Lewis Hollow Site Report

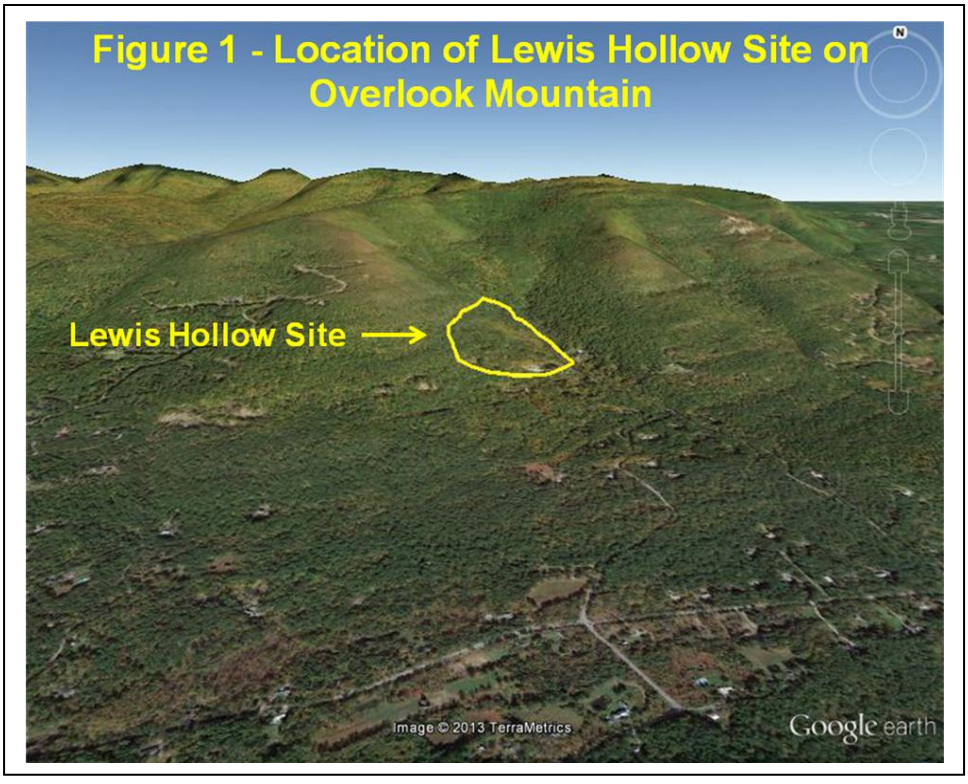
By David Johnson

Participants and Survey Date

The Lewis Hollow Site survey discussed in this report was conducted by David Johnson, Glenn Kreisberg, Howard Banney and Edward Doucet during March and April, 2012.

Location and History

Overlook Mountain is located two miles northeast of Woodstock, NY and eight miles west of the Hudson River along the eastern escarpment of the Catskill Mountains. The Lewis Hollow Site is located along the southeastern slope of the mountain between 1100 and 15000 ft elevation and consists of dozens of cairns ranging in size from 3 ft square to 30 to 70 ft long and 15 to 30 ft wide, with heights reaching up to 12 ft. (Figure 1)



Near the site, archaeological evidence has shown Native Americans occupied nearby rock shelters from 2000 B.C. – 1750 A.D. as autumn hunting bases. (Figure 2) Documents at the Woodstock Guild contain a photograph of some of the artifacts found by Q. W. Berry in “Indian Cave” on Overlook circa 1919. The artifacts appear to be 3 Lamoken, 3 Brewerton, 1 Snook kill and 11 pottery shards dating from the Middle to Late Woodland Periods, possibly Jack’s Reef type dating 500 to 900 A.D.

