrapped crosswise at midsection with multiple circuits of sinew wrapped Z-wise. Remnants of a white feather quill are present beneath the wrapping. See also K. Adams, this volume.

Wrapped Sticks

Seventeen wrapped sticks were examined for the project: 11 wrapped with yucca leaf strips, one with probable bulrush stems, two with yucca cordage, two with sinew, and one with a now-missing binding. Karen Adams and Edward Jolie identified the wood and the yucca strips, and I identified the sinew, bulrush, and the yucca cordage. Nine sticks were identified as Populus/Salix (cottonwood or willow) stems, three as Quercus (oak) stems, one as likely Rhus (sumac), and four are unidentified (see K. Adams, this volume). Most sticks are unworked, but one is tapered to a point at one end (Figure 5.34), and another is ground flat at one end (Figure 5.35). Morris and Burgh (1954:69-70) make passing reference to some of these "miscellaneous" artifacts in their Falls Creek monograph, but do not illustrate or identify them by catalog number.

Figure 5.34. FCRS-00540, narrow, pointed, unidentified stick wrapped spirally with probable bulrush strips.

Figure 5.35. FCRS-00541, Populus/Salix stick wrapped spirally with yucca strips tied in overhand knots. End at left is ground into a flat wedge.

Of the 11 sticks wrapped with yucca-leaf strips, five are bound with overhand knots, 3 are bound with a square knot, and one exhibits a half hitch. The rest are unbound. Seven are spirally wrapped with yucca strips (Figures 5.34 and 5.35), and five are wrapped with one or more individual strips (Figures 5.36-5.38).

Figure 5.36. FCRS-00536, Quercus sp. stick wrapped crosswise with a yucca strip tied in an incomplete square knot.

Figure 5.37. FCRS-00538, small Populus/Salix stick wrapped crosswise in two places with narrow yucca strips tied in overhand knots.

Figure 5.38. FCRS-00544, small Populus/Salix stick wrapped crosswise in four places with yucca strips tied in incomplete square knots.

Both cordage-wrapped sticks are wrapped with 2s-Z yucca cordage. FCRS-00534 is a narrow stick, broken at both ends, wrapped with two circuits of yucca cordage tied in an overhand knot (Figure 5.39). FCRS-02673 is a short, thick stick, forked at one end, wrapped crosswise in two places with coarse 2s-Z yucca cordage tied in a square knot. Both ends of the stick are ground (Figure 5.40).

Figure 5.39. FCRS-00534, Populus/Salix stick wrapped crosswise with 2s-Z yucca cordage tied in an overhand knot.

Figure 5.40. FCRS-02673, thick Quercus sp. stick wrapped crosswise in two places with 2s-Z yucca cordage tied in square knots. Both ends of stick are ground flat.

Of the sinew-wrapped sticks, FCRS-02672 is a narrow stick tapered to a blunt point at one end and broken at the other, spirally wrapped at the broken end with a strip of S-wrapped sinew. The stick is broken beyond the wrapping (Figure 5.41). FCRS-002713.1 is a narrow twig, broken at both ends, wrapped crosswise at the center with multiple circuits of Z-wrapped sinew. The sinew strips have broken down into fine fibers. A deteriorated white feather quill laid parallel to the stick is enclosed by the wrapping (Figure 5.42).

Figure 5.41. FCRS-02672, small unidentified stick tapered to a blunt point at one end, wrapped spirally with sinew.

Figure 5.42. FCRS-02713.1, narrow unidentified stick wrapped spirally with sinew.

Finally, FCRS-00546 is a short stick, broken at both ends, with three crosswise gouges in the bark, suggesting the former presence of wrapping (Figure 5.43).

Figure 5.43. FCRS-00546, small Populus/Salix stick with crosswise gouges suggesting former presence of wrapping.

Six wrapped sticks, three wrapped with yucca strips and three with sinew, were identified in the Burial Crevice assemblage from the North Shelter (Webster and Jolie 2011: J-47 through J-49). Two of the sinew-wrapped sticks had feather quills beneath the wrapping.

Atlatl Dart Main shaft

A long straight stick, hollowed out at one end and splintered at the other, is the probable remains of an atlatl dart mainshaft recovered from a rat nest in Terrace I of the North Shelter (FCRS-02674) (Figure 5.44). Karen Adams identified the wood as a Populus/Salix stem. A 4.5 cm longitudinal crack at the finished end is repaired with seven circuits of a probable desiccated hide strip wrapped S-wise around the shaft with the end underneath and parallel to the last row of wrapping. The incomplete stick is 19.0 cm long and 1.0 in diameter, 1.2 in diameter where wrapped.

Figure 5.44. FCRS-02674, Populus/Salix atlatl dart mainshaft fragment wrapped with a probable hide strip as a repair.

Morris and Burgh (1954:68-69, Fig. 98.2.i-k) discuss and illustrate three atlatl dart fragments, one from a foreshaft and two from mainshafts, but they do not discuss this example.

Arrow Shaft

FCRS-00656 is the nock end of an incomplete reed arrowshaft wrapped crosswise in two places with sinew (Figure 5.45). This post-Basketmaker II artifact was recovered from miscellaneous fill in the South Shelter. The fragmentary shaft includes three nodes of a Phragmites australis stem (see Adams, this volume) and is cracked lengthwise. This artifact is not discussed by Morris and Burgh (1954).

Figure 5.45. FCRS-00656, Phragmites australis arrowshaft with two areas of sinew wrapping, nock at left.

Game Snare

A small game snare, consisting of a reed keeper with a running noose of 2s-Z yucca cordage, was recovered from miscellaneous fill in the South Shelter (Morris and Burgh 1954:Figs. 44, 98.2.f) (FCRS-00648, Figures 5.46 and 5.47). The snare is composed of a short, single node of a Phragmites australis stem, 6.0 cm long and 0.7 cm in diameter, with a pierced septum (see K. Adams, this volume). A strand of coarsely processed 2s-Z yucca cordage, 2.0 mm in diameter, encircles the neck of the joint and is tied around itself with an overhand knot (see Morris and Burgh 1954:Fig. 44 for an illustration). The long end of the cord passes over the end of the stem and down through the tube to make a free-running noose.

Figure 5.46. FCRS-00648, Phragmites australis game snare with running noose of 2s-Z yucca cordage tied in an overhand knot.

Figure 5.47. FCRS-00648, close-up of 2s-Z yucca noose passing over end of stem and down through the tube.

Morris and Burgh (1954:69) describe this as a "widely distributed type of snare for trapping small game." A similar type of snare, composed of a short bone tube rather than a reed, was recovered from the Basketmaker II site of White Dog Cave (Guernsey and Kidder 1921:80, Pl. 32b).

5.9 Bark Umbilical Pad

FCRS-03709 is a large bark trapezoidal slab, reddish brown in color, that probably served as the foundation for a hide-covered umbilical pad (Figure 5.48). The slab was recovered by I.F. Flora from an undocumented context in the north or south shelter. It is 17.4 cm long, 6.0 wide at the tip, 11.2 cm wide at the base, and 1.5 cm thick, and a triangular piece is detached at one corner. The edges are rounded in profile. Karen Adams identified the wood as ponderosa pine.

Umbilical pads served to "prevent umbilical hernia by exerting pressure on the navel of the new-born child" (Guernsey and Kidder 1921:58). They incorporated a variety of materials in their foundations. An almost identical bark umbilical pad was recovered by I.F. Flora from an undocumented context in the Burial Crevice of the North Shelter (Morris and Burgh 1954:69, Fig 98, 1c; Webster and Jolie 2011: J-47, Fig. J-24). Similar bark pads are reported from Tabeguache Cave in southwestern Colorado (Hurst 1941:Pl. III, no. 29) and from the Kayenta area of northeastern Arizona (Guernsey and Kidder 192158-59, Pl. 22c; Kidder and Guernsey 1919:187, Pl. 85b; Lockett and Hargrave 1953:17).

Figure 5.48. FCRS-03709, ponderosa pine bark foundation for an umbilical pad

5.10 Twined, Coiled, and Plaited Basketry Artifacts

The 16 non-mortuary basketry artifacts from Falls Creek analyzed by Jolie derive principally from refuse deposits in the South Shelter that include fragments of twined mats (n=4), coiled baskets (n=4), plaited carrying straps or tump bands (n=2), and sandals (n=3). A single sandal fragment comes from the rat nest level of Terrace 1 in the North Shelter, and two additional coiled basket fragments come from unknown contexts at Falls Creek. In general terms, these specimens replicate the technological choices evidenced in the material previously described from the North Shelter burial crevice (Webster and Jolie 2011) and so are summarized here by weaving technology in terms of what new observations they contribute to our understanding of the entire Falls Creek perishable artifact assemblage.

Twined Matting: Open Simple Twining, S-Twist Weft

Fragments of four different mats represent additional examples of the most abundant twined matting structural technique represented in the Falls Creek assemblage (Webster and Jolie 2011:J-49). Although Morris and Burgh (1954:66) make it sound as though the two largest specimens (FCRS-00655.1, -02689) are from the same mat, this seems highly unlikely because they (1) do not mend, (2) exhibit dissimilar wear patterns, and (3) show different weft row spacing. Thus, they were analyzed, and are treated here, as two separate mats. Provenience information and basic structural and metric data for all four of the mat specimens are presented in Tables 5.7 and 5.8.

Table 5.7. Twined Matting by Provenience.

FCRS No.	Institution Cat. No.	Provenience	Structural Technique	Raw Material(s)	Dimensions	Comments
FCRS-00655.1	CU 8037a	South Shelter, general refuse	open simple twining, s-twist wefts	*Schoenoplectus* sp. warps, *Yucca* sp. wefts	32 x 27 cm	Well preserved mat fragment with partial end and side selvages (Morris and Burgh 1954:Fig. 99b). Radiocarbon dated to 2660+/-160 rcybp (Smiley and Robins 1997:167, Fig. B.6). Was bagged with yucca-wrapped forked twig FCRS-00655.2.
FCRS-02688	CU 8228	South Shelter, general refuse	open simple twining, s-twist wefts	*Schoenoplectus* sp. warps, *Yucca* sp. wefts	30.5 x 8.5 cm	Mat fragment with partial side selvage.
FCRS-02689	CU 8229	South Shelter, general refuse	open simple twining, s-twist wefts	*Schoenoplectus* sp. warps, *Yucca* sp. wefts	60 x 51 cm	Well preserved mat fragment with partial end selvage.
FCRS-02726	CU 8261	South Shelter, general refuse	open simple twining, s-twist wefts	*Schoenoplectus* sp. warps, *Yucca* sp. wefts	17 x 13.5 cm, largest	Six mat end and side selvage fragments with loose rush culms. Poorly preserved.

Table 5.8. Twined Matting Metric Data.

FCRS No.	Warp Width (range in mm)	Mean Warp Width (mm)	Warps per cm (range)	Mean Warps per cm	Weft Width (range in mm)	Mean Weft Width (mm)	Weft Row Gap (range in cm)	Mean Weft Row Gap (cm)
FCRS-00655.1	11-16	13.9	1	1	1.6-3.4	2.6	4.8-7.4	5.9
FCRS-02688	9-14	11.4	1	1	2.4-3.6	3	6.7-8.7	8
FCRS-02689	12-16	14.3	1	1	2.2-3.3	2.6	5.8-8.9	7.6
FCRS-02726	14-15	14.5	1	1	2.2-2.8	2.5	4.3-5.8	4.9

The mats are made from rush culm (Schoenoplectus sp.) warps and paired yucca (Yucca sp.) cordage wefts (Figure 5.49). Warps in all specimens consist of five to eight rush stems bundled together to act as one warp unit. Wefts are in every case paired and in three specimens are lengths of tightly twisted 2s-Z cordage. In the fourth specimen (FCRS-02726), the wefts are lengths of tightly twisted 2(2z-S) Z yucca cordage. Self variety side selvages are preserved on three specimens and double 90 degree end selvages also on three. Two mats preserve both end and side selvages (FCRS-00655.1, -02726). The double 90 degree end selvages (Adovasio 2010:112, Fig. 36) all compare favorably in terms of execution with the example from the North Shelter burial crevice illustrated by Morris and Burgh (1954:Fig. 36; see Webster and Jolie 2011:J-50). In FCRS-02726, one of the best preserved end selvage pieces appears to preserve a corner where the two weft elements are tied off in an overhand knot and then s-plied to make a single 2(2(2z-S)Z)S compound cord that hangs loose for some 4.5 cm. The side selvage of the same mat evidences a terminal warp unit consisting of a bundle of eight to ten rush stems z-twisted together that are then caught by weft turns. This contrasts with the side selvage of FCRS-00655.1 in which the terminal warp unit consists of a loose three strand braid wherein each "strand" of the braid is three to four rush stems (Figure 5.50). The third side selvage (FCRS-02688) has a terminal warp unit of seven rush stems that are tightly s-twisted together before being secured by weft twists (Figure 5.49). In one location on the side selvage the wefts of this mat appear to be individual lengths of cordage folded 180 degrees around the selvage warp back on themselves, after which twining proceeds with the single cord then acting as the paired wefts.

Figure 5.49. FCRS-02688, open simple twined mat fragment with s-twist wefts. Note side selvage and abrasion from use-related wear.

Figure 5.50. FCRS-00655.1, overview of open simple twined mat with s-twist wefts. Note braided side selvage warp on left and double 90 degree self end selvage at top.

Ply splices are visible in the cordage wefts of all mats, and in FCRS-00655.1 there are three overhand knots that reflect either weft element splices, mends, or both. The free end of one such overhand knot splice/mend reveals that the cord is s-twisted yucca fiber that was folded 180 degrees on itself and given a z-twist to create a two ply cord. Warp splices in these mats appear to have simply been laid in at weft row twists. No other diagnostic features were observed, but heavier surface abrasion is common to one face of each artifact and is consistent with their use as mats (Figure 5.49).

5.11 Coiled Basketry: Close Coiling, Half Rod and Bundle Stacked Foundation, Noninterlocking Stitch

The six coiled basket specimens examined contain five small wall fragments of the structural type most common at Falls Creek (Webster and Jolie 2011: J-56; see also Morris and Burgh 1954:Fig. 42a). The sixth specimen included here (FCRS-02691) appears to be a coiled basket start which, in reality, may or may not be half rod and bundle stacked. The specimen employs stitching thread-like fiber to wrap a foundation of at least one halved rod with right-to-left-slanting wraps. The tightness of the wrapping of the sole circuit represented makes positive identification of foundation difficult, and the initial coils of baskets frequently differ in composition from the wall of the finished vessel. Provenience information and basic structural and metric data for all of the coiled specimens are presented in Tables 5.9 and 5.10.

Table 5.9. Coiled Basketry by Provenience.

FCRS No.	Institution Cat. No.	Provenience	Structural Technique	Raw Material(s)	Dimensions	Form	Comments
FCRS-02690	CU 8230	South Shelter, general refuse	close coiling, half rod and bundle stacked foundation, noninterlocking stitches	*Rhus* sp. stitches and foundation, *Yucca* sp. bundle	3.5 x 3.1 cm	unknown	Some charring on concave face suggests possible parching tray.
FCRS-02691	CU 8231	South Shelter, general refuse	close coiling, basket start?	*Rhu*s sp.	2.9 cm in diameter x 1.3 cm thick	unknown	Probable coiled basket start if not a fiber wrapped ring.
FCRS-02722	CU 8259a	South Shelter, general refuse	close coiling, half rod and bundle stacked foundation, noninterlocking stitches	*Rhus* sp. stitches and foundation, *Yucca* sp. bundle	5.7 x 1 cm	unknown	Possible light charring on convex face.
FCRS-02723	CU 8259b	South Shelter, general refuse	close coiling, half rod and bundle stacked foundation, noninterlocking stitches	*Rhus* sp. stitches and foundation, *Yucca* sp. bundle	2.7 x 1.1 cm	unknown	
FCRS-03711	ASM GP47905	unknown	close coiling, half rod and bundle stacked foundation, noninterlocking stitches	*Rhus* sp. stitches and foundation, *Yucca* sp. bundle	6.6 x 1.3 cm	unknown	
FCRS-03712	ASM GP47355	unknown	close coiling, half rod and bundle stacked foundation, noninterlocking stitches	*Rhus* sp. stitches and foundation, *Yucca* sp. bundle	7.5 x 2.2 cm	unknown	

Table 5.10. Coiled Basketry Metric Data.

FCRS No.	Diameter of Coil (range in mm)	Mean Diameter of Coil (mm)	Coils Per cm (range)	Mean Coils Per cm	Stitch Width (range in mm)	Mean Stitch Width (mm)	Stitches Per cm (range)	Mean Stitches Per cm	Stitch Gap (range in mm)	Mean Stitch Gap (mm)	Fineness (coils/cm x stitches/ cm)
FCRS-02690	3.0-5.0	3.8	2-2.5	2.3	1.7-2.7	2.3	3-4	3.5	0-1.5	0.3	8.1
FCRS-02691					1.9-3.0	2.5					
FCRS-02722		3.9		2	2.4-2.5	2.4		3		1.5	6
FCRS-02723		4.7		2	2.0-2.8	2.4		3.5	0.9-1.3	1.2	7
FCRS-03711			2	2			4	4			8
FCRS-03712			2	2			4	4			8

The five coiled basket wall fragments are wholly consistent with the more intact examples from the burial crevice. The halved rod is flat side down in all cases, and each fragment exhibits a right-to-left work direction and concave work face (Figure 5.51). No rims, unequivocal starts, mends, or decoration are preserved. FCRS-02690 evidences one clipped short fag end splice and FCRS-02723 has one fag end stitch splice that is bound under with the direction of work. FCRS-02690 also exhibits some possible dark grimy organic residue, as well as some charring on its concave surface which may indicate its original use as a parching tray (Figure 5.51). One other specimen exhibits possible light charring on its convex face (FCRS-02722).

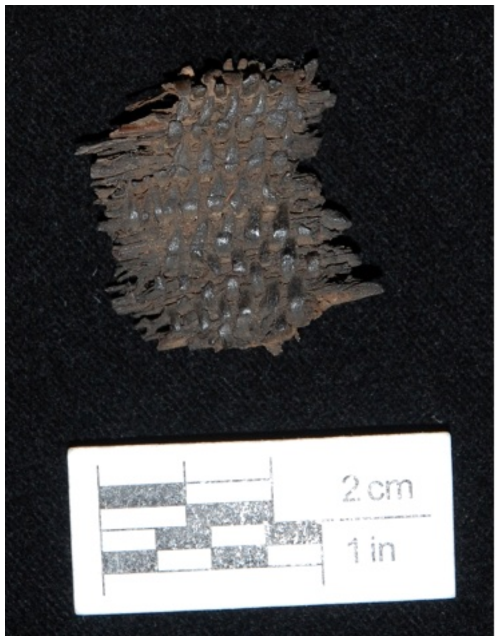


Figure 5.51. FCRS-02690, concave (work surface) view of close coiled, half rod and bundle stacked foundation, noninterlocking stitch basket fragment. Charring suggests use as a parching tray.

Plaited Straps: Simple Plaiting, 1/1 Interval

Two incomplete plaited (interlaced) bands that were probably used as carrying straps or tumplines reflect an artifact type not attested in the mortuary assemblage (Figure 5.52). Both examples are flat, 12-strand braids (oblique interlacing) made from rush culms. The interval of interlacement is predominately 1/1, but in both there are frequent 1/2/1 shifts, likely to facilitate the shaping of the bands. Morris and Burgh (1954:66) assumed that these two objects were portions of the same item, but this seems highly improbable given different use-related wear, residues, and strip measurements. Tables 5.11 and 5.12 provide provenience details and basic structural and metric data.

Table 5.11. Plaited Straps and Sandals by Provenience.

FCRS No.	Institution Catalog No.	Provenience	Form	Structure	Raw Material	Selvage Treatment	Dimensions	Description/comments
FCRS-00664	CU 8042	North Shelter, Terrace I, rat nest level	Sandal	2/2 twill	*Schoenoplectus* sp. strips, *Yucca* sp. ties	2/1 90 degree self side selvage	4 x 2.7 cm	Small selvage fragment. Remains of yucca leaf tie system pierce sole.
FCRS-02683	CU 8226a	South Shelter, surface refuse above Floor 11	Sandal	2/2 twill	*Yucca* sp.	2/1 90 degree self side selvage	8.8 x 4.1 cm, largest fragment	Three fragments, largest with side selvages. Small pieces of yucca leaf ties remain.
FCRS-02684	CU 8226b	South Shelter, surface refuse above Floor 11	Sandal	2/2 twill	*Schoenoplectus* sp.	2/1 90 degree self side selvage	2.5 x 2.3 cm	Small selvage fragment. Possibly treated with some unknown preservative.
FCRS-02685	CU 8227a	South Shelter, general refuse	Strap	12-strand flat braid	*Schoenoplectus* sp.	90 degree self side selvages	18 x 3.9 cm	Carrying strap or tump band fragment. Broken end is burned. Depicted in Morris and Burgh (1954:Fig. 99c) but misidentified by CU number on p. 129.
FCRS-02686	CU 8227b	South Shelter, general refuse	Strap	12-strand flat braid	*Schoenoplectus* sp.	90 degree self side selvages	31.5 x 4 cm	Carrying strap or tump band fragment.
FCRS-02687	CU 8227b and 8037c	South Shelter, general refuse	Sandal	2/2 twill	*Schoenoplectus* sp. strips, *Yucca* sp. ties	2/1 90 degree self side selvages, 90 degree self (heel?) selvage	19.5 x 11.5 cm	Lower 2/3 of sandal. Wear suggests worn on right foot. Tie system remains indicate side-loop tie system of yucca cordage. Note with sandal says this received 2 catalog numbers (8227b and 8037c).

Table 5.12. Plaited Strap and Sandal Metric Data.

FCRS No.	Form	Strip Width (range in mm)	Mean Strip Width (mm)	Strips per cm (range)	Mean Strips per cm
FCRS-00664	Sandal	6.6-7.4	7	1.5-2	1.8
FCRS-02683	Sandal	3.4-5.9	4.8	2-3	2.5
FCRS-02684	Sandal	2.8-5.4	4.1	2.5-3	2.8
FCRS-02685	Strap	3.8-8.4	5.5	2	2
FCRS-02686	Strap	3.4-6.5	4.7	1.5-2	1.8
FCRS-02687	Sandal	5.3-9	6.8	1.5-2	1.6

One end of each artifact amounts to a wrapped loop that served to secure the band to another object such as a burden basket. Loops are created by taking five culms as a unit and folding them about 180 degrees back on themselves to form a standing loop on one end and ten dangling strips on the other. Two additional elements, one each on opposing sides of the loop, are then interlaced with the dangling strips (effecting the 12-strand braid) while the free ends of these same two strips act to wrap the loop for reinforcement. Damage makes it unclear what happens next in FCRS-02686, but in the other specimen the added strips make 20 to 22 right-to-left-slanting wraps. The construction of these loops is partly illustrated by Morris and Burgh (1954:Fig. 37).

Strip splices all appear laid in, and the side selvages of both are of the 90 degree self type, as one expects on a braid. FCRS-02685 is burned on its broken end (Figure 5.52) and FCRS-02686 evidences abrasive use-related wear and grimy black organic residue that may also be from use. No other diagnostic attributes were noted.

Figure 5.52. FCRS-02685, overview of 12-strand braid carrying strap with charring visible at broken end.

The chronology and structural variability of braided carrying straps are poorly understood, but such constructs may have a wide distribution in the prehispanic northern Southwest. Examples made from rush and yucca strips are reported from Pueblo period contexts in northeastern Arizona and are very similar in construction to the Falls Creek specimens (e.g., Kidder and Guernsey 1919:114, 172, Plate 45.2). By comparison, available Basketmaker straps appear to be simpler three-strand braids (Kidder and Guernsey 1919:172; see also PMAE 15-11-10/A2167 on PMAE 2014) or much finer and more elaborately decorated twined and plaited products (e.g., Guernsey 1931:Plate 10; Guernsey and Kidder 1921:Plate 23). This may suggest that the basic production mechanics of braided straps were both widely distributed and long-lived in the region, or that the Falls Creek examples actually date to the Pueblo era. Alternatively, the Falls Creek specimens may indicate that the more elaborate twined and plaited straps seen in western Basketmaker sites were not produced among western Basketmaker groups at all, mirroring the production of fine twined sandals in the east and their total absence in the west.

Plaited Sandals: Twill Plaiting, 2/2 Interval

Fragments of four twill plaited (or obliquely interlaced if viewed as braided) sandals add to the sample of two or three recovered from the North Shelter burial crevice (Webster and Jolie 2011:J-32). One sandal is from the rat nest level of Terrace 1 in the North Shelter, while the remaining come from refuse deposits in the South Shelter. All but FCRS-02687 are highly fragmented. Three are made from rush culms (Figure 5.53) while the fourth is of yucca leaves. Provenience, analytic, and metric data for these specimens are presented in Tables 5.11 and 5.12.

Figure 5.53. FCRS-02687, overview of 2/2 twill plaited rush culm sandal with remains of yucca cordage side-loop tie system.

Partial side selvages are preserved on all of the sandals and are slight variants of the 90 degree self selvage. Here, however, strips pass over or under one strip before folding and then passing over or under two strips as they are being reintegrated into the fabric (see Osborne 2004:Fig. 102c). One 90 degree self end (heel?) selvage is preserved on FCRS-02687, the use wear on which suggests that it was worn on the right foot. Strip splices visible in FCRS-02687 all appear to be simply laid in at strip crossings.

Three sandals evidence the partial remains of their original tie systems. Two employ sewn yucca leaf strips along the sandal's edge in a fashion that suggests the side-loop variety of tie system as opposed to toe-heel (FCRS-00664, -02683). FCRS-02687 preserves tightly twisted 2(2z-S) Z yucca cordage that pierces the sole along the sandal's selvage to create a side-loop tie system. Only one loop of cordage, about 5.1 cm long, remains, however. Abrasive use-related wear is visible on the probable soles of all specimens. FCRS-02684 also appears to have possibly been treated at some point with an unknown preservative based on visible whitish residue.

CHAPTER 6: ANALYSIS OF PLANT REMAINS

Karen R. Adams

6.0 Introduction

The second phase of the Falls Creek Rockshelters re-analysis project included the participation of an archaeobotanical specialist trained in plant sciences. The aim was to re-evaluate and enhance identifications and descriptions of domesticated and non-domesticated plant specimens recovered from the Falls Creek Rockshelters (Jones and Fonner 1954). A total of sixty-one separate Falls Creek Rockshelters plant samples not associated with the North Shelter Burial Crevice were analyzed. This report complements a previous Phase 1 report on plant materials associated with internments within the Burial Crevice as well as associated burial crevice fill (Adams and Paterson 2011).

An important point to make about this archaeobotanical assemblage is that it represents plant taxa and parts large enough to be seen and collected in the field by excavators. The process of flotation, which essentially calls for pouring site sediment into water and then collecting the entire size range of buoyant plant parts, some as tiny as 1.0 mm in diameter, was not in use in the first half of the 20th century. Therefore, plant parts that can only be recognized and identified under the microscope are essentially missing from this assemblage. This includes many of the wild plant seeds known historically (Adams and Fish 2006; Castetter 1935; Rainey and Adams 2004; Standley 1912; Yanovsky 1936) and in pre-Hispanic times (Adams and Fish 2006; Adams and Van West 2005; Huckell and Toll 2004) to have provided subsistence resources to groups in the American Southwest.

6.1 Methods

The analysis strategy included laying out a specimen or collection of specimens and examining everything using a Zeiss binocular microscope with magnifications ranging from 8-50x, in order to view details of both exterior morphology and interior anatomy. On occasion it was necessary to record measurement or count data, if that was missing from inventory information associated with each sample. The aim was to verify or revise the identifications of artifacts or specimens, and add additional relevant comments on condition and/or apparent modifications. Identifications were supported by comparison to modern comparative plant collections of reproductive and vegetative parts, backed by herbarium voucher specimens; for details see on-line identification resources (Adams and Murray 2004) and published reports (Murray, Adams, and Smith 2008).

6.2 Results

The plant materials discussed in this report were recovered from contexts not associated with the North Shelter burial crevice or interments. Three different academic institutions provided access to specimens. Fifteen separate samples currently stored at the Arizona State Museum or at the University of Michigan Laboratory of Anthropological Archaeology represent a diversity of plant taxa and parts. A collection of forty-six samples curated at the University of Colorado, Boulder and transferred to the Anasazi Heritage Museum for analysis also contained a diversity of plant taxa and parts. General results of re-analysis are summarized for all three collections in Table 6.1. Descriptive details can be found in Appendix 1 (Arizona State Museum and University of Michigan Museum of Anthropological Archaeology samples) and Appendix 2 (University of Colorado at Boulder samples). Representative photos of the plant taxa/parts reported here can be viewed in Figures 6.1–6.9.

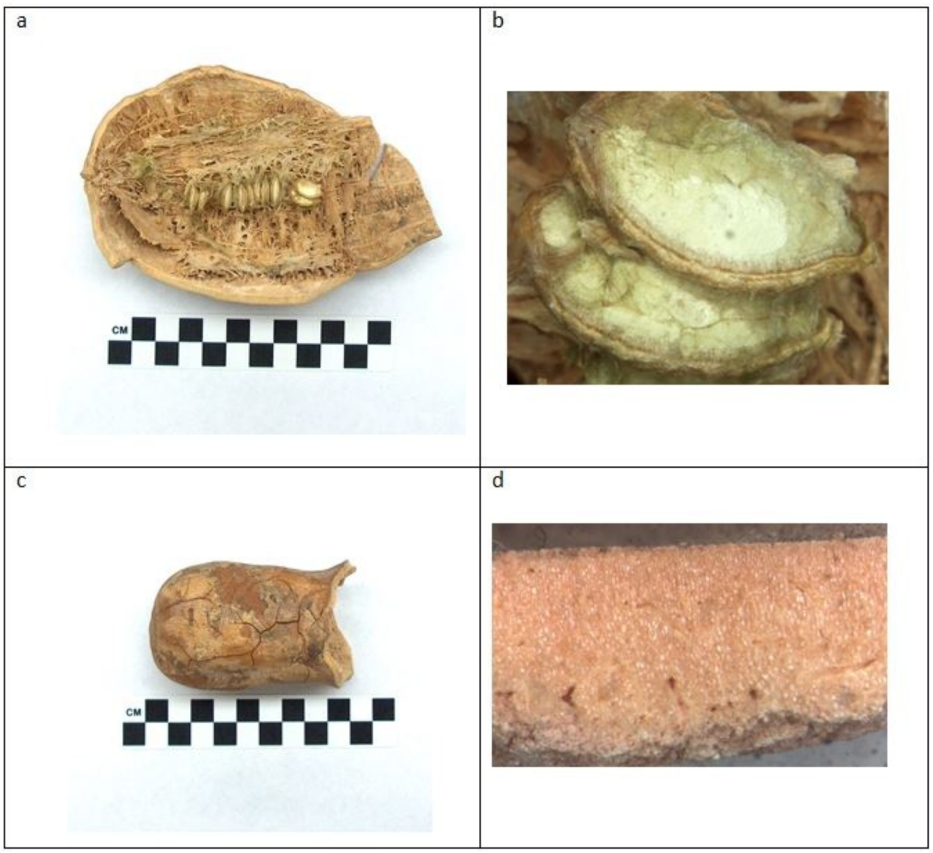
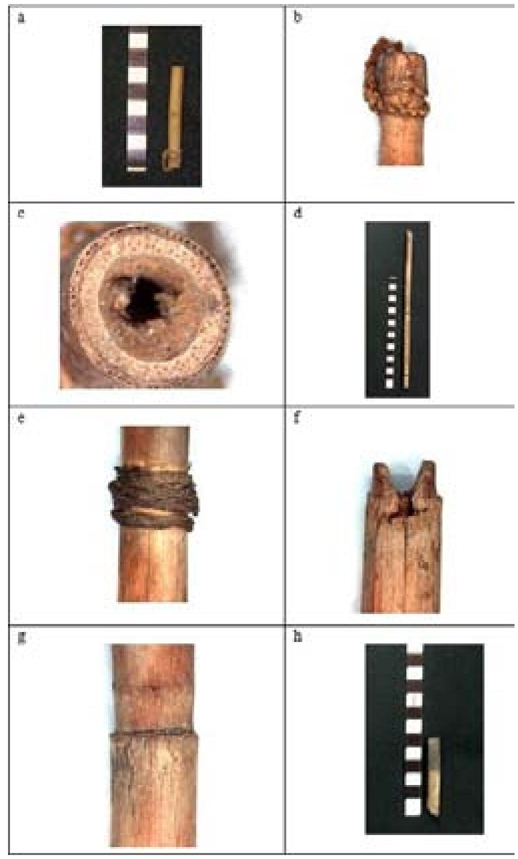


Figure 6.1. Domesticated resources. (a-b) Uncharred hard-shelled butternut squash (*Cucurbita moschata*) rind fragment with seeds still attached, with a close-up of two of the seeds, showing fringed edge (FCRS-03706); (c) one uncharred hard-shelled butternut squash fruit neck (FCRS-03706); (d) uncharred gourd (*Lagenaria*) rind in transverse view (FCRS-03700). Scales = cm.

Figure 6.2. Domesticated and wild resources. (a-b) Three uncharred maize (*Zea mays*) cob segments, each with a narrow shank, and close-up of one kernel with translucent endosperm (upper right) that is attached to the cob on the left (FCRS-03714); (c) charred prickly pear (*Opuntia*) seed (FCRS-03701); and (d) uncharred vetch (*Vicia*) seeds (FCRS-03701). Scales = cm (a) and mm (c, d).

Figure 6.3. Uncharred wild plant fiber artifacts. (a) Juniper (*Juniperus*) bark knotted fiber bundle (FCRS-02713); (b) monocotyledon fibro-vascular bundles, likely *Yucca* (FCRS-03705); (c) twined bag fragment, likely *Yucca* (FCRS-03710); (d) basketry fragment with lemonade berry (*Rhus aromatica*) element across the top, and (e) likely *Yucca* leaf fibers (FCRS-03712); and (f) 2-ply Z-twist twine, likely *Yucca* (FCRS-03713). Scale = cm.

Figure 6.4. Uncharred reedgrass (*Phragmites australis*) specimens. (a-c) A game snare with *Yucca* fiber string and clear transverse view (FCRS-00648); (d-g) an atlatl dart mainshaft with sinew wrap, notched end, and visible node with a hole (FCRS-00656); and (h) a short stem wrapped at top with unknown bark (FCRS-02728). Scales = cm.



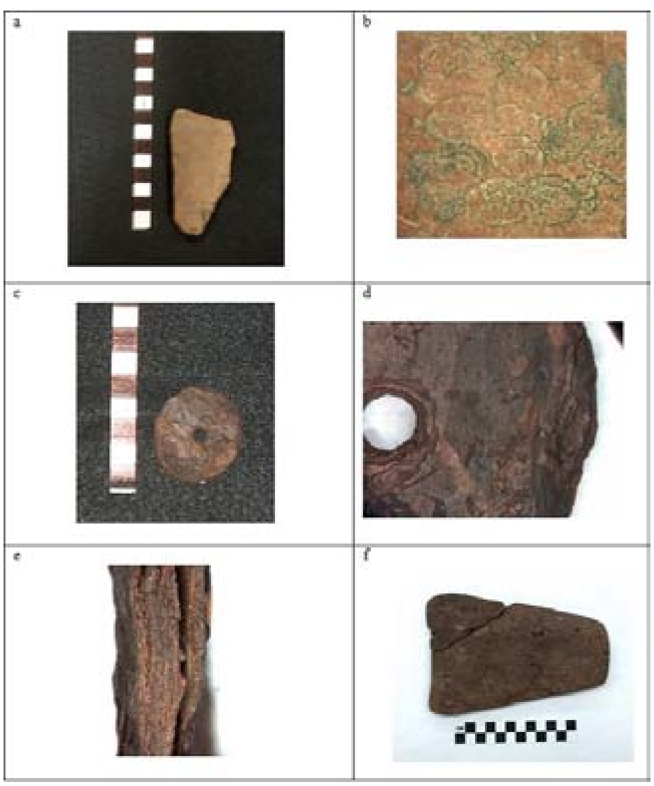


Figure 6.5. Uncharred ponderosa pine (*Pinus ponderosa*) bark slab specimens. (a-b) Bark slab, with close-up of picture puzzle pattern made by bark scales (FCRS-02715); (c-d) full view and close-up of bark slab shaped into a circular disk with a hole in the center, plus (e) side view of bark layers (FCRS-00645); and (f) an umbilical pad made from a shaped ponderosa pine bark slab (FCRS-03709). Scales = cm.

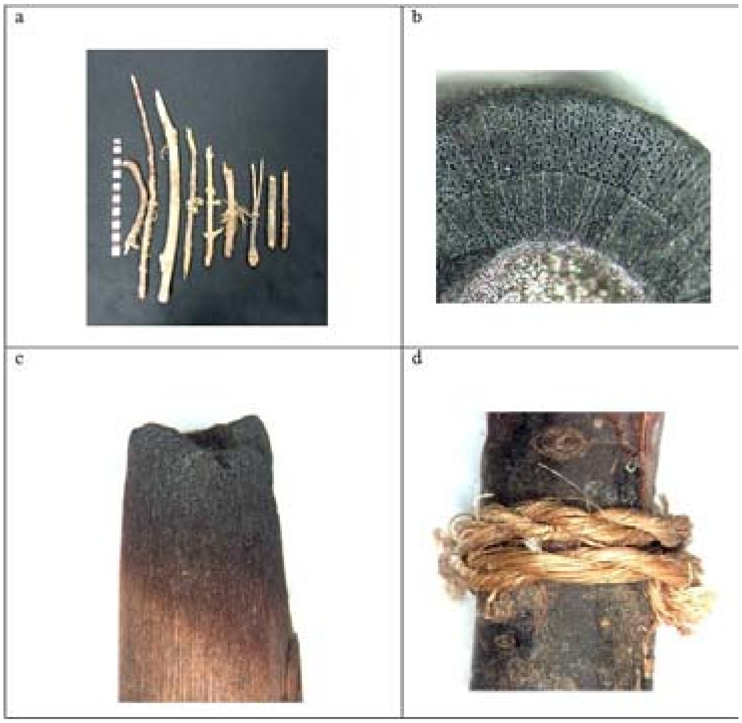


Figure 6.6. Cottonwood/willow (*Populus/Salix*) stems. (a) A collection of uncharred cottonwood/willow stems as the 1st, 2nd, 4th, and 7th stems aligned from left to right (FCRS-00534); (b-c) charred transverse view typical of a cottonwood/willow stem with a large central pith, that has been charred only on one end (FCRS-02710); and (d) yucca (*Yucca*) fiber tie on one stem (FCRS-00534).

Figure 6.7. Uncharred oak (*Quercus*) stems. (a) Stem that has been cut flat on upper end and (b) tapered on lower end (FCRS-00651); (c) stem with a yucca (*Yucca*) fiber tie (FCRS-00537): and (d) transverse view of an uncharred oak stem that shows larger vessels that form a ring in the early wood, and some of the vessels appear occluded (filled), two traits typical of oak wood (FCRS-02669). Scale = cm.

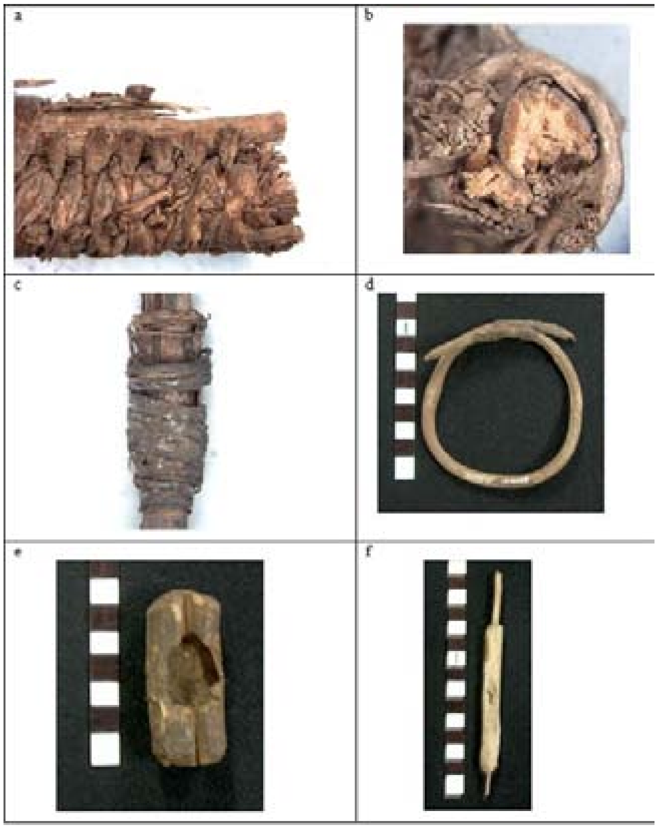


Figure 6.8. Uncharred lemonade berry and Unknown Dicotyledon stems. (a-b) Basketry fragment, with long horizontal lemonade berry (*Rhus aromatica*) element visible along top, and lemonade berry stem in transverse view in upper right (FCRS-03712); (c-f) four Unknown Dicotyledon stems, one with a sinew wrap (FCRS-02713), one twisted into a circle (FCRS-00658), one shaped like a little box (FCRS-00657), and one whittled at both ends (FCRS-00649). Scales = cm.

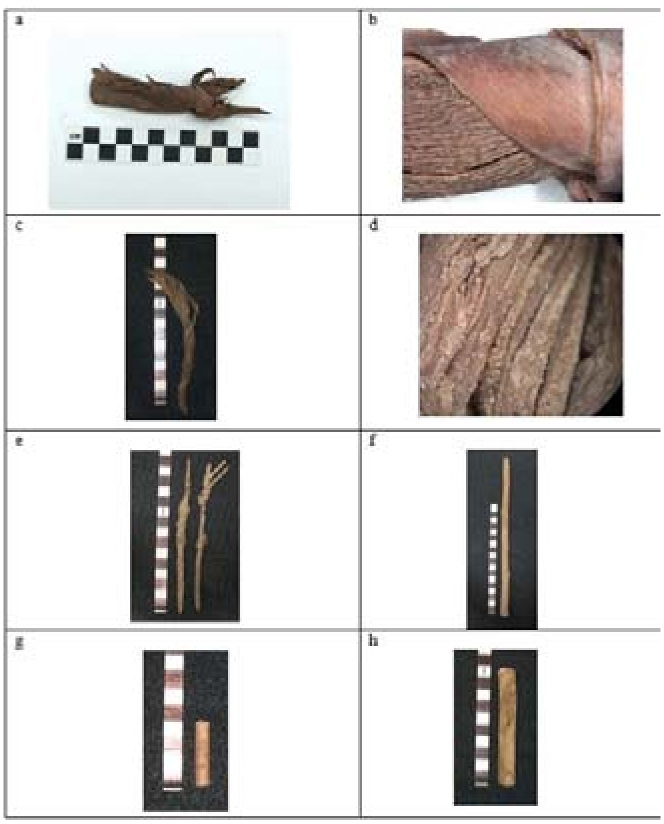


Figure 6.9. Uncharred unknown stems, bark, and leaves. (a-b) Unknown Dicotyledon bark strip knot (FCRS-03703); (c-d) bulrush (*Scirpus acutus*) stem rope (FCRS-02727); (e) two unknown stems with a bulrush (*Scirpus acutus*) stem wrap (FCRS-00540, left), and another with a yucca (*Yucca*) leaf wrap (FCRS-00543 (right); (f) one unknown stem, cut on one end (FCRS-02709); and (g-h) two unknown stems cut flat on both ends (FCRS-00646 and FCRS-00650). Scale = cm.

Table 6.1. Overview of plant taxa/parts identified in the Falls Creek Rockshelters Phase 2 project, grouped by Domesticated Plants, Wild Plant Reproductive and Tuber/Rhizome Parts, and Wild Plant Non-Reproductive Parts. Complete details available in Appendix 1 (Arizona State Museum and University of Michigan Museum of Anthropological Archaeology) and Appendix 2 (University of Colorado, Boulder).

Taxon	Common Name	Part(s)	Condition	FCRS Number(s)	Modifications	Location*
Domesticated Plants						
Cucurbita moschata	butternut squash	rind fragment, seed	uncharred	03706		UofM
Lagenaria	gourd	rind fragment	uncharred	03700		UofM
Zea mays	maize, corn	cob segment	uncharred	03714		ASM
Wild Plant Reproductive Parts						
Opuntia	prickly pear	seed	charred	03701		UofM
Vicia	vetch	seed	uncharred	03701, 03702		UofM
Wild Plant Non-Reproductive Parts						
Juniperus	juniper	bark fibers		02713.2, 02714	bundles	CU
Monocotyledon, likely *Yucca*	monocotyledon	fibers, fibro-vascular bundles, leaf fragment	uncharred	03705, 03710, 03712, 03713	twined bag fragment, basket, basket fragment, twine	ASM
Phragmites australis	reedgrass	stem	uncharred	00648, 00656, 02728	game snare, atlatl dart mainshaft, or wrapped with unknown bark strips	CU
Pinus ponderosa	ponderosa pine	bark slab	uncharred	00645, 02715, 03709	slabs shaped as thin disc, umbilical pad, or other	ASM, CU
Poaceae	grass family	stem fragment	charred	02693	stem bundle	UofM, CU
Populus/Salix	cottonwood/willow	stem, with *Yucca* fiber tie	uncharred	00534, 00535, 00544, 00545	otherwise unworked	CU
Populus/Salix	cottonwood/willow	stem, with probable hide strip	uncharred	02674	cut on one end	CU

Populus/Salix	cottonwood/willow	stem	uncharred	00647, 00652, 02668, 02710, 02711	shaped or fire-hardened on one or both ends	CU
Quercus	oak	stem, with *Yucca* fiber tie	uncharred, partially charred	00536, 00537	otherwise unworked	CU
Quercus	oak	stem	uncharred	00651, 02669, 02673	worked on both ends	CU
Rhus aromatica	lemonade berry	stem	uncharred	03711, 03712	basket made from whole Rhus stems wrapped with split monocotyledon fibers	ASM
Scirpus acutus	bulrush	stem rope	uncharred	02727	twisted into a Z-twist	CU
Unknown Dicotyledon	unknown dicotyledon	bark strips	charred, uncharred	03703	knotted	UofM
Unknown Dicotyledon	unknown dicotyledon	stem, with *Yucca* fiber or bulrush (*Scirpus acutus*) fiber tie or sinew wrap	uncharred	00538, 00539, 00541, 00542, 00546, 02713.1		CU
Unknown Dicotyledon	unknown dicotyledon	stems, some with sinew strips	uncharred	00649, 00653, 00657, 00658, 00661, 02671, 02672, 02712	worked at one or both ends, shaped like a box, twisted into a ring, shaped into a thin slab, or otherwise worked	CU
Unknown	unknown	stem, with *Yucca* fiber tie or bulrush (*Scirpus acutus)* fiber tie	uncharred	00540, 00543		CU
Unknown	unknown	stem	uncharred	00646, 00650, 00660, 02649, 02670, 02708	worked at one or both ends	CU
Unknown	unknown	stem, with unknown bark strip tie	uncharred	02709		CU

*Location: UofM (University of Michigan, Museum of Anthropological Archaeology); ASM (Arizona State Museum); CU (University of Colorado, Boulder).

For the record, three of these re-analyzed samples were determined late in the project to represent other archaeological sites. These include: (a) charred maize (*Zea mays*) cob segments/cob fragments (FCRS-03704) and charred nutsedge (*Cyperus*) tubers (FCRS-03708) from La Plata Site 22 (Morris, E.H. 1939:118, Plate 99); and (b) charred Dicotyledon leaves and inflorescences and a charred grass (Poaceae) stem fragment from Talus Village (FCRS-03707). Although these specimens will not be discussed further, their descriptive data have been retained in the Falls Creek Rockshelters Phase 2 database.

Table 6.2. Descriptive information on maize (*Zea mays*) cob segments.

FCRS Number	University of Arizona Cat. No	Taxon	Part	Condition	Quantity	Length (cm)	Diam. (mm) midpoint	Row No.	Cupule width (mm)
3714	GP 47904	*Zea mays*	cob segment	uncharred	1	8	2.2	12	n/a
3714	GP 47904	*Zea mays*	cob segment	uncharred	1	5.5	2	12	n/a
3714	GP 47904	*Zea mays*	cob segment	uncharred	1	7	1.8	12	n/a

6.3 Domesticated Plants.

Three domesticates identified during this research were previously reported in the Phase 1 analysis (Adams and Paterson 2011). These include parts of: maize (*Zea mays*), butternut squash (*Cucurbita moschata*), and gourd (*Lagenaria*). Three uncharred maize cob segments, complete around their circumference for a portion of their length, represent ears with 12 rows of kernels (Table 6.2). These fall within descriptions of Chapalote/Basketmaker/Hohokam maize discussed in detail in the Phase 1 report (Adams and Paterson 2011). A single yellow kernel on an uncharred cob (FCRS-03714) revealed translucent endosperm inside, characteristic of flint and pop varieties of maize. The butternut squash remains also complement those recovered from the Phase 1 analysis, which are among the earliest for this type of squash reported in the American Southwest (Adams and Paterson 2011). An important point about the squash is that it is a hard-shelled variety, clearly identified on the basis of its seeds still attached to the inside. Gourd (*Lagenaria*) seeds are quite different. Although modern butternut squash often have a soft shell, the plant can also produce a hard shell that would contribute to longer storage capability. Likewise, a gourd (*Lagenaria*) rind fragment, identified on the basis of cellular structure in cross-section view, augments the record of yet another domesticate first reported from the Phase 1 re-analysis project.

6.4 Wild Plants: Subsistence Resources.

Two wild plant resources not included in the Phase 1 report could represent subsistence and/or medicinal usage. These include a single prickly pear (*Opuntia)* seed suggesting use of the fruit and over 100 vetch (*Vicia*) seeds. These two resources will be discussed in more detail.

***Opuntia* (prickly pear) seed:**

A single charred prickly pear (*Opuntia*) seed suggests use of prickly pear fruit as a subsistence resource. Prickly pear plants are common members of the local flora. Other Basketmaker II sites with prickly pear seeds include Turkey Pen Ruin in the Grand Gulch area (Aasen 1984) and Cowboy Cave in southeastern Utah (Barnett and Coulam 1980:127-131). The historic record of prickly pear fruit use as a food is extensive (Rainey and Adams 2004). Usually the sweet red fruit is eaten and the hard seeds spit out or swallowed whole.

***Vicia* (vetch) seeds:**

Over 100 uncharred vetch (*Vicia*) seeds preserved in excellent condition within the Falls Creek Rockshelters deposits. Vetch seeds are rarely reported in the Southwestern US archaeobotanical record, although there is a reference to vetch use within Basketmaker II deposits in the Grand Gulch/Cedar Mesa area (Aasen 1984; Lepofsky 1986). This may be because vetch plants are generally considered unpalatable or poisonous to humans. However, the rich ethnographic record of plant use indicates that humans have learned how to render vetch seeds and foliage edible. For example, the black seeds of vetch (*Vicia americana*) were eaten by the Acoma and Laguna, and the Cochiti used the entire pods of this species, calling it "duck peas" (Castetter 1935:32). Young stems of *Vicia americana* were baked or cooked for greens in California (Yanovsky 1936:39-40). The ripe pods of another species of vetch, *Vicia melilotoides*, were cooked and eaten or dried and stored for later by the Chiricahua and Mescalero Apache (Castetter and Opler 1936:49). California groups used the stems and leaves of *Vicia americana* for food and the roots for tying materials (Heizer and Elsasser 1980). Elsewhere in the world, bitter vetch (*Vicia ervilia*) was considered both a medicinal crop and a favorite food for livestock (Miller and Enneking (2014:254-268).

6.5 Wild Plants: Non-Subsistence Resources.

Other plant taxa/parts recovered during the Phase 2 re-analysis represent non-food resources. Some, such as juniper (*Juniperus*) bark, reedgrass (*Phragmite australis)* stems, ponderosa pine (*Pinus ponderosa*) bark slabs (all shaped), basketry fragments made of lemonade berry (*Rhus aromatica*) stems, and various items crafted from bulrush (*Scirpus acutus*) stems, have been discussed and described in the Phase 1 report (Adams and Paterson 20111). Others that were not in the Phase 1 report, and discussed in more detail below, include: (a) Monocotyledon fibers, fibro-vascular bundles, and leaf fragments, most likely representing use of yucca (*Yucca*) plants; (b) grass (Poaceae) stem fragments; (c) and shaped sticks made from cottonwood/willow (*Populus/Salix*) and oak (*Quercus*) stems. In addition, other plant parts, including unidentified stems and bark strips and leaf fragments, will be briefly reviewed.

Monocotyledon specimens:

The Monocotyledon fibers, fibro-vascular bundles, and leaf fragments very likely represent use of *Yucca* (yucca) leaf fibers for making baskets, sandals, cordage, and for a wide range of other routine fiber needs. *Yucca* fibers were reported in the Phase 1 reports by Adams and Peterson (2011) and especially by Webster and Jolie (2011). In addition, bulrush (*Scirpus acutus*) stems were also used as fiber sources, such as a rope that was fashioned using a Z-twist (FCRS-02727).

Grass (Poaceae) stem fragments:

Ripening grains (caryopses) of wild grasses offer important subsistence resources in the spring through fall seasons, and have provided major dietary components to historic groups (Doebley 1984:62; Rainey and Adams 2004). The presence of grass stems in archaeological deposits could easily preserve as residue from processing the grains. It also stands to reason that these same grasses would also provide raw materials as stems for a range of daily needs such as padding, brooms, brushes, pit lining, roof thatching, etc. (Adams 1988).

During the Phase 2 project, a bundle of over 100 uncharred grass stems (FCRS-02693) was analyzed; it may represent a raw material in storage for a future use. At Old Man Cave, located along the edge of Cedar Mesa, Basketmaker II deposits included chaff from dropseed grass (*Sporobolus*) that represented left over debris from threshing the grass to remove the small grains (Geib and Davidson 1994:197). At Cowboy Cave in southeastern Utah, two skin bags containing shelled corn had been set in a shallow pit lined with grass and cedar bark. A mat of dropseed grass (*Sporobolus)* covered the shallow pit (Jennings 1980:29). Caves in the Prayer Rock District of northeastern Arizona, representing the later Basketmaker III period, contained a wide range of perishable materials important to daily life, including mats and brooms made of grass stems (Morris, E.A. 1980:123). Some of the long grass stems were twined, cut, folded, and tied, or bundled with string or fiber. It seems reasonable that the Falls Creek Rockshelters Basketmaker II groups were well familiar with grass stems as an all-purpose material for many household uses.

Wooden stems (sticks):

Identifying wooden sticks in the archaeological record is difficult. One common method is to view a transverse (cross) section to see anatomical details of rings, rays, vessels, and the patterns they make. Charred wood specimens from thermal features and middens are often identified in this manner (Adams and Murray 2004). Certain exterior features, such as the placement and character of over-wintering buds (Jolie 2008) or the presence of lenticular pores in tangential view (Adams and Murray 2004), can also be used when they are present. The older Basketmaker II reports, some of them describing spectacular collections of perishable artifacts, often do not give identification details of the different woody plants used in making these items. Or, identifications are generalized, such as "hardwood".

During the Phase 1 Falls Creek Rockshelters project, a number of "sticks", many of them embellished in some way with cordage and/or feathers, were reported. Four "wrapped sticks" and a "pointed stick" were described by Webster and Jolie (2011:J47-48) during the first phase of this project. Although the trees or shrubs utilized to make the sticks were not identified, it seems clear that these artifacts likely represented prayer sticks and awls. In addition, an incomplete but well-preserved cradleboard recovered from the burial crevice was partially constructed of lemonade berry/sumac twigs (*Rhus aromatica*) (Adams and Paterson 2011: I-10 – I-11; Webster and Jolie 2011: J-45 – J46). Other larger wooden cradleboard elements that could not be viewed in cross-section without breaking them may well represent other local trees or shrubs such as willow (*Salix*) or oak (*Quercus*).

During Phase 2 re-analysis, some wood stems revealed adequate anatomical details to identify, via the transverse view, the type of tree or shrub they were made of. It is clear that cottonwood and/or willow (*Populus/Salix*) stems and oak (*Quercus*) stems were commonly utilized for making various wooden items.

***Populus/Salix* (cottonwood/willow) stems, some with *Yucca* (yucca) fiber ties or unknown bark strip ties:**

Six *Populus/Salix* stems were shaped, fire-hardened, cut on one end, or cut and having an unknown bark tie. Additional stems with yucca fiber ties were otherwise unworked. The primary defining trait of these wood types is that the transverse view reveals numerous vessels, some of them paired (Adams and Murray 2004). The uses for such sticks could be many. For example, wood fashioned into items, some of them ritual, are well known from well-preserved archaeological sites that represent time periods later than Basketmaker II. A spectacular collection of wood artifacts from Chetro Ketl in Chaco Canyon has been described and illustrated with photos (Vivan, et al. 1978). A series of shaped "prayersticks" were identified as having been made from cottonwood (*Populus*) and other woods (Vivian et al. 1978:110-111). Other "assorted sticks" were fashioned from willow *(Salix*), oak (*Quercus*) and many other woody plants (Vivian et al. 1978112-113; Dennis and Zauderer 1978:135). Wood and reed artifacts are common in well-preserved cave deposits. At Cowboy Cave in southeastern Utah, worked wood and sticks with pitch, fiber cordage, or bark strips were recovered (Janetski 1980:75-95). Various artifacts were identified as constructed from cottonwood (*Populus*) and other wood types (Janetski 1980:77, 80, 83). At Cave du Pont in Kane County, Utah, during the Basketmaker II period a cottonwood box was made by cutting a section ten inches long from a cottonwood (*Populus*) limb that was two inches in diameter (Nusbaum 1922:116-117). The bark was peeled off and the ends rubbed smooth. A cavity eight inches long by one and a quarter inch in depth was dug out of the upper surface. At one end are traces of a fret design in black paint. The specimen represents a container, possibly for feathers or other fragile articles. For this phase of the Falls Creek Rockshelters project, a small wooden "box" that may have held projectile points (FCRS-00657) was fashioned from an unidentified wood type.

