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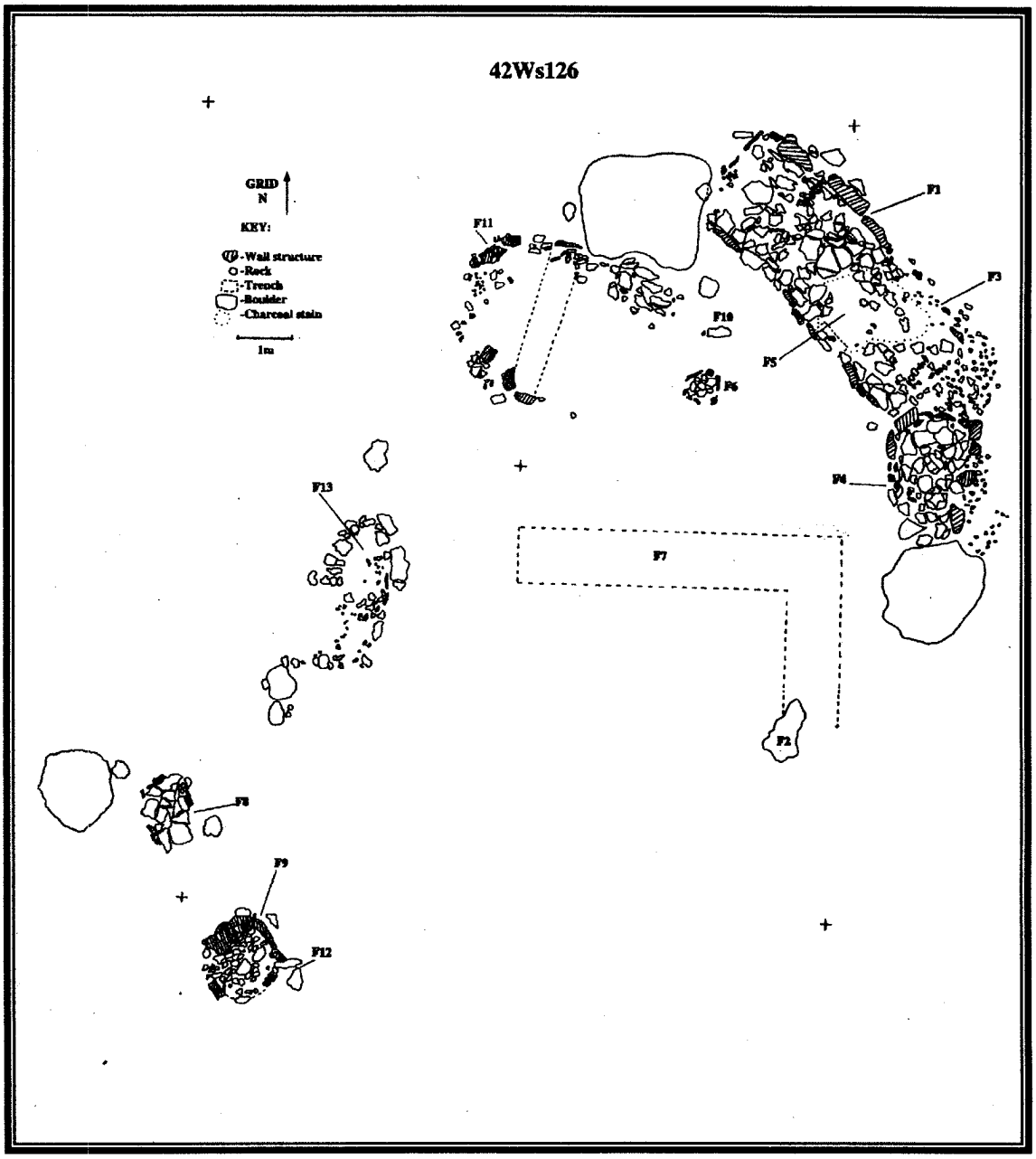

NEVADA ARCHAEOLOGICAL ASSOCIATION

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The design for the NAA logo was adapted by Robert Elston from a Garfield Flat petroglyph.

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Manuscripts submitted for publication in the *Nevada Archaeologist* should follow the style guide of the October 1992 issue of *American Antiquity*. Manuscripts should be typed and double-spaced throughout, including notes and bibliography, and illustrations may be camera-ready or electronic. Either type must have a full caption. Submissions from avocational archaeologists as well as professionals are encouraged.

Manuscripts should be to *Nevada ArchaeologistI,* P.O. Box 73145, Las Vegas, Nevada, 89170-3145.

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EDITOR'S CORNER

Public education and outreach are not new archaeological endeavors. American archaeologists recognized the need for public support and understanding as early as 1906 with the enactment of the Antiquities Act. The act acknowledges that archaeological materials should be housed in museums where they are readily accessible to the public (43 CFR 3.17). In recent years, many archaeological organizations initiated programs focusing on outreach, education and volunteerism that increase public awareness and encourage cooperation between avocationalists and professionals. Our organization's founding was based on these very goals. The theme of this volume reflects the Nevada Archaeological Association's (NAA) long-standing commitment to public education, promoting accessibility to archaeological resources and information, and preserving our shared cultural heritage.

The five articles in this volume cover a range of projects that blend public participation with scientific study. Chris Miller's contribution focuses on BLM's efforts to promote public stewardship and appreciation of our cultural resources through the Hidden Cave interpretive program and *Project Archaeology*. Zion National Park provided the backdrop for a National Science Foundation funded educational outreach program that brought high-school teachers and their students together with professionals to excavate, analyze and interpret materials at a Virgin Anasazi site. Eskenazi chronicles the results of this project. Woody et al. emphasize the importance and effectiveness of utilizing volunteers to record rock art sites. The *Nevada Rock Art Documentation Project* trains non-professionals so they can record sites threatened by vandalism, development, or heavy visitation. The Baker archaeological site is the focus of Henderson et al.'s efforts to build community awareness. The authors advocate making public participation plans a crucial element of every archaeological research design. This approach encourages a partnership between the public and scientists and fosters conservation of heritage resources. The final article advocates the inclusion of volunteers in museum-based research. The Hot Creek materials, like many other older museum collections, suffered from lack of attention. Edwards and DuBarton describe the cooperative efforts of volunteers and professionals to rehabilitate the collection, and obtain research driven data, while providing an avenue for public participation.

In highlighting these successful projects, we hope that all professionals will recognize the importance of public support and involvement and seek to balance the goals of scientific research with outreach and education. Cultural heritage is not the private domain of professional archaeologists. It's greatest value lies in its ability to inspire and enhance our lives by providing a link with our shared past.

The editors wish to thank all those who contributed papers. All errors and omissions are ours alone. We believe this volume provides a cross-section of professional and avocational research interests and reflects the diversity of our membership. We hope in some small way these examples will inspire more collaborative efforts in the future.

Cover: *Site Plan of the Watchman Site, Zion National Park, Utah.*

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Interpretation, Environmental Education, Recreation and Archaeology As One

by
Christina Miller

Abstract: An effective interpreter provokes the audience to find personal relevance about a natural or cultural site. This in turn encourages the audience to learn more; take ownership of the site, and prevent possible unintentional or intentional damage of cultural resources. The Carson City Field Office, Bureau of Land Management (BLM) provides interpretive, educational and cultural experiences at Hidden Cave, part of the Grimes Point Archaeological Area near Fallon, Nevada. The BLM extends the "ownership" of our nation's cultural sites by promoting Project Archaeology, a curriculum based resource guide, in Nevada. In addition, expanding the Native American perspective of Hidden Cave will enhance local ownership and present visitors with a continuing historic perspective.

There are many reasons to educate visitors, students, and teachers about Nevada's archaeological resources. Some of the most common reasons are: to focus attention on something of interest, to protect resources through interpretive presentations, to promote an agency mission, and to enhance the public's experience by stimulating their curiosity and promoting a sense of shared history. The last reason is the most important if an interpreter is serious about reaching their audience. The key to an effective presentation is making the subject relevant and convincing the public that they have a personal stake in fostering a spirit of commitment to our common heritage. If you cannot make a subject relevant - worth understand or caring for, then all other means are diminished in stature and effort. Of course, the interpreter should have a personal experience with the subject matter in order to present it in the best possible way and in a sincere manner.

Why are Nevada's archaeological resources worth interpreting? To many of us, Nevada's resources provide a personal or spiritual connection with the past, a place to seek oneself, and a means of becoming familiar with the history of one's region, state, or country. This connection can afford a sense of belonging. Visitors may think of these resources as part of an extended family not seen often. Freeman Tilden, one of the founding fathers of the field of interpretation said, "... even though your visitor may not himself know just what immediate impulse brought him to any one of these places, he is for this ultimate reason in a receptive mood. The visitor is unlikely to respond unless what you have to tell, or to show, touches his personal experience, thoughts, hopes, way of life, social position, or whatever else." (Tilden 1977:13). This observation crosses many cultural boundaries, however, what is special about one place to one visitor is not necessarily so to another. Many Native American and African groups see nature itself as sacred, and humans participate in that sacredness according to their degree of integration with natural processes. "the need to protect nature from human activities is thus strongest in those cultures that look upon themselves as separate from the natural life, and where they see that civilization is dangerous to the natural settings they need for spiritual relief."(Machlis and Field 1992:197).

Hidden Cave just outside of Fallon, Nevada, is an excellent example of a multi-cultural site used by the Bureau of Land Management for environmental education and interpretation (Figure 1). Considered sacred by the Paiute and

Shoshone peoples, local residents and tourists with diverse ethnic affiliations also regularly visit the site for recreational, informational (scientific), or educational activities. Approximately 4,000 people are given tours each year with additional visitors dropping in to visit the site throughout the week. The actual cave is physically closed to visitation except by official tours in order to protect the cultural resources. Hidden Cave is a developed interpretive, recreational and cultural site presented by the BLM in order to meet the needs and demands of the visiting public. How does an effective interpretive presentation capture the imagination and interest of this varied audience? He or she must make the site (story) relate to the visitor so the experience is more than just sterile information. While the interpreter presents information, the main goal must be provocation. Because most interpreters at prehistoric and historic sites are not members of the culture presented, it is best to state that the interpretations given are often from the Euro-American perspective. Presentations must cross cultural boundaries to explain that ancient peoples shared the same needs we all have for shelter, food, and spiritual meaning in our lives. The Bureau of Land Management is working on expanding the cultural diversity of the tours through efforts with the Fallon Paiute-Shoshone Tribe.

Figure 1. Chris Miller guides tour at Hidden Cave, outside Fallon.

The main interpretive theme presented during tours of Hidden Cave is how the Native people lived along the shores of ancient Lake Lahontan. Interpretive stops along the one-mile trail leading to the cave present information about the local flora, and fauna, and desert ecology. These stops also make comparisons

between modern and ancient environments, and suggest possible reasons the native people produced pectroglyphs. Inside Hidden Cave, a continuation of the external environment is displayed in the soil stratigraphy cut open to public display. Interpretive displays along with the interpreter explain how archaeologists bring together a variety of information to explain the lifestyles of the ancient peoples who lived there. A good example is the story of the atlatls found in the cave. The interpreters explain how this was not just a tool, but also an extension of ones arm. The atlatl demonstrates that these people understood the principle of physics (force x length) just as we do today. Visitors learn that prehistoric people possessed the intelligence and skills to use whatever materials were around to do the same kinds of things modern people do. The interpreter demonstrates how an atlatl is thrown and then the audience is given information that will help them learn how to make and throw their own atlatl. Open-ended questions like "Who do you think threw the atlatl?" or "what do you think they hunted with the atlatl?" can be used to broaden the discussion of the subject. By emphasizing the use of Hidden Cave as a place where tools were cached, the interpreter can draw parallels between ancient and modern storage behavior.

Visitors should become active participants in the tour, on an equal footing with the interpreter. When the visitor is immersed in the experience, the talk becomes of secondary importance. School tours are the most important of all visitor experiences at Hidden Cave, or any interpretive site. To get people interested in their history, it is important to do it while they are young, then they grow up seeing comparisons, inferences, and applications. The interpreter must be receptive, and listen to the children's (works for adults too) questions and feelings. A sense of stewardship for the site may be developed if visitors see what they can do for the site and how the history is now **their** history. By developing their interest in natural and cultural sites the public may become more active in assisting those trying to protect sites from unintentional and intentional vandalism. Many recreational studies have shown that at sites where signs, brochures or other information indicates volunteers take care of the site, the area is less prone to damage.

