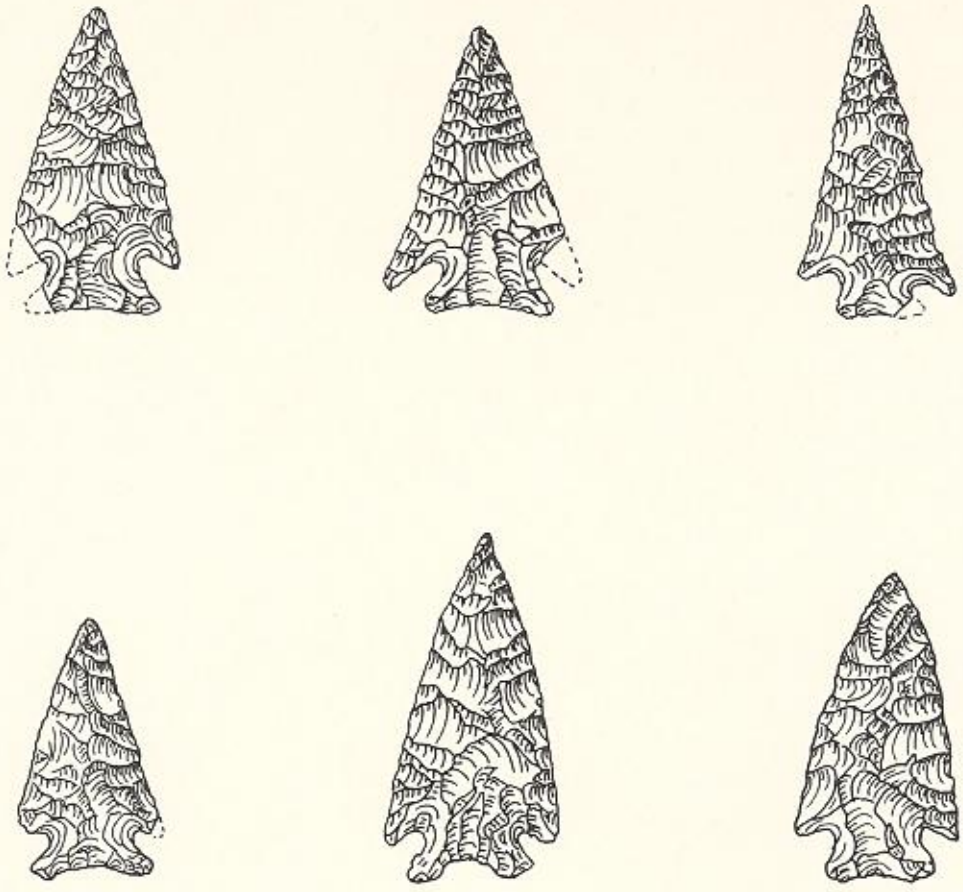
ISSN 0893-2271

IDAHO ARCHAEOLOGIST



Volume 12, Number 1

Volume 12, Number 1
Spring 1989

IDAHO ARCHAEOLOGIST

The ***IDAHO ARCHAEOLOGIST*** is published semi-annually by the Idaho Archaeological Society, a non-profit associaiton of professional and amateur archaeologists, organized under the laws of the State of Idaho. Subscriptions are $7.50 per year and may be obtained by writing the ***IDAHO ARCHAEOLOGIST,*** Department of Sociology, Anthropology and Criminal Justice Administration, Boise State University, 1910 University Drive, Boise, Idaho 83725.

NOTICE TO AUTHORS: Manuscripts should conform to the style sheet for *American Antiquity*. Manuscripts should be typed double-spaced, with 1½-inch margins, and submitted in the original and two copies. The ***IDAHO ARCHAEOLOGIST*** will publish articles and shorter contributions concerning the archaeology of Idaho and those areas of adjacent states and provinces including the Columbia drainage and the Great Basin. Technical papers and theoretical papers having a wider audience will be considered. Manuscripts should be addressed to:

Mark G. Plew, Editor
IDAHO ARCHAEOLOGIST
Department of Sociology, Anthropology
and Criminal Justice Administration
Boise State University
1910 University Drive
Boise, Idaho 83725

Cover: Elko series projectile points from the Dagger Falls site. Illustration courtesy Richard N. Holmer

CONTENTS

ARTICLES AND REPORTS

DAGGER FALLS: A PRELIMINARY REPORT

Richard N. Holmer
Idaho Museum of Natural History

INTRODUCTION

The Dagger Falls archaeological site (10VY76) is located in the Dagger Falls Campground on the Middle Fork of the Salmon River, Challis National Forest, central Idaho (Figure 1). The Forest Service plans to rehabilitate the campground by enlarging the camping spurs, replacing old log barriers with rock barriers, installing two new toilets and a new water system, and possibly constructing an overlook over the falls. The Deputy State Historic Preservation Officer and the Forest Service agreed that the archaeological site located in the campground is eligible for the National Register of Historic Places and that an archaeological excavation was warranted to recover a representative sample of the contents of the site prior to the rehabilitation efforts. Such an excavation was conducted as an Idaho State University Archaeological Field School exercise from June 13 through August 4, 1988. A total surface area of 167 square meters was excavated during the eight-week project, resulting in the removal of 145 cubic meters of soil. Contained within the excavated soil were approximately 130,000 stone artifacts, which are the primary clues to the prehistoric use of the site. The brief report presented in the following pages is extracted from the preliminary report submitted to the supporting agencies (Holmer 1988).

SITE DESCRIPTION

The Dagger Falls Site is located on two terraces on the south side of the Middle Fork overlooking Dagger Falls (Figure 2). The terraces are 12 to 15 m above the river level and are covered by a stand of Douglas fir and lodgepole pine with an understory of a few Oregon grape and other shrubs and pine grass. The slopes above and below the terraces are very steep and consist mainly of exposed granite. Above the site, talus covers portions of the slope which, in places, extends down onto the site.

The Dagger Falls Campground was constructed in 1964-1965 and apparently was not preceded by a cultural resources survey (McDaniel 1987). The campground area was first formally recorded as an archaeological site in 1971 (Pavesic 1978). Even though the site had been badly disturbed by campground construction and recreational use, it was immediately recognized as having potential scientific importance. In 1986, the site was visited by a Challis National Forest interdisciplinary team to discuss the planned rehabilitation of the campground. Because the rehabilitation project would further disturb the site and would result in greater recreational use, the Deputy State Historic Preservation Officer was consulted. It was agreed that the site was potentially eligible for nomination to the National Register of Historic Places and needed to be formally tested and evaluated (McDaniel 1986).

A test excavation was conducted in 1987 which demonstrated that there were intact buried prehistoric cultural deposits up to 1 m in depth. Recovered during the test was a relatively high density of artifacts with a "surprisingly small number of artifact types" (McDaniel 1987). The excavators interpreted the site as a limited activity fishing/hunting site occupied within the last 3,000 years. The age estimates were derived from the presence of Elko series projectile points and the lack of any earlier styles. Other observations included the common occurrence of fire-cracked rock, a high percentage of obsidian (62.2%) as a stone tool material type, and the complete absence of bone.

Because of the findings of the test excavation (McDaniel 1987) the Forest Service recommended that the site be excavated to recover a representative sample prior to campground rehabilitation. To accomplish this they recommended the excavation of 5-10% of the surface area of the site. Arrangements were made between the Challis National Forest and Idaho State University to conduct the excavation during the Summer of 1988.

In preparation for the 1988 excavation, Idaho State University assembled a research design to guide the work at Dagger Falls and other areas along the Middle Fork of the Salmon River (Holmer and Henrikson 1988a, 1988b). In it are listed numerous questions of interest to archaeologists about the prehistory of the Middle Fork area as well as preliminary guidelines for the excavation procedures at Dagger Falls. Some of the questions that we hoped to answer include the age of occupation of the site, the role of the site in the subsistence economy of the occupants, possible changes in use of the site through time, possible changes in the climate that supported local food resources, the general

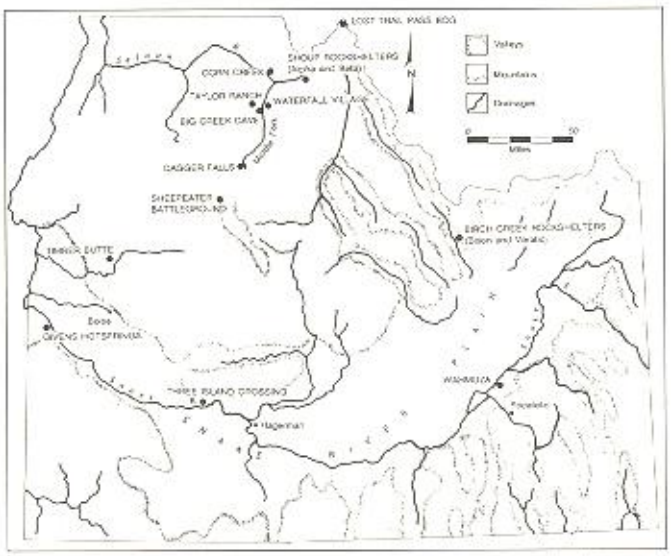


Figure 1. Map showing the location of Dagger Falls and other sites discussed in the text.

direction from which people consistently came to the site (e.g., from the Snake River Basin or the lower reaches of the Salmon River Basin), and the effects of recent camping on the archaeological resource.