***Quercus* (oak) wood stems, some with yucca (*Yucca*) fiber ties:**

Three *Quercus* stems were cut or otherwise modified on both ends. Additional stems with yucca fiber ties were otherwise unworked. Oak wood traits include very large vessels in the early wood, making them appear "ring porous", and both very wide and quite narrow rays (Adams and Murray 2004). A Basketmaker planting stick, 45 inches in length, and found in Basketmaker Caves of northeastern Arizona was said to be made from the "root of some hardwood tree, possibly oak" (Guernsey and Kidder 1921:89-90). The entire surface had been smoothed and one end worked down to a thin blade with a rounded point and a sharp edge. Wood-working waste recovered at Cowboy Cave in southeastern Utah, including round sticks of varying diameters and lengths, some smoothed and/or notched, were constructed of oak (*Quercus*) wood (Janetski 1980:85). Wood was a commonly utilized material by Basketmaker III groups living in Caves in the Prayer Rock District of northeastern Arizona (Morris, E.A. 1980:124-138). The Agricultural Forest Products Laboratory in Madison Wisconsin identified some of these artifacts as constructed from oak (*Quercus*) wood. The artifacts were extremely varied, and included various "worked sticks", "incised sticks", and a "stick with burned decoration" (Morris, E.A. 1980:137).

Unknown Dicotyledon stems, Unknown stems:

During this Phase 2 portion of the project, numerous non-charred wooden stems, often shaped and/or with attached cordage or sinew, did not have a transverse view exposed with enough details to make an identification. Because breaking them to see inside was not considered an option, many of these uncharred wooden artifacts made from smaller stems (sticks) were not identified at all, or broadly identified to Dicotyledon, which can include many of the woody non-conifer trees and shrubs in the region.

Unknown Dicotyledon stems, some with yucca (*Yucca*) fiber ties and others without:

Similarly, a series of additional stems with some evidence of human modification, likely also representing woody plants in the Dicotyledon group, also preserved with and without yucca fiber ties. Another unknown stem retained an unknown bark strip tie. Again, the uses of these items could range from everyday needs to ceremonial purposes.

6.6 Summary

The Phase 2 Falls Creek Rockshelters re-analysis project encountered some of the same plant taxa/parts reported in the Phase 1 report (Adams and Paterson 2011). These include three domesticates (maize, butternut squash, and gourds). Potential resources from two additional wild plants were also added to the list: a prickly pear cactus seed, and vetch seeds. Cactus seeds have been commonly recovered from archaeological sites from the American Southwest. Less commonly recovered vetch seeds could represent food and/or non-food usage.

Non-food uses of wild plant parts were varied. For example, slabs of thick ponderosa pine (*Pinus ponderosa*) bark were shaped into an umbilical pad, a flat circular disk, and an item for another purpose. A game snare, an atlatl dart mainshaft, and other items were fashioned from reedgrass (*Phragmites australis*) stems. Shreddy juniper (*Juniperus*) bark, grass (*Poaceae*) stems, and bulrush (*Scirpus acutus*) stems provided useful household resources. Lemonade berry *(Rhus aromatica*) stems were utilized in making baskets that also included Monocotyledon leaf fibers (likely *Yucca*).

The Phase 2 re-analysis project also focused heavily on wooden items made from the stems (sticks) of trees or shrubs. This class of specimens is difficult to identify if no transverse (cross section) view is available. These stems were generally worked in some way, and many included yucca fiber ties, unknown bark strip ties, or sinew wrapping. Stems from cottonwood/willow (*Populus/Salix*) and oak (*Quercus*) trees were fashioned into many of these artifacts; in other cases the identifications are more general (Dicotyledon) or remain unknown.

Re-analysis of museum collections is a valuable endeavor. In the case of the Falls Creek Rockshelters plant remains, this Phase 2 study both corrected and refined some of the previous identifications. For example, hard shells in the cucurbit family are generally considered to represent gourds (*Lagenaria*), however it is clear they can also occur in what are generally considered to be soft-shelled squash, such as butternut squash (*Cucurbita moschata*). Most of the uncharred wood stems, modified in various ways and including *Yucca* and unknown bark ties, were not originally identified. At present it is clear that at least some of these items were made from cottonwood/willow (*Populus/Salix*) stems and some from oak (*Quercus*) stems. Two basket fragments (FCRS-03711 and 03712) were both determined to have included lemonade berry (*Rhus aromatica*) stems as part of their construction, along with Monocotyledon fibro-vascular bundles (likely representing *Yucca* leaves) as a second element. Bulrush (*Scirpus acutus*) stems also provided important fiber resources.

CHAPTER 7:
FALLS CREEK ROCKSHELTERS DATABASE

Kristina Horton

7.1 Introduction

The FallsCreekDatabase.mdb, a Microsoft Access 2010 database created on a Windows 7 platform, is the culmination of two phases of work on the Falls Creek Rockshelters Archaeological Assessment project. Phase 1 of this project focused on the NAGPRA materials recovered from the Falls Creek Rockshelters, in the late 1930's, which were dispersed to three primary facilities. Phase 1 artifacts and human remains came into the Anasazi Heritage Center (AHC) under Temporary Reposit Agreement Number 49 and have since been repatriated to the tribe. Phase 2 of this project focused on the non-NAGPRA materials and collection, excavated from the areas surrounding burials; these artifacts were primarily housed at the University of Colorado Museum of Natural History (UCMNH) and came into the AHC under accession number 2012.11.

The creation of tbl_FCRS_CollectionInventory (Collection Inventory), the primary data table inventorying the collection, began during the initial phase of the project. The Collection Inventory creates a primary and unique identifier, the FCRS Number, assigned to each artifact while maintaining the various institution data used to track and label artifacts through time. In Phase 2 of this project the majority of the non-NAGPRA collection was housed at UCMNH and can be cross-referenced by the CU numbering system (CU Catalog Number and CU Field Number) which correlate to the Morris and Burgh report. For the purposes of this phase of the project, artifacts will be referenced by their FCRS Number as well as their CU Catalog and Field Number.

The following report summarizes the work conducted by Kristina Horton on the Phase 2 collection and then includes database documentation for the overall project. It is the express hope of this author to see work conducted in a third and final phase of this project, to ensure the creation and compilation of a finalized research and interpretive digital tool which can accompany the final synthetic volume on the culminating work on the Falls Creek collection. This digital reference tool could link analytical data to the digital photographs for visual access and documentation on the Falls Creek Collection. The creation of a digital object that can withstand the migration through time is our ultimate goal, so this research tool can be used in perpetuity.

7.2 Archival Work At UCMNH

In February and March of 2012, Kristina Horton visited the University of Colorado Museum of Natural History collections and archives.
The goal of these visits were twofold:

- Copy and scan additional materials from the Earl Morris archives, which had not been sent to Laurie Webster during Phase 1 work.
- Visit and assess the physical collection to prepare for a transfer of property to the Anasazi Heritage Center.

Digital and hard copies were made of every catalogue card associated with the collection as a reference tool for this project, these objects are included in the archives housed under accession 2012.11 at the AHC. While working with the catalogue cards it became clear the collection inventory, created by Mellissa (Stolz) Bechhoefer in 2003, was generated by the information included on each catalog card which reduced the work needed to update the collection inventory. It is of note that the Falls Creek collection was catalogued at the same time as the Talus Village materials and the two sites share overarching catalog numbers and may have been historically mixed during the write-up of the Morris and Burgh report. The inventory provided by the UCMNH is the only digital compiled list of artifacts recovered from the Falls Creek Rockshelters.

Over the course of work in the CU Archives a master inventory of each field number, artifact, and catalogue number was never found. There are a couple archival documents which group artifacts by provenience and artifact type, which only list the field number. Laurie Webster is working on correlating the field numbers with the catalogue numbers, as there are several items in the current collection inventory which do not have a field number associated with them. Once this is information is digitized, it can be uploaded to the FallsCreekDatabase and used to update provenience data, to create a searchable and concise database that can be linked to the GIS maps for the site.

During these visits, the physical artifacts and collection were assessed for transport and an estimate was generated to repackage and move the collection the AHC. At that time, there were couple items and one larger material type that were determined to be missing from the CU Collection. First, there was a very small amount of unworked faunal in the collection inventory from UCMNH and this did not reflect the number of materials documented in the final appendix written by Hugo Rodeck in the Morris and Burgh report. Unworked faunal was determined to be 'missing' from the collection after this inventory. In the Morris and Burgh report, there was also mention of plaster samples with anthropomorphic images molded into the material, it is unclear if these samples were moved to UCMNH and where they might be-they were never catalogued into the collection and could quite possibly still be stored at UCMNH.

After these visits, an overview of work conducted at UCMNH and estimates for future work were sent along to Julie Coleman with the Forest Service and Mike Berry with Dominguez Archaeological Research Group, to initiate the transfer of property from UCMNH to the AHC.

7.3 Overview Of The Transfer Of Property: UCMNH To The AHC

On Monday, August 13th, 2012, the author transported the Falls Creek Rockshelter collections from the University of Colorado Museum of Natural History (UCMNH) to the Anasazi Heritage Center (AHC). Between Tuesday, August 14th and Thursday, August 15th, Horton conducted the collection management tasks at the AHC to unpack, inventory, and prepare the collection for Phase 2 analysis.

To initiate the Transfer of Property (TOP), Julie Coleman submitted a letter on behalf of the Forest Service requesting the Basketmaker II non-NAGPRA materials be packaged for transport and permanent storage at the Anasazi Heritage Center (AHC). Christie Cain, Anthropology Collections Manager at UCMNH worked with a graduate student and an undergraduate student to digitally inventory and arrange the collection for transport. The author met with the team at UCMNH to work on the digital inventory and boxing of artifacts. Due to the nature of long term open air storage at UCMNH, many of the artifacts needed to be placed in 4mil bags to ensure they stayed together by catalogue number and to enable transport. Cain and her team finalized the inventory and finished the boxing of the collection in June, generating a digital list of artifacts arranged by temporary box number.

On Monday, August 13th Horton met with Cain to finalize the collection inventory, sign paperwork (Receipt for Outgoing Property), and load the twelve boxes and a couple oversized items into Horton's vehicle. Between Tuesday, August 14th and Thursday, August 16th, the Falls Creek collection was unpacked, rehoused in curation boxes, inventoried, labeled, and stored in Permanent Storage Room 208 (PS208) at the AHC. With the exception of a couple items and unworked faunal, all objects were accounted for in the move between UCMNH and the AHC. Follow-up ensued with UCMNH to identify and locate the remaining artifacts associated with the Falls Creek Collection and prepare them to be moved from UCMNH to the AHC. By Thursday, all objects were stored in the appropriate curation artifact boxes and moved for permanent storage to three general locations- Special Collections Cabinets, Oversized Storage, and Bulk Storage.

On Friday, August 17th the Phase 2 collections from the Falls Creek Rockshelters were inventoried and ready for analysis by the research team. The research team then visited the AHC and/or loaned artifacts out for the analysis between the early fall of 2012 and the summer of 2014. What is included in the Phase 2 synthetic volume is a record of their analysis conducted on the collection over the course of this phase of the project.

7.4 The Case Of The Missing Unworked Faunal

Early in the Phase 2 work conducted on this project, Cerisa Reynolds was contracted to analyze the unworked faunal while it resided at UCMNH. When she performed her analysis, it became clear that the majority of the collection was missing. Additional work will need to be conducted with Cerisa Reynolds to include her data in the FallsCreekDatabase. The unworked faunal analysis data has not been compiled, but it is the hope of the author to continue working on the unworked faunal data in Phase 3 of this project or create an addendum with the unworked faunal data under the Phase 2 grant work. There is one box of unworked faunal, currently housed at the AHC, but these items are not the entirety of the excavated collection. The remainder of the collection was identified when visiting UCMNH to prepare the collections for transport and one suspicious cabinet was quickly glanced in while searching for additional Falls Creek materials.

While preparing the Falls Creek collection for transport to the AHC, the author glanced in an intriguing cabinet labeled "Earl Morris Miscellany". This cabinet is located at UCMNH in the following location 101, 057, 06, and revealed a drawer containing several large bags of unworked faunal material. Upon closer inspection, it became clear the bones were labeled with numbers prefixed with 38- and 40-, which had been used to identify the field numbers of artifacts collected by Earl Morris during the Durango Expeditions, supported by the Carnegie Institute.

The author digitized the full inventory of unworked faunal from Hugo Rodeck's appendix, the Morris and Burgh. This inventory was then used to compare to the labeled bones found in the miscellany cabinet. It was determined that yes indeed those field numbers matched most of the items on the digitized Rodeck Inventory, the unworked faunal had been found.

Additional research and documentation needs to be done on this subject, but it is the author's guess that the unworked faunal was given to Hugo Rodeck sometime in the 1940's for analysis, research, and reporting in the Morris and Burgh report. The unworked faunal had been labeled with the field numbers, helping to differentiate the Falls Creek (prefix 38-) from the Talus Village (prefix 40-) artifacts, during Rodeck's write-up. When UCMNH curated and catalogued the smaller pieces of bones the majority of the diagnostic elements, including all of the long bones, were not present. The author believes that the majority of unworked faunal stayed with Hugo Rodeck in his lab and was never curated, but had been fully documented in the write-up of the final report. It is possible that around the time when Hunter, the old museum collections building at the University of Colorado, was vacated that these items were moved to the Anthropology Collections and placed in the Earl Morris Miscellany drawer.

7.5 Mystery Artifacts And The Search For Specimens

The work conducted on this project has been a fascinating combination of archival research and documentation, while comparing historic reports to the physical collection. Working with historical collections, especially those that have been dispersed to various institutions, creates a challenge to researchers and analysts to find, identify, and correlate specimens back to the artifacts described in the original report. The Morris and Burgh report is a comprehensive document and will always remain integral as the primary synthesis of work done in the late 1930's. When it came to the mystery of the unworked faunal, the Morris and Burgh report was integral in identifying those materials since they had never been catalogued with the overall collection.

The history of the physical collection and management strategies utilized to track and store the collection over time, also present an interesting facet to this project. At some point in time, I would imagine undergraduate and graduate students in the lab, took the time to label each artifact with the CU Field Number and occasionally the CU Catalogue Number. For the lithic material, each individual flake has been labeled (with the exception of a couple catalogue numbers) with a field number. When packaging the collection at UCMNH it became clear that there was this whole collection management history that may never be fully documented at the end of this project, since it is not what we typically talk about when dealing with collections. Maybe there are additional files in the archives which would help to illuminate the history of physically managing the Falls Creek collection.

The Earl Morris Archives, housed at UCMNH, never revealed a master field/specimen list from the excavations at Falls Creek Rockshelters. It is possible that this document is stored in the Carnegie files, which were not looked into during this phase of the project. There are a couple other archival inventories but none that serve as the master list of CU Field Numbers that identify artifacts recovered during excavation.

Another artifact class, described by Morris and Burgh as modeled objects of clay and decorated fragmetns of cist walls, is missing from the collection. Maybe one day we will find the anthropomorphic images embedded in plaster, but have never been relocated in the Anthropology Collections at UCMNH. Sally Cole has been very interested in comparing these plaster images to the prolific rock art within the shelter, but at the time of the transfer of property these items were never identified in the collection.

There are a handful of items which still reside at Arizona State Museum and the University of Michigan Laboratory of Anthropological Archaeology. Karen Adams was able to analyze the archaeobotanical specimens from both institutions, during Phase 2 of this project. Laurie Webster analyzed the Arizona State Museum perishable specimens, but has not analyzed the materials housed at the University of Michigan Laboratory of Anthropological Archaeology. Mona Charles has not analyzed the worked faunal from the Arizona State Museum and it is unclear, at this time, if there might be lithic material also housed at ASM from which had been acquired from Gila Pueblo. These items have not been requested for return to the Forest Service for curation at the AHC, at the time of writing this report.

Reading through the mystery items it is apparent that the majority of the collection was relocated and this phase of the project accomplished a major goal to transfer the entirety of the collection to the AHC. There is an archive item that still resides at UCMNH and has not been documented under this phase of the project, these are the photographs from Morris' excavation, maybe under Phase 3 these items can be scanned and documented with the AHC archives to provide a robust record of the Falls Creek Rockshelters and their contemporary and prehistoric history.

7.6 Notice Of Inventory Completion, NAGPRA, And Repatriation

Although NAGPRA work was not specifically conducted under this phase of the project, the author assisted Linda Farnsworth and Julie Coleman, to complete the Notice of Inventory Completion for National NAGPRA as a separate contract. As Linda worked through the collection, udpates and changes needed to be made to the project database; the modified NAGPRA data were updated to FallsCreekDatabase and these data will be curated with the entirety of the collection.

Upon the author's visit to the AHC in July of 2014, an updated storage location of "REPATRIATED" has been assigned to each of the NAGPRA items, including Human Remains, Associated Funerary Objects (AFO), and Unassociated Funerary Objects (UFO) that were repatriated to the tribes. The physical materials are no longer housed at the AHC under the Temporary Reposit Agreement Number 49, but analysis data, photographs and records will be curated with the rest of the Falls Creek materials and are now clearly identified as being repatriated.

7.7 Overview Of Accession 2012.11 At The Anasazi Heritage Center

Due to the amazing preservation of the collection, the historical value, and the academic intrigue- the Falls Creek Rockshelter collection was dispersed across the country over the twenty years between excavation (1938) and the printing of the Morris and Burgh report (1954). Multiple iterations of work have been conducted by the Forest Service under various contracts and grant, to determine the location of the artifacts recovered from the Falls Creek Rockshelters. Over the course of this multi-phased project, we have worked towards reuniting the collection at the AHC and fully analyzing the materials for an anticipated synthetic volume reevaluating the Falls Creek Rockshelters. At the completion of Phase 2, the majority of the Falls Creek Rockshelter assemblage have been reunited and curated at the AHC under accession 2012.11.

7.8 Culminating Visit To The AHC July 2014

Between July 7-12, 2014, the author made a final visit to the AHC to reconcile the storage and organization of the physical collection housed under accession 2012.11.
The Falls Creek materials are sorted by material type and then stored in the following locations:

- Bulk Storage: Permanent Storage Room(PS208), Row 12, Unit 3, Shelves 4-9 and Unit 4, Shelf 1
  - Flaked Lithics, Non-flaked Lithics, and Unworked Faunal

- Special Collections: Permanent Storage Room(PS208), Special Collections, Cabinet 7, Drawer C-F
  - Perishables, Wood Tools, Worked Faunal, Miscellaneous Specimens and Ornaments

- Oversized Shelves: Permanent Storage Room(PS208), Row 33, Unit 16, Shelf 4
  - Oversized groundstone items

- Archival Storage Room: Row 13, Unit 6, Shelf 1
  - Printed digital photographs and contact sheets
  - CU Catalogue Cards (copies)
  - Detailed Analysis Tables
  - Project Hard Drive
  - Additional materials will be added by: Sally Cole, Laurie Webster, and Mona Charles

The Collection Inventory was reconciled for each artifact and the Box Numbers and Storage Locations were updated accordingly. Artifacts were reorganized and rehoused following the analysis which had been conducted under this phase of the project between 2012 and 2014. An email summary, not included in this report, was sent to the AHC following the author's visit to outline the organization of the collection and make future recommendations for curating and cataloging the accession. Between the Collection Inventory and the Box Log, a full record of the items being curated at the AHC can be pulled from the FallsCreekDatabase for curation management purposes.

At the completion of her visit, the author has submitted to the AHC all archives and data associated within her scope of work on this phase of the project. It is anticipated, though, additional changes will be made to the FallsCreekDatabase as the final Phase 2 report is compiled, therefore a final version of the database and any updated files will need to be sent to the AHC upon completion of Phase 2 work. The other researchers and analysts, specifically Sally Cole, Laurie Webster, Mona Charles, and Mike Berry will be submitting to the AHC additional archival documentation on this project and potentially finalizing their analysis through the end of the 2014.

It is the hope of the project team, that additional funding will support a Phase 3 on this project to compile a synthetic volume and a compiled database linked to digital photography thus creating a visual research tool which augments the synthetic write-up of the Falls Creek Rockshelters. The project database is in a good place at this point, but additional work will be needed to create a true research tool.

7.9 Overview Of Digital Objects

Under this phase of the Falls Creek Archaeological Assessment Project, a hard drive has been curated at the AHC under Accession 2012.11. The contents of this hard drive are organized into three primary folders, with the front end database outside of the primary folder structure.

Main Folder Name: ...\FCRS-Phase2_FallsCreek_Phase2\...

Sub Folder Names:

- FallsCreek_db
- Images
- Index

Front End Database: FallsCreekDatabase.mdb

It is of note that these folders contain final files and documentation on this project and in no way reflect the multiple iterations of work conducted by the author and the other researchers who have contributed to this project. The contents of these folders are the finalized digital objects upon completion of Phase 2 work.

In this era of supercomputing, digital objects proliferate quickly. Curation of digital data is still in its infancy when it comes to museums who work with physical archaeological collections and their associated archival documentation. The research team on this project will need to come up with an articulated plan to handle how these digital objects are arranged and presented to the public, while storing them in a format that will withstand the test of time and data migration. At the completion of this phase of the project, the digital images and index have been arranged but further work will need to be done to link these images and documents to the FallsCreekDatabase and the associated research data. For the purposes of this project and reporting, a data table serving as a reference tool was queried for documentation in the final Phase 2 report (see Chapter 7 Appendix Database).

7.10 Digital Photographs & Archives

Stored within the folder labeled "Images" are the compiled digital photographs and images generated during this project. Each researcher was responsible for the photo documentation of their material class(es) during analysis. Photographs were to be recorded on a digital photo log referencing the PhotoID number labeled on each image. Consequently, the subfolders are labeled by researcher/analyst name. The compiled digital photographs can be attributed to the following individuals:

- Carol Graham
- Ed Jolie
- Karen Adams
- Laurie Webster
- Mona Charles

- Phil Geib
- Project
- Sally Cole

Included in the table below is a summary of the Image subfolders and their contents. A note has been made if a photo log was completed and integrated into the project database under the column 'Photo Log'. A copy of the full photo log will be included in hard copy for the AHC archives. As mentioned earlier, digital objects can be quite prolific, but unless managed correctly can easily be deleted or manipulated, thus compromising the original digital object. For the purposes of archival documentation on this project, the author printed hard copy images for curation in two formats. For selected image folders, a PDF was compiled for each folder showing all of the folder's contents with four images per page. To correlate the printed images to the photo log and the original files, it is integral to use the second document which is a contact sheet of the images in the folder, which show the file name or PhotoID for each image. At the writing of this report and submitting the hard drive to the AHC for curation, the project has compiled close to 9500 images. Sally Cole prepared her images for curation separately and they will consist of high quality color contact sheets with images stored on archival CDs. It is of note that Sally Cole's images will be duplicated on the hard drive.

Analyst Super Folder	Analyst Sub Folder Name	Photo Log	Number of Digital Objects	ARCHIVES Compiled PDF of Images (# pages)	ARCHIVES Compiled PDF Contact Sheet (# pages)
Carol Graham	Carol Graham	YES	277	69	8
Ed Jolie	Ed Jolie/ Ed Jolie Phase 1_BLM Anasazi Heritage Center	YES	54	14	2
Ed Jolie	Ed Jolie/Ed Jolie Phase 1_CT Hurst Museum	NO	75	19	3
Ed Jolie	Ed Jolie/Ed Jolie Phase I_EAJ FCRs site visit 8-15-09	NO	113	29	4
Ed Jolie	Ed Jolie/Ed Jolie Phase 1_FCRS00088-extra photos and AMS sample photos for Phase I	NO	21	6	1
Ed Jolie	Ed Jolie/Ed Jolie Phase 1_MEVE Falls Creek basketry	NO	446	112	13
Ed Jolie	Ed Jolie/Ed Jolie Phase 2	YES	73	19	3

Analyst Super Folder	**Analyst Sub Folder Name**	**Photo Log**	**Number of Digital Objects**	**ARCHIVES Compiled PDF of Images (# pages)**	**ARCHIVES Compiled PDF Contact Sheet (# pages)**
Karen Adams	Karen Adams/2012-05 Adams_(May)_FCRS_Phase_2_Final_Photos_May_24_2014	YES	39	10	2
Karen Adams	Karen Adams/2012-08 Adams_(aug)_FCRS_Phase_2_Final Photos	YES	88	22	3
Karen Adams	Karen Adams/Hurst_BMI	YES	190	48	6
Karen Adams	Karen Adams/KRA_FallsCreek	YES	240	60	7
Laurie Webster	Falls Creek Phase I	NO	714	178	21
Laurie Webster	Falls Creek Phase II	YES	246	63	8
Mona Charles	Mona Charles/Phase 1 (multiple sub-folders)	YES	802	Mona Charles To Do	Mona Charles To Do
Mona Charles	Mona Charles/Phase 2_bone_bead	YES	17	15	N/A. Compiled PDF photo document includes file name
Mona Charles	Mona Charles/Phase 2_gaming_pieces	YES	48	6	N/A. Compiled PDF photo document includes file name
Mona Charles	Mona Charles/Phase 2_Microscope_photos (multiple sub-folders)	NO	783	Not Compiled	Mona Charles To Do
Mona Charles	Mona Charles/Phase 2_notched_bone (multiple sub-folders)	YES	63	13	N/A. Compiled PDF photo document includes file name
Mona Charles	Mona Charles/Phase 2_pipe	YES	6	2	N/A. Compiled PDF photo document includes file name

Analyst Super Folder	Analyst Sub Folder Name	Photo Log	Number of Digital Objects	ARCHIVES Compiled PDF of Images (# pages)	ARCHIVES Compiled PDF Contact Sheet (# pages)
Mona Charles	Mona Charles/Phase 2_pointed_bone	YES	206	40	N/A. Compiled PDF photo document includes file name
Mona Charles	Mona Charles/Phase 2_retouched_jpgs (multiple sub-folders)	NO		Not Compiled	Not Compiled
Mona Charles	Mona Charles/Phase 2_shaped_stone	YES	11	N/A	1
Mona Charles	Mona Charles/Phase 2_shell-bead	YES	5	N/A	1
Mona Charles	Mona Charles/Phase 2_shell pendant	YES	9	N/A	1
Mona Charles	Mona Charles/Phase 2_Worked_bone	YES	87	20	N/A. Compiled PDF photo document includes file name
Phil Geib	Phil Geib	YES	2289	572	66
Project	FCRS_PhotoArchive	NO	265	67	8
Sally Cole	FCRS_5LP1434_South Shelter and North Shelter maps (2011, rev. 2014) adapted from Morris and Burgh (1954) and Fahmi (1998)	YES	0	Sally Cole will submit	Sally Cole will Submit
Sally Cole	FCRS_5LF1434_Data for 2008 Portable XRF Testing at South and North Falls Creek Shelter	YES	0	Sally Cole will submit	Sally Cole will submit
Sally Cole	FCRS_Final Report(03-2011)5LP1434-NSPanel5[3-DStretch&enhcolor][MWalker,SJCole]	YES	5	Sally Cole will submit	Sally Cole will submit
Sally Cole	FCRS_Final Report(03-2011)5LP1434-SSPanel4[3-Infared][LCasjens, Sjcole]	YES	33	Sally Cole will submit	Sally Cole will submit
Sally Cole	FCRS_Final Report(03-2011)5LP1434-SSPanel4[4-Infare]&Inscriptions 1,2,3[LCasjens,SJCole]	YES	24	Sally Cole will submit	Sally Cole will submit

Analyst Super Folder	Analyst Sub Folder Name	Photo Log	Number of Digital Objects	ARCHIVES Compiled PDF of Images (# pages)	ARCHIVES Compiled PDF Contact Sheet (# pages)
Sally Cole	FCRS_PhaseIIC14analysis_NSBurial Crevice(NSP 11)-S wall[SJC2014]	YES	26	Sally Cole will submit	Sally Cole will submit
Sally Cole	FCRS_SSP1-4_1997 Rock Art Panel Drawings[SJC2014]	YES	42	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/Attachment D-5_FCRSfinal report-SJC	YES	8	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_1997-35mm_graffiti-betwNS&SS[SJC2014]	YES	11	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_1997-35mm_NSfeatures&grafitti[SJC2014]	YES	7	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_1997-35mm_NSP1-5,7-9&11BC[SJC2014	YES	88	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_1997-35mm_SSgraffiti-S7cen[SJCole2014]	YES	27	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_1997-35mm_SSP1-SSP4[SJC2014]	YES	49	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_2007 XRF-pigment testing results_SSP4&NSP5,8,11BC[SJCole 2014]	YES	17	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_final report Part D-archive photo prints_NSPanels 3-6	YES	18	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_Final Report(03-2011)5LP1434-NSPanels 1,2,3,4 [SJCole]	YES	77	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_Final Report(03-2011)5LP1434-SSP4[1][SJCole]	YES	73	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_Final Report(03-2011)5LP1434-SSPanel 4 [2][SJCole]	YES	107	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_Final Report(03-2011)5LP1434-landscape& NSfeatures[SJCole]	YES	39	Sally Cole will submit	Sally Cole will submit

Analyst Super Folder	Analyst Sub Folder Name	Photo Log	Number of Digital Objects	ARCHIVES Compiled PDF of Images (# pages)	ARCHIVES Compiled PDF Contact Sheet (# pages)
Sally Cole	Sally Cole/FCRS_Final Report(03-2011)5LP1434-landscape&SSfeatures[SJCole]	YES	18	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_Final Report(03-2011)5LP1434-NSP11-Burial Crevice [1][SJCole]	YES	85	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_Final Report(03-2011)5LP1434-NSP11-Burial Crevice[2-Infrared][LCasjens,edt.SJCole]	YES	21	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_Final Report(03-2011)5LP1434-NSP5[3-D-Stretch&panorama][SJCole]	YES	45	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_Final Report(03-2011)5LP1434-NSPanel 8[SJCole]	YES	112	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_Final Report(03-2011)5LP1434-NSPanel5 [1][SJCole)	YES	74	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_Final Report(03-2011)5LP1434-NSPanel5 [2][SJCole)	YES	45	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_Final Report(03-2011)5LP1434-NSPanels 6,7,9,10[SJCole]	YES	103	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_Final Report(03-2011)5LP1434-NSPanels 6,7,9,10[SJCole]*	YES	DUPLICATE	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_Final Report(03-2011)5LP1434-SSP4[5-Infrared][LCasjens,edt.SJCole]	YES	31	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_Final Report(03-2011)5LP1434-SSPanels 1, 2, 3 & Inscriptions 1, 2, 3[SJCole]	YES	47	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_NSP1-11BC_1997 Rock Art Panel Drawings[SJC2014]	YES	217	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_Phase I(2010)_NSP3,5,8,11BCdrawings[SJC2014]	YES	34	Sally Cole will submit	Sally Cole will submit

Analyst Super Folder	Analyst Sub Folder Name	Photo Log	Number of Digital Objects	ARCHIVES Compiled PDF of Images (# pages)	ARCHIVES Compiled PDF Contact Sheet (# pages)
Sally Cole	Sally Cole/FCRS_Phase I(2010)_SSP1&P4drawings[SJC2014]	YES	11	Sally Cole will submit	Sally Cole will submit
Sally Cole	SallyCole/FCRS_PhaseI(2010)_NSP 3,5,8,11BCdrawings[SJC2014]	YES	34	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_PHASEII_ AZRUNeg.74_1938NSexcavation[SJC2014]	YES	5	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_PhaseIIC14analysis_NS BurialCrevice(NSP11)-S wall[SJC2014]	YES	26	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_SSP1–4_1997 Rock Art Panel Drawings[SJC2014]	YES	42	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRS_USFS-unprovenienced rock art[SJC2014]	YES	9	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRSPhase II_5LP1434_4x5scans(2014)	YES	13	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRSPhase II_5LP1434_NS highpanels photowork[SJC2014]	YES	10	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRSPhase II_5LP1434_SelectPhotosNS[SJCole2014]	YES	401	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRSPhase II_5LP1434_SpecialPhotographyNS[DManley][SJC2014]	YES	104	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRSPhase II_5LP1434_SpecialPhotographySS[DManley][SJC2014]	YES	39	Sally Cole will submit	Sally Cole will submit
Sally Cole	Sally Cole/FCRSPhaseII_5LP1434_Select PhotosSS[SJCole2014]	YES	110	Sally Cole will submit	Sally Cole will submit

7.11 DIGITAL DOCUMENTATION

Digital documentation for this project is housed in the folder labeled Index. A copy of these items can be found on the project hard drive and another copy was made to the hard drive housed with the Forest Service. There are several folders which contain subfolders and digital objects specific to the work conducted on this phase of the project. Below, you will find a full list of the primary folder names with a description of their contents.

- **Falls Creek Database Output:** Each of these documents were printed for the AHC archives as project documentation for the work conducted under Phase 1 and Phase 2 of this project. They can be considered data dumps from the database and reflect each line of data and analysis generated during this project.

File Name	File Format	Description
Falls Creek Rockshelter Catalogue Cards	PDF	3765 pages of catalogue cards which synthesize the artifact data for each object identified as part of the Falls Creek collection
MS Access Database Printout	Microsoft Word	Summary document of the detailed analysis table, listed below, which were printed from the database for archival documentation.
tbl_FCRS_CG_LithicData	Microsoft Word	Carol Graham Phase 1 lithic data
tbl_FCRS_EJLW_Aprons	Microsoft Word	ED Jolie and Laurie Webster Perishable Analysis
tbl_FCRS_EJLW_BasketryRawMaterial	Microsoft Word	ED Jolie and Laurie Webster Perishable Analysis
tbl_FCRS_EJLW_CoiledBaskets	Microsoft Word	ED Jolie and Laurie Webster Perishable Analysis
tbl_FCRS_EJLW_Cordage	Microsoft Word	ED Jolie and Laurie Webster Perishable Analysis
tbl_FCRS_EJLW_HideArtifact	Microsoft Word	ED Jolie and Laurie Webster Perishable Analysis
tbl_FCRS_EJLW_MiscWorkedPerishables	Microsoft Word	ED Jolie and Laurie Webster Perishable Analysis
tbl_FCRS_EJLW_RawFiber	Microsoft Word	ED Jolie and Laurie Webster Perishable Analysis
tbl_FCRS_EJLW_Sandal	Microsoft Word	ED Jolie and Laurie Webster Perishable Analysis
tbl_FCRS_EJLW_TiesBandStrapsSahses	Microsoft Word	ED Jolie and Laurie Webster Perishable Analysis
tbl_FCRS_EJLW_TwinedBags	Microsoft Word	ED Jolie and Laurie Webster Perishable Analysis
tbl_FCRS_EJLW_TwinedBlanket	Microsoft Word	ED Jolie and Laurie Webster Perishable Analysis

File Name	File Format	Description
tbl_FCRS_EJLW_TwinedMat	Microsoft Word	ED Jolie and Laurie Webster Perishable Analysis
tbl_FCRS_EJLW_WoodArtifact	Microsoft Word	ED Jolie and Laurie Webster Perishable Analysis
tbl_FCRS_KRA_Plant_Curcurbita	Microsoft Word	Karen Adams Archaeobotanical Analysis
tbl_FCRS_KRA_Plant_Tuber	Microsoft Word	Karen Adams Archaeobotanical Analysis
tbl_FCRS_KRA_Plant_ZeaCob	Microsoft Word	Karen Adams Archaeobotanical Analysis
tbl_FCRS_KRA_Plant_ZeaCobSegment	Microsoft Word	Karen Adams Archaeobotanical Analysis
tbl_FCRS_KRA_Plant_ZeaKernal	Microsoft Word	Karen Adams Archaeobotanical Analysis
tbl_FCRS_KRA_Plant_PlantData	Microsoft Word	Karen Adams Archaeobotanical Analysis
tbl_FCRS_MC_Seeds	Microsoft Word	Mona Charles Bone, Stone, and Ornament Analysis
tbl_FCRS_MC_ShapedStone	Microsoft Word	Mona Charles Bone, Stone, and Ornament Analysis
tbl_FCRS_MC_ShapedStone_Bead	Microsoft Word	Mona Charles Bone, Stone, and Ornament Analysis
tbl_FCRS_MC_ShapedStone_Bead_Detail	Microsoft Word	Mona Charles Bone, Stone, and Ornament Analysis
tbl_FCRS_MC_ShapedStone_Pendant	Microsoft Word	Mona Charles Bone, Stone, and Ornament Analysis
tbl_FCRS_MC_ShapedStone_Pendant_ SubTable	Microsoft Word	Mona Charles Bone, Stone, and Ornament Analysis
tbl_FCRS_MC_ShapedStone_Pipe	Microsoft Word	Mona Charles Bone, Stone, and Ornament Analysis
tbl_FCRS_MC_Shells	Microsoft Word	Mona Charles Bone, Stone, and Ornament Analysis
tbl_FCRS_MC_Shells_PendantDetail	Microsoft Word	Mona Charles Bone, Stone, and Ornament Analysis
tbl_FCRS_MC_WorkedBone	Microsoft Word	Mona Charles Bone, Stone, and Ornament Analysis
tbl_FCRS_MC_WrkBone_Awl	Microsoft Word	Mona Charles Bone, Stone, and Ornament Analysis
tbl_FCRS_MC_WrkBone_Bead	Microsoft Word	Mona Charles Bone, Stone, and Ornament Analysis
tbl_FCRS_MC_WrkBone_Gaming Piece	Microsoft Word	Mona Charles Bone, Stone, and Ornament Analysis

File Name	File Format	Description
tbl_FCRS_MC_WrkBone_NotchedBone	Microsoft Word	Mona Charles Bone, Stone, and Ornament Analysis
tbl_FCRS_MC_NotchedBone_SubTable	Microsoft Word	Mona Charles Bone, Stone, and Ornament Analysis
tbl_FCRS_PG_Cores-Nodular-Tools	Microsoft Word	Phil Geib Lithic Data
tbl_FCRS_PG_Debitage	Microsoft Word	Phil Geib Lithic Data
tbl_FCRS_PG_FlakedFacialTools	Microsoft Word	Phil Geib Lithic Data
tbl_FCRS_PG_Manos-Metates	Microsoft Word	Phil Geib Lithic Data
tbl_FCRS_PG_MiscTools	Microsoft Word	Phil Geib Lithic Data
tbl_FCRS_SJC_RockArt	Microsoft Word	Sally Cole Rock Art Data

- **Falls Creek Phase 1 Final Report**
  - Chapters from the Phase 1 NAGPRA report submitted to SHPO and the Forest Service as project documentation for Phase 1 analysis.
- **Falls Creek Presentations**
  - Dawn Mulhern and Mona Charles presentation on Phase 1 NAGPRA analysis.
- **FCRS_CGraham_LithicsGS**
  - Phase 2 lithic data from Carol Graham who was the initial analyst for lithic material on the site. She did not complete the analysis, but her inventory was helpful in sorting out the analysis of the prolific lithic assemblage.
- **FCRS_EAJ-LW_Perishable**
  - A compiled data table of the perishable material, as it was imported into the FallsCreekDatabase
  - Raw Data files are the original files sent by Laurie Webster and Ed Jolie for integration into the database.
- **FCRS_EJolie_Perishable**
  - Photo logs for Ed Jolie of the perishable material.
  - Raw data includes Ed Jolie's initial inventory of materials looked at the AHC.
- **FCRS_KAdams_Archaeobotanical**
  - Compiled plant and photo log data compiled by Karen Adams.
- **FCRS_LWebster_Perishable**
  - Photo log data from Laurie Webster
- **FCRS_MCharles**

- Photo Log
- Mona Charles Phase 1 database for images. Please note, this database is in MSAccess and depicts the images in the database format.

- **FCRS_PGeibLithics**
  - Compile lithic analysis and the digital photo log.
  - In the Raw Data folder is a copy of the analysis database used by Phil Geib. Of note, this database integrates photographs with the detailed analysis giving a wonderful visual of the artifacts associated with each line of analytical data.
- **FCRS_SCole**
  - Sally Cole's Rock Art data and digital photo log.
- UniversityColorado_Archives and Collection
  - 101FallsCreekN&Sshelters.xls is the original data file provided by CU as the Falls Creek inventory of artifacts housed at CU.
  - In the folder CUArchives_Digitized you can find scanned images from the Earl Morris Archives as well as the catalog cards for each artifact associated with the Falls Creek collection. A full copy of each catalog card has been printed for the AHC Archives.
- UniversityMicigan_Archives
  - ELR No. 1 Pt. 2.pdf is the record of the Falls Creek materials housed at the University of Michigan, which had been analyzed by Volney Jones who wrote the archaeobotanical section of the Morris and Burgh report.

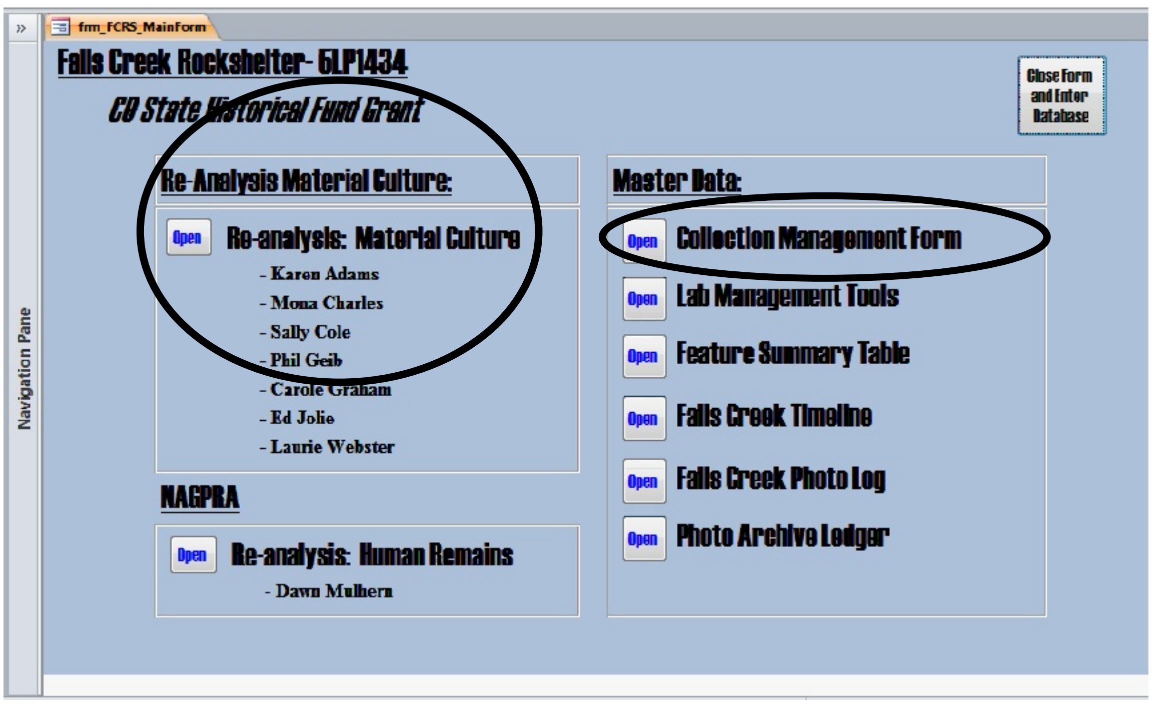
7.12 Navigating The Front End Database

The FallsCreekDatabase is the front end or user side of the database, with integrated forms and reports written specific to the work conducted on this project. The database was split into a front end and back end to preserve the data tables, which are housed in the MS Access file called FallsCreek_db_be. The data tables are linked from the back end to the front end files. If the link is broken, when moving the archived database to a new computer drive then the connection can be re-established with the following directions:

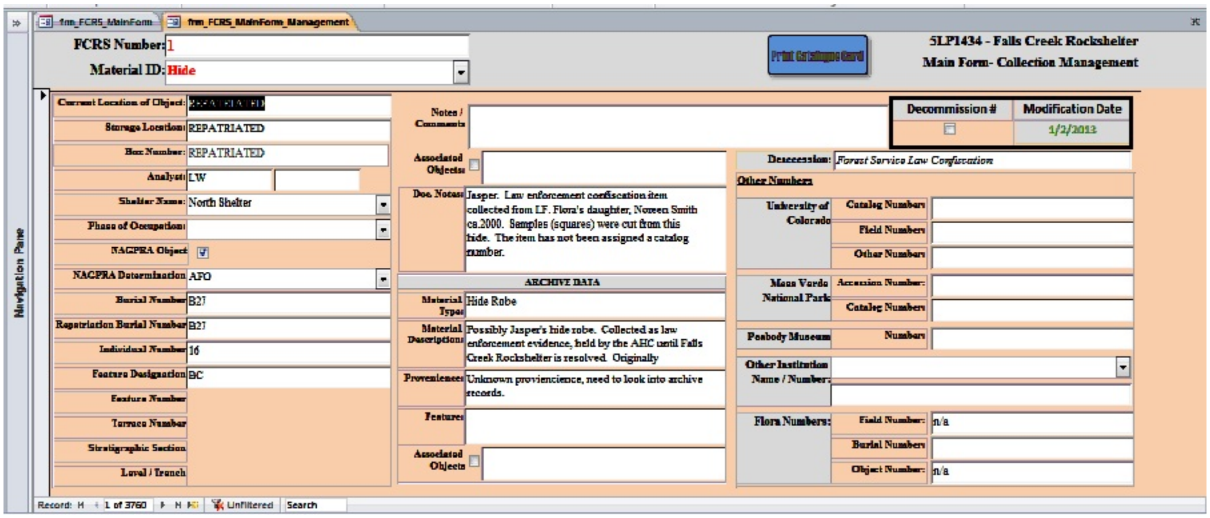
1. Copy the existing folder structure to the desired drive
2. Open the front end: FallsCreekDatabase.mdb
3. Select "External Data" in the ribbon
4. Select "Linked Table Manager"
5. The "Linked Table Manager" will open a new window listing each data table, linked to the front end

6. On the bottom of te window, check “Always prompt for a new location”
7. On the right side of the window, select “Select All”
8. Press OK
9. A window will then pop-up asking you to navigate to the back end database. Map to the FallsCreek_db_be.mdb on your server. Select OK.
10. The front end database should now be linked to the back end

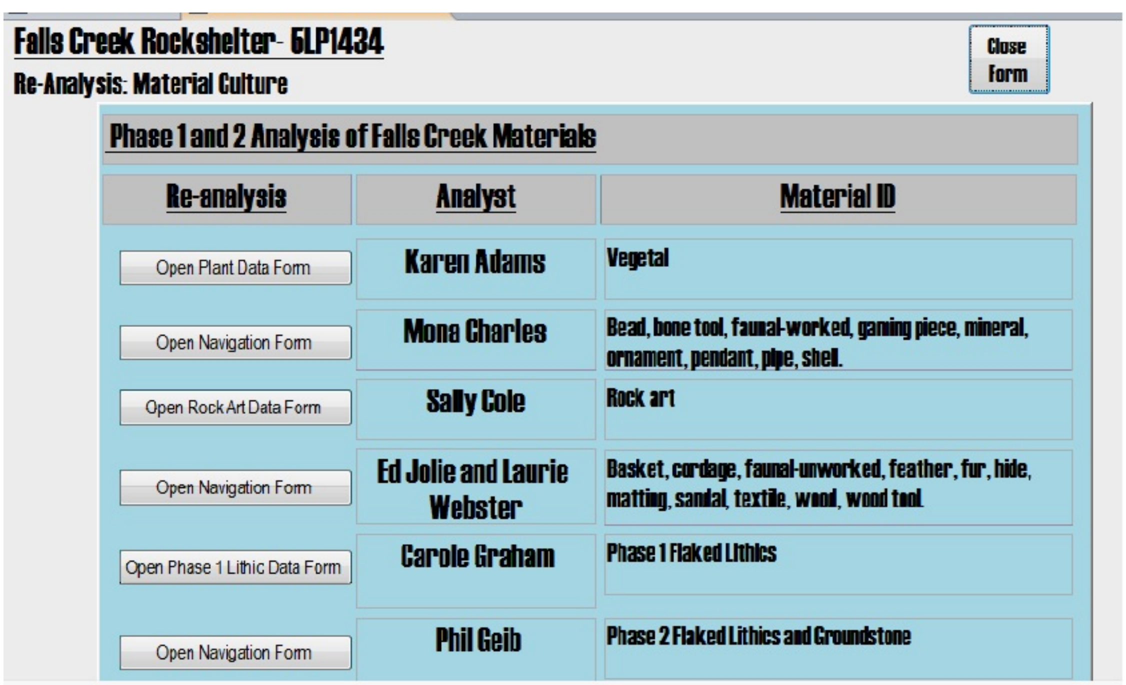
The front end database will automatically open to the main navigation form, which organizes associated data entry and analytical forms into a clear format. Buttons are labeled ‘Open’ followed by the associated form description which interfaces to access the database and the associated data tables. In the following snap shot, one can see the main navigation form for the database. Of specific interest to future researchers are the buttons labeled ‘Re-Analysis: Material Culture’ and ‘Collection Management Form’, circled below.



The ‘Collection Management Form’, button located on the top right of the main form, opens the primary page which was used to manage the collection inventory for this project. This form was developed to include archived provenience and catalogue data, while incorporating consolidated information from the two phases of work on this project. A “Catalogue Card” was developed from these data/this form, for the work conducted on this project, meant to consolidate the data on each artifact from all the various sources. Copies of the project Catalogue Cards will be curated at the AHC as final project documentation. The Catalogue Card combines archival data, provenience data, and then links to the baseline analytical data on each artifact. A master document of each artifact and their catalogue card has been saved to the index folder as a compiled PDF. Below, you can see the Collection Management Form which arranges the Collection Inventory data in an easy to read format.



From the main navigation form, the 'Re-analysis: Material Culture' button opens another navigation form which organizes the various analyses by primary analyst. Each button will open either a new navigation form or a primary analysis form, a brief description of each analysts' material type is included in the form description. A snap-shot has been included below, for reference:



The integrity of the front end database will rely on the eventual migration of the database structure through time. The database can exist as tabular data, but the visual orientation of data entry forms and report can be helpful to organize and interpret data. It is the hope of Phase 3 analysis to move these data tables and the associated forms to a more stable file format which link to the images of artifacts taken for this project.

7.13 Database Documentation

Under the scope of work for the Falls Creek Rockshelter Archaeological Assessment Project (5LP1434) the FallsCreekDatabase.mdb and FallsCreek_db_be.mdb, the Microsoft Access relational databases, continued to be designed, modified, and updated with collated project data. The FallsCreekDatabase was populated with project data generated during the phase 2 analysis of artifacts from non-NAGPRA proveniences. These data were imported, sorted, and appended to the existing tables which were created during Phase 1 analysis of the artifacts and human remains collected from NAGPRA proveniences. The database structure has continued to evolve and change over the course of this project, this document can be considered the most updated database documentation on the FallsCreekDatabase, which culminated in the most updated artifact inventory for the site.

The FallsCreekDatabase was created to fulfill three primary goals:

1) Create a master collection inventory of artifacts and their associated excavation data from Basketmaker II contexts in the north and south shelter at 5LP1434. Because artifacts were housed historically at Mesa Verde National Park, the University of Colorado Museum of Natural History, Peabody Museum, University of Michigan Laboratory of Anthropological Archaeology, Arizona State Museum, and the Center for Southwest Studies a new unique numbering system was devised to track the artifacts from this project.

2) Create a research and collection management tool for the Falls Creek Rockshelters.

3) Create a tool which will augment the final synthetic write-up on the Falls Creek Rockshelters and the work conducted since the site was initially excavated in the late 1930's.

In the following sections, the structure and relationship of the fields/variables of the primary data tables are documented and explained. The appendix (Chapter 7 Appendix) includes a full inventory of analyzed artifacts, for the purpose of project documentation and archiving under the scope of work for this phase of the project.

Final digital copies of the FallsCreekDatabase MS Access database and digital photos, folders, and files were saved to two external hard drives, one at the Anasazi Heritage Center under accession number 2012.11 and another copy was made to the hard drive purchase for Phase 1 analysis and stored with the US Forest Service. There are many data tables included in the FallsCreekDatabase, the following tables are selected as the most important for navigation, interpretation, and collection management on this project and require documentation in this report.

Table Names:

- tbl_FCRS_CollectionInventory*
- tbl_FCRS_FeatureSummaryTable
- tbl_FCRS_Digital_PhotoLog
- tbl_FCRS_CollectionInventory_Analyzed*
- lkp_FCRS_AnalysisCode*

**The relationships of these tables are illustrated below. Relationships of all data tables can be viewed in the relationship pane of the back end database FallsCreek_be_db.mdb.*

Basic Relationships:

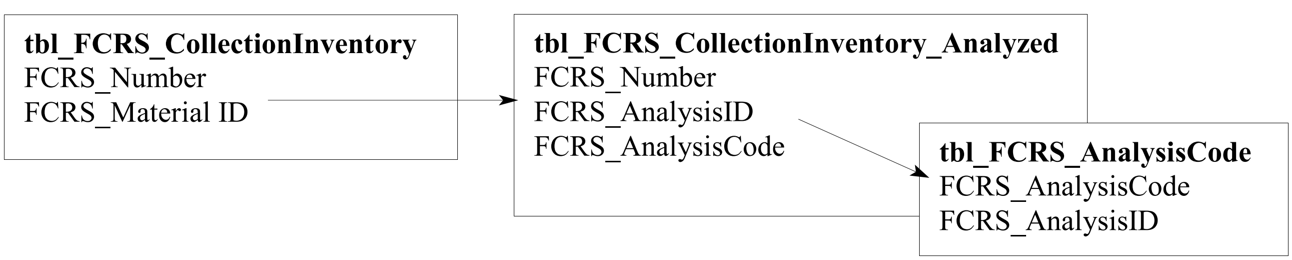


Table Name: tbl_FCRS_CollectionInventory

Description: Summary table of all objects excavated at the Falls Creek Rockshelters by Zeke Flora and/or Earl Morris and Robert Burgh. The initial collection inventory was created by compiling the collection inventories from: University of Colorado Museum of Natural History, Peabody Museum, and Mesa Verde National Park. Reevaluation data and additional artifacts have been assigned a FCRS Number for tracking and documentation.

Purpose: Collection Management, NAGPRA, repatriation, basic analytical and statistical tool for research and reporting.

Appendix: Selected fields printed in this appendix.

Access Field Name	Caption	Description
*FCRS_Number	FCRS Number	PRIMARY KEY. 5-digit numeric ID for each line of data-primary key/unique value, ties all tables together
FCRS_MaterialID	Material ID	Select the material, linked to lkp_FCRS_MaterialType
FCRS_DecommissionFCRSNumber	Decomission FCRS Number	Check if FCRS Number has been decommisioned. See FCRS_CollectionNotes for additional details.
FCRS_AnalystPrimary	Primary Analyst	Select the primary analyst, linked to lkp_FCRS_AnalystName
FCRS_AnalystSecondary	Secondary Analyst	Select the secondary analyst, linked to lkp_FCRS_AnalystName
FCRS_CollectionNotes	Notes	Enter current collection notes in this field. Preface each entry with the analyst initials and date.
FCRS_CurrentRepository	Current Repository	Current repository of object. Select from lkp_FCRS_CurrentRepository.
FCRS_StorageLocation	Storage Location	Storage location in current repository.
FCRS_ObjectType	Object Type	Enter the object type. The object type is generated during analysis and will be unique to each analytical system.

Access Field Name	Caption	Description
FCRS_ObjectDescription	Object Description	Enter the object description, a concatenated field that can be used for basic reporting and GIS. The object description is generated during analysis and the format will be unique to each analytical system.
FCRS_ObjectAssoc	Associated Objects?	Check if object is physcially associated with another object or human remains.
FCRS_ObjectAssoc_Note	Associated Object Notes	Type a brief, standardized, note to describe the association of the object with another object and/or human remains.
FCRS_SiteNumber	Site Number = 5LP1434	5LP1434- Falls Creek Rock Shelter. Default value = 5LP1434.
FCRS_ShelterName	Shelter Name	Enter North Shelter or South Shelter. Linked to lkp_FCRS_ShelterName.
FCRS_OccupationPhase	Occupation	Enter the phase of occupation. Select from lkp_FCRS_PhaseOccupation.
FCRS_Feature	Feature	Enter the feature designation compiled during the Falls Creek Rockshelter Project.
FCRS_BurialNumber	Burial Number	Enter the Burial Number, from the 1954 Morris and Burgh report.
FCRS_BurialNumber_Repatriation	Repatriation Burial Number	Enter the Burial Number association for repatriation. This Burial Number may differ from the FCRS_BurialNumber which reflects the provenience where the FCRS# was originally believed to have been excavated.
FCRS_IndividualNumber	Individual Number	Enter the Individual Number, from Dawn Mulhern's osteological analysis during Phase 1 reevaluation.
FCRS_NAGPRA	NAGPRA?	Check yes if object is associated with a NAGPRA feature, applies to: AFO's, UFO's, and human remains.
FCRS_NAGPRA_Type	NAGPRA Determination	Select the NAGPRA determination from lkp_FCRS_NAGPRADetermination
FCRS_DocNotes	Documentation Notes	Memo field for documentation purposes and archival research. Primary documentation on artifact can be quoted or transcribed here.

Access Field Name	Caption	Description
Archive_DeaccessionInstitution	Deaccession Institution	Collections History- Enter the name of the institution from where this object was deaccessioned for the reevaluation project.
Archive_CUCatalogNumber	CU Catalog Number	Collections History- CU Catalog Number.
Archive_CUFieldNumber	CU Field Number	Collections History- CU Field Number
Archive_CUOtherNumber	CU Other Number	Collections History- CU Other Number
Archive_MVNPAccessionNumber	MVNP Accession Number	Collections History- MVNP Accession Number
Archive_MVNPCatalogNumber	MVNP Catalog Number	Collections History- MVNP Catalog Number
Archive_MVNPCatalogNumber_New	MVNP Catalog Number- Sort	Collections History- MVNP Catalog Number (with no spaces to allow for accurate sorting)
Archive_PeabodyNumber	Peabody Number	Collections History- Peabody Number. Includes Accession Number and Catalog Number.
Archive_FloraFieldNumber	Flora Field Number	Excavation History- Flora Field Number. Each object in the field received an alpha numeric designation in Flora's notes.
Archive_FloraBurialNumber	Flora Burial Number	Excavation History- Flora Burial Number. Each burial was assigned a lettered designation.
Archive_FloraObjectNumber	Flora Object Number	Excavation history- Flora Object Number. Notations made in Zeke Flora's handwritten notes for each object.
Archive_OtherCollectionName	Institution Name	Collections History- Enter the collection facility name. Select from: lkp_FCRS_CurrentRepository.
Archive_OtherCollectionNumber	Institution Number	Collections History- Enter the collection number, use commas to separate individual numbers.
Archive_MaterialType	Archive Material Type	Archived material type, pulled from the CU, MVNP, and Peabody data tables.
Archive_MaterialDescription	Archive Material Description	Enter the material description from archival sources.
Archive_NAGPRA	Archive NAGPRA	Archived NAGPRA, pulled from the CU, MVNP, and Peabody data tables.