To extend the preservation message, lessons that help students understand the richness and importance of the past are brought into the classroom through programs such as *Project Archaeology*. The Bureau of Land Management is committed to *Project Archaeology,* which promotes responsible and thoughtful stewardship of our archaeological heritage. Aimed at grades four through seven, this interactive workbook-based course allows more teachers to expand the curriculum, promote cultural awareness, and actively reach out to children through our schools. In turn, the facilitators of *Project Archaeology* can reach beyond a cultural site's interest and importance without even physically being at the site. The Bureau of Land Management in Nevada has developed a web page for *Project Archaeology* at: www.nv.blm.gov/cultural/project_archaeology.htm. This web page allows teachers to learn what cultural sites, like Hidden Cave, may be in their area to visit, and what resources are available to teachers. *Project Archaeology* provides educators with an innovative and exciting method of incorporating archaeology into traditional core curriculum.

Interpretation, environmental education, recreation and archaeology are often everything in one package. Visitors to public lands encompass their trip with the ability to experience fun, gain understanding, and

acquire ownership of their natural and cultural resources in a one-time occurrence. Land managers must be multifaceted in presenting recreational, interpretive and cultural policies, programs and service needs to the public. One of the best ways of interpreting cultural sites is for the interpreter to connect with the audience in sharing the relevance of the site to the visitor's life. A shared ownership often allows for cross-cultural ideas to be acknowledged, a positive spread of information and a possibility in the reduction of vandalism to a site. A cultural site can also be experienced off location by the curriculum based resource guide *Project Archaeology.* Teachers can share with student's cultural and historical concepts of public ownership and site information from the classroom. Hidden Cave in Fallon, Nevada, is an example of interpretation by a government agency presenting the cross cultural, natural and public importance of national historic sites.

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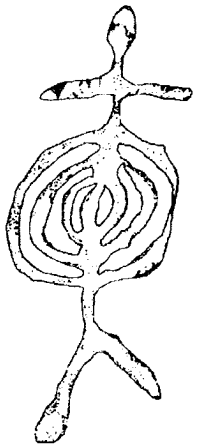

Excavation and Interpretation: 42Ws126, The Watchman Site Zion National Park, Utah

by
Suzanne B. Eskenazi

Abstract: Excavations at 42Ws126, a Virgin Anasazi site in Zion National Park, Utah, were conducted for three weeks in the summer of 2000 by archaeologists from the Desert Research Institute in Las Vegas, Nevada, along with high school students and teachers from Nevada and southern Utah as part of a public outreach program. The site consists of aboveground and subsurface storage units and hearth features; no evidence for habitation was encountered. The architecture, ceramic, lithic, and ground stone assemblages indicate small-scale, short-term use of the site. Radiocarbon dates from charred material, the presence of both early and later ceramic types, and the architectural arrangement and construction methods indicate use during Pueblo I (A.D. 800-1000) and late Pueblo II to early Pueblo III periods (A.D. 1000-1150). A brief discussion of future public interpretation of the Watchman Site follows the discussion of recovered artifacts.

Introduction

Site 42Ws126, the Watchman Site, is a Virgin Anasazi storage and food-processing site located [redacted] Zion National Park, [redacted] (Figure 1). In June 2000, members of the Desert Research Institute, along with teams of high school students and their teachers, initiated a salvage excavation project as part of a public outreach program entitled the Nevada Science Teacher Enhancement Program (NSTEP). Although recorded numerous times after initial investigations by Ben Wetherill in 1934, a full excavation of "Watchman" was never completed. Excavations during the summer of 2000 lasted for three weeks. Analysis of the Watchman Site focused on the excavation and subsequent analysis of architectural features, chronological information and the artifacts. This paper provides a broad overview of the data gleaned from research at the Watchman Site, why it is important from a regional Virgin Anasazi perspective, and a brief discussion of plans for future public interpretation of the site.

Expectations

Excavations at the Watchman Site provided an opportunity to identify settlement and subsistence strategies practiced throughout the prehistoric occupation of the Virgin Anasazi region. The hypothesis tested in this research proposes that the Virgin Anasazi regularly utilized higher elevations above the floodplain of the North Fork of the Virgin River for short-term, small-scale food storage and processing from Pueblo I to Pueblo III (A.D. 800 – A.D. 1150). Excavation of 42Ws126 investigated the validity of the site's characterization as a small-scale, temporary food storage and processing site. In this study, temporary means seasonal, or other, shorter term use. Why would this site illustrate such small-scale, temporary use? The Watchman Site is one of forty known archaeological sites in Zion Canyon, situated along the Virgin River's northern branch. Many of these sites are much smaller and represent more limited-use than the larger, more intensively used sites along the East Fork of the Virgin River, in Parunuweap Canyon.

Site 42Ws126 characterizes the adaptive diversity typical of the Virgin Anasazi in

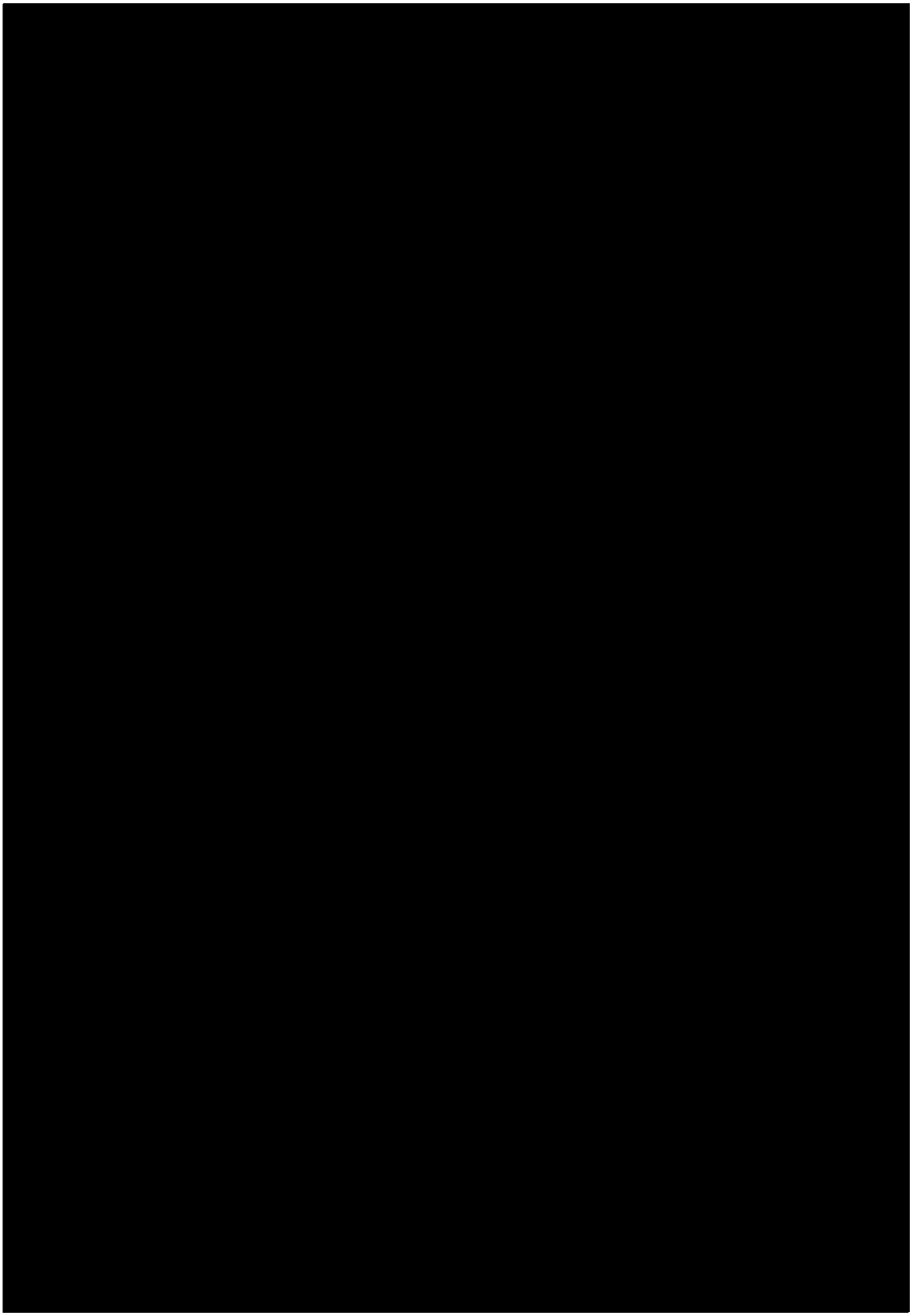

Figure 1. Location of 42Ws126.

Zion Canyon, southern Nevada, southwestern Utah, and portions of northern Arizona for approximately 1200 years. Distributed across a wide geographical region, both artifacts and architecture reflect the distinct modes of subsistence and settlement behaviors that distinguish this adaptive pattern. McFadden (1996:30) identifies residential mobility coupled with storage capabilities as the key components of this adaptive strategy. Its proximity to the Virgin River made 42Ws126 an ideal location for planting maize and other cultigens as well as for storing food items. Data from sites across the Southwest suggest that a variety of subsistence strategies coexisted, with both sedentary and more mobile hunter-gatherer populations overlapping in the same region (Upham 1984:250). The variety of Virgin Anasazi site types illustrates that this "serial and contemporaneous adaptive diversity" (Upham 1984:250) was a reality for the inhabitants of Zion Canyon. The Virgin Anasazi made conscious decisions about when to move and where to plant, process, and store resources. These decisions are visible in the variability of architectural sites in the region.

If Watchman were a short-term storage and food-processing site indicative of diverse Virgin Anasazi adaptive patterns, then certain artifacts and architecture reflective of such use would be evident. Architecture should consist of a number of storage cists, which should in turn possess evidence of cultigens and/or other food items. A habitation structure, if present, should illustrate a temporary presence, such as a pit house large enough to support a nuclear or extended family for a season or other, short-term use. The pit structure should show a limited investment of energy; that is, it would be a simple structure illustrative of reuse and reconstruction, with little elaboration. The ceramic assemblage should be composed primarily of jars, which would have stored food resources.

What can the artifacts tell us about the subsistence practices at the Watchman Site? Ground stone is particularly useful in identifying food-processing behaviors. At Watchman, the groundstone artifacts should be indicative of small-scale, temporary use. In general, the recovery of ground stone at a site indicates a semi-sedentary lifestyle, often with an increasing reliance on agriculture. This behavior may also be identified through the heavier use of larger areas on some stones. Hard (1990:138) suggested that prehistoric people "...selected and manufactured appropriate grinding tools for the task at hand." Two-hand manos are associated with the grinding of corn, while one-hand manos are associated with the processing of wild seeds (Lancaster 1986:177). A mix of these artifacts, if found, implies short-term, small-scale food processing. The metate collection should illustrate a similar pattern and consist of slab metates and grinding slabs, both of which could have been used with one and two-hand manos. Because the Virgin Anasazi placed limited emphasis on grinding, and because the stones were not made for long-term use, it was uneconomical to expend effort in production of ground stone. If this idea is true, the ground stone artifacts from the Watchman Site will be made of local materials.

Westfall (1987:148) notes that grinding tool kits associated with wild resources such as seeds exhibit a wide range of characteristics directly related to varying uses and portability, while those grinding tool kits associated with corn have more formal characteristics. If the Virgin Anasazi had a mixed economy of both cultivated and wild foods, and if 42Ws126 illustrates this economy, then the ground stone assemblage will include stones associated with both wild and cultivated

resources. However, since this hypothesis argues for short-term, small-scale use of the site, ground stone tool kits associated with wild foods should dominate the assemblage.