During the excavation, a total of eight 1x2 m test pits were placed in a variety of locations across the site. The locations were selected to sample the topographic and geomorphic variability of the site. Those pits which produced an abundance of artifacts and information were expanded and those that produced relatively little were abandoned. Two of the original pits ultimately were connected, forming Area A, which exposed 143 square meters of subsurface deposits (Figure 2) and produced the vast majority of artifacts and information. Area A also had deep deposits making the stratigraphic segregation of time periods possible. Area B is located in a small saddle between two outcrops directly overlooking the river. The deposits there were shallow, but they produced numerous stone tools. Area C was excavated through the gravel road bed exposing deep intact deposits containing numerous artifacts. Area D demonstrated that the deep and rich cultural deposits exposed in Area A and C continue to the west along the terrace. Areas E through G demonstrated the relative lack of prehistoric evidence in the very shallow soils away from the flat area of the lower terrace.

Because over 85% of the artifacts and data were recovered from Area A, the following discussions will focus on that area with brief mention of other excavation areas as appropriate. Detailed descripitons of the other areas will be included in the final report, but because of the preliminary nature of this report, they will not be included here.

NATURAL AND CULTURAL STRATIGRAPHY

The late Quaternary geology of the Dagger Falls Campground provides us with clues about why prehistoric peoples visited the site; and the archaeology has the potential for making an important contribution to our understanding of the geological history of the area. Combined, the geology and archaeology reveal an exciting story about the human ecology of the Salmon River Mountains.

Exposed in Area A were five stratigraphic layers of soil which have accumulated on top of a substratum of large

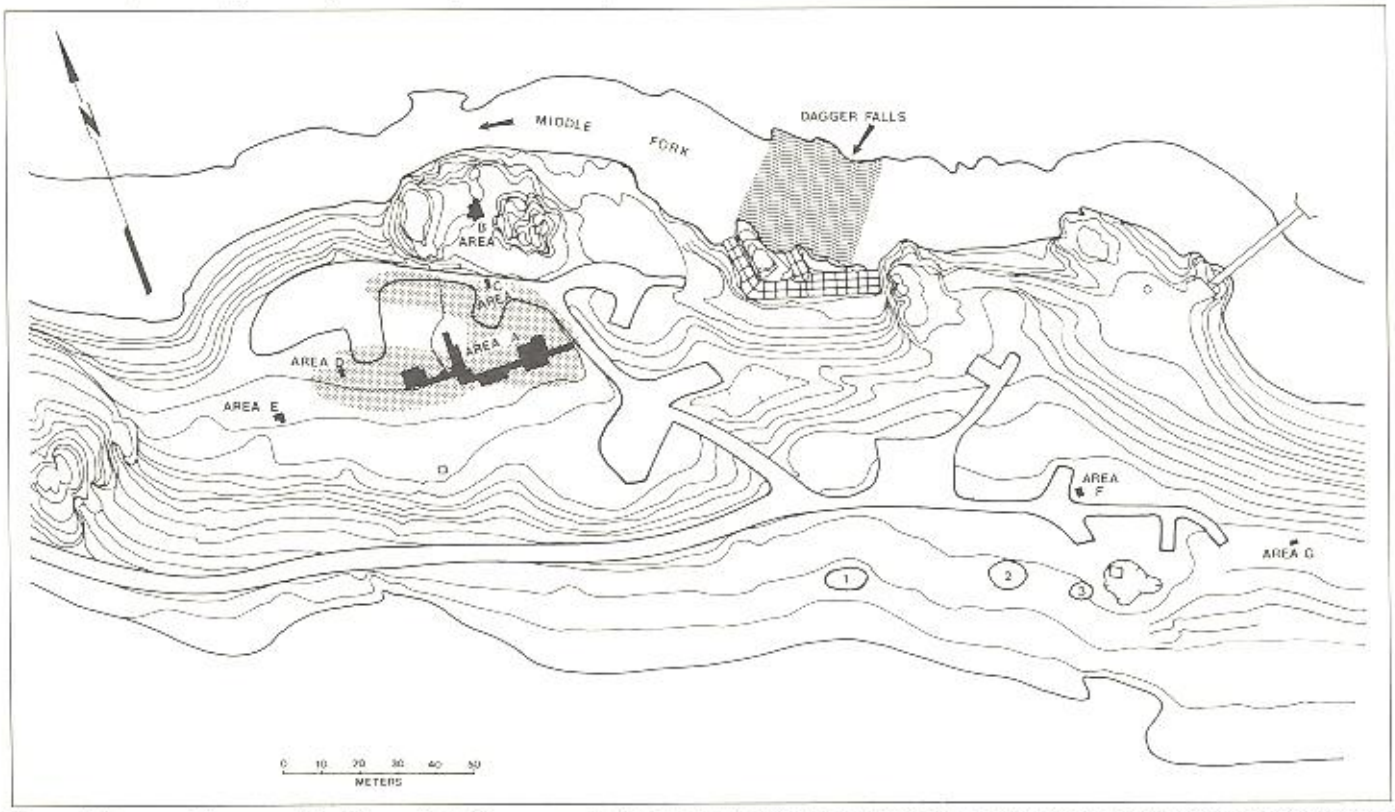


Figure 2. Topographic map of the Dagger Falls Campground showing the location of excavation areas (in black). Stippled area indicates zone of deep, intact archaeological deposits.

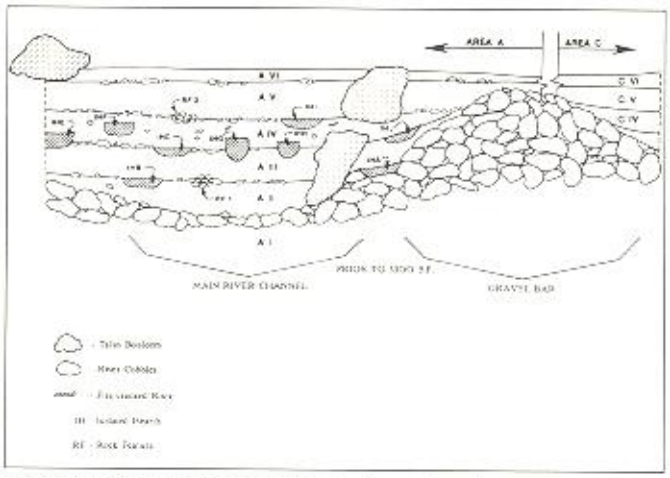


Figure 3. Schematic profile of excavation Area A.

river-rounded boulders, gravels and sands (Figure 3). The substratum (Stratum I in Figure 3) is characteristic of high-energy main channel river deposits similar to those comprising the channel deposits of the Middle Fork of the Salmon River today. Therefore, at some time in the past, the main channel of the river flowed directly through what is now the lower terrace of the campground. The large granite outcrops on the north side of the campground terrace would have been part of the north bank of the river, and the upper terrace of the campground would have overlooked the river much as the lower terrace overlooks the river today.

Resting directly on top of the old channel deposits are numerous large, angular boulders that are part of the talus formed around the base of the cliffs above the site. These boulders have weathered somewhat, but it is obvious that they were not in the flow of the river for any appreciable time. In other words, they tumbled onto the river-bottom deposits at approximately the same time as the migration of the river to the north which left the gravels exposed as a terrace. Shortly thereafter cultural features show up on the surface of the gravel indicating that humans began using the newly exposed terrace as a camp site. In one instance, a fire hearth was constructed directly on top of the river gravel and directly adjacent to one of the large talus boulders. Numerous artifacts were scattered around this feature (Hearth A in Figure 3). The mere size of the boulders (many exceeding 1 m in maximum dimension) precludes human agents as an explanation for their presence on the site.

Directly overlaying the channel deposits and surrounding the talus boulders are colluvial soils that have collected to depths ranging from 20 cm over ancient gravel bars up to 1.4 m directly over the mid-channel. The origin of the soils is a fan radiating out over the site from the south (Figure 2). This fan has been formed by gravity and erosion carrying soils and weathered granite particles down between two cliff faces on the canyon wall. The soils are remarkably consistent in grain size and other attributes which suggests a relatively consistent accumulation of soil since it began. There are no alluvial deposits (beach sands or overbank flood loams) intermixed, suggesting that the migration of the river course occurred abruptly, leaving the terrace "high and dry," never to be covered by river waters again. This apparent abruptness of the movement of the river and the presence of the large angular talus boulders suggest that a geological event, such as an earthquake, may have occured which changed the course of the river. This possibility is strengthened by the fact that the river has cut through the granite terrace to a depth of 15 m in the last 3,300 years. It seems unlikely that this depth could have been attained without the water following a severely weakened crack or fault zone.