Access Field Name	Caption	Description
Archive_Provenience	Archive Provenience	Archived provenience, pulled from the CU, MVNP, and Peabody data tables.
Archive_FeatureDesignation	Archive Feature Designation	Archived feature designation, pulled from the CU, MVNP, and Peabody data tables.
Archive_AssocObjects	Archive Associated Objects	Archived associated objects, pulled from the CU, MVNP, and Peabody data tables.
Archive_AssocObjectDescription	Archive Associated Object Description	Archived associated object description, pulled from the CU, MVNP, and Peabody data tables.
AHC_CollectionDept	AHC Collection Department	Enter the AHC Collection / Department type.
AHC_AccessionNumber	AHC Accession Number	Enter the AHC Accession Number.
AHC_TempRepositNumber	AHC Temporary Reposit Number	Enter the AHC Temporary Reposit Number.
FCRS_ObjectID	Object ID	ObjectID is the unique number assigned for the Falls Creek Rockshelter Project- 5 digit number prefixed with "FCRS".
FCRS_ObjectID_Old	Object ID Old	OLD-ObjectID is the unique number assigned for the Falls Creek Rockshelter Project- 5 digit number
ModificationDate	Modification Date	If record is modified, update the Modification Date to today's date.

Table Name: tbl_FCRS_FeatureSummaryTable

Description: Summary table of all features excavated and/or identified in the Falls Creek Rockshelter by Zeke Flora and/or Earl Morris and Robert Burgh.

Appendix: Selected fields printed in this appendix.

Access Field Name	Caption	Description
FCRS_Feature	Feature	Enter the feature designation compiled during the Falls Creek Rockshelter Project.
FCRS_FeatureType	Feature Type	Enter the Feature Type, feature designations are prefixed with a letter designation which corresponds to the feature type.
FCRS_BurialNumber	Burial Number	Enter the Burial Number, from the 1954 Morris and Burgh report.
MBBurialNumber_linkFST	Morris Burgh Burial Number	
FCRS_PanelNumber	Panel Number	Enter the Rock Art Panel or the Historic Inscription Number.
FCRS_SiteNumber	Site Number	5LP1434- Falls Creek Rock Shelter. Default value = 5LP1434.
FCRS_ShelterName	Shelter Name	Enter North Shelter or South Shelter. Linked to lkp_FCRS_ShelterName.
FCRS_OccupationPhase	Occupation	Enter the phase of occupation. Select from lkp_FCRS_PhaseOccupation.
FCRS_TerraceNumber	Terrace Number	Enter the Terrace Number (roman numerals) from the 1954 Morris and Burgh Report
FCRS_FloorNumber	Floor Number	Enter the Floor Number from the 1954 Morris and Burgh Report. Floor numbers are sequential within each terrace designation.
FCRS_AssociatedFeatures	Associated Features	Enter associated features, using commas to separate individual entries.
FCRS_ArchiveCitation	Citation	Enter the primary citation or reference for the feature designation.

Access Field Name	Caption	Description
FCRS_FeatureDescription	Feature Description	Enter the feature description from the 1954 Morris and Burgh report or Zeke Flora's Burial Crevice notes.
TEMP_BurialNumber_SortOrder	Burial Sort Order	
TEMP_BurialFCRSNumber	Burial FCRS Number	
TEMP_BurialOtherNumber	Burial Other Numbers	
TEMP_AnalyzedDM	Analyzed DM	
TEMP_BurialDescription	Burial Description	
TEMP_FeatureDescripCitation	Map Figure Numbers	
TEMP_ExcavatedBy	Excavated By	
TEMP_DescribedMB	Described in MB Rpt	
TEMP_MappedMB	Mapped in MB	
TEMP_BurialNotes	Burial Notes	
FCRS_1938Disposal	Disposal (1938 Earl Morris Indicies)	Disposal as listed in the 1938 Indicies of Floors, Features, and Burials from the Durango Rock Shelters.
DateModified	DateModified	

Table Name: tbl_FCRS_Digital_PhotoLog

Description: Digital photos have been taken by researchers over the duration of this project, the photo log inventories each digital image with a file name, folder path, and brief description.

Purpose: The digital photo log will is the key to link collection inventory and analytical data to digital images of the analyzed artifacts. During the final phase of this project, the final photo log will be cleaned up so images will be linked to analytical data to create a visual tool to research and manage the Falls Creek collection.

Appendix: Not printed during this phase of the project, several photo logs still need to be created for full digital image and project documentation.

Access Field Name	Caption	Description
Folder	Memo	Folder Name
*PhotoID	Photo ID No	PRIMARY KEY. Unique file name for digital photographs.
DigitalObjectType	Digital Object Type	File format and type for digital images.
FCRS_Number	FCRS Number	5-digit numeric ID for each line of data- primary key/ unique value, ties all tables together.
Analysis ID	Object ID	ObjectID is the unique number assigned for the Falls Creek Rockshelter Project- 5 digit number
Analysis ID_Import	Object ID Import	
Archive_CatNumber	Related Catalog Numbers	Enter catalogue numbers from other collection facilities. If there are multiple catalogue numbers, please separate them by commas.
CU Catalogue Number		
CU Field Number		
University of Michigan Lab Number		

Access Field Name	Caption	Description
University of Michican Catalogue Number		
FCRS_BurialNumbers	Related Burial Numbers	Enter the burial numbers related to this object.
FCRS_ObjectType	Object Type	Enter the 'Object Type' from your analysis coding sheets.
PhotoDescription	Photo Description	Enter a brief summary of the image.
Magnification	Magnification	Enter the magnification used to take the photograph. IF you are taking digitally magnified photographs, this field is important. A scale should always be used.
PhotographerName	Photographer Name	Enter the name or initials of the photographer. This may be your own name repeated, but this information will be important in the future if credit needs to be attributed to an image.
Photo Date	PhotoDate	Enter the year the photograph was taken.
Print	Recommendation: Print Photo for Curation*	Check if you recommend this photograph be printed for curation. Enter No, if you do not recommend this photograph be printed for curation.
FileName_Path	File Name and Path	In order to build a database of digital photographs, we will want to provide hyperlinks between the images, GIS, and the Project Database.

Table Name: tbl_FCRS_CollectionInventory_Analyzed

Description: A compiled inventory of each line of detailed analytical data and the associated baseline analysis used to describe each artifact.

Purpose: Record the analysis of artifacts during each phase of this project with the associated Analysis ID and selected information pulled from the analysis tables. This table is the link between tbl_FCRS_CollectionInventory and the various analysis tables, organized by researcher and type of analysis.

Appendix: Selected fields printed in this appendix.

Access Field Name	Caption	Description
*FCRS_Number	FCRS Number	PRIMARY KEY. 5-digit numeric ID for each line of data- primary key/ unique value, ties all tables together.
FCRS_ObjectID	Object ID	Used during Phase 1. ObjectID is the unique number assigned for the Falls Creek Rockshelter Project- 5 digit number.
*FCRS_AnalysisID	Analysis ID	PRIMARY KEY. Enter the corresponding identification alpha/number assigned to the corresponding line of data for analysis.
FCRS_ObjectType	Object Type	Enter the object type. The object type is generated during analysis and will be unique to each analytical system.
FCRS_AnalyzedMaterialID	Analyzed Material ID	Select the material, linked to lkp_FCRS_MaterialType.
FCRS_ExcludeLineofData	EXCLUDE Line of Data- In Reporting	Check if analytical line of data should be excluded from reports. This field is checked when summary lines of data have been created for an artifact/object.
FCRS_AnalystPrimary	Primary Analyst	Select the primary analyst, linked to lkp_FCRS_AnalystName
FCRS_DateAnalysis	Date Analyzed	Enter the date of analysis.

Access Field Name	Caption	Description
FCRS_AnalysisCode	Analysis Type	Enter the code for the analysis performed on this object. This field will correspond to a specific analytical table, either detailed or basic analysis.
FCRS_ObjectDescription	Object Description	Enter the object description, a concatenated field that can be used for basic reporting and GIS. The object description is generated during analysis and the format will be unique to each analytical system.
FCRS_ImportDate	Data Import Date	Enter the date data was imported into the database.
FCRS_AnalysisComments	Analysis Comments	Enter any comments from the analyst specific to the management of the collection and the reanlaysis.

Table Name: lkp_FCRS_AnalysisCode

Description: A compiled inventory of each type of detailed analysis conducted over the duration of this project.

Purpose: Cross-reference the detailed analysis tables with tbl_FCRS_CollectionInventory_Analyzed, so researchers can find additional information on each artifact in the respective data tables.

Appendix: Individual detailed analysis tables have not been printed in this report, please reference the respective researcher chapters.

Analysis Type	Analysis	Analysis ID Format	Analysis Description	Analysis Table Name
CG	Lithic	FCRS-00000.00	Analysis of lithic materials from the Falls Creek Rockshleters.	tbl_FCRS_CG_LithicData or tbl_FCRS_CG_LithicData_Phase2_9-2013
KRA	Plant	KRA-00000	Analysis of the plant materials incorporated into the objects from the Falls Creek Rockshelter. Assume that all items analyzed in the Plant Data table, items listed with a different analysis type can be found in the Plant Data table as well as the detailed analysis data.	tbl_FCRS_KRA_PlantData
KRA-Cob	Plant- Zea Cob	KRA-00000	Detailed analysis and metrics for zea cobs.	tbl_FCRS_KRA_PlantData & tbl_FCRS_KRA_Plant_ZeaCob
KRA-CobSeg	Plant- Zea Cob Segment	KRA-00000	Detailed analysis and metrics for zea cob segment.	tbl_FCRS_KRA_PlantData & tbl_FCRS_KRA_Plant_ZeaCobSegment
KRA-Curcurbita	Plant- Curcurbita	KRA-00000	Detailed analysis and metrics for curcurbita.	tbl_FCRS_KRA_PlantData & tbl_FCRS_KRA_Plant_Curcurbita
KRA-Kernal	Plant- Zea Kernal	KRA-00000	Detailed analysis and metrics for zea kernals.	tbl_FCRS_KRA_PlantData & tbl_FCRS_KRA_Plant_ZeaKernal
KRA-Tuber	Plant- Tuber	KRA-00000	Detailed analysis and metrics for tubers.	tbl_FCRS_KRA_PlantData & tbl_FCRS_KRA_Plant_Tuber
MC-Seed	Seed	FCRS-00000	Detailed analysis of seed ornaments.	tbl_FCRS_MC_Seeds
MC-Shell	Shell	FCRS-00000	Detailed analysis of shell.	tbl_FCRS_MC_Shells
MC-Shell-Pen	Shell- Pendant	FCRS-00000	Detailed analysis of shell pendant.	tbl_FCRS_MC_Shells_PendantDetail

Analysis Type	Analysis	Analysis ID Format	Analysis Description	Analysis Table Name
MC-SS	Shaped Stone	FCRS-00000.00	Detailed analysis of shaped stone by Mona Charles.	tbl_FCRS_MC_ShapedStone
MC-SS-Bead	Shaped Stone-Bead	FCRS-00000.St0.Sq0	Detailed analysis of shaped stone beads.	tbl_FCRS_MC_ShapedStone_Bead
MC-SS-Bead Orn	Shaped Stone-Bead Ornament	FCRS-00000	Detailed analysis of shaped stone bead ornaments.	tbl_FCRS_MC_ShapedStone_Bead_Detail
MC-SS-Bead Pen	Shaped Stone-Bead Pendant	FCRS-00000	Detailed analysis of shaped stone bead pendants.	tbl_FCRS_MC_ShapedStone_Pendant and tbl_FCRS_MC_ShapedStone_Pendant_SubTable
MC-SS-Pipe	Shaped Stone-Pipe	FCRS-00000	Detailed analysis of shaped stone pipes.	tbl_FCRS_MC_ShapedStone_Pipe
MC-SUM	Necklace or Ornament	FCRS-00000.00 or FCRS-00000-0	Summary line of data created from Mona Charles chapter in Phase 1 analysis.	N/A
MC-WB	Worked Bone	FCRS-00000	Detailed analysis of worked bone.	tbl_FCRS_MC_WorkedBone
MC-WB-Awl	Worked Bone-Awl	FCRS-00000	Detailed analysis of worked bone awls.	tbl_FCRS_MC_WrkBone_Awl
MC-WB-BB	Worked Bone-Bead	FCRS-00000	Detailed analysis of worked bone beads.	tbl_FCRS_MC_WrkBone_Bead
MC-WB-GP	Worked Bone-Gaming Piece	FCRS-00000	Detailed analysis of worked bone gaming pieces.	tbl_FCRS_MC_GamingPiece
MC-WB-NB	Worked Bone-Notched Bone	FCRS-00000	Detailed analysis of notched bone (ribs).	tbl_FCRS_MC_WrkBone_NotchedBone and tbl_FCRS_MC_WrkBone_NotchedBone_SubTable
N/A	Not Applicable		No detailed analysis provided. All analysis information is included in this table.	N/A
P-Apron	Perishable- Apron	FCRS-00000.00 or FCRS-00000-0	Detailed analysis of aprons, conducted by Ed Jolie and Laurie Webster.	tbl_FCRS_EJLW_Apron
P-BRM	Perishable-Basketry Raw Material	FCRS-00000.00 or FCRS-00000-0	Detailed analysis of basketry raw material conducted by Ed Jolie and Laurie Webster.	tbl_FCRS_EJLW_BasketryRawMaterial
P-CB	Perishable- Coiled Basket	FCRS-00000.00 or FCRS-00000-0	Detailed analysis of coiled baskets conducted by Ed Jolie and Laurie Webster.	tbl_FCRS_EJLW_CoiledBaskets
P-Cord	Perishable-Cordage	FCRS-00000.00 or FCRS-00000-0	Detailed analysis of perishable cordage, conducted by Ed Jolie and Laurie Webster.	tbl_FCRS_EJLW_Cordage
P-HA	Perishable- Hide Artifact	FCRS-00000.00 or FCRS-00000-0	Detailed analysis of hide artifacts conducted by Ed Jolie and Laurie Webster.	tbl_FCRS_EJLW_HideArtifact

Analysis Type	Analysis	Analysis ID Format	Analysis Description	Analysis Table Name
P-MWP	Perishable- Miscellaneous Worked	FCRS-00000.00 or FCRS-00000-0	Detailed analysis of miscellaneous worked perishables conducted by Ed Jolie and Laurie Webster.	tbl_FCRS_EJLW_MiscWorkedPerishables
P-Raw Fiber	Perishable- Raw Fiber	FCRS-00000.00 or FCRS-00000-0	Detailed analysis of perishable raw fibers, conducted by Ed Jolie and Laurie Webster.	tbl_FCRS_EJLW_RawFiber
P-Sandal	Perishable- Sandal	FCRS-00000.00 or FCRS-00000-0	Detailed analysis of sandals conducted by Ed Jolie and Laurie Webster.	tbl_FCRS_EJLW_Sandal
P-Tba	Perishable- Twined Bags	FCRS-00000.00 or FCRS-00000-0	Detailed analysis of twined bags conducted by Ed Jolie and Laurie Webster.	tbl_FCRS_EJLW_TwinedBags
P-TBl	Perishable- Twined Blankets	FCRS-00000.00 or FCRS-00000-0	Detailed analysis of twined blankets conducted by Ed Jolie and Laurie Webster.	tbl_FCRS_EJLW_TwinedBlanket
P-TBSS	Perishable- Ties, Bands, Straps, Sashes	FCRS-00000.00 or FCRS-00000-0	Detailed analysis of ties, bands, straps and sashes conducted by Ed Jolie and Laurie Webster.	tbl_FCRS_EJLW_TiesBandStrapsSashes
P-TM	Perishable- Twined Mat	FCRS-00000.00 or FCRS-00000-0	Detailed analysis of twined mats conducted by Ed Jolie and Laurie Webster.	tbl_FCRS_EJLW_TwinedMat
P-WA	Perishable- Wood Artifact	FCRS-00000.00 or FCRS-00000-0	Detailed analysis of wood artifacts conducted by Ed Jolie and Laurie Webster.	tbl_FCRS_EJLW_WoodArtifact
PG-CNT	Cores & Nodular Tools	FCRS Number and Analysis ID = Primary Key	Detailed analysis of Cores and Nodular Tools by Phil Geib.	tbl_FCRS_PG_Cores-Nodular-Tools
PG-DEB	Debitage	FCRS Number and Analysis ID = Primary Key	Detailed analysis of Debitage by Phil Geib. Note, XRF analysis conducted on specific obsidian samples.	tbl_FCRS_PG_Debitage
PG-FFT	Flaked Facial Tools	FCRS Number and Analysis ID = Primary Key	Detailed analysis of Flaked Facial Tools by Phil Geib. Note, XRF analysis conducted on specific obsidian samples.	tbl_FCRS_PG_FlakedFacialTools
PG-MM	Manos & Metates	FCRS Number and Analysis ID = Primary Key	Detailed analysis of Manos & Metates by Phil Geib. Note, XRF analysis conducted on specific obsidian samples.	tbl_FCRS_PG_Manos-Metates
PG-MT	Miscellaneous Tools	FCRS Number and Analysis ID = Primary Key	Detailed analysis of Miscellaneous Tools by Phil Geib. Note, XRF analysis conducted on specific obsidian samples.	tbl_FCRS_PG_MiscTools

7.14 Conclusion

This project has been illuminating on how best to manage and handle reevaluation projects of historic collections, specifically when the collections are reunited from various institutions. Each institution who housed the Falls Creek artifacts had a different collection management and numbering system to track and catalogue artifacts. Combining these numbering systems into one format for tracking and reporting was a true challenge, especially when trying to correlate those data with the Morris and Burgh report. The Morris and Burgh report serves as the only consolidated documentation on artifacts excavated from the Falls Creek Rockshelters, unless we can relocate the master field/specimen list from the original excavations. Provenience data, associated with each artifact, suffered the most data loss through time. It is the hope of the author to continue piecing together the provenience data in Phase 3 of this project. For these reasons, a new numbering system (the FCRS Number) was applied to the collection inventory to track and easily manage the collection under one unified numbering system.

Another challenge faced during this phase was with the transfer of artifacts from UCMNH to the AHC. The collection was transferred from UCMNH to the AHC and packaged primary for transport. When the author arrived at the AHC the collection was unpacked and then boxed/arranged for subsequent analysis and for permanent storage at the AHC. Between 2012 and 2014 there have been several rounds of analysis conducted at the AHC and then temporary loans provided to researchers who were unable to analyze materials at the Museum. Subsequently, between 2012 and 2014 the physical inventory and locations of the artifacts have been modified and changed necessitating a final inventory and organization of the collection. In retrospect, it would have been better to have transferred the collection to the AHC as a temporary reposit so the collection could be temporarily stored during analysis and then prepared at the end of analysis for accessioning into the collection. By waiting until the end of analysis, to prepare a collection for curation, a better job could have done organizing the collection for access and use by future researchers.

These are all lessons learned when dealing with a historically excavated site that has been curated in multiple locations. Those same challenges have also created a series of mysteries and ah-hah moments, which have led to excitement and interest in the project. The value of re-evaluating historic collections with modern techniques not only helps to create consolidated artifact inventories, but helps to reveal connections between artifacts and material culture which might not have been drawn from the original analysis or excavation data. Interwoven in this chapter of the report has been the express interest in continuing work on this project to create a more finalized interpretive tool for researchers and the public.

Although there is inherent value in the current product which has been curated at the AHC, additional work would be necessary to create an interpretive tool for posterity.

CHAPTER 8: A REANALYSIS OF THE NORTH FALLS ROCK CREEK SHELTER FAUNAL ASSEMBLAGE

Cerisa R. Reynolds

8.1 Introduction

In 1954, with the publication of Morris and Burgh's *Basket Maker II Sites Near Durango, Colorado*, the archaeological world was presented with an impressive analysis of an immense amount of cultural materials collected during excavations from Talus Village and the Falls Creek Rock Shelters. In comparison to other BM II sites (see Reynolds 2007a, 2007b, 2012a, 2012b, 2012c, 2012d), these two sites contained a large number of bulk fauna, and though Morris and Burgh (1954) discussed and described the worked faunal materials in more detail than bulk materials, Appendix D, "Animal and Bird Bones from the Durango Sites" (Rodeck 1954) provided what would long remain one of the most detailed zooarchaeological reports to come out of the American Southwest. As can be seen in Table 1, Rodeck identified a variety of large and small animals during his analysis of the fauna from the North Falls Creek Shelter.

Though Rodeck's presentation of the data would remain impressive in comparison to those from other sites excavated during the first half of the 20th century, his methods were limited, and he only provided readers with taxonomic identification, skeletal part, and rough quantities in the form of what we would today call the Number of Identified Specimens (NISP), a quantification technique that represents the number of specimens identified to a specific taxon (see Grayson 1984; Klein and Cruz-Uribe 1984; Lyman 2008), as shown in Table 1. He did not attempt to assess the Minimum Number of Individuals (MNI) present in this assemblage (see below), nor did he adequately address the taphonomic state of the assemblage. These questions would be left for later scholars with new zooarchaeological methods with which to approach the archaeological record.

With these very intentions, the author visited the University of Colorado Museum in Boulder, Colorado to re-analyze Rodeck's assemblage in the Summer of 2007. Unfortunately, the assemblage Rodeck analyzed could not be located, but the author and museum curators located a small box of fragmentary faunal remains that were not included in Rodeck's 1954 report. Of the 367 fragments located (belonging to both the North Falls Creek Rock Shelter and Talus Village), 23 specimens from the North Falls Creek Rock Shelter were identifiable to element and taxon (see Reynolds 2012a). Then, in the Spring of 2014, after Rodeck's assemblage had been located by project personnel, the author was able to analyze the very specimens described in "Animal and Bird Bones from the Durango Sites" (Rodeck 1954). This report outlines the general methods used during the 2007 and 2014 analyses, summarizes the results, and makes mention to the ways in which these collections compare to each other and to faunal assemblages from other nearby sites.

8.2 Methods for Analyzing the Assemblage

Methods for analysis in 2007 and again in 2014 were quite similar, the only difference being that analysis in 2007 was conducted with the use of the University of Colorado Boulder's Vertebrate Zoology Collection, while the 2014 analysis took place in the University of Colorado Boulder's Museum. Every specimen in these collections was examined by the author and, when possible, was identified to skeletal element, portion of that element, element side (when applicable), and taxon. Identification to a taxonomic category is one of the most basic and most important aspects of zooarchaeological analyses and was accomplished using the Vertebrate Zoology Collection and was further aided by comparative literature including France (2009), Gilbert (1980), McKusick (1986), and Olsen (1973). In this analysis, a conservative approach was taken and a specimen was only given an assignment to the species level when it was extremely likely that the specimen belonged to said species. As such, the assignment of *cf.* was frequently used to denote a close/likely but not positive assignment to a specific taxonomic category (Reitz and Wing 1999:36).

In addition to NISP (discussed above), quantification techniques that are in and of themselves conservative (namely, the Minimum Number of Elements [MNE] and the Minimum Number of Individuals [MNI]) were applied to the assemblage during the author's analyses. MNE is a measurement that determines the minimum number of skeletal elements, per taxonomic category (species, size class, etc.), within an assemblage. This would, for instance, tell us the minimum of how many left deer femurs, right porcupine mandibles, or right cottontail tibias are in a specific assemblage. MNE was determined based on a system of portions and landmarks (recognizable, specific features of an element), a system used to make sure that overlap of any two specimens could be accounted for. (The landmark system used here closely follows that set forth by Matthew E. Hill, Jr. for *Bison bison* and James G. Enloe for *Rangifer tarandus*, with additional landmarks added). This means that two fragments from, for instance, the proximal end of a right humerus were only counted as belonging to two different individuals if the same portions or landmarks were present in both specimens. The specimens were also, when possible, divided by fused versus unfused, so that elements belonging to mature versus immature individuals would count as separate MNEs. The result is a conservative MNE for each element for each taxonomic category.

Based on MNE, MNI—a quantification measuring the minimum number of individual animals necessary to make up a specific assemblage (White 1953)—was then calculated. This means that, if the largest MNE of a taxon is eight (representing, let's say, eight instances of Landmark 1 from a deer's right femur), than the MNI for that taxon is eight. Using a conservative MNE system, the minimum number of individual animals utilized by site inhabitants has been determined.

The presence of several hundred fragmentary faunal specimens not included in Rodeck's (1954) report suggests that his initial analysis focused on only the most identifiable specimens collected during excavation at both the Falls Creek Shelters and Talus Village. Though this recently found collection informs us that "non-identifiable" specimens and fragments were collected during excavation, our lack of information regarding excavation and collection methods fails to inform us as to how many of the faunal specimens found during excavation were actually collected. As such, a conservative approach has been taken in this specific analysis, and the author therefore did not calculate skeletal part frequencies in hopes of learning about butchering and transport decisions, calculate skeletal part frequencies to look at possible density mediated attrition, or measure all assemblage specimens in hopes of learning about processing techniques.

8.3 Results

The collection identified in 2007 yet not reported on by Rodeck (1954) was a highly fragmentary collection, while the collection reported on by Rodeck was made up of well preserved, more easily identifiable specimens. It is not currently known at what point the assemblage was divided, or by whom it was divided, or if these faunal specimens make up the entirety of collected bulk faunal remains. This, combined with a lack of knowledge regarding collection methods, means that we cannot be sure that this assemblage is truly representative of occupant diet, as it is possible that many additional fragments were not collected or were discarded over the years. Still, as is discussed elsewhere (Reynolds 2012a), the very existence of the fragmentary, less identifiable collection tells us that excavators collected more than just "pretty" specimens, and though certain quantification techniques would not be prudent, some general conclusions can still be drawn.

Rodeck (1954) identified 133 faunal specimens from the North Falls Creek Shelter, as can be seen in Table 8.1. An NISP based upon his report suggests that the assemblage is heavily dominated by the mule deer, with canid (possibly coyote) and porcupine coming in at a distant second and third, respectively (Figure 8.1). Analysis of the fragmentary assemblage in 2007 was similarly dominated by mule deer (Table 8.2), and other than the addition of black bear to the assemblage's fauna, the combination of the NISP values from these two assemblages does little to change the original distribution, as shown in Figure 8.1. The analysis conducted on Rodeck's original assemblage in the Spring of 2014 brought to light the fact that several specimens in Rodeck's assemblage were not included in his report, thus increasing the site's overall NISP (Table 8.3). (Importantly, this does little to the general trend in dominant taxa, as is shown in Figure 2). This reanalysis also allowed for further quantification, namely MNE and MNI for the aggregated North Falls Creek assemblage (Table 8.3).

Table 8.1. Bulk faunal specimens from the North Falls Creek Shelter analyzed by Rodeck and presented in Rodeck 1954.

Common Taxon Name	NISP
Coyote?	18
Marmot	3
Sciuridae (prairie dog?)	1
Beaver	5
Porcupine	9
Cottontail	4
Mule Deer	88
Bighorn Sheep	2
Turkey	3
Total	133

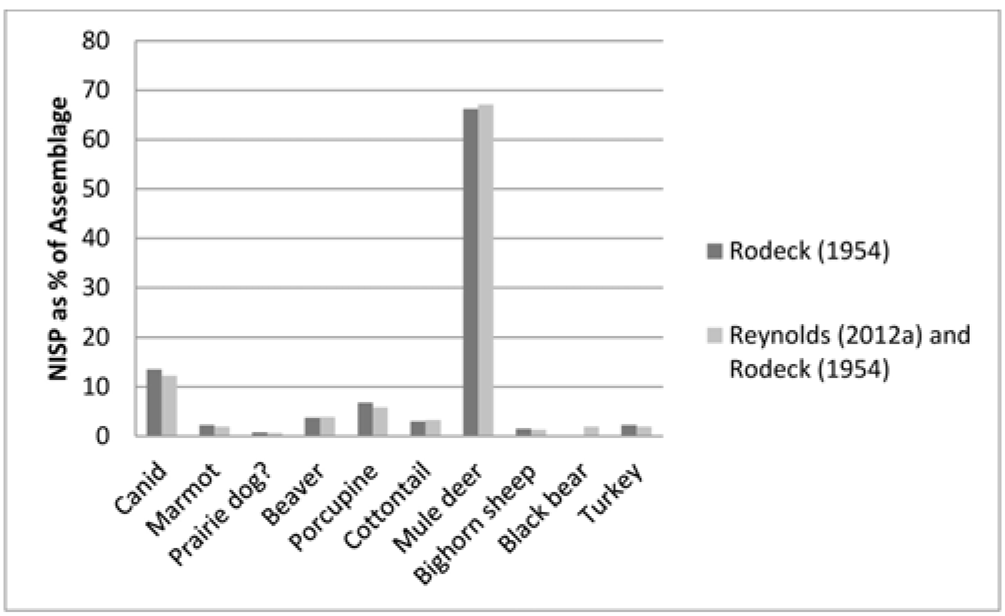


Figure 8.1. Taxonomic distribution (as percentage of the total assemblage) for the North Falls Creek Rock Shelter based on NISPs from Rodeck's 1954 data compared to the cumulative NISP of Rodeck (1954) and Reynolds (2012a). Definitive and likely assignments to taxon are lumped here (e.g., Mule deer and cf. Mule deer).

Table 8.2. Bulk faunal specimens from the North Falls Creek Shelter identified by Reynolds in 2007 and presented in Reynolds 2012a.

Common Taxon Name	NISP
Black Bear	3
Canis sp.	1
Beaver	1
Cottontail	1
Mule Deer	9
Probably Mule Deer	7
Aves (Unspecified)	1
Total	23

Table 8.3. NISP and MNI of the North Falls Creek Rock Shelter as determined by Reynolds in 2007 and 2014.

Taxon	NISP	MNI
Black Bear	3	1
Bighorn Sheep	2	1
Elk	1	1
Deer	91	5*
Probably Deer	9	N/A
Artiodactyl	4	N/A
Porcupine	10	1
Beaver	6	1
Marmot	4	1
Scuridae (Prairie dog?)	1	1
Cottontail	6	2
Possibly cottontail	1	N/A
Jackrabbit	1	1
Small Mammal	3	N/A

Taxon	NISP	MNI
Small to Medium Mammal	1	N/A
Medium to Large Mammal	1	N/A
Large Mammal	2	N/A
Canid (Coyote?)	23	3
Turkey	5	1
Possible Eagle	1	1
Medium Bird	5	N/A
Medium to Large Bird	3	N/A
Large Bird	5	N/A
Bird	1	N/A
Totals	**186**	**20**

*Includes a fetal/infantile individual

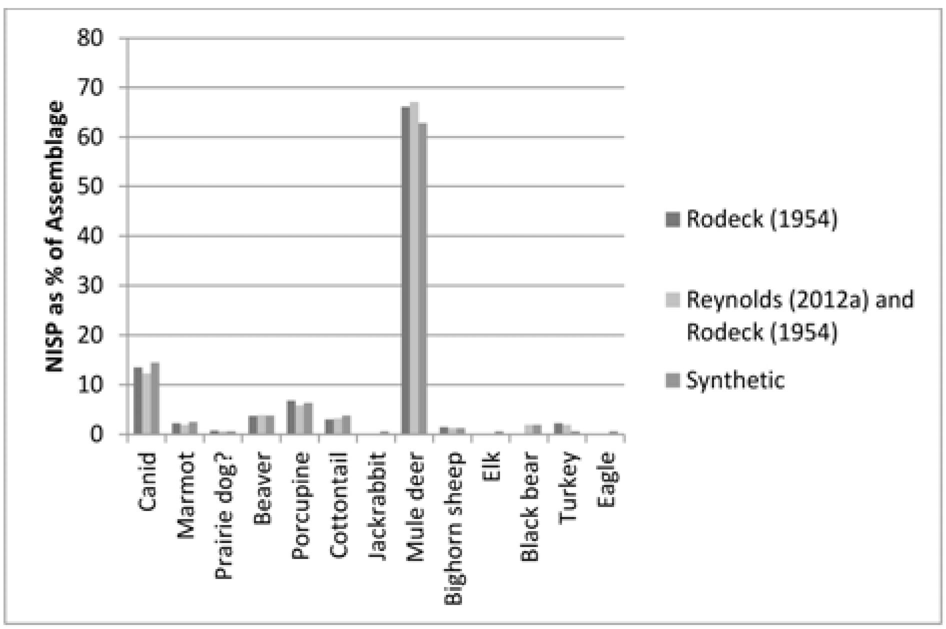


Figure 8.2. Taxonomic distribution (as percentage of the total assemblage) for the North Falls Creek Rock Shelter based on NISPs from Rodeck's 1954 data compared to the cumulative NISP of Rodeck (1954) and Reynolds (2012a) as well as the synthetic NISP, which includes all fauna analyzed by the author in 2007 and 2014. Definitive and likely assignments to taxon are lumped here (e.g., Mule deer and cf. Mule deer).

Once MNI is calculated, we see that the North Falls Creek faunal assemblage is made up of at least 19 individuals (see Figures 3 and 4): five deer, three canids (coyote?), two cottontail rabbits, and one of each of the following: elk, bighorn sheep, jackrabbit, marmot, sciuridae (prairie dog?), beaver, porcupine, black bear, turkey, and eagle. As is the case with the nearby sites of Talus Village and Darkmold (see Reynolds 2007a, 2007b, 2012a, 2012b, 2012c, 2012d, 2012e; Rodeck 1954), this assemblage is dominated by artiodactyls, with an MNI of seven. Importantly, one of the mule deer belongs to a fetal or *very* young individual, indicating a late-Spring through early-Fall kill (Heffelfinger 2006). The hunting of pregnant deer or of very young individuals was also practiced at the nearby Darkmold site and may be indicative of resource pressure (Reynolds 2012d). Though artiodactyls are common for these Durango sites, Basketmaker II (BM II) sites outside of Durango have few to no artiodactyl specimens (Reynolds 2007a, 2007b, 2012a, 2012b, 2012c, 2012d, 2012e).

Similarly, beaver, though present in only a few specimens, is also found at Talus Village and Darkmold, but is not found in the assemblages of BM II sites elsewhere across the Southwest (Reynolds 2012d). The successful procurement of beaver may have been opportunistic thanks to the various nearby rivers and streams, or it may have required the use of specific technologies that enabled people to trap aquatic and semi-aquatic resources (see Dean 2007). The remaining small mammals could have been caught as a part of "garden hunting" (see Linares 1976), and the canid was either consumed or at the very least provided people with fur, as several of the specimens identified as canid contain cutmarks. The absence of mice and other small game—game that are represented in high numbers at most other BM II sites (Reynolds 2012d)—may reflect reality, which would suggest that the site's inhabitants did not need to resort to the consumption of such small animals (see Reynolds 2012d), or may more likely reflect an absence of extensive sieving, thus reducing the chances of their remains being collected.

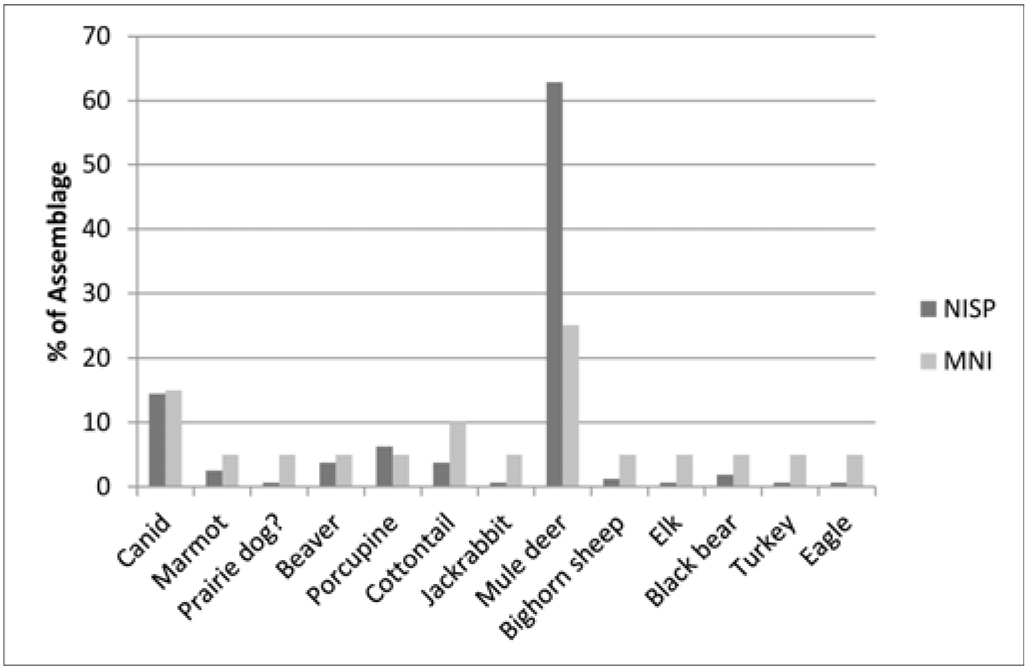


Figure 8.3. Taxonomic distribution (as percent of the total assemblage) for synthetic/aggregate North Falls Creek Rock Shelter assemblage.

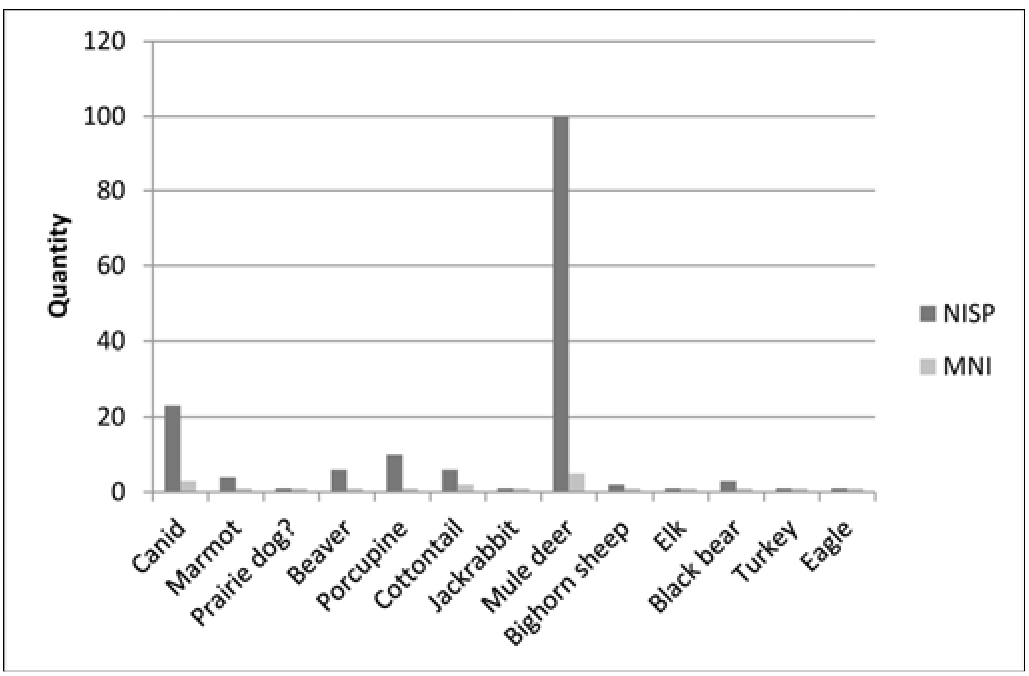


Figure 8.4. Taxonomic distribution (as quantity) for the synthetic/aggregate North Falls Creek Rock Shelter assemblage.

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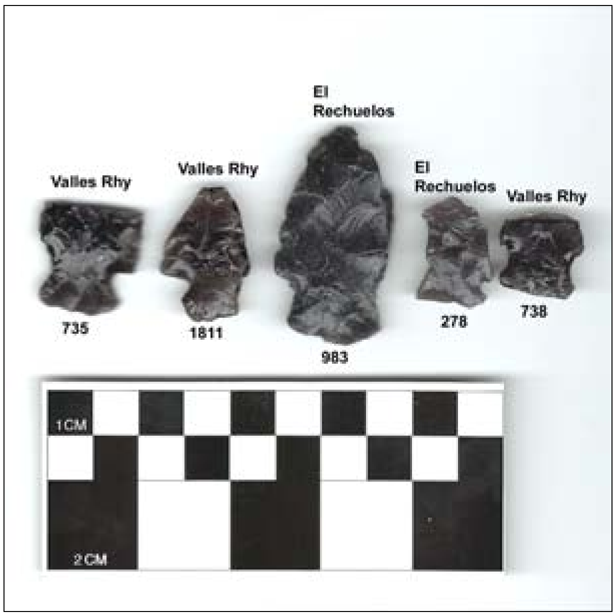
Chapter 2 Appendix
Source Provenance of Obsidian Artifacts from the Falls Creek Basketmaker II Rockshelters, Southern Colorado

GEOARCHAEOLOGICAL XRF LAB

GEOARCHAEOLOGICAL X-RAY FLUORESCENCE SPECTROMETRY LABORATORY
8100 WYOMING BLVD., SUITE M4-158, ALBUQUERQUE, NM 87113 USA

SOURCE PROVENANCE OF OBSIDIAN ARTIFACTS FROM THE FALLS CREEK BASKETMAKER II ROCKSHELTERS, SOUTHERN COLORADO



Impact fractured dart points from the Falls Creek rockshelters

by

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Report Prepared for

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5 April 2014

INTRODUCTION

The analysis here of 40 obsidian artifacts from the Falls Creek rockshelters in southern Colorado. All of the artifacts were produced from one of three obsidian sources in the Jemez Mountains both pre-caldera and caldera events. The assemblage is dominated by Valles Rhyolite (Cerro del Medio) obsidian (52.5%), and given the large sizes of the artifacts some with cortex were certainly procured in the caldera proper.

ANALYSIS AND INSTRUMENTATION

All archaeological samples are analyzed whole. The results presented here are quantitative in that they are derived from "filtered" intensity values ratioed to the appropriate x-ray continuum regions through a least squares fitting formula rather than plotting the proportions of the net intensities in a ternary system (McCarthy and Schamber 1981; Schamber 1977). Or more essentially, these data through the analysis of international rock standards, allow for inter-instrument comparison with a predictable degree of certainty (Hampel 1984).

The trace element analyses were performed in the Geoarchaeological XRF Laboratory, Albuquerque, New Mexico, using a Thermo Scientific *Quant'X* energy dispersive x-ray fluorescence spectrometer. The spectrometer is equipped with a ultra-high flux peltier air cooled Rh x-ray target with a 125 micron beryllium (Be) window, an x-ray generator that operates from 4-50 kV/0.02-1.0 mA at 0.02 increments, using an IBM PC based microprocessor and WinTrace™ 4.1 reduction software. The spectrometer is equipped with a 2001 min^{-1} Edwards vacuum pump for the analysis of elements below titanium (Ti). Data is acquired through a pulse processor and analog to digital converter. This is a significant improvement in analytical speed and efficiency beyond the former Spectrace 5000 and *QuanX* analog systems (see Davis et al. 2011; Shackley 2011).

For Ti-Nb, Pb, Th elements the mid-Zb condition is used operating the x-ray tube at 30 kV, using a 0.05 mm (medium) Pd primary beam filter in an air path at 200 seconds livetime to generate x-ray intensity $K\alpha_1$-line data for elements titanium (Ti), manganese (Mn), iron (as Fe^T), cobalt (Co), nickel (Ni), copper, (Cu), zinc, (Zn), gallium (Ga), rubidium (Rb), strontium (Sr), yttrium (Y), zirconium (Zr), niobium (Nb), lead (Pb), and thorium (Th). Not all these elements are reported since their values in many volcanic rocks is very low. Trace element intensities were converted to concentration estimates by employing a quadratic calibration line ratioed to the Compton scatter established for each element from the analysis of international rock standards certified by the National Institute of Standards and Technology (NIST), the US. Geological Survey (USGS), Canadian Centre for Mineral and Energy Technology, and the Centre de Recherches Pétrographiques et Géochimiques in France (Govindaraju 1994). Line fitting is linear (XML) for all elements but Fe where a derivative fitting is used to improve the fit for iron and thus for all the other elements. When barium (Ba) is acquired, the Rh tube is operated at 50 kV and 0.5 mA in an air path at 200 seconds livetime to generate x-ray intensity $K\alpha_1$-line data, through a 0.630 mm Cu (thick) filter ratioed to the bremsstrahlung region (see Davis et al. 2011). Further details concerning the petrological choice of these elements in North American obsidians is available in Shackley (1988, 1990, 1995, 2005; also Mahood and Stimac

1991; and Hughes and Smith 1993). A suite of 17 specific standards used for the best fit regression calibration for elements Ti- Nb, Pb, and Th, include G-2 (basalt), AGV-2 (andesite), GSP-2 (granodiorite), SY-2 (syenite), BHVO-2 (hawaiite), STM-1 (syenite), QLO-1 (quartz latite), RGM-1 (obsidian), W-2 (diabase), BIR-1 (basalt), SDC-1 (mica schist), BCR-2 (basalt), TLM-1 (tonalite), SCO-1 (shale), all US Geological Survey standards, NBS-278 (obsidian) from the National Institute of Standards and Technology, BR-1 (basalt) from the Centre de Recherches Pétrographiques et Géochimiques in France, and JR-1 and JR-2 (obsidian) from the Geological Survey of Japan (Govindaraju 1994).

The data from the WinTrace software were translated directly into Excel for Windows and into SPSS for statistical manipulation (Table 1). In order to evaluate these quantitative determinations, machine data were compared to measurements of known standards during each run (Table 1). RGM-1 is analyzed during each sample run for obsidian artifacts to check machine calibration (Table 1). Source assignments made by reference to source data at the laboratory (see Shackley 1995, 2005, and http://swxrflab.net/swobsrcs.htm; see Table 2 here).

DISCUSSION

Before a discussion of the source provenance of the samples, a short discussion of the Jemez Mountains sources is in order. Following this is a short discussion of the samples proper.

The Jemez Mountains and the Sierra de los Valles

A more complete discussion of the archaeological sources of obsidian in the Jemez Mountains is available in Shackley (2005:64-74). Distributed in archaeological contexts over as great a distance as Government Mountain in the San Francisco Volcanic Field in northern Arizona, the Quaternary sources in the Jemez Mountains, most associated with the collapse of the Valles Caldera, are distributed at least as far south as Chihuahua through secondary deposition in the Rio Grande, and east to the Oklahoma and Texas Panhandles through exchange. And like the sources in northern Arizona, the nodule sizes are up to 10 to 30 cm in diameter; El Rechuelos, Cerro Toledo Rhyolite, and Valles Rhyolite (Valles Rhyolite derived from the Cerro del Medio dome complex) glass sources are as good a media for tool production as anywhere. Until the recent land exchange of the Baca Ranch properties, the Valles Rhyolite primary domes (i.e., Cerro del Medio) had been off-limits to most research. The discussion of this source group here is based on collections by Dan Wolfman and others, facilitated by Los Alamos National Laboratory, and the Museum of New Mexico, and recent sampling of all the major sources courtesy of the Valles Caldera National Preserve (VCNP; Shackley 2005; Wolfman 1994).

There are at least four eruptive events in the last 8.7 million years that have produced the four chemical groups in the Jemez Mountains (Figure C2-1).

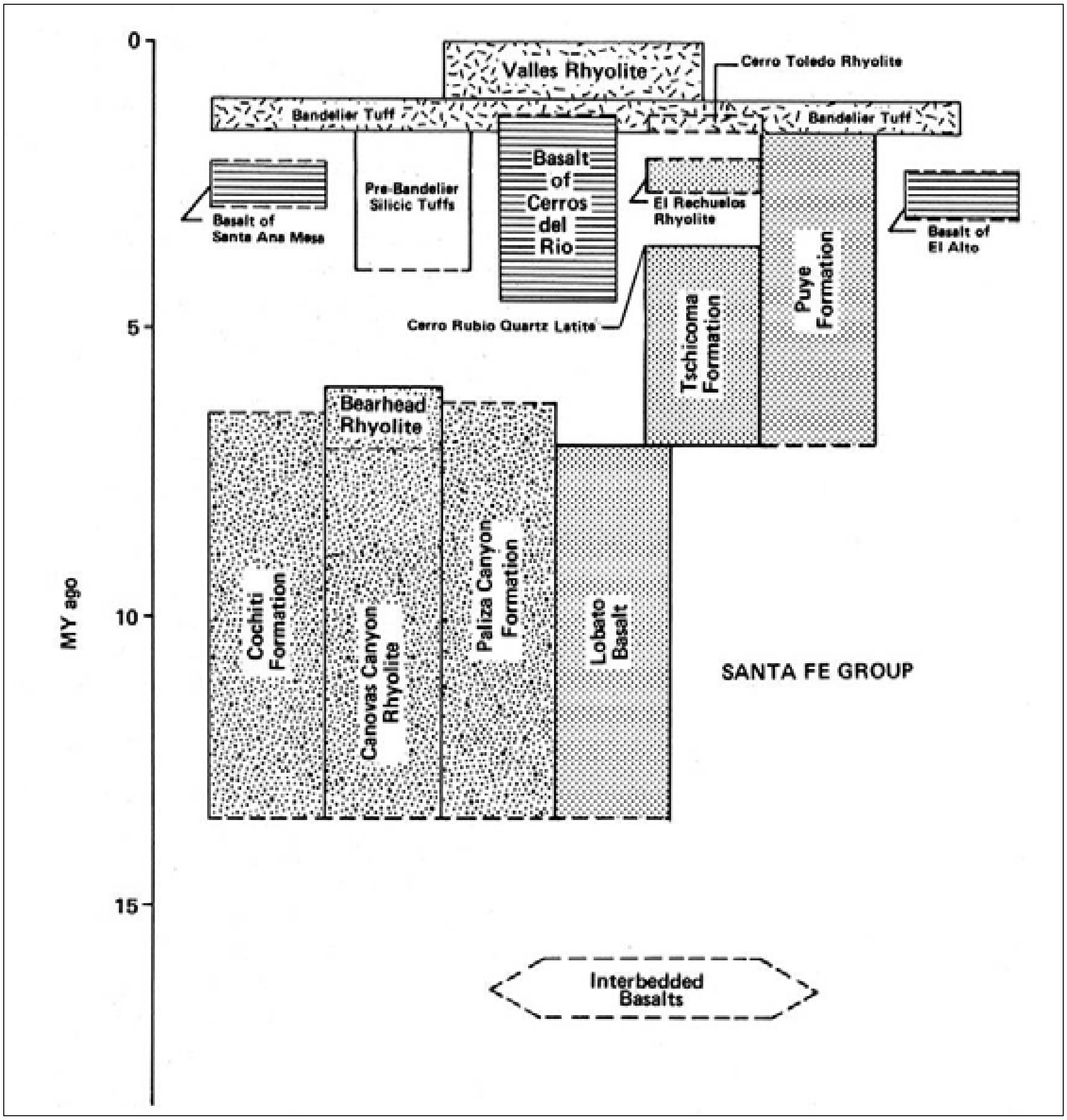

Figure C2-1. Generalized stratigraphic relations of the major volcanic and alluvial units in the Jemez Mountains (from Gardner et al. 1986). Note the near overlapping events at this scale for the Cerro Toledo and Valles Rhyolite members, and the position of Cerro Toledo Rhyolite at the upper termination of the Puye Formation.

The earliest pre-caldera obsidian is the Bear Springs Peak source, part of Canovas Canyon Rhyolite that is dated to about 8.7 mya, firmly in the Tertiary (Kempter et al. 2004; Figure 1 here). This source is a typical Tertiary marekanite source with remnant nodules embedded in a perlitic matrix. It is located in a dome complex including Bear Springs Peak on Santa Fe National Forest and radiating to the northeast through Jemez Nation land (Shackley 2009). While the nodule sizes are small, the glass is an excellent media for tool production and has been found archaeologically at Zuni and in secondary deposits as far south as Las Cruces (Church 2000; Shackley 2013). Four of the samples were produced from this source (Table C2-1 and C2-2).

Part of the same Keres Member as Canovas Canyon Rhyolite is Paliza Canyon Rhyolite. They have similar elemental chemistry and are likely nearly contemporaneous. This source is rare in archaeological contexts, the primary vent is yet unknown, but occurs in Rio Grande alluvium (Church 2000; Shackley 2014).

The second relevant eruptive event that produced artifact quality obsidian is the El Rechuelos Rhyolite. This source, present as one sample here, is what I consider the best media for tool production of the group. It dates to about 2.4 million years ago, and nodules at least 10 cm in diameter are present in a number of domes north of dacite Polvadera Peak, the incorrect vernacular name for this source. El Rechuelos has eroded through the Rio Chama into the Rio Grande and has also been found in alluvium into southern New Mexico (Church 2000; Shackley 2013).

About 1.4 mya, the first caldera collapse occurred in the Jemez Mountains, called the Cerro Toledo Rhyolite event an initial phase of the Tewa Formation. This very large event produced the Bandelier Tuffs and spread ash flows many kilometers into the area and horizontally southwest from what is now Rabbit Mountain and the Cerro Toledo domes to the east. These large ash flow sheets are responsible for the great quantity of Cerro Toledo obsidian that is present in the Quaternary Rio Grande alluvium all the way to Chihuahua (Church 2000; Shackley 2005, 2013).

The second caldera collapse that produced the Valles Rhyolite member of the Tewa Formation, called Valles Rhyolite here, occurred around one million years ago and created most of the geography of the current Valles Caldera. A number or rhyolite ring domes were produced on the east side of the caldera, but only Cerro del Medio produced artifact quality obsidian. Indeed, the Cerro del Medio dome complex produced millions of tons of artifact quality glass, and is the volumetrically largest obsidian source in the North American Southwest challenged only by the Government Mountain dome complex in the San Francisco Volcanic Field. Cerro del Medio obsidian was apparently preferred by Folsom knappers, as well as those in all periods since, including the knappers that produced this assemblage. While Cerro Toledo probably appears in archaeological contexts in New Mexico sites with greater frequency, it is likely because it is distributed in secondary contexts. Valles Rhyolite (Cerro del Medio), dominating here importantly does not erode outside the caldera, in any quantity and size and likely had to be originally procured in the caldera proper (Shackley 2005, 2013). Parenthetically, the Valles Rhyolite samples here are nearly completely without spherulites, typical of what Ana Steffen calls the "monster quarry" locality near the top of Cerro del Medio. I have seen many of the procurement localities on the dome and the "monster quarry" is the one locality that is typically free of spherulites.

The large size of many of the artifacts here, including the projectile points and bifaces (see cover image) suggests that most if not all the obsidian was originally procured from the Jemez Mountains and not secondary contexts. It is certainly possible that the obsidian raw material was procured directly by these prehistoric knappers from the Jemez Mountains region during trips south, or could have been exchanged with Basketmaker groups in the region (Table C2-2 and Figure C2-2).

Table C2-1. Elemental concentrations for the archaeological specimens and the USGS RGM-1 standard by test unit. All measurements in parts per million (ppm).

Sample	Ti	Mn	Fe	Rb	Sr	Y	Zr	Nb	Pb	Th	Source
278	542	444	5502	156	3	26	70	42	26	15	El Rechuelos Rhy
281	586	380	8361	160	5	43	169	47	27	18	Valles Rhy (Cerro del Medio)
282	612	414	4986	158	12	26	70	44	26	17	El Rechuelos Rhy
666	606	450	5431	160	4	24	70	42	28	23	El Rechuelos Rhy
706	470	519	9367	213	1	63	187	86	33	25	Cerro Toledo Rhy
734	495	427	5348	156	4	25	66	38	26	21	El Rechuelos Rhy
735	503	372	8226	155	4	45	168	47	27	19	Valles Rhy (Cerro del Medio)
738	566	393	8655	161	6	45	164	49	26	22	Valles Rhy (Cerro del Medio)
739	435	405	4966	149	5	20	67	37	26	20	El Rechuelos Rhy
859	552	388	8368	156	4	43	167	47	25	14	Valles Rhy (Cerro del Medio)
900	519	443	5292	154	5	22	69	40	28	19	El Rechuelos Rhy
983	586	423	5108	154	6	23	71	40	26	25	El Rechuelos Rhy
1043	544	426	5135	151	2	21	64	36	28	19	El Rechuelos Rhy
1044	539	408	8989	163	1	43	173	48	27	21	Valles Rhy (Cerro del Medio)
1049	495	403	4883	139	5	22	64	35	25	19	El Rechuelos Rhy
1078	447	523	9331	210	2	63	180	87	35	32	Cerro Toledo Rhy
1113	653	455	5890	161	5	27	71	40	27	20	El Rechuelos Rhy
1115	806	402	5397	154	3	22	64	39	29	18	El Rechuelos Rhy
1191	541	419	5148	155	6	21	69	40	30	24	El Rechuelos Rhy
1194	528	568	9993	218	0	67	185	84	32	22	Cerro Toledo Rhy
1198	616	450	9747	172	5	45	179	51	32	23	Valles Rhy (Cerro del Medio)
1219	618	412	9462	163	4	48	169	48	26	20	Valles Rhy (Cerro del Medio)
1811	514	388	8991	161	5	44	173	46	28	18	Valles Rhy (Cerro del Medio)
1918	494	344	7599	145	4	42	162	47	24	19	Valles Rhy (Cerro del Medio)
2625	600	509	6083	167	7	24	72	43	31	22	El Rechuelos Rhy
2650	551	374	8266	157	5	43	161	48	25	19	Valles Rhy (Cerro del Medio)
2651	507	365	7908	156	4	42	155	47	23	20	Valles Rhy (Cerro del Medio)
4271	586	372	8203	158	4	43	166	50	26	19	Valles Rhy (Cerro del Medio)
4651	492	368	7979	151	4	43	158	51	26	21	Valles Rhy (Cerro del Medio)
4821	513	402	8780	159	3	45	172	52	27	18	Valles Rhy (Cerro del Medio)
4822	654	447	9337	168	4	47	170	49	29	22	Valles Rhy (Cerro del Medio)
4823	609	400	8782	163	3	47	170	48	28	22	Valles Rhy (Cerro del Medio)
4824	562	413	9253	166	5	42	168	50	28	22	Valles Rhy (Cerro del Medio)
4846	544	436	5212	149	6	24	65	41	27	23	El Rechuelos Rhy
4847	516	436	5360	158	5	24	66	39	28	26	El Rechuelos Rhy
4848	659	434	9931	179	3	45	182	51	26	19	Valles Rhy (Cerro del Medio)
4849	636	413	8741	163	5	44	166	47	26	23	Valles Rhy (Cerro del Medio)
4850	588	419	5263	150	4	23	69	44	27	24	El Rechuelos Rhy
4851	638	438	9452	172	6	46	174	51	28	21	Valles Rhy (Cerro del Medio)
4852	684	449	9781	170	4	44	178	51	28	16	Valles Rhy (Cerro del Medio)
RGM1-S4	1611	296	13051	148	102	25	222	13	26	17	standard
RGM1-S4	1532	288	13028	150	101	23	227	10	25	12	standard
RGM1-S4	1517	283	13028	153	103	23	225	10	23	14	standard

Table C2-2. Frequency distribution of source provenance in the sites.