Ceramic artifacts from Watchman also illustrate behavior patterns. Vessel form indicates vessel function (Rice 1987:207-242). Identified functions of ceramic artifacts from the Watchman Site should define storage and cooking patterns supporting the argument for a population that may have been partly reliant on cultivated foods. If the use of the Watchman Site was periodic and short-term, and the Virgin Anasazi were preparing and storing food, then pottery indicative of these activities should dominate the assemblage. Generally, bowls indicate serving, while jars denote cooking, storage, and transportation of food items (Perry 1998:3, Lange 1998:124). Groups utilizing the Watchman Site could have been storing both cultivated and wild food resources in jars. In addition, this hypothesis expects the ratio of plain to painted wares at Watchman to be more like the ratios at other storage-only sites than those at habitation sites.

Lithic artifacts also convey evidence of settlement and subsistence behaviors. The assumption for this study is as follows: if the site displays characteristics of a sedentary lifestyle, expedient tools will dominate the assemblage. Conversely, if formal tools dominate the assemblage, then the site represents a more mobile lifestyle. This assumption is based on Andrefsky's (1998) and Parry and Kelly's (1987) research. Expedient, informal tools are typically manufactured for a particular task and used once before being discarded. Formal tools, to the contrary, are multifunction and multiuse implements (Parry and Kelly 1987:298). In addition, if Watchman is indicative of short-term mobility, then a high debitage to tool ratio, reflecting tool manufacture at the site, is likely. Trash middens, or lack thereof (including lithic, ceramic, and macrobotanical debris), also indicate relative duration of occupation. Dalley and McFadden define middens as "...fairly well-defined and purposeful areas of trash accumulation, as opposed to the random and incidental accumulations of debris over the areas of intensive occupation and activity" (Dalley and McFadden 1985:47).

Results

Architecture

Excavation at the Watchman Site resulted in the identification of 13 features (Figure 2). The features included three circular storage cists, two rectangular storage rooms, a grinding slick, and a possible collapsed wall. Two hearths and an ash layer of soil along the western wall of the storage room were also uncovered, (Feature 5, Feature 6, Feature 10) although one hearth (Feature 10) was disturbed. An arc of attached rectangular storage rooms was built at the edge of a knoll, surrounding two hearths located in the courtyard. All of these were formed using slab-lined walls and floors, typical of Virgin Anasazi architecture (Lyneis 1995:209).

Exterior diameters of the cists ranged from 1.0m x 1.5m (Feature 8) to 2.0m x 3.25m (Feature 1). Depths of the cists ranged from 20cm (Feature 4) to 79 cm (Feature 9). No formal habitation structure, or pit house, was identified during excavation. Pit houses are semi-subterranean, circular, roofed structures, with clay floors. Hearths, ventilators, deflectors, benches, and postholes are common interior features (Lyneis 1995:210-213). The collapsed wall feature at 42Ws126 (feature 11) indicates the site may have

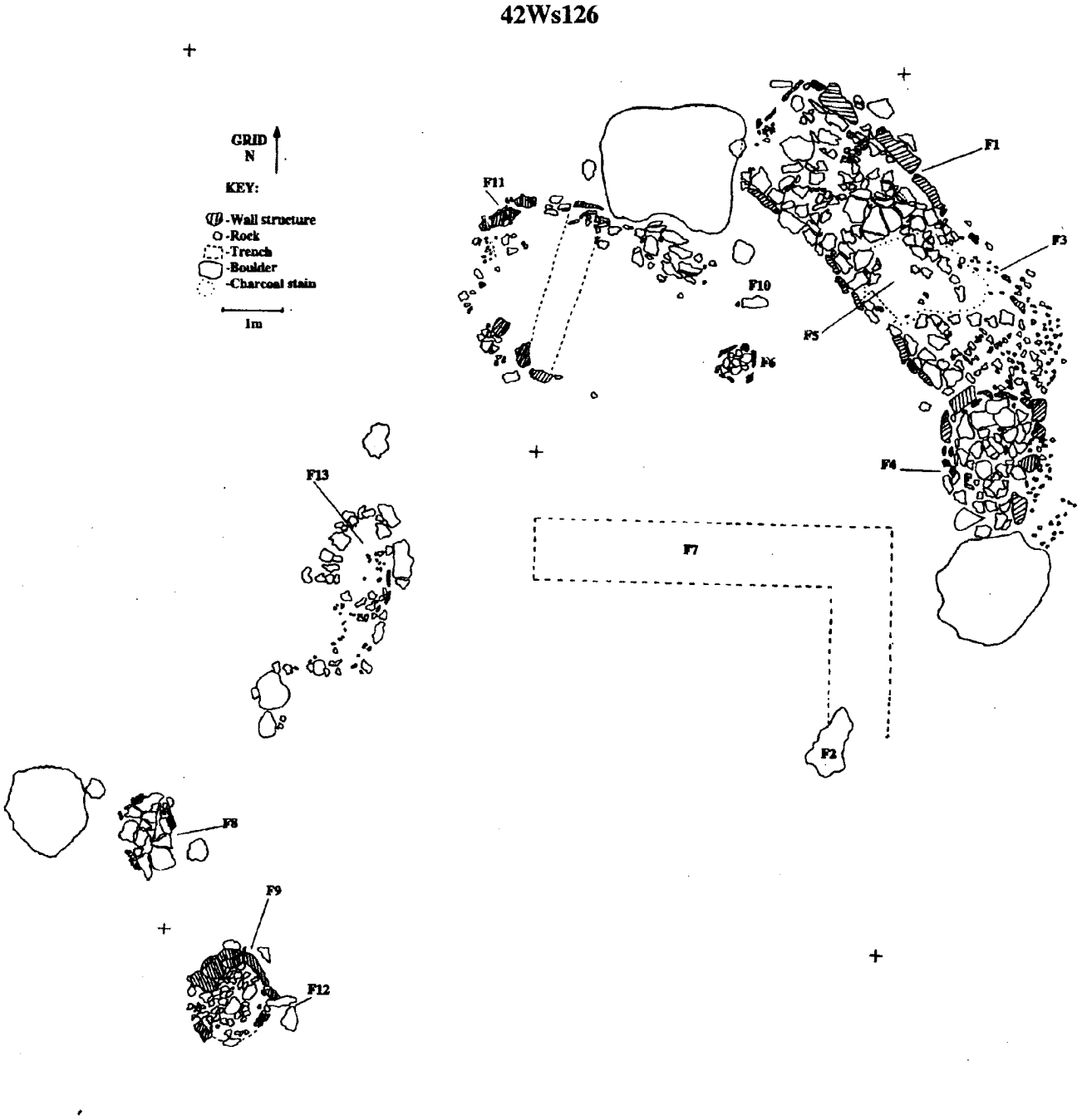

Figure 2. 42Ws126 Site Map.

contained additional rooms, but their location next to the edge of the knoll and their poor condition did not allow for a more precise interpretation. The abundance of storage features at Watchman indicates that although there was no formal habitation structure at the site, its importance for storage was essential.

The architecture suggests two components, one early and one late. The two individual circular storage cists on the southwestern part of the site (Features 8, 9) may be from an earlier occupation. The circular, unattached nature of the storage cists is characteristic of Late Basketmaker III/Early Pueblo I (A.D. 400- 1000) architecture. The presence of two Pueblo I Washington Black-on-gray sherds that fit together supports the idea that these cists are early. These were found under the floor of Feature 8, which has a calibrated radiocarbon age of A.D. 700-900. The later component includes an arc of two rectangular storage rooms and a circular storage cist, attached at one short wall and built around the edge of the knoll between two boulders. The shape and connected nature of this arc is characteristic of Pueblo II occupations (A.D. 1000-1150).

Ground Stone

Analysis of the 16 ground stone artifacts indicates informal, small-scale food processing. Ground stone artifacts recovered at Watchman include one complete bifacial mano, and two bifacial mano fragments, (those generally associated with heavier dependence on cultivated materials such as maize) (Adams 1991). Table 1 provides the quantities of the various recovered ground stone artifacts. Only one two-hand mano was recovered. Two-hand manos are typical of corn grinding (Lancaster 1986:177).

The site yielded eleven manos. Five of these were found in association with features. One unifacial mano fragment was found within two meters of Feature 8 (circular storage cist), while another unifacial mano and a bifacial mano fragment were recovered from stratum three and the fill of Feature 8 respectively. Finally, one unifacial mano fragment was recovered from stratum two of Feature 6 (hearth), and one unifacial mano fragment was found in level two of Feature 7 (non-cultural trench).

Table 1. 42Ws126 Ground Stone Assemblage.

Ground Stone Type	Quantity
Grinding Slick	1
Jar Lid	1
Mano - Complete	1
Two-handed Mano - Complete	1
One Handed Bifacial Mano – Complete	1
One Handed Bifacial Mano Fragments	2
Mano fragments	6
Metate fragments	2
Bifacial Metate fragment	1
Total	16

Excavation produced only three metate fragments. One metate was found in stratum one of Feature 7 (non-cultural trench). The bifacial metate and the jar lid were both found on the surface of Feature 1, the storage room. All but one mano and the jar lid showed purposeful shaping. A low incidence of secondary battering on the stones indicates a lack of resurfacing or use. Eighty-one percent (13/16) of the ground stone assemblage was either lightly battered or not battered at all. Only one metate was moderately battered.

Three manos and one metate in the assemblage show evidence of bifacial grinding. The mean of the ground area on face one of all of the bifacial manos was 50.92 cm^2, while the mean of the ground area on face one of all of the metates was 88.84 cm^2. The mean of the ground area on

facet two of all of the bifacial manos was 35.06 cm^2. Only one metate was bifacially ground. Its ground area on facet two totaled 48.8 cm^2. Total mean of the ground area on facet one for all manos and metates combined was 53.95 cm^2, and 38.5 cm^2 on facet two. In examining the intensity of wear on the manos, 82 percent (9/11) were moderately ground, 18 percent (2/11) were lightly ground, and none were highly ground. All three metates were moderately ground.

Analysis of the cross sectional shape of the ground stone assemblage did not indicate intensive grinding activity at the Watchman Site. Not including the grinding slick, (since its cross-sectional shape could not be determined) 53 percent of the ground stone assemblage was flat (8/15), 20 percent was convex (3/15), and the remaining 27 percent was split between irregular (2/15), and concave (2/15). Plan view shape (overall formal shape) of the manos did not illustrate any discernable patterns in manufacture. Three of the manos were circular, two were rectangular, three were oval, one was square, and two were too fragmented to determine their individual shapes. The metates also did not show a pattern in plan view shape; one was rectangular, one was square, and one was irregularly shaped.

Ceramics

Excavation at Watchman yielded 1,167 ceramic artifacts. Laureen M. Perry completed the ceramic analysis in the Desert Research Institute Lab. The assemblage included six ceramic wares: Tusayan Gray, Tusayan White, Shinarump Gray, Shinarump White, Shinarump Red, and Moapa Gray. Tusayan and Shinarump Wares are locally produced using different clay and temper sources, while Moapa Wares from the Mt. Trumbull area in Arizona are intrusive. In addition, the excavations recovered three pieces of fired mud with quartz inclusions. The 472 corrugated sherds recovered from the site constituted 40.4 percent of the total ceramic assemblage. Virgin Anasazi corrugated pottery first appears at approximately A.D. 1050 (Walling et. al. 1986:356). Judging from the radiocarbon dates, site 42Ws126 fits well with this time frame. The ceramic assemblage included sherds from painted bowls and plain and corrugated jars. Table 2 shows the quantity and percentages of each ceramic ware and type along with their respective vessel form.

The ratios of jars to bowls at the Watchman Site and at three habitation and three storage sites were evaluated. The three habitation sites used in the ceramics comparison were Pinenut, Main Ridge, and Adam 2. The Pinenut Site is located on the Kanab Plateau of northwestern Arizona. Main Ridge and Adam 2 are both located in the Moapa Valley in southeastern Nevada. The three storage-only sites used in all comparisons that follow were from Quail Creek, located in southwestern Utah on the northern edge of the St. George Basin. The three pieces of fired mud from 42Ws126 were excluded from this analysis because their form could not be determined. Establishing a proxy was necessary because vessel form data from the Quail Creek storage-only sites was unavailable. The proxy allowed for a full analysis of the relationship of vessel forms from these sites and 42Ws126. The dearth of decorated jar sherds has been established in ceramic assemblages from other regions (Wilson 1985), and Colton (1952) identified only two decorated ceramic types with rare jar forms. These are North Creek Black-on-gray and Virgin Black-on-white. Following this idea, it is assumed that the plain wares identified in the ceramic assemblages from the Quail Creek storage sites 42Ws385, 42Ws386, and 42Ws397 all represent jar sherds, while the painted wares

Table 2. 42Ws126 Pottery Types and Forms.