Figure 2

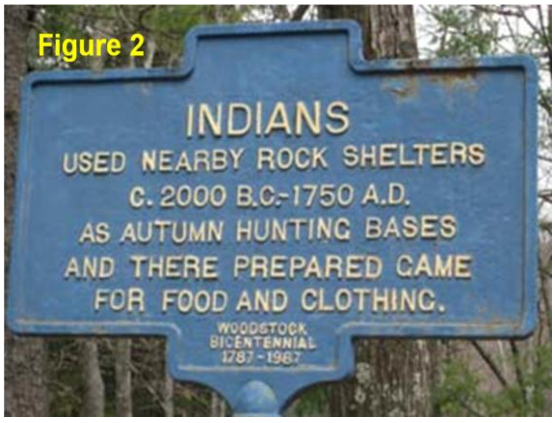


Figure 3

From 1839 to 1900 California Quarry mined bluestone shale near and within the site. (Figure 3) The presence of some small quarries near the cairns has lead to controversy regarding their origin. While some argue they were constructed by Native Americans, others believe they were constructed during the time the quarry was active. This report will present data which supports the Native American hypothesis, which suggests the Lewis Hollow Site was constructed before Europeans entered the area. Early property deeds for the area mention “ancient stone monuments” present from the first land grants, patents and subdivisions (Kreisberg, 2007).

Glenn Kreisberg, Vice President of the New England Antiquities and Research Association (NEARA), became aware of the site during the construction of a cell tower and began to research the site. He located nearly five dozen cairns. A National Registry application has been submitted to preserve the site and is currently pending. “In 2006 as part of the cell tower review, Sherry White, Tribal Preservation Officer of the Stockbridge Munsee Community Band of Mohican, visited the cairns and expressed the belief that the larger of the structures could be memorial or “burial” cairns”. (Kreisberg

2007) Then “In 2008 researchers from the New York State Museum in Albany visited the site along with members of NEARA. State Museum GIS specialist Susan Winchell-Sweeney conducted a GPS site survey documenting the quantity and location of the remaining stone constructions. In all, 6 very large cairns (up to 100 ft in length), 46 small cairns (up to 10 ft in length), 2 “snake” effigies or “serpent” walls (90’) and 2 springs were identified and their size and location data recorded”. (Kreisberg 2010) After visiting the site in 2012 archaeologist, Nina Versaggi, Binghamton University, commented that the site should be studied further to determine if qualifies to be put on the State and National Register of Historic Places.

Johnson first visited the site with Kreisberg in July 2011 and then surveyed it in the March and April of 2012. At that time a large portion of the site was in danger of being sold to developers. As of this report a conservancy group in Woodstock is negotiating purchasing the site and preserving it.

Johnson’s Research Prior to the Lewis Hollow Site

In 1996 while locating groundwater sources for Nasca, Peru, Johnson realized ancient inhabitants mapped areas of higher permeability within aquifers, which flowed independently of the Rio Grande de Nasca drainage’s tributaries, with geoglyphs, also known as the Nasca Lines. Interestingly habitation, cemetery and ceremonial sites were located where these areas of higher permeability intersected the river valleys. While many of the geoglyphs mapped the flow of areas of higher permeability, others documented astronomical events such as the solstices and equinoxes. (Johnson 2009)

During the preliminary Nasca survey Johnson worked alone without the aid of modern scientific equipment. By studying existing wells, ancient infiltration galleries, springs, faults and other natural features within the valleys, Johnson was able to determine where areas of higher permeability within aquifers intersected the valleys. Prior to his investigation, other researchers determined the rivers were the only source of both surface and groundwater within this drainage. (Schreiber and Lancho 2003: 21-35) Following the geoglyphs into the mountains lead him to the water sources high