Pedological processes have slowly and consistently altered the soil deposits since they began accumulating. The resultant soils are acidic (pH of 5.0) because of the chemistry of the granite parent rock and the constantly accumulating pine-needle humus.

Because of the consistency in the depositional history of the soils, the entire depth of deposits constitute a single geological unit. However, cultural factors have altered some of the deposits and made them readily divisible into five strata which have relative chronological meaning. The principal cultural phenomena that assisted in delineating strata was the distribution of fire-cracked rock. There were certain periods during the history of occupation at Dagger Falls when large quantities of river cobbles were carried onto the terrace and used in cooking/heating/smoking fires. Once the cobbles had been cracked through heating and cooling to the point that they were no longer of sufficient size to retain adequate heat, they were discarded. It was relatively easy to trace dense scatters of rock over ancient living surfaces. In addition, the varying intensity of cultural activity slightly altered the color and compaction of the deposits, aiding in the segregation of strata in areas where little or no fire-cracked rock was discarded. In some areas it would have been easy to divide the deposits into far more than five strata because of the clarity of a number of distinct activities separated by accumulated soils. In other areas, specially where the deposits are thin (e.g., over ancient gravel bars), following the five stratigraphic layers proved to be challenging.

Distinct concentrations of fire-cracked rock fire hearths were identified within the site deposits (Figure 3). Charcoal samples for radiocarbon dating were collected from several features and should provide good chronological control of the recovered data. There was no evidence uncovered that dwelling structures were ever constructed on the site unless the three talus pits overlooking the upper terrace are the remains of dwellings (Figure 2). Their location would make them suitable for hunting blinds or, possibly, as storage facilities, but probably not residences.

ARTIFACTS

A total of 1,241 lots of artifacts were recovered during the excavations. In general, each lot represents the specimens recovered from 1 m^2 in one stratigraphic layer. It was often possible, however, to recover items from a single ancient surface.

The types of artifacts recovered during the excavation consist mostly of the products and byproducts of stone tool manufacture (Table I). The size of the stone

TABLE I

Flaked Stone Tool Counts

Provenience	Points	Bifaces	Scrapers	Drills	Total
Area A					
AVI	46(27%)	99(57%)	19(11%)	9(5%)	173
AV	155(28%)	315(58%)	54(10%)	22(4%)	546
AIV	312(31%)	540(54%)	121(12%)	31(3%)	1,004
AIII	288(32%)	492(54%)	107(12%)	26(3%)	913
AII	194(34%)	295(51%)	65(11%)	20(3%)	574
Subtotal	995(31%)	1,741(54%)	366(11%)	108(3%)	3,210
Area B	58(35%)	92(55%)	10(6%)	6(4%)	166
Area C	24(50%)	16(33%)	6(13%)	2(4%)	48
Area D	6(25%)	14(58%)	2(8%)	2(8%)	24
Area E	3	1	1	0	5
Area F	0	0	0	0	0
Area G	0	0	0	0	0
*Questionable	73	91	15	5	184
Total	1,159(32%)	1,955(54%)	400(11%)	123(3%)	3,637

*For the most part the artifacts with questionable provenience were recovered from disturbed areas or from the modern surface. For example, almost one quarter of them were recovered from the fill of the four historic trash pits in Area A.

tools collection is impressive, consisting of 1,159 projectile points, 1,955 complete and fragmentary bifaces, 400 scrapers, 123 drills, 37 gravers, and approximately 3,285 utilized flakes (all counts are preliminary). These numbers compare favorably with the predicted quantities based on the original Forest Service test excavation results. In the preliminary research design (Holmer and Henrikson 1988b) it was predicted that we would recover 1,100 ± 160 projectile points and 3,900 ± 550 other stone tools. Also impressive is the pottery collection consisting of 191 sherds from several vessels. Seventy pecked and ground stone tools also were recovered. Because of the acidic nature of the soil, all perishable materials disintegrated, including all uncharred food bone. We plan to conduct studies to determine if other biological residues, such as blood proteins, have also perished. If, as suspected, all remnants of prehistoric foods have vanished, then conclusions concerning subsistence economy for the occupants of the site must rest in stone tool studies.

Projectile Points

The collection of 1,159 projectile points is dominated by Elko series recovered from all five cultural strata in Area A. Accompanying the Elko points in the later strata (IV through VI) are the Rosegate and Desert Side-notched series. Occurring throughout the occupational history of the site in small but significant numbers is the Wahmuza Lanceolate point (approximately 25 total). There are only a few points that do not easily fit into these types. Over 97% of the projectile points are of obsidian, which is of interest because no known obsidian source exists in the immediate vicinity (the nearest source being Timber Butte approximately 100 km to the southwest).

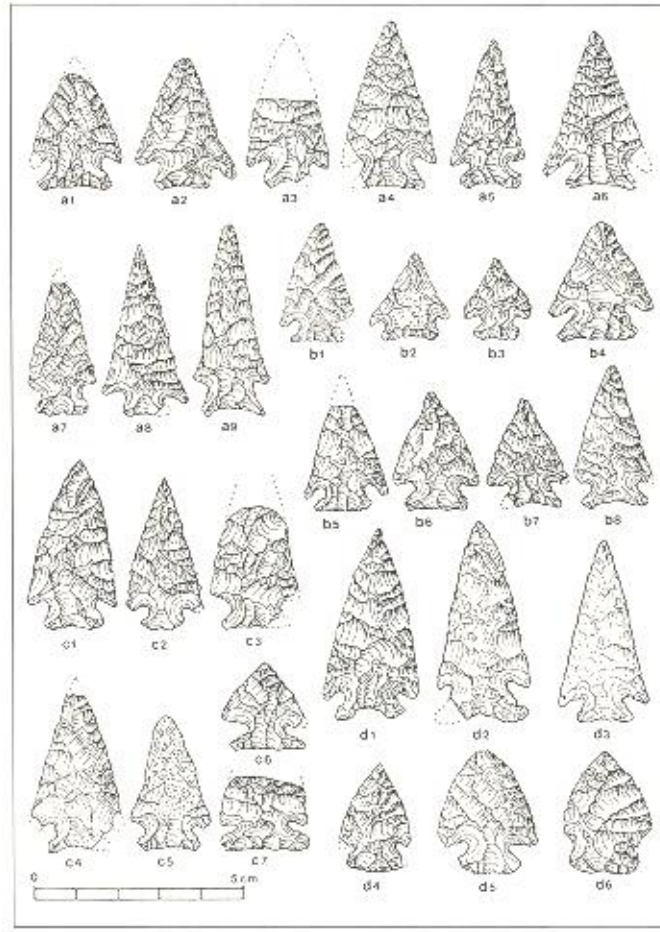


Figure 4. Elko series projectile points: a1-a9 from Stratum II; b1-b8 from Stratum II; c1-c7 from Stratum III; d1-d6 from strata IV-VI.

The Elko series is represented by approximately equal numbers of corner-notched and eared varieties (Figure 4). Although we are just beginning our analysis, they appear to be remarkably consistent in style throughout the cultural deposits. Their presence directly on top of the gravel substratum provides us with our only clue as to when the river migrated and left the terrace exposed. Throughout the Salmon River Mountains and the Snake River Basin, Elko points rarely occur prior to 3,300 years ago (Ross and Holmer 1986); therefore, the exposure of the terrace most likely occurred since that time. An estimated maximum age of approximately 3,300 years is supported by the presence of the smaller Rosegate series arrow points (Figure 5), approximately two-thirds of the way up in the deposits. Arrow points

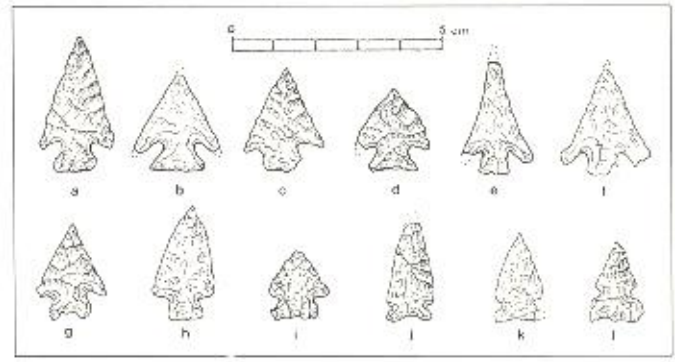


Figure 5. Rosegate and Desert Side-Notched series projectile points.

first occur in the archaeological record of the region about 1,200 years ago (Ross and Holmer 1986). In the uppermost two strata Desert Side-notched points (Figure 5) become common, indicating an age of less than 800 years.