TYPE/WARE	QUANTITY	% OF TOTAL	JARS	BOWLS
TUSAYAN GRAY WARE				
North Creek Gray	575	49.3%	445	130
North Creek Corrugated	236	20.2%	236	---
TUSAYAN WHITE WARE				
Washington Black-on-gray	2	0.2%	---	2
St. George Black-on-gray	2	0.2%	---	2
North Creek Black-on-gray	2	0.2%	---	2
Hurricane Black-on-gray (corrugated)	1	0.1%	---	1
Pipe Spring Black-on-gray (corrugated)	1	0.1%	---	1
Black-on-gray, Virgin Series	20	1.7%	---	20
SHINARUMP GRAY WARE				
Shinarump Plain	26	2.2%	19	7
Shinarump Corrugated	212	18.2%	211	1
SHINARUMP WHITE WARE				
Virgin Black-on-white	2	0.2%	---	2
Toquerville Black-on-white (corrugated)	19	1.6%	1	18
Unnamed Black-on-gray	23	1.9%	---	23
Unnamed Black-on-gray (corrugated)	16	1.3%	---	16
(SHINARUMP RED WARE)				
Kanab Red	2	0.2%	---	2
MOAPA GRAY WARE				
Moapa Corrugated	24	2.1%	24	---
Slide Mountain Black-on-gray	1	0.1%	---	1
Fired mud with quartz inclusions	3	0.2%	---	---
TOTAL	1167	100%		

represent bowl sherds. While this proxy left room for potential errors, the assumption that utilitarian vessels (jars) used for food storage would be undecorated, and vessels used for serving food would be decorated is well founded (Lyneis 1995; Myhrer 1986; Perry 1998).

The comparison, shown in Table 3, indicates that 42Ws126 has a much higher ratio of jars to bowls than the habitation sites. The ratio of jars to bowls at the Watchman Site fell exactly in the middle of the habitation site and storage-only site ratios. A potential problem in examining these ratios is the lack of screening at the comparison sites from Quail Creek (42Ws385, 42Ws386, 42Ws387). The assemblage from Main Ridge was recovered from surface collections only, and the assemblage from Adam 2 was recovered using screens. The lack of screening at the Quail Creek storage-only sites should have led to lower jar to bowl ratios (assuming that painted bowl sherds are identified more often than plain jar sherds), rather than the observed higher jar to bowl ratios indicated in Table 3. In addition, plain wares composed less than 8 percent of the ceramic assemblage from Watchman. The ratio of plain to painted wares was more similar to

Table 3. Jar and Bowl Ratio Comparisons for Habitation and Storage Sites.

Site	Jars	Bowls	Ratio	Screened
42Ws126	936	228	4.1:1	Yes
Habitation				
Main Ridge	622	289	2.2:1	Surface
Pinenut	527	189	2.8:1	Yes
Adam 2	148	90	3.0:1	Yes
Storage				
42Ws386	33	7	4.7:1	No
42Ws397	169	16	10.6:1	No
42Ws385	43	2	21.5:1	No

the storage-only sites than to the habitation sites. This is illustrated in Table 4.

In this case, the high ratio of jar sherds to bowl sherds, the amount of storage architecture,and the absence of a pit structure at the Watchman Site can be used to support a hypothesis of short-term, small-scale use of the site. Familiarity with their surroundings allowed small groups of people to travel to the Watchman Site in order to retrieve stored food items.

Table 4. Ceramic Surface Treatment Comparisons.

Site	Site Type	Ratio	Screened
Pinenut	Habitation	4.54:1	Yes
42Ws386	Storage-only	4.71:1	No
42Ws126	Storage-only	6.75:1	Yes
Red Cliffs	Habitation	9.68:1	No
42Ws397	Storage-only	12.07:1	No
42Ws385	Storage-only	21.5:1	No
Adam 2	Habitation	38.25:1	Yes

Lithics

Excavation and screening through a 1/8" mesh screens yielded 414 lithic artifacts. Eskenazi completed analysis of the lithic assemblage in the Desert Research Institute's archaeology laboratory. Table 5 shows the categories and quantities of the lithic assemblage. While the number of tools is small, the assemblage showed a mix of formal and informal tools. The formal tools included eight bifaces, one hammerstone, and one projectile point fragment. Informal/expedient tools included one utilized flake and two edge-modified flakes. Cores and assayed cobbles and pebbles are included in the total tool count. However, they were not counted as informal or formal. Because cores and cobbles were used only as raw material sources, they were are not included in the formal and informal tool totals (see Shott 1993). They were included in the analysis of debitage to tools at the Watchman Site in comparison to other sites.

The debitage to tool ratio at Watchman is 17.81:1. Table 6 illustrates how this ratio compared with those from other habitation and storage-only sites. Except for the Red Cliffs Site, which replaced Main Ridge, the same sites used in the ceramics comparison were used in the lithic comparison. The Red Cliffs Site is located in the St. George Basin in southwestern Utah. Tools included in the total for each comparison site do not include cores or assayed cobbles, since these items were excluded from the Watchman totals. The debitage to tool ratio at the Watchman Site is higher than at any of the other habitation or storage sites, while it is more similar to the storage-only sites. It most closely resembles the storage-only site from Quail Creek (42Ws397). The third storage-only site, 42Ws385 is something of an anomaly. However, it's small sample size may have had a direct effect on its unusually low debitage to tool ratio.

Table 5. 42Ws126 Tool Assemblage.

Chipped Stone Type	Quantity	%
Tools		
Biface	8	
Projectile point fragment	1	
Edge-modified flake	1	
Utilized flake	1	
Assayed Cobble/Pebble	4	
Hammerstone	1	
Cores	6	
Total Tools	22	5%
Debitage		
Decortication Flake	73	
Core Reduction Flake	198	
Pressure Flake	6	
Bifacial Thinning Flake	27	
Shatter	81	
Indeterminate	7	
Total Debitage	392	95%
Total Lithic Artifacts	414	100%

Flotation Data

None of the analyzed samples contained carbonized domesticated annuals. No midden or area of botanical discard was

identified in the excavations. The sample from feature 5 contained two carbonized *Stipa (Oryzopsis) hymenoides* (Indian ricegrass) seeds and five *Pinus* sp. leaf (needle) fragments, the only sample to contain anything other than wood charcoal (Martin and Popper 2000:2). Wood charcoal densities were low, but included *Atriplex* sp.(saltbrush), Asteraceae (sunflower family), *Juniperus* sp. (juniper), *Pinus* sp. (pine), and *Poplus/Salix* (poplar/willow). The heavy fractions were devoid of artifactual material, seeds, and other plant parts except for wood charcoal. Martin and Popper (2000:3) suggest that the samples represent disturbed deposits with evidence of fuel use or fill, which contained mostly burned structural material. Table 7 identifies the results of the wood charcoal analysis.

Although the number of plant remains recovered was low, it appears as though the prehistoric groups using 42Ws126 utilized locally available resources. Indian ricegrass is commonly found in fallow fields and disturbed sandy soils in the Upper Sonoran Life Zone, and the seeds are high in protein and easy to collect (Martin and Popper 2000:3). They can be harvested during the early summer months, and are often found in late Pueblo II Virgin Anasazi plant assemblages. Unfortunately, the Indian ricegrass seeds were found in association with feature five, the ash layer that was determined to be of modern age, and they cannot be used to determine prehistoric subsistence behavior. Pinyon and juniper, the most common wood charcoal types, grow in the Pinyon-Juniper Woodland. Saltbrush grows surrounding the site, and the poplar/willow wood could have been collected from the riparian zone, in close proximity. Domesticated plants, if they were processed and stored at 42Ws126, could have been grown along the floodplain of the Virgin River when the width of the canyon allowed for it.

Radiocarbon Dates

Four charcoal samples from the Watchman Site were submitted to Beta Analytic, Inc. for analysis (Table 8). The dates from Features 6 (hearth) and 5 (ash layer) were obtained through standard radiometric dating techniques, while the samples from Features 8t and 9 were obtained from accelerated mass

Table 6. Debitage/Tool Ratio Comparisons.

Site	Site Type	Debitage	Tools	Ratio	Screened
Pinenut	Habitation	1197	251	4.76:1	Yes
42Ws385	Storage-only	23	5	5:1	No
Red Cliffs	Habitation	3033	543	5.5:1	No
Adam 2	Habitation	515	48	10.7:1	Yes
42Ws386	Storage-only	11	0	11:1	No
42Ws397	Storage-only	405	34	12:1	No
42Ws126	Storage-only	392	22	17.81:1	Yes

Table 7. 42Ws126 Wood Charcoal Analysis.

Type	F5 Ash Layer		F10 Hearth		F6 Hearth	
Associated Date	Modern		No date		A.D. 1010-1300	
	Count	Weight	Count	Weight	Count	Weight
Asteraceae	3	.08g				
Atriplex sp.	11	.60g				
Juniperus sp			16	2.5g	8	.38g
Pinus sp.	6	.45g	3	.54g	12	.41g
Poplus/Salix			1	.05g		
Total Identified	20	1.13	20	3.09	20	.79
Total Wood Charcoal		13.58		12.54		2.73

spectrometer (AMS) techniques. All calibration was done using the INTCAL 98 Radiocarbon Age Calibration program. The two circular storage cists on the southwestern edge of the site yielded earlier dates than the hearth on the northern part of the site. The charcoal sample taken from Feature eight, a storage cist, yielded a calibrated age range of A.D. 700-900, while the sample from Feature 9, also a storage cist, yielded a calibrated age range of A.D. 870-1010. The charcoal sample from Feature 6, a hearth, yielded a calibrated age range of A.D. 1010-1300. A sample taken from Feature 5, an ash layer above the floor stones from Features 1 and 3, yielded a modern date and therefore was not included in the analysis. The radiocarbon dates from collected specimens at 42Ws126 infer two separate periods of use. The first during Pueblo I (A.D. 800-1000), and the second, during late Pueblo II to early Pueblo III (A.D. 1000-1225).

Conclusion

As part of a regionally diverse adaptive strategy, the Virgin Anasazi stored and processed food at 42Ws126 on a regular basis to ensure an available backup food supply. They used ceramic types, wares, and forms that were similar to other Virgin Anasazi sites, likely collected and processed wild foods in close proximity to the site, and retouched the tools that they needed when necessary.

Why is the Watchman Site important in a regional sense? Its importance lies not solely in the architecture, or in the radiocarbon dates, or in the artifacts uncovered. If the Virgin Anasazi practiced a variety of adaptive behaviors, then the Watchman Site captures a poorly understood facet of their subsistence strategy. The Virgin Anasazi utilized a diverse range of

Table 8. 42Ws126 Radiocarbon Dates.

Lab Sample	Material	Provenien	Uncalibrated	Calibrated Age (2 sig.)
120 (Beta-147322)	Charred mat.	Feature 6	840 +/-90 B.P	A.D. 1010-1300
132 (Beta-147323)	Charred mat.	Feature 8	1210 +/-40 B.P.	A.D. 700-900 (AMS)
149 (Beta-147324)	Charred mat.	Feature 9	1110 +/-40 B.P.	A.D. 870-1010 (AMS)
186 (Beta-147325)	Charred mat.	Feature 5	20+/-50 B.P.	Outside of calib. range

environmental settings, and the variety of site types is a direct result of this pattern. The ceramics and the radiocarbon dates from 42Ws126 point to a pattern of reuse and reoccupation, one characteristic of many Virgin Anasazi sites (Dalley and McFadden 1985, 1988).

In the Southwest, large epicenters such as Chaco Canyon and Mesa Verde have long been the center of archaeological attention. In focusing too heavily on major sites and phenomenon, smaller sites illustrative of alternative modes of adaptation is lost. Our focus must be readjusted so that we can effectively investigate these other types of sites in the field and in the record. Once we accept the idea that there are multiple mechanisms for efficiently manipulating difficult desert environments, the information smaller sites can yield becomes necessary to understand regional patterns. Excavations at Watchman are important because they contribute to greater knowledge of a smaller, more "marginal" group" such as the Virgin Anasazi. As we continue to refine our knowledge of the Virgin Anasazi, we can better understand their cultural and technological adaptations to the environment and their relationships to neighboring groups in the Southwest.