		Frequency	Percent
Source	Valles Rhy (Cerro del Medio)	21	52.5
	El Rechuelos Rhy	16	40.0
	Cerro Toledo Rhy	3	7.5
	Total	40	100.0

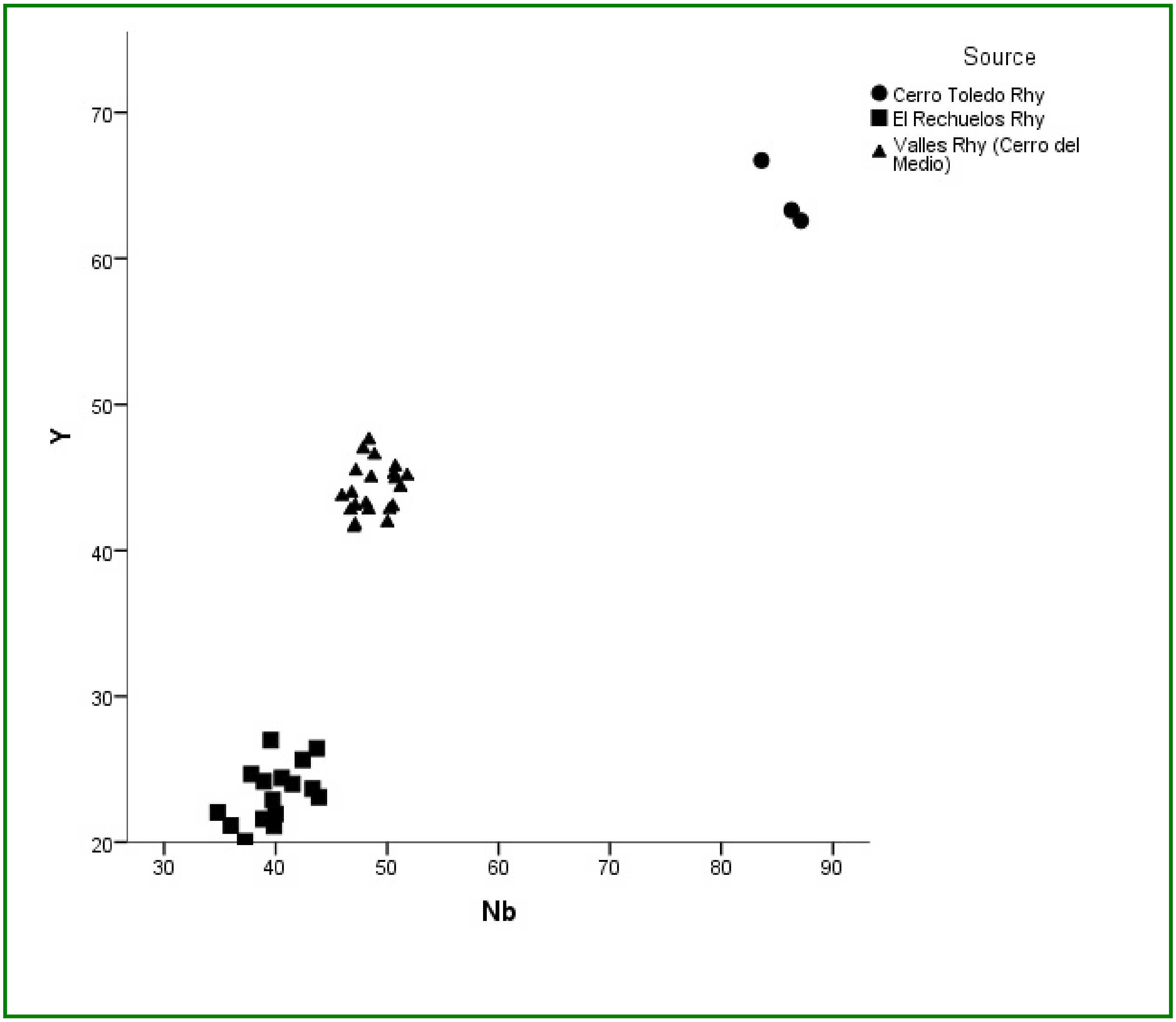

Figure C2-2. Nb versus Y bivarite plot of the archaeological specimens.

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Chapter 4 Appendix
Animal Hair Samples Recovered from the South Wall of the Burial Crevice, 5LP1434

Carole L. Graham

Introduction

In 2010, while documenting remnants of sediment adhering to the walls of the Burial Crevice, in the North Shelter of the Falls Creek Rockshelter Site (5LP1434), Carole Graham and Sally Cole noted fibers imbedded in three distinct areas of a charcoal stained layer, the lowest sediment remnant observed on the south wall (Graham 2011, Figure C4-1). Samples were collected from each of the areas in the hopes that they could be identified and potentially used for AMS radiocarbon dating (Figure C4-1), ultimately providing additional detail concerning the use and chronology of the Burial Crevice during the Basketmaker II period.

Analysis

Dr. Richard Dujay, Professor of Biology and Director of the Microscopy Center at Colorado Mesa University in Grand Junction, Colorado, examined the samples on August 23, 2013. Using a Leica digital microscope, Dr. Dujay was able to provide a taxonomic identification for each of the samples (Table C4-1; Figures C4-2 to C4-4). Sample FCRS.2a was identified as hair from a member of the Leporidae Family, which includes lagomorphs such as cottontail rabbit and jackrabbit. Sample FCRS.2b was identified as hair from a member of the Cervidae Family, and more specifically, as mule deer. Sample FCRS.2c was identified as hair from a member of the Mustelidae Family, whose members include ermine, mink, marten, fisher, badger, black-footed ferret, wolverine, spotted skunk, striped skunk, and river otter. Dr. Dujay noted that members of these mammalian families inhabit the Durango region at present and likely inhabited the region in the past as well.

Following taxonomic identification, the samples were submitted for AMS dating at the University of Georgia's Center for Applied Isotope Studies. The resulting raw and calibrated dates are provided in Table C4-1. Only sample FCRS.2c has a calibrated date (2 sigma) that extends into the BC range; the other two date post-AD 1.

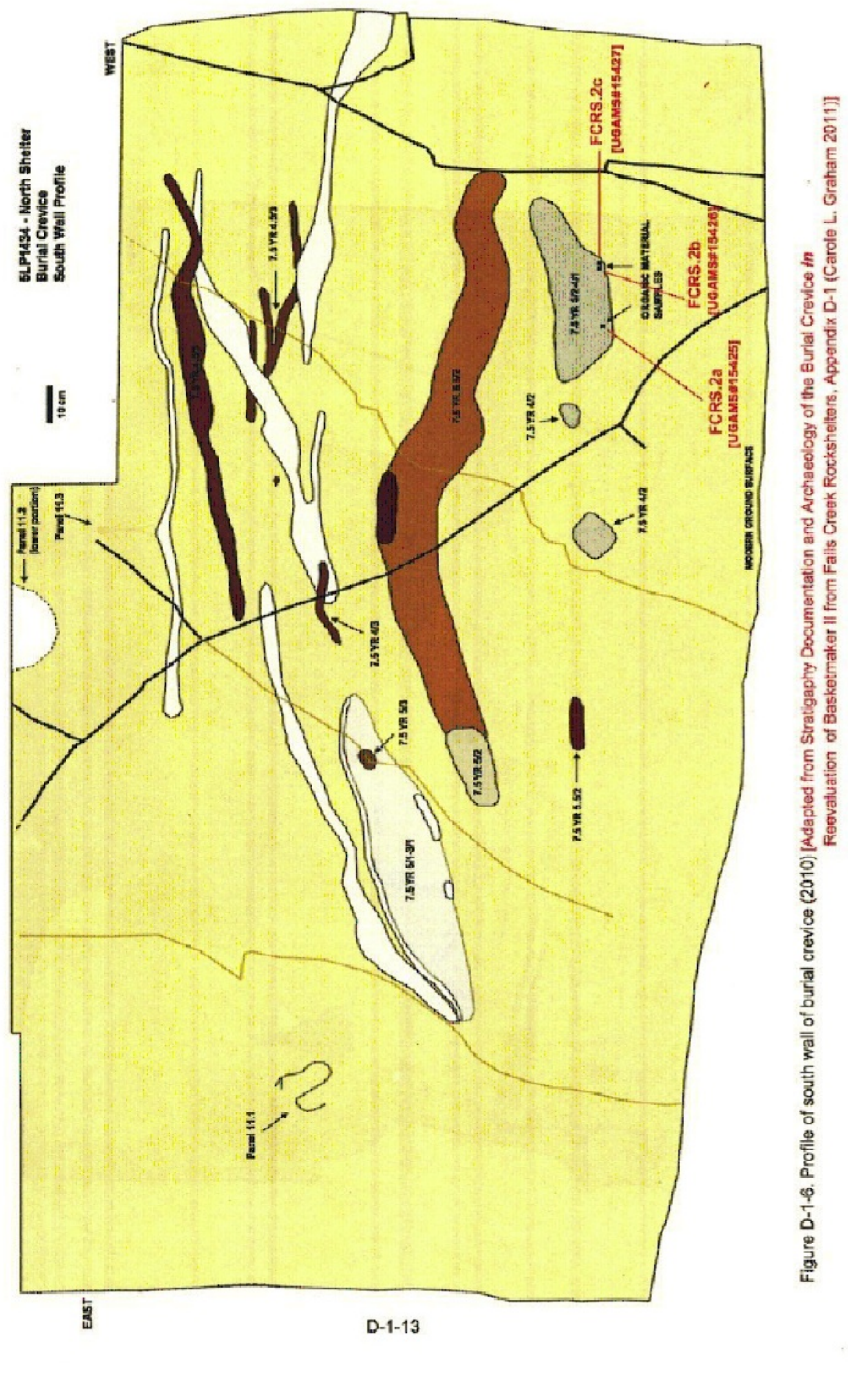

Figure C4-1. Profile map of south wall of the Burial Crevice, showing the locations from which the animal hide samples were recovered.

Table C4-1. Taxonomic Identifications and AMS Dates for Animal Hair Samples

FCRS Sample No. (UG Sample No.)	Taxonomic Identification	Years BP	Calendar Date*
FCRS.2a (UG 15425)	Leporidae Family (rabbit/hare)	1880±25	AD 70-215
FCRS.2b (UG 15426)	Cervidae Family, specifically mule deer	1940±25	AD 7-126
FCRS.2c (UG 15427)	Mustelidae (Weasel Family)	2010±20	50 BC-AD 52
* Reported raw BP date calibrated for this study: 95.4% probability, OxCal v. 4.1.7 Bronk Ramsey (2010); r:5; Atmospheric data from Reimer et al (2009)			

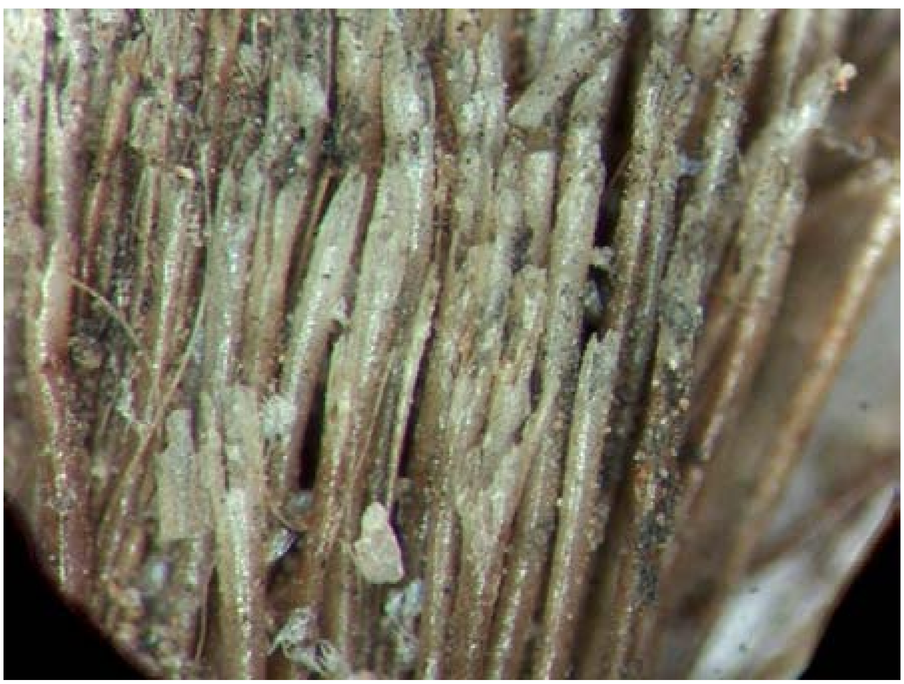

Figure C4-2. Sample FCRS.2a, Leporidae Family, 50x magnification. Photo by Karen Adams.

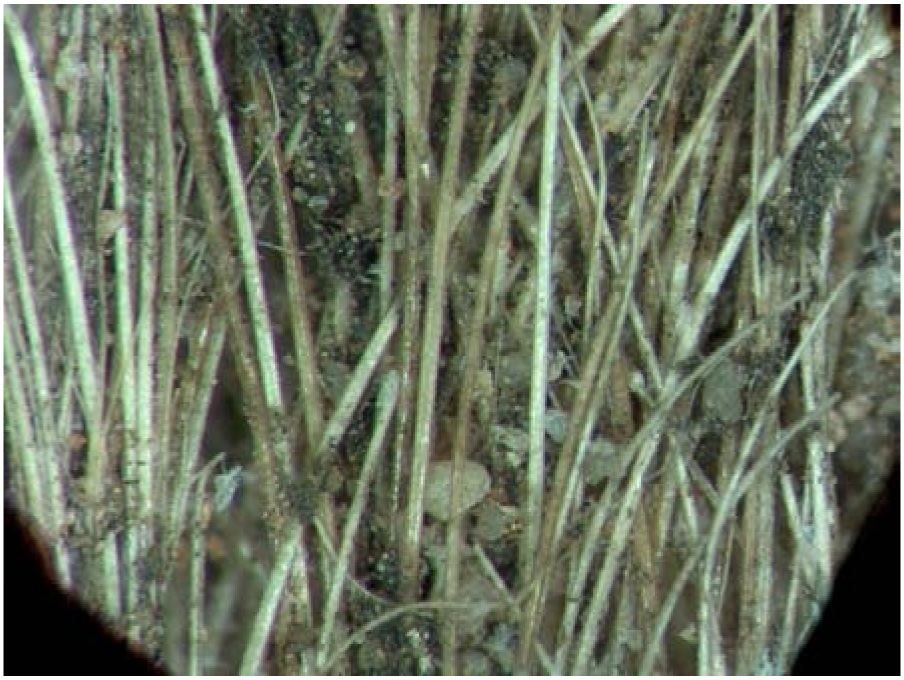

Figure C4-3. Sample FCRS.2b, mule deer, 50x magnification. Photo by Karen Adams.

Figure C4-4. Sample FCRS.2c, Mustelidae Family, 50x magnification. Photo by Karen Adams.

Discussion

As noted above, the samples of animal hair were recovered from the lowest stratum of observable sediment on the south wall of the Burial Crevice, near the west end. The gray, charcoal-stained deposit corresponds with the stratum designated by Flora as the "burial level" (see discussion in Graham 2011). It is presumed that the animal hair was introduced into the Burial Crevice deposits through human agency, probably as part of individual burial events, largely because of their stratigraphic position and their proximity to numerous human burials; the remains of 29 individuals were buried in the relatively small space (see Mulhern 2011).

Because no scaled maps or photographs were produced during Flora's 1937 excavation of the Burial Crevice, there is no direct evidence to link the animal hair samples to specific burials. Not-to-scale sketch maps prepared by Zeke Flora after his 1937 excavation of the crevice are the only sources of information about the locations of burials within the crevice (see Figures D-1-4 and D-1-5, Graham 2011).

According to Flora's plan view sketch map, the area from which the animal hair samples were recovered corresponds with the burials of four children (Individuals 5, 8, 9, and 10), ranging in age from newborn to about 5-7 years of age (see Mulhern 2011 for descriptions). Individuals 5 and 8 were closest to the wall according to Flora's map. Records from the Peabody Museum show that animal hair and hide were originally associated with Individual 10 (Mulhern 2011:E-9) and more recent study shows that a deer hide was associated with Individual 8 and a deer or pronghorn hide was associated with Individual 9 (Webster and Jolie 2011:J-35).

In their study of perishable artifacts originating in the Burial Crevice, Webster and Jolie (2011:J-34) observed that several burials had been wrapped in animal hides, of which deer was most common, though elk, pronghorn, and small mammals were also represented. The present study shows that hides from rabbit/hare species and a member of the weasel family were also likely used as shrouds or other burial goods. While it is impossible to say with certainty that the animal hair samples recovered from the wall originally accompanied the burials of these particular children (Individuals 5, 8, 9, and 10), it is certainly possible that they did.

The radiocarbon dates resulting from the samples, which all originated at about the same vertical level, are rather disparate, indicating considerable reworking of the crevice fill (see Figure A1-1). As noted in an earlier work (Graham 2011), the crevice saw continued use, perhaps 1,000 years or more, attesting to its importance as a burial locale during the Basketmaker II period. While the new AMS dates cannot be assigned to specific sets of human remains, they can be seen as markers of individual burial events and add considerably to the known chronology of the Burial Crevice (see Graham 2011).

Conclusions

Three animal hair samples were recovered from sediment remnants adhering to the south wall of the Burial Crevice, in the North Shelter of the Falls Creek Rockshelter Site. Taxonomic identification of the samples has expanded our knowledge of animal hides likely used as shrouds or other burial goods, possibly associated with the burial of children. The resulting AMS dates add considerably to the chronology of the Burial Crevice, attesting to its significance and longevity as a burial locale during the Basketmaker II period.

Chapter 7

APPENDIX: Database

For the purposes of project and reporting, the following table has been queried for documentation in the final Phase 2 report. This data table does not reflect the entirety of data housed in the FallsCreekDatabase, but serves as a reference tool for reporting purposes.

Chapter 7 Appendix Database: Data Table Used as Reference Tool for Reporting Purposes

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
00001	FCRS-00001	Hide	Hide Artifact	BC	16	Yes	AFO	LW		Deer. Measuring: approx 120 x 60 cm.							n/a		n/a		
00002	FCRS-00002	Textile	Apron			No	Not NAGPRA	LW		Waist Cord: 4(2s-Z), Fringe:2s-Z, Method of Attachment:human hair twining element: 2z-s; red yucca twining element: 2s-Z											
00004	FCRS-00004.1	Textile	Apron	BC	1	Yes	AFO	LW		Waist Cord: missing, Fringe:2z-S and 2s-Z juniper bark cordage, Method of Attachment:Lark's head knots						39-110-10/N3523.1	n/a		n/a		
00004	FCRS-00004.2	Textile	Cordage	BC	1	Yes	AFO	LW		Yucca. One strand wrapped Z-wise with fur strips. Other strand wrapped with feather down (unable to determine wrapping direction). cordage. Structure: 2s-Z. Cordage Diamater: 3.0 mm. Knot: no						39-110-10/N3523.1	n/a		n/a		
00005	FCRS-00005	Fur	Hide Artifact	BC	1	Yes	AFO	LW		Deer. Measuring: 13.0 x 4.5 cm.						39-110-10/N3523.2	n/a		EL 4		
00008	FCRS-00008	Textile	Twined Bag	BC	18	Yes	AFO	LW		Structure: 2-strand twining (Z). Warp Elements: 2s-Z yucca, 4/cm. Weft Elements: 2s-Z yucca, 14/cm. Selvages: Missing						39-110-10/N3525.0.1	n/a		EO 5		
00009	FCRS-00009	Fur	Hide Artifact	BC	18	Yes	AFO	LW		Deer. Measuring: 20.5 x 20 cm.						39-110-10/N3525.0.2	n/a		EO 5		
00010	FCRS-00010	Textile	Apron	BC	18	Yes	AFO	LW		Waist Cord: see FCRS-00123 for waist cord, Fringe:2s-Z yucca, Method of Attachment:n/a						39-110-10/N3525.0.3	F50a		n/a		
00011	FCRS-00011	Fur	Hide Artifact	BC	18	Yes	AFO	LW		Deer. Measuring: 11 x 10 cm.						39-110-10/N3525.0.4	n/a		EO 5		
00015	FCRS-00015	Hide	Hide Artifact	BC	8	Yes	AFO	LW		Deer. Measuring: 4.4 x 1.5 cm.						39-110-10/N3527.0.1	n/a		n/a		
00018	FCRS-00018	Hide	Unidentified mammal fur (tuft); human hair (nostril)	BC	10	Yes	AFO	LW		Tuft of fuzzy brown hair on forehead. Cluster of straight human hair in nostrils						39-110-10/N3528.1	n/a		n/a		
00023	FCRS-00023.1	Textile	Apron	BC	20	Yes	AFO	LW		Waist Cord: 2s-Z juniper bark, Fringe:see FCRS-00024 for possible fringe, Method of Attachment:unknown						39-110-10/N3532.0.1	F12		n/a		
00023	FCRS-00023.2	Textile	Cordage	BC	20	Yes	AFO	LW		Apocynum or juniper bark cordage. Structure: 2s-Z. Cordage Diamater: 2.3 mm. Knot: Overhand knot						39-110-10/N3532.0.1	F12		n/a		
00023	FCRS-00023.3	Textile	Cordage	BC	20	Yes	AFO	LW		Human hair cordage. Structure: 2(2z-S)Z. Cordage Diamater: 1.8 mm. Knot: no						39-110-10/N3532.0.1	F12		n/a		
00024	FCRS-00024	Textile, Vegetal	Apron	BC	20	Yes	AFO	LW	KA	Waist Cord: see FCRS-00023.1 for waist cord, Fringe:juniper bark, shredded, Method of Attachment:unknown						39-110-10/N3532.0.2	F12		n/a		
00024	KRA-0001	Textile, Vegetal	Juniperus type bark	BC	20	Yes	AFO	LW	KA	Juniper bark covering for burial						39-110-10/N3532.0.2	F12		n/a		
00026	FCRS-00026.2	Fur	Rabbit fur	BC	21	Yes	AFO	LW		Tufts of soft golden fur adhering to skin. Possibly placed between body and outer hide wrapping						39-110-10/N3533.1	F13a		n/a		
00027	FCRS-	Cordage	Cordage	BC	21	Yes	AFO	LW		Human hair cordage. Structure:						39-110-	F13		n/a		

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	00027.1									2s-Z. Cordage Diamater: 1.0 mm. Knot: Overhand knot						10/N3533.2					
00027	FCRS-00027.2	Cordage	Cordage	BC	21	Yes	AFO	LW		Human hair cordage. Structure: 2s-Z. Cordage Diamater: 0.8 mm. Knot: no						39-110-10/N3533.2	F13		n/a		
00028	FCRS-00028	Cordage	Cordage	BC	21	Yes	AFO	LW		Rabbit hair, probably cordage. Structure: 2z-S. Cordage Diamater: 1.5 mm. Knot: no						39-110-10/N3533.3	F13		n/a		
00030	FCRS-00030	Textile	Braided yucca strap	BC	11	Yes	AFO	LW		Raw Material: Braided yucca strap, Dimensions43 cm long, 0.6 cm wide						39-110-10/N3534.1	F14		n/a		
00031	FCRS-00031.2	Human Remains	Cordage	BC	13	Yes	Human Remains	DM		Human hair cordage. Structure: 2s-Z. Cordage Diamater: 0.7 mm. Knot: no						39-110-10/N3535.0	F15	EY	EY		
00032	FCRS-00032	Cordage	Cordage	BC	13	Yes	AFO	LW		Animal hair, possibly dog cordage. Structure: 2z-S. Cordage Diamater: 1.5 mm. Knot: Square knot						39-110-10/N3535.1	F15		n/a		
00033	FCRS-00033	Textile	Braided animal hair tie	BC	13	Yes	AFO	LW		Raw Material: Braided animal hair tie, Dimensions30 cm long, 0.8 cm wide, approximately						39-110-10/N3535.2	F15		n/a		
00034	FCRS-00034	Cordage	Cordage	BC	13	Yes	AFO	LW		Animal hair, possibly dog cordage. Structure: 9(2z-S)Z. Cordage Diamater: 0.9 mm. Knot: no						39-110-10/N3535.3	F15		n/a		
00035	FCRS-00035	Textile	Apron	BC	13	Yes	AFO	LW		Waist Cord: 6(3s-Z)S human-hair cordage, Fringe:2s-Z yucca cordage, Method of Attachment:2-strand twining (S) with 3s-Z human-hair cords						39-110-10/N3535.4	F15		n/a		
00036	FCRS-00036	Fur	Rabbit fur	BC	13	Yes	AFO	LW		Patches of soft golden fur adhering to cheek, chin, and chest						39-110-10/N3535.5	F15		n/a		
00038	FCRS-00038	Textile, Fur	Twined blanket	BC	6	Yes	AFO	LW	LW	Structure: Probably 2-strand weft twining. (incomplete). Warp Elements: Rabbit-fur strips wrapped upon themselves (no cordage core). 1.5 warps/cm. Weft Elements: 2s-Z cordage of unidentified plant fiber. Weave density undetermined.. Selvages: None observed.						39-110-10/N3536.1	F16		n/a		
00040	FCRS-00040	Hide	Hide Artifact	BC	9	Yes	AFO	LW	LW	Pronghorn antelope or deer. Measuring: 46 x 25.5 cm.						39-110-10/N3537.1	F17		FA		
00041	KRA-0002	Textile, Vegetal	Juniperus type bark	BC	9	Yes	AFO	LW	KA	Juniper bark covering for burial						39-110-10/N3537.2	F17		FA		
00042	FCRS-00042	Cordage	Cordage	BC	9	Yes	AFO	LW		Juniper bark cordage. Structure: 2s-Z. Cordage Diamater: 3.0-4.0 mm. Knot: no						39-110-10/N3537.3	F17		FA		
00075	FCRS-00075	Basket	shallow tray	BC	18	Yes	AFO	EJ		Strutural Technique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches. Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle. Dimensions: 32.5 x 29.5 cm, 1.5-5.5 cm tall.				MEVE-00321	MEVE 3618		F27		EO 1		
00076	FCRS-	Basket	shallow tray	BC	18	Yes	AFO	EJ	KA	Strutural Technique: close coiling,				MEVE-	MEVE		n/a		EO 1		

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	00076									half rod and bundle stacked foundation, noninterlocking stitches. Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle. Dimensions: 38.5 x 34.5 cm, 2.5-8.5 cm tall.				00321	3619						
00076	KRA-0003	Basket	Basketware tray	BC	18	Yes	AFO	EJ	KA	Basketware tray with some imbedded plant parts				MEVE-00321	MEVE 3619		n/a		EO 1		
00076	KRA-0004	Basket	Basketware tray	BC	18	Yes	AFO	EJ	KA	Basketware tray with some imbedded plant parts				MEVE-00321	MEVE 3619		n/a		EO 1		
00078	FCRS-00078	Hide	Hide Artifact	BC	21	Yes	AFO	LW		Pronghorn antelope. Measuring: 78 x 60 cm .				MEVE-00321	MEVE 3638		F13a		n/a		
00079	FCRS-00079	Hide	Hide Artifact	BC	21	Yes	AFO	LW		Pronghorn antelope, probably. Measuring: 43 x 31 cm .				MEVE-00321	MEVE 3639		F13a		n/a		
00081	FCRS-00081	Textile	Braided rabbit hair sash	BC	16	Yes	AFO	LW		Raw Material: Braided rabbit hair sash, DimensionsAt least 26 cm long, 6.0 cm wide				MEVE-00321	MEVE 3641		F20		EM 1		
00082	FCRS-00082	Hide, Textile	Cordage	BC	14	Yes	AFO	LW	LW	Human hair cordage. Structure: 2z-S. Cordage Diamater: 1.2 mm. Knot: Square knot				MEVE-00321	MEVE 3642		F21		EK 2		
00083	FCRS-00083	Hide, Textile	Cordage	BC	14	Yes	AFO	LW	LW	Human hair cordage. Structure: 2s-Z. Cordage Diamater: 1.0 mm. Knot: no				MEVE-00321	MEVE 3643		F21		EK 2		
00084	FCRS-00084	Cordage	Cordage	BC	14	Yes	AFO	LW		Human hair cordage. Structure: 2s-Z. Cordage Diamater: 3.0 mm. Knot: no				MEVE-00321	MEVE 3644		F21		EK 2		
00085	KRA-0005	Vegetal	Amaranthus type seeds	BC	14	Yes	AFO	KA		Amaranth seeds from a twined bag				MEVE-00321	MEVE 3645		F22		EK 5		
00086	FCRS-00086	Hide	Hide Artifact	BC	14	Yes	AFO	LW		Deer. Measuring: 39.0 x 18.5 cm .				MEVE-00321	MEVE 3646		F23		EK 3		
00087	FCRS-87.1	Pipe	Pipe	BC	1	Yes	AFO	MC		Conical shaped pipe, Red banded silstone				MEVE-00321	MEVE 3647		F25		EL 3		
00088	FCRS-00088	Basket	small cup-like bowl	BC	1	Yes	AFO	EJ		Strutural Technique: close coiling, two rod and bundle bunched foundation, noninterlocking stitch. Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle. Dimensions: 11.4 cm diameter, 6 cm tall.				MEVE-00321	MEVE 3648		F26		EL 1		
00089	FCRS-00089	Basket	shallow tray	BC	16	Yes	AFO	EJ		Strutural Technique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches. Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle. Dimensions: 41 cm diameter, 2-5.5 cm tall.				MEVE-00321	MEVE 3649		F27a		EM 3		
00090	FCRS-00090	Basket	large nearly flat tray	BC	16	Yes	AFO	EJ		Strutural Technique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches. Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle. Dimensions: 51 cm diameter, 1 cm tall.				MEVE-00321	MEVE 3650		F27b		EM 3		
00091	FCRS-00091	Basket	large shallow tray	BC	16	Yes	AFO	EJ		Strutural Technique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches. Raw Materials: Rhus sp.				MEVE-00321	MEVE 3651		F27c		EM 3		

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										stitches and foundation, Yucca sp. bundle. Dimensions: 34 x 32.5 cm, 3 cm tall.											
00092	FCRS-00092	Basket	large shallow wide mouth bowl	BC	16	Yes	AFO	EJ		Strutural Technique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches. Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle. Dimensions: 47 x 45 cm, 7 cm tall.				MEVE-00321	MEVE 3652		F27d		EM 3		
00093	FCRS-00093	Hide	Hide Artifact	BC	2	Yes	AFO	LW		Deer. Measuring: 69.0 x 53.0 cm.				MEVE-00321	MEVE 3653		F28		EN 2		
00094	FCRS-00094	Textile	Twined Bag	BC	14	Yes	AFO	LW		Structure: 2-strand twining (Z). Warp Elements: 2s-Z yucca, 4-5/cm. Weft Elements: 2s-Z yucca, 14-15/cm. Selvages: Base missing, upper end frayed				MEVE-00321	MEVE 3654		F29		EK 4		
00095	FCRS-00095	Textile	Twined Bag	BC	18	Yes	AFO	LW		Structure: 2-strand twining (Z). Warp Elements: 2s-Z yucca, 3.5-4/cm. Weft Elements: 2s-Z yucca, 14/cm. Selvages: Spiral base. At mouth opening, some elements gathered into 3-strand braids				MEVE-00321	MEVE 3655		F30		EO 4		
00096	FCRS-00096	Bead	Necklace or Ornaments	BC	13	Yes	AFO	MC	KA	Six juniper berry beads strung on yucca cordage and two isolated beads.				MEVE-00321	MEVE 3656		F31		n/a		
00096	FCRS-00096.1	Bead	Cordage	BC	13	Yes	AFO	MC	KA	Yucca cordage. Structure: 2s-Z. Cordage Diamater: 1.8 mm. Knot: no				MEVE-00321	MEVE 3656		F31		n/a		
00096	FCRS-00096.2	Bead	Cordage	BC	13	Yes	AFO	MC	KA	Human hair cordage. Structure: 2s-Z. Cordage Diamater: 0.7 mm. Knot: no				MEVE-00321	MEVE 3656		F31		n/a		
00096	KRA-0006	Bead	Juniperus type seed beads	BC	13	Yes	AFO	MC	KA	Eight juniper seed beads				MEVE-00321	MEVE 3656		F31		n/a		
00097	FCRS-00097	Hide	Hide Artifact	BC		Yes	UFO	LW		Pronghorn antelope. Measuring: 44 x 30 cm.				MEVE-00321	MEVE 3657		F32		n/a		
00098	FCRS-00098	Bead	Cordage	BC	18	Yes	AFO	MC		Yucca cordage. Structure: 2s-Z. Cordage Diamater: 1.0 mm. Knot: no				MEVE-00321	MEVE 3658		F33		n/a		
00098	FCRS-00098	Bead	Necklace or Ornaments	BC	18	Yes	AFO	MC		16 olivella dama beads with a few piece of yucca cordage, possible found embedded in the back of the neck of the individual. Small or medium sized, simple spire-lopped (6) and spire punched (1), or complete lopped (9). No human hair observed, just fragments of yucca cordage.				MEVE-00321	MEVE 3658		F33		n/a		
00099	FCRS-00099	Matting	Twined Mat	BC		Yes	UFO	LW	KA	mat. Structural technique: open simple twining, s-twist wefts. Raw Materials: Schoenoplectus sp. Warps, Yucca sp. Wefts				MEVE-00321	MEVE 3659		F34		n/a		
00099	KRA-0007	Matting	Scirpus acutus type stems	BC		Yes	UFO	LW	KA	Bulrush stem matting fragment				MEVE-00321	MEVE 3659		F34		n/a		
00100	FCRS-00100	Matting	Twined Mat	BC		Yes	UFO	LW	KA	possible mat. Structural technique: open simple twining, s-twist wefts. Raw Materials:				MEVE-00321	MEVE 3660		F34a		n/a		

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										Juniperus sp. Warps and Yucca sp. Wefts											
00100	KRA-0008	Matting	Juniperus type bark strips	BC		Yes	UFO	LW	KA	Shredded juniper bark matting				MEVE-00321	MEVE 3660		F34a		n/a		
00101	FCRS-00101.1	Matting	Twined Mat	BC		Yes	UFO	LW	KA	mat. Structural technique: open simple twining, s- and z-twist wefts. Raw Materials: probable Schoenoplectus sp. Warps and wefts				MEVE-00321	MEVE 3661		F34b		n/a		
00101	FCRS-00101.2	Matting	Cordage	BC		Yes	UFO	LW	KA	Yucca cordage. Structure: 2z-S. Cordage Diamater: 2.0 mm. Knot: Square knot				MEVE-00321	MEVE 3661		F34b		n/a		
00101	FCRS-00101.3	Matting	Cordage	BC		Yes	UFO	LW	KA	Yucca cordage. Structure: 2s-Z. Cordage Diamater: 1.0 mm. Knot: no				MEVE-00321	MEVE 3661		F34b		n/a		
00101	KRA-0009	Matting	Scirpus acutus type stem fibers	BC		Yes	UFO	LW	KA	Bulrush stem fiber matting				MEVE-00321	MEVE 3661		F34b		n/a		
00102	FCRS-00102	Textile, vegetal	Yucca	BC		Yes	UFO	LW	KA	Small bundle of processed yucca fiber. Folded and loosely twisted. Medium processing.				MEVE-00321	MEVE 3662		F34c		n/a		
00102	KRA-0010	Textile, vegetal	Yucca type fiber bundle	BC		Yes	UFO	LW	KA	Yucca fiber bundle				MEVE-00321	MEVE 3662		F34c		n/a		
00103	FCRS-00103	Textile	Juniper bark	BC		Yes	UFO	LW	KA	Bundle of shredded juniper bark				MEVE-00321	MEVE 3663		F34d		n/a		
00103	KRA-0011	Textile	Juniperus type bark, shredded	BC		Yes	UFO	LW	KA	Juniper bark (bast) fiber bundle				MEVE-00321	MEVE 3663		F34d		n/a		
00104	FCRS-00104	Basket	Basketry raw material-Rhus sp.	BC		Yes	UFO	EJ		Raw Materials: Rhus sp.. Dimensions: 32 x 26 x 4.5.				MEVE-00321	MEVE 3664		F34e		n/a		
00105	FCRS-00105.1	Cordage	Cordage	BC		Yes	UFO	LW		Human hair cordage. Structure: 3s-Z. Cordage Diamater: 1.3 mm. Knot: no				MEVE-00321	MEVE 3665		n/a		n/a		
00105	FCRS-00105.2	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: 2s-Z. Cordage Diamater: 2.5 mm. Knot: Square knot				MEVE-00321	MEVE 3665		n/a		n/a		
00105	FCRS-00105.3	Cordage	Cordage	BC		Yes	UFO	LW		Yucca. One strand wrapped Z-wise with hide strips, other strand wrapped S-wise with hide strips. cordage. Structure: 2s-Z. Cordage Diamater: 5.0 mm. Knot: no				MEVE-00321	MEVE 3665		n/a		n/a		
00105	FCRS-00105.4	Cordage	Cordage	BC		Yes	UFO	LW		Rabbit hair cordage. Structure: 12(2z-S)Z. Cordage Diamater: 9.0 mm. Knot: no				MEVE-00321	MEVE 3665		n/a		n/a		
00105	FCRS-00105.5	Cordage	Apocynum, possibly	BC		Yes	UFO	LW		Slightly twisted bundle of a shredded barklike material, possibly apocynum fiber.				MEVE-00321	MEVE 3665		n/a		n/a		
00105	FCRS-00105.6	Cordage	Wrapped stick	BC		Yes	UFO	LW		Small stick wrapped crosswise with a yucca strip				MEVE-00321	MEVE 3665		n/a		n/a		
00106	FCRS-00106	Textile, Fur	Twined blanket	BC	14	Yes	AFO	LW	LW	Structure: 2-strand weft twining (all S-wise twining except for one short section). Warp Elements: 2s-Z yucca cordage wrapped S-wise with bird quills and Z-wise with bird skins and rabbit-fur strips. 1.5 warps/cm. Some warps twined in pairs, others twined				MEVE-00321	MEVE 3666		F35		EK 1		

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										singly. . Weft Elements: 2s-Z yucca cordage. Rows 3-5 cm apart.. Selvages: Warp selvage: 180 degree self- selvage; Weft selvage: 180 degree self-selvage.											
00107	FCRS-00107.1	Basket	large shallow tray	BC	2	Yes	AFO	EJ		Strutural Technique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches. Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle. Dimensions: 51 cm diameter, 2 cm tall.				MEVE-00321	MEVE 3667		F36		EN 1		
00107	FCRS-00107.2	Basket	unknown basket	BC	2	Yes	AFO	EJ		Strutural Technique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches. Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle. Dimensions: 3.9 x 3.8 cm and 2.3 x 2.3 cm.				MEVE-00321	MEVE 3667		F36		EN 1		
00108	FCRS-00108	Shell	Cordage	BC	18	Yes	AFO	MC		Yucca cordage. Structure: 2s-Z. Cordage Diamater: 1.0 mm. Knot: 1 square knot, 3 overhand knots				MEVE-00321	MEVE 3668		F38		EO 3		
00108	FCRS-00108	Shell	Necklace or Ornaments	BC	18	Yes	AFO	MC		Strand 9 of 12 strands of Olivella dama and Conus or Oliva shells. 156 apical spires removed. Longitudinal stringing, some show wear on lateral edges as if placed side by side. Two large Conus or Oliva shells held together with lightly twisted yucca cordage.				MEVE-00321	MEVE 3668		F38		EO 3		
00109	FCRS-00109	Ornament	Necklace or Ornaments	BC	18	Yes	AFO	MC	KA	137 juniper berry seed beads on two thin cords of fine black string with a thin disc-shaped abalone shell bead in the middle.				MEVE-00321	MEVE 3669						
00109	KRA-0012	Ornament	Juniperus type seed beads	BC	18	Yes	AFO	MC	KA	3 Juniper seed beads, plus 1 unknown plant stem bead				MEVE-00321	MEVE 3669						
00110	FCRS-00110	Bead	Necklace or Ornaments	BC		Yes	UFO	MC		Fragments of lignite, oreohelix, shell and two broken seed beads.				MEVE-00321	MEVE 3670		F40				
00111	FCRS-00111	Matting	Twined Mat	BC		Yes	UFO	LW		mat. Structural technique: open (?) twining, s-twist wefts. Raw Materials: Schoenoplectus sp. Warps, Yucca sp. Wefts				MEVE-00321	MEVE 3671		F41		n/a		
00112	FCRS-00112.1	Cordage	Cordage	BC		Yes	UFO	LW		Human hair cordage. Structure: 2s-Z. Cordage Diamater: 0.8 mm. Knot: no				MEVE-00321	MEVE 3672		F42		n/a		
00112	FCRS-00112.2	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: 4(2s-Z)S. Cordage Diamater: 2.0 mm. Knot: Square knot				MEVE-00321	MEVE 3672		F42		n/a		
00112	FCRS-00112.3	Cordage	Cordage	BC		Yes	UFO	LW		Animal hair, possibly dog cordage. Structure: 9(2z-S)Z. Cordage Diamater: 2.5 mm. Knot: no				MEVE-00321	MEVE 3672		F42		n/a		
00112	FCRS-00112.4	Cordage	Rabbit fur	BC		Yes	UFO	LW		Small clumps of white and light brown fur enmeshed in human-hair cordage of FCRS-00112.1.				MEVE-00321	MEVE 3672		F42		n/a		
00112	FCRS-00112.4	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: Z. Cordage Diamater: 0.8 mm. Knot:				MEVE-00321	MEVE 3672		F42		n/a		

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										no											
00113	FCRS-00113	Textile, Vegetal	Corn leaf bundle	BC		Yes	UFO	LW	KA	17.0 cm long, 7.7 cm wide, 3.8 cm thick				MEVE-00321	MEVE 3673		F43		n/a		
00113	KRA-0013	Textile, Vegetal	Zea mays leaf bundle	BC		Yes	UFO	LW	KA	Maize leaf bundle				MEVE-00321	MEVE 3673		F43		n/a		
00114	FCRS-00114	Hide	Sandal	BC		Yes	UFO	LW		Deer hide sandal. Dimensions: 21.0 cm long, 9.7 cm maximum width, 7.0 cm wide at heel				MEVE-00321	MEVE 3674		F44, F1051		n/a		
00115	FCRS-00115	Sandal	Sandal	BC		Yes	UFO	LW		Yucca leaf sandal. Dimensions: 24.0 cm long, 11.8 cm maximum width, 8.0 cm at heel				MEVE-00321	MEVE 3675		F45, F1050		n/a		
00116	FCRS-00116	Wood Tool	Atlatl fragment	BC		Yes	UFO	LW	KA	Proximal end of an atlatl. Wood identified as rabbitbrush. See Graham, this report, for a detailed analysis.				MEVE-00321	MEVE 3676		F46		n/a		
00116	FCRS-00116	Wood Tool	atlatl fragment	BC		Yes	UFO	LW	KA	Wood atlatl, proximal fragment				MEVE-00321	MEVE 3676		F46		n/a		
00116	KRA-0014	Wood Tool	Chrysothamnus/Artemisia? type stem atlatl fragment	BC		Yes	UFO	LW	KA	Rabbitbrush/Sagebrush? stem atlatl fragment				MEVE-00321	MEVE 3676		F46		n/a		
00117	FCRS-00117	Ornament	Necklace or Ornaments	BC		Yes	UFO	MC		Five shell wall beads are attached to the lignite pendant necklace with gum.				MEVE-00321	MEVE 3677		F47		n/a		
00117	FCRS-00117	Ornament	Cordage	BC		Yes	UFO	MC		Hide cordage. Structure: 3s-Z. Cordage Diamater: 10.0 mm. Knot: no				MEVE-00321	MEVE 3677		F47		n/a		
00118	FCRS-00118.1	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: 2s-Z. Cordage Diamater: 3.0 mm. Knot: Overhand knots				MEVE-00321	MEVE 3678		F47				
00118	FCRS-00118.2	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: 2s-Z. Cordage Diamater: 1.0 mm. Knot: Square knot				MEVE-00321	MEVE 3678		F47				
00118	FCRS-00118.3	Cordage	Cordage	BC		Yes	UFO	LW		Human hair cordage. Structure: 3(2z-S)Z. Cordage Diamater: 1.7 mm. Knot: Overhand knot				MEVE-00321	MEVE 3678		F47				
00119	FCRS-00119	Hide, Textile	Hide Artifact	BC	18	Yes	AFO	LW	LW	Deer. Measuring: 80 x 85 cm.				MEVE-00321	MEVE 3679		F48		EO 5		
00120	FCRS-00120	Hide	Hide Artifact	BC	18	Yes	AFO	LW		Deer. Measuring: 13 x 18 cm.				MEVE-00321	MEVE 3680		F48		EO 5		
00121	FCRS-00121	Hide, Textile	Hide Artifact	BC	18	Yes	AFO	LW		Deer. Measuring: 120 x 50 cm.				MEVE-00321	MEVE 3681		F49		EO 5		
00122	FCRS-00122.1	Hide, Textile	Hide Artifact	BC	18	Yes	AFO	LW	LW	Deer. Measuring: 40 x 50 cm and 25 x 25 cm.				MEVE-00321	MEVE 3682		F50 and F50a		EO 5		
00122	FCRS-00122.2	Hide, Textile	Apron	BC	18	Yes	AFO	LW	LW	Waist Cord: see FCRS-00123 for waist cord, Fringe:2s-Z yucca cordage , Method of Attachment:n/a				MEVE-00321	MEVE 3682		F50 and F50a		EO 5		
00122	FCRS-00122.3	Hide, Textile	Cordage	BC	18	Yes	AFO	LW	LW	Rabbit hair cordage. Structure: 2z-S. Cordage Diamater: 1.0 mm. Knot: Square knot?				MEVE-00321	MEVE 3682		F50 and F50a		EO 5		
00123	FCRS-00123	Textile	Apron	BC	18	Yes	AFO	LW		Waist Cord: 2[3(2s-Z)S]Z human hair cordage, Fringe:2s-Z yucca cordage , Method of Attachment:2-strand twining (S) with 2(2z-S)Z human-hair cords				MEVE-00321	MEVE 3683		F50a		n/a		

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00124	FCRS-00124	Textile	Twined Bag	BC		Yes	UFO	LW		Structure: 2-strand twining (Z). Warp Elements: 2s-Z yucca, 6/cm. Weft Elements: 2s-Z yucca, 14-16/cm. Selvages: Base missing. Possible overcast upper edge.				MEVE-00321	MEVE 3684		F51		n/a		
00125	FCRS-00125	Ornament	Necklace or Associated Ornaments	BC	18	Yes	AFO	MC	KA	Twenty-four dirty juniper berry beads on thin yucca cordage and stuck to a small piece of hide.				MEVE-00321	MEVE 3685		F52a		n/a		
00125	FCRS-00125	Ornament	Cordage	BC	18	Yes	AFO	MC	KA	Yucca cordage. Structure: 2s-Z. Cordage Diamater: 1.5 mm. Knot: no				MEVE-00321	MEVE 3685		F52a		n/a		
00125	KRA-0015	Ornament	Juniperus type seed beads	BC	18	Yes	AFO	MC	KA	24 Juniper seed beads				MEVE-00321	MEVE 3685		F52a		n/a		
00126	FCRS-00026.1	Bead	Hide Artifact	BC	18	Yes	AFO	MC		Deer or pronghorn antelope. Measuring: 31 x 14 cm .				MEVE-00321	MEVE 3686		F52b		EO 3		
00126	FCRS-00126	Bead	Cordage	BC	18	Yes	AFO	MC		Yucca cordage. Structure: 2s-Z. Cordage Diamater: 1.0 mm. Knot: no				MEVE-00321	MEVE 3686		F52b		EO 3		
00126	FCRS-00126-1	Bead	Necklace or Ornaments	BC	18	Yes	AFO	MC		Eight strands (1-8) Beads have the apical spire removed for longitudinal stringing, apexes strung in the same direction. All strands have some original yucca cordage but no human hair.				MEVE-00321	MEVE 3686		F52b		EO 3		
00126	FCRS-00126-2	Bead	Necklace or Ornaments	BC	18	Yes	AFO	MC		Strand 10: Restrung strand of shells with some unusual wax or glue at one end. The length is 19 cm. Strand contains 44 small, barrel-shaped Olivella biplicata and 23 very small Olivella baetica. End of the strand a single large Olivella biplicata. Strand 11: Single olivella baetica bead with some cordage and roots. 17.3 mm long and weighs 0.15 gm. Strand 12: Single strand with three Olivella baetica beads held together with some type of cordage with adherents (including soil). 35.1 mm long and 0.34 grams in weight.				MEVE-00321	MEVE 3686		F52b		EO 3		
00127	FCRS-00127	Bead	Ornament	BC		Yes	UFO	MC		Lignite Barrel Bead				MEVE-00321	MEVE 3687		F52c		n/a		
00128	FCRS-00128	Hide, Beads	Necklace or Ornaments	BC	13	Yes	AFO	LW	MC	Twenty-four juniper berry beads strung on yucca cordage.				MEVE-00321	MEVE 3688		F52d		n/a		
00128	FCRS-00128.1	Hide, Beads	Hide Artifact	BC	13	Yes	AFO	LW	MC	Deer, probably. Measuring: 18.5 x 4.0 cm .				MEVE-00321	MEVE 3688		F52d		n/a		
00128	FCRS-00128.2	Hide, Beads	Cordage	BC	13	Yes	AFO	LW	MC	Yucca cordage. Structure: 2s-Z. Cordage Diamater: 1.2 mm. Knot: no				MEVE-00321	MEVE 3688		F52d		n/a		
00129	FCRS-00129	Bead	Ornament	BC	18	Yes	AFO	MC		Lignite Barrel Bead				MEVE-00321	MEVE 3689		F53		EO 2		
00130	FCRS-00130.226	Shell	whole Orehelix strigosa depressa	BC		Yes	UFO	MC		Size:NA, Class:NA,Type: NA, Complete: Yes				MEVE-00321	MEVE 3690		F52f		n/a		

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00131	FCRS-00131	Flaked Stone	hafted drill	BC		Yes	UFO	CG	KA	Chalcedony drill bit with wood haft, distal fragment				MEVE-00321	MEVE 3691		F52g		n/a		
00131	KRA-0016	Flaked Stone	Rosaceae type wood haft	BC		Yes	UFO	CG	KA	Rosaceae type stem wood haft for flaked stone drill				MEVE-00321	MEVE 3691		F52g		n/a		
00132	FCRS-00132	Flaked Stone	drill fragment	BC		Yes	UFO	CG		Chert drill, medial fragment				MEVE-00321	MEVE 3692		F52h		n/a		
00133	FCRS-00133	Flaked Stone	scraper	BC		Yes	UFO	CG		Chert scraper				MEVE-00321	MEVE 3693		F52i		n/a		
00134	FCRS-00134	Ornament	Ornament	BC		Yes	UFO	MC		Odocoileus sp.,Mandible				MEVE-00321	MEVE 3694		F52j		n/a		
00135	FCRS-00135.1	Bone Tool	Awl	BC		Yes	UFO	MC		Awl,cf. mule deer,Cannon				MEVE-00321	MEVE 3695		F52k		n/a		
00136	FCRS-00136.2	Bone Tool	Awl	BC		Yes	UFO	MC		Awl,cf. mule deer,Cannon, front, proximal end medial side, posterior portion				MEVE-00321	MEVE 3696		F52l		n/a		
00137	FCRS-00137.227	Shell	Conus princeps Possible Bead or Pendant	BC		Yes	UFO	MC		Size:, Class:,Type: , Complete: No				MEVE-00321	MEVE 3697		F52m		n/a		
00137	FCRS-00137.228	Shell	Conus xiacmcuells Possible Bead or Pendant	BC		Yes	UFO	MC		Size:, Class:,Type: , Complete: No				MEVE-00321	MEVE 3697		F52m		n/a		
00139	KRA-0017	Vegetal	Cucurbita type rind	BC		Yes	UFO	KA		Cucurbita type rind fragment				MEVE-00321	MEVE 3699		F52p		n/a		
00140	KRA-0018	Vegetal	Zea mays stem segment	BC		Yes	UFO	KA		Maize stem segments				MEVE-00321	MEVE 3700		F52q		n/a		
00140	KRA-0019	Vegetal	Zea mays shank segment	BC		Yes	UFO	KA		Maize shank segment				MEVE-00321	MEVE 3700		F52q		n/a		
00140	KRA-0020	Vegetal	Phragmites type stem segment	BC		Yes	UFO	KA		Reedgrass stem segment				MEVE-00321	MEVE 3700		F52q		n/a		
00141	FCRS-00141	Cordage	Yucca	BC		Yes	UFO	LW		Bundle of coarsely processed, reddish-brown yucca fiber, probably from a single leaf of broadleaf yucca. Bundle folded back toward the center at both ends and loosely twisted Z-wise.				MEVE-00321	MEVE 3701		F52r		n/a		
00142	FCRS-00142	Cordage	Cordage	BC		Yes	UFO	LW		Yucca. Wrapped Z-wise with hide strips. cordage. Structure: 2s-Z. Cordage Diamater: 7.0 mm. Knot: no				MEVE-00321	MEVE 3702		F52s		n/a		
00143	FCRS-00143	Cordage	Cordage	BC		Yes	UFO	LW		Yucca. Wrapped S-wise with turkey quills. cordage. Structure: 2s-Z. Cordage Diamater: 8.0 mm. Knot: Square knot				MEVE-00321	MEVE 3703		F52t		n/a		
00144	FCRS-00144	Textile	Braided yucca bands	BC		Yes	UFO	LW		Raw Material: Braided yucca bands, Dimensions16.0 cm long, 0.8 cm wide				MEVE-00321	MEVE 3704		F52u		n/a		
00145	FCRS-00145	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: 2s-Z. Cordage Diamater: 1.4 mm. Knot: Overhand knots				MEVE-00321	MEVE 3705		F52v		n/a		
00146	FCRS-00146.1	Cordage	Cordage	BC		Yes	UFO	LW		Human hair cordage. Structure: 2s-Z. Cordage Diamater: 0.7 mm. Knot: no				MEVE-00321	MEVE 3706		F52w		n/a		
00146	FCRS-00146.2	Cordage	Cordage	BC		Yes	UFO	LW		Rabbit hair cordage. Structure: 2z-S. Cordage Diamater: incomplete. Knot: no				MEVE-00321	MEVE 3706		F52w		n/a		