Elko, Rosegate and Desert series points are the common styles for the Salmon River drainage during this time period. What is unusual, however, is that the vast majority of them are made of obsidian, which is not available in the Salmon River drainage. Excavated sites downriver from Dagger Falls reveal a much more limited use of obsidian, usually around 10%. This suggests that the occupants of Dagger Falls were more closely tied to the resources of the Snake River drainage where obsidian is abundant. Coupled with this is the fact that a very distinctive style of point that occurs in Snake River Basin sites, the Wahmuza Lanceolate (Figure 6), also occurs at Dagger Falls. This style has not been recovered from excavated sites such as at Big Creek, Corn Creek, or the Shoup Shelters. The projectile points and the materials used in their manufacture suggest that Snake River Basin people traveled to Dagger Falls carrying lithic resources with them, and that people from farther downriver in the Salmon River Basin, who manufactured their points out of locally available cryptocrystalline silicates, did not frequently use the site.

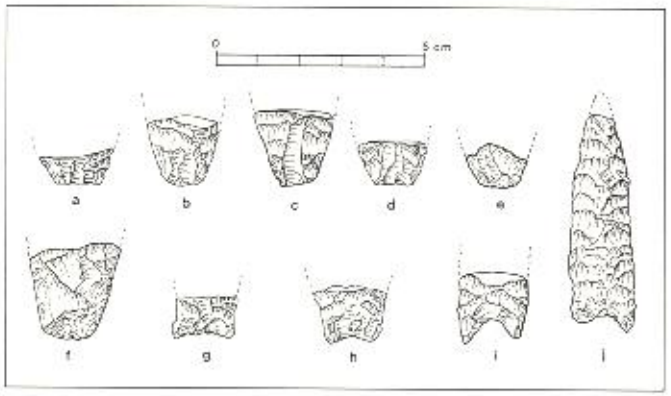


Figure 6. a-f are Wahmuza Lanceolate bases; g-j are Humboldt series.

Bifaces

More common than projectile points are complete and fragmentary bifaces (Figure 7). Although the shapes of the unbroken examples vary somewhat, the generalized form appears to be a thin, bipointed oval form that in a few cases appears to have been hafted.

Readily visible on the bifaces is severe edge damage. The crushing of the working edge and the removal of large numbers of short, broad flakes, which often terminate in hinge fractures on both sides of the edge, indicate that the tools were used in a sawing motion to cut tough material such as wood or bone. As with the projectile points, most of the bifaces are made of obsidian; those that are not are usually made of a fine-grained basalt, another resource available in the Snake River Basin but not in the Salmon River drainage.

Scrapers

A total of 400 scrapers were recovered during the excavation (Figure 8). Morphologically, they fit into the

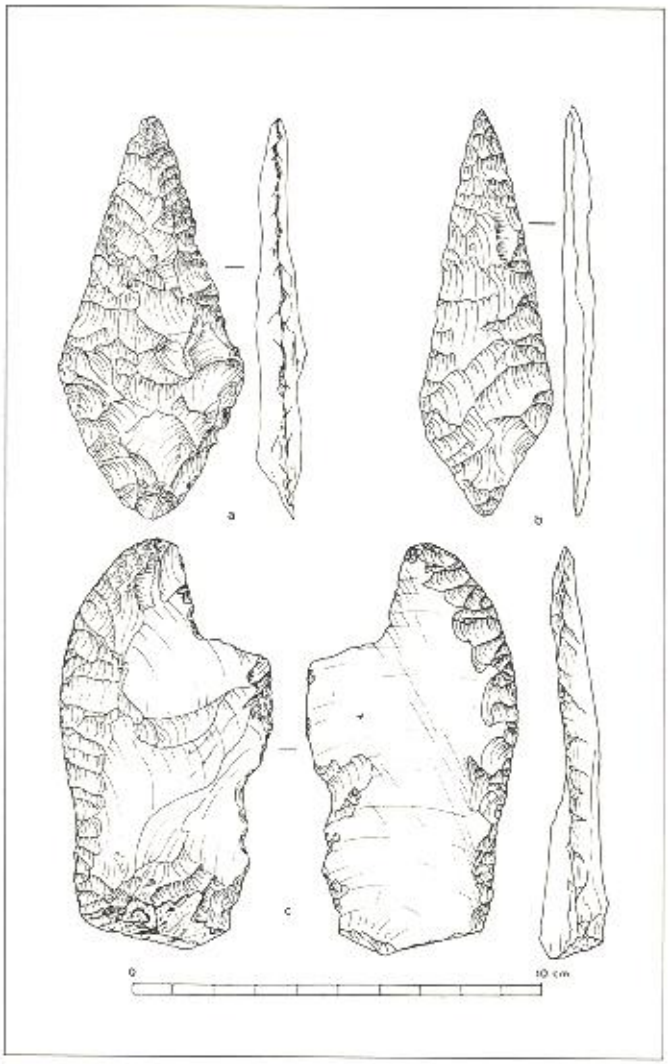


Figure 7. Bifaces.

categories of end, side, and crescent scrapers. Because some of the scrapers fit more than one category, the question of function must be addressed through edge wear and edge angles rather than simple morphology. During analysis, all scrapers will be measured for edge angle in those areas that show wear to help identify tool use (Keely 1980). Material type is also of interest, especially because the use of material is quite different than for projectile points. Approximately 60% of the scrapers are of fine-grained basalt, 30% of cryptocrystalline silicates, and 10% of obsidian. Included with the scrapers are 11 teshoas and three choppers.

Drills and Gravers

One hundred twenty-three drills and 37 gravers were recovered (Figure 8). Of the drills, approximately one-third are complete. These vary in length from 1.6-8.0 cm and about 50% of them are made of obsidian, the rest being cryptocrystalline silicates and basalt. Of the 37 gravers approximately 17% are of obsidian with 41% and 41% of basalt and cryptocrystalline silicates respectively. Only one spokeshave was found (see utilized flake discussion below).

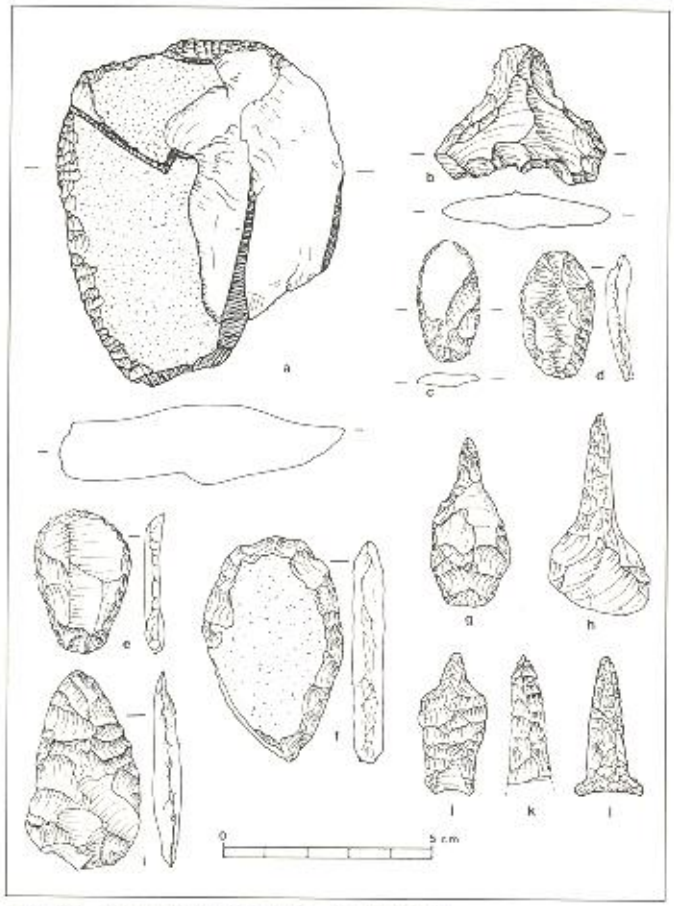


Figure 8. a-f, i are scrapers; g-h, j-l are drills.

Utilized Flakes

To address basic questions about the use of flakes as expedient cutting and scraping tools, a 25% random sample was selected from the total debitage lots of each of the stratigraphic layers of Area A. Based on this sample an estimate of 3,285 utilized flakes were recovered during the excavation. Of these, 91% are of obsidian; 8%, cryptocrystalline silicates; and 1%, basalt. These figures might be misleading because obsidian shows use wear more readily than the more durable materials.

A very interesting pattern exists on many of the obsidian utilized flakes. Approximately 9% of them appear to have been used in a scraping motion on cylindrical shafts. A concavity has been worn into one or two sides of the flakes. The diameters of the concavities and by extension, the shafts, appear to be of two sizes. Preliminary measurements indicate a large shaft of approximately 20 mm diameter and a small shaft of 8-10 mm diameter.

DEBITAGE

The debitage analysis is proceeding using a 25% random sample of the lots collected from each stratigraphic layer recovered from Area A. Since our analysis is just beginning, only 30% of that sample has actually been examined. Based on these initial observations, approximately 125,000 flakes were recovered during excavation. Of the observed sample approximately 64% are obsidian; 14%, cryptocrystalline silicates; 10%, basalt; 10%, rhyolite; 2%, argillite, and less than 1%, quartzite and quartz. Of the total flakes, approximately 4% are decortication flakes exhibiting cortex. Most of the decortication flakes are obsidian, which is surprising because of the distance away from the nearest known source. It is a basic premise in archaeology that people do not carry materials and artifacts long distances just to throw them away. A chemical characterization of the recovered obsidian should help clarify if there is a source represented at Dagger Falls that we have not yet recorded.