Interpretation Options

Zion National Park attracts over two million visitors annually. With this in mind, excavation at the Watchman Site combined scientific research with public education and involvement. The excavation itself was a public outreach initiative, allowing teachers and students from outside the discipline to participate in a hands-on scientific process. Learning continued after fieldwork ended. Teachers and students wrote research papers based on questions they posed before fieldwork began, and they gave oral and poster presentations developed from the excavation data in February 2001.

Over the past twenty years interpreting archaeology and sharing knowledge with the public has become an important professional goal (see Jameson, Jr. 1997:11, and AAA Code of Ethics III-C-1). The NSTEP program is only one example of the successful links between professionals and interested members of the public. As interest and public investments in cultural resources grow, archaeologists have a responsibility to share their knowledge and educate the public about these resources.

Archaeological site interpretation methods should address three key issues (Wallace 1987). Archaeologists must better connect the past, present, and future, in order to demonstrate the dynamic nature of history. Our understanding of the past is not static but continues to evolve. Secondly, interpreters must stress that particular moments in time are actually moments in larger processes, processes still operating at the present. Finally, interpretation and presentation must take a wider geographical perspective. Site significance cannot be addressed in an isolated context. Rather, the importance of individual sites must be examined on a regional scale.

These ideas form the basis of the interpretive concept for the Watchman Site. Project development includes the creation of four wayside signs, as well as a brochure providing further information about the Virgin Anasazi. The main focus of these interpretive tools is educating park visitors about humans connection to and dependence on the earth. The Watchman Site is one example of how prehistoric humans adapted to a diverse, challenging landscape using available resources for successful survival. The archaeological interpretive exhibit at the Watchman Site will be the only one at a prehistoric architectural site in Zion National Park. Currently, the others are directed toward prehistoric rock art and historic sites. Open-air exhibits provide a

unique opportunity to teach the importance of archaeological heritage while reinforcing the necessity of preserving these resources for future generations. Interpretation at the Watchman Site is only a small part of our responsibility to educate the public about the nature of archaeology as a profession. Projects like these reach large numbers of people over time, helping to combat site destruction and looting until they no longer pose an imminent threat to our archaeological heritage.

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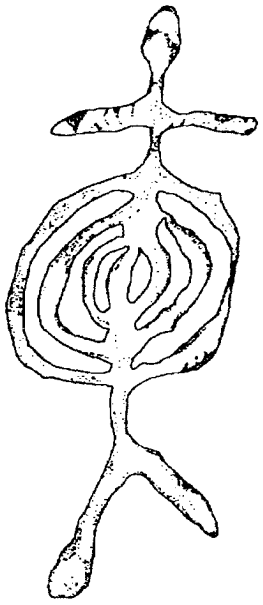

The Nevada Rock Art Documentation Project

by
Alanah Woody, Eva Jensen, Jack and Elaine Holmes, and Anne McConnell

Abstract: Nevada's rock art is under increasing threat from urban sprawl and increased site visitation. Most rock art sites are undocumented and most professional archaeologists are unable to undertake this daunting task due to lack of funds and personnel. An educated public may be the best hope for documentation and preservation of rock art and other archaeological sites in the future. The Nevada Rock Art Documentation Project aims to document rock art sites throughout the state of Nevada by combining the efforts of both professional and avocational archaeologists.

Introduction

Rock art has been of little archaeological interest for many years simply because it couldn't be dated or "read" (Whitley and Loendorf 1994). With some notable exceptions, rock art was the province of avocational archaeologists. In some ways, this attitude contributed to rock art's marginalization as a professional domain of study. For years, dedicated non-professionals recorded rock art sites, funded only with their own money. These individuals attempted to understand rock art's place in prehistoric life, devoting vacations and weekends to their research. Problems with dating and interpretation remain, but in general, rock art research is now becoming the focus of professional archaeologists. One point we wish to make is that in spite of the growing professional interest in rock art dedicated avocationals can still make important contributions. Working in conjunction with scientists, their efforts benefit both land managers and professionals. Land managers gain valuable information necessary for management and planning decisions. Avocationals also add to the data professionals use to develop and test hypotheses and theories.

Nevada has more than 1,000 known rock art sites (Woody 2000), but of that number little more than half can be plotted even to Township and Range. Fewer still have accurate Universal Transverse Mercator (UTM) coordinates. Even fewer include adequate records regarding type of rock art, motifs or associated archaeological materials. This information could aid in our understanding of the behaviors associated with rock art's use and production. The number of rock art sites recorded to today's high standards can be counted on only a few hands. The few adequately and accurately documented sites serve for future rock art recording efforts.

Concerned citizens often provide the impetus for professional recording. For example, the Harry Reid Center for Environmental Studies thoroughly recorded and mapped the Sloan Canyon site. "The Friends of Sloan Petroglyphs," who brought attention to the problems of increased site visitation and urban development, played a key role initiating this action. Additionally, plans exist for professional recording of a small number of sites on lands administered by the Bureau of Land Management (BLM) in near future. The excellent work carried out by research institutions, contract firms, and land managing agencies in documenting sites on public and private lands should be applauded. It is very encouraging to those of us who feel that rock art deserves special attention and protection.

Nevertheless, the fact remains that most rock art sites will never be recorded, even marginally. Countless others will be vandalized or weather away without notice.

So many other critical cultural resources are under threat, that there simply is not the time or funding available for professional archaeologists to do it all. Rock art is of course a priority to land managers, but the reality of the federal and state budgets often makes one or two individuals responsible for managing tens of thousands of acres. Choices must be made and in many cases, the immediate threat to other resources takes precedence. As professional recognition of rock art's importance grows, grant writing and fund raising for recording projects becomes essential. It is sometimes difficult to convince employers/professionals of the need for these projects since rock art sites comprise just one component of the archaeological record. With so many competing priorities, archaeologists can only devote a small portion of their time to rock art resources. A deep commitment to preserving rock art leads many archaeologists to volunteer their professional expertise during vacations and weekends for recording projects.

Workshop

These problems seem almost insurmountable with land managers and professional archaeologists simply unable to devote the time and resources to rock art - so many sites and so little time or money. For the last several years a small group of people, both professional and avocational have been commiserating about this very problem. Most are long term members of rock art research organizations. They love rock art for both its beauty and its potential to answer questions regarding prehistoric human behavior. Tired of standing by and watching with a feeling of helplessness, these like-minded individuals decided to take action. Driven by a desire to help land managers and contribute to our understanding of rock art, they created The Nevada Rock Art Documentation Project. The need for more and better documentation of rock art is clear, and there is a large pool of avocational people who are willing to do the work. We organized a workshop to identify those who, like us, were tired of sitting on the sidelines and wanted to contribute. The invitation-only workshop was targeted to professionals and avocationalists with an interest in rock art that might be willing to provide either organizational expertise or training.

The successful workshop attracted 40 participants including, professional land managers, archaeologists and avocational rock art researchers. Held at the Old Logandale Historic School, the Lost City Museum hosted the workshop. The Museum also provided a venue for meals and socializing, and gave workshop participants a chance to view artifacts from sites in the area.

Workshop presentations covered a variety of subjects necessary for starting a successful recording program. Dave Valentine, at that time working for the Bureau of Reclamation, discussed how rock art sites might qualify for protection under Federal regulations including Section 106 of the National Historic Preservation Act. Diana Hawks of the BLM in Arizona, sent information about a successful rock art project using Sierra Club volunteers. Helen Mortensen discussed the Site Steward program under consideration by the Nevada State Legislature. This bill supports public archaeology "watch" activities, advocates training and promotes participation by concerned citizens. Robert Mark discussed high tech methods to enhance photographic images of rock art motifs that may have faded in the field or on older photographs. Terri Robertson gave a presentation about her work to save the Sloan Canyon area. She is a perfect example of what an individual passionate about a cause can accomplish

with hard work and persistence. Don Christensen provided the final presentation. An avocational, he recorded rock art for many years. His insight into successful partnerships with land managers was a valuable contribution to the workshop.

An important part of the workshop was an open discussion that allowed participants to voice concerns and exchange ideas. Many of these were incorporated into the procedures of the Nevada Rock Art Documentation Project. Everyone agreed that land managers do not have the time to train volunteers. Many have had bad experiences with volunteers who did not deliver the paperwork or who were more trouble than they were worth! Because documentation is crucial, land managers must receive original site records for deposition in the appropriate repository. It is also important that a duplicate copy of the records be stored at an alternative location. The Lost City Museum agreed to serve as the recipient of duplicate records for rock art sites in the southern part of Nevada.

Prior to the workshop, organizers created a list of endangered sites. Some have been recorded while some are already for professional recording. The participants reviewed all the sites on the original list, however one site warranted special attention. Within a few miles of a proposed community development on private land, the Wildcat Wash site looked like a good candidate for the first group project. The site's original documentation provided very limited information about the rock art and archaeology. The small size of Wildcat Wash was also advantageous in the first effort to train volunteers to record rock art and recognize archaeological features and artifacts. Sites not chosen will be reserved for future efforts as the group refines their approach. Additional input will be sought from the land managers throughout the state for further projects.

Recording

The recording project was a great success. Volunteers came from southern Nevada and California spending two full days drawing, photographing and measuring distances between panels. Good things do indeed come in small packages. Wildcat Wash, chosen partly for the small size and 'manageability', provided some wonderful surprises for volunteers and the professional archaeologists alike. The first day started with a bang when a small, incised stone was found (Figure 1). That was the first but not the last of the artifacts documented.

To streamline recording efforts we divided into several task groups. One group began numbering rock art panels, while other volunteers climbed to the tops of the canyon walls to scout for high panels and artifacts or sites. One team recorded vegetation at each panel and throughout the surrounding area. Experienced volunteers taught others to draw the numbered panels using a string grid to insure accuracy. The mapping team took GPS readings for panels and artifacts as well as measuring distances between each panel. Most of the rock art imagery was non-representational (Figure 2), but there were some motifs that may have been anthropomorphs (Figure 3). Others have been images of horned snakes or "serpents" (Figure 4).

The field crew also identified three rock shelters. One shelter contained Puebloan and Paiute pottery along with a dark midden deposit. Two corncobs were noted in other shallow shelter areas. Exploring teams found one site high above the canyon floor consisting of several courses of stacked stone, interpreted as a hunting blind. Two locations in the canyon contained six deadfall trap sticks. At one location a bundle of cordage was found with five of the sticks, while the remaining stick was found in the other location. The volunteers identified

only a few lithic artifacts and ground stone pieces scattered throughout the canyon.

At the end of the second day, 68 panels had been drawn and photographed, and 22 artifacts located and photographed. The "small" canyon revealed a wealth of information about past behaviors. Many individuals had come to the canyon and one tired crew left with a feeling of great accomplishment. More projects are currently in the planning stages and the Nevada Rock Art Documentation is off to a great start.

Conclusions

Since the Wildcat Wash recording project was completed, the Nevada Rock Art Documentation Project has been merged with the newly formed Nevada Rock Art Foundation. The goals and objectives remain the same, but the Foundation is a tax-exempt organization which allows donations made to be tax deductible. The Foundation's Board of Directors and Advisory Boards include both professional anthropologists and archaeologists, but also concerned citizens who want to make a difference. Future plans include, in addition to rock art recording projects, a statewide educational program for kids and adults, publications, and continuing advocacy for archaeological site protection.

We wish to make it clear that we do not in any way condone large numbers of people invading rock art sites or support the open disclosure of sensitive site locations to each and every citizen who demands it. What we are advocating is thorough training for volunteers by professional archaeologists. These individuals can then record rock art sites with the guidance of professionals and provide those to appropriate land management agencies. This is a win-win situation, where land managers get data on sites in their districts and rock art enthusiasts can participate in protecting the sites that they love.

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Figure 1. Small incised stone.

Figure 2. Non-representational motifs.

Figure 3. Anthropomorphic motifs

Figure 4. Horned serpent.