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00146	FCRS-00146.3	Cordage	Cordage	BC		Yes	UFO	LW		Animal hair, probably cordage. Structure: 2(2z-S)Z. Cordage Diamater: 2.0 mm. Knot: no				MEVE-00321	MEVE 3706		F52w		n/a		
00147	FCRS-00147.1	Cordage	Cordage	BC		Yes	UFO	LW		Human hair cordage. Structure: 2z-S. Cordage Diamater: 2.0 mm. Knot: no				MEVE-00321	MEVE 3707		F52x		n/a		
00147	FCRS-00147.2	Cordage	Cordage	BC		Yes	UFO	LW		Human hair cordage. Structure: 2s-Z. Cordage Diamater: 0.9 mm. Knot: no				MEVE-00321	MEVE 3707		F52x		n/a		
00147	FCRS-00147.3	Cordage	Cordage	BC		Yes	UFO	LW		Animal hair, possibly dog cordage. Structure: 6(2z-S)Z. Cordage Diamater: 3.0 mm. Knot: no				MEVE-00321	MEVE 3707		F52x		n/a		
00148	FCRS-00148	Wood	Wrapped stick	BC		Yes	UFO	LW	KA	Long twig with crosswise wrapping of sinew. Two feather-quill fragments present beneath sinew wrapping parallel to twig.				MEVE-00321	MEVE 3708		F52y		n/a		
00148	KRA-0021	Wood	Unknown dicotyledon type twig	BC		Yes	UFO	LW	KA	Unknown twig artifact--prayer stick?				MEVE-00321	MEVE 3708		F52y		n/a		
00149	159	Flaked Stone	Flaked Facial Tools	BC		Yes	UFO	PG		Scraper, Chert				MEVE-00321	MEVE 3709		F52z		n/a		
00149	FCRS-00149	Flaked Stone	Hide Artifact	BC		Yes	UFO	PG		Unidentified (three possibly rodent). Measuring: 22 x 1.5 cm; 19 x 3 cm; 23 x 4 cm; 12 x 2.3 cm; 15 x 6 cm.				MEVE-00321	MEVE 3709		F52z		n/a		
00150	KRA-0022	Vegetal	Cucurbita type rind	BC		Yes	UFO	KA		Cucurbita type rind fragment				MEVE-00321	MEVE 3710		F52-1		n/a		
00151	KRA-0023	Vegetal	Zea mays caryopses (kernels)	BC		Yes	UFO	KA		Zea mays flint type caryopses (kernels)				MEVE-00321	MEVE 3711		F52-2		n/a		
00152	FCRS-00152	Matting	Twined Mat	BC		Yes	UFO	LW	KA	mat. Structural technique: open simple twining, s-twist wefts. Raw Materials: Schoenoplectus sp. Warps, Yucca sp. Wefts				MEVE-00321	MEVE 3712		F52-3		n/a		
00152	KRA-0024	Matting	Scirpus acutus type stems	BC		Yes	UFO	LW	KA	Bulrush stem matting fragments				MEVE-00321	MEVE 3712		F52-3		n/a		
00153	FCRS-00153	Matting	Twined Mat	BC		Yes	UFO	LW	LW	possible mat. Structural technique: open simple (?) twining, s-twist wefts. Raw Materials: Juniperus sp. Warps and Yucca sp. Wefts				MEVE-00321	MEVE 3713		F52-4		n/a		
00154	FCRS-00154.1	Cordage	Cordage	BC		Yes	UFO	LW		Yucca. Wrapped Z-wise with strips of deer hide cordage. Structure: 2s-Z. Cordage Diamater: 5.0 mm. Knot: no				MEVE-00321	MEVE 3714		F52-5		n/a		
00154	FCRS-00154.2	Cordage	Cordage	BC		Yes	UFO	LW		Yucca. Wrapped Z-wise with hide strips from an unidentified mammal cordage. Structure: 2s-Z. Cordage Diamater: 5.0 mm. Knot: no				MEVE-00321	MEVE 3714		F52-5		n/a		
00155	FCRS-00155	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: 2(2z-S)Z. Cordage Diamater: 1.0 mm. Knot: no				MEVE-00321	MEVE 3715		F52-6		n/a		
00156	FCRS-00156	Textile	Braided bulrush stems	BC		Yes	UFO	LW	KA	Raw Material: Braided bulrush stems, Dimensions15.5 cm long, 1.2 cm wide				MEVE-00321	MEVE 3716		F52-7		n/a		
00156	KRA-0025	Textile	Scirpus acutus type	BC		Yes	UFO	LW	KA	Bulrush stem braid				MEVE-	MEVE		F52-7		n/a		

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			stems											00321	3716						
00157	FCRS-00157	Hide	Hide Artifact	BC		Yes	UFO	LW		Deer. Measuring: 7 x 4 cm.				MEVE-00321	MEVE 3717		F52-8		n/a		
00158	FCRS-00158	Cordage	Deer hair	BC		Yes	UFO	LW		Clump of parallel fibers of deer hair. Packrat dung and soil adhering to one surface. 8.0 x 4.0 cm.				MEVE-00321	MEVE 3718		F52-9		n/a		
00159	KRA-0026	Vegetal	Zea mays cob	BC		Yes	UFO	KA		Miniature 14-rowed maize cob				MEVE-00321	MEVE 3719		F52-10		n/a		
00160	KRA-0027	Vegetal	Zea mays stalk (stem) with roots attached	BC		Yes	UFO	KA		Maize stem with roots still attached				MEVE-00321	MEVE 3720		F52-11		n/a		
00161	FCRS-00161	Bone Tool	Pointed stick	BC		Yes	UFO	MC	KA	Tip of a flat pointed stick, charred at tip. Broken and splintered at unpointed end.				MEVE-00321	MEVE 3721		F52-12		n/a		
00161	KRA-0028	Bone Tool	Juniperus type wood awl	BC		Yes	UFO	MC	KA	Juniper wood awl				MEVE-00321	MEVE 3721		F52-12		n/a		
00162	FCRS-00162	Ornament	Ornament	BC		Yes	UFO	MC		Odocoileus hemionus,Mandible				MEVE-00321	MEVE 3722		F52-13		n/a		
00163	KRA-0029	Vegetal	Cucurbita moschata type seeds	BC		Yes	UFO	KA		Butternut squash seeds				MEVE-00321	MEVE 3723		F52-14		n/a		
00164	KRA-0030	Vegetal	Zea mays cobs	BC		Yes	UFO	KA		Maize cobs				MEVE-00321	MEVE 3724		F52-15		n/a		
00165	KRA-0031	Vegetal	Cucurbita type rind fragment	BC		Yes	UFO	KA		Squash rind fragment				MEVE-00321	MEVE 3725		F52-16		n/a		
00166	FCRS-00166.1	Flaked Stone	biface fragment	BC		Yes	UFO	CG		Chert biface, end fragment				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.10	Flaked Stone	flake	BC		Yes	UFO	CG		Chert flake				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.11	Flaked Stone	flake	BC		Yes	UFO	CG		Chalcedony flake, medial fragment				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.12	Flaked Stone	flake	BC		Yes	UFO	CG		Chert flake, proximal fragment				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.13	Flaked Stone	flake	BC		Yes	UFO	CG		Chert flake				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.14	Flaked Stone	flake	BC		Yes	UFO	CG		Chert flake, unknown fragment				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.15	Flaked Stone	flake	BC		Yes	UFO	CG		Chert flake, proximal fragment				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.16	Flaked Stone	flake	BC		Yes	UFO	CG		Chert flake				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.17	Flaked Stone	flake	BC		Yes	UFO	CG		Obsidian flake				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.18	Flaked Stone	flake	BC		Yes	UFO	CG		Obsidian flake				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.19	Flaked Stone	flake	BC		Yes	UFO	CG		Obsidian flake, proximal fragment				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.2	Flaked Stone	biface fragment	BC		Yes	UFO	CG		Silicified wood biface				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.20	Flaked Stone	flake	BC		Yes	UFO	CG		Obsidian flake, medial fragment				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.3	Flaked Stone	biface fragment	BC		Yes	UFO	CG		Obsidian biface, margin fragment				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-	Flaked	flake tool	BC		Yes	UFO	CG		Chert flake				MEVE-	MEVE		F52-17		n/a		

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	00166.4	Stone												00321	3726						
00166	FCRS-00166.5	Flaked Stone	flake	BC		Yes	UFO	CG		Meta-siltstone flake				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.6	Flaked Stone	flake	BC		Yes	UFO	CG		Meta-siltstone flake, medial fragment				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.7	Flaked Stone	flake	BC		Yes	UFO	CG		Meta-siltstone flake				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.8	Flaked Stone	flake	BC		Yes	UFO	CG		Chert flake, proximal fragment				MEVE-00321	MEVE 3726		F52-17		n/a		
00166	FCRS-00166.9	Flaked Stone	flake	BC		Yes	UFO	CG		Chert flake, proximal fragment				MEVE-00321	MEVE 3726		F52-17		n/a		
00167	FCRS-00167.229	Shell	? Possible Bead or Pendant	BC		Yes	UFO	MC		Size:, Class:,Type: , Complete: 1				MEVE-00321	MEVE 3727		F52-18		n/a		
00167	FCRS-00167.230	Shell	Conus sp. Possible Bead or Pendant	BC		Yes	UFO	MC		Size:, Class:,Type: , Complete: 1				MEVE-00321	MEVE 3727		F52-18		n/a		
00167	FCRS-00167.231	Shell	Olivella biplicata ? Possible Bead or Pendant	BC		Yes	UFO	MC		Size:, Class:,Type: , Complete: 1				MEVE-00321	MEVE 3727		F52-18		n/a		
00168	FCRS-00168	Ornament	Ornament	BC		Yes	UFO	MC		Small Mammal,Long bone				MEVE-00321	MEVE 3728		F52-19		n/a		
00168	FCRS-00168	Ornament	Ornament	BC		Yes	UFO	MC		Small Mammal,Long bone				MEVE-00321	MEVE 3728		F52-19		n/a		
00169	FCRS-00169	Basket	probable large bowl or tray	BC		Yes	UFO	EJ		Strutural Technique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches. Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle. Dimensions: 4.2 x 2.2 cm.				MEVE-00321	MEVE 3729		F52-20		n/a		
00170	FCRS-00170	Basket	unknown basket	BC		Yes	UFO	EJ		Strutural Technique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches. Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle. Dimensions: 5.1 x 2.4 cm.				MEVE-00321	MEVE 3730		F52-21		n/a		
00171	FCRS-00171.1	Cordage	Cordage	BC		Yes	UFO	LW		Human hair cordage. Structure: 2s-Z. Cordage Diamater: 0.8 mm. Knot: no				MEVE-00321	MEVE 3731		F52-22		n/a		
00171	FCRS-00171.2	Cordage	Cordage	BC		Yes	UFO	LW		Animal hair, probably cordage. Structure: 2(2z-S)Z. Cordage Diamater: 2.0 mm. Knot: no				MEVE-00321	MEVE 3731		F52-22		n/a		
00172	FCRS-00172	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: 2s-Z. Cordage Diamater: 1.3 mm. Knot: Overhand knots				MEVE-00321	MEVE 3732		F52-23		n/a		
00173	FCRS-00173	Cordage	Cordage	BC		Yes	UFO	LW		Human hair cordage. Structure: 2s-Z. Cordage Diamater: 1.5 mm. Knot: no				MEVE-00321	MEVE 3733		F52-24		n/a		
00174	FCRS-00174.1	Textile, Fur	Cordage	BC		Yes	UFO	LW	LW	Yucca cordage. Structure: 2s-Z. Cordage Diamater: 1.3 mm. Knot: no				MEVE-00321	MEVE 3734		F52-25		n/a		
00174	FCRS-00174.10	Textile, Fur	Cordage	BC		Yes	UFO	LW	LW	Yucca. Wrapped Z-wise with hide strips. cordage. Structure: 2s-Z and 4z-Z. Cordage Diamater: 4.0-8.0 cm. Knot: no				MEVE-00321	MEVE 3734		F52-25		n/a		

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00174	FCRS-00174.11	Textile, Fur	Twined blanket	BC		Yes	UFO	LW	LW	Structure: 2-strand weft twining, probably. Warp Elements: 2s-Z yucca cordage wrapped Z-wise with bird skins. 2 warps/cm. Weft Elements: 2s-Z yucca cordage. Weave density undetermined. . Selvages: Both missing.				MEVE-00321	MEVE 3734		F52-25		n/a		
00174	FCRS-00174.12	Textile, Fur	Cordage	BC		Yes	UFO	LW	LW	Yucca. Wrapped S-wise with hide strips. cordage. Structure: 2s-Z. Cordage Diamater: 6.0 mm . Knot: no				MEVE-00321	MEVE 3734		F52-25		n/a		
00174	FCRS-00174.13	Textile, Fur	Cordage	BC		Yes	UFO	LW	LW	Yucca cordage. Structure: 2s-Z. Cordage Diamater: 2.0-6.0 cm. Knot: Square knot				MEVE-00321	MEVE 3734		F52-25		n/a		
00174	FCRS-00174.2	Textile, Fur	Cordage	BC		Yes	UFO	LW	LW	Yucca cordage. Structure: 4(2s-Z)S. Cordage Diamater: 3.0 mm. Knot: no				MEVE-00321	MEVE 3734		F52-25		n/a		
00174	FCRS-00174.3	Textile, Fur	Cordage	BC		Yes	UFO	LW	LW	Human hair cordage. Structure: 2s-Z. Cordage Diamater: 0.8 mm. Knot: no				MEVE-00321	MEVE 3734		F52-25		n/a		
00174	FCRS-00174.4	Textile, Fur	Cordage	BC		Yes	UFO	LW	LW	Apocynum or juniper bark cordage. Structure: 2z-S. Cordage Diamater: 4.0 mm. Knot: Square knot				MEVE-00321	MEVE 3734		F52-25		n/a		
00174	FCRS-00174.5	Textile, Fur	Cordage	BC		Yes	UFO	LW	LW	Apocynum or juniper bark cordage. Structure: 3(2z-S)Z. Cordage Diamater: 7.0 mm. Knot: no				MEVE-00321	MEVE 3734		F52-25		n/a		
00174	FCRS-00174.6	Textile, Fur	Twined blanket	BC		Yes	UFO	LW	LW	Structure: 2-strand weft twining (S). Warp Elements: 2s-Z yucca cordage wrapped Z-wise with bird skins and quills. 2 warps/cm. Weft Elements: 2s-Z yucca cordage wrapped Z-wise with strips of rabbit fur. Rows approx. 2 cm apart. . Selvages: Warp selvage: 180 degree self-selvage; Weft selvage: missing.				MEVE-00321	MEVE 3734		F52-25		n/a		
00174	FCRS-00174.7	Textile, Fur	Cordage	BC		Yes	UFO	LW	LW	Yucca. Wrapped S-wise with feather quills cordage. Structure: 2s-Z. Cordage Diamater: 5.0 mm. Knot: no				MEVE-00321	MEVE 3734		F52-25		n/a		
00174	FCRS-00174.8	Textile, Fur	Cordage	BC		Yes	UFO	LW	LW	Animal hair, possibly dog cordage. Structure: 2z-S. Cordage Diamater: 1.0 mm. Knot: no				MEVE-00321	MEVE 3734		F52-25		n/a		
00174	FCRS-00174.9	Textile, Fur	Cordage	BC		Yes	UFO	LW	LW	Yucca cordage. Structure: 2s-Z. Cordage Diamater: 1.9 mm. Knot: no				MEVE-00321	MEVE 3734		F52-25		n/a		
00175	FCRS-00175	Matting	Twined Mat	BC		Yes	UFO	LW		possible mat. Structural technique: open simple (?) twining, s-twist wefts. Raw Materials: Juniperus sp. Warps and Yucca sp. Wefts				MEVE-00321	MEVE 3735		F52-26		n/a		
00176	FCRS-00176	Textile	Braided yucca bands	BC	11	Yes	AFO	LW		Raw Material: Braided yucca bands, Dimensions29.0 cm long, 0.7 cm wide				MEVE-00321	MEVE 3736		F52-27		n/a		
00177	FCRS-	Textile	Braided rabbbit hair	BC		Yes	UFO	LW		Raw Material: Braided rabbbit				MEVE-	MEVE		F52-28		n/a		

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	00177		band							hair band, Dimensions6.4 cm long (longer), 5.1 cm long (shorter), 0.6 cm wide				00321	3737						
00178	FCRS-00178	Textile, Feather	Cordage	BC		Yes	UFO	LW	LW	Yucca. Wrapped S-wise with bird quills. cordage. Structure: 2s-Z. Cordage Diamater: 3.0-7.0 cm. Knot: no				MEVE-00321	MEVE 3738		F52-29		n/a		
00179	FCRS-00179	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: 3(2s-Z)S. Cordage Diamater: 4.0 mm. Knot: Square knots, overhand knots				MEVE-00321	MEVE 3739		F52-30		n/a		
00180	FCRS-00180	Textile	Twined Bag	BC		Yes	UFO	LW		Structure: 2-strand twining (Z). Warp Elements: 2s-Z yucca, probably, 5/cm. Weft Elements: Yucca, probably; composition undetermined, 8/cm. Selvages: Missing				MEVE-00321	MEVE 3740		F52-31		n/a		
00181	FCRS-00181	Textile	Braided rabbit hair sash	BC	16	Yes	AFO	LW		Raw Material: Braided rabbit hair sash, DimensionsAt least 7.0 cm long, 4.5 cm wide,				MEVE-00321	MEVE 3741		F20		EM 1		
00182	FCRS-00182	Hide, Textile	Hide Artifact	BC		Yes	UFO	LW	LW	Deer. Measuring: 36 x 1.2 cm; 11 x 4 cm; 9 x 7 cm; 9 x 3 cm; 8 x 4 cm, 7.5 x 5 cm; 4 x 3 cm.				MEVE-00321	MEVE 3742		F52-33		n/a		
00183	KRA-0032	Vegetal	Zea mays cobs	BC		Yes	UFO	KA		Maize cobs				MEVE-00321	MEVE 3743		F52-34		n/a		
00184	KRA-0033	Vegetal	Cucurbita pepo type stem	BC		Yes	UFO	KA		Squash stem				MEVE-00321	MEVE 3744		F52-35		n/a		
00185	KRA-0034	Vegetal	Cucurbita and Lagenaria type rind fragments	BC		Yes	UFO	KA		Squash rind fragment				MEVE-00321	MEVE 3745		F52-36		n/a		
00185	KRA-0035	Vegetal	Cucurbita and Lagenaria type rind fragments	BC		Yes	UFO	KA		Gourd rind fragment				MEVE-00321	MEVE 3745		F52-36		n/a		
00186	FCRS-00186	Hide	Hair ornament	BC		Yes	UFO	LW	KA	Broken hair ornament consisting of six narrow sticks (Sumac sp?) lashed together with a row of sinew worked in wrapped twining. Sticks flush at one end, broken at other. Stick diameter 1.2 cm.				MEVE-00321	MEVE 3746		F52-37		n/a		
00186	KRA-0036	Hide	Hair ornament of unknown twigs	BC		Yes	UFO	LW	KA	Twigs fashioned into a hair ornament				MEVE-00321	MEVE 3746		F52-37		n/a		
00187	FCRS-00187.1	Wood	Wrapped stick	BC		Yes	UFO	LW	KA	Slender twig wrapped with sinew near one end. Broken at both ends.				MEVE-00321	MEVE 3747		F52-38		n/a		
00187	FCRS-00187.2	Wood	Wrapped stick	BC		Yes	UFO	LW	KA	Slender twig wrapped in two places with sinew. Broken at one end, rounded at the other. Quill fragment secured beneath sinew wrapping near broken end.				MEVE-00321	MEVE 3747		F52-38		n/a		
00187	FCRS-00187.3	Wood	Wrapped stick	BC		Yes	UFO	LW	KA	Slender twig wrapped with yucca strips near one end. One end broken, other end tapers to a point.				MEVE-00321	MEVE 3747		F52-38		n/a		
00187	KRA-0037	Wood	Unknown dicotyledon type twigs	BC		Yes	UFO	LW	KA	Unknown wrapped twigs				MEVE-00321	MEVE 3747		F52-38		n/a		
00188	FCRS-	Vegetal	Bark slab	BC		Yes	UFO	KA		Large bark slab, reddish-brown				MEVE-	MEVE		F52-39		n/a		

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	00188									color, probably pine or spruce. Beveled edges. Two holes through slab. Possible umbilical pad.				00321	3748						
00188	KRA-0038	Vegetal	Pinus ponderosa type bark slab	BC		Yes	UFO	KA		Ponderosa pine bark slab				MEVE-00321	MEVE 3748		F52-39		n/a		
00189	FCRS-00189.1	Ornament, Cordage	Cordage	BC		Yes	UFO	MC		Human hair cordage. Structure: 2(3z-S)S. Cordage Diamater: 4.0 mm. Knot: no				MEVE-00321	MEVE 3749		F52-40		n/a		
00190	FCRS-00190	Ornament	Ornament	BC		Yes	UFO	MC		Odocoileus hemionus,Mandible				MEVE-00321	MEVE 3750		F52-41		n/a		
00191	FCRS-00191	Ornament	Ornament	BC		Yes	UFO	MC		Odocoileus hemionus,Mandible				MEVE-00321	MEVE 3751		F52-42		n/a		
00192	FCRS-00192	Bone Tool	Ornament	BC		Yes	UFO	MC		Odocoileus sp.,Mandible				MEVE-00321	MEVE 3752		F52-43		n/a		
00192	FCRS-00192.1	Bone Tool	Notched Bone	BC		Yes	UFO	MC		cf. mule deer, Rib (possibly 5th), Complete				MEVE-00321	MEVE 3752		F52-43		n/a		
00193	FCRS-00193	Basket	large wide mouthed tray or bowl	BC		Yes	UFO	EJ		Strutural Technique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches. Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle. Dimensions: 13.5 x 2.7 cm.				MEVE-00321	MEVE 3753		F52-44		n/a		
00194	FCRS-00194	Basket	unknown basket	BC		Yes	UFO	EJ		Strutural Technique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches. Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle. Dimensions: 14 x 8.5 cm.				MEVE-00321	MEVE 3754		F52-45		n/a		
00195	FCRS-00195	Basket	unknown basket	BC		Yes	UFO	EJ		Strutural Technique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches. Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle. Dimensions: 5 x 3.7 cm.				MEVE-00321	MEVE 3755		F52-46		n/a		
00196	FCRS-00196	Basket	unknown basket	BC		Yes	UFO	EJ		Strutural Technique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches. Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle. Dimensions: 6.3 x 3.6 cm.				MEVE-00321	MEVE 3756		F52-47		n/a		
00197	FCRS-00197	Basket	unknown basket	BC		Yes	UFO	EJ		Strutural Technique: open coiling, half rod foundation, intricate interlocking stitch. Raw Materials: Rhus sp. stitches and rods. Dimensions: 18 x 3.3 cm and 3.8 x 2.4 cm.				MEVE-00321	MEVE 3757		F52-48		n/a		
00198	FCRS-00198	Bead, Cordage	Necklace or Ornaments	BC	18	Yes	AFO	MC	LW	Long rope of two strands of lignite, siltstone (or very fine sandstone), and indurated shale beads strung on human hair cordage. A Conus or Oliva shell pendant is attached to one end and the other end was tied to the				MEVE-00321	MEVE 3758		F53		EO 2		

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										second strand with a large knot of human hair. There are three free ends of frayed human hair beyond the last bead. After the knot, the hair cordage tapers for a distance of about 19 cm. The second strand was more or less restrung by or under the supervision of Ms. Daniels. During the restringing, the end of one strand was missing the end pendant or bangle. A shell from another necklace, found with the same burial, was used to bind off the necklace.											
00198	FCRS-00198	Bead, Cordage	Cordage	BC	18	Yes	AFO	MC	LW	Human hair cordage. Structure: One strand 5(2s-Z)S, other strand 3(2s-Z)S. Cordage Diameter: 3.0 mm (3-ply cord), 4.0 mm (5-ply cord). Knot: Overhand knot				MEVE-00321	MEVE 3758		F53		EO 2		
00200	FCRS-00200	Basket	Basketry raw material-Rhus sp.; Yucca sp; unknown	BC	14	Yes	AFO	EJ	KA	Raw Materials: Rhus sp.; Yucca sp; unknown mammal hide. Dimensions: 27 diameter x 6.5 max height.				MEVE-00321	MEVE 3760		F24a		EK 6		
00200	KRA-0039	Basket	Rhus aromatica type twig splints, bound with Yucca	BC	14	Yes	AFO	EJ	KA	Lemonade berry twig splints, bound with yucca twine				MEVE-00321	MEVE 3760		F24a		EK 6		
00201	FCRS-00201	Basket	Basketry raw material-Rhus sp., Yucca sp., unknow	BC	14	Yes	AFO	EJ	KA	Raw Materials: Rhus sp., Yucca sp., unknown mammal hide. Dimensions: 27 x 24 x 6.8 max height.				MEVE-00321	MEVE 3761		F24b		EK 6		
00201	KRA-0040	Basket	Rhus aromatica type twig splints, bound with Yucca	BC	14	Yes	AFO	EJ	KA	Lemonade berry twig splints, bound with yucca twine				MEVE-00321	MEVE 3761		F24b		EK 6		
00202	FCRS-00202.571	Bead	Olivella dama Bead	BC		Yes	UFO	MC		Size:, Class:,Type: , Complete: Yes				MEVE-00321	MEVE 10304		F52e		n/a		
00203	FCRS-00203	Textile, Vegetal	Corncob wrapped with yucca leaf	BC		Yes	UFO	LW	KA	2.6 cm long, 2.1 cm diameter				MEVE-00321	MEVE 10838		F52-34		n/a		
00203	KRA-0041	Textile, Vegetal	Zea mays cob segment bound with Yucca sp. leaf str	BC		Yes	UFO	LW	KA	Maize cob bound with yucca leaf strips				MEVE-00321	MEVE 10838		F52-34		n/a		
00204	KRA-0042	Textile, Wood	Unknown dicotyledon type twig, wrapped with Yucca	BC		Yes	UFO	LW	KA	Unknown wrapped twigs				MEVE-00321	MEVE 10850		F52-25		n/a		
00204	KRA-0043	Textile, Wood	Unknown dicotyledon type twig, wrapped with Yucca	BC		Yes	UFO	LW	KA	Unknown wrapped twigs				MEVE-00321	MEVE 10850		F52-25		n/a		
00205	FCRS-00205.1	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: 2s-Z. Cordage Diamater: 1.3 mm. Knot: no				MEVE-00321	MEVE 10851		F52-25		n/a		
00205	FCRS-00205.2	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: 2s-Z. Cordage Diamater: 1.7 mm. Knot: Square knot				MEVE-00321	MEVE 10851		F52-25		n/a		
00205	FCRS-00205.3	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: 2s-Z and 2z-S. Cordage Diamater: 1.2 mm (one 2s-Z strand); 2.0 mm (other 2s-Z strand and the 2z-S strand). Knot: Incomplete,				MEVE-00321	MEVE 10851		F52-25		n/a		

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										suspended knot, possibly an overhand knot.											
00205	FCRS-00205.4	Cordage	Cordage	BC		Yes	UFO	LW		Yucca. Wrapped Z-wise with rabbit-fur strips. cordage. Structure: 2s-Z. Cordage Diamater: 5.0 mm. Knot: no				MEVE-00321	MEVE 10851		F52-25		n/a		
00206	FCRS-00206	Cordage	Cordage	BC		Yes	UFO	LW		Yucca. Wrapped S-wise with rabbit-fur strips. cordage. Structure: 2s-Z. Cordage Diamater: 10.0 mm. Knot: no				MEVE-00321	MEVE 10869		F34d		n/a		
00207	FCRS-00207.572	Shell	Orehelix strigosa depressa whole	BC		Yes	UFO	MC		Size:NA, Class:NA,Type: NA, Complete: Yes				MEVE-00321	MEVE 10871		F52b		n/a		
00207	FCRS-00207.573	Shell	Haliotis pendant	BC		Yes	UFO	MC		Size:NA, Class:NA,Type: NA, Complete: No				MEVE-00321	MEVE 10871		F52b		n/a		
00207	FCRS-00207.574	Shell	Olivella dama Whole	BC		Yes	UFO	MC		Size:Small, Class:NA,Type: NA, Complete: Yes				MEVE-00321	MEVE 10871		F52b		n/a		
00208	KRA-0044	Vegetal	Zea mays caryopses (kernels)	BC		Yes	UFO	KA		Zea mays flint type caryopses (kernels)				MEVE-00321	MEVE 10872		F52b		n/a		
00209	FCRS-00209	Ornament	Necklace or Ornaments	BC		Yes	UFO	MC	KA	Long strand of juniper seed beads (approx. 1,231 +/- 10 beads) strung on a modern string with an Olivella biplicata shell on one end and an Oliva (spicata or small incassata) or small Conus sp. on the other end. One Olivella dama in a vial along with 18 loose juniper berry beads.				MEVE-00593	MEVE 8653		F39?		EN 4?		
00209	KRA-0045	Ornament	Juniperus type seed beads	BC		Yes	UFO	MC	KA	Juniper seed necklace fragment				MEVE-00593	MEVE 8653		F39?		EN 4?		
00209	KRA-0046	Ornament	Yucca type fiber cord	BC		Yes	UFO	MC	KA	Twisted yucca fiber cord				MEVE-00593	MEVE 8653		F39?		EN 4?		
00210	FCRS-00210	Shell	Necklace or Ornaments	BC	18	Yes	AFO	MC		Long strand of Olivella dama (368), smaller and spire-cut, and two larger shell end beads (olive incrassate and biplicata), restrung on modern string.				MEVE-00593	MEVE 8654		F38		EO 3		
00211	FCRS-00211	Wood	Cradleboard	BC		Yes	UFO	LW	KA	Small cradleboard with oak or willow frame. Body consists of 40 vertical and 62 horizontal sumac rods woven in wrapped twining with sinew in a diamond network design. Vertical rods are flush at both ends, horizontal rods taper in width from upper to lower				MEVE-00593	MEVE 8655		F37, F1052		n/a		
00211	KRA-0047	Wood	Rhus aromatica type twig rods, as part of a cradle	BC		Yes	UFO	LW	KA	Cradleboard rod elements				MEVE-00593	MEVE 8655		F37, F1052		n/a		
00211	KRA-0048	Wood	Unknown wood frame elements, as part of a cradlebo	BC		Yes	UFO	LW	KA	Cradleboard frame elements				MEVE-00593	MEVE 8655		F37, F1052		n/a		
00216	FCRS-00216	Hide	Hide Artifact	BC	16	Yes	AFO	LW		Deer. Measuring: 9.5 x 7 cm .				MEVE-00593	MEVE 77893		n/a		n/a		
00217	FCRS-00217	Hide	Hide Artifact	BC	16	Yes	AFO	LW		Deer. Measuring: 13 x 6.6 cm .				MEVE-00593	MEVE 77894		n/a		n/a		
00218	FCRS-00218.3	Bone Tool	Awl	Burial	26	Yes	AFO	MC		Awl,Possible cf. mule deer,Cannon	8020m	38-0137									

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00219	FCRS-00219.1	Gaming Piece	Gaming Piece	Burial		Yes	UFO	MC		Gaming Piece,round,Complete: Yes	8032w	38-0624									
00220	FCRS-00220.1	Shell	Shell, Probable pendant	Burial		Yes	UFO	MC		Probable pendant, Glycemeras or Laevicardium elatune (?)	8034b	38-0625									
00221	FCRS-00221	Bead	Bead	Burial		Yes	UFO	MC		Green stone Bead	8034e	38-0626									
00223	FCRS-00223.3	Pendant	Shell Pendant	Burial	30	Yes	AFO	MC		Pendant, Glycymeris or Laevicardium elatune (?)	8034m	38-0628									
00224	FCRS-00224	Bone Tool	antler wrench	Burial	23	Yes	AFO	MC		Antler tool, proximal fragment	8036b										
00224	FCRS-00224	Bone Tool	Indeterminate	Burial	23	Yes	AFO	MC		Odocolieus sp.,Antler	8036b										
00225	FCRS-00225	Flaked Stone	flake tool	Burial	26	Yes	AFO	CG		Silicified wood flake tool	8054	38-0138									
00226	FCRS-00226	Bone Tool	Chisel or scraper	Burial		Yes	UFO	MC		Odocoileus hemionus,Tibia	8055	38-0140									
00228	FCRS-00228	Hide	Hide Artifact	BC		Yes	UFO	LW		Deer. Measuring: 18 x 7 cm (larger fragment).	8093	38-0561									
00230	FCRS-00230	Textile	Braided bulrush stems	BC		Yes	UFO	LW		Raw Material: Braided bulrush stems, Dimensions15.0 cm long, 0.8 cm wide	8095	38-0564									
00231	FCRS-00231	Textile	Knotted corn leaves	BC		Yes	UFO	LW		5.0 cm long, 3.0 cm wide	8097	38-0566									
00233	FCRS-00233	Sandal	Sandal	BC		Yes	UFO	LW		Yucca leaf sandal. Dimensions: 16.0 cm long, 10.5 cm wide	8099a	38-0568									
00234	FCRS-00234	Sandal	Sandal	BC		Yes	UFO	LW		Yucca leaf sandal. Dimensions: 18.5 cm long, 10.5 cm wide	8099b	38-0569									
00235	FCRS-00235	Sandal	Sandal	BC		Yes	UFO	LW		Yucca leaf sandal. Dimensions: 6.0 cm long, 6.0 cm wide; and 3.5 cm long, 3.5 cm wide	8099c	38-0570									
00236	FCRS-00236	Flaked Stone	projectile point fragment	B	32	Yes	AFO	CG		Chalcedony dart point; medial fragment	8124.1	38-0812									
00237	FCRS-00237	Flaked Stone	projectile point fragment	B	32	Yes	AFO	CG		Chert dart point, distal fragment	8124.2	38-0811									
00251	FCRS-00251	Hide, Textile	Hide Artifact	BC		Yes	UFO	LW	LW	Deer. Measuring: .	8227	38-2799									
00252	KRA-0049	Vegetal	Cucurbita moschata type seeds	BC		Yes	UFO	KA		Butternut squash seeds	8269	38-2791									
00253	KRA-0050	Vegetal	Zea mays cob segments	BC		Yes	UFO	KA		Maize cob segments	8270	38-2792									
00254	KRA-0051	Vegetal	Zea mays stem segments with roots attached	BC		Yes	UFO	KA		Maize stem segments with roots	8271	38-2793									
00255	KRA-0052	Vegetal	Zea mays caryopses (kernels)	BC		Yes	UFO	KA		Zea mays flint type caryopses (kernels)	8272	38-2794									
00256	FCRS-00256.1	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: 2s-Z. Cordage Diamater: 1.0 mm. Knot: no	8273	38-2795									
00256	FCRS-00256.2	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: 2s-Z. Cordage Diamater: 2.0 mm. Knot: no	8273	38-2795									
00256	FCRS-00256.3	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: 2s-Z. Cordage Diamater: 4.0 mm. Knot: no	8273	38-2795									

Chapter 7 Appendix Database: Data Table Used as Reference Tool for Reporting Purposes

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
00256	FCRS-00256.4	Cordage	Cordage	BC		Yes	UFO	LW		Yucca cordage. Structure: 2(2z-S)Z. Cordage Diamater: 4.0 mm. Knot: no	8273	38-2795									
00257	FCRS-00257	Cordage	Cordage	BC		Yes	UFO	LW		Human hair cordage. Structure: 2(2z-S)Z. Cordage Diamater: 5.0 mm. Knot: no	8274	38-2796									
00258	FCRS-00258.1	Cordage	Cordage	BC		Yes	UFO	LW		Yucca. Wrapped S-wise with turkey quills. cordage. Structure: 2s-Z. Cordage Diamater: 5.0 mm. Knot: no	8275	38-2797									
00258	FCRS-00258.2	Cordage	Cordage	BC		Yes	UFO	LW		Human hair. Wrapped Z-wise with feather quills. cordage. Structure: 2(2z-S)Z. Cordage Diamater: 5.0 mm. Knot: no	8275	38-2797									
00259	FCRS-00259.1	Textile, Hide	Cordage	BC		Yes	UFO	LW	LW	Deer hide strips, Z-twisted upon themselves cordage. Structure: Z. Cordage Diamater: 7.0 mm. Knot: no	8276	38-2798									
00259	FCRS-00259.2	Textile, Hide	Cordage	BC		Yes	UFO	LW	LW	Deer hide strips Z-twisted around a bird-skin core cordage. Structure: Z. Cordage Diamater: 5.0 mm. Knot: no	8276	38-2798									
00259	FCRS-00259.3	Textile, Hide	Cordage	BC		Yes	UFO	LW	LW	Rabbit fur strips, Z-twisted upon themselves cordage. Structure: Z. Cordage Diamater: 5.0 mm. Knot: no	8276	38-2798									
00259	FCRS-00259.4	Textile, Hide	Cordage	BC		Yes	UFO	LW	LW	Yucca. Wrapped Z-wise with strips of bird skin. cordage. Structure: 2s-Z. Cordage Diamater: 5.0 mm. Knot: no	8276	38-2798									
00259	FCRS-00259.5	Textile, Hide	Cordage	BC		Yes	UFO	LW	LW	Yucca. Wrapped S-wise with strips of bird skin. cordage. Structure: 2s-Z. Cordage Diamater: 6.0 mm . Knot: no	8276	38-2798									
00260	FCRS-00260	Textile, Hide	Cordage	BC		Yes	UFO	LW	LW	Yucca cordage. Structure: 2s-Z. Cordage Diamater: 2.0 mm. Knot: Overhand knot	8277	38-2799									
00261	FCRS-00261	Textile	Twined Bag	BC		Yes	UFO	LW		Structure: 2-strand twining (Z). Warp Elements: 2s-Z yucca, 4/cm. Weft Elements: 2s-Z yucca, 11/cm. Selvages: Missing	8278	38-2800									
00262	FCRS-00262	Basket	unknown basket	BC		Yes	UFO	EJ		Strutural Technique: yucca fiber coil wrapped with sumac stitches, possible coiled basket start. Raw Materials: Rhus sp. stitches and Yucca sp. bundle. Dimensions: 2.8 x 2.7 cm, 1.2 cm tall.	8279.1										
00263	FCRS-00263	Matting	Twined Mat	BC		Yes	UFO	LW		mat. Structural technique: open simple twining, s-twist wefts. Raw Materials: Schoenoplectus sp. Warps, Yucca sp. Wefts	8279.2	38-2801									
00264	FCRS-00264	Basket	unknown basket	BC		Yes	UFO	EJ		Strutural Technique: half rod, interlocking stitches. Raw Materials: Rhus sp. stitches and rods. Dimensions: 5.8 x 2 cm.	8280	38-2802									
00266	FCRS-00266	Textile, Vegetal	Apron	BC	14	Yes	AFO	LW		Waist Cord: 7(2s-Z)S yucca cordage, Fringe: juniper bark,				MEVE-00321	MEVE 3220		F1		n/a		

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										shredded, Method of Attachment:unknown											
00267	FCRS-000267.1	Hide, Textile	Hide Artifact	BC	15	Yes	AFO	LW		Elk. Measuring: greater than 90 x 50 cm .				MEVE-00321	MEVE 3640		F18		FB		
00267	FCRS-00267.2	Hide, Textile	Cordage	BC	15	Yes	AFO	LW		Yucca cordage. Structure: 2s-Z. Cordage Diamater: 9.0 mm. Knot: 1 overhand knot, 1 square knot				MEVE-00321	MEVE 3640		F18		FB		
00268	FCRS-00268	Hide	Hide Artifact	BC	17	Yes	Human Remains	LW		Deer. Measuring: at least 1.6 x 0.6 m.				MEVE-00321	MEVE 3759		F54		FC		
00269	FCRS-00269	Cordage	Cordage	BC	17	Yes	Human Remains	LW		Yucca, probably. Wrapped S-wise with feather quills. Probably turkey. cordage. Structure: 2s-Z. Cordage Diamater: 10.0 mm. Knot: One end tied in self-bow. Two pieces joined by probable square knot.				MEVE-00321	MEVE 3759		F54		FC		
00270	FCRS-00270	Hide	Hide Artifact	BC	16	Yes	AFO	LW		Deer. Measuring: 9.6 x 4.9 cm .							n/a		n/a		
00271	FCRS-00271	Bead	Ornament	BC	18	Yes	AFO	MC	LW	Odocoileus sp.,Mandible							F53		EO 2	Center for Southwest Studies	CSWS .01.001
00271	FCRS-00271	Bead	Necklace or Ornaments	BC	18	Yes	AFO	MC	LW	Lignite, indurated shale, and siltstone necklace on rope strung on human hair. The rope was found wrapped around the individual's legs, with FCRS00198. Cut and polished deer mandible bangles are attached to the end of the ropes.							F53		EO 2	Center for Southwest Studies	CSWS .01.001
00271	FCRS-00271	Bead	Cordage	BC	18	Yes	AFO	MC	LW	Human hair cordage. Structure: Two strands 3(2z-S)Z, other strand 2s-Z. Cordage Diamater: . Knot:							F53		EO 2	Center for Southwest Studies	CSWS .01.001
00271	FCRS-00271	Bead	Ornament	BC	18	Yes	AFO	MC	LW	Odocoileus sp.,Mandible							F53		EO 2	Center for Southwest Studies	CSWS .01.001
00272	FCRS-272.2	Pipe	Pipe			No		MC		Conical shaped pipe, Black heavy igneous?			43944/11								
00273	351	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Quartzite		38-0090									
00274	350	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Silicified wood		38-0092									
00275	323	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Siltstone/mudstone		38-0095									
00276	1582	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood		38-0392									
00277	403	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone		38-0424									
00278	382	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Obsidian		38-0425									
00279	402	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Silicified wood		38-0427									
00280	404	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone		38-0429									
00281	381	Flaked	Flaked Facial Tools			No		PG	CG	Biface thin, Obsidian		38-0431									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone																			
00282	1767	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian		38-0433									
00283		Flaked Stone	flake			No		PG	CG	In bag with CU cat no 8074		38-0434									
00284	383	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Obsidian		38-0436									
00285		Flaked Stone	biface			No		PG	CG	in bag with CU cat no 8056		38-0765									
00286		Flaked Stone	biface			No		PG	CG	in bag with CU cat no 8056		38-0772									
00287		Flaked Stone	biface			No		PG	CG	in bag with CU cat no 8056		38-0777									
00288	1	Groundstone	Cores and Nodules			No		PG	CG	DFP core, Quartzite.	3969a	38-2773									
00289	106	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	3969b	38-2774									
00290	17	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7954a										
00291	24	Groundstone	Mano			No		PG	CG	Two-hand mano, Coarse Igneous	7954b										
00292	18	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7954c										
00293	22	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7954d										
00294	19	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7954e										
00295	16	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7954f										
00296	21	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7954g										
00297	23	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7954h										
00298	46	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7954i										
00299	20	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7954j										
00300	14	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7954k										
00301	15	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7954l										
00302	30	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7954m										
00303	1	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7954n										
00304	31	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7955a										
00305	26	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7955b										
00306	27	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7955c										
00307	29	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7955d										
00308	10	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7955e										
00309	28	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7955f										
00310	35	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7955g										
00311	12	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7955h										
00312	33	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7955i										
00313	9	Groundstone	Mano			No		PG	CG	One-hand mano, Coarse Igneous	7955j										
00314	25	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7955k										
00315	34	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7955l										
00316	11	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7955m										
00317	32	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7955n										
00318	8	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7956a										
00319	2	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7956b										
00320	6	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7956c										
00321	13	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7956d										

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
00322	7	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7956e										
00323	3	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7956f										
00324	36	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7957a										
00325	4	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7957b										
00326	5	Groundstone	Mano			No		PG	CG	One-hand mano, Coarse Igneous	7957c										
00327	53	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7957d										
00328	88	Groundstone	Cores and Nodules			No		PG	CG	Chopper, Limestone.	7958a										
00329	91	Groundstone	Cores and Nodules			No		PG	CG	DFP core, Siltstone/mudstone.	7958b										
00330	75	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Siltstone/mudstone.	7958c										
00331	90	Groundstone	Cores and Nodules			No		PG	CG	DFP core, Quartzite.	7958d										
00332	78	Groundstone	Cores and Nodules			No		PG	CG	Chopper, Quartzite.	7958e										
00333	437	Groundstone	Flaked Facial Tools			No		PG	CG	Chopper, Quartzite	7958f										
00334	74	Groundstone	Cores and Nodules			No		PG	CG	DFP core, Siltstone/mudstone.	7958g										
00335	80	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Limestone.	7958h										
00336	83	Groundstone	Cores and Nodules			No		PG	CG	Chopper, Quartzite.	7958i										
00337	84	Groundstone	Cores and Nodules			No		PG	CG	Chopper, Quartzite.	7958j										
00338	87	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Sandstone.	7958k										
00339	93	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Coarse Igneous.	7958l										
00340	81	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Siltstone/mudstone.	7958m										
00341	79	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Siltstone/mudstone?.	7958n										
00342	92	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7958o										
00343	77	Groundstone	Cores and Nodules			No		PG	CG	DFP core, Quartzite.	7958p										
00344	76	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7958q										
00345	85	Groundstone	Cores and Nodules			No		PG	CG	Chopper, Quartzite.	7958r										
00346	82	Groundstone	Cores and Nodules			No		PG	CG	Chopper, Siltstone/mudstone.	7958s										
00347	89	Groundstone	Cores and Nodules			No		PG	CG	DFP core, Siltstone/mudstone.	7958t										
00348	73	Groundstone	Cores and Nodules			No		PG	CG	DFP core, Siltstone/mudstone.	7958u										
00349	72	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Limestone.	7958v										
00350	108	Groundstone	Cores and Nodules			No		PG	CG	Chopper, Quartzite.	7959a										
00351	107	Groundstone	Cores and Nodules			No		PG	CG	Chopper, Siltstone/mudstone.	7959b										
00352	109	Groundstone	Cores and Nodules			No		PG	CG	Scraper/Plane, Limestone.	7959c										
00353	111	Groundstone	Cores and Nodules			No		PG	CG	Chopper?, Limestone.	7959d										
00354	104	Groundstone	Cores and Nodules			No		PG	CG	Chopper?, Limestone.	7959e										
00355	110	Groundstone	Cores and Nodules			No		PG	CG	Scraper/Plane?, Siltstone/mudstone.	7959f										
00356	103	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Sandstone.	7960a										
00357	49	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Coarse Igneous.	7960b										
00358	102	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Coarse Igneous.	7960c										
00359	48	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Coarse Igneous.	7960d										
00360	97	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Coarse Igneous.	7960e										
00361	44	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7960f										
00362	51	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7960g										
00363	47	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7960h										

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00364	43	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7960i										
00365	100	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Siltstone/mudstone.	7960j										
00366	96	Groundstone	Cores and Nodules			No		PG	CG	DFP core, Siltstone/mudstone.	7960k										
00367	45	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7960l										
00368	59	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7960m										
00369	50	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Limestone.	7960n										
00370	98	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Coarse Igneous.	7960o										
00371	101	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7960p										
00372	99	Groundstone	Cores and Nodules			No		PG	CG	DFP core, Quartzite.	7960q										
00373	46	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Limestone.	7960r										
00374	52	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Limestone.	7961a										
00375	54	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961b										
00376	58	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Coarse Igneous.	7961c										
00377	45	Groundstone	Mano			No		PG	CG	One-hand mano, Coarse Igneous	7961d										
00378	57	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961e										
00379	23	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Coarse Igneous.	7961f										
00380	68	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961g										
00381	63	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961h										
00382	64	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961i										
00383	55	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Limestone.	7961j										
00384	61	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961k										
00385	62	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961l										
00386	65	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961m										
00387	60	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961n										
00388	29	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961o										
00389	56	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961p										
00390	36	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961q										
00391	38	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961r										
00392	33	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961s										
00393	34	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961t										
00394	40	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Coarse Igneous.	7961u										
00395	37	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961v										
00396	32	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Coarse Igneous.	7961w										
00397	39	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Coarse Igneous.	7961x										
00398	35	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7961y										
00399	105	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7967a	38-2465									
00400	41	Groundstone	Mano			No		PG	CG	One-hand mano, Coarse Igneous	7967b	38-2750									
00401	44	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7967c	38-2756									
00402	40	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7967d	38-2764									
00403	39	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7967e	38-2766									
00404	38	Groundstone	Mano			No		PG	CG	Two-hand mano, Sandstone	7967f	38-2767									
00405	42	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7967g	38-2768									
00406	37	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7967h	38-2771									
00407	43	Groundstone	Mano			No		PG	CG	One-hand mano, Sandstone	7967i	38-2770									

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00408	27	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Sandstone.	7968a	38-0786									
00409	42	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Coarse Igneous.	7968b	38-2749									
00410	14	Groundstone	Lithic Tool			No		PG	CG	tool, acute crushing edge, sandstone (fine)	7968c	38-2447									
00411	26	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7968d	38-2751									
00412	67	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7968e	38-2752									
00413	69	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Limestone.	7968f	38-2754									
00414	24	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7968g	38-2759									
00415	30	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Limestone.	7968h	38-2776									
00416	25	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Coarse Igneous.	7968i	38-2777									
00417	28	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Silicified wood.	7968j	38-2778									
00418	66	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7968k	38-2779									
00419	31	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Quartzite.	7968l	38-2782									
00420		Groundstone	metate			No		PG	CG		7970d										
00421		Groundstone	metate			No		PG	CG		7970b										
00422	434	Flaked Stone	Flaked Facial Tools			No		PG	CG	Chopper, Siltstone/mudstone	7987c	38-2786									
00423	440	Groundstone	Flaked Facial Tools			No		PG	CG	Chopper, Siltstone/mudstone	7988d	38-2755									
00424	71	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Siltstone/mudstone.	7990d	38-2781	A-12832-X-18								
00425	354	Flaked Stone	Flaked Facial Tools			No		PG	CG	Chopper, Chert	7991a	38-0098									
00426	1584	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	7991b										
00427	21	Flaked Stone	Cores and Nodules			No		PG	CG	DFP core, Siltstone/mudstone.	7991c	38-0552									
00428	20	Flaked Stone	Cores and Nodules			No		PG	CG	DFP core, Quartzite.	7991d	38-0705									
00429	324	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood	7992d	38-0359									
00430	1583	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	7992e	38-0405									
00431	325	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	7992f	38-0217									
00432	328	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Quartzite	7993b	38-0691									
00433	329	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Silicified wood	7993c	38-0207									
00434	330	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Silicified wood	7993d	38-0684									
00435	327	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Siltstone/mudstone	7993f	38-0586									
00436	326	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Siltstone/mudstone	7993h	38-0587									
00437	317	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Siltstone/mudstone	7993j	38-2614									
00438	318	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Siltstone/mudstone	7993k	38-2615									
00439	319	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Siltstone/mudstone	7993l	38-2616									

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00440	352	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	7994b	38-0075									
00441	353	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	7994d	38-0358									
00442	332	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	7995b	38-0362									
00443	331	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	7995d	38-0371									
00444	333	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	7995f	38-0316									
00445	335	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Rhyolite	7995h	38-0072									
00446	334	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	7995i										
00447	344	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Quartzite	7996a	38-0678									
00448	348	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	7996b	38-2316									
00449	345	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	7996d	38-0068									
00450	347	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	7996f	38-0206									
00451	349	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Rhyolite	7996i	38-2603									
00452	346	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	7996j	38-0066									
00453	343	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	7997a	38-0183									
00454	342	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Rhyolite	7997d	38-0400									
00455	341	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Quartzite	7997g	38-0190									
00456	322	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Chert	7998b	38-1734									
00457	321	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Silicified wood	7998e	38-0219									
00458	320	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Chalcedony	7998g	38-0629									
00459	340	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Quartzite	7999b	38-0696									
00460	339	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	7999d										
00461	338	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	7999e	38-0517									
00462	337	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chalcedony	7999f	38-0518									
00463	336	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	7999j	38-0063									
00464	186	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8000d	38-0529									
00465	191	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8000e	38-0188									

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00466	192	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8000g	38-0689									
00467	187	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8000j	38-0372									
00468	189	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Quartzite	8000k	38-0059									
00469	188	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8000l	38-0222									
00470	190	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8000m	38-0352									
00471	216	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8000p	38-2604									
00472	193	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Quartzite	8000r	38-0045									
00473	197	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Quartzite	8001a	38-0694									
00474	198	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Quartzite	8001b	38-0676									
00475	194	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8001d	38-2100									
00476	200	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8001e	38-0698									
00477	196	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Quartzite	8001f	38-0185									
00478	215	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Rhyolite	8001h	38-2446									
00479	199	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Quartzite	8001i	40-1073									
00480	195	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Rhyolite	8001n	38-0693									
00481	205	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8002a	38-0351									
00482	202	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Rhyolite	8002b	38-0368									
00483	203	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill?, Quartzite	8002c	38-0688									
00484	204	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8002e	38-0519									
00485	201	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Obsidian	8002f	38-0703									
00486	206	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8002g	38-0192									
00487	207	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8002h	38-0690									
00488	185	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8003e	38-0522									
00489	183	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8003h	38-0226									
00490	184	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Rhyolite	8003o (d?)	38-0679									
00491	214	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Quartzite	8004b	38-0053									

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00492	213	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8004c	38-0073									
00493	228	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Chert	8004d	38-2596									
00494	210	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Rhyolite	8004g	40-0156									
00495	212	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Chert	8004i	38-0047									
00496	211	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8004j	38-1758									
00497	209	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8004n	38-0220									
00498	208	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert?	8004p	38-0178									
00499	217	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Obsidian	8005c	38-0810									
00500	218	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Silicified wood	8005d	38-0196									
00501	219	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Quartzite	8005f	38-0718									
00502	224	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Chert	8007a	38-0366									
00503	223	Flaked Stone	Flaked Facial Tools			No		PG	CG	Scraper, Obsidian	8007b	38-0428									
00504	225	Flaked Stone	Flaked Facial Tools			No		PG	CG	Denticulate saw, Siltstone/mudstone	8007c	38-0559									
00505	227	Flaked Stone	Flaked Facial Tools			No		PG	CG	Perforator, Silicified wood	8007d	40-2163									
00506	226	Flaked Stone	Flaked Facial Tools			No		PG	CG	Perforator, Siltstone/mudstone	8007e	38-0556									
00507	1202	Flaked Stone	Debitage			No		PG	CG	Tool spall, Chert	8007g	38-0540									
00508	222	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Silicified wood	8007h	38-0681									
00509	221	Flaked Stone	Flaked Facial Tools			No		PG	CG	Scraper?, Silicified wood	8007l	38-0223									
00510	220	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8007p	38-0182									
00511	231	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Silicified wood	8008c	38-0412									
00512	235	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Silicified wood	8008d	38-0398									
00513	236	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Rhyolite	8008e	38-0732									
00514	237	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Chert	8008f	40-2141									
00515	239	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill?, Quartzite	8008g	38-0748									
00516	238	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill?, Chert	8008j	38-0390									
00517	233	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Chalcedony	8008o	38-0372									

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00518	234	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Chert	8008p										
00520	232	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Quartzite	8008v	38-0364									
00521	174	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Silicified wood	8009b	38-0194									
00522	175	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Silicified wood	8009c	38-0055									
00523	176	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Silicified wood	8009g	38-0674									
00524	177	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill?, Silicified wood	8009i	38-0187									
00525	178	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Silicified wood	8009j	38-0528									
00526	179	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Silicified wood	8009k	38-0088									
00527	180	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Quartzite	8009m	38-0677									
00528	181	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill?, Quartzite	8009n	38-0367									
00529	182	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Silicified wood	8009q	38-0548									
00530	229	Flaked Stone	Flaked Facial Tools			No		PG	CG	Scraper, Silicified wood	8010b	38-0216									
00531	1203	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8010i	38-0614									
00532	230	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Chert	8010j	40-0158									
00533	240	Flaked Stone	Flaked Facial Tools			No		PG	CG	Denticulate saw, Quartzite	8010t	38-2607									
00534	FCRS-00534	Textile, Wood	Wrapped stick			No		LW	KA	Populus/ Salixstem, yucca fiber, Overhand, 16.5 cm long, 0.8 cm diameter; yucca cordage 1.5 mm diameter	8011	38-0003									
00534	FCRS-00534	Textile, Wood	Cordage			No		LW	KA	Yucca . Structure: 2s-Z, Cordage Diameter: , Knot: Overhand	8011	38-0003									
00534	KRA-0053	Textile, Wood	Populus/Salix stem, with Yucca fiber tie			No		LW	KA	Populus/Salix stem with Yucca fiber tie, otherwise unworked	8011	38-0003									
00535	FCRS-00535	Textile, Wood	Wrapped stick			No		LW	KA	Populus/ Salixstem, yucca fiber, Overhand, 34.5 cm long, 1.0 cm diameter; yucca strip 1.2 mm wide	8011	38-0004									
00535	KRA-0054	Textile, Wood	Populus/Salix stem, with Yucca fiber tie			No		LW	KA	Populus/Salix stem with Yucca fiber tie, otherwise unworked	8011	38-0004									
00536	FCRS-00536	Textile, Wood	Wrapped stick			No		LW	KA	Quercus stem, yucca leaf, Square?, 12.2 cm long, 1.5 cm diameter; yucca strip 2.0--3.0 mm wide	8011	38-0005									
00536	KRA-0055	Textile, Wood	Quercus stem, with Yucca fiber tie			No		LW	KA	Quercus stem with Yucca fiber tie, otherwise unworked	8011	38-0005									
00537	FCRS-00537	Textile, Wood	Wrapped stick			No		LW	KA	Quercus stem, yucca leaf tie, no, 14,0 cm long, 0.6 cm diameter; yucca strip 1.0 mm wide	8011	38-0006									
00537	KRA-0056	Textile,	Quercus stem, with			No		LW	KA	Unworked Quercus stem with	8011	38-0006									