GROUND AND PECKED STONE

Of the 70 ground- and pecked-stone tools, 80% appear to be grinding implements and 20% pecking or pounding implements. The local granite river cobbles are the basic raw materials for these tools with only one example of quartzite.

POTTERY

One hundred ninety-one pot sherds were recovered during the excavation of Area A (Table II). Their presence in strata IV through VI correlates with the occurrence of arrow points and suggests that the upper three strata date to within the last 1,200 years.

TABLE II

Pottery Counts

Provenience	Count
Area A VI	11
V	76
IV	104
III	0
II	0
Total	191

The pottery recovered at Dagger Falls supports the contention that the people who used the site were closely affiliated with the occupants of the Snake River Basin. There, pottery commonly occurs in sites dating within the last 1,200 years while it is rare in sites in the heart of the Salmon River Basin. The style of pottery and the level of technology employed in its manufacture is essentially identical between that recovered at Dagger Falls and that recovered at sites on the Snake River Plain. Based on the few base sherds and numerous rim sherds recovered during the excavation, it appears that at least a few of the vessels represented are of flat-bottomed Intermountain Ware. Some sherds are from more finely made vessels and may represent Southern Idaho Plain Ware. A similar range of pottery occurred at Wahmuza on the Fort Hall Reservation.

HISTORIC ARTIFACTS

The historic objects recovered during the excavation can be separated by time period: artifacts associated with early historic aboriginal use of the site; and historic trash associated with the construction of the campground and fish ladder and recent recreational camping. The former group is of great interest to us, and the latter is not. But before the historic trash is dismissed,

it does merit some discussion. There are numerous large trash pits scattered across the lower terrace, and we excavated portions of four of them. They were remarably consistent, being approximately 1.5 meters in diameter and over one meter deep (usually down to the river boulders). They contained a wide variety of food and beverage containers, some of which had dates embossed on them. All dates concentrated around the late 1950s to the early 1960s. There were also non-food containers such as automobile anti-freeze and oil cans. There were a few fishing-related items such as two expended reels of line and a few salmon vertebrae. Almost all of the food containers were large (e.g., #10) and it is apparent that many people were being fed for more than a few days. The most logical explanation for the quantity and type of trash is the construction crew for the campground and/or fish ladder. They would have been the first into the area with vehicles (hence anti-freeze and oil) and would have needed bulk foods for a crew of several people (hence the numerous #10 cans). It would appear that they also did a little recreational fishing and alcohol consumption as evidenced by numerous beer cans and whiskey bottles (which provided most of the dating information).

The early historic artifacts are of considerably more interest, but they are few in number. The most notable are the few glass trade beads that probably were left there by the same people that were leaving behind the early historic obsidian artifacts.

DISCUSSION

The story that emerges from the data presented above begins with a geological event, possibly an earthquake, which occurred approximately 3,300 years ago. The suspected quake may have resulted from the slippage of the fault that forms the canyon surrounding the Dagger Falls area. The river rapidly changed course through the fault, leaving the original channel high and dry. This event also created falls in what is now a narrow gorge which follows the actual fault itself. The falls presented a new obstacle for the migrating salmon, making them vulnerable to the spear; the newly exposed terrace (the old river channel) became attractive for camping because it lay next to a concentration of salmon resulting from the bottleneck of the falls and gorge. It appears that there was no similar concentration of salmon at this location prior to the suspected earthquake because test excavations located on the upper terrace (which would have been the logical place to camp when the river flowed over the lower terrace) yielded no evidence of camping. Therefore, there appears to have been nothing special about this stretch of the canyon to attract concentrations of people prior to 3,300 years ago.

Even before soils began accumulating on the newly exposed terrace, people were attracted to the falls; and, ever since that time, people have continued to be attracted there. The people who came to Dagger Falls were probably not the ones who occupied the lower reaches of Middle Fork and the main Salmon River but were residents of the Snake River Basin. They probably came to Dagger Falls and other sites on the headwaters of the Middle Fork to seasonally "hunt" the salmon in the summer or fall. They then returned to the Snake River Basin for the winter with as much dried fish as they could carry. The next season would find them returning to the upper Middle Fork area bringing the familiar obsidian tool material with them to be left behind as they loaded themselves with dried fish for the trek back to their wintering areas. This pattern of seasonal movement is still recounted in Shoshone-Bannock oral histories today (Howard Funke, personal communication).

The above scenario is tentative but is valuable as an hypothesis to be tested by the analyses of the recovered data. There are also several questions presented in our Research Design (Holmer and Henrikson 1988b) that we will be able to address through analyses. Those questions, and the proposed efforts to address them, are as follows:

1) What is the age of occupation at the site?

This, the most basic of archaeological questions, is easily addressed through the radiocarbon dating of cultural features. To date the earliest human use of the site, which will also closely date the suspected earthquake, charcoal recovered from Hearth A (Figure 3) will be submitted for assay.

Two other dates will be processed that bracket Stratum IV. Those have been selected because arrow points and pottery first occur at that time (additional reasons are discussed below). Dating the earliest occurrence of arrow points and pottery is important because of the discrepancy in interpretation of the temporal meaning of these artifact types. For example, Hackenberger (1988) suggests that arrow points are as early as 3,400 years ago, while Ross and Holmer (1986) interpret them all to be within the last 1,200 years. This discrepancy greatly affects our interpretation of the prehistory of the area.

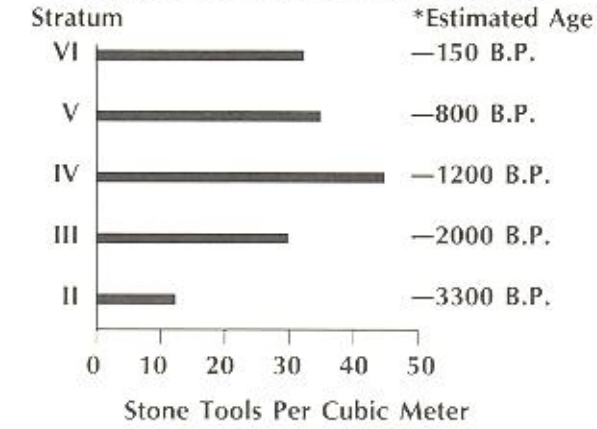
At this time no obsidian hydration dates will be processed because of the documented inaccuracy of the technique, even in well-sheltered deposits (e.g., Thomas 1983). One of the research objectives listed in the research design is to use the Dagger Falls collection as a test of the concurrence of obsidian hydration dating with radiocarbon dating. It is important to determine the validity of obsidian hydration dating because it forms the basic assumption in Hackenberger's (1988) settlement model. However, there is no laboratory currently processing obsidian sample for the complete set of Idaho sources. Because of this deficiency the Idaho Museum of Natural History is discussing with the Idaho National Engineering Laboratory the possibility of developing an obsidian sourcing and hydration dating laboratory using their equipment and their expertise. When and if this laboratory begins operation, we hope to utilize the Dagger Falls collection as one of the principal sources for samples of obsidian recovered in a well-dated context.

2) Is there evidence for changes in intensity of use of the site through time?

The sample recovered from Area A suggests change over time in the intensity of use of the site (or, at least, the portion that was excavated). This can be demonstrated simply by calculating the density of artifacts for each strata. Preliminary calculations for the density of

TABLE III

Density of Stone Tools per Stratum



*Age estimates are based on projectile point styles following Ross and Holmer (1986) in conjunction with the thickness of each stratum.

TABLE IV

Climatic Reconstruction Following Hackenberger (1988)

Years B.P.	Climate
0	
250	Modern
500	
750	Warm and Dry
1000	
1250	Cool and Moist
1500	
1750	
2000	Warm and Dry
2250	
2500	
2750	
3000	
3250	Cool and Moist
3500	
3750	
4000	

stone tools produces the pattern shown in Table III. The apparent trend suggests that during the time of the deposition of Stratum IV the use of the site was at its greatest. That time coincides with the first appearance of arrow points and pottery; therefore, it is of particular interest. There is a basic assumption in the interpretation of the graph, however, that must first be tested: that the soil accumulation rate was essentially constant over time. If Stratum IV represents a period of much slower soil accumulation, then it naturally would have a higher density of artifacts resulting from similar intensity of use to earlier and later strata. Radiocarbon dates at the base of Stratum II and bracketing Stratum IV will help test the assumption; and a detailed analysis of soil samples will be conducted with this question in mind.