A Heritage Network for the Great Basin

by
Caroline Hilton, Virginia Terry, and Mark Henderson

Abstract: *We describe efforts in Ely to implement a proactive regional interpretive network for the Great Basin physiographic region which includes four components: 1) an environmental education program, 2) a regional scientific collections information network, 3) an interdisciplinary field research network, and 4) a travelers information network to orient visitors to natural and cultural features and interpretive facilities in the Great Basin. These components must be integrated for visitors, residents, and scholars alike to conserve resources, draw their own conclusions about the natural and cultural character of the region, and choose the path of future development in America's "land in between".*

This presentation examines our effort to promote conservation of heritage resources in the central Great Basin by encouraging public participation in the use of these resources. We wish to show continuity with the discussion of public archaeology offered by Brain Hatoff (1992) at the 1990 Great Basin conference in Reno. Through a current case study from the Ely area, we illustrate public participation opportunities to enhance scientific research goals. We then attempt to expand on Hatoff's perspective by suggesting that archaeologists and ethnographers be obligated to develop formalized **public participation plans** as part of the design for each research project. We suggest four vital public information sharing components to include in such plans and offer suggestions for plugging into existing community networks to encourage public understanding of the research.

This discussion is the result of collaboration between two community educators and a community archaeologist. Caroline Hilton is a teacher and community activist in Ely. Virginia Terry is an educator and currently White Pine County School District Special Services Director and McGill Elementary School Principal. Both were instrumental in the McGill Elementary School's selection as one of President Clintons National Blue Ribbon Schools for 1992. Mark Henderson is an archaeologist with the Bureau of Land Management in Ely. We are indebted to efforts by educators, archaeologists and volunteers at the Baker Archaeological Project for many of the notions presented here. However, the presentation does not necessarily represent the views of any of our co-conspirators or our employers.

Archaeologists and ethnographers are usually elusive when confronted by members of the public requesting disclosure of specific field databases such as site locations and informant identities. Archaeologists often respond as if a team of looters backs every inquiry. Ethnographers sometimes react to public inquiries as if hordes of shutterbugs will be invading their host research communities and making inappropriate inquires of the "natives". It is now axiomatic that the future of our discipline's relies on public exposure of, and support for our endeavors (Cartledge and Spoerl 1993, Hatoff 1992, Lipe 1973, Schiffer and Gumerman 1977, McGimsey 1972, McGowan 1989). We expect the public to value our research; not to loot archaeological sites and not be bigoted about different cultural traditions and ethnic values. However, we are wary about public disclosure and discussion of our research.

This is fine, but some believe there is a clear line between ethical disclosure of data sources by professionals and unethical grandstanding for self-serving ends. The American Anthropological Association for

example has ethics standards that if violated could lead to professional sanctions. There are also legal prohibitions against disclosure of certain information gathered under Federal auspices. Most archaeologists are familiar with the provisions of the Archaeological Resources Protect Act, which forbids disclosure of public land archaeological site locations except on a need to know basis. As citizens, we all rely on the Privacy Act to protect our identities in federal information collecting efforts such as the census and tax returns. On the other hand, there are no sanctions imposed on researchers who do not make efforts at public education and as Lipe states (1977:25) there are few professional rewards for public participation.

The "eco-tourist" and the local resident are increasingly sophisticated about the cultural as well as natural heritage of the places they visit and in which they live. With increased leisure time, population and accessibility we have no choice but to rely on the good will and knowledge of the public to protect our heritage resources. We might also find that some of the public's suspicions about outside researchers can by allayed by explicit public participation efforts.

The Great Basin in general is representative of a remote, desolate and depopulated region with special problems with visitation not unlike many wilderness areas. A conflict exists between growth-oriented entrepreneurs on the one hand and the opportunities for research in the relatively pristine outdoor laboratory, unconstrained back country exploration, and the traditional lifeways of residents in a low population density environment on the other hand. The region forms a simplified model for analysis of the impact of human activities in a continental ecosystem. What are the costs and benefits of disclosure of natural resource information in such an environment with the mandate for environmental education as stressed in the 1988 amendments to the Archaeological Resources Protection Act? How does one educate without disclosure? How does one adjust to increasing access and utilization to the resources by the uninitiated?

The area surrounding Ely is the center of the Great Basin. There is some reason to believe it is a boom economy waiting to happen. If so, will this boom be an opportunity for improving quality of life indicators (Naroll 1983)? Alternatively, will such a boom be another opportunity for applied social scientists to again practice triage while culture takes its own trajectory? Are we reduced to being observers because of the constraints of our own ethical and professional standards? If the area continues to be out of the mainstream, it will remain a social laboratory for conservation of natural and human resources with few reasons to question the status quo of our research priorities. Nevertheless, if it does boom we will be faced with an accelerated erosion of our databases as faced in almost every other region in the west.

The general problem of publicity is illustrated in the establishment of Great Basin National Park (GBNP) (Public Law 99-565). The Park legislation mandated a "unified and cost effective interpretation of the Great Basin physiographic region" as a whole. Unlike most parks, Great Basin Park's purpose was to be representative of, and interpret a whole ecosystem. The legislation further mandated the development of a coordinated public and private approach to this interpretive endeavor. The public impetus to create the Park was a result of two usually incompatible interest groups (Unrau 1990:367). One group had an entrepreneurial desire to promote tourist development - what might be called a "Chamber of Commerce" interest. The other

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group wished to establish a naturalistic reserve, what some might consider a "preservationist" interest. As a result, there is perhaps no other Park legislation that was so long in incubation and reflective of persistent struggle by promoters and naturalists (Lambert 1991, Unrau 1990, Waite 1974). The conflict persists after establishment of the Park with preservationists who have valued the Great Basin as a research laboratory relatively untrammeled by development who do not wish the region to become a tourist attraction. This is the same dilemma faced by archaeologists and ethnographers in disclosing their sources. We wish the public support but we want everything to stay the same.

Efforts to create a Zuni Culture National Historic Park on the Zuni Indian Reservation in New Mexico also illustrate the conflict about how the public can and should be educated about heritage resources. The Tribal members have so far rejected establishment of the Zuni Park. The local population does not want to be subjected to institutionalized interpretation of their heritage to non-participants; what some Zunis consider creation of a "human zoo". Visitation continues on the Zuni Reservation and the conflict is not resolved. The numerous social scientists that are aware of the situation are ethically unable to do more than observe as the demand for more information and number of visitors increases.

Under either the boom or the bust scenario culturologists (anthropologists and educators) need to make efforts to conserve resources in the region, both as a matter of public policy and self-serving professional survival (Lipe 1973, 1977). In the remainder of this presentation, we provide a theoretical basis for the current underdevelopment of research potential in the central Great Basin, a history of recent efforts to develop public awareness of scientific values in the area and a proposed method for researchers to promote conservation of Great Basin heritage resources through public participation in their research.

Theoretical Basis

Today, the central Great Basin is both core and periphery (Steward 1972). It is the core of a physiographic region but out of the mainstream in a current cultural sense. Population density in the state of Nevada is lower than anywhere in the country, outside of Alaska. With its highly urbanized population, the central Basin may be the ideal type for a "new age" Desert Culture (Jennings 1973). Although not in the sense originally intended, the 21st Century Desert Culture features rates of suicide, domestic violence, incarceration, smoking, cancer, birth defects, police to civilian population, teenage pregnancy, alcoholism, unemployment, school drop outs, rape, population growth, drug arrests, teen homicides, job growth, and gun ownership among the highest in the nation.

The Great Basin has been **objectively** defined hydrographically, physiographically, floristically, and ethnographically (Grayson 1993, Trimble 1989). Some contemporary observers have argued that the contemporary cultural character of the Great Basin can be **subjectively** defined by "...heedless destruction of nature, as well as the debasement of tradition, learning, and the sacred texts of society". (Shepperson 1989:x).

Great Basin National Park and the immediate environs in the central Great Basin have suffered little attention from culturologists as well as the public in general. Ethnographically, this entire section of eastern Nevada and Western Utah is perhaps the most poorly known in the United States. It is outside the scholarly

mainstream. Neither American Indian, European, Asian or African enclaves, nor traditional livestock, mining, farming or religious communities are subjects of focal research by Great Basin ethnographers. For example, Fowler and Dawson comment that the basketry of the Western Shoshone is perhaps the least available for study in all Great Basin ethnographic basketry collections (1986:714). This may be a result of the distance of the central Great Basin from centers of population and therefore academic access.

The lack of longstanding cultural research commitments in the central Great Basin may also be a result of ambivalence or hostility toward researchers and non-commodity development. Few if any culturologists claim this as a regional research domain. Many local residents are cool toward eco-tourism and the scholars that might be seen as epiphenomena to real economic growth in mining, ranching, and retailing. Extractive industry proponents see natural resources visitation as a threat to their economy. Other entrepreneurs see natural resource tourism dollars, gaming, hunting and motocross as the market of the future. The GBNP's legislative provision permitting livestock grazing at pre-Park levels demonstrates the political power of the traditional commodities producers.

In 1988, visitors at GBNP did not exceeded 75,000, (NPS 1992:144) reflecting the general decline in National Park visitation (Tomsho 1994). In contrast, market demand for casino and family "Theme Park' entertainment appears to be on a rapid and continuing rise. The theme park boom is speculatively linked to a decline in US domestic National Park controlled "eco-tourism". The promotion of family entertainment has even become part of recent statewide political campaigns (Hammergren 1994). The simultaneous boom in gold mining in northern Nevada and population in southern Nevada leaves a curious vacuum or lag of tourist related development in the central Great Basin. White Pine County, with a stable population of about 10,000 has sustained an unemployment rate of around 10 percent for more than a decade. The county does not have an Interstate highway, limiting accessibility to area attractions and businesses. Since Kennecott Copper closed its eastern Nevada Mine and smelter in 1980, establishment of the Nevada maximum-security prison in Ely, which began operation in 1989, is the major factor preventing higher unemployment and population decline.

Recent Applications

Grassroots efforts in the community of Ely to implement a proactive understanding of the local environment began in part as an outgrowth of the establishment of GBNP. The motivation for this interest grew out of a perceived lack of appreciation by much of the local population for the regional environment. A 1992 community survey conducted by the White Pine County Economic Diversification Committee demonstrated a serious under-promotion of tourist and visitor related facilities adversely affecting the local economy. That same year, the White Pine County School District implemented a Great Basin Natural Resources and Cultural Heritage Fair to inform elementary age students, teachers and the community about the area's human and natural heritage. In 1993, the Economic Diversification Committee made its first priority the promotion of a Visitor Center.

External forces were also at work. In 1991, the Bureau of Land Management sponsored its second *Adventures in the Past* tribute. The Adventures in the Past program grew out of the 1988 amendments to the Archaeological Resources Protection Act.

The act requires federal land managing agencies to conduct education programs to encourage public stewardship of archaeological resources. As part of the 1991 regional tribute to the Great Basin, Brigham Young University, the White Pine Public Museum, and the Ely District Bureau of Land Management forged a cooperative arrangement. This agreement encourages public visitation and participation in archaeological excavations at the Baker Archaeological Site, a Fremont Culture site in the Snake Valley visible from the GBNP Visitor Center (Figure 1). The public programs at the Baker Site have now concluded. During its history, each eight-week summer program attracted approximately 1,300 visitors and over 100 excavation volunteers.

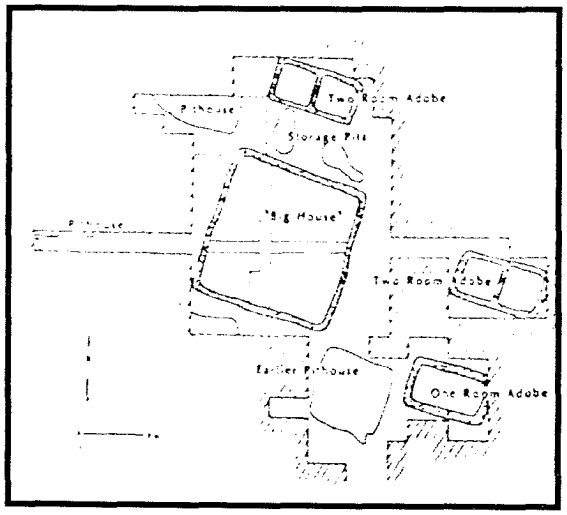

Figure 1. Baker Site Excavations 1992.