above the valleys. Knowing that the ancient inhabitants did not have modern scientific equipment to detect areas of higher permeability within the mountains, he wondered how they accomplished this. By using dowsing with metal rods he was able to detect the subterranean flow of aquifers and areas of higher permeability within them, which were mapped by geoglyphs. He realizes dowsing is not recognized by the scientific community, however when you consider the ancient inhabitants did not have any modern scientific equipment to assist them, dowsing may have been an option for them. Dowsing has been used in various forms to locate groundwater sources for hundreds of years, and Native Americans may have used it. (Johnson 2009: Ch. 3 Pt. 1: 1-31) Beginning in 1998 members of the Department of Geosciences, University of Massachusetts, Amherst, collaborated with Johnson in Peru for five years. Their research confirmed there were two sources of water within this region, the river valleys and the aquifers intersecting the valleys from the sides where geoglyphs are located. (Johnson 2009: Ch. 3 Pt. 1: 1-31, appendix)

Eventually their research team expanded its investigation along more than 1,400 miles of Peru and Chile's coastal desert and found the same correlation existed throughout this region. All of their data is presented in Johnson's book titled Beneath the Nasca Lines and Other Costal Geoglyphs of Peru and Chile. Please contact David Johnson at 845-454-1860 for a CD copy of his book and southwest reports.

Ultimately, we thought if this is true for Peru and Chile's coastal desert, could it also apply to other parched regions of the world, such as the southwestern United States. During 2011 and 2012 Johnson surveyed several sites in Arizona and New Mexico applying the same research methods he used in Peru and Chile. All of the sites he surveyed were aligned with areas of higher permeability, and features within the sites were also aligned with them.

During this time Johnson also researched sites within the northeast. In spite of this region receiving precipitation throughout the year, the Native American archaeological sites he surveyed were associated with areas of higher permeability.

Field Methods

The survey consisted of circling the sites using dowsing rods to determine where areas of higher permeability are located, and if they are aligned with features within the sites, such as cairns, geoglyphs walls, kivas, dwellings and astronomical features. Within the bedrock groundwater is found in permeable strata. Geological features such as faults, fractures, dikes and contacts within the permeable strata can collect groundwater and conduct it along their length, thus creating an area of higher permeability. The metal dowsing rods are held perpendicular to the ground and parallel to one another as he walks. When an area of higher permeability is encountered the rods cross to some extent. If they barely cross it indicates there is a low rate of flow along the area of higher permeability. If they cross in the middle it is moderate, and if they cross completely it indicates a strong rate of flow. The trend and width of the areas of higher permeability are determined by crossing it several times and documenting where the rods cross. In addition to documenting areas of higher permeability, all archaeological features are also documented.

Our preliminary data in the southwest suggests that in addition to mapping areas of higher permeability with habitation and ceremonial sites, Native Americans also mapped them with Chacoan Roads, geoglyphs, cairns, individual stones, stone piles and stone rows. Often when an area of higher permeability is followed away from a site, it leads to another site. These areas of higher permeability can extend for miles. Therefore, when possible, depending on the topography and time restraints, Johnson tries to follow an area of higher permeability from site to site and document any features located along it.

Johnson realizes this methodology does not follow modern archaeological methodologies, however consider the following. The ancient Native Americans who constructed these sites appear to have had a reason for choosing these locations as very special places. Thus far, our data indicates the ancient Native Americans who constructed these sites were locating the same subsurface features that Johnson is documenting.

At this point in time we have not been able to identify any archaeological evidence that supports the Native Americans used some form of dowsing. However, the evidence could be there and misinterpreted, for example, in petroglyphs or the Native Americans never documented it. It is also possible dowsing as a means to locate groundwater was lost due to conflicts, conquest, epidemics or cultural diffusion.