3) *Was the climate significantly different during times of occupation than it is today?*

If the fluctuations in intensity of use of the site suggested in Table III are valid, then an obvious question to ask is if that period correlates with a change in climate making the resources there more attractive. Hackenberger (1988) offers a climatic reconstruction for the last 4,000 years and concludes that there have been significant climatic and vegetational changes (Table IV). If Hackenberger's climatic reconstruction is valid and our interpretation of the age of the cultural deposits at Dagger Falls is accurate, then it would appear that the height of human use of the site falls within a cool and moist period. Hackenberger argues that during periods with these characteristics, the permanent residents of the Salmon River area were focusing their subsistence activities in elevations lower than Dagger Falls because vegetation there would support sufficient land animal resources. Since Hackenberger is talking about the permanent residents of the area, not people coming into the area seasonally, the Dagger Falls data probably strengthens Hackenberger's model by demonstrating that groups from the lower downriver areas did not come up to the higher elevations during cool and moist periods, leaving them open for use by foreign people coming to harvest salmon from adjacent drainages.

Significant climatic shifts should be recorded in the pollen record of the site. However, the shifts which have occurred in the last 3,300 years may not have been of sufficient magnitude to cause significant changes in plant species on the Dagger Falls site. We plan to process nine pollen samples from the site to determine if additional work is warranted: three samples each from Stratum II, IV, and VI.

4) *What function did the site serve in terms of subsistence?*

Without the preservation of food bone this question must be addressed by studies focused on stone tools and other preserved elements. In the faint hope that blood residue has endured the acidic soils, a few points, bifaces and utilized flakes will be submitted for analysis. Regardless of the results of that analysis we plan to compare the artifact inventory of Dagger Falls with other sites of known function (usually where food bone is well preserved). Plew (1988) has proposed that anadromous fishing locales along the Snake River demonstrate considerable variation in tool assemblages. His data suggest that fishing locales produce fewer "weapons" relative to general purpose tools than do hunting sites. Variation in the relative quantity of domestic and fabricating implements seems to correlate with the site type (e.g., residential base, field camp, location, etc.) rather than the subsistence focus. Since we believe that the occupants of Dagger Falls were people closely related to those occupying the lower Snake River Basin, it seems reasonable to expect similar patterns in both areas. The number of projectile points (i.e., weapons) from Dagger Falls clearly fits Plew's projection. We plan to address this question by comparing relative counts of artifact types within assemblages recovered from fishing vs. hunting camps. This approach has been attempted for the Northern Rocky Mountains by Thoms (1987:272). Thoms found that in 13 sites there were relatively more projectile points and fewer thick edge-modified tools (mainly cobble tools and large scrapers)

in hunting sites than in fishing sites. Root processing sites fell in between the two in relative quantities. When Thoms attempted to compare the assemblage of an additional hunting site the assemblage unexpectedly correlated with a fishing activity, not the anticipated hunting activity. Despite these discouraging results Thoms feels that the approach has merit and should receive further attention.

The analysis of the Dagger Falls artifacts is not well enough along to be able to directly compare the frequencies of artifact types to Plew's or Thoms's data; however, a preliminary comparison of the percentage of projectile points in the total stone tool assemblage for several sites associated with Snake River Plains people is presented in Table V. The results support the general trend suggested by Plew and Thoms.

TABLE V

Comparison of Dagger Falls Stone Tool Assemblage with Other Sites

Site	Points	Total Assemblage	% Points
Anadromous Fishing Sites			
Dagger Falls	1159	7030	16
Three Island Crossing	243	700	35
Hunting Sites			
Wahmuza	310	629	49
Bison & Veratic	451	1038	43
Corn Creek	223	551	40

Despite the large quantity of projectile points recovered from Dagger Falls, they are in relatively few numbers when compared to the quantity of other stone tools; and they are represented by less than one-half the number that we would expect in a big game hunting site (as represented by Bison, Veratic and Corn Creek). Another set of data to be considered in interpreting the subsistence activities practiced at the site has to do with its location and the kinds of data absent from the prehistoric record. If Dagger Falls served primarily as a big-game hunting camp, then we might expect other accessible flat terraces in the vicinity to produce similar concentrations of artifacts (since the presence of big game should not be affected by the falls). Test pits placed in the upper terrace at Dagger Falls and at two different locations near the mouth of Boundary Creek located a few hundred meters down river (DeBlois 1977, Ringe 1988) produced very little. As a matter of fact the Boundary Creek location should have been a much better hunting location because the creek itself provides numerous meadow areas covered with grass, good access to higher country, and is adjacent to a natural ford across the Middle Fork. Combined with the locational inferences is the fact that only three fragments of burned bone were recovered during the excavation. Because of the acidic soils, bone is not expected to have been preserved. However, burned bone would have survived. If Dagger Falls was a hunting camp such as Corn Creek (Holmer and Ross 1985), then we might expect at least 45,000 fragments of burned bone. This estimate is based on the density (number per cubic meter) of bone recovered at Corn Creek that was charred enough to have been preserved even in highly acidic soil. Using the same numbers, the three burned fragments of artiodactyl long bone recovered at Dagger Falls suggests that a total of 6 bone fragments were discarded there—surely not enough to argue for a hunting subsistence activity.

5) *Do the artifacts recovered from Dagger Falls suggest a stronger relationship with the Snake River Basin or the Columbia Plateau?*

The styles of artifacts recovered from Dagger Falls are remarkably similar to sites in the Upper Snake River Basin such as Wahmuza (Holmer 1986) yet quite dissimilar to sites on the main Salmon River such as Corn Creek (Holmer and Ross 1985). This preliminary evaluation is quite subjective, but will be addressed by a detailed comparative morphological analysis of the artifact forms from sites in both drainage basins. Equally important to the morphological analysis is the chemical determination of the source of obsidian being brought to the site. Since obsidian makes up the majority of the recovered tools, it must have been readily available to the people who visited the site. Therefore, it seems reasonable to assume that those who came to the site either came from areas where obsidian is plentiful or that they passed by such an area on their way to Dagger Falls. There have been hundreds of obsidian artifacts processed for the Salmon River area (Sappington 1982); however, it is difficult to determine the meaning of the data. The difficulty results for the low percentage of sourced items. Using Dagger Falls as an example, the excavation recovered approximately 130,000 stone tools and debitage, yet it is common for only a few items to be sourced (e.g., 10), which would result in less than one one-thousandth of one percent—hardly statistically significant.

We hope to source a statistically significant number of samples from Dagger Falls, stratifying the sample by age and by interpreted level of curation (i.e., highly curated tools such as projectile points should reflect a different pattern of sources than decortication flakes—and, unexpectedly, we recovered numerous flakes with cortex). Accurately determining a significant number of samples is not possible at this time; however, preliminary estimates can be made if it is assumed that the previously processed sample from the Salmon River area (Sappington 1982) is representative of the Dagger Falls collection. Using this assumption, we calculate that 625 formal tools (e.g., projectile points and bifaces), 300 flakes with cortex, and 275 flakes without cortex need to be processed. This large number (1,200 total) is necessary to ensure that the few items from sources other than Timber Butte are sufficiently represented so that statistical comparisons over time and with other sites are meaningful. When this stage of the analysis begins, a stratified random sample of obsidian items will be selected for source characterization, and based on the results, a much more accurate estimate of the total quantity to be processed will be made. Needless to say, the cost of processing this many artifacts will be prohibitive unless our negotiations with the Idaho National Engineering Laboratory are successful for developing an obsidian sourcing and hydra-

tion laboratory (see discussion above).

6) *What has been the effect of over 20 years of recreational camping on the Dagger Falls archaeological site?*

Based on our excavation, it would appear that the recreational use of the Dagger Falls Campground has had little effect on the prehistoric resources. The same cannot be said for activities associated with the actual construction of the fish ladder and campground. Whereas the test pit that penetrated the roadway (Area C) suggests that portions of the site have probably been protected from further damage by the road fill, the numerous large trash pits document the indiscriminate destruction of significant archaeological resources by the construction crews. The trash pits are so numerous that during our excavations we resorted to a metal detector so that they could be avoided. We suspect they are associated with construction crews rather than casual camping because the dated containers are of approximately the right year and because of the numerous bulk food and non-food (e.g., oil and anti-freeze) containers indicating large numbers of people using machinery.

The Dagger Falls site is clearly a site of great scientific significance, and portions of it should be preserved. It is a pleasure to report that an agreement has been made to limit campground develpment to areas with little scientific potential as determined by our excavation (Tom Green, personal communication). This kind of agreement goes beyond the "letter of the law" which is often construed to support a decision to proceed with development without regard to remaining archaeological deposits after a site has been "mitigated" by limited excavation. The agreement to restrict development, however, does conform with the "intent of the law," which is to preserve archaeological sites and data for future generations. The decision by the Forest Service to fulfill the "intent" rather than the "letter" of the law is to be commended. Through these efforts the Dagger Falls Campground will continue to be a popular place to camp (as it has been for the last 3,300 years) with minimal effects on the archaeological resources, and, perhaps, will be excavated again by future archaeologists with different questions in mind and heretofore unimagined tools available for interpretation.