Even through the community has been very supportive of the project and protective of the site (including investigations of off-season and after hours visitors) there are many that think the collections should be displayed in a local facility. The efforts of school children at Billinghurst Middle to have the Lovelock Decoy Ducks returned precipitated local concern about disposition of artifacts from the Baker Project. Many believe that the artifacts should have remained within the state of Nevada. There is a perception of "colonial" robbery by out of area institutions and researchers.

The need for a curatorial facility to house local collections formed part of the justification for two of the authors (Hilton and Terry) to approach various local, state, and federal agencies. The authors solicited help from the Ely City Council, the White Pine County Commission, the Nevada Legislature Public Lands Committee, the Bureau of Land Management, and Nevada's US Congressional Delegation to support the establishment of a Heritage Center in Ely.

The objective of the Baker Archaeological Project to teach conservation by allowing volunteer excavation opportunities to all comers, particularly local students, was only partially successful. Our most dedicated participants were local citizens, but few were students. Nevertheless, the opportunity has been available; countering claims by illicit excavators that they dig illegally because archaeologists will not allow them to access their projects.

In the final year of research excavations at the Baker Site, the project expanded by adding a "Teachers Field School" as a national pilot program for the BLM "Intrigue of the Past" (Smith and Others 1992) Project Archaeology curriculum (Figure 2).

An unanticipated finding of the Baker Project is the notion that all archaeological field projects, no matter how modest, backed by federal permits and or finances should be required to have a public participation plan. Additionally, any such plan should require compelling reasons to exclude the avocational public from fieldwork participation. We frankly can think of no situation that justifies volunteer exclusion from an archaeological project, except where mandated by law (hazardous situations such as

Figure 1. Teachers working at the Baker Site.
Photograph by Anne DuBarton.

fire or law enforcement operations).

It has been twenty years since a major archaeological field project operated in the Snake Valley (Tuohy and Randall 1979) and forty years since a research field school has taken place there (Taylor 1954). Opportunities for public participation in heritage research cannot disappear if we expect public support for the conservation model initiated here. Forty years ago there were no archaeologists living closer to the central Great Basin than Salt Lake City, Provo and Reno. Now archaeologists working for federal resource management agencies live in most western communities. These civil servants form the core leadership in heritage resource conservation. If we are still loosing the conservation battle, as many believe we are, then perhaps focusing efforts on environmental education can make some improvements.

Elements for a Public Participation Plan

Community-based heritage resource specialists and researchers doing work in local communities must commit to participation in and promotion of four essential networks to conserve heritage resources (See Figure 3). There is an implicit contract with the community in which our research takes place to:

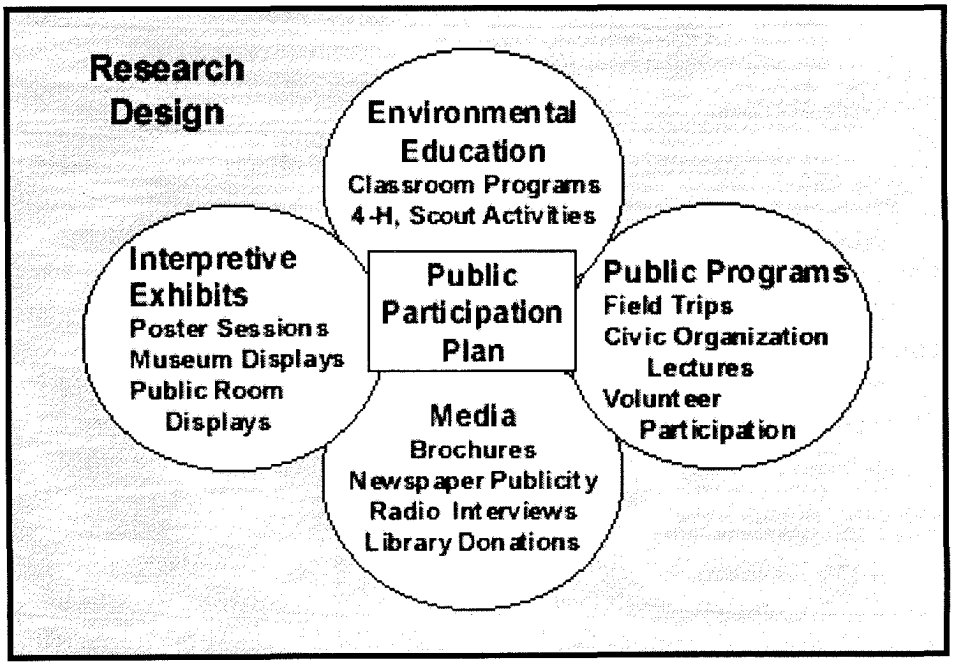

Figure 3. Public Participation Plan Research Design

- First, participate in local environmental education programs through schools, community colleges, civic organizations and community clubs (like 4-H and Scouts),
- Second, to promote exhibition of collections and research results in local communities by loan agreements with museums outside the area and donation of collections in private hands to qualified repositories,
- Third, to develop and utilize existing community forums for public presentations by people doing field research in the area through local historical and archaeological societies, and community colleges and,
- Fourth, to produce information for sightseers, visitors, travelers and tourists and disseminate this information at local businesses, public buildings, display racks of governments agencies, and Chambers of Commerce.

Effectively using each of these components must rely on seeking and preserving allies in the local community as well as cooperation of outside researchers doing work in the area. Environmental education programs can be supported by all scholars and naturalists in the Great Basin by building an explicit "public participation plan" into each research design.

Effective application of the collections information network requires "information super-highway" links to archives, libraries and museum collections. The U.S. Army Corps of Engineers, St. Louis District offer a pilot model for this approach (Meyers and Trimble 1993). In addition, researchers working on local projects should contact area schools, libraries, government offices with public display areas, and museums to determine if a poster display or small exhibit highlighting their work could be shown.

Regional institutions should serve as clearinghouses and communication centers for scholars undertaking research in the area. Much local research does not benefit from community knowledge because researchers are unwilling or unable to contact individuals or community groups that may have the information. Everyone knows of missed sites and misinterpreted resources resulting from the failure to contact local people "in the know". Conversely, researchers have an obligation to inform local users about the research they are undertaking while it is in progress, although newspaper publicity may not be appropriate. Researchers also have an obligation to make the published results of their work available to the local community. Minimally, this means a contribution to the local public and high school library of all published papers and written presentations made to professional audiences. Great Basin records are scattered because the research centers are in major, and unfortunately often competing, institutions on the periphery or outside the region (Reno, Carson City, Salt Lake City, Provo, Las Vegas). The current situation is colonial in nature, with scholars from urban centers coming into the community for research and not inviting the public to share in the fieldwork or share the results.

If scholars wish the public to share in the conservation of research materials and resources, we must make them partners in the stewardship of those resources. A visitor who does know that potsherds, arrowheads, bottles, bristlecones and rat middens are vital scientific resources cannot be expected to share in the scientist's righteous indignation when these materials

are treated as oddities, collectibles and merchandise or unintentionally destroyed by a livestock operator, miner or motocross racer. It is relatively inexpensive for a researcher to develop a small tri-fold brochure for a current project and make this available to the local and traveling public. This type of inexpensive presentation lends credibility to the researcher's efforts with the local community. This also allows an opportunity to promote the concept of "minimum impact" visitation. Effectively applied in teaching respect for natural resources ("Project Wild" or "Project Learning Tree"), this philosophy may be as useful for promoting stewardship of heritage resources. Getting the word out on these matters is not just a responsibility of the government agencies charged with enforcement of rules, regulations and laws, or the tourism bureau, or the Chamber of Commerce. Everyone shares an obligation to protect and promote our collective cultural heritage.

It is trite but true that our own futures count on our ability to get these networks to operate more effectively. With accelerated use of our cultural resources and our desire to have continued access to our research materials cooperation in the development of research designs and public participation plans is imperative. Integration of these components is for visitors, residents and scholars alike to conserve resources, draw their own conclusions about the natural and cultural character of the region, and choose the path of future development in America's "land in between".

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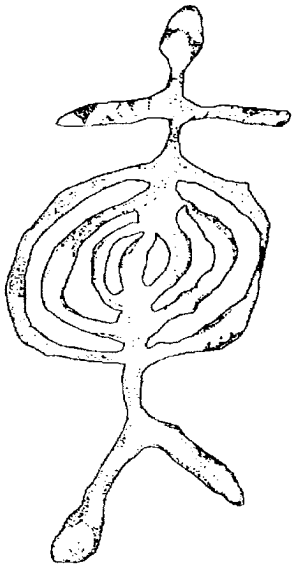

The Hot Creek Project Volunteer Programs and Museum Collections: Combining Public Education and Archaeological Research in Nevada

by
Susan R. Edwards
and
Anne DuBarton

Abstract: Museum storerooms hold many older archaeological collections. Utilizing volunteers to analyze and curate these materials allows researchers to obtain otherwise inaccessible data and satisfies an increasing need for public involvement in archaeological programs. The Hot Creek project provides a model for combining the complimentary goals of public education and archaeological research. It served as an outlet for avocationalists to make a real contribution to the field while allowing archaeologists to collect data on regional exchange, chronology, and lithic technology in a poorly understood region of Nevada.

Introduction

The Hot Creek project is an example of how the complimentary goals of public education and archaeological research can be met. Many valuable archaeological collections, such as the Hot Creek materials, languish in museum basements. Funding to deal with the collections is usually scarce or non-existent. Establishing a volunteer program for the purpose of analysis and curation of these materials allows otherwise inaccessible data to be obtained and satisfies an increasing need for public involvement in archaeological programs. The Society for American Archaeology (SAA) endorses efforts like these. The organization's "Principles of Archaeological Ethics" promotes public education and outreach stating:

> Archaeologists shall reach out to the public to: (1) enlist its support for the stewardship of the archaeological record, (2) explain and promote the use of archaeological methods and techniques in understanding human behavior and culture, and (3) explain archaeological interpretations of the past. A variety of audiences exist for these education and outreach efforts, including students, teachers, lawmakers, Native Americans, government officials, environmentalists, service organizations, retirees, reporters, and journalists. Archaeologists who are unable to undertake public education and outreach directly shall encourage and support the efforts of others in these activities. Archaeologists should participate in cooperative efforts with others interested in the archaeological record so that preservation, protection, and interpretation of the record may be improved (Lynott and Wylie 1995:23).

The programs most likely to succeed integrate elements appealing to a variety of groups. Creative research designs incorporating questions reflecting both local and regional interests along with avenues for public participation appeal to archaeologists and stimulate public/professional partnerships. As McManamon (2000:18) notes "[w]e need to make education and outreach programs and support for them part of the regular business of professional archaeology." The Hot Creek project provided an outlet for avocationalists to make an important contribution to the field while allowing archaeologists to collect data on regional exchange, chronology, and lithic technology in a poorly understood region of Nevada.

Project Background

Nevada's Hot Creek Valley lies within the Central Subregion of the Great Basin physiographic province (Figure 1). Characterized as an area of high valleys

enclosed by north-south trending mountain ranges, valley floor elevations are typically above 5,500 ft and the mountains reach up to 10,000 ft. Valley bottom vegetation consists of cold-desert shrubs such as shadscale and sagebrush, while piñyon-juniper woodlands cloak the upper elevations.

Figure 1. Overview of the Hot Creek Valley.

The Hot Creek Valley has long been home to native populations. Abundant water resources and the wide variety of plants and animals that attracted Native Americans, also brought explorers and pioneers to the region in the 1860's. Contemporary informants indicate that Shoshone utilization of the valley continued well into the 20th Century (Arnold et. al. 1997). Cultural resources reflecting at least 8,000 years of utilization by these groups extend across the valley.

The Hot Creek artifacts were collected as part of a survey and salvage excavation project in the late 1960's. In advance of the Department of Energy's (DOE) Faultless Project, Dr. Richard Brooks and a team of archaeologists surveyed the Hot Creek Valley for cultural resources. Of the 134 sites recorded in the region, most were prehistoric single activity locales where food processing or tool manufacturing occurred. Other site types included temporary camps, rock art panels, and historic mining and ranching structures. Following site recordation, the archaeologists conducted data recovery at selected locations within the valley recovering more than 18,000 artifacts. Brooks (n.d.) produced a summary report, but time and budget constraints prevented completion of statewide inventory forms with precise site locations and provenience data. Additionally, only a small percentage of the materials recovered during the original fieldwork received analysis. The collections have been stored in a museum since that time.