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		Wood	Yucca fiber tie							Yucca fiber tie											
00538	FCRS-00538	Textile, Wood	Wrapped stick			No		LW	KA	Populus/ Salixstem (probably), yucca leaf, Overhand, 17.5 cm long, 0.8 cm diameter; yucca strips 3.0 and 4.0 mm wide	8011	38-0007									
00538	KRA-0057	Textile, Wood	Unknown Dicotyledon stem, with Yucca fiber tie			No		LW	KA	Unknown Dicotyledon diffuse porous stem, likely Populus/Salix, unworked	8011	38-0007									
00539	FCRS-00539	Textile, Wood	Wrapped stick			No		LW	KA	Populus/ Salixstem (probably), yucca leaf, no, 11.0 cm long, 1.0 cm diameter; yucca strip 1.5 mm wide	8011	38-0008									
00539	KRA-0058	Textile, Wood	Unknown Dicotyledon stem, with Yucca fiber tie			No		LW	KA	Unknown Dicotyledon diffuse porous stem, likely Populus/Salix, unworked	8011	38-0008									
00540	FCRS-00540	Textile, Wood	Wrapped stick			No		LW	KA	Stick: unknown stem; wrapping: probably bulrush stem, no, 14.5 cm long, 0.7 cm diameter; yucca strips 3.0-4.0 cm wide; length of wrapping 4.3 cm	8011	38-0009									
00540	KRA-0059	Textile, Wood	Unknown stem, with Scirpus acutus tie			No		LW	KA	Unknown stem	8011	38-0009									
00541	FCRS-00541	Textile, Wood	Wrapped stick			No		LW	KA	Populus/ Salixstem (probably), yucca leaf, Overhand, 13.0 cm long, 1.1 cm diameter; yucca strips 1.0-3.0 mm wide, most 1.0-1.5 mm wide	8011	38-0010									
00541	KRA-0060	Textile, Wood	Unknown Dicotyledon stem, with Yucca fiber tie			No		LW	KA	Unknown Dicotyledon diffuse porous stem, likely Populus/Salix, unworked	8011	38-0010									
00542	FCRS-00542	Textile, Wood	Wrapped stick			No		LW	KA	Populus/ Salixstem (probably), yucca leaf, Square , 33.0 cm long, 1.6 cm diameter; yucca strip 1.0 mm wide	8011	38-0011									
00542	KRA-0061	Textile, Wood	Unknown Dicotyledon stem, with Yucca fiber tie			No		LW	KA	Unknown Dicotyledon diffuse porous stem, likely Populus/Salix	8011	38-0011									
00543	FCRS-00543	Textile, Wood	Wrapped stick			No		LW	KA	Unknown stem, yucca leaf, Overhand, 14.0 long, 0.5 cm wide; yucca strips 1.0-1.5 mm wide	8011	38-0012									
00543	KRA-0062	Textile, Wood	Unknown stem, with Yucca fiber tie			No		LW	KA	Unknown stem	8011	38-0012									
00544	FCRS-00544	Textile, Wood	Wrapped stick			No		LW	KA	Populus/ Salixstem, yucca leaf, Square, 23.0 cm long, 0.8 cm diameter; yucca strips 1.5-3.0 mm wide	8011	38-0014									
00544	KRA-0063	Textile, Wood	Populus/Salix stem, with Yucca fiber tie			No		LW	KA	Populus/Salix stem with Yucca fiber tie, otherwise unworked	8011	38-0014									
00545	FCRS-00545	Textile, Wood	Wrapped stick			No		LW	KA	Populus/ Salixstem, yucca leaf, Overhand, 14.5 cm long, 0.7 cm diameter; yucca strip 0.7 mm wide	8011	38-0015									
00545	KRA-0064	Textile, Wood	Populus/Salix stem, with Yucca fiber tie			No		LW	KA	Populus/Salix stem with Yucca fiber tie, otherwise unworked	8011	38-0015									
00546	FCRS-	Textile,	Wrapped stick			No		LW	KA	Populus/ Salixstem (probably),	8011	38-0017									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
	00546	Wood								yucca leaf, no, 11.0 cm long, 1.1 cm diameter											
00546	KRA-0065	Textile, Wood	Unknown Dicotyledon stem			No		LW	KA	Unknown Dicotyledon diffuse porous stem, likely Populus/Salix, unworked	8011	38-0017									
00547		Stone-Unworked	other mod stone			No		PG	CG	indurated shale?	8016a	38-0804									
00548		Stone-Unworked	other mod stone			No		PG	CG	modified jet	8016b	38-0440									
00549	7	Groundstone	Possible Lithic Ceremonial Item			No		PG	CG	ceremonial?, abraded object (atlatl wt blank?), hornfels	8016c	38-2585									
00550		Stone-Unworked	other mod stone			No		PG	CG	modified jet	8016e	38-0441									
00551		Stone-Unworked	other mod stone			No		PG	CG	modified sandstone tabular piece	8016f	38-0444									
00552		Stone-Unworked	other mod stone			No		PG	CG	modifed sandstone	8016g	38-0803									
00553		Mineral	other mod stone			No		PG	CG	yellow pigment, uranium ore?	8016h	38-0806									
00554		Stone-Unworked	other mod stone			No		PG	CG	fossil, chipped on edge	8016i	38-0805									
00555		Stone-Unworked	other mod stone			No		PG	CG	shaped chert	8016j	38-0802									
00557	8	Stone-Unworked	Possible Lithic Tool			No		PG	CG	tool?, pecking stone & other, quartz (massive)	8016n	38-2602									
00558	9	Groundstone	Possible Lithic Tool			No		PG	CG	tool?, disk (cover?), sandstone (very fine)	8016q	38-2601									
00559	FCRS-559.1	Faunal-Worked	Punch or Awl			No		MC	DHJC	Punch or Awl,Lynx rufus,Ulna	8017c	38-0657									
00560	FCRS-560.2	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8018c	38-0301									
00561	FCRS-561.3	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8018e	38-0619									
00562	FCRS-562.4	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8019b	38-0303									
00563	FCRS-563.5	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8019c	38-1281									
00564	FCRS-564.6	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Radius	8019d	38-0034									
00565	FCRS-565.7	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8019h	40-1219									
00566	FCRS-566.8	Faunal-Worked	Punch or Reamer			No		MC	DHJC	Punch or Reamer,cf. mule deer,Ulna	8019o	38-0316									
00567	FCRS-567.9	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8020f	38-0666									
00568	FCRS-568.10	Faunal-Worked	Punch			No		MC	DHJC	Punch,cf. mule deer,Cannon	8020g	38-0028									
00569	FCRS-569.11	Faunal-Worked	Probable Awl			No		MC	DHJC	Probable Awl,cf. mule deer,Radius	8020h	38-1283									
00570	FCRS-570.12	Faunal-Worked	Punch or Reamer			No		MC	DHJC	Punch or Reamer,cf. mule deer,Cannon	8020i	38-0299									
00571	FCRS-571.13	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Rib	8021a	38-0311									

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00572	FCRS-572.14	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Rib	8021b	38-0323									
00573	FCRS-573.15	Faunal-Worked	Punch			No		MC	DHJC	Punch,cf. mule deer,Cannon	8021d	38-0029									
00574	FCRS-574.16	Faunal-Worked	Drill			No		MC	DHJC	Drill ,cf. mule deer,Cannon	8021g	38-0607									
00575	FCRS-575.17	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8022f	38-0296									
00576	FCRS-576.18	Faunal-Worked	Drill or Punch			No		MC	DHJC	Drill or Punch,cf. mule deer,Long bone	8023b	38-2637									
00577	FCRS-577.19	Faunal-Worked	Indeterminate Worked Bone			No		MC	DHJC	Indeterminate Worked Bone,cf. mule deer,Cannon	8023c	38-0617									
00578	FCRS-578.20	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Long bone	8023e	38-0659									
00579	FCRS-579.21	Faunal-Worked	Punch or Reamer			No		MC	DHJC	Punch or Reamer,cf. mule deer,Cannon	8023f	38-0081									
00580	FCRS-580.22	Faunal-Worked	Awl or reamer			No		MC	DHJC	Awl or reamer,cf. mule deer,Cannon	8023h	38-2573									
00581	FCRS-581.21	Faunal-Unworked	Indeterminate			No		CR		Odocoileus hemionus, NA	8024a	38-0603									
00582	FCRS-582.22	Faunal-Worked	Flesher			No		MC	DHJC	Odocoileus hemionus, Cannon	8024b	38-2612									
00583	FCRS-583.23	Faunal-Worked	Flesher			No		MC	DHJC	Odocoileus hemionus, Antler	8024c	38-2705									
00584	FCRS-584.82	Faunal-Worked	Ornament			No		MC	DHJC	Unidentified Small Animal, Rib or long bone	8025c	38-0461									
00585	FCRS-585.24	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long ??bone	8025e	38-2629									
00586	FCRS-586.25	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long?? Bone	8025g	38-0306									
00587	FCRS-587.26	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long or rib	8026a	38-0248									
00588	FCRS-588.27	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long or rib	8026c	38-0485									
00589	FCRS-589.28	Faunal-Worked	Ornament			No		MC	DHJC	Large Mammal (Ungulate-sized), Long or rib	8026e	38-0250									
00590	FCRS-590.29	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8026g	38-0341									
00591	FCRS-591.30	Faunal-Worked	Indeterminate			No		MC	DHJC	Odocoileus hemionus, Cannon	8026i	38-2482									
00592	FCRS-592.31	Faunal-Worked	Indeterminate			No		MC	DHJC	Odocoileus hemionus, Cannon	8026j	38-0255									
00593	FCRS-593.1	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Scapula, Lightly Broken	8027d	38-0487									
00594	FCRS-594.2	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Scapula, Broken	8027i	38-0347									
00595	FCRS-595.3	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib 6th, Lightly Broken	8028a'	38-0290									
00596	FCRS-596.4	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib , Broken	8028a?										
00597	FCRS-597.5	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib 6th, Lightly Broken	8028b'	38-0247									

Chapter 7 Appendix Database: Data Table Used as Reference Tool for Reporting Purposes

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
00598	FCRS-598.6	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Broken	8028c?										
00599	FCRS-599.7	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib 6th, Lightly Broken	8028e	38-0077									
00600	FCRS-600.8	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib 6th, Lightly Broken	8028f	38-0488									
00601	FCRS-601.9	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib 6th, Broken	8028h	38-0287									
00602	FCRS-602.10	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib 6th, Broken	8028o	38-2490									
00603	FCRS-603.11	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib 6th, Lightly Broken	8028r	38-0078									
00604	FCRS-604.12	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib 6th, Lightly Broken	8028t	38-0481									
00605	FCRS-605.13	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib 6th, Lightly Broken	8028u	38-2627									
00606	FCRS-606.14	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib 6th, Lightly Broken	8028z	38-0575									
00607	FCRS-607.32	Faunal-Worked	Indeterminate			No		MC	DHJC	Odocoileus hemionus, Cannon	8029a	38-2481									
00608	FCRS-608.33	Faunal-Worked	Flesher			No		MC	DHJC	Odocoileus hemionus, Cannon	8029b	38-0340									
00609	FCRS-609.34	Faunal-Worked	Indeterminate			No		MC	DHJC	Odocoileus hemionus, Cannon	8029c	38-0650									
00610	FCRS-610.35	Faunal-Worked	Flesher			No		MC	DHJC	Odocoileus hemionus, Cannon	8029e	38-2479									
00611	FCRS-611.36	Faunal-Worked	Flesher			No		MC	DHJC	Odocoileus hemionus, Cannon	8029f	38-2480									
00613	FCRS-613.37	Faunal-Worked	Flesher			No		MC	DHJC	Odocoileus hemionus, Long	8029h	38-0601									
00614	FCRS-614.1	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,rectangular rounded edges,Complete: Yes	8032a	38-0275									
00615	FCRS-615.2	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,rectangular,Complete: Yes	8032b'	38-0789									
00616	FCRS-616.3	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,rectangular,Complete: No	8032c	38-0277									
00617	FCRS-617.4	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,lenticular or ovate,Complete: Yes	8032c'	38-0790									
00618	FCRS-618.5	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,rectangular,Complete: No	8032f	38-0447									
00619	FCRS-619.6	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,lenticular or ovate,Complete: Yes	8032g	38-0448									
00620	FCRS-620.7	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,rectangular,Complete: Yes	8032k	38-0452									
00621	FCRS-621.8	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,rectangular,Complete: Yes	8032l	38-0453									
00622	FCRS-622.9	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,round,Complete: No	8032n	38-0455									
00623	FCRS-623.10	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,rectangular,Complete: Yes	8032q	38-0512									
00624	FCRS-624.11	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,rectangular,Complete: Yes	8032t	38-0515									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
00625	FCRS-625.12	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,rectangular,Complete: No	8032u	38-0582									
00626	FCRS-626.13	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,lenticular or ovate,Complete: No	8032x	38-1005									
00627	FCRS-627.14	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,square,Complete: Yes	8032y	38-2621									
00628	FCRS-628.15	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,lenticular or ovate,Complete: Yes	8032z	38-0787									
00629	FCRS-629.1	Faunal-Worked	Bone Bead			No		MC	DHJC	Bone Bead Ornament,Mammal,Long bone	8033d	38-0458									
00630	FCRS-630.2	Faunal-Worked	Bone Bead			No		MC	DHJC	Bone Bead Ornament,Mammal,Long bone	8033e	38-0459									
00631	FCRS-631.3	Faunal-Worked	Bone Bead			No		MC	DHJC	Bone Bead Ornament,Mammal,Long bone	8033j	38-0510									
00632	FCRS-632.4	Faunal-Worked	Bone Bead			No		MC	DHJC	Bone Bead Ornament,Mammal,Long bone	8033p	38-2620									
00633	FCRS-633.5	Faunal-Worked	Bone Bead			No		MC	DHJC	Bone Bead Ornament,Bird,Long bone	8033t	38-0345									
00634	FCRS-634.6	Faunal-Worked	Bone Bead			No		MC	DHJC	Bone Bead Ornament,Large bird,Long bone	8033u	38-2628									
00635	FCRS-635.7	Faunal-Worked	Bone Bead			No		MC	DHJC	Bone Bead Ornament,,Mammal,Long bone	8033w	38-0484									
00636	FCRS-636.3	Shell	Shell Pendant			No		MC		Pendant, Haliotis	8034a	38-0448									
00637	FCRS-637.4	Shell	Shell Pendant			No		MC		Pendant, Bivalve	8034c	38-0793									
00638	FCRS-638.584	Shell	Conus ximenes,Bead, bangle or pendant			No		MC		Size: , Class: , Type:	8034d	38-0795									
00639	FCRS-639.2	Bead	Bead			No		MC		Bead, Siltstone or indurated shale?	8034f	38-0457									
00640	FCRS-640.1	Bead	Bead			No		PG	MC	Bead, Siltstone or indurated shale?	8034h	38-0801									
00641	FCRS-641.2	Shell	Shell Pendant			No		MC		Pendant, Bivalve	8034j	40-2292									
00642	FCRS-642.3	Pendant	Pendant			No		MC		Pendant, Green chlorite schist (?)	8034o	38-0794									
00643	FCRS-643.4	Pendant	Pendant preform or possible atlatl weight			No		PG	MC	Pendant preform or possible atlatl weight, Dark gray, banded siltstone?	8034p	38-0271									
00644	FCRS-644.5	Pendant	Possible atlat weight			No		PG	MC	Possible atlat weight, Dark gray, banded siltstone?	8034q	38-0439									
00645	KRA-0066	Wood Tool	Pinus ponderosa bark slab			No		KA		Pinus ponderosa bark slab, shaped into a thin disc	8035a	38-2722									
00646	KRA-0067	Wood Tool	Unknown stem			No		KA		Unknown stem, cut flat on both ends	8035d	38-2731									
00647	KRA-0068	Wood	Populus/Salix stem			No		KA		Poplulus/Salix stem, shaped and fire-hardened at one end	8035e	38-2697e									
00648	FCRS-00648	Textile, Wood	Game snare			No		LW	KA	Phragmites australis stem, yucca fiber, Overhand, 6.0 cm long, 0.7 cm diameter; cordage 2.0 mm diameter	8035f	38-2646									
00648	KRA-0069	Textile, Wood	Phragmites australis stem, game snare			No		LW	KA	Phragmites australis stem, with a hole punched through the	8035f	38-2646									

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										septum, and a Yucca fiber string attached at the only node											
00649	KRA-0070	Wood Tool	Unknown Dicotyledon stem			No		KA		Dicotyledon stem, whittled at both ends to very small diameters	8035g	38-0280									
00650	KRA-0071	Wood Tool	Unknown stem			No		KA		Unknown stem, cut at both ends	8035h	38-0018									
00651	KRA-0072	Wood Tool	Quercus stem			No		KA		Quercus stem, cut flat on one end, tapered on the other	8035i	38-2697a									
00652	KRA-0073	Wood Tool	Populus/Salix stem			No		KA		Populus/Salix stem, one end cut and hollowed out; other end broken	8035j	38-2697d									
00653	KRA-0074	Wood Tool	Unknown Dicotyledon stem			No		KA		Unknown Dicotyledon stem, one end cut and hollowed out; other end broken	8035k	38-2650									
00654	FCRS-654.38	Faunal-Worked	Indeterminate			No		MC	DHJC	Odocoileus hemionus, Antler	8036a	38-2712									
00655	FCRS-00655.1	Matting	Twined Mat			No		EJ		mat.Structural Technique: open simple twining, s-twist wefts, Raw Material: Schoenoplectus sp. warps, Yucca sp. wefts.	8037a	38-2667									
00655	FCRS-00655.2	Matting	Wrapped stick			No		EJ		Rhus sp.(?) twig, yucca leaf, half hitch, 10.2 cm long, 2.4 cm max. width; twig 6.0 mm max. diameter; yucca strip 1.9 mm max. width	8037a	38-2667									
00656	FCRS-00656	Textile, Wood	Arrowshaft			No		KA	LW	Phragmites australis stem, sinew, no, 26.2 cm long, 0.8 cm diameter, 0.9 diameter where wrapped	8038	38-0019									
00656	KRA-0075	Textile, Wood	Phragmites australis stem, arrow shaft			No		KA	LW	Phragmites australis stem; arrow shaft	8038	38-0019									
00657	KRA-0076	Wood Tool	Unknown Dicotyledon stem			No		KA		Unknown Dicotyledon stem, heavily worked, part of a fire-starter kit?	8038g	38-2725									
00658	KRA-0077	Wood Tool	Unknown Dicotyledon stem			No		KA		Unknown Dicotyledon stem, twisted into a ring	8038h	38-2589									
00660	KRA-0078	Wood Tool	Unknown stem			No		KA		Unknown stem, tapers at one end	8038k	38-2733									
00661	KRA-0079	Wood Tool	Unknown Dicotyledon stem			No		KA		Unknown Dicotyledon stem, shaped into a thin rectangular slab	8039a	38-0016									
00662	FCRS-00662.1	Hide	Hide Artifact			No		LW		Unidentified . Stiching: Running stitch, Dimensions: 9.0 cm long, 5.5 cm wide, 2.8 cm thick, 0.8 cm thick along stitched edge (double thickness).	8040	38-0020									
00662	FCRS-00662.2	Hide	Hide Artifact			No		LW		Squirrel family?. Stiching: no, Dimensions: 9.0 cm long, 4.5 cm wide.	8040	38-0020									
00662	FCRS-00662.3	Hide	Hide Artifact			No		LW		Deer. Stiching: no, Dimensions: Largest 9.0 cm long, 3.0 cm wide.	8040	38-0020									
00662	FCRS-00662.4	Hide	Hide Artifact			No		LW		Unidentified . Stiching: no, Dimensions: Length 6.0 cm, width 5.5 cm .	8040	38-0020									
00663	FCRS-00663	Cordage	Cordage			No		LW		Yucca . Structure: 2(2z-S)Z, Cordage Diameter: , Knot: Square, overhand	8041	38-0021									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
00664	FCRS-00664	Textile	Sandal			No		LW	EJ	Raw Material: Schoenoplectus sp. strips, Yucca sp. ties, Dimensions4 x 2.7 cm	8042	38-0022									
00665	427	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8043	38-0024a, 38-24b									
00666	1776	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8044										
00667	FCRS-667.23	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8045b	38-0027									
00668	FCRS-668.24	Faunal-Worked	Punch or Awl			No		MC	DHJC	Punch or Awl,cf. mule deer,Antler	8045c	38-0030									
00669	FCRS-669.25	Faunal-Worked	Punch or Awl			No		MC	DHJC	Punch or Awl,cf. mule deer,Cannon	8045d	38-0031									
00670	FCRS-670.26	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Long bone	8045e	38-0032									
00671	FCRS-671.27	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Ulna	8045f	38-0035									
00672	FCRS-672.39	Faunal-Worked	Flesher			No		MC	DHJC	Odocoileus hemionus, Cannon	8046a	38-0036									
00673	FCRS-673.40	Faunal-Worked	Flesher			No		MC	DHJC	Odocoileus hemionus, Cannon	8046b	38-0037									
00674	95	Groundstone	Cores and Nodules			No		PG	CG	Hammerstone, Sandstone.	8048	38-0041									
00675	268	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chalcedony	8049	38-0045									
00676	267	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Quartzite	8049	38-0046									
00677	271	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Chert	8049	38-0048									
00678	273	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	8049	38-0050									
00679	260	Flaked Stone	Flaked Facial Tools			No		PG	CG	Scraper, Chert	8049	38-0052									
00680	259	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8049	38-0058									
00681	277	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8049	38-0061									
00682	276	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8049	38-0062									
00683	275	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8049	38-0064									
00684	274	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8049	38-0065									
00685	265	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Obsidian	8049	38-0066									
00686	262	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8049	38-0067									
00687	263	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Obsidian	8049	38-0069									
00688	264	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Obsidian	8049	38-0071									
00689		Flaked Stone	biface			No		PG	CG		8049a	38-0044									

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00690	272	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8049d	38-0049									
00691	266	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Chert	8049f	38-0054									
00692	269	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Rhyolite	8049g	38-0056									
00693	261	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chalcedony	8049h	38-0057									
00694	270	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Chert	8049o	38-0074									
00695	FCRS-695.15	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib 6th, Broken	8050	38-0076									
00696	FCRS-696.28	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8051a	38-0079									
00697	FCRS-697.29	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8051b	38-0080									
00698	FCRS-698.30	Faunal-Worked	Drill			No		MC	DHJC	Drill,cf. mule deer,Cannon	8051c	38-0082									
00699	FCRS-699.31	Faunal-Worked	Drill			No		MC	DHJC	Drill,cf. bighorn sheep,Cannon	8051d	38-0083									
00700	FCRS-700.41	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8051e	38-0084									
00701	FCRS-701.32	Faunal-Worked	Punch or Awl			No		MC	DHJC	Punch or Awl,cf. mule deer,Cannon	8051f	38-0085									
00702	376	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8052a	38-0086									
00703	377	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8052f	38-0094									
00704	379	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8052g	38-0095									
00705	378	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8052h	38-0096									
00706	380	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Obsidian	8052i	38-0097									
00707	FCRS-707.42	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8053	38-0116									
00708	306	Flaked Stone	Flaked Facial Tools			No		PG	CG	Scraper, Quartzite	8056										
00709	1205	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8056	38-0144									
00710	FCRS-710.33	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8057	38-0165									
00711	414	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8058a	38-0180									
00712	417	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Chert	8058b	38-0181									
00713	423	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Chert	8058c	38-0184									
00714	418	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8058d	38-0186									
00715	415	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8058d	38-0193									

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00716	421	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	8058f	38-0198									
00717	413	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Quartzite	8058g	38-0201									
00718	425	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone?	8058h	38-0202									
00719	424	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8058i	38-0203									
00720	1772	Flaked Stone	Debitage			No		PG	CG	Tool spall, Chert	8058j	38-0204									
00721	416	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8058k	38-0188									
00722	422	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Chert	8058l	38-0191									
00723	420	Flaked Stone	Flaked Facial Tools			No		PG	CG	Scraper, Chert	8058m	38-0199									
00724	419	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	8058n	38-0200									
00725	373	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	8059	38-0210									
00726	372	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Quartzite	8059	38-0211									
00727	366	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood	8059	38-0213									
00728	365	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood	8059	38-0215									
00729	368	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8059	38-0221									
00730	363	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Silicified wood	8059	38-0224									
00731	369	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8059	38-0227									
00732	370	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Siltstone/mudstone	8059	38-0228									
00733	371	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8059	38-0229									
00734	362	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Obsidian	8059	38-0232									
00735	358	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Obsidian	8059	38-0234									
00736	360	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8059	38-0236									
00737	364	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood	8059d	38-0214									
00738	359	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Obsidian	8059i	38-0253									
00739	361	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Obsidian	8059k	38-0231									
00740	367	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Silicified wood	8059o	38-0237									
00741	375	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert?	8059q	38-0212									

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00742	374	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	8059r	38-0218									
00743	FCRS-743.16	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Broken	8060a	38-0238									
00744	FCRS-744.17	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8060b	38-0239									
00745	FCRS-745.18	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8060c	38-0241									
00746	FCRS-746.19	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8060d	38-0242									
00747	FCRS-747.20	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Broken	8060e	38-0243									
00748	FCRS-748.21	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8060f	38-0244									
00749	FCRS-749.22	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8060g	38-0245									
00750	FCRS-750.23	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8060h	38-0246									
00751	FCRS-751.43	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long Bone	8061	38-0249									
00752	FCRS-752.34	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8062	38-0258									
00753	FCRS-753.35	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8062	38-0259									
00754	FCRS-754.36	Faunal-Worked	Awl			No		MC	DHJC	Awl,Large mammal,Long bone	8062	38-0260									
00755	FCRS-755.37	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. bighorn sheep,Horn	8062	38-0262									
00756	FCRS-756.38	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Ulna	8062	38-0263									
00757	FCRS-757.39	Faunal-Worked	Indeterminate Worked Bone			No		MC	DHJC	Indeterminate Worked Bone,cf. mule deer,Cannon	8062	38-0264									
00758	FCRS-758.40	Faunal-Worked	Punch or Reamer			No		MC	DHJC	Punch or Reamer,Large mammal,Long bone	8062	38-0265									
00759	FCRS-759.41	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. bighorn sheep,Ulna	8062a	38-0251									
00760	FCRS-760.42	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8062b	38-0254									
00761	FCRS-761.43	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8062c	38-0256									
00762	FCRS-762.44	Faunal-Worked	Punch or Awl			No		MC	DHJC	Punch or Awl,Large mammal,Long bone	8062d	38-0257									
00763	FCRS-763.45	Faunal-Worked	Awl			No		MC	DHJC	Awl,Large mammal,Long bone	8062h	38-0261									
00764	FCRS-764.46	Faunal-Worked	Punch			No		MC	DHJC	Punch ,Large mammal,Long bone	8062m	38-0266									
00765	FCRS-765.47	Faunal-Worked	Indeterminate Worked Bone			No		MC	DHJC	Indeterminate Worked Bone,Large mammal,Long bone	8062n	38-0267									
00766	FCRS-766.48	Faunal-Worked	Punch or Awl			No		MC	DHJC	Punch or Awl,Large mammal,Long bone	8062o	38-0269									
00767	FCRS-767.24	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Scapula, Broken	8063	38-0253									

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00768	10	Groundstone	Possible Lithic Tool			No		PG	CG	tool?, disk (cover?), sandstone (very fine) (actually finer but not silt	8064	38-0273									
00770	FCRS-770.25	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Broken	8067a	38-0285									
00771	FCRS-771.26	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Broken	8067b	38-0286									
00772	FCRS-772.27	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8067c	38-0288									
00773	FCRS-773.28	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8067d	38-0289									
00774	FCRS-774.29	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Broken	8067e	38-0291									
00775	FCRS-775.30	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Broken	8067f	38-0292									
00776	FCRS-776.31	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Broken	8067g	38-0293									
00777	FCRS-777.32	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8067h	38-0294									
00778	FCRS-778.49	Faunal-Worked	Punch			No		MC	DHJC	Punch,cf. mule deer,Cannon	8068a	38-0295									
00779	FCRS-779.50	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8068a'	38-0332									
00780	FCRS-780.51	Faunal-Worked	Drill			No		MC	DHJC	Drill,cf. mule deer,Long bone	8068b	38-0297									
00781	FCRS-781.52	Faunal-Worked	Indeterminate Worked Bone			No		MC	DHJC	Indeterminate Worked Bone,Large mammal,Long bone	8068b'	38-0333									
00782	FCRS-782.53	Faunal-Worked	Drill			No		MC	DHJC	Drill,cf. mule deer,Long bone	8068c	38-0298									
00783	FCRS-783.54	Faunal-Worked	Awl			No		MC	DHJC	Awl,Large mammal,Long bone	8068c'	38-0334									
00784	FCRS-784.55	Faunal-Worked	Punch or Awl			No		MC	DHJC	Punch or Awl,cf. mule deer,Cannon	8068d	38-0300									
00785	FCRS-785.56	Faunal-Worked	Indeterminate Worked Bone			No		MC	DHJC	Indeterminate Worked Bone,cf. mule deer,Cannon	8068d'	38-0335									
00786	FCRS-786.57	Faunal-Worked	Punch			No		MC	DHJC	Punch,cf. mule deer,Cannon	8068e	38-0302									
00787	FCRS-787.58	Faunal-Worked	Awl			No		MC	DHJC	Awl,Large mammal,Long bone	8068e'	38-0336									
00788	FCRS-788.59	Faunal-Worked	Awl			No		MC	DHJC	Awl,Large mammal,Long bone	8068f	38-0304									
00789	FCRS-789.60	Faunal-Worked	Awl			No		MC	DHJC	Awl,Large mammal,Long bone	8068f'	38-0337									
00790	FCRS-790.61	Faunal-Worked	Drill			No		MC	DHJC	Drill,cf. mule deer,Long bone	8068g	38-0305									
00791	FCRS-791.62	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8068h	38-0307									
00792	FCRS-792.63	Faunal-Worked	Indeterminate Worked Bone			No		MC	DHJC	Indeterminate Worked Bone,cf. mule deer,Ulna	8068i	38-0308									
00793	FCRS-793.64	Faunal-Worked	Indeterminate Worked Bone			No		MC	DHJC	Indeterminate Worked Bone,cf. mule deer,Cannon	8068j	38-0309									
00794	FCRS-794.65	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8068k	38-0310									

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00795	FCRS-795.66	Faunal-Worked	Reamer			No		MC	DHJC	Reamer,cf. mule deer,Long bone	8068l	38-0312									
00796	FCRS-796.67	Faunal-Worked	Punch			No		MC	DHJC	Punch,cf. mule deer,Cannon	8068m	38-0313									
00797	FCRS-797.68	Faunal-Worked	Reamer/ Drill			No		MC	DHJC	Reamer/ Drill,cf. mule deer,Cannon	8068o	38-0315									
00798	FCRS-798.69	Faunal-Worked	Indeterminate Worked Bone			No		MC	DHJC	Indeterminate Worked Bone,cf. mule deer,Long bone	8068p	38-0317									
00799	FCRS-799.70	Faunal-Worked	Drill or Punch			No		MC	DHJC	Drill or Punch,cf. mule deer,Antler	8068q	38-0319									
00800	FCRS-800.71	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8068r	38-0320									
00801	FCRS-801.72	Faunal-Worked	Drill			No		MC	DHJC	Drill,Large mammal,Long bone	8068r?	38-0330									
00802	FCRS-802.73	Faunal-Worked	Awl			No		MC	DHJC	Awl,Large mammal,Cannon	8068s	38-0321									
00803	FCRS-803.44	Faunal-Worked	Indeterminate			No		MC	DHJC	Odocoileus hemionus, Cannon	8068t	38-0322									
00804	FCRS-804.74	Faunal-Worked	Indeterminate Worked Bone			No		MC	DHJC	Indeterminate Worked Bone,Large mammal,Long bone	8068v	38-0324									
00805	FCRS-805.75	Faunal-Worked	Punch or Awl			No		MC	DHJC	Punch or Awl,Large mammal,Long bone	8068v	38-0325									
00806	FCRS-806.45	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8068w	38-0326									
00807	FCRS-807.46	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8068w?	38-0328									
00809	FCRS-809.76	Faunal-Worked	Indeterminate Worked Bone			No		MC	DHJC	Indeterminate Worked Bone,Large mammal,Long bone	8068z	38-0331									
00810	FCRS-810.47	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8069a	38-0318									
00811	FCRS-811.48	Faunal-Worked	Flesher			No		MC	DHJC	Odocoileus hemionus, Long	8069b	38-0338									
00812	FCRS-812.49	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8070a	38-0327									
00813	FCRS-813.50	Faunal-Worked	Flesher			No		MC	DHJC	Odocoileus hemionus, Long	8070b	38-0339									
00814	FCRS-814.51	Faunal-Worked	Flesher			No		MC	DHJC	Odocoileus hemionus, Long	8070c	38-0342									
00815	FCRS-815.52	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8070d	38-0343									
00816	FCRS-816.53	Faunal-Worked	Flesher			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8070e	38-0344									
00818	FCRS-818.33	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Scapula, Broken	8071b	38-0348									
00819	FCRS-819.34	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Scapula, Broken	8071c	38-0349									
00820	279	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8072a	38-0350	42951/11								
00821	281	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Chalcedony	8072c	38-0354									
00822	278	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chalcedony	8072d	38-0356									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
00823	292	Flaked Stone	Flaked Facial Tools			No		PG	CG	Scraper, Chert	8072f	38-0357									
00824	293	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Silicified wood	8072g	38-0360									
00825	284	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Silicified wood	8072h	38-0361									
00826	290	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Chert	8072i	38-0363									
00827	282	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Rhyolite	8072j	38-0369									
00828	285	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Siltstone/mudstone	8072l	38-0373									
00829	287	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8072m	38-0379									
00830	289	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8072n	38-0370	43943/11								
00831	286	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Siltstone/mudstone	8072o	38-0376									
00832	283	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Obsidian	8072p	38-0378									
00833	295	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chalcedony	8072q	38-0379	43945/11								
00834	1204	Flaked Stone	Debitage			No		PG	CG	DFP core, Chert	8072r	38-0380									
00835	288	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8072s	38-0383									
00836	280	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Quartzite	8072t	38-0385									
00837	291	Flaked Stone	Flaked Facial Tools			No		PG	CG	Scraper, Chert	8072u	38-0388									
00838	294	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Quartzite	8072v	38-0395									
00839	14	Stone-Unworked	Cores and Nodules			No		PG	CG	DFP core, Silicified wood.	8073	38-0381									
00840	388	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8074a	38-0384									
00841	386	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood	8074b	38-0386									
00842	400	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Quartzite	8074c	38-0387									
00843	397	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8074c'	38-0435									
00844	390	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill?, Silicified wood	8074d	38-0391									
00845	1768	Flaked Stone	Debitage			No		PG	CG	Tool spall, Silicified wood	8074e	38-0393									
00846	395	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8074f	38-0394									
00847	391	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8074g	38-0396									
00848	399	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Quartzite	8074h	38-0401									

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00849	385	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8074i	38-0403									
00850	387	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood	8074j	38-0408									
00851	1770	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8074k	38-0411									
00851	401	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Rhyolite	8074k	38-0411									
00852	394	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8074l	38-0415									
00853	398	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Siltstone/mudstone	8074m	38-0416									
00854	389	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood	8074n	38-0417									
00855	392	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Silicified wood	8074o	38-0419									
00856	396	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8074p	38-0420									
00857	393	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8074q	38-0421									
00858	1769	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8074r	38-0422									
00859	384	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Obsidian	8074y	38-0426									
00860	1787	Flaked Stone	Debitage			No		PG	CG	Tool spall, Chert	8075a	38-0382									
00861	432	Flaked Stone	Flaked Facial Tools			No		PG	CG	retouched flake, Silicified wood	8075b	38-0389									
00862	1788	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8075d	38-0399									
00863	1789	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8075e	38-0402									
00864	1790	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8075f	38-0407									
00865	1791	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8075g	38-0409									
00866	1792	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8075h	38-0413									
00867	1793	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8075i	38-0414									
00868	433	Flaked Stone	Flaked Facial Tools			No		PG	CG	Perforator?, Siltstone/mudstone	8075j	38-0430									
00869	431	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Silicified wood	8076	38-0397									
00870	22	Groundstone	Cores and Nodules			No		PG	CG	DFP core, Chert.	8077	38-0404									
00871	15	Flaked Stone	Cores and Nodules			No		PG	CG	DFP core, Silicified wood.	8078	38-0437									
00872	296	Flaked Stone	Flaked Facial Tools			No		PG	CG	Denticulate saw, Siltstone/mudstone	8079	38-0438									
00873		Groundstone	other mod stone			No		PG	CG	worn spherical quartzite pebble	8080	38-0443									
00874		Groundstone	other mod stone			No		PG	CG	highly polished pebble, prob silicified wood	8081	38-0445									

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00875	FCRS-875.54	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), antler?	8082	38-0462									
00878	FCRS-878.55	Faunal-Worked	Indeterminate			No		MC	DHJC	Odocoileus hemionus, Long	8085	38-0483									
00879	FCRS-879.35	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Scapula, Complete	8086	38-0486									
00880	FCRS-880.36	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib , Lightly Broken	8087a	38-0489									
00881	FCRS-881.37	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8087b	38-0490									
00882	FCRS-882.38	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8087c	38-0492									
00883	FCRS-883.39	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8087d	38-0493									
00884	FCRS-884.77	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8088a	38-0495									
00885	FCRS-885.78	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8088b	38-0496									
00886	FCRS-886.79	Faunal-Worked	Punch or Awl			No		MC	DHJC	Punch or Awl,cf. mule deer,Cannon	8088c	38-0497									
00887	FCRS-887.80	Faunal-Worked	Punch or Awl			No		MC	DHJC	Punch or Awl,cf. mule deer,Cannon	8088d	38-0498									
00888	FCRS-888.81	Faunal-Worked	Punch			No		MC	DHJC	Punch,cf. mule deer,Cannon	8088e	38-0499									
00889	FCRS-889.82	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8088f	38-0501									
00890	FCRS-890.83	Faunal-Worked	Punch or Awl			No		MC	DHJC	Punch or Awl,cf. mule deer,Cannon	8088g	38-0502									
00891	FCRS-891.84	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Tibia	8088h	38-0503									
00892	FCRS-892.85	Faunal-Worked	Punch			No		MC	DHJC	Punch,cf. mule deer,Ulna	8088i	38-0504									
00893	FCRS-893.86	Faunal-Worked	Punch			No		MC	DHJC	Punch,cf. mule deer,Cannon	8088j	38-0506									
00894	FCRS-894.87	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8088k	38-0507									
00895	FCRS-895.83	Faunal-Worked	Indeterminate			No		MC	DHJC	Ovis canadensis, Ulna	8088l	38-0508									
00896	411	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Quartzite	8089a	38-0521									
00897	412	Flaked Stone	Flaked Facial Tools			No		PG	CG	Scraper, Siltstone/mudstone	8089b	38-0524									
00898	410	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	8089c	38-0525									
00899	407	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8089d	38-0527									
00900	405	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Obsidian	8089e	38-0230									
00901	409	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Silicified wood	8089f	38-0548									
00902	408	Flaked Stone	Flaked Facial Tools			No		PG	CG	retouched flake, Silicified wood	8089g	38-0549									

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00903	406	Flaked Stone	Flaked Facial Tools			No		PG	CG	Denticulate saw, Siltstone/mudstone	8089h	38-0553									
00904	1771	Flaked Stone	Debitage			No		PG	CG	Tool spall, Quartzite	8089i	38-0560									
00905	257	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8090a	38-0532									
00906	256	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Chert	8090b	38-0533									
00907	251	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8090c	38-0534									
00908	252	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8090d	38-0535									
00909	248	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8090e	38-0536									
00910	255	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8090f	38-0537									
00911	254	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	8090g	38-0538									
00912	253	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8090h	38-0539									
00913	250	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8090h	38-0541									
00914	258	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chalcedony	8090i	38-0542									
00915	249	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8090j	38-0543									
00916	247	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood	8090k	38-0544									
00917	246	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Silicified wood	8090m	38-0545									
00918	245	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform?, Silicified wood	8090n	38-0547									
00919	13	Flaked Stone	Cores and Nodules			No		PG	CG	DFP core, Siltstone/mudstone.	8090o	38-0551									
00920	244	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Siltstone/mudstone	8090p	38-0554									
00921	243	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8090q	38-0555									
00922	242	Flaked Stone	Flaked Facial Tools			No		PG	CG	Scraper, Obsidian	8090r	38-0557									
00923	241	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8090s	38-0558									
00924	439	Groundstone	Flaked Facial Tools			No		PG	CG	Chopper, Siltstone/mudstone	8091a	38-0523									
00925	438	Groundstone	Flaked Facial Tools			No		PG	CG	Chopper, Quartzite	8091b	38-0531									
00926	426	Flaked Stone	Flaked Facial Tools			No		PG	CG	Denticulate saw, Silicified wood	8092	38-0550									
00927	FCRS-927.40	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8100a	38-0571									
00928	FCRS-928.41	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Broken	8100b	38-0572									
00929	FCRS-929.42	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8100c	38-0573									

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00930	FCRS-930.43	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8100d	38-0574									
00931	FCRS-931.44	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Complete	8100e	38-0576									
00932	FCRS-932.45	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8100f	38-0577									
00933	77	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chalcedony	8101a	38-0583									
00934	73	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8101b	38-0588									
00935	75	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Siltstone/mudstone	8101c	38-0589									
00936	76	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Chert	8101d	38-0590									
00937	74	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8101e	38-0591									
00938	78	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood	8101f	38-0592									
00939	79	Flaked Stone	Flaked Facial Tools			No		PG	CG	Denticulate saw, Silicified wood	8101g	38-0593									
00940	2	Groundstone	Lithic Tool			No		PG	CG	tool, burnishing stone, metamorphic pebble	8101h	38-0594									
00941	FCRS-941.56	Faunal-Worked	Indeterminate			No		MC	DHJC	Odocoileus hemionus, Radius	8102	38-0600									
00942	FCRS-942.46	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. bighorn sheep, Scapula, Complete	8103	38-0602									
00943	FCRS-943.57	Faunal-Worked	Flesher			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8104	38-0604									
00944	FCRS-944.88	Faunal-Worked	Indeterminate Worked Bone			No		MC	DHJC	Indeterminate Worked Bone,cf. mule deer,Long bone	8105a	38-0605									
00945	FCRS-945.89	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Long bone	8105b	38-0606									
00946	FCRS-946.90	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8105c	38-0608									
00947	FCRS-947.91	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. bighorn sheep,Radius	8106a	38-0615									
00948	FCRS-948.92	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Long bone	8106b	38-0616									
00949	FCRS-949.93	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Long bone	8106c	38-0618									
00950	FCRS-950.47	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. bighorn sheep, Scapula, Broken	8108a	38-0621									
00951	FCRS-951.48	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Scapula, Broken	8108b	38-0622									
00952	FCRS-952.49	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8109a	38-0646									
00953	FCRS-953.50	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Broken	8109b	38-0647									
00954	FCRS-954.51	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Lightly Broken	8109c	38-0648									
00955	FCRS-955.52	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Scapula, Broken	8110	38-0649									

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00956	FCRS-956.58	Faunal-Worked	Flesher			No		MC	DHJC	Odocoileus hemionus, Long	8111	38-0651									
00957	FCRS-957.94	Faunal-Worked	Punch			No		MC	DHJC	Punch,cf. mule deer,Ulna	8112a	38-0653									
00958	FCRS-958.95	Faunal-Worked	Punch			No		MC	DHJC	Punch,cf. mule deer,Ulna	8112b	38-0654									
00959	FCRS-959.59	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8112c	38-0655									
00960	FCRS-960.96	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8112d	38-0656									
00961	FCRS-961.97	Faunal-Worked	Drill or Reamer			No		MC	DHJC	Drill or Reamer,cf. mule deer,Cannon	8112e	38-0658									
00962	FCRS-962.98	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Long bone	8112f	38-0660									
00963	FCRS-963.99	Faunal-Worked	Probable Awl			No		MC	DHJC	Probable Awl,cf. mule deer,Long bone	8112g	38-0662									
00964	FCRS-964.100	Faunal-Worked	Drill or Reamer			No		MC	DHJC	Drill or Reamer,cf. mule deer,Cannon	8112h	38-0661									
00965	FCRS-965.101	Faunal-Worked	Indeterminate Worked Bone			No		MC	DHJC	Indeterminate Worked Bone,cf. mule deer,Cannon	8112i	38-0663b									
00966	FCRS-966.102	Faunal-Worked	Punch			No		MC	DHJC	Punch,cf. mule deer,Long bone	8112j	38-0664									
00967	FCRS-967.103	Faunal-Worked	Probable Awl			No		MC	DHJC	Probable Awl,cf. mule deer,Cannon	8112k	38-0665									
00968	FCRS-968.104	Faunal-Worked	Probable Awl			No		MC	DHJC	Probable Awl,cf. mule deer,Cannon	8112l	38-0667									
00969	436	Flaked Stone	Flaked Facial Tools			No		PG	CG	Chopper, Quartzite	8114	38-0668									
00970	133	Flaked Stone	Flaked Facial Tools			No		PG	CG	Scraper-plane?, Chert	8115a	38-0669									
00971	125	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Chert	8115b	38-0670									
00972	128	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Quartzite	8115c	38-0671									
00973	124	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Quartzite	8115d	38-0673									
00974	120	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8115e		A-12 B32-X-8								
00975	129	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Chert	8115e	38-0675									
00976	121	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Quartzite	8115e	38-0692									
00977	130	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	8115f	38-0680									
00978	126	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Siltstone/mudstone	8115f	38-0697									
00979	123	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Siltstone/mudstone	8115g	40-1922	43948/11								
00980	122	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8115h	38-0701									
00981	131	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform?, Rhyolite	8115m	38-0687									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
00982	132	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Silicified wood	8115n	38-0695									
00983	119	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Obsidian	8115o	38-0699									
00984	127	Groundstone	Flaked Facial Tools			No		PG	CG	Biface thick, Chalcedony	8115p	38-0704									
00985	107	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chalcedony	8116	38-0706									
00986	100	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Silicified wood?	8116	38-0707									
00987	97	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chalcedony	8116	38-0709									
00988	492	Flaked Stone	Debitage			No		PG	CG	Tool spall, Chalcedony	8116	38-0710									
00989	490	Flaked Stone	Debitage			No		PG	CG	DFP core, Chert	8116	38-0711									
00990	493	Flaked Stone	Debitage			No		PG	CG	Tool spall, Chert	8116	38-0712									
00991	494	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chalcedony	8116	38-0713									
00992	99	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8116	38-0714									
00993	108	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8116	38-0715									
00994	116	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Silicified wood	8116	38-0716									
00995	487	Flaked Stone	Debitage			No		PG	CG	DFP core, Chert	8116	38-0717									
00996	111	Flaked Stone	Flaked Facial Tools			No		PG	CG	Scraper-plane?, Siltstone/mudstone	8116	38-0719									
00997	491	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8116	38-0720									
00998	86	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Rhyolite	8116	38-0721									
00999	96	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8116	38-0723									
01000	101	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Silicified wood?	8116	38-0725									
01001	92	Flaked Stone	Flaked Facial Tools			No		PG	CG	Denticulate scraper, Silicified wood	8116	38-0726									
01002	91	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Silicified wood	8116	38-0727									
01003	106	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	8116	38-0728									
01004	115	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Silicified wood	8116	38-0729									
01005	113	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8116	38-0730									
01006	489	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8116	38-0731									
01007	94	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8116	38-0733									
01008	103	Flaked	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood?	8116	38-0734									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone																			
01009	102	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Silicified wood?	8116	38-0735									
01010	117	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8116	38-0736									
01011	93	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8116	38-0737									
01012	105	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	8116	38-0738									
01013	95	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Quartzite	8116	38-0739									
01014	109	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	8116	38-0740									
01015	85	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Rhyolite	8116	38-0741									
01016	118	Flaked Stone	Flaked Facial Tools			No		PG	CG	Unknown, Siltstone/mudstone	8116	38-0742									
01017	89	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Silicified wood	8116	38-0743									
01018	82	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8116	38-0744									
01019	488	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8116	38-0745									
01020	104	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood?	8116	38-0747									
01021	88	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood	8116	38-0749									
01022	112	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood?	8116	38-0750									
01023	486	Flaked Stone	Debitage			No		PG	CG	DFP core, Silicified wood	8116	38-0751									
01025	114	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Quartzite	8116	38-0753									
01026	83	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8116	38-0754									
01027	81	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Siltstone/mudstone	8116	38-0755									
01028	84	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Siltstone/mudstone	8116	38-0756									
01029	98	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Obsidian	8116	38-0757									
01030		Flaked Stone	biface			No		PG	CG		8116	38-0758									
01031	110	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8116	38-0759									
01032	87	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Silicified wood	8116	38-0768									
01033	13	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Silicified wood	8117	38-0760									
01034	14	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8117	38-0761									
01035	1	Flaked	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8117	38-0762									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone																			
01036	3	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8117	38-0763									
01037	15	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8117	38-0764									
01038	11	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8117	38-0766									
01039	5	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8117	38-0767									
01040	4	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8117	38-0769									
01041	4	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8117	38-0770									
01042	16	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Obsidian	8117	38-0771									
01043	6	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Obsidian	8117	38-0773									
01044	2	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8117	38-0775									
01045	17	Flaked Stone	Flaked Facial Tools			No		PG	CG	Unknown, Silicified wood	8117	38-0776									
01046	9	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8117	38-0778									
01047	1	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8117	38-0779									
01048	7	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8117	38-0780									
01049	8	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Obsidian	8117	38-0781									
01050	3	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8117	38-0782									
01051	10	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Obsidian	8117	38-0783									
01052	12	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Rhyolite	8117	38-0784									
01053	2	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Silicified wood	8117	38-0785									
01054	FCRS-1054.60	Faunal-Worked	Ornament			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8118	38-0792									
01055	FCRS-1055.583	Shell	Olivella dama,Bead			No		MC		Size: Medium, Class: A1, Type:	8119	38-0796									
01056		Mineral	mineral			No		PG	CG	red pigment, powder	8120	38-0797									
01057		Stone-Unworked	other mod stone			No		PG	CG	highly polished pebble, black chert	8121	38-0798									
01058		Mineral	mineral			No		PG	CG	sample of soft stone	8122	38-0799									
01059	3	Stone-Unworked	Stone Ornament			No		PG	CG	ornament, bead blank, lignite	8123	38-0800									
01060	134	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chalcedony	8124	38-0808									
01061	135	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Silicified wood?	8125	38-0809									
01068	508	Flaked	Debitage			No		PG	CG	Biface thinning, Chert	8127	38-0814									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone																			
01069	509	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8127	38-0815									
01070	502	Flaked Stone	Debitage			No		PG	CG	bulb removal, Siltstone/mudstone	8127	38-0816									
01071	504	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8127	38-0817									
01072	503	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8127	38-0818									
01073	507	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8127	38-0819									
01074		Flaked Stone	flake			No		PG	CG		8127	38-0820									
01075	506	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8127	38-0821									
01076	495	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8127	38-0822									
01077	496	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8127	38-0823									
01078	501	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8127	38-0824									
01079	499	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8127	38-0825									
01080	497	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8127	38-0826									
01081	505	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8127	38-0827									
01082	498	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8127	38-0828									
01083	500	Flaked Stone	Debitage			No		PG	CG	bulb removal, Obsidian	8127	38-0829									
01084	80	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert?	8128	38-0845									
01085	485	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8128	38-0846									
01086		Flaked Stone	flake			No		PG	CG		8129										
01087	326	Flaked Stone	Debitage			No		PG	CG	Bulb removal, Chert	8129	38-0848									
01088	319	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8129	38-0855									
01089	64	Flaked Stone	Flaked Facial Tools			No		PG	CG	Denticulate saw, Chert	8129	38-0856									
01090	325	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8129	38-0858									
01091	324	Flaked Stone	Debitage			No		PG	CG	DFP core, Chalcedony	8129	38-0861									
01092	328	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8129	38-0902									
01093	321	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8129	38-0927									
01094	327	Flaked	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8129	38-0951									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone																			
01095	323	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8129	38-8638-8933									
01095	72	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood	8129	38-8638-8933									
01096	FCRS-1096.61	Faunal-Worked	Indeterminate			No		MC	DHJC	Odocoileus hemionus, Cannon	8130a	38-0998									
01097	FCRS-1097.62	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8130b	38-0999									
01098	FCRS-1098.63	Faunal-Worked	Flesher			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8130c	38-1000									
01099	FCRS-1099.64	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8130d	38-1001									
01100	FCRS-1100.65	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8130e	38-1002									
01101	FCRS-1101.66	Faunal-Worked	Flesher			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8130f	38-1003									
01102	FCRS-1102.84	Faunal-Worked	Indeterminate			No		MC		Large Mammal (Ungulate-sized), Long	8130g	38-1004									
01110	23	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	8132a	38-1087									
01111	24	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	8132b	38-1088									
01112	7	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8132c	38-1084									
01113	22	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Obsidian	8132d	38-1091									
01114	6	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8132e	38-1094									
01115	26	Flaked Stone	Flaked Facial Tools			No		PG	CG	retouched flake, Obsidian	8132f	38-1095									
01116	25	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill?, Siltstone/mudstone	8132g	38-1096									
01117	18	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Silicified wood	8133	38-1040 (1090?)									
01118	4	Groundstone	Cores and Nodules			No		PG	CG	Chopper, Quartzite.	8134a	38-1092									
01119	94	Groundstone	Cores and Nodules			No		PG	CG	Chopper, Quartzite.	8134b?	38-1093	A-12832-X-16								
01120	142	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8135	38-1047									
01121	11	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8135	38-1098									
01122	8	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8135	38-1099									
01123	21	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8135	38-1100									
01124	151	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8135	38-1101									
01125	73	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8135	38-1102									
01126	34	Flaked Stone	Debitage			No		PG	CG	Alternate, Chalcedony	8135	38-1103									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01127	130	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8135	38-1104									
01128	24	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8135	38-1105									
01129	10	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8135	38-1106									
01130	84	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8135	38-1107									
01131	33	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8135	38-1108									
01132	70	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8135	38-1109									
01133	128	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8135	38-1110									
01134	56	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8135	38-1111									
01135	83	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8135	38-1112									
01136	134	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8135	38-1113									
01137	133	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1114									
01138	15	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8135	38-1115									
01139	90	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1116									
01140	23	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8135	38-1117									
01141	74	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8135	38-1118									
01142	13	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8135	38-1119									
01143	72	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8135	38-1120									
01144	3	Flaked Stone	Cores and Nodules			No		PG	CG	DFP core, Siltstone/mudstone.	8135	38-1121									
01145	152	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8135	38-1122									
01146	57	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8135	38-1123									
01147	51	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8135	38-1124									
01148	38	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chalcedony	8135	38-1125									
01149	31	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8135	38-1126									
01150	53	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8135	38-1127									
01151	69	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8135	38-1128									
01152	22	Flaked Stone	Debitage			No		PG	CG	DFP core, Chert	8135	38-1129									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01153	25	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8135	38-1130									
01154	75	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8135	38-1131									
01155	54	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8135	38-1132									
01156	78	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8135	38-1135									
01157	140	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Quartzite	8135	38-1136									
01158	67	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8135	38-1137									
01159	88	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8135	38-1138									
01160	66	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8135	38-1139									
01161	68	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8135	38-1140									
01162	132	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1141									
01163	144	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8135	38-1142									
01164	71	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8135	38-1143									
01165	89	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8135	38-1144?									
01166	86	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chalcedony	8135	38-1146									
01168	77	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8135	38-1147									
01169	52	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8135	38-1148									
01170	81	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8135	38-1149									
01171	82	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8135	38-1150									
01172		Flaked Stone	flake			No		PG	CG		8135	38-1151									
01173	85	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8135	38-1152									
01174	136	Flaked Stone	Debitage			No				Indetere/nondescript, Rhyolite	8135	38-1153									
01175	111	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8135	38-1153									
01177	126	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8135	38-1154									
01178	129	Flaked Stone	Debitage			No		PG	CG	Alternate, Quartzite	8135	38-1155									
01179	145	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8135	38-1156									
01180		Flaked Stone	flake			No		PG	CG		8135	38-1157									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01181	79	Flaked Stone	Debitage			No		PG	CG	DFP core, Chalcedony	8135	38-1159									
01182	148	Flaked Stone	Debitage			No		PG	CG	Alternate, Chalcedony	8135	38-1160									
01183	76	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8135	38-1161									
01184	138	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8135	38-1162									
01185	131	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1163									
01186	139	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Rhyolite	8135	38-1164									
01187	65	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8135	38-1165									
01188		Flaked Stone	flake			No		PG	CG		8135	38-1166									
01189	49	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8135	38-1167									
01190	59	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1168									
01191	185	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1169									
01192	62	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1170									
01193	27	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1171									
01194	184	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1172									
01195	26	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8135	38-1173									
01196	30	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1174									
01197	61	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1175									
01198	166	Flaked Stone	Debitage			No		PG	CG	Bulb removal, Obsidian	8135	38-1176									
01199	164	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1177									
01200	161	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8135	38-1178									
01201	167	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1179									
01202	176	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1180									
01203	47	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8135	38-1181									
01204	50	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8135	38-1182									
01205	64	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1183									
01206	181	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1184									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01207	41	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1185									
01208	103	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8135	38-1186									
01209	28	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1187									
01210	162	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1188									
01211	182	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8135	38-1189									
01212	155	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1190									
01213	100	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1191									
01214	177	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8135	38-1192									
01215	163	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1193									
01216	159	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1194									
01217	160	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1195									
01218	124	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8135	38-1196									
01219	183	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1198									
01220	44	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1199									
01221	18	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1200									
01222	60	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1201									
01223	99	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1202									
01224	43	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1203									
01225	42	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1204									
01226	168	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1205									
01227	39	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8135	38-1206									
01228	116	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1208									
01229	92	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1209									
01230	127	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8135	38-1210									
01231	91	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8135	38-1211									
01232	58	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1212									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01233	16	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1213									
01234	19	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8135	38-1214									
01235	171	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1215									
01236	113	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1216									
01237	95	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8135	38-1217									
01238	48	Flaked Stone	Debitage			No		PG	CG	DFP core, Silicified wood	8135	38-1218									
01239	101	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Silicified wood	8135	38-1219									
01240	46	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1220									
01241	63	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1221									
01242	45	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1222									
01243	96	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1223									
01244	156	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1224									
01245	20	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8135	38-1225									
01246		Flaked Stone	flake			No		PG	CG		8135	38-1226									
01247	146	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8135	38-1227									
01248	94	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1228									
01249	154	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8135	38-1229									
01250	165	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1230									
01251	175	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8135	38-1231									
01252	169	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1232									
01253	93	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1233									
01254	178	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1234									
01255	29	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1235									
01256	125	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8135	38-1236									
01257	143	Flaked Stone	Debitage			No		PG	CG	Tool spall, Quartzite	8135	38-1237									
01258	172	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1238									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01259	110	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1239									
01260	122	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1240									
01261	106	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1241									
01262	109	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8135	38-1242									
01263	170	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8135	38-1243									
01264	97	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1244									
01265	118	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1245									
01266	119	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8135	38-1246									
01267	114	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8135	38-1247									
01268	174	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1249									
01269	80	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8135	38-1250									
01270	157	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1251									
01271	120	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1252									
01272	108	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1253									
01273	153	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8135	38-1254									
01274	158	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8135	38-1255									
01275	105	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1256									
01276	98	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1257									
01277	104	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8135	38-1258									
01278	173	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8135	38-1259									
01279	115	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8135	38-1262									
01280	180	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8135	38-1263									
01281	107	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8135	38-1264									
01282	179	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8135	38-1265									
01283	9	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8135	38-1266									
01284	36	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8135	38-1267									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01285	35	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8135	38-1268									
01286	55	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8135	38-1269									
01287	137	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8135	38-1270									
01288	149	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8135	38-1271									
01289	102	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8135	38-1272									
01290	121	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8135	38-1273									
01291	141	Flaked Stone	Debitage			No		PG	CG	bulb removal, Rhyolite	8135	38-1274									
01292	150	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8135	38-1275									
01293	147	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8135	38-1276									
01294	123	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8135	38-1277									
01295	117	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8135	38-1278									
01296	112	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8135	38-1281									
01297	FCRS-1297.53	Faunal-Unworked	Notched Bo			No		CR		cf. mule deer, Rib, Lightly Broken	8136	38-1278									
01298	FCRS-1298.105	Faunal-Worked	Drill or Punch			No		MC	DHJC	Drill or Punch,cf. mule deer,Long bone	8137a	38-1279									
01300	FCRS-1300.106	Faunal-Worked	Reamer			No		MC	DHJC	Reamer,cf. mule deer,Tibia	8137c	38-1282									
01301	FCRS-1301.67	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8138	38-1284									
01428	FCRS-1428.16	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,lenticular or ovate,Complete: Yes	8140	38-1347	43962/11								
01429	FCRS-1429.17	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,lenticular or ovate,Complete: No	8140a	38-1346									
01430	FCRS-1430.18	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,rectangular,Complete: Yes	8140c	38-1348									
01431	FCRS-1431.19	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,square,Complete: Yes	8140d	38-1399									
01432	FCRS-1432.20	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,round,Complete: No	8140e	38-1350									
01433	FCRS-1433.21	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,lenticular or ovate,Complete: Yes	8140f	38-1351									
01434	FCRS-1434.22	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,rectangular,Complete: Yes	8140g	38-1352									
01435	27	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8141a	38-1354									
01436	28	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point Preform, Chert	8141b	38-1356									
01437	29	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Quartzite	8141d	38-1358									