ACKNOWLEDGMENTS

It is a pleasure to acknowledge the agencies, institutions, and individuals who contributed funding, moral support and personal energy to the archaeological excavation at Dagger Falls. The Challis National Forest provided the opportunity, as well as partial funding (Purchase Order No. 43-02261-8-1038), to conduct the project. The remainder of the funding was provided by Idaho State University's Research Committee (Grant No. AS88-4), College of Arts and Sciences, and the Idaho Museum of Natural History. Unfortunately, space does not allow a complete listing of the more than 40 individuals who dedicated portions of their summer to the project. All played crucial roles; therefore, to avoid leaving out one, I will name none. Projects cannot be conducted without adequate funding, but in the final analysis it is the individuals, who, through their diligence and industry, made it possible to recover the data here summarized.

REFERENCES CITED

Debloois, Evan

1977 **An Investigation of Cultural Resources at the Boundary Creek Boat Launching Facility, Challis National Forest, Idaho.** Cultural Resource Management Report No. CH-83-138. Challis National Forest.

Hackenberger, Steven

1988 **Cultural Ecology and Evolution in Central Montane Idaho.** Unpublished Ph.D. dissertation, Department of Anthropology, Washington State University, Pullman.

Holmer, Richard N.

1986 **Shoshone-Bannock Culture History.** Swanson/Crabtree Anthropological Research Laboratory Reports of Investigations No. 85-16. Pocatello.

1988 **Preliminary Report: The 1988 Excavation at Dagger Falls.** Swanson/Crabtree Anthropological Research Laboratory Reports of Investigaitons No. 88-10. Pocatello.

Holmer, Richard N., and Lael Suzann Henrikson

1988a Archaeological Investigations on the Middle Fork of the Salmon River—A General Research Design. In **Preliminary Report: The 1988 Excavation at Dagger Falls,** by Richard N. Holmer, pp. 32-47. Swanson/Crabtree Anthropological Research Laboratory Reports of Investigations No. 88-10. Pocatello.

1988b A Research Design for Archaeological Excavations at the Dagger Falls Campground Site. In **Preliminary Report: The 1988 Excavation at Dagger Falls,** by Richard N. Holmer, pp. 48-54. Swanson/Crabtree Anthropological Research Laboratory Reports of Investigations No. 88-10. Pocatello.

Holmer, Richard N., and Jeffrey W. Ross

1985 **Excavations at Corn Creek.** Swanson/Crabtree Anthropological Research Laboratory Reports of Investigations No. 84-8. Pocatello.

Keeley, Lawrence H.

1980 **Experimental Determination of Stone Tool Uses.** University of Chicago Press, Chicago.

McDaniel, Marion

1986 **Dagger Falls Campground Rehabilitation Project.** Cultural Resource Management Report No. CH-86-197. Challis National Forest.

1987 **Archaeological Test Excavations at Dagger Falls Campground.** Cultural Resource Management Report No. CH-87-216. Challis National Forest.

Pavesic, Max G.

1978 **Archaeological Overview of the Middle Fork of the Salmon River Corridor, Idaho Primitive Area.** Archaeological Reports No. 3. Boise State University, Boise.

Plew, Mark G.

1988 Archaeological Assemblage Variability in Fishing Locales of the Western Snake River Plain. **North American Archaeologist** 9:247-257.

Ringe, Brenda L.

1988 Test Excavations on the South Side of Boundary Creek. Field notes on file, Idaho Museum of Natural History, Pocatello.

Ross, Jeffrey W., and Richard N. Holmer

1986 The Temporal Distribution of Artifact Types in the Salmon River Mountains. Paper presented at the XXXIXth Annual Northwest Anthropological Conference, Moscow, Idaho.

Sappington, Robert Lee

1982 Obsidian Procurement along the Middle Fork of the Salmon River in Central Idaho. In **Cultural Resource Reconnaissance in the Middle Fork Salmon River Basin, Idaho, 1978,** by Ruthann Knudson, Darby Stapp, Steven Hackenberger, William D. Lipe, and Mary P. Rossillion, pp. 413-422. Cultural Resource Report No. 7. Intermountain Region Forest Service, Ogden.

Thomas, David Hurst

1983 **The Archaeology of Montor Valley, 2: Gatecliff Shelter.** Anthropological Papers of the American Museum of Natural History No. 59(I). New York.

Thoms, Alston V.

1987 Adaptive Strategies in the Northern Rockies: Land Use and Archaeological Assemblage Variation. In **Prehistoric Land Use in the Northern Rocky Mountains: A Perspective from the Middle Kootenai River Valley,** edited by A.V. Thoms and G.C. Burtchard, pp. 231-278. Center for Northwest Anthropology Project Report No. 4. Washington State University, Pullman.

SHORT CONTRIBUTIONS

BOOK REVIEW

LITHIC ASSEMBLAGES OF DIRTY SHAME ROCKSHELTER: CHANGING TRADITIONS IN THE NORTHERN INTERMONTANE

by Richard C. Hanes. University of Oregon Anthropological Papers No. 40, 1988. x + 206 pp., tables, illustrations, appendices, references. $9.00.

Reviewed by Mark G. Plew
Boise State University

The 1973 excavations at Dirty Shame Rockshelter (DSR) documented a series of archaeological assemblages within the last 9,500 years. The data provide a substantial comparative base for localities throughout the Owyhee Uplands of eastern Oregon and western Idaho. The excavations have been reported through a number of articles, two doctoral dissertations, a master's paper, and a monograph in the University of Oregon Anthropological Papers series, the latter being an analysis of the perishable materials. This volume discusses the lithic record at DSR and provides both regional integration and consideration of the DSR data in Northern Great Basin prehistory. The volume which utilizes data from Hanes's 1980 dissertation is an important contribution and enhances our understanding of the prehistory of the Owyhee Upland area.

The volume consists of five chapters, an appendix and addendum. The first chapter provides an environmental setting and overview of previous archaeological research and the ethnographic record. A second rather brief chapter reviews the excavation of DSR with reference to vertical and spatial associations. Much of the discussion appears to be extracted from earlier papers and provides little new information. Chapter three details the technological factors considered in the lithic analysis of DSR. The discussion includes the description of projectile point morphologies and chronologies, biface production blanks, groundstone, debitage and lithic material categories. Regional scholars may find the obsidian sourcing portion of the chapter particularly useful.

Chapter four details the lithic assemblages at DSR by addressing four analytical concerns which include:

1) Changing patterns of raw material use related to toolstone sources and technological activities at the site.
2) Representation of regionally significant artifact types at the site.
3) Variation in actual patterns of life at the site through time.
4) Isolation of artifact sub-assemblages which offer a degree of integrity suitable for addressing the above points. (p. 39)

Assemblages are discussed by cultural zones described in earlier articles and reviewed in chapter two. The discusison includes the character of deposits and dating, point types, and other tools including biface blanks, groundstone and production debris. Discussion of raw material use and technology is followed by a summary of tool and production debris for each zone. These summaries might have been more appropriately combined.

Additionally, the textual presentation of the data from each cultural zone is difficult to follow and might have been enhanced by the use of tables interspersed through the text rather than at the end. The fourth chapter concludes with a summary of temporal patterning in DSR assemblages and offers an outline of the culture history of DSR based upon "distinctive trends in site occupation at specific time periods" (p. 151).

Hanes defines an Early Archaic Occupational Period (9,500 - 6,800 B.P.) during which time the site was infrequently visited. Tool kits include primarily stemmed lanceolate point varieties such as Great Basin Stemmed, Windust and Plano as well as simple flake tools and bifacially trimmed slabs of local vein agate. Obsidian was utilized primarily as the material of manufacture, particularly for projectile points. Groundstone became increasingly common at the end of the period as notched projectiles were introduced (p. 151). a Mid Archaic Occupational period (6,800 - 5,900 B.P.) is marked by the increased use of chipped-stone tools and a variety of groundstone implements. The presence of Northern side-notched, Elko series, Pinto, and Humbolt series types document a shift from lanceolate stemmed to notched and barbed projectiles. Discard behavior increased, though tool types remained the same. A cultural hiatus persists for 3,000 years after 6,000 B.P. (p. 151).

The Late Archaic Occupational period (2,700-400 B.P.), which marks a resumption of use of DSR, is characterized by significant changes. The use of the site is altered

by the construction of domed thatch structures. Additionally, a broader range of chipped-stone tools are employed, and bow and arrow technology is introduced. Rosegate series points appear by at least 2,500 B.P. and become dominant by 1,500 B.P. The production of arrowpoints is further associated with a change from reducing obsidian biface blanks to reducing thin chert flake blanks. Obsidian decreases as a tool stone with a greater variety of materials coming from more distant localities. Though there are significant changes in the nature of the use of DSR, the intensity of use is less than the earlier Mid Archaic occupation (p. 151).