The Volunteer Program

Many older artifact collections similar to the Hot Creek materials fill museums and other curation facilities. Rich with data potential, these collections frequently need extensive "rehabilitation" or upgrading to current curation standards prior to analysis. Usually an insurmountable obstacle, the absence of funding provided the opportunity to enlist the help of an existing group of dedicated volunteers.

A successful volunteer program requires skilled and enthusiastic participants. The avocational archaeologists that were part of the Hot Creek project possessed diverse talents and backgrounds that made it a rewarding learning experience for all.

Although camera-shy, Marion Van Buren has never shied away from donating long hours to the pursuit of archaeology (Figure 2). She has been a volunteer for the University of Nevada system since 1986. Working with University of Nevada Las Vegas (UNLV) and Desert Research Institute (DRI) archaeologists, Marion has logged hundreds of field and laboratory hours on Great Basin, Mojave Desert, and Southwest projects. She has worked in the field on surface collection and excavation projects, and has worked in the lab analyzing ceramics and cataloging many artifacts.

As a biology teacher, Helen Dwyer (also Figure 2) spent 20 years trying to instill in her students her passion for learning about the natural world. Volunteering in archaeological programs satisfies both her love for archaeology and her thirst for knowledge. Helen pursued her passion for archaeology by participating in Earth Watch programs at Homolovi Ruin. In 1981, Helen began working at UNLV regularly, volunteering for numerous projects in the Virgin and Muddy River regions.

Figure 2. Marion VanBuren (background) and Helen Dwyer (foreground).

Although a relative newcomer to volunteering, Hazel DuBarton's interest in archaeology spans more than 30 years (Figure 3). Her interest in Old World cultures inspired her daughter to become a professional archaeologist. In 1993, Hazel began working in the archaeology lab where she learned the fine points of artifact cataloging and packaging. Interacting with the professionals and avocationalists at DRI, Hazel has gained experience and a deeper appreciation for the goals of archaeology.

The Collections

Initially, the lack of statewide inventory forms motivated DOE to reassess the collection. Additionally, Federal agencies responsible for archaeological collections have become more sensitive to Native American concerns such as issues of cultural affiliation and ceremonial significance. Using the American Indian Religious Freedom Act (AIRFA) and Native American Grave Protection and Repatriation Act (NAGPRA) for guidance, DOE, like many other agencies, is re-evaluating the status and proper management of the materials under their care. Motivated by these concerns, DOE agreed to a review of the Hot Creek materials.

Figure 3. Hazel DuBarton

Transferred to the DRI curation facility in October 1997, the Hot Creek collection arrived in poor condition. The artifacts remained in their original field containers – a rag tag collection of paper bags, cigarette boxes, vials, and plastic sandwich bags with only limited provenience information scrawled on 3-x-5 inch index cards (Figure 4). These storage techniques are typical for collections dating to this period, but are not acceptable by today's curation standards.

Clearly, the first order of business was to organize and repackage the artifacts according to current archival standards (36 CFR 79.5). The volunteers prepared new packaging consisting of polypropylene

Figure 4. Collections in original condition.

zipper-closure bags with acid-free labels heat-sealed inside (Figure 5). Individual bags were logged into a master database before being placed in acid-free cartons for permanent storage. The volunteers provided initial analysis, sorting the collection into categories such as lithics, ceramics, and ornaments. They divided each category into sub-groups based on morphology and raw material types facilitating the identification of chronologically sensitive artifacts and non-local items.

Figure 5. Some of the collections after packaging.

The Hot Creek assemblage includes a significant number of items originating from outside the valley. These artifacts indicate that the inhabitants participated in regional exchange on at least a limited basis. Three *Olivella biplicata* shell beads found in the valley can be dated between 900 and 1100 A.D. (King 1982) (Figure 6). These split-punched and barrel shaped beads originate in coastal southern California and are found at many Great Basin sites. A circular stone ornament made of brucite was also part of the collection (Figure 6). Brucite, a magnesium carbonate, is harder than talc but softer than many other stones and is therefore easy to carve. Regional sources for brucite occur at Currant Creek near Ely and at Gabbs, Nevada (DuBarton 1999; Kral 1951; Longwell et al. 1965).

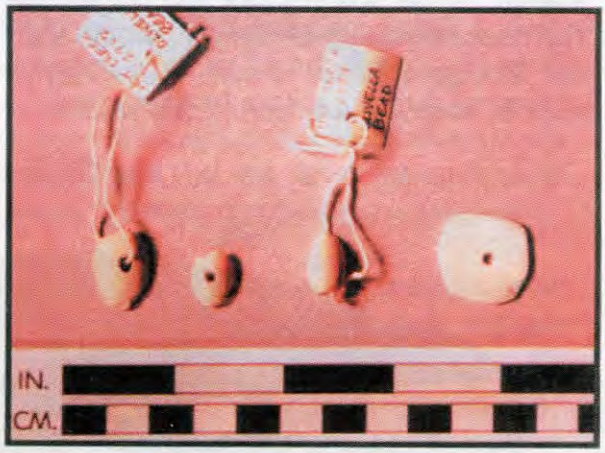

Figure 6. Shell beads and Brucite ornament.

Although most of the ceramics found in the Hot Creek Valley are Intermountain Brownwares dating to the last 800 years (Lockett and Pippin 1990), the collection included a small number of tradewares (non-local ceramics) (Figure 7). Graywares originating in western Utah indicate interaction with Fremont groups during a period ranging from 400 to 1350 A.D. (Madsen 1977). Other sherds, identified as Virgin Anasazi ceramics, date between 600 and 1,150 A.D. (Colton 1952). Anasazi and Fremont ceramics occur at sites throughout south-central Nevada. This evidence suggests a developing exchange network between the Great Basin and the Southwest during the Late Archaic.

Figure 7. Brownwares and Graywares.

The projectile points found in the Hot Creek collection indicate the valley has been utilized by native peoples since the Early Archaic, about 8,000 years ago (Figure 8). The most numerous categories include Elko and Rosegate Series points. These styles were in common use during the Middle to Late Archaic; they span the transition from atlatl and dart to bow and arrow (Warren and Crabtree 1986). Locally available chert was the preferred raw material for most of the points analyzed as part of the Hot Creek study. This material accounts for 87 (45%) of the 195 points. Basalt and jasper were the next most common raw materials; each represented by 36 (18%) specimens. Obsidian made up ten percent of the raw materials (19 specimens). A variety of other materials account for the balance of the points recovered. Agate, chalcedony, quartzite, and silicified volcanic each comprised 2 to 3 percent of the assemblage. Correlations between lithic raw material and point types indicate obsidian occurs in small frequencies throughout time, while basalt use was more extensive in the Middle Archaic. Chert dominates the later point styles.

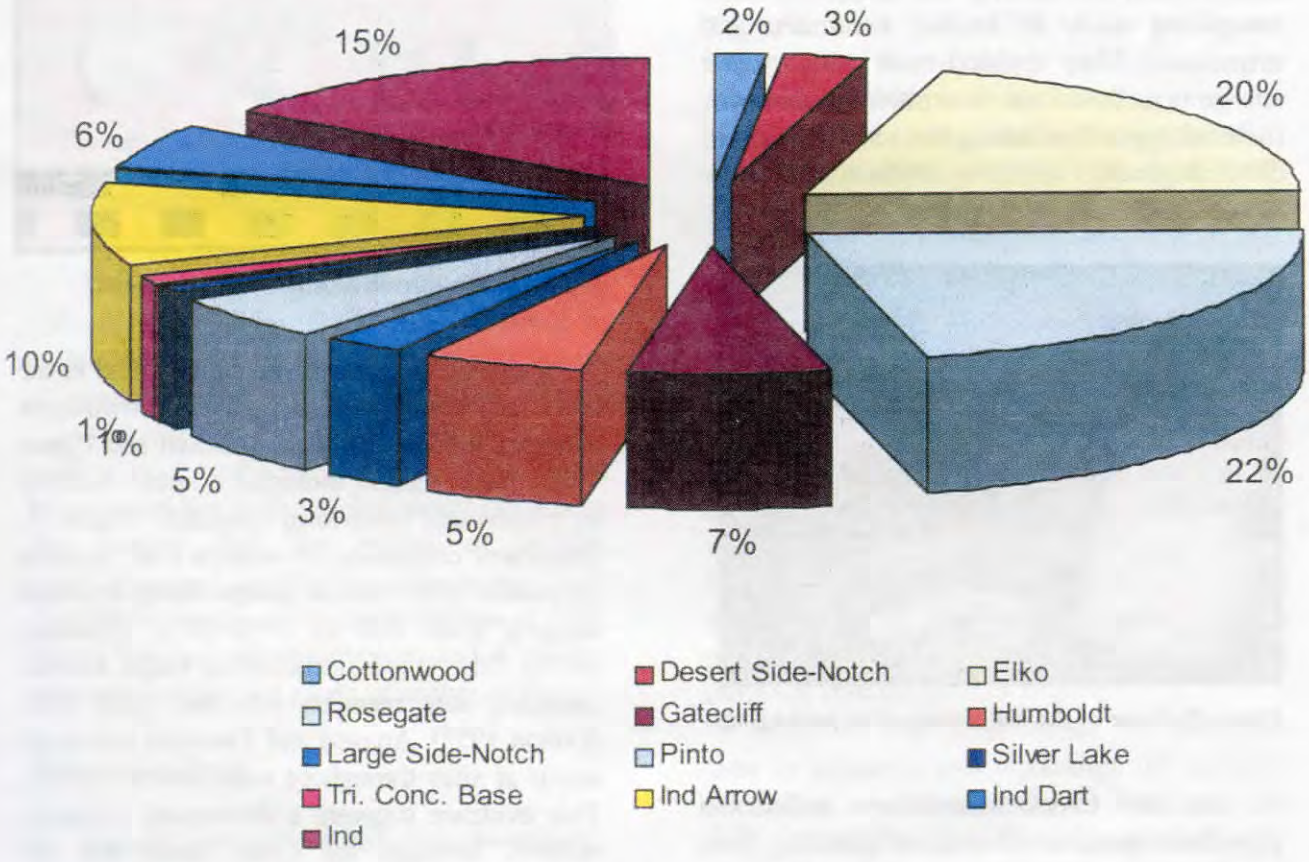

Figure 8. Hot Creek Projectile Points

Conclusions

Work on the Hot Creek collection is nearly finished. Both parties clearly benefited from this cooperative learning effort. The invaluable assistance of the volunteers made completion of the inventory and repackaging possible. Working with the archaeologists, the volunteers' analyses provided the data needed to address several important research questions. In addition, the catalog generated as a result of this project furnished the data for NAGPRA summaries. Consultations between DOE and the tribes are ongoing.

In addition, DRI archaeologists gained preliminary information regarding regional exchange, chronology and lithic technology that is invaluable for comparative studies. The next step requires more in depth analyses such as obsidian sourcing and hydration, ceramic petrographic analyses, use-wear studies, and lithic production investigations. With this information, archaeologists can make comparisons between the Hot Creek Valley and surrounding areas such as Monitor Valley, Pahute and Rainier Mesas, or the lands encompassed by the Nevada Test and Training Range. Taking a broader approach places the Hot Creek Valley in a regional context, and provides another piece in the puzzle for reconstructing the prehistory of the central Great Basin.

The cooperative efforts of volunteers and professionals in the Hot Creek project is based on the premise that museum collections represent the stored material culture of the past and that this culture is "knowable" through study of these artifacts. To make this past accessible to the public several goals should be part of projects using museum collections. These include conservation of our material culture, research enabling us to understand it, and education of the numerous "publics" who have an interest in these materials. Archaeologists have espoused these goals since the Antiquities Act of 1906, yet many people don't feel that artifacts found in museums serve to connect them to the past.

Pubic participation increases appreciation for the past, encourages respect for cultural resources and fosters a sense of stewardship. While many archaeologists involve non-professionals in fieldwork that is perceived as "glamorous and exciting," it is important for them to recognize that excavation is only a small part of the total archaeological process. Through involvement in laboratory work volunteers learn to appreciate other aspects of archaeological research and are better able to understand the meaning the artifacts they have dug up.

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