Chapter 7 Appendix Database: Data Table Used as Reference Tool for Reporting Purposes

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01438	30	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8141e	38-1359									
01439	31	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	8141g	38-1357									
01440	21	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Quartzite	8142	38-1355									
01441	1066	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8143	38-1360									
01442	1065	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1361									
01443	1067	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8143	38-1362									
01444	1046	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Silicified wood	8143	38-1363									
01445	1068	Flaked Stone	Debitage			No		PG	CG	Alternate, Chalcedony	8143	38-1364									
01446	1064	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1365									
01447	1143	Flaked Stone	Debitage			No		PG	CG	DFP core, Silicified wood	8143	38-1366									
01448	1028	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1367									
01449		Flaked Stone	flake			No		PG	CG		8143	38-1369									
01450		Flaked Stone	scraper			No		PG	CG		8143	38-1369									
01451	1145	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8143	38-1370									
01452	1094	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8143	38-1371									
01453	1069	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1372									
01454	1070	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1373									
01455	1095	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1374									
01456	1047	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8143	38-1375									
01457	1048	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8143	38-1376									
01458	168	Flaked Stone	Flaked Facial Tools			No		PG	CG	Unknown, Chert	8143	38-1377									
01459	1071	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1378									
01460	1072	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8143	38-1379									
01461	1151	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8143	38-1380									
01462	1096	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1381									
01463	1018	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1382									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01464	1073	Flaked Stone	Debitage			No		PG	CG	DFP core, Chert	8143	38-1383									
01465	1142	Flaked Stone	Debitage			No		PG	CG	Biface thinning?, Chert	8143	38-1384									
01466	1049	Flaked Stone	Debitage			No		PG	CG	Alternate, Chalcedony	8143	38-1385									
01467	1123	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8143	38-1387									
01468	1019	Flaked Stone	Debitage			No		PG	CG	Tool spall, Silicified wood	8143	38-1388									
01469	1126	Flaked Stone	Debitage			No		PG	CG	Alternate, Quartzite	8143	38-1389									
01470	1074	Flaked Stone	Debitage			No		PG	CG	DFP core, Chert	8143	38-1390									
01471	1075	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1392									
01472	1125	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8143	38-1393									
01473	1050	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8143	38-1394									
01474	1201	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8143	38-1396									
01475	1124	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8143	38-1397									
01476	1029	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1398									
01477	1076	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8143	38-1399									
01478	1051	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8143	38-1400									
01479	1077	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8143	38-1401									
01480	1078	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1402									
01481	1052	Flaked Stone	Debitage			No		PG	CG	DFP core, Chert	8143	38-1403									
01482		Flaked Stone	flake tool			No		PG	CG		8143	38-1404									
01483	1097	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8143	38-1404									
01483	158	Flaked Stone	Flaked Facial Tools			No		PG	CG	Denticulate saw, Rhyolite	8143	38-1404									
01484	1079	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1405									
01485	1080	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1406									
01486	161	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Silicified wood	8143	38-1407									
01487	1146	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8143	38-1408									
01488	1011	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8143	38-1409									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01489	1098	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8143	38-1410									
01490	1027	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1411									
01491	1099	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1412									
01492	1081	Flaked Stone	Debitage			No		PG	CG	pressure, Chert	8143	38-1413									
01493	163	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Silicified wood	8143	38-1414									
01494	1127	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8143	38-1415									
01495	1020	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1416									
01496	1122	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8143	38-1417									
01497	1021	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8143	38-1418									
01498	1100	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1419									
01499	1022	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1420									
01500	1082	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1421									
01501	162	Flaked Stone	Flaked Facial Tools			No		PG	CG	Denticulate saw, Quartzite	8143	38-1422									
01502	1101	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Quartzite	8143	38-1424									
01503	169	Ornament	Flaked Facial Tools			No		PG	CG	Unknown, Silicified wood	8143	38-1425									
01503	4	Ornament	Ornament Debris			No		PG	CG	ornament, ornament production debris, Blue-green stone (soft), copper ore?	8143	38-1425									
01504	1102	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8143	38-1425?									
01505	1023	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1426									
01506	1053	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1427									
01507	1083	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Quartzite	8143	38-1428									
01508	1084	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1429									
01509	1169	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Obsidian	8143	38-1430									
01510	1085	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1431									
01511	948	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1432									
01512	971	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8143	38-1433									
01513	962	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1434									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01514	1054	Flaked Stone	Debitage			No		PG	CG	DFP core, Chalcedony	8143	38-1439									
01515	1086	Flaked Stone	Debitage			No		PG	CG	bulb removal, Chert	8143	38-1440									
01516	1104	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1441									
01517	1055	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chalcedony	8143	38-1442									
01518	164	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface, Silicified wood	8143	38-1443									
01519	1087	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8143	38-1444									
01520	1030	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1444									
01521	1088	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8143	38-1445									
01522	1144	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1446									
01523	1025	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1447									
01524	1148	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8143	38-1448									
01525	1089	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8143	38-1450									
01526	1056	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8143	38-1451									
01527	1062	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1452									
01528	1105	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8143	38-1453									
01529	1106	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8143	38-1454									
01530	1026	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Silicified wood	8143	38-1456									
01531	166	Flaked Stone	Flaked Facial Tools			No		PG	CG	Engraver?, Chert	8143	38-1457									
01532	1107	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8143	38-1458									
01533	170	Flaked Stone	Flaked Facial Tools			No		PG	CG	Denticulate saw?, Chert	8143	38-1459									
01534	1165	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8143	38-1460									
01535	1108	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chalcedony	8143	38-1461									
01536	1164	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1462									
01537	1090	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8143	38-1462									
01538	1057	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8143	38-1463									
01539	1109	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8143	38-1465									

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01540	1058	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chalcedony	8143	38-1466									
01541	1091	Flaked Stone	Debitage			No		PG	CG	Tool spall, Chalcedony	8143	38-1467									
01542	1110	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1468?									
01543	1111	Flaked Stone	Debitage			No		PG	CG	Alternate, Chalcedony	8143	38-1469									
01544	171	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Silicified wood	8143	38-1470									
01545	1103	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8143	38-1471									
01546	1092	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8143	38-1472									
01547	1112	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8143	38-1473									
01548	1031	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1474									
01549	1059	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8143	38-1475									
01550	1033	Flaked Stone	Debitage			No		PG	CG	pressure, Silicified wood	8143	38-1476									
01551	1157	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone?	8143	38-1477									
01552	1113	Flaked Stone	Debitage			No		PG	CG	Tool spall, Chert	8143	38-1478									
01553	1032	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1479									
01554	1114	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8143	38-1480									
01555	1012	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8143	38-1481									
01556		Flaked Stone	flake			No		PG	CG		8143	38-1483									
01557	1159	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8143	38-1483									
01558	1128	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8143	38-1484									
01559	1153	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8143	38-1485									
01560	1129	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8143	38-1486									
01561		Flaked Stone	flake			No		PG	CG		8143	38-1487									
01562	1130	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8143	38-1488									
01563	1131	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8143	38-1489									
01564	1010	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1490									
01565	1150	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8143	38-1491									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01566		Flaked Stone	flake			No		PG	CG		8143	38-1492									
01567		Flaked Stone	flake			No		PG	CG		8143	38-1493									
01568	1156	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8143	38-1494									
01569	1155	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8143	38-1496									
01570	1013	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8143	38-1496									
01571	1147	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8143	38-1497									
01572		Flaked Stone	flake			No		PG	CG		8143	38-1498									
01573	1115	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8143	38-1499									
01574	1093	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1500									
01575	1160	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8143	38-1501									
01576	1038	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8143	38-1502 (1602?)									
01577	1162	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Quartzite	8143	38-1503									
01578	1149	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1505									
01579	1137	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8143	38-1507									
01580	1116	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8143	38-1507									
01581	1199	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8143	38-1507									
01582	1060	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8143	38-1508									
01583	1061	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chalcedony	8143	38-1509									
01584	1117	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1510									
01585	947	Flaked Stone	Debitage			No		PG	CG	DFP core, Silicified wood	8143	38-1511									
01586	1182	Flaked Stone	Debitage			No		PG	CG	DFP core, Obsidian	8143	38-1512									
01587	1170	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1513									
01588	1183	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1514									
01589	1034	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Silicified wood	8143	38-1515									
01590	1166	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1516									
01591	959	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1517									

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01592	985	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8143	38-1518									
01593	968	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8143	38-1519									
01594	1009	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8143	38-1520									
01595	1171	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1521									
01596	1167	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1522									
01597	951	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8143	38-1523									
01598	1185	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1524									
01599		Flaked Stone	flake			No		PG	CG		8143	38-1524									
01600	1186	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1525									
01601	1187	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Obsidian	8143	38-1526									
01602	1188	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1527									
01603	1189	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1528									
01604	160	Flaked Stone	Flaked Facial Tools			No		PG	CG	Unknown, Obsidian	8143	38-1529									
01605	952	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8143	38-1530									
01606	1035	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1531									
01607	1180	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1532									
01608	990	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1533									
01609	1118	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1534									
01610	961	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1535									
01611	1138	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8143	38-1536									
01612	167	Flaked Stone	Flaked Facial Tools			No		PG	CG	Unknown, Siltstone/mudstone	8143	38-1537									
01613	957	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1538									
01614	953	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8143	38-1539									
01615	950	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1540									
01616	1139	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8143	38-1541									
01617	969	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8143	38-1542									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01618	1140	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8143	38-1543									
01619	963	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1544									
01620	1172	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1545									
01621	1190	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8143	38-1546									
01622	1191	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8143	38-1547									
01623	1173	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1548									
01624	981	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1550									
01625	165	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood	8143	38-1551									
01626	973	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8143	38-1552									
01627	958	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1553									
01628	1014	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8143	38-1554									
01629	975	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1555									
01630	949	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1556									
01631	966	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1557									
01632	1015	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8143	38-1558									
01633	1036	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8143	38-1559									
01634	960	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1560									
01635	972	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1561									
01636	1132	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8143	38-1562									
01637	989	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1563									
01638	978	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1564									
01639	1193	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1565									
01640	967	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1566									
01641	1200	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8143	38-1566									
01642	1141	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8143	38-1567									
01643	954	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1568									

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01644	173	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform?, Siltstone/mudstone	8143	38-1569									
01646	986	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1570									
01647	1163	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Silicified wood	8143	38-1571									
01648	987	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1572									
01649	1194	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1573									
01650	1168	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1574									
01651	1181	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8143	38-1575									
01652	1008	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8143	38-1577									
01653	1000	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1578									
01654	970	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1579									
01655	1192	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1579 (1574?)									
01655	995	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1579 (1574?)									
01656	997	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1580									
01657	991	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1581									
01658	956	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1582									
01659	1154	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8143	38-1583									
01660	1195	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1584									
01661	994	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1585									
01662	172	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Siltstone/mudstone	8143	38-1586									
01662	955	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1586									
01663	1174	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1587									
01664	1196	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8143	38-1588									
01665	988	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1589									
01666	998	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1590									
01667	1133	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8143	38-1591									
01668	1134	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8143	38-1592									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01669	1037	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8143	38-1593									
01670	964	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1594									
01671	984	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8143	38-1595									
01672	979	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1596									
01673	982	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1597									
01674	999	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1599									
01675	1175	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8143	38-1600									
01676	1197	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8143	38-1601									
01677	1006	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8143	38-1603									
01678	1176	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1604									
01679	1002	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1605									
01680	1001	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1606									
01681	1005	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8143	38-1607									
01682	1003	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8143	38-1608									
01683	996	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1609									
01684	1039	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1610									
01685	1040	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8143	38-1611									
01686	1177	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1612									
01687	1007	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1613									
01688	977	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1615									
01689	1041	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8143	38-1616									
01690	1042	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Silicified wood	8143	38-1617									
01691	976	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1618									
01692	965	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1619									
01693	1043	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1620									
01694	1178	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8143	38-1621									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01695	1198	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8143	38-1623									
01696	974	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1625									
01697	983	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8143	38-1626									
01698	992	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1627									
01699	1179	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8143	38-1627									
01700	1136	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8143	38-1628									
01701		Flaked Stone	flake			No		PG	CG		8143	38-1629									
01702	1016	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8143	38-1630									
01703	1045	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1631									
01704	993	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8143	38-1632									
01705	1135	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8143	38-1633									
01706	1044	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8143	38-1634 (1639?)									
01707		Flaked Stone	biface			No		PG	CG	Refits with FCRS 01662	8143	38-1635									
01708	1119	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8143	38-1636									
01709	980	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8143	38-1637									
01710	1152	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8143	38-1638									
01711	1161	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8143	38-1639 (1039?)									
01712		Flaked Stone	flake			No		PG	CG		8143	38-1640									
01713	1063	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chalcedony	8143	38-1641									
01714	1120	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1642									
01715	1121	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8143	38-1643									
01716	1024	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8143	38-1644									
01717	1017	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Rhyolite	8143	38-1645									
01718	1004	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8143	38-1646									
01719	12	Flaked Stone	Cores and Nodules			No		PG	CG	DFP core, Silicified wood.	8143	38-1647									
01720	5	Ornament	Ornament Debris			No		PG	CG	ornament, ornament production debris, Blue-green stone (soft), copper ore?	8143	38-1650									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01721	6	Ornament	Ornament Debris			No		PG	CG	ornament, ornament production debris, Blue-green stone (soft), copper ore?	8143	38-1651									
01722		Flaked Stone	flake			No		PG	CG		8143	38-1666?									
01723	FCRS-1723.68	Faunal-Worked	Flesher			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8144	38-1652									
01728	FCRS-1728.54	Faunal-Worked	Notched Bo			No		MC	DHJC	NA, Scapula, Broken	8146a	38-1654									
01803	32	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Rhyolite	8148a	38-1735									
01804	33	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Quartzite	8148b	38-1736									
01805	34	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chert	8148c	38-1737									
01806	35	Flaked Stone	Flaked Facial Tools			No		PG	CG	Denticulate saw, Silicified wood	8148d	38-1739									
01807	5	Flaked Stone	Cores and Nodules			No		PG	CG	DFP core, Chert.	8148e	38-1740									
01808	6	Flaked Stone	Cores and Nodules			No		PG	CG	DFP core, Chert.	8148f	38-1742									
01809	19	Flaked Stone	Flaked Facial Tools			No		PG	CG	Chopper, Quartzite	8149	38-1741									
01810	5	Flaked Stone	Debitage			No		PG	CG	Tool spall, Chalcedony	8150	38-1743									
01811	20	Flaked Stone	Flaked Facial Tools			No		PG	CG	Drill, Obsidian	8150	38-1744									
01812	FCRS-1812.1	Shell	Shell, Possible bead or part of pendant			No		MC		Possible bead or part of pendant, Bivalve	8151	38-1745									
01813	FCRS-1813.23	Gaming Piece	Gaming Piece			No		MC		Gaming Piece,rectangular,Complete: No	8152a?	38-1938	A-12831-X-4								
01814	750	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8153	38-0989									
01815	311	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1260									
01816	220	Flaked Stone	Debitage			No		PG	CG	DFP core, Chert	8153	38-1747									
01817		Flaked Stone	flake			No		PG	CG		8153	38-1748									
01818	186	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8153	38-1749									
01819	188	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8153	38-1750									
01820	206	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8153	38-1751									
01821	241	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8153	38-1752									
01822	248	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8153	38-1753									
01823	229	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8153	38-1754									
01824	293	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8153	38-1755									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01825	228	Flaked Stone	Debitage			No		PG	CG	Tool spall, Chalcedony	8153	38-1756									
01826	219	Flaked Stone	Debitage			No		PG	CG	Alternate, Chalcedony	8153	38-1757									
01827	211	Flaked Stone	Debitage			No		PG	CG	DFP core, Silicified wood	8153	38-1758									
01828	215	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8153	38-1759									
01829	198	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8153	38-1760									
01830	196	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8153	38-1761									
01831	194	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8153	38-1762									
01832	226	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8153	38-1763									
01833	292	Flaked Stone	Debitage			No		PG	CG	DFP core, Chert	8153	38-1764									
01834	304	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8153	38-1765									
01835	306	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8153	38-1766									
01836		Flaked Stone	flake			No		PG	CG		8153	38-1767									
01837	212	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8153	38-1768									
01838	190	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8153	38-1769									
01839	195	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8153	38-1770									
01840	225	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8153	38-1771									
01841	38	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chalcedony	8153	38-1772									
01842	234	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8153	38-1773									
01843	232	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8153	38-1775									
01844	249	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8153	38-1776									
01845	221	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8153	38-1777									
01846	200	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8153	38-1778									
01847	203	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8153	38-1779									
01848	214	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8153	38-1779									
01849	251	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8153	38-1780									
01850	218	Flaked Stone	Debitage			No		PG	CG	Tool spall, Chert	8153	38-1781									

Chapter 7 Appendix Database: Data Table Used as Reference Tool for Reporting Purposes

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01851	222	Flaked Stone	Debitage			No		PG	CG	DFP core, Chert	8153	38-1782									
01852	283	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8153	38-1783									
01853	246	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8153	38-1784									
01854	187	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8153	38-1785									
01855	191	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8153	38-1786									
01856	204	Flaked Stone	Debitage			No		PG	CG	DFP core, Limestone	8153	38-1787									
01857	299	Flaked Stone	Debitage			No		PG	CG	DFP core, Chert	8153	38-1788									
01858	213	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8153	38-1789									
01859	40	Flaked Stone	Flaked Facial Tools			No		PG	CG	Perforator, Silicified wood	8153	38-1790									
01860	295	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8153	38-1791									
01861	201	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8153	38-1792									
01862	245	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8153	38-1793									
01863	231	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8153	38-1794									
01864	209	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8153	38-1795									
01865	236	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8153	38-1796									
01866	227	Flaked Stone	Debitage			No		PG	CG	Alternate, Chalcedony	8153	38-1797									
01867	239	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8153	38-1798									
01868	216	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8153	38-1799									
01869	288	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8153	38-1800									
01870	242	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8153	38-1801									
01871	36	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface, Chert	8153	38-1802									
01872	223	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8153	38-1803									
01873	296	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8153	38-1804?									
01874	244	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Quartzite	8153	38-1805									
01875	240	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8153	38-1806									
01876	37	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8153	38-1807									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01877		Flaked Stone	flake			No		PG	CG		8153	38-1808									
01878	205	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8153	38-1809									
01879	197	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Silicified wood	8153	38-1810									
01880	294	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8153	38-1811									
01881	39	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point?, Chalcedony	8153	38-1812									
01882		Flaked Stone	flake			No		PG	CG		8153	38-1813									
01883	224	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8153	38-1814									
01884	297	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8153	38-1815									
01884	41	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood	8153	38-1815									
01885	230	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8153	38-1816									
01886	233	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8153	38-1817									
01887	243	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Quartzite	8153	38-1818									
01888	291	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8153	38-1819									
01889		Flaked Stone	flake			No		PG	CG		8153	38-1820									
01890	303	Flaked Stone	Debitage			No		PG	CG	DFP core, Rhyolite	8153	38-1821									
01891	217	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8153	38-1823									
01892	250	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8153	38-1824									
01893	247	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8153	38-1826									
01894	207	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8153	38-1827									
01895	256	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1827									
01896		Flaked Stone	flake			No		PG	CG		8153	38-1828									
01897	235	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8153	38-1829									
01898	202	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8153	38-1830									
01899	298	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8153	38-1831									
01900		Flaked Stone	flake			No		PG	CG		8153	38-1832									
01901	301	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8153	38-1833									

Chapter 7 Appendix Database: Data Table Used as Reference Tool for Reporting Purposes

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01902	305	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8153	38-1834									
01903	193	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8153	38-1835									
01904	302	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8153	38-1836									
01905	210	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8153	38-1837?									
01906	289	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8153	38-1838									
01907	275	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8153	38-1839									
01908	238	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8153	38-1840									
01909	237	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Silicified wood	8153	38-1841									
01910	189	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8153	38-1842									
01911	265	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1843									
01912	257	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1844									
01913	290	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Quartzite	8153	38-1845									
01914	259	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1846									
01915	285	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1847									
01916	262	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8153	38-1848									
01917	252	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8153	38-1849									
01918	307	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8153	38-1850									
01919	273	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1851									
01920	258	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8153	38-1852									
01921	274	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1853									
01922	300	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8153	38-1854									
01923	309	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8153	38-1855									
01924	199	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8153	38-1856									
01925	263	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1857									
01926	253	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1858									
01927	277	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1859									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01928	254	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1860									
01929	282	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8153	38-1861									
01930	280	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8153	38-1862									
01931	269	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1863									
01932	276	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1864									
01933	281	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8153	38-1865									
01934	284	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1866									
01935	261	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1867									
01936	271	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8153	38-1868									
01937	270	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1869									
01938	310	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8153	38-1870									
01939	255	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1871									
01940	268	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1872									
01941	208	Flaked Stone	Debitage			No		PG	CG	Tool spall, Quartzite	8153	38-1873									
01942	278	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1874									
01943	308	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8153	38-1875									
01944	267	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1876									
01945	287	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1877									
01946	272	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8153	38-1878									
01947	260	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8153	38-1879									
01948	266	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8153	38-1880									
01949	192	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8153	38-1881									
01950	279	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8153	38-1882									
01951		Flaked Stone	flake			No		PG	CG		8153	38-1895									
01952	FCRS-1952.69	Faunal-Worked	Flesher			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8154	38-1883									
01953	FCRS-1953.107	Faunal-Worked	Probable Awl			No		MC	DHJC	Probable Awl,cf. mule deer,Cannon	8155a	38-1884									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
01954	FCRS-1954.108	Faunal-Worked	Drill			No		MC	DHJC	Drill ,cf. mule deer,Cannon	8155b	38-1885									
02001	147	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Quartzite	8158a	38-1936									
02002	146	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Chalcedony	8158b	38-1937									
02004	155	Flaked Stone	Flaked Facial Tools			No		PG	CG	Scraper, Siltstone/mudstone	8160	38-1941									
02005	941	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8160	38-1942									
02006	917	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8160	38-1943									
02007	902	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8160	38-1944									
02008	942	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8160	38-1945									
02009	913	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8160	38-1946									
02010	929	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8160	38-1947									
02011	905	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8160	38-1949									
02012	909	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8160	38-1950									
02013	912	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8160	38-1951									
02014	920	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8160	38-1952									
02015	930	Flaked Stone	Debitage			No		PG	CG	Tool spall, quartz	8160	38-1953									
02016	906	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8160	38-1954									
02017	914	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8160	38-1955									
02018	945	Flaked Stone	Debitage			No		PG	CG	DFP core, Limestone	8160	38-1956									
02019	915	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8160	38-1957									
02020	923	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8160	38-1958									
02021	919	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8160	38-1959									
02022	879	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8160	38-1960									
02023	904	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8160	38-1961									
02024	921	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8160	38-1962									
02025	943	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8160	38-1963									
02026	946	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8160	38-1964									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
02027	934	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8160	38-1965									
02028	910	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8160	38-1966									
02029	918	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8160	38-1967									
02030	936	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8160	38-1968									
02031		Flaked Stone	flake			No		PG	CG		8160	38-1969									
02032		Flaked Stone	flake			No		PG	CG		8160	38-1970									
02033	907	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8160	38-1971									
02034	926	Flaked Stone	Debitage			No		PG	CG	DFP core, Silicified wood	8160	38-1972									
02035	939	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8160	38-1973									
02036	911	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Silicified wood	8160	38-1974									
02037	940	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Rhyolite	8160	38-1974									
02038	925	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8160	38-1975									
02039	908	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8160	38-1976									
02040		Flaked Stone	flake			No		PG	CG		8160	38-1978									
02041	931	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8160	38-1979									
02042	938	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8160	38-1980									
02043	882	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8160	38-1981									
02044	922	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8160	38-1982									
02045	927	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8160	38-1983									
02046	156	Flaked Stone	Flaked Facial Tools			No		PG	CG	Scraper, Quartzite?	8160	38-1984									
02047	933	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8160	38-1986									
02048	928	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8160	38-1987									
02049	903	Flaked Stone	Debitage			No		PG	CG	pressure, Chalcedony	8160	38-1988									
02050	916	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8160	38-1989									
02051	932	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8160	38-1990									
02052	944	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8160	38-1991									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
02053	935	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8160	38-1992									
02054		Flaked Stone	flake			No		PG	CG		8160	38-1993?									
02055	884	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8160	38-1994									
02056	937	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8160	38-1995									
02057		Flaked Stone	flake			No		PG	CG		8160	38-1996									
02058		Flaked Stone	flake			No		PG	CG		8160	38-1997									
02059	885	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8160	38-1998									
02060	886	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8160	38-1999									
02061	887	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8160	38-2000									
02062		Flaked Stone	flake			No		PG	CG		8160	38-2001									
02063	888	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8160	38-2002									
02064	157	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8160	38-2003									
02065	889	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8160	38-2004									
02066	890	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8160	38-2005									
02067	891	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8160	38-2006									
02068	892	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8160	38-2007									
02069	924	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8160	38-2008									
02070	893	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8160	38-2010									
02071	894	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8160	38-2011									
02072	881	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8160	38-2012									
02073		Flaked Stone	flake			No		PG	CG		8160	38-2013									
02074	895	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8160	38-2014									
02075	896	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8160	38-2015									
02076	897	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8160	38-2016									
02077	898	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8160	38-2017									
02078	899	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8160	38-2018									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
02079	880	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8160	38-2019									
02080		Flaked Stone	flake			No		PG	CG		8160	38-2020									
02081		Flaked Stone	flake			No		PG	CG		8160	38-2021									
02082	900	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8160	38-2022									
02083	901	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8160	38-2023									
02084		Flaked Stone	flake			No		PG	CG		8160	38-2025									
02085	FCRS-2085.109	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Long bone	8161	38-2026									
02086	FCRS-2086.70	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8162a	38-2027									
02087	FCRS-2087.71	Faunal-Worked	Flesher			No		MC	DHJC	Odocoileus hemionus, Tibia	8162b	38-2028									
02088	FCRS-2088.72	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8162c	38-2029									
02089	FCRS-2089.73	Faunal-Worked	Indeterminate			No		MC	DHJC	Avian, Long	8162e	38-2034									
02090	FCRS-2090.74	Faunal-Worked	Indeterminate			No		MC	DHJC	Large Mammal (Ungulate-sized), Long	8162f	38-2036									
02161	151	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Obsidian	8166a	38-2073	43949/11								
02162	152	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8166b	38-2079									
02163	86	Groundstone	Cores and Nodules			No		PG	CG	Chopper, Quartzite.	8167	38-2075									
02164		Flaked Stone	flake			No		PG	CG		8168	38-0821									
02165	626	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8168	38-0847									
02166	631	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8168	38-0849									
02167	630	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8168	38-0850									
02168	688	Flaked Stone	Debitage			No		PG	CG	bulb removal, Chert	8168	38-0852									
02169	672	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Quartzite	8168	38-0853									
02170	628	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8168	38-0857									
02171		Flaked Stone	flake			No		PG	CG		8168	38-0859									
02172	689	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert?	8168	38-0860									
02173	700	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8168	38-0862									
02174	653	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8168	38-0864									
02175	635	Flaked	Debitage			No		PG	CG	Biface thinning, Chert	8168	38-0865									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone																			
02176	686	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert?	8168	38-0866									
02177	679	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8168	38-0867									
02178	749	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8168	38-0868									
02179	681	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8168	38-0869									
02180	673	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8168	38-0870									
02181	633	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8168	38-0872									
02182	638	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8168	38-0873									
02183	693	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8168	38-0874									
02184	671	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8168	38-0875									
02185	641	Flaked Stone	Debitage			No		PG	CG	Alternate, Chalcedony	8168	38-0876									
02186	702	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8168	38-0877									
02187	667	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8168	38-0878									
02188	690	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8168	38-0879									
02189	691	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Silicified wood	8168	38-0880									
02190	634	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8168	38-0881									
02191	647	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8168	38-0882									
02192	670	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Quartzite	8168	38-0883									
02193	692	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chalcedony	8168	38-0884									
02194	642	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8168	38-0885									
02195	643	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8168	38-0886									
02196		Flaked Stone	flake			No		PG	CG		8168	38-0886?									
02197	674	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8168	38-0887									
02198	705	Flaked Stone	Debitage			No		PG	CG	Tool spall, Limestone	8168	38-0888									
02199		Flaked Stone	flake			No		PG	CG		8168	38-0890									
02200	585	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8168	38-0891									
02201	661	Flaked	Debitage			No		PG	CG	Alternate, Silicified wood	8168	38-0892									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone																			
02202	639	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8168	38-0894									
02203	696	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8168	38-0895									
02204	584	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0896?									
02205	658	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8168	38-0898									
02206	563	Flaked Stone	Debitage			No		PG	CG	Alternate, Rhyolite	8168	38-0899									
02207	645	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8168	38-0900									
02208	695	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8168	38-0901									
02209	591	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0903									
02210	644	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8168	38-0904									
02211	683	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood?	8168	38-0905									
02212	666	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8168	38-0906									
02213	664	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8168	38-0907									
02214	593	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0908									
02215	564	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8168	38-0909									
02215	727	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0909									
02216	586	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0910									
02217	706	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8168	38-0911									
02218	594	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0912									
02219	596	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0914									
02220		Flaked Stone	flake			No		PG	CG		8168	38-0914?									
02221	655	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8168	38-0915									
02222	588	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0915									
02223	663	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8168	38-0917									
02224	711	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0917									
02225	724	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8168	38-0918									
02226	715	Flaked	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0919									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone																			
02227	712	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0920									
02228	709	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0921									
02229	710	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0922									
02230	717	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0923									
02231	748	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8168	38-0924									
02232	713	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0925									
02233	721	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0926									
02234	718	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8168	38-0928									
02235	714	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0929									
02236	726	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8168	38-0930									
02237	716	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0931									
02238	731	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0932									
02239	741	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0933									
02240	725	Flaked Stone	Debitage			No		PG	CG	Tool spall, Obsidian	8168	38-0934									
02241	742	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0935									
02242	736	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8168	38-0936									
02243	743	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8168	38-0937									
02244	595	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0938									
02245	609	Flaked Stone	Debitage			No		PG	CG	bulb removal, Siltstone/mudstone	8168	38-0939									
02246	583	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8168	38-0940									
02247	587	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0941									
02248		Flaked Stone	flake			No		PG	CG		8168	38-0942									
02249	589	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0942									
02250	603	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0943									
02251	657	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Silicified wood	8168	38-0944									
02252	604	Flaked	Debitage			No		PG	CG	Biface thinning,	8168	38-0945									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone								Siltstone/mudstone											
02253	605	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8168	38-0946									
02254	601	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0947									
02255	607	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0948									
02256	602	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0949									
02257	723	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0950									
02258	608	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8168	38-0952									
02259	662	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8168	38-0953									
02260	613	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0954									
02261	747	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8168	38-0955									
02262	598	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0956									
02263	615	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8168	38-0957									
02264	592	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0958									
02265	654	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8168	38-0959									
02266	722	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0961									
02267	665	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8168	38-0962									
02268	660	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8168	38-0963									
02269	599	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0964									
02270	624	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0965									
02271	734	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Obsidian	8168	38-0966									
02272	733	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0967									
02273	740	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8168	38-0968									
02274		Flaked Stone	flake			No		PG	CG		8168	38-0968									
02275	728	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8168	38-0969									
02276	738	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8168	38-0970									
02277	737	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8168	38-0971									
02278	597	Flaked	Debitage			No		PG	CG	Biface thinning,	8168	38-0972									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone								Siltstone/mudstone											
02279	656	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8168	38-0973									
02280	732	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0974									
02281	606	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0975									
02282	684	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood?	8168	38-0976									
02283	659	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8168	38-0977									
02284	614	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0978									
02285	739	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8168	38-0979									
02286	729	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0980									
02287	730	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0981									
02288	719	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8168	38-0982									
02289	610	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0983									
02290	744	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-0984									
02291	745	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8168	38-0985									
02292	612	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8168	38-0986									
02293	746	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8168	38-0987									
02294	618	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8168	38-0988									
02295	619	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-0990									
02296	697	Flaked Stone	Debitage			No		PG	CG	Core edge prep, indeterminate	8168	38-0991									
02297	694	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8168	38-0992									
02298	677	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8168	38-0993									
02299		Flaked Stone	flake			No		PG	CG		8168	38-0994									
02300	617	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8168	38-0995									
02301	735	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Obsidian	8168	38-0996									
02302	698	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8168	38-0997									
02303	629	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8168	38-1154									
02304	720	Flaked	Debitage			No		PG	CG	Biface thinning, Obsidian	8168	38-1207									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone																			
02305	600	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-1614									
02306		Flaked Stone	flake			No		PG	CG		8168	38-2012									
02307	637	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8168	38-2076									
02308	560	Flaked Stone	Debitage			No		PG	CG	Maint/rejuv, Quartzite	8168	38-2077									
02309	676	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8168	38-2078									
02310	627	Flaked Stone	Debitage			No		PG	CG	Alternate, Chalcedony	8168	38-2079									
02311	648	Flaked Stone	Debitage			No		PG	CG	DFP core, Silicified wood	8168	38-2080									
02312	687	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert?	8168	38-2081									
02313	699	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8168	38-2082									
02314	561	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8168	38-2083									
02315		Flaked Stone	flake			No		PG	CG		8168	38-2085									
02316	555	Flaked Stone	Debitage			No		PG	CG	Alternate, Chalcedony	8168	38-2086									
02317	682	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8168	38-2087									
02318	704	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8168	38-2088									
02319	566	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8168	38-2089									
02320	701	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8168	38-2090									
02321	649	Flaked Stone	Debitage			No		PG	CG	bulb removal, Silicified wood	8168	38-2091									
02322	632	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8168	38-2092									
02323	680	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8168	38-2093									
02324	650	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8168	38-2094									
02325	668	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8168	38-2095									
02326	640	Flaked Stone	Debitage			No		PG	CG	Alternate, Chalcedony	8168	38-2096									
02327	646	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8168	38-2097									
02328		Flaked Stone	flake			No		PG	CG		8168	38-2098									
02329	651	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8168	38-2099									
02330	678	Flaked	Debitage			No		PG	CG	DFP core, Chalcedony	8168	38-2100									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone																			
02331	675	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Quartzite	8168	38-2102									
02332	652	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Silicified wood	8168	38-2103									
02333	636	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8168	38-2104									
02334	685	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood?	8168	38-2106									
02335	703	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8168	38-2106									
02336		Flaked Stone	flake			No		PG	CG		8168	38-2107									
02337	623	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8168	38-2108 (2508?)									
02338	562	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8168	38-2109									
02339	708	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8168	38-2110									
02340	557	Flaked Stone	Debitage			No		PG	CG	Tool spall, Quartzite	8168	38-2111									
02341	669	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8168	38-2112									
02342	554	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-2113									
02343	622	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8168	38-2114									
02344	620	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8168	38-2115									
02345	621	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite	8168	38-2116									
02346	707	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8168	38-2117									
02347	565	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8168	38-2118									
02348	558	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8168	38-2119									
02349	556	Flaked Stone	Debitage			No		PG	CG	DFP core, Sandstone	8168	38-2120									
02350	139	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Silicified wood	8168	38-2121									
02351	10	Flaked Stone	Cores and Nodules			No		PG	CG	Chopper, Siltstone/mudstone.	8168	38-2122									
02352	580	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8168	38-2123									
02353	568	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-2124									
02354	570	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-2125									
02355	571	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-2126									
02356	569	Flaked	Debitage			No		PG	CG	Biface thinning,	8168	38-2127									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone								Siltstone/mudstone											
02357	567	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8168	38-2128									
02358	579	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-2129									
02359	572	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-2130									
02360	578	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8168	38-2131									
02361	590	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-2132									
02362	576	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-2133									
02363	582	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-2134									
02364	581	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8168	38-2135									
02365	577	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-2136									
02366	611	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-2137									
02367	575	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-2138									
02368	573	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-2139									
02369	574	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-2140									
02370	616	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8168	38-2141									
02371	559	Flaked Stone	Debitage			No		PG	CG	Maint/rejuv, Chert	8168	38-2177									
02372	FCRS-2372.55	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Broken	8170	38-2142?									
02380	140	Flaked Stone	Flaked Facial Tools			No		PG	CG	Chopper?, Siltstone/mudstone	8172a	38-2167									
02381	141	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Quartzite	8172b	38-2168									
02382	142	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8172c	38-2169									
02383	143	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform?, Silicified wood?	8172d	38-2170									
02384	144	Flaked Stone	Flaked Facial Tools			No		PG	CG	Chopper, Siltstone/mudstone	8172e	38-2171									
02385	145	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Siltstone/mudstone	8172f	38-2172									
02386	777	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8173	38-1598									
02387	779	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8173	38-2174									
02388	786	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8173	38-2175									
02389		Flaked	flake			No		PG	CG		8173	38-2176									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone																			
02390		Flaked Stone	flake			No		PG	CG		8173	38-2178									
02391	752	Flaked Stone	Debitage			No		PG	CG	bulb removal, Rhyolite	8173	38-2180									
02392	780	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8173	38-2183									
02393	781	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8173	38-2184									
02394	797	Flaked Stone	Debitage			No		PG	CG	DFP core, Chert?	8173	38-2184									
02395	787	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8173	38-2186									
02396	788	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8173	38-2187									
02397	782	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8173	38-2188									
02398	800	Flaked Stone	Debitage			No		PG	CG	DFP core, Limestone	8173	38-2191									
02399	799	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8173	38-2192									
02400	789	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8173	38-2193									
02401	790	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8173	38-2194									
02402	783	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8173	38-2195									
02403		Flaked Stone	flake			No		PG	CG		8173	38-2196									
02404	791	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8173	38-2197									
02405	798	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8173	38-2198									
02406	794	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8173	38-2199									
02407	792	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8173	38-2201									
02408	778	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8173	38-2203									
02409	795	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8173	38-2204									
02410	784	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8173	38-2205									
02411	793	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8173	38-2210									
02412	785	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8173	38-2211									
02413	796	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8173	38-2212									
02414	755	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8173	38-2213									
02415	756	Flaked	Debitage			No		PG	CG	Biface thinning,	8173	38-2214									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone								Siltstone/mudstone											
02416	757	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8173	38-2215									
02417	758	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8173	38-2216									
02418	759	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8173	38-2217									
02419	760	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8173	38-2219									
02420	753	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8173	38-2220									
02421	761	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8173	38-2221									
02422	762	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8173	38-2222									
02423	763	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8173	38-2223									
02424	764	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8173	38-2224									
02425	765	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8173	38-2225									
02426	766	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8173	38-2226									
02427	767	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8173	38-2227									
02428	768	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8173	38-2228									
02429	769	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8173	38-2229									
02430	770	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8173	38-2230									
02431	153	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8173	38-2231									
02431	754	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8173	38-2231									
02432	771	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8173	38-2232									
02433	772	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8173	38-2233									
02434	773	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8173	38-2234									
02435	774	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8173	38-2236									
02436	775	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8173	38-2237									
02437	776	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8173	38-2238									
02438	FCRS-2438.110	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8174a	38-2239									
02438	FCRS-2438.75	Faunal-Worked	Indeterminate			No		MC	DHJC	Odocoileus hemionus, Cannon	8174a	38-2239									
02452	543	Flaked	Debitage			No		PG	CG	Biface thinning, Chert	8176	38-2253									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone																			
02453	541	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8176	38-2254									
02454	534	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Rhyolite	8176	38-2254									
02455		Flaked Stone	flake			No		PG	CG		8176	38-2255									
02456	550	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8176	38-2256									
02457	542	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8176	38-2257									
02458	549	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chert	8176	38-2258									
02459	545	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8176	38-2260									
02460		Flaked Stone	flake			No		PG	CG		8176	38-2261									
02461	539	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8176	38-2262									
02462	546	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8176	38-2263									
02463	548	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8176	38-2264									
02464	552	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8176	38-2266									
02465	535	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8176	38-2267									
02466	551	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Chalcedony	8176	38-2268									
02467	547	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8176	38-2269									
02468	536	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8176	38-2270									
02469	553	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Limestone	8176	38-2271									
02470	514	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8176	38-2272									
02471	511	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8176	38-2276									
02472	513	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8176	38-2277									
02473	520	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8176	38-2278									
02474	518	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8176	38-2279									
02475	544	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8176	38-2280									
02476	529	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8176	38-2281									
02477	524	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8176	38-2282									
02478	515	Flaked	Debitage			No		PG	CG	Biface thinning,	8176	38-2283									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone								Siltstone/mudstone											
02479	510	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8176	38-2284									
02480		Flaked Stone	flake			No		PG	CG		8176	38-2285									
02481	519	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8176	38-2286									
02482	521	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8176	38-2287									
02483	532	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8176	38-2288									
02484	525	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8176	38-2289									
02485	526	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8176	38-2290									
02486	522	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8176	38-2291									
02487	516	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8176	38-2292									
02488	517	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8176	38-2293									
02489	540	Flaked Stone	Debitage			No		PG	CG	bulb removal, Chert	8176	38-2294									
02490	538	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8176	38-2294									
02491	531	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8176	38-2295									
02492	523	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8176	38-2296									
02493	528	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8176	38-2297									
02494	533	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8176	38-2298									
02495	530	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8176	38-2300									
02496	537	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8176	38-2301									
02497	512	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8176	38-2422									
02498		Flaked Stone	flake			No		PG	CG		8176	38-2874									
02499	150	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8177a	38-2302									
02500	751	Flaked Stone	Debitage			No		PG	CG	DFP core, Chert	8177b	38-2303									
02506	149	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chert	8180a	38-2314									
02507	148	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Siltstone/mudstone	8180b	38-2317									
02508	832	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8181	38-2318									
02509		Flaked	flake			No		PG	CG		8181	38-2319									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone																			
02510	825	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8181	38-2320									
02511	801	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8181	38-2321									
02512	837	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8181	38-2322									
02513	826	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8181	38-2323									
02514	824	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8181	38-2324									
02515	838	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8181	38-2325									
02516		Flaked Stone	flake			No		PG	CG		8181	38-2326									
02517		Flaked Stone	flake			No		PG	CG		8181	38-2327									
02518	833	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Quartzite	8181	38-2328									
02519	830	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8181	38-2329									
02520	803	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8181	38-2330									
02521	836	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8181	38-2331									
02522	802	Flaked Stone	Debitage			No		PG	CG	DFP core, Silicified wood	8181	38-2332									
02523	827	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8181	38-2333									
02524	834	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8181	38-2334									
02525	828	Flaked Stone	Debitage			No		PG	CG	bulb removal, Silicified wood	8181	38-2335									
02526		Flaked Stone	flake			No		PG	CG		8181	38-2336									
02527		Flaked Stone	flake			No		PG	CG		8181	38-2337									
02528	829	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8181	38-2338									
02529	831	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert	8181	38-2339									
02530	835	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite	8181	38-2340									
02531	804	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8181	38-2341									
02532	805	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8181	38-2342									
02533	806	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8181	38-2343									
02534	807	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8181	38-2344									
02535	808	Flaked	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8181	38-2345									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone																			
02536		Flaked Stone	flake			No		PG	CG		8181	38-2346									
02537	809	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8181	38-2347									
02538	810	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8181	38-2348									
02539	811	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8181	38-2349									
02540	812	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8181	38-2350									
02541	813	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8181	38-2351									
02542	814	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8181	38-2352									
02543	815	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8181	38-2353									
02544	816	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8181	38-2354									
02545	817	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8181	38-2355									
02546	818	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8181	38-2356									
02547	819	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8181	38-2357									
02548	820	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8181	38-2358									
02549	821	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8181	38-2359									
02550	822	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8181	38-2360									
02551	823	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8181	38-2361									
02552	FCRS-2552.56	Faunal-Worked	Notched Bo			No		MC	DHJC	Odocoileus Hemonius, Tibia, Broken	8182	38-2362									
02561	867	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8185	38-2275									
02562		Flaked Stone	flake			No		PG	CG		8185	38-2352									
02563	11	Flaked Stone	Cores and Nodules			No		PG	CG	Chopper, Quartz.	8185	38-2389									
02564		Flaked Stone	flake			No		PG	CG		8185	38-2390									
02565		Flaked Stone	flake			No		PG	CG		8185	38-2391									
02566		Flaked Stone	flake			No		PG	CG		8185	38-2392									
02567		Flaked Stone	flake			No		PG	CG		8185	38-2394									
02568		Flaked Stone	flake			No		PG	CG		8185	38-2395									
02569	858	Flaked	Debitage			No		PG	CG	Biface thinning, Silicified wood	8185	38-2396									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone																			
02570	876	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite?	8185	38-2397									
02571	875	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite?	8185	38-2398									
02572	859	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8185	38-2399									
02573	154	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Silicified wood	8185	38-2400									
02574	860	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8185	38-2401									
02575	866	Flaked Stone	Debitage			No		PG	CG	Alternate, Chert	8185	38-2402									
02576	861	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Silicified wood	8185	38-2403									
02577	865	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8185	38-2404									
02578	871	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Rhyolite	8185	38-2404									
02579	877	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Quartzite?	8185	38-2405									
02580	862	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Silicified wood	8185	38-2406									
02581		Flaked Stone	flake			No		PG	CG		8185	38-2407									
02582		Flaked Stone	flake			No		PG	CG		8185	38-2408									
02583	839	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8185	38-2409									
02584	868	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8185	38-2410									
02585	863	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Silicified wood	8185	38-2411									
02586	869	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chert	8185	38-2412									
02587	840	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8185	38-2413									
02588	864	Flaked Stone	Debitage			No		PG	CG	Alternate, Silicified wood	8185	38-2415									
02589	873	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8185	38-2416									
02590	870	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8185	38-2417									
02591	872	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Chert?	8185	38-2418									
02592	841	Flaked Stone	Debitage			No		PG	CG	Alternate, Siltstone/mudstone	8185	38-2419									
02593	842	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8185	38-2420									
02594	843	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8185	38-2421									
02595	844	Flaked	Debitage			No		PG	CG	Biface thinning,	8185	38-2423									

Chapter 7 Appendix Database: Data Table Used as Reference Tool for Reporting Purposes

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
		Stone								Siltstone/mudstone											
02596	845	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8185	38-2424									
02597	874	Flaked Stone	Debitage			No		PG	CG	DFP core, Quartzite?	8185	38-2425									
02598	846	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8185	38-2426									
02599	847	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8185	38-2427									
02600	848	Flaked Stone	Debitage			No		PG	CG	Core edge prep, Siltstone/mudstone	8185	38-2428									
02601	849	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8185	38-2429									
02602	850	Flaked Stone	Debitage			No		PG	CG	bulb removal, Siltstone/mudstone	8185	38-2430									
02603	851	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8185	38-2431									
02604		Flaked Stone	flake			No		PG	CG		8185	38-2432									
02605	852	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8185	38-2434									
02606	853	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8185	38-2435									
02607	854	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Siltstone/mudstone	8185	38-2436									
02608	855	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8185	38-2437									
02609	856	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8185	38-2438									
02610	857	Flaked Stone	Debitage			No		PG	CG	Indetere/nondescript, Siltstone/mudstone	8185	38-2439									
02611	878	Flaked Stone	Debitage			No		PG	CG	DFP core, Limestone	8185	38-2524									
02612		Mineral	bag of sand			No		PG	CG	not mine!	8186										
02613	137	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Siltstone/mudstone	8187a	38-2441									
02614	138	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform?, Siltstone/mudstone	8187b	38-2442									
02615	136	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Obsidian	8187d	38-2444									
02616	FCRS-2616.111	Faunal-Worked	Probable Awl			No		MC	DHJC	Probable Awl,cf. mule deer,Cannon	8188a	38-2451									
02617	FCRS-2617.112	Faunal-Worked	Drill			No		MC	DHJC	Drill,cf. mule deer,Cannon	8188b	38-2452									
02618	FCRS-2618.113	Faunal-Worked	Drill			No		MC	DHJC	Drill,cf. mule deer,Long bone	8188c	38-2453									
02619	FCRS-2619.114	Faunal-Worked	Punch or Reamer			No		MC	DHJC	Punch or Reamer,cf. mule deer,Cannon	8188d	38-2454									
02620	61	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Quartzite	8189a	38-2455									
02621	318	Flaked Stone	Debitage			No		PG	CG	DFP core, Siltstone/mudstone	8189b	38-2456									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
02622	62	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Chalcedony	8189c	38-2457									
02623	63	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Quartzite	8189c(?)	38-2443	43952/11								
02624	44	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Chalcedony	8190a	38-2457									
02625	43	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Obsidian	8190b	38-2459									
02626	42	Flaked Stone	Flaked Facial Tools			No		PG	CG	Projectile Point, Silicified wood	8190c	38-2460									
02627	45	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Silicified wood	8190d	38-2461									
02628	46	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Silicified wood	8190e	38-2462									
02629	316	Flaked Stone	Debitage			No		PG	CG	DFP core, Silicified wood	8191a	38-2463									
02630	317	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Chalcedony	8191b	38-2464									
02631	FCRS-2631.115	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8192	38-2478									
02632	FCRS-2632.76	Faunal-Worked	Indeterminate			No		MC	DHJC	Odocoileus hemionus, Cannon	8193a	38-2483									
02632	FCRS-2632.77	Faunal-Worked	Indeterminate			No		MC	DHJC	Odocoileus hemionus, Cannon	8193a	38-2483									
02633	FCRS-2633.78	Faunal-Worked	Indeterminate			No		MC		Odocoileus hemionus, Cannon	8193b	38-2484									
02634	FCRS-2634.79	Faunal-Worked	Indeterminate			No		MC	DHJC	Odocoileus hemionus, Radius	8194b	38-2486									
02636	FCRS-02636	Hide	Hide Artifact			No		LW		Unidentified . Stiching: no, Dimensions: 16.0 cm long, 1.6 cm max width.	8195	38-2487									
02637	FCRS-2637.116	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Long bone	8196	38-2488									
02639	FCRS-2639.57	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Scapula, Complete	8198a	38-2491									
02640	FCRS-2640.58	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Scapula, Complete	8198b	38-2492									
02641	FCRS-2641.59	Faunal-Unworked	Notched Bo			No		CR		cf. mule deer, Rib, Lightly Broken	8199a	38-2574									
02642	FCRS-2642.80	Faunal-Unworked	Indeterminate			No		CR		Unidentified Mammal, Long	8199b	38-2578									
02644	48	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8201	38-2584									
02645	1	Stone-Unworked	Lithic Tool			No		PG	CG	tool, burnishing stone, metamorphic pebble	8202	38-2586									
02646	7	Groundstone	Cores and Nodules			No		PG	CG	DFP core, Siltstone/mudstone.	8203	38-2587									
02649	KRA-0080	Wood Tool	Unknown stem			No		KA		Unknown shaped stem segment, sharpened and fire-hardened at both ends	8205	38-2592									
02650	312	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8206a	38-2594									
02651	313	Flaked Stone	Debitage			No		PG	CG	Alternate, Obsidian	8206b	38-2595									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
02652	315	Flaked Stone	Debitage			No		PG	CG	DFP core, Silicified wood	8207a	38-2605									
02653	314	Flaked Stone	Debitage			No		PG	CG	DFP core, Obsidian	8207b	38-2606									
02654	47	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Chert	8207c	38-2608									
02655	FCRS-2655.117	Faunal-Worked	Drill			No		MC	DHJC	Drill,cf. mule deer,Cannon	8208a	38-2609									
02656	FCRS-2656.118	Faunal-Worked	Drill			No		MC	DHJC	Drill,cf. mule deer,Cannon	8208b	38-2610									
02657	FCRS-2657.119	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8208c	38-2611									
02658	FCRS-2658.81	Faunal-Worked	Flesher			No		MC	DHJC	Odocoileus hemionus, Cannon	8209	38-2613									
02659	FCRS-2659.60	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Broken	8210	38-2617, 38-2618									
02659	FCRS-2659.61	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Broken	8210	38-2617, 38-2618									
02660	FCRS-2660.120	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8211	38-2619									
02661	FCRS-2661.121	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8212	38-2623									
02662	50	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Rhyolite	8213o	38-2625, 38-2626									
02663	FCRS-2663.62	Faunal-Worked	Notched Bo			No		MC	DHJC	cf. mule deer, Rib, Broken	8214	38-2636									
02664	FCRS-2664.122	Faunal-Worked	Punch or Awl			No		MC	DHJC	Punch or Awl,cf. mule deer,Cannon	8215	38-2638									
02665	58	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Silicified wood	8216a	38-2639									
02666	56	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8216b	38-2640									
02667	57	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Quartzite	8216c	38-2641									
02668	KRA-0081	Wood Tool	Populus/Salix stem			No		KA		Populus/Salix stem, shaped	8217a	38-2643									
02669	KRA-0082	Wood Tool	Quercus stem			No		KA		Quercus stem, one end cut and one edge burned	8217b	38-2644									
02670	KRA-0083	Wood Tool	Unknown stem			No		KA		Unknown stem, cut on both ends	8217c	38-2645									
02671	KRA-0084	Wood Tool	Unknown Dicotyledon stem			No		LW	KA	Unkown stem, sharpened on one end	8218a	38-2647									
02672	FCRS-02672	Textile, Wood	Wrapped stick			No		KA	LW	Unknown dicotyledon stem, sinew, no, 14.3 cm long, 0.5 cm diameter; sinew 1.0-3.0 mm wide	8218b	38-2648									
02672	KRA-0085	Textile, Wood	Unknown Dicotyledon stem			No		KA	LW	Unknown Dicotyledon stem, sharpened on one end, other end wrapped with unknown sinew strips	8218b	38-2648									
02673	FCRS-02673	Wood Tool	Cordage			No		KA		Yucca . Structure: 2s-Z, Cordage Diameter: , Knot: Square	8218c	38-2649									
02673	KRA-0086	Wood Tool	Quercus stem			No		KA		Quercus stem, cut on both ends, one end forked, with 2 Yucca fiber string ties	8218c	38-2649									
02674	FCRS-	Textile,	Atlatl dart mainshaft			No		LW	KA	Populus/ Salixstem, sinew, no,	8218d	38-2651									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
	02674	Wood	fragment							19.0 cm long (incomplete), 1.0 cm diameter, 1.2 cm diameter where wrapped											
02674	KRA-0087	Textile, Wood	Populus/Salix stem			No		LW	KA	Populus/Salix stem, cut on one end, with probably hide strip	8218d	38-2651									
02675	FCRS-02675.1	Hide, Cordage	Cordage			No		LW		Yucca, wrapped (Z-wise with hide strip) . Structure: 2s-Z, Cordage Diameter: , Knot: no	8219	38-2654									
02675	FCRS-02675.2	Hide, Cordage	Cordage			No		LW		Animal hide . Structure: 2z-S, Cordage Diameter: , Knot: Square knot	8219	38-2654									
02675	FCRS-02675.4	Hide, Cordage	Cordage			No		LW		Yucca . Structure: 2s-Z, Cordage Diameter: , Knot: no	8219	38-2654									
02676	FCRS-02676	Hide	Hide Artifact			No		LW		Deer. Stiching: no, Dimensions: 12.8 cm long, 1.6 cm wide; 13.5 cm long, 2.7 cm wide.	8220	38-2655									
02677	FCRS-02677	Hide	Hide Artifact			No		LW		Deer. Stiching: no, Dimensions: 6.0 cm long, 3.8 cm wide.	8221	38-2656									
02678	FCRS-02678	Hide	Hide Artifact			No		LW		Deer. Stiching: no, Dimensions: 12.6 cm long, 3.8 cm wide (curled up).	8221b	38-2657									
02679	FCRS-02679	Textile, Vegetal	Cordage			No		LW		Human hair . Structure: 2(2z-S)Z, Cordage Diameter: , Knot: Overhand	8222	38-2658									
02680	FCRS-02680.1 and .2	Textile, Vegetal	Cordage			No		LW		Yucca . Structure: 2s-Z, Cordage Diameter: , Knot: no	8223	38-2659									
02680	FCRS-02680.3	Textile, Vegetal	Cordage			No		LW		Yucca, wrapped (S-wise with turkey quills) . Structure: 2s-Z, Cordage Diameter: , Knot: no	8223	38-2659									
02683	FCRS-02683	Textile	Sandal			No		LW	EJ	Raw Material: Yucca sp., Dimensions8.8 x 4.1 cm, largest fragment	8226a	38-2662									
02684	FCRS-02684	Textile	Sandal			No		LW	EJ	Raw Material: Schoenoplectus sp., Dimensions2.5 x 2.3 cm	8226b	38-2663									
02685	FCRS-02685	Textile	Strap			No		LW	EJ	Raw Material: Schoenoplectus sp., Dimensions18 x 3.9 cm	8227a	38-2664a									
02686	FCRS-02686	Textile	Strap			No		LW	EJ	Raw Material: Schoenoplectus sp., Dimensions31.5 x 4 cm	8227b	38-2664b									
02687	FCRS-02687	Textile	Sandal			No		LW	EJ	Raw Material: Schoenoplectus sp. strips, Yucca sp. ties, Dimensions19.5 x 11.5 cm	8227b	38-2665									
02688	FCRS-02688	Matting	Twined Mat			No		LW	EJ	mat.Structural Technique: open simple twining, s-twist wefts, Raw Material: Schoenoplectus sp. warps, Yucca sp. wefts.	8228	38-2666									
02689	FCRS-02689	Matting	Twined Mat			No		EJ		mat.Structural Technique: open simple twining, s-twist wefts, Raw Material: Schoenoplectus sp. warps, Yucca sp. wefts.	8229	38-2667									
02690	FCRS-02690	Basket	unknown			No		EJ	LW	Structural Techinique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches, Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle,	8230	38-2668									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
										Dimensions: 3.5 x 3.1 cm											
02691	FCRS-02691	Basket	unknown			No		EJ	LW	Structural Techinique: close coiling, basket start?, Raw Materials: Rhus sp., Dimensions: 2.9 cm in diameter x 1.3 cm thick	8231	38-2669									
02693	KRA-0088	Vegetal	Poaceae stems			No		KA		Poaceae stem bundle, almost boat-shaped, hollow in the middle	8233	38-2671									
02694	FCRS-02694.1-.3	Hide, Cordage	Cordage			No		LW		Yucca, wrapped (S-wise with hide strips) . Structure: 2z-S and 2(2s-Z)S, Cordage Diameter: , Knot: no	8234	38-2674									
02695	FCRS-02695.1	Cordage	Cordage			No		LW		Yucca . Structure: 2s-Z, Cordage Diameter: , Knot: no	8235	38-2676									
02695	FCRS-02695.2	Cordage	Cordage			No		LW		Yucca . Structure: 2z-S, Cordage Diameter: , Knot: no	8235	38-2676									
02696	FCRS-02696.1-.3	Cordage	Cordage			No		LW		Yucca . Structure: 2s-Z, Cordage Diameter: , Knot: no	8236	38-2687									
02697	FCRS-02697.1	Cordage	Cordage			No		LW		Yucca . Structure: 2s-Z, Cordage Diameter: , Knot: no	8237	38-2679									
02697	FCRS-02697.2	Cordage	Cordage			No		LW		Yucca . Structure: 2z-S, Cordage Diameter: , Knot: no	8237	38-2679									
02697	FCRS-02697.3	Cordage	Cordage			No		LW		Apocynum (Indian hemp) or Juniper Bark . Structure: 2z-S, Cordage Diameter: , Knot: Overhand	8237	38-2679									
02698	FCRS-02698	Cordage	Cordage			No		LW		Yucca . Structure: 2s-Z, Cordage Diameter: , Knot: no	8238	38-2681									
02699	FCRS-02699	Cordage	Cordage			No		LW		Apocynum (Indian hemp) . Structure: 2(2z-S)Z, Cordage Diameter: , Knot: no	8239	38-2682									
02700	FCRS-02700	Hide, Cordage	Cordage			No		LW		Yucca, tied to hide strip . Structure: 2s-Z, Cordage Diameter: , Knot: Granny knot, square knot	8240	38-2684									
02701	FCRS-02701	Cordage	Cordage			No		LW		Bulrush . Structure: 3-strand braid, Cordage Diameter: , Knot: no	8241	38-2685									
02702	FCRS-02702	Cordage	Cordage			No		LW		Juniper bark . Structure: Z-twist, Cordage Diameter: , Knot: Granny	8242	38-2687									
02703	FCRS-02703.1 and .2	Hide, Textile	Cordage			No		LW		Yucca, wrapped (S-wise with hide strips) . Structure: 2z-S , Cordage Diameter: , Knot: no	8243	38-2690									
02703	FCRS-02703.3	Hide, Textile	Cordage			No		LW		Yucca, wrapped (S-wise with bird skin strips) . Structure: 2z-S, Cordage Diameter: , Knot: no	8243	38-2690									
02704	FCRS-02704	Hide	Rodent Tail			No		LW		Narrow tail of a small animal, probably a rodent, with remains of tan hair at one end.	8244	38-2691									
02705	FCRS-02705.1	Hide	Hide Artifact			No		LW		Unidentified . Stiching: no, Dimensions: 19.0 cm long, 2.3 cm max width.	8245	38-2692									
02705	FCRS-02705.2	Hide	Hide Artifact			No		LW		Deer. Stiching: no, Dimensions: 6.9 cm long, 1.1 cm max width.	8245	38-2692									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
02705	FCRS-02705.3	Hide	Hide Artifact			No		LW		Unidentified . Stiching: no, Dimensions: 9.5 cm long, 1.3 cm max width.	8245	38-2692									
02706	FCRS-02706.1	Hide, Textile	Hide Artifact			No		LW		Squirrel family?. Stiching: no, Dimensions: 16.5 cm long, 5.5 cm (distorted); detached foot fragment 2.5 cm long, 2.0 cm wide .	8246	38-2693									
02706	FCRS-02706.2	Hide, Textile	Hide Artifact			No		LW		Unidentified . Stiching: Running stitch, probably, Dimensions: 19.8 cm long, 9.0 cm max width.	8246	38-2693									
02706	FCRS-02706.3	Hide, Textile	Hide Artifact			No		LW		Deer. Stiching: Running stitch, probably, Dimensions: 28.0 cm long, 10.5 cm max width.	8246	38-2693									
02706	FCRS-02706.4	Hide, Textile	Hide Artifact			No		LW		Deer. Stiching: no, Dimensions: 19.0 cm long, 6.7 cm wide.	8246	38-2693									
02706	FCRS-02706.5	Hide, Textile	Hide Artifact			No		LW		Deer. Stiching: no, Dimensions: 17.1 cm long, 7.1 cm wide.	8246	38-2693									
02706	FCRS-02706.6	Hide, Textile	Hide Artifact			No		LW		Deer. Stiching: no, Dimensions: 17.0 cm long, 3.7 cm wide.	8246	38-2693									
02706	FCRS-02706.7	Hide, Textile				No		LW		Deer. Stiching: no, Dimensions: 5.3 cm long, 3.0 cm wide.	8246	38-2693									
02707	FCRS-02707	Textile	Human Hair			No		LW		Clump of dark brown human hair bound crosswise with modern string.	8247	38-2694									
02708	KRA-0089	Wood Tool	Unknown stem			No		KA		Unknown stem, shaped and fire-hardened	8248a	38-2697b									
02709	KRA-0090	Wood Tool	Unknown stem, with unknown bark strip tie			No		KA		Unknown stem, cut on one end	8248b	38-2697c									
02710	KRA-0091	Wood Tool	Populus/Salix stem			No		KA		Poplulus/Salix stem, with burned ends	8249a	38-2698a									
02711	KRA-0092	Wood Tool	Populus/Salix stem			No		KA		Poplulus/Salix stem, possibly cut on one end	8249b	38-2698b									
02712	KRA-0093	Wood Tool	Unknown Dicotyledon stem			No		KA		Unknown dicotyledon stem, hollowed and cut at both ends	8249c	38-2698c									
02713	FCRS-02713.1	Textile, Wood	Wrapped stick			No		LW	KA	Unknown dicotyledon stem, sinew, feather, no, 8.5 cm long, 0.5 cm diameter; sinew 3.0 mm ave diameter	8250	38-2699									
02713	FCRS-02713.2	Textile, Wood	Juniper Bark			No		LW	KA	Small bundle of juniper bark tied in an overhand knot. See also K. Adams, this volume.	8250	38-2699									
02713	KRA-0094	Textile, Wood	Juniperus bark fiber bundle			No		LW	KA	Juniperus bark fiber bundle, wrapped back over on itself	8250	38-2699									
02713	KRA-0095	Textile, Wood	Unknown Dicotyledon stem, with sinew wrap			No		LW	KA	Unknown stem with sinew wrap	8250	38-2699									
02714	FCRS-02714	Textile, Vegetal	Cordage			No		LW	KA	Juniper bark . Structure: 2s-Z, Cordage Diameter: , Knot: Square	8251	38-2700									
02714	FCRS-02714	Textile, Vegetal	Juniper Bark			No		LW	KA	Large bundle of golden-brown juniper bark, bound crosswise at one end with 2s-Z juniper-bark cordage in a square knot with a self-loop. Other end of bundle is constricted as if formerly bound,	8251	38-2700									