The final chapter constitutes a detailed culture history of the region. Hanes provides a useful summary of regional patterns correlating with the occupational phases of DSR. An environmental and archaeological overview are provided for each phase. Summary and conclusions include discussion of technological change, chronology and site use of the 9,500-year sequence. Though changes in intensity of site use are noted, variation in tool assemblages over time is negligible (p. 172). Notable in regard to chronology is the 3,000 year occupational hiatus after 6,000 B.P. Using Binford's 1980 collector-forager model, Hanes describes the Early Archaic Phase at DSR as a short-term foragers' field camp. The Mid Archaic Phase is considered a long-term field camp while the Late Archaic Phase is characterized as a residential base camp.

A primary criticism of the volume concerns its failure to clearly document the biface trajectory. Though the approach and detail of the presentation are commendable, the relative simplicity of the lithic analysis results in a lack of clarity in the discussion of assemblage variation. Hanes, however, provides a detailed examination of the DSR lithic assemblages and presents the most complete synthesis of the archaeology of the Owyhee Uplands and adjacent areas offered to date. Particularly important is the author's consideration of data from western Idaho and the Snake River Plain. The DSR study is an important contribution to Northern Great Basin prehistory. The volume is well written, nicely illustrated and attractively produced. Its affordable price will ensure that the volume is widely distributed and used.

TWO ABORIGINAL METAL PROJECTILES FROM SWISS VALLEY, NEAR KING HILL, IDAHO

Mark G. Plew
Boise State University

This note describes two metal projectile points discovered some twenty years ago by Mr. Glenn Mills of King Hill, Idaho. The projectiles reported here were collected by Mills at the western end of the Swiss Valley adjacent to Bancroft Springs, approximately 5 miles upstream from King Hill (see Figure 1). The discovery is of interest as a number of metal artifacts have been reported from the vicinity. Notable is Crabtree's (1968) documentation of iron and laminated metal items from the Oregon Trail site and a recently reported brass bipoint from Three Island Crossing near Glenns Ferry, Idaho (Plew and Meyer 1987). Additionally, copper items of European origin have been reported from the Rattlesnake Canyon Cremation site near Mountain Home, Idaho (Bonnichsen 1964), and are known to have been traded widely throughout the Northwest and Great Basin (see Caldwell and Mallory 1967:95, Griswald 1954, Hughes and Bennyhoff 1986).

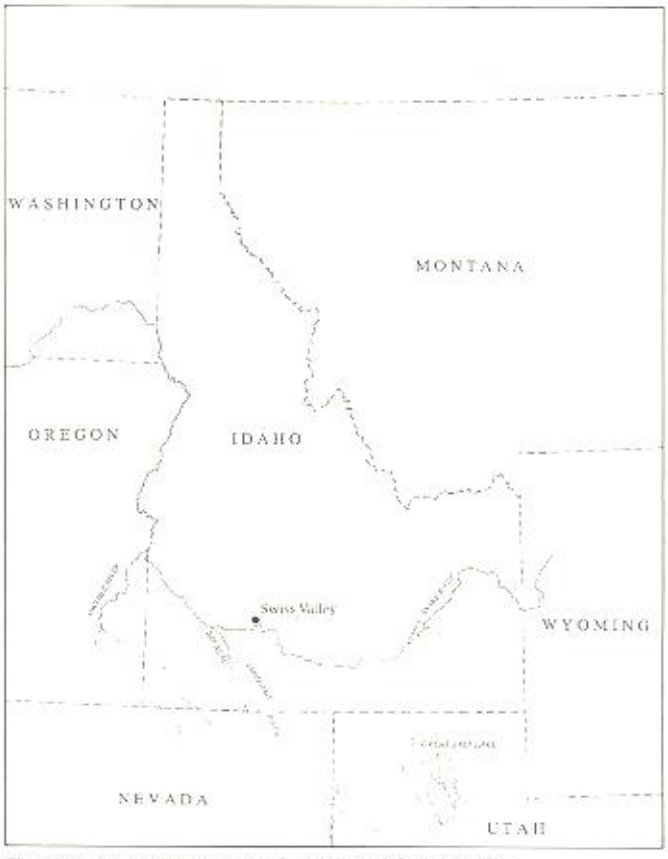


Figure 1. Map showing the location of Swiss Valley.

The artifacts described here, like those at the Oregon Trail site (Crabtree 1968), are made of iron. The first specimen is a small point with a triangular blade element and stem measuring 2.8 cm in length (see Figure 2). The stem approximates the blade length. The blade element measures 1.6 cm long and 1.2 cm at its greatest width. The average thickness is 0.1 cm. Microscopic

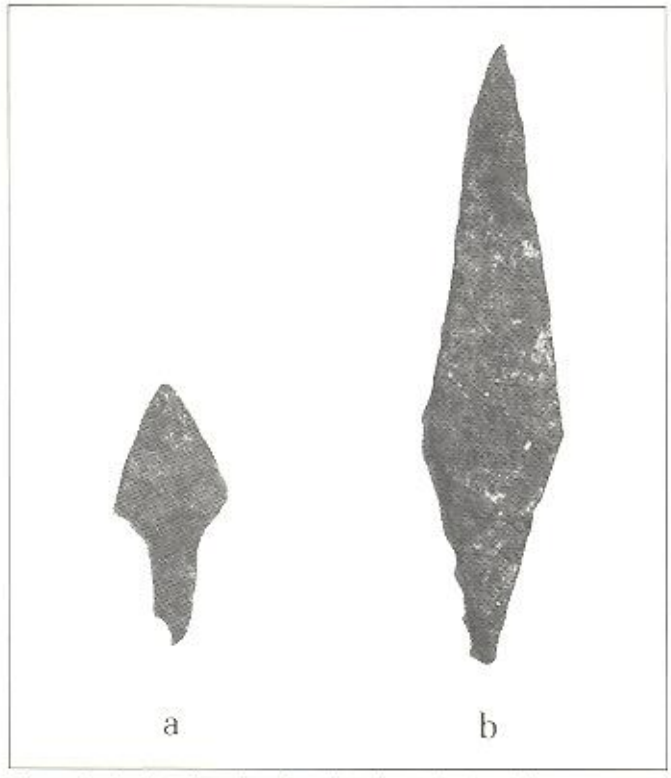


Figure 2. a-b, Metal projectile points from Swiss Valley.

examination at 20x magnification demonstrated no evidence of manufacturing related wear patterns. The dorsal and ventral surfaces are extremely pitted. A relatively deep groove is present on one surface of the stem near the tang of the blade element. The edges appear slightly rounded though no evidence of abrasion is obvious. The edges are somewhat thinner than the body of the point.

The second specimen is a large diamond-shaped bipoint measuring 6.8 cm in length and 1.5 cm at maximum width. The distance between the tip and the point of greatest width is 4.3 cm. The thickness of the specimen ranges from 0.1-0.2 cm. Microscopic examination (20x) showed no evidence of manufacturing related wear striations as are discernable on the brass bipoint from Three Island Crossing. The surface areas of the diamond-shaped bipiont are extremely pitted. The edges, like those of the smaller stemmed point, are slightly thinner than the body or blade of the projectile. The edges appear slightly rounded (see Figure 2).

The discovery of additional metal artifacts of aboriginal manufacture are of interest as such items in southwest Idaho have been found commonly in areas along or adjacent to the Snake River. Indeed, most have been reported between Glenns Ferry and Bliss, Idaho. This is most probably, as suggested by Crabtree (1968), associated with the rather extensive Euro-American presence in the area beginning in the 1840s. The

documentation of such aboriginal metal work will enhance and further expand our understanding of the process of acculturation (cf. Crabtree 1969:39) and the rapidity with which this change occured.

ACKNOWLEDGMENT

The author wishes to express his gratitude to Mr. Glenn Mills, who kindly permitted examination of the specimens and shared freely his knowledge of the King Hill area.

REFERENCES CITED

Bonnichsen, Robson
1964 The Rattlesnake Canyon Cremation Site, Southwestern Idaho. **Tebiwa** 7(1):28.

Caldwell, Warren W., and Oscar L. Mallory
1967 **Hells Canyon Archaeology.** Smithsonian Institution River Basin Surveys, Publications in Salvage Archaeology No. 5. Washington.

Crabtree, Don E.
1968 Archaeological Evidence of Acculturation Along the Oregon Trail. **Tebiwa** 11(2):38-42.

Griswold, Gillet
1954 **Aboriginal Patterns of Trade Between the Columbia Basin and the Northern Plains.** Unpublished M.A. Thesis, Montana State University.

Hughes, Richard E., and James E. Bennyhoff
1986 Early Trade. In **Great Basin,** edited by Warren D'Azevedo, pp. 238-255. Handbook of North American Indians Vol. 11, edited by William C. Sturtevant. Smithsonian Institution, Washington.

Plew, Mark G., and Kevin Meyer
1987 An Aboriginally Worked Brass Bipoint from Three Island Crossing. **Idaho Archaeologist** 10:17-18.

Boise State University
School of Social Sciences and Public Affairs
1910 University Drive
Boise, ID 83725

Account 041-A001

Non-Profit Organ.
U.S. POSTAGE
PAID
Boise, Idaho
Permit No. 170