Although Johnson uses metal dowsing rods ancient Native Americans could have used a variety of dowsing techniques to locate areas of higher permeability. For centuries dowsing rods have been made out of forked wood sticks to locate groundwater. During the last 40 years Johnson has worked and lived with tribes in remote regions of the world whose life style still resembles that of Native Americans before 1492. Occasionally Johnson has observed alternative dowsing techniques which could have been used by the ancestral Native Americans. For example, at times it is possible to hear groundwater flowing beneath the surface. In the lower *Rio Grande de Nasca* drainage of Peru at Usaca residents told Johnson and Mabee they could hear a waterfall at night when they laid down to sleep, however the surface of the river was dry. At Usaca the scientific study located a fault which is deeper than the river valley bottom and crossed it perpendicular to the river's flow. Where the subsurface water / groundwater flowing down the river valley intersected the deeper fault it flows out of the river and into the fault which is lower, thus creating the underground waterfall the local residents are hearing. Interestingly the inhabitants of Usaca had located the only well in the areas up gradient from where they heard the waterfalls. During the Aja Alto survey we could hear groundwater flowing along the fault we were mapping (Johnson 2009: Ch. 3 Pt. 1: 48). Northern Burkina Faso is located in the Sahel, one of the driest regions of the Sahara desert. While working with a United Nations development project Johnson observed three productive wells, which were located along a twenty-four km stretch of desert. When asked how they located the wells, Johnson was introduced to an elderly man who lived in the region and had a reputation for locating wells. He said by sitting on the ground at various locations he could sense where concentrated flows of groundwater are located. In Kenya during a Red Cross well project Johnson worked with Mohamed Roba, who told him how he taught himself to locate groundwater

sources by observing various types of vegetation and soils. Eighty percent of his wells were successful. This suggests, in addition to observing natural groundwater features such as springs, seeps and blowholes, faults and natural bedrock fractures, ancient inhabitants of the region could have used some method to identify areas of higher permeability. Then they mapped their location with surface features such as shrines, structures, petroglyphs, cairns and geoglyphs.

In Chile, our data indicates the Chinchorro Culture, which inhabited one of the driest regions of the Atacama Desert as early as 8,000 BP (6000 B.C.), documented areas of high permeability, which provided them with fresh water in an area where the groundwater was contaminated with salt and arsenic. (Johnson 2009, Ch. 6, Camarones & Chiza: 4-8)

Blind Surveys

To test his methodology Johnson has conducted blind surveys prior to a more through scientific investigation. When people read Johnson's reports and hear his presentations at conferences it is hard for them to believe this methodology works, however when they accompany him in the field, they are surprised at the results. Following this report Johnson has included a list of people who have conducted blind tests with him and are willing to serve as references. During these surveys Johnson does not know which site he is going to or its location prior to the survey. By following an area(s) of higher permeability he has demonstrated he is able to locate the site in question and archaeological features located within it. To the best of his knowledge, this is the first survey of this nature to be conducted in this region.

Two of the blind surveys are especially interesting. In June 2012 Dr Curtis Hoffman, Bridgewater State University, Massachusetts, conducted a blind survey with Johnson at a nearby site, which Doug Harris, Preservation Office, Narragansett Tribe, recognizes as a traditional sacred northeastern Native American site consisting of stone features which include astronomical alignments. Hoffman did not provide Johnson with any information regarding the site. Hoffman comments in his discussion of the blind

survey that Johnson was able to find the site and that “I would say that this was a good confirmation of his method.” His report is included below.

The Hopi report also discusses the blind survey they conducted with Johnson. At a meeting with members of the Hopi Council, Preservation and Water Resources Departments in September 2012 they informed Johnson that there are archaeological features they know of which are associated with their ancestral past however they cannot explain their meaning through Hopi oral traditions. They offered to conduct a blind survey with Johnson to test his methodology. The Hopi report for this blind survey was submitted to their archaeology and hydrology departments, as well as their tribal council, by the Hopi representative, Max Taylor, Water Resources Technician, Hopi Tribe Water Resources Program, who conducted the blind survey with Johnson. In his report he describes how Johnson was able to locate a spring and cairns he knew nothing about and comments “(Note: These cairns are very old and the purposes of the 3 markers are lost to the present day land users which are the Hopi)”. He also mentions Johnson located an archaeological site on the way to one of the cairns which the Hopi did not know about. (Taylor 2012) Since this survey included two cairn sites located on traditional Hopi land, the report is included it below.

Both the Narraganset and Hopi traditional beliefs recognize sites containing cairns and other stone features as part of their ancestral history. The distance between the Bridgewater University Site and the Hopi Cairn Sites is 2,000 miles. However using the same methodology, Johnson was able to locate both sites, as well as other ancient Native American sites from different historical periods and regions, which strongly suggests they were aligning their habitation and ceremonial sites, as well as stone features, along areas of higher permeability. The results of these blind surveys suggest some of the oral traditions which have been lost to the Hopi and other Native American tribes may be recovered, to some extent, by Johnson’s methodology, as well as other researcher’s investigations of cairn sites.

The Sacred Landscape

One of the main issues in regard to this investigation is why would the Ancestral Native Americans be interested in mapping areas of higher permeability, which are often too deep for them to utilize as a water source. Perhaps their concept of the underworld and sacred landscape holds some clues. Although Ruth Van Dyke's description of the sacred geography and landscape was written in regard to Chaco Canyon, New Mexico, it reflects the basic believes of Native Americans throughout the western hemisphere.

"The Tewas, Keres, Zunis and Hopi place importance on spatial divisions and directions, dividing their physical, social, and spiritual worlds into horizontal and vertical dimensions of cosmologies expressed through landscape and agriculture. Multiple levels of social and spiritual meaning are inscribed on the landscape by topographic features and shrines, and the pueblo itself represents this organization in microcosm. Horizontal divisions correspond to cardinal directions, and vertical divisions include upper and lower world. Nested layers or symmetrical quarters are connected at a center place - the pueblo. The center place is the place of convergence, where six directions (four cardinal directions plus zenith and nadir) join and where symmetrically opposing forces are balanced. They also used elements of the natural topography to dramatic effect. The results were a landscape that was built to be experienced, to express ideas about sacred directions and dualistic balance. Oppositional dualisms such as those between the celestial and the subterranean, the visible and the invisible, and the north and south are represented in Chacoan great houses, great kivas, road alignments, earthworks, and shrines." (Van Dyke 2004: 79)

These traditions share a complex intimate relationship with nature which was developed over hundreds, if not thousands, of years by observing, documenting and experimenting with their natural surroundings, and then implementing and adapting a lifestyle to accommodate these environments, thus enabling them to survive. Each site was multifunctional in scope to meet diverse parameters within their beliefs. The horizontal and vertical dimensions of the geology, hydrology, archaeology features

Johnson is mapping corresponds to the beliefs discussed by Van Dyke. Perhaps settling along areas of high permeability was a way to align the underworld and the present world.

The Lewis Hollow Site

Johnson's Lewis Hollow Site report compares this site with others which have similar characteristics based on his investigations, as well as other researchers' studies of cairn sites throughout the United States.

When most individuals or groups survey cairn sites the natural tendency is to search for the cairns randomly. For example, once they find one they scatter out looking for another, which leads to documenting them randomly. Then when the data is entered in their computer, they look for a pattern. Actually the cairns are laid out in linear patterns which can be followed once you know what to look for. (Figure 4) Although Johnson uses dowsing to locate cairns by following the areas of higher permeability, it is possible to follow the linear pattern without dowsing, especially at sites with minimal damage.

Figure 4 - Cairn line on OL 25 – Lewis Hollow Site

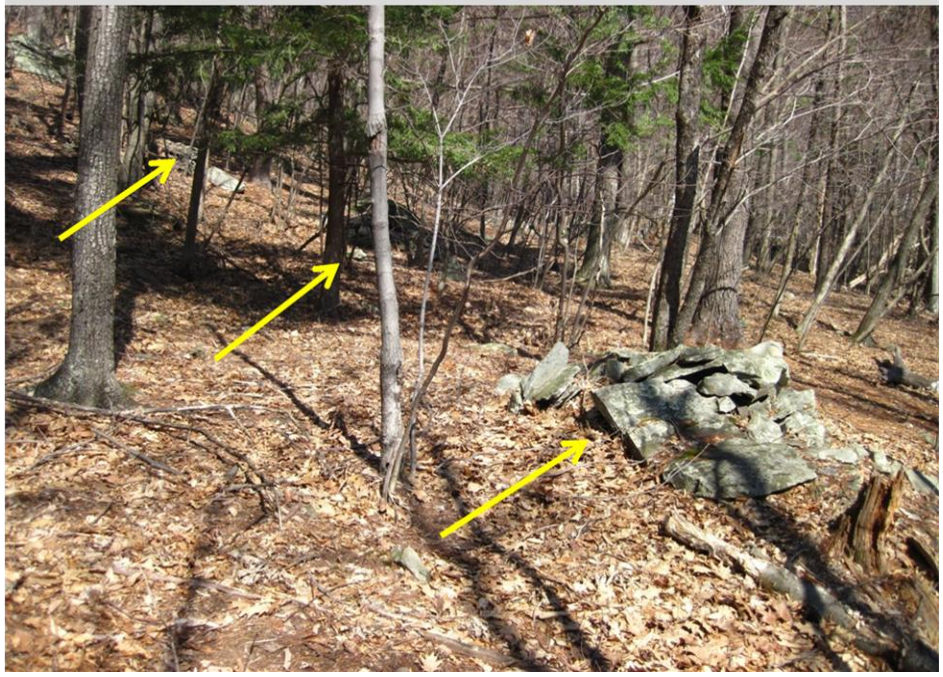


Figure 5 - La Plata Pueblo, Arizona, two small cairns

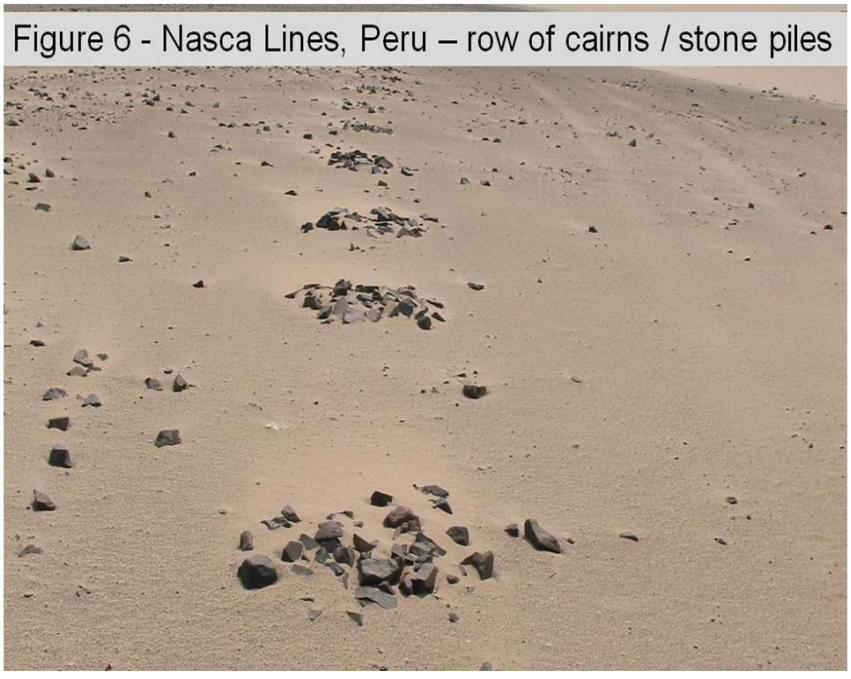


Figure 6 - Nasca Lines, Peru – row of cairns / stone piles

During the last seventeen years Johnson has studied cairn sites in three regions, Peru and Chile, southwestern and northeastern United States. In each case at least one of the cairn and stone pile functions was to map the course of areas of higher permeability. In Peru the Nasca Lines and other coastal geoglyphs appear to be defined

by continuous lines consisting of small stones. However when you ground survey them, you realize most consist of stone piles placed side by side. In the southwest similar small stone piles, as well as larger ones, along the width of areas of higher permeability have been documented. Figures 4 – 6 represent cairns from Peru, Arizona and New York State.

Although the cairn sites in the northeast are smaller than those Johnson has observed in Peru and Chile and the southwest, his data suggests at least one of the cairn's functions remains constant, and that is mapping areas of higher permeability. Soon after Johnson began surveying the Lewis Hollow Site he asked Howard Banney, member of the Orange County Chapter of the New York State Archaeological Association, to accompany him to the Lewis Hollow Sites. Banney had worked on the Nasca Lines with Johnson. Johnson did not tell him anything about the site prior to his visit, other than he wanted his opinion regarding it. After fifteen minutes observing the site Banney commented "This is just like the Nasca Lines, only smaller. The cairns are marking the width of the areas of higher permeability." Then he pointed out where there was an intersection of two areas of higher permeability without using dowsing. This similarity has been observed at sites throughout the regions Johnson has researched. Once you know what to look for, it is not very difficult to identify the linear patterns.

Early References to Cairns and Who Might Have Built Them

There are several references dating back to the Colonial Period which refer to cairns and other stone features associated with northeastern Native Americans. Two references are The Search for Lost America (Trento 1978) and The Sacred Landscape of New England's Native Civilization: Manitou (Mavor and Dix 1989). Several are posted at: (http://www.nativestones.com/cairns.htm). Cairns associated with ancient sites are also found throughout the world. On the internet, there are dozens of archaeological site reports from universities throughout the United States documenting cairn sites. These web sites are easy to locate. For example, one of the sites is "Stone Cairns of West-Central Texas" *(*Texas Beyond History 2013). All you have to do is search for cairn sites. With ancient cairn sites documented throughout the world, one cannot dismiss the

possibility that the ancestral Native Americans of the northeast also constructed them. The main question is what was their function?

Another possibility which must be considered is there are numerous references to the similarity between cairn sites in the northeastern United States and Europe, especially the British Isles. There are several references on this subject posted on the internet, as well as several books including The Search for Lost America and The Sacred Landscape of New England's Native Civilization: Manitou. Since I have not ground surveyed similar sites in Europe, I will refrain from commenting on them for the time being. I hope to research some European cairn sites in the near future.

Survey Results

Areas of Higher Permeability

A total of 51 areas of higher permeability were documented at the Lewis Hollow Site. Of these, five appear to be the main areas of higher permeability contributing groundwater to the site. The other areas of higher permeability branch from them and intersect one another as they cross the site. The bedrock at the site appears to be heavily fractured and can conduct both, near surface water from precipitation, as well as deeper concentrated flows of groundwater. The springs associated with the site are located along areas of higher permeability on the northeast side of the site. All of the areas of higher permeability are documented in Google Earth. (See Johnson's My Places file)

Main Areas of Higher Permeability

Northeast - southwest trend across site

OL

OL 36

OL 60

OL 25 –

OL 11

Northwest - southeast trend across site

OL 70 and 72 to 44

OL 10

OL 12

OL 80

OL 48

OL 38

OL 37

Location Of Great Cairns

Great Cairn 1 – intersection of OL 36 and 34

Great Cairn 2 – intersection of OL 36, 37 and 62

Great Cairn 3 – intersection of OL 36 and 38

Great Cairn 4 – Intersection of OL 36 and 2

Great Cairn 5 – where OL 36 turns sharply

Great Cairn 6 – along OL 60 very close to where it turns sharply

Great Cairn 7 – intersection of OL 25 and 75

Great Cairn 8 – where OL 41 turns sharply

Great Cairn 9 – at the intersection of OL 60 and 48

Snake Wall North – intersection of OL 10