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										but no tie present.											
02714	KRA-0096	Textile, Vegetal	Juniperus bark fiber bundle			No		LW	KA	Juniperus bark fiber bundle, bound at one end with juniper bark cordage	8251	38-2700									
02715	KRA-0097	Vegetal	Pinus ponderosa bark slab			No		KA		Pinus ponderosa bark slab, roughly sub-rectangular	8252	38-2704									
02716	FCRS-2716.123	Faunal-Worked	Awl			No		MC	DHJC	Awl,cf. mule deer,Cannon	8253	38-2709									
02718	52	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8255	38-2716									
02719	55	Flaked Stone	Flaked Facial Tools			No		PG	CG	Scraper, Chert	8256	38-2717									
02720	FCRS-02720	Textile, Feather	Feather			No		LW		Medium-size brown feather with a white tip. Probably the wing feather of a Mallard or Pintail duck (identified by Chuck LaRue).	8257	38-2718									
02722	FCRS-02722	Basket	unknown			No		EJ	LW	Structural Techinique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches, Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle, Dimensions: 5.7 x 1 cm	8259a	38-2720									
02723	FCRS-02723	Basket	unknown			No		EJ	LW	Structural Techinique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches, Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle, Dimensions: 2.7 x 1.1 cm	8259b	38-2721									
02724	FCRS-02724	Textile	Twined Bag			No		LW		6.5 cm long, 3.0 cm wide (curled up), 4-5 cm (flattened)	8260a	38-2724a									
02725	FCRS-02725	Textile	Twined Bag			No		LW		5.1 cm long and 4.9 cm wide; 3.5 cm long, 4.0 cm wide	8260b	38-2724b									
02726	FCRS-02726	Matting	Twined Mat			No		LW	EJ	mat.Structural Technique: open simple twining, s-twist wefts, Raw Material: Schoenoplectus sp. warps, Yucca sp. wefts.	8261	38-2727									
02727	FCRS-02727	Textile, Vegetal	Bullrush stems			No		LW	KA	Z-twisted bundle of bulrush stems and several detached pieces.	8262	38-2730									
02727	KRA-0098	Textile, Vegetal	Scirpus acutus stem rope			No		LW	KA	Scirpus acutus stems twisted into a Z-twist	8262	38-2730									
02728	KRA-0099	Wood Tool	Phragmites australis stem			No		KA		Phragmites australis stem; wrapped with unknown bark strips	8263	38-2732									
02730	59	Flaked Stone	Flaked Facial Tools			No		PG	CG	Unknown, Silicified wood	8265a	38-2735									
02731	60	Flaked Stone	Flaked Facial Tools			No		PG	CG	Notch spokeshave, Siltstone/mudstone	8265b	38-2736									
02732	49	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Chert	8266	38-2737									
02733	FCRS-02733.1 and .2	Cordage	Cordage			No		LW		Yucca . Structure: 2s-Z, Cordage Diameter: , Knot: no	8267	38-2739									
02734	FCRS-	Cordage	Cordage			No		LW		Yucca, wrapped (S-wise with hide	8268	38-2740									

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	02734.1									strip) . Structure: 2z-S, 2s-Z, Cordage Diameter: , Knot: Granny knot, overhand knot											
02734	FCRS-02734.2	Cordage	Cordage			No		LW		Yucca, wrapped (Z-wise with hide strip) . Structure: 2z-Z, Cordage Diameter: , Knot: no	8268	38-2740									
02735	54	Flaked Stone	Flaked Facial Tools			No		PG	CG	Bifacial knife, Siltstone/mudstone	8274	38-0423									
02737	435	Groundstone	Flaked Facial Tools			No		PG	CG	Chopper, Coarse Igneous?	8636	40-1087?	A-12832-X-15								
02738	15	Groundstone	Lithic Tool			No		PG	CG	tool, abrading & battering, sandstone (very fine)	8689e	38-0530									
03600	FCRS-03600	Sandal	Sandal, wickerwork	BC		Yes	UFO	LW		WICKERWORK SANDAL, INCOMPLETE											
03601	FCRS-03601	Sandal	Sandal, wickerwork	BC		Yes	UFO	LW		WICKERWORK SANDAL, INCOMPLETE											
03602	FCRS-03602	Sandal	Sandal, wickerwork	BC		Yes	UFO	LW		WICKERWORK SANDAL, INCOMPLETE											
03603	FCRS-03603	Sandal	Sandal, wickerwork	BC		Yes	UFO	LW		WICKERWORK SANDAL, COMPLETE											
03604	FCRS-03604	Sandal	Sandal, wickerwork	BC		Yes	UFO	LW		WICKERWORK SANDAL, INCOMPLETE											
03605	FCRS-03605	Sandal	Sandal, wickerwork	BC		Yes	UFO	LW		WICKERWORK SANDAL, INCOMPLETE											
03606	FCRS-03606	Basket	Basket, twined	BC		Yes	UFO	LW		TWINED BASKET FROM NARROWLEAF YUCCA PLANT, INCOMPLETE											
03607	FCRS-03607	Vegetal	Vegetal, yucca	BC		Yes	UFO	LW		YUCCA LEAF, FOLDED AND WRAPPED, INCOMPLETE											
03608	FCRS-03608	Bone Tool	Bone Tool	BC		Yes	UFO	LW		BONE AWL, COMPLETE											
03609	FCRS-03609	Vegetal	Vegetal, yucca	BC		Yes	UFO	LW		COILED YUCCA LEAVES, COMPLETE											
03610	FCRS-03610	Vegetal	Vegetal, corn cob	BC		Yes	UFO	LW		CORN COB, INCOMPLETE											
03611	FCRS-03611	Vegetal	Vegetal, yucca	BC		Yes	UFO	LW		COILED YUCCA LEAF, INCOMPLETE											
03612	FCRS-03612	Vegetal	Vegetal, yucca	BC		Yes	UFO	LW		YUCCA-LEAF TIE, COMPLETE											
03613	FCRS-03613	Cordage	Cordage	BC		Yes	UFO	LW		COILED JUNIPER BARK CORDAGE, COMPLETE											
03614	FCRS-03614	Cordage	Cordage	BC		Yes	UFO	LW		CORDAGE BUNDLE AND FRAGMENTS											
03615	FCRS-03615	Vegetal	Vegetal, yucca	BC		Yes	UFO	LW		MASS OF YUCCA FIBER											
03616	FCRS-03616	Vegetal	Vegetal, yucca	BC		Yes	UFO	LW		KNOTTED YUCCA LEAVES, INCOMPLETE											
03617	FCRS-03617	Cordage	Cordage	BC		Yes	UFO	LW		YUCCA AND APOCYNUM CORDAGE FRAGMENTS											
03618	FCRS-03618	Wood	Wood, worked	BC		Yes	UFO	LW		WORKED WOOD											
03619	FCRS-03619	Hide	Hide	BC		Yes	UFO	LW		HIDE STRIPS											

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03620	FCRS-03620	Sandal	Sandal, twill-plaited	BC		Yes	UFO	LW		TWILL-PLAITED SANDAL, INCOMPLETE											
03700	KRA-0100	Vegetal	Lagenaria rind fragment			No		KA		Lagenaria rind fragment		38-2582								University of Michigan Laboratory of Anthropological Archaeology	Lab Number: 3939. Cat Number: 4000-1-6177
03701	KRA-0101	Vegetal	Opuntia (prickly pear) seed			No		KA		Opuntia (prickly pear) seed		38-2635								University of Michigan Laboratory of Anthropological Archaeology	Lab Number: 3937. Cat Number: 4000-1-1245.
03701	KRA-0102	Vegetal	Vicia sp. seeds			No		KA		Vicia sp. seeds		38-2635								University of Michigan Laboratory of Anthropological Archaeology	Lab Number: 3937. Cat Number: 4000-1-1245.
03702	KRA-0103	Vegetal	Vicia sp. seeds			No		KA		Vicia sp. seeds		38-2635								University of Michigan Laboratory of Anthropological Archaeology	Lab Number: 3937. Cat Number: 4000-1-1244.
03703	KRA-0104	Vegetal	Dicotyledon bark strip			No		KA		Dicotyledon bark strip knot		38-2688								University of Michigan Laboratory of Anthropological Archaeology	Lab Number: 3950C. Cat Number: 4000-1-6041.
03703	KRA-0105	Vegetal	Dicotyledon bark strip			No		KA		Dicotyledon bark strip		38-2688								University of Michigan Laboratory of Anthropological Archaeology	Lab Number: 3950C. Cat Number: 4000-1-6041.
03704	KRA-0106	Vegetal	Zea mays cob segment			No		KA		Zea mays cob segment		40-201b								University of Michigan Laboratory of Anthropological Archaeology	Lab Number: 3958. Cat Number: 4000-1-5638.
03704	KRA-0107	Vegetal	Zea mays cob fragment			No		KA		Zea mays cob fragment		40-201b								University of Michigan Laboratory of Anthropological Archaeology	Lab Number: 3958. Cat Number: 4000-1-5638.
03705	KRA-0108	Vegetal	Monocotyledon, likely Yucca	BC		Yes	UFO	KA		Monocotyledon fibro-vascular bundles, likely Yucca							F34b			University of Michigan Laboratory of Anthropological Archaeology	Lab Number: 4440. Cat Number: 4440-1-5793.
03705	KRA-0109	Vegetal	Pronghorn Antelope hair	BC		Yes	UFO	KA		Pronghorn Antelope hair							F34b			University of Michigan Laboratory of Anthropological	Lab Number: 4440. Cat Number:

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																				Archaeology	4440-1-5793.
03706	KRA-0110	Vegetal	Cucurbita moschata rind fragment			No		KA		Cucurbita moschata rind fragment		38-2582								University of Michigan Laboratory of Anthropological Archaeology	Lab Number: 3939? Or 14070?. Cat Number: 4000-1-1455.
03706	KRA-0111	Vegetal	Cucurbita moschata seed			No		KA		Cucurbita moschata seed		38-2582								University of Michigan Laboratory of Anthropological Archaeology	Lab Number: 3939? Or 14070?. Cat Number: 4000-1-1455.
03707	KRA-0112	Vegetal	Poaceae stem fragment			No		KA		Poaceae stem fragment										University of Michigan Laboratory of Anthropological Archaeology	Lab Number: 5?. Cat Number: 12603.
03707	KRA-0113	Vegetal	Dicotyledon leaf fragment			No		KA		Dicotyledon leaf fragment										University of Michigan Laboratory of Anthropological Archaeology	Lab Number: 5?. Cat Number: 12603.
03708	KRA-0114	Vegetal	Cyperus stem			No		KA		Cyperus stem, charred										University of Michigan Laboratory of Anthropological Archaeology	Lab Number: None. Cat Number: 12602.
03708	KRA-0115	Vegetal	Cyperus tuber			No		KA		Cyperus tuber, charred										University of Michigan Laboratory of Anthropological Archaeology	Lab Number: None. Cat Number: 12602.
03709	KRA-0116	Vegetal	Pinus ponderosa bark slab			No		KA	LW	Pinus ponderosa, shaped bark slab										Arizona State Museum	GP 47346
03710	FCRS-03710	Vegetal	Twined Bag			No		KA	LW	19.0 cm long and 24 cm in diameter										Arizona State Museum	GP 47907
03710	KRA-0117	Vegetal	Monocotyledon, likely Yucca			No		KA	LW	Monocotyledon fiber twined bag fragment, likely Yucca										Arizona State Museum	GP 47907
03711	FCRS-03711	Basket	unknown			No		KA	LW	Structural Techinique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches, Raw Materials: Rhus sp. stitches and foundation, Yucca sp. bundle, Dimensions: 6.6 x 1.3 cm										Arizona State Museum	GP 47905
03711	KRA-0118	Basket	Rhus aromatica			No		KA	LW	Rhus aromatica stem basket fragment										Arizona State Museum	GP 47905
03711	KRA-0119	Basket	Monocotyledon, likely Yucca			No		KA	LW	Monocotyledon leaf basket fragment, likely Yucca										Arizona State Museum	GP 47905
03712	FCRS-03712	Basket	unknown			No		KA	LW	Structural Techinique: close coiling, half rod and bundle stacked foundation, noninterlocking stitches, Raw Materials: Rhus sp. stitches and										Arizona State Museum	GP 47355

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										foundation, Yucca sp. bundle, Dimensions: 7.5 x 2.2 cm											
03712	KRA-0120	Basket	Rhus aromatica			No		KA	LW	Rhus aromatica stem basket fragment										Arizona State Museum	GP 47355
03713	FCRS-03713	Vegetal	Cordage			No		KA	LW	Yucca . Structure: 2s-Z, Cordage Diameter: , Knot: no										Arizona State Museum	GP 47361
03713	KRA-0121	Vegetal	Monocotyledon, likely Yucca			No		KA	LW	Monocotyledon leaf twine fragment										Arizona State Museum	GP 47361
03714	KRA-0122	Vegetal	Zea mays cob segment			No		KA	LW	Zea mays cob segment										Arizona State Museum	GP 47904
04000	314	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Siltstone/mudstone	8056	38-765									
04001	316	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thick, Silicified wood	8056	38-772									
04002	315	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Siltstone/mudstone	8056	38-777									
04003	313	Flaked Stone	Flaked Facial Tools			No		PG	CG	Point preform, Rhyolite	8056	38-0091									
04004	90	Flaked Stone	Flaked Facial Tools			No		PG	CG	Denticulate saw, Silicified wood	8116	38-0752									
04005	322	Flaked Stone	Debitage			No		PG	CG	Biface thinning, Silicified wood	8129	38-0863									
04006	51	Flaked Stone	Flaked Facial Tools			No		PG	CG	Biface thin, Siltstone/mudstone	8213	38-2626									
04100	66	Flaked Stone	Flaked Facial Tools			No		PG		Biface thin, Chert	8129	(1095-2)									
04101	65	Flaked Stone	Flaked Facial Tools			No		PG		Biface thick, Siltstone/mudstone	8129	(1095-3)									
04102	8	Flaked Stone	Cores and Nodules			No		PG		DFP core, Chert.	8129	1095.4									
04103	9	Flaked Stone	Cores and Nodules			No		PG		DFP core, Siltstone/mudstone.	8129	1095.5									
04104	320	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8129	1095-6									
04105	41	Flaked Stone	Cores and Nodules			No		PG		Hammerstone, Quartzite.	7961R	00391a									
04106	307	Flaked Stone	Flaked Facial Tools			No		PG		Biface thick, Silicified wood	8056	708-002									
04107	308	Flaked Stone	Flaked Facial Tools			No		PG		Unknown, Siltstone/mudstone	8056	708-04									
04108	309	Flaked Stone	Flaked Facial Tools			No		PG		Biface thick, Chert	8056	708-07									
04109	310	Flaked Stone	Flaked Facial Tools			No		PG		Biface thin, Chert	8056	708-09									
04110	311	Flaked Stone	Flaked Facial Tools			No		PG		Biface thick, Siltstone/mudstone	8056	708-10									
04111	312	Flaked Stone	Flaked Facial Tools			No		PG		Biface thick, Silicified wood	8056	708-12									
04112	18	Flaked Stone	Cores and Nodules			No		PG		DFP core, Siltstone/mudstone.	8056	none (708-5)									
04113	19	Flaked Stone	Cores and Nodules			No		PG		DFP core, Silicified wood.	8056	none (708-8)									

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04114	1577	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8056	708-03									
04115	1581	Flaked Stone	Debitage			No		PG		DFP core, Silicified wood	8056	708-11									
04116	1580	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8056	708-13									
04117	1576	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8056	708-14									
04118	1578	Flaked Stone	Debitage			No		PG		DFP core, Chert	8056	708-15									
04119	1579	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	708-16									
04120	329	Flaked Stone	Debitage			No		PG		DFP core, Quartzite	8129	1095.329									
04121	330	Flaked Stone	Debitage			No		PG		DFP core, Quartzite	8129	1095.330									
04122	331	Flaked Stone	Debitage			No		PG		DFP core, Quartzite	8129	1095.331									
04123	332	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Quartzite	8129	1095.332									
04124	333	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8129	1095.333									
04125	334	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.334									
04126	335	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.335									
04127	336	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.336									
04128	337	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.337									
04129	338	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8129	1095.338									
04130	339	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.339									
04131	340	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.340									
04132	341	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.341									
04133	342	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.342									
04134	343	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.343									
04135	344	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.344									
04136	345	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.345									
04137	346	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.346									
04138	347	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.347									
04139	348	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.348									

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04140	349	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.349									
04141	350	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.350									
04142	351	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.351									
04143	352	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.352									
04144	353	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.353									
04145	354	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.354									
04146	355	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.355									
04147	356	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8129	1095.356									
04148	357	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8129	1095.357									
04149	358	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.358									
04150	359	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.359									
04151	360	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.360									
04152	361	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8129	1095.361									
04153	362	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.362									
04154	363	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8129	1095.363									
04155	364	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8129	1095.364									
04156	365	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.365									
04157	366	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.366									
04158	367	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.367									
04159	368	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8129	1095.368									
04160	369	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8129	1095.369									
04161	370	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.370									
04162	371	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8129	1095.371									
04163	372	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.372									
04164	373	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8129	1095.373									
04165	374	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8129	1095.374									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04166	375	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.375									
04167	376	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8129	1095.376									
04168	377	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8129	1095.377									
04169	378	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8129	1095.378									
04170	379	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8129	1095.379									
04171	380	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Siltstone/mudstone	8129	1095.380									
04172	381	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.381									
04173	382	Flaked Stone	Debitage			No		PG		DFP core, Silicified wood	8129	1095.382									
04174	383	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8129	1095.383									
04175	384	Flaked Stone	Debitage			No		PG		Core edge prep, Silicified wood	8129	1095.384									
04176	385	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8129	1095.385									
04177	386	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8129	1095.386									
04178	387	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.387									
04179	388	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.388									
04180	389	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.389									
04181	390	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.390									
04182	391	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.391									
04183	392	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.392									
04184	393	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8129	1095.393									
04185	394	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.394									
04186	395	Flaked Stone	Debitage			No		PG		Biface thinning?, Silicified wood	8129	1095.395									
04187	396	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8129	1095.396									
04188	397	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.397									
04189	398	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.398									
04190	399	Flaked Stone	Debitage			No		PG		Core edge prep, Silicified wood	8129	1095.399									
04191	400	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8129	1095.400									

Chapter 7 Appendix Database: Data Table Used as Reference Tool for Reporting Purposes

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04192	401	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8129	1095.401									
04193	402	Flaked Stone	Debitage			No		PG		Biface thinning, Chalcedony	8129	1095.402									
04194	403	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8129	1095.403									
04195	404	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8129	1095.404									
04196	405	Flaked Stone	Debitage			No		PG		Biface thinning, Chalcedony	8129	1095.405									
04197	406	Flaked Stone	Debitage			No		PG		Alternate, Chert	8129	1095.406									
04198	407	Flaked Stone	Debitage			No		PG		DFP core, Chert	8129	1095.407									
04199	408	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8129	1095.408									
04200	409	Flaked Stone	Debitage			No		PG		Alternate, Chert	8129	1095.409									
04201	410	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.410									
04202	411	Flaked Stone	Debitage			No		PG		Alternate, Chert	8129	1095.411									
04203	412	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8129	1095.412									
04204	414	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.414									
04205	415	Flaked Stone	Debitage			No		PG		Maint/rejuv, Silicified wood	8129	1095.415									
04206	416	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8129	1095.416									
04207	417	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8129	1095.417									
04208	418	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8129	1095.418									
04209	419	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8129	1095.419									
04210	420	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8129	1095.420									
04211	421	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8129	1095.421									
04212	422	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.422									
04213	423	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8129	1095.423									
04214	424	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.424									
04215	425	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8129	1095.425									
04216	426	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.426									
04217	427	Flaked Stone	Debitage			No		PG		DFP core, Silicified wood	8129	1095.427									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04218	428	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8129	1095.428									
04219	429	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8129	1095.429									
04220	430	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8129	1095.430									
04221	431	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8129	1095.431									
04222	432	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8129	1095.432									
04223	433	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8129	1095.433									
04224	434	Flaked Stone	Debitage			No		PG		Alternate, Chert	8129	1095.434									
04225	435	Flaked Stone	Debitage			No		PG		Alternate, Chert	8129	1095.435									
04226	436	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8129	1095.436									
04227	437	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8129	1095.437									
04228	438	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8129	1095.438									
04229	439	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8129	1095.439									
04230	440	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8129	1095.440									
04231	444	Flaked Stone	Debitage			No		PG		Alternate, Chert	8129	1095.444									
04232	445	Flaked Stone	Debitage			No		PG		DFP core, Chert	8129	1095.445									
04233	446	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8129	1095.446									
04234	447	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8129	1095.447									
04235	448	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Sandstone	8129	1095.448									
04236	449	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Sandstone	8129	1095.449									
04237	450	Flaked Stone	Debitage			No		PG		Biface thinning, Rhyolite	8129	1095.450									
04238	451	Flaked Stone	Debitage			No		PG		Biface thinning, Rhyolite	8129	1095.451									
04239	452	Flaked Stone	Debitage			No		PG		Biface thinning, Rhyolite	8129	1095.452									
04240	453	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8129	1095.453									
04241	454	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Sandstone	8129	1095.454									
04242	455	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8129	1095.455									
04243	456	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.456									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04244	457	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.457									
04245	458	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.458									
04246	459	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.459									
04247	460	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.460									
04248	461	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8129	1095.461									
04249	462	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.462									
04250	463	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.463									
04251	464	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8129	1095.464									
04252	465	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.465									
04253	466	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8129	1095.466									
04254	467	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.467									
04255	468	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.468									
04256	469	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.469									
04257	470	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8129	1095.470									
04258	471	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.471									
04259	472	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.472									
04260	473	Flaked Stone	Debitage			No		PG		Core edge prep, Obsidian	8129	1095.473									
04261	474	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.474									
04262	475	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8129	1095.475									
04263	476	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.476									
04264	477	Flaked Stone	Debitage			No		PG		DFP core, Obsidian	8129	1095.477									
04265	478	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8129	1095.478									
04266	479	Flaked Stone	Debitage			No		PG		DFP core, Obsidian	8129	1095.479									
04267	480	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8129	1095.480									
04268	481	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.481									
04269	482	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.482									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04270	483	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8129	1095.483									
04271	484	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8129	1095.484									
04272	1206	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144 (709-002)									
04273	1207	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144 (709-003)									
04274	1208	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8056	38-144 (709-004)									
04275	1209	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144 (709-005, etc)									
04276	1210	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04277	1211	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04278	1212	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04279	1213	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04280	1214	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04281	1215	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04282	1216	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04283	1217	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04284	1218	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04285	1219	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04286	1220	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04287	1221	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04288	1222	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04289	1223	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04290	1224	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04291	1225	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04292	1226	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04293	1227	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04294	1228	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04295	1229	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04296	1230	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04297	1231	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04298	1232	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04299	1233	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04300	1234	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04301	1235	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04302	1236	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04303	1237	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04304	1238	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04305	1239	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04306	1240	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04307	1241	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04308	1242	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04309	1243	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04310	1244	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04311	1245	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04312	1246	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04313	1247	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04314	1248	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Siltstone/mudstone	8056	38-144									
04315	1249	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04316	1250	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Siltstone/mudstone	8056	38-144									
04317	1251	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Siltstone/mudstone	8056	38-144									
04318	1252	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04319	1253	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04320	1254	Flaked Stone	Debitage			No		PG		Tool spall, Siltstone/mudstone	8056	38-144									
04321	1255	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04322	1256	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04323	1257	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04324	1258	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04325	1259	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04326	1260	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04327	1261	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04328	1262	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04329	1263	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04330	1264	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04331	1265	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04332	1266	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04333	1267	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04334	1268	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Siltstone/mudstone	8056	38-144									
04335	1269	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8056	38-144									
04336	1270	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8056	38-144									
04337	1271	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8056	38-144									
04338	1272	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8056	38-144									
04339	1273	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Siltstone/mudstone	8056	38-144									
04340	1274	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04341	1275	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8056	38-144									
04342	1276	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04343	1277	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8056	38-144									
04344	1278	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04345	1279	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04346	1280	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04347	1281	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04348	1282	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04349	1283	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04350	1284	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04351	1285	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04352	1286	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04353	1287	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04354	1288	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04355	1289	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04356	1290	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8056	38-144									
04357	1291	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Siltstone/mudstone	8056	38-144									
04358	1292	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8056	38-144									
04359	1293	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8056	38-144									
04360	1294	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04361	1295	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04362	1296	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8056	38-144									
04363	1297	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Siltstone/mudstone	8056	38-144									
04364	1298	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04365	1299	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04366	1300	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04367	1301	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04368	1302	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04369	1303	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04370	1304	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04371	1305	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8056	38-144									
04372	1306	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04373	1307	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04374	1308	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8056	38-144									
04375	1309	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04376	1310	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04377	1311	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8056	38-144									
04378	1312	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04379	1313	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04380	1314	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04381	1315	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04382	1316	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8056	38-144									
04383	1317	Flaked Stone	Debitage			No		PG		Core top prep, Silicified wood	8056	38-144									
04384	1318	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04385	1319	Flaked Stone	Debitage			No		PG		bulb removal, Silicified wood	8056	38-144									
04386	1320	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04387	1321	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8056	38-144									
04388	1322	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04389	1323	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04390	1324	Flaked Stone	Debitage			No		PG		DFP core, Silicified wood	8056	38-144									
04391	1325	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8056	38-144									
04392	1326	Flaked Stone	Debitage			No		PG		DFP core, Silicified wood	8056	38-144									
04393	1327	Flaked Stone	Debitage			No		PG		DFP core, Silicified wood	8056	38-144									
04394	1329	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04395	1330	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04396	1331	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04397	1332	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04398	1333	Flaked Stone	Debitage			No		PG		Biface thinning?, Silicified wood	8056	38-144									
04399	1334	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04400	1335	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8056	38-144									
04401	1336	Flaked Stone	Debitage			No		PG		bulb removal, Silicified wood	8056	38-144									
04402	1337	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04403	1338	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8056	38-144									
04404	1339	Flaked Stone	Debitage			No		PG		Core edge prep, Silicified wood	8056	38-144									
04405	1340	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04406	1341	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04407	1342	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04408	1343	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8056	38-144									
04409	1344	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8056	38-144									
04410	1345	Flaked Stone	Debitage			No		PG		Core edge prep, Silicified wood	8056	38-144									
04411	1346	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8056	38-144									
04412	1347	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8056	38-144									
04413	1348	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04414	1349	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04415	1350	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04416	1351	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04417	1352	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8056	38-144									
04418	1353	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04419	1354	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04420	1355	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04421	1356	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8056	38-144									
04422	1357	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04423	1358	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04424	1359	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04425	1360	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8056	38-144									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04426	1361	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04427	1362	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04428	1363	Flaked Stone	Debitage			No		PG		Core edge prep, Silicified wood	8056	38-144									
04429	1364	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8056	38-144									
04430	1365	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04431	1366	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8056	38-144									
04432	1367	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8056	38-144									
04433	1368	Flaked Stone	Debitage			No		PG		DFP core, Silicified wood	8056	38-144									
04434	1369	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04435	1370	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8056	38-144									
04436	1371	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8056	38-144									
04437	1372	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8056	38-144									
04438	1373	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04439	1374	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04440	1375	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Siltstone/mudstone	8056	38-144									
04441	1376	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8056	38-144									
04442	1377	Flaked Stone	Debitage			No		PG		Biface thinning, Rhyolite	8056	38-144									
04443	1378	Flaked Stone	Debitage			No		PG		Biface thinning, Rhyolite	8056	38-144									
04444	1379	Flaked Stone	Debitage			No		PG		Biface thinning, Rhyolite	8056	38-144									
04445	1380	Flaked Stone	Debitage			No		PG		Biface thinning, Rhyolite	8056	38-144									
04446	1381	Flaked Stone	Debitage			No		PG		Biface thinning, Rhyolite	8056	38-144									
04447	1382	Flaked Stone	Debitage			No		PG		Biface thinning, Rhyolite	8056	38-144									
04448	1383	Flaked Stone	Debitage			No		PG		Biface thinning, Rhyolite	8056	38-144									
04449	1384	Flaked Stone	Debitage			No		PG		Core edge prep, Rhyolite	8056	38-144									
04450	1385	Flaked Stone	Debitage			No		PG		Core edge prep, Quartzite	8056	38-144									
04451	1386	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04452	1387	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04453	1388	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8056	38-144									
04454	1389	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04455	1390	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04456	1391	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8056	38-144									
04457	1392	Flaked Stone	Debitage			No		PG		Tool spall, Silicified wood	8056	38-144									
04458	1393	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8056	38-144									
04459	1394	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04460	1395	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04461	1396	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04462	1397	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04463	1398	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8056	38-144									
04464	1399	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8056	38-144									
04465	1400	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8056	38-144									
04466	1401	Flaked Stone	Debitage			No		PG		Biface thinning, Chalcedony	8056	38-144									
04467	1402	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8056	38-144									
04468	1403	Flaked Stone	Debitage			No		PG		DFP core?, Silicified wood	8056	38-144									
04469	1404	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04470	1405	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04471	1406	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04472	1407	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04473	1408	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04474	1409	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04475	1410	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04476	1411	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04477	1412	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04478	1413	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04479	1414	Flaked Stone	Debitage			No		PG		Alternate, Chert	8056	38-144									
04480	1415	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04481	1416	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04482	1417	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04483	1418	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04484	1419	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04485	1420	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04486	1421	Flaked Stone	Debitage			No		PG		Core edge prep, Chert	8056	38-144									
04487	1422	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04488	1423	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8056	38-144									
04489	1424	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04490	1425	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04491	1426	Flaked Stone	Debitage			No		PG		DFP core, Silicified wood	8056	38-144									
04492	1427	Flaked Stone	Debitage			No		PG		Core edge prep, Silicified wood	8056	38-144									
04493	1428	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04494	1429	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04495	1430	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8056	38-144									
04496	1431	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8056	38-144									
04497	1432	Flaked Stone	Debitage			No		PG		Core edge prep, Chalcedony	8056	38-144									
04498	1433	Flaked Stone	Debitage			No		PG		Biface thinning, Chalcedony	8056	38-144									
04499	1434	Flaked Stone	Debitage			No		PG		DFP core, Chert	8056	38-144									
04500	1435	Flaked Stone	Debitage			No		PG		Biface thinning, Chalcedony	8056	38-144									
04501	1436	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8056	38-144									
04502	1437	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04503	1438	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04504	1439	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04505	1440	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8056	38-144									
04506	1441	Flaked Stone	Debitage			No		PG		bulb removal, Chert	8056	38-144									
04507	1442	Flaked Stone	Debitage			No		PG		Tool spall, Silicified wood	8056	38-144									
04508	1443	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8056	38-144									
04509	1444	Flaked Stone	Debitage			No		PG		Alternate, Chert	8056	38-144									
04510	1445	Flaked Stone	Debitage			No		PG		Alternate, Chert	8056	38-144									
04511	1446	Flaked Stone	Debitage			No		PG		Alternate, Chert	8056	38-144									
04512	1447	Flaked Stone	Debitage			No		PG		Alternate, Chert	8056	38-144									
04513	1448	Flaked Stone	Debitage			No		PG		Core edge prep, Silicified wood	8056	38-144									
04514	1449	Flaked Stone	Debitage			No		PG		Alternate, Chert	8056	38-144									
04515	1450	Flaked Stone	Debitage			No		PG		Alternate, Chert	8056	38-144									
04516	1451	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chalcedony	8056	38-144									
04517	1452	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04518	1453	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8056	38-144									
04519	1454	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8056	38-144									
04520	1455	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04521	1456	Flaked Stone	Debitage			No		PG		Biface thinning, Chert?	8056	38-144									
04522	1457	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04523	1458	Flaked Stone	Debitage			No		PG		Core edge prep, Chert	8056	38-144									
04524	1459	Flaked Stone	Debitage			No		PG		Biface thinning, Quartzite	8056	38-144									
04525	1460	Flaked Stone	Debitage			No		PG		DFP core, Quartzite	8056	38-144									
04526	1461	Flaked Stone	Debitage			No		PG		Biface thinning, Quartzite	8056	38-144									
04527	1462	Flaked Stone	Debitage			No		PG		Maint/rejuv, Quartzite	8056	38-144									
04528	1463	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Quartzite	8056	38-144									
04529	1464	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Quartzite	8056	38-144									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04530	1465	Flaked Stone	Debitage			No		PG		Maint/rejuv, Quartzite	8056	38-144									
04531	1466	Flaked Stone	Debitage			No		PG		Maint/rejuv, Quartzite	8056	38-144									
04532	1467	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8056	38-144									
04533	1468	Flaked Stone	Debitage			No		PG		Core edge prep, Chalcedony	8056	38-144									
04534	1469	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04535	1470	Flaked Stone	Debitage			No		PG		Core edge prep, Quartzite	8056	38-144									
04536	1471	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04537	1472	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04538	1473	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04539	1474	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8056	38-144									
04540	1475	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8056	38-144									
04541	1476	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8056	38-144									
04542	1477	Flaked Stone	Debitage			No		PG		Core edge prep, Chert	8056	38-144									
04543	1478	Flaked Stone	Debitage			No		PG		Alternate, Chert	8056	38-144									
04544	1479	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8056	38-144									
04545	1480	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8056	38-144									
04546	1481	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Quartzite	8056	38-144									
04547	1482	Flaked Stone	Debitage			No		PG		DFP core, Chert	8056	38-144									
04548	1483	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04549	1484	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8056	38-144									
04550	1485	Flaked Stone	Debitage			No		PG		Core edge prep, Silicified wood	8056	38-144									
04551	1486	Flaked Stone	Debitage			No		PG		Alternate, Chert	8056	38-144									
04552	1487	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8056	38-144									
04553	1488	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8056	38-144									
04554	1489	Flaked Stone	Debitage			No		PG		Maint/rejuv, Chalcedony	8056	38-144									
04555	1490	Flaked Stone	Debitage			No		PG		Tool spall, Quartzite	8056	38-144									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04556	1491	Flaked Stone	Debitage			No		PG		Biface thinning, Chert?	8056	38-144									
04557	1492	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04558	1493	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04559	1494	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04560	1495	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04561	1496	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04562	1497	Flaked Stone	Debitage			No		PG		bulb removal, Obsidian	8056	38-144									
04563	1498	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04564	1499	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04565	1500	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04566	1501	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04567	1502	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04568	1503	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04569	1504	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04570	1505	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8056	38-144									
04571	1506	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04572	1507	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8056	38-144									
04573	1508	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8056	38-144									
04574	1509	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8056	38-144									
04575	1510	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8056	38-144									
04576	1511	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04577	1512	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8056	38-144									
04578	1513	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04579	1514	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04580	1515	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04581	1516	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04582	1517	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04583	1518	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04584	1519	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04585	1520	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04586	1521	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8056	38-144									
04587	1522	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8056	38-144									
04588	1523	Flaked Stone	Debitage			No		PG		Tool spall, Obsidian	8056	38-144									
04589	1524	Flaked Stone	Debitage			No		PG		Tool spall, Obsidian	8056	38-144									
04590	1525	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04591	1526	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04592	1527	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04593	1528	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04594	1529	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04595	1530	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04596	1531	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04597	1532	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04598	1533	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04599	1534	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04600	1535	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04601	1536	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04602	1537	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04603	1538	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04604	1539	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8056	38-144									
04605	1540	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8056	38-144									
04606	1541	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8056	38-144									
04607	1542	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04608	1543	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8056	38-144									
04609	1544	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8056	38-144									
04610	1545	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8056	38-144									
04611	1546	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8056	38-144									
04612	1547	Flaked Stone	Debitage			No		PG		Core edge prep, Obsidian	8056	38-144									
04613	1548	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8056	38-144									
04614	1549	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04615	1550	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04616	1551	Flaked Stone	Debitage			No		PG		Core edge prep, Obsidian	8056	38-144									
04617	1552	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04618	1553	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8056	38-144									
04619	1554	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8056	38-144									
04620	1555	Flaked Stone	Debitage			No		PG		Core edge prep, Obsidian	8056	38-144									
04621	1556	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04622	1557	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04623	1558	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04624	1559	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04625	1560	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04626	1561	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8056	38-144									
04627	1562	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8056	38-144									
04628	1563	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8056	38-144									
04629	1564	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8056	38-144									
04630	1565	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8056	38-144									
04631	1566	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8056	38-144									
04632	1567	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04633	1568	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04634	1569	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04635	1570	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8056	38-144									
04636	1571	Flaked Stone	Debitage			No		PG		Core edge prep, Obsidian	8056	38-144									
04637	1572	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8056	38-144									
04638	1573	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8056	38-144 (709-376)									
04639	1574	Flaked Stone	Debitage			No		PG		DFP core, Silicified wood	8056	38-144 (709-377)									
04640	1575	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8056	38-144 (709-379)									
04641	17	Flaked Stone	Cores and Nodules			No		PG		DFP core, Chert.	8056	38-144 (709-378)									
04642	298	Flaked Stone	Flaked Facial Tools			No		PG		Projectile Point, Obsidian	8056	38-0144 (709-367)									
04643	299	Flaked Stone	Flaked Facial Tools			No		PG		retouched flake, Siltstone/mudstone	8056	38-0144 (709-368)									
04644	300	Flaked Stone	Flaked Facial Tools			No		PG		Projectile Point, Siltstone/mudstone	8056	38-0144 (709-369)									
04645	301	Flaked Stone	Flaked Facial Tools			No		PG		Biface thin, Silicified wood	8056	38-0144 (709-372)									
04646	302	Flaked Stone	Flaked Facial Tools			No		PG		Biface thick, Silicified wood	8056	38-0144 (709-373)									
04647	303	Flaked Stone	Flaked Facial Tools			No		PG		Bifacial knife, Chert	8056	38-0144 (709-374)									
04648	304	Flaked Stone	Flaked Facial Tools			No		PG		Denticulate saw?, Chert	8056	38-0144 (709-375)									
04649	305	Flaked Stone	Flaked Facial Tools			No		PG		retouched flake, Chalcedony	8056	38-0144 (709-376)									
04650	11	Stone-Unworked	Lithic Tool			No		PG		manuport, manuport, metamorphic pebble	8056	38-144 (709-380)									
04651	428	Flaked Stone	Flaked Facial Tools			No		PG		Scraper, Obsidian	8043	38-0024B (665-002)									
04652	429	Flaked Stone	Flaked Facial Tools			No		PG		Biface thick, Siltstone/mudstone	8043	38-0024 (665-003)									
04653	430	Flaked Stone	Flaked Facial Tools			No		PG		retouched flake, Siltstone/mudstone	8043	38-0024 (665-006)									
04654	355	Flaked Stone	Flaked Facial Tools			No		PG		Projectile Point, Obsidian	8043	38-0024 (665-182)									
04655	356	Flaked Stone	Flaked Facial Tools			No		PG		Scraper, Siltstone/mudstone	8043	38-0024 (665-183									
04656	357	Flaked Stone	Flaked Facial Tools			No		PG		Biface thick, Chert	8043	38-0024 (665-184)									
04657	1773	Flaked Stone	Debitage			No		PG		DFP core, Chert	8043	38-24 (665-004)									
04658	1774	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8043	38-24 (665-005)									
04659	1775	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8043	38-24 (665-007)									

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04660	1592	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8043	38-24 (665-008)									
04661	1594	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8043	38-24 (665-010)									
04662	1595	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8043	38-24 (665-011)									
04663	1596	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24 (665-012, etc)									
04664	1597	Flaked Stone	Debitage			No		PG		Biface thinning?, Siltstone/mudstone	8043	38-24									
04665	1598	Flaked Stone	Debitage			No		PG		Biface thinning?, Siltstone/mudstone	8043	38-24									
04666	1599	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04667	1600	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04668	1601	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04669	1602	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04670	1603	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04671	1604	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04672	1605	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04673	1606	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04674	1607	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04675	1608	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04676	1609	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04677	1610	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04678	1611	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04679	1612	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04680	1613	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04681	1614	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04682	1615	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04683	1616	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04684	1617	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04685	1618	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8043	38-24									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04686	1619	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Siltstone/mudstone	8043	38-24									
04687	1620	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8043	38-24									
04688	1621	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04689	1622	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04690	1623	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04691	1624	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8043	38-24									
04692	1625	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8043	38-24									
04693	1626	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04694	1627	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04695	1628	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04696	1629	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8043	38-24									
04697	1630	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8043	38-24									
04698	1631	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8043	38-24									
04699	1632	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8043	38-24									
04700	1633	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8043	38-24									
04701	1634	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8043	38-24									
04702	1635	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8043	38-24									
04703	1636	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8043	38-24									
04704	1637	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8043	38-24									
04705	1638	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8043	38-24									
04706	1639	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8043	38-24									
04707	1640	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04708	1641	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04709	1642	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04710	1643	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04711	1644	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8043	38-24									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04712	1645	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Siltstone/mudstone	8043	38-24									
04713	1646	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Siltstone/mudstone	8043	38-24									
04714	1647	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8043	38-24									
04715	1648	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04716	1649	Flaked Stone	Debitage			No		PG		DFP core, Chalcedony	8043	38-24									
04717	1650	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04718	1651	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04719	1652	Flaked Stone	Debitage			No		PG		DFP core, Silicified wood	8043	38-24									
04720	1653	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8043	38-24									
04721	1654	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04722	1655	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04723	1656	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04724	1657	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04725	1658	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8043	38-24									
04726	1659	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8043	38-24									
04727	1660	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Silicified wood	8043	38-24									
04728	1661	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04729	1662	Flaked Stone	Debitage			No		PG		Core edge prep, Silicified wood	8043	38-24									
04730	1663	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04731	1665	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04732	1666	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04733	1667	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04734	1668	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04735	1669	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04736	1670	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04737	1671	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04738	1672	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04739	1673	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8043	38-24									
04740	1674	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8043	38-24									
04741	1675	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8043	38-24									
04742	1676	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8043	38-24									
04743	1677	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8043	38-24									
04744	1678	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8043	38-24									
04745	1679	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8043	38-24									
04746	1680	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8043	38-24									
04747	1681	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8043	38-24									
04748	1682	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8043	38-24									
04749	1683	Flaked Stone	Debitage			No		PG		Core edge prep, Chert	8043	38-24									
04750	1684	Flaked Stone	Debitage			No		PG		Core edge prep, Chert	8043	38-24									
04751	1685	Flaked Stone	Debitage			No		PG		Alternate, Chalcedony	8043	38-24									
04752	1686	Flaked Stone	Debitage			No		PG		Alternate, Chalcedony	8043	38-24									
04753	1687	Flaked Stone	Debitage			No		PG		Alternate, Chalcedony	8043	38-24									
04754	1688	Flaked Stone	Debitage			No		PG		Core edge prep, Chalcedony	8043	38-24									
04755	1689	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8043	38-24									
04756	1690	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8043	38-24									
04757	1691	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8043	38-24									
04758	1692	Flaked Stone	Debitage			No		PG		Biface thinning, Chalcedony	8043	38-24									
04759	1693	Flaked Stone	Debitage			No		PG		Biface thinning, Chalcedony	8043	38-24									
04760	1694	Flaked Stone	Debitage			No		PG		Core edge prep, Silicified wood	8043	38-24									
04761	1695	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8043	38-24									
04762	1696	Flaked Stone	Debitage			No		PG		Alternate, Chert?	8043	38-24									
04763	1697	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Chert	8043	38-24									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04764	1698	Flaked Stone	Debitage			No		PG		Core edge prep, Quartzite	8043	38-24									
04765	1699	Flaked Stone	Debitage			No		PG		Core edge prep, Quartzite	8043	38-24									
04766	1700	Flaked Stone	Debitage			No		PG		Core edge prep, Quartzite	8043	38-24									
04767	1701	Flaked Stone	Debitage			No		PG		Core edge prep, Rhyolite	8043	38-24									
04768	1702	Flaked Stone	Debitage			No		PG		Biface thinning, Rhyolite	8043	38-24									
04769	1703	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8043	38-24									
04770	1704	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8043	38-24									
04771	1705	Flaked Stone	Debitage			No		PG		Tool spall, Quartzite	8043	38-24									
04772	1706	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Siltstone/mudstone	8043	38-24									
04773	1707	Flaked Stone	Debitage			No		PG		Core edge prep, Siltstone/mudstone	8043	38-24									
04774	1708	Flaked Stone	Debitage			No		PG		Core edge prep, Limestone	8043	38-24									
04775	1709	Flaked Stone	Debitage			No		PG		Tool spall, Limestone	8043	38-24									
04776	1710	Flaked Stone	Debitage			No		PG		DFP core, chert?	8043	38-24									
04777	1711	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04778	1712	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04779	1713	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04780	1714	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04781	1715	Flaked Stone	Debitage			No		PG		Alternate?, Obsidian	8043	38-24									
04782	1716	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04783	1717	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8043	38-24									
04784	1718	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04785	1719	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04786	1720	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04787	1721	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04788	1722	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8043	38-24									
04789	1723	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8043	38-24									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04790	1724	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8043	38-24									
04791	1725	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8043	38-24									
04792	1726	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04793	1727	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04794	1728	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04795	1729	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8043	38-24									
04796	1730	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04797	1731	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04798	1732	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04799	1733	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04800	1734	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04801	1735	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04802	1736	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04803	1737	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04804	1738	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8043	38-24									
04805	1739	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04806	1740	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04807	1741	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04808	1742	Flaked Stone	Debitage			No		PG		Core edge prep, Obsidian	8043	38-24									
04809	1743	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8043	38-24									
04810	1744	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8043	38-24									
04811	1745	Flaked Stone	Debitage			No		PG		Core edge prep, Obsidian	8043	38-24									
04812	1746	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04813	1747	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8043	38-24									
04814	1748	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8043	38-24									
04815	1749	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8043	38-24									

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04816	1750	Flaked Stone	Debitage			No		PG		pressure, Obsidian	8043	38-24									
04817	1751	Flaked Stone	Debitage			No		PG		pressure, Obsidian	8043	38-24									
04818	1752	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04819	1753	Flaked Stone	Debitage			No		PG		Tool spall, Obsidian	8043	38-24									
04820	1754	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8043	38-24									
04821	1755	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04822	1756	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24									
04823	1757	Flaked Stone	Debitage			No		PG		Biface thinning?, Obsidian	8043	38-24									
04824	1758	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8043	38-24									
04825	1759	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8043	38-24 (665-174)									
04826	1760	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Obsidian	8043	38-24 (665-175)									
04827	1761	Flaked Stone	Debitage			No		PG		DFP core, Chert	8043	38-24 (665-177)									
04828	1762	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8043	38-24 (665-178									
04829	1763	Flaked Stone	Debitage			No		PG		Biface thinning, Chalcedony	8043	38-24									
04830	1764	Flaked Stone	Debitage			No		PG		DFP core, Chalcedony	8043	38-24									
04831	1765	Flaked Stone	Debitage			No		PG		Core edge prep, Silicified wood	8043	38-24									
04832	1766	Flaked Stone	Debitage			No		PG		Biface thinning, Chert	8043	38-24									
04833	1588	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8043	38-24									
04834	1589	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8043	38-24									
04835	1585	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8043	38-24									
04836	1586	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8043	38-24									
04837	1587	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8043	38-24									
04838	1590	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8043	38-24									
04839	1591	Flaked Stone	Debitage			No		PG		DFP core, Siltstone/mudstone	8043	38-24									
04840	1777	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8044	38-25 (666-02)									
04841	1778	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8044	38-25 (666-03)									

Chapter 7 Appendix Database: Data Table Used as Reference Tool for Reporting Purposes

FCRS Number	Analysis ID	Material ID	Object Type	Feature	Individual	NAGPRA?	NAGPRA Determination	Primary Analyst	Secondary Analyst	Object Description	CU Catalog Number	CU Field Number	CU Other Number	MVNP Accession Number	MVNP Catalog Number	Peabody Number	Flora Field Number	Flora Burial Number	Flora Object Number	Institution Name	Institution Number
04842	1779	Flaked Stone	Debitage			No		PG		Alternate, Obsidian	8044	38-25 (666-04)									
04843	1780	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8044	38-25 (666-05)									
04844	1781	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8044	38-25 (666-06)									
04845	1782	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8044	38-25 (666-07)									
04846	1783	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8044	38-25 (666-08)									
04847	1784	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8044	38-25 (666-09)									
04848	1785	Flaked Stone	Debitage			No		PG		Biface thinning, Obsidian	8044	38-25 (666-10)									
04849	1786	Flaked Stone	Debitage			No		PG		DFP core, Obsidian	8044	38-25 (666-11)									
04850	67	Flaked Stone	Flaked Facial Tools			No		PG		retouched flake, Obsidian	8129	1095-441									
04851	68	Flaked Stone	Flaked Facial Tools			No		PG		Scraper, Obsidian	8129	1095-442									
04852	69	Flaked Stone	Flaked Facial Tools			No		PG		retouched flake, Obsidian	8129	1095-443									
04853	70	Flaked Stone	Flaked Facial Tools			No		PG		Denticulate saw, Chert	8129	1095-485									
04854	71	Flaked Stone	Flaked Facial Tools			No		PG		Unknown, Chert	8129	1095-486									
04855	40	Flaked Stone	Debitage			No		PG		Biface thinning, Silicified wood	8135	38-1133									
04856	87	Flaked Stone	Debitage			No		PG		Alternate, Silicified wood	8135	38-1145									
04857	135	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Rhyolite	8135	38-1165a (2 w/ same lable)									
04858	286	Flaked Stone	Debitage			No		PG		Indetere/nondescript, Siltstone/mudstone	8153	38-1825									
04859	625	Flaked Stone	Debitage			No		PG		DFP core, Chert	8168	38-871									
04860	1593	Flaked Stone	Debitage			No		PG		Alternate, Siltstone/mudstone	8043	38-24 (665-009)									
04861	527	Flaked Stone	Debitage			No		PG		Biface thinning, Siltstone/mudstone	8176	38-2294a ('A' afixed to since duplicted CU Field #									
04862	13	Stone-Unworked	Possible Lithic Ceremonial Item			No		PG		ceremonial?, abraded crystal, biotite mica crystals	8043	38-24 (665-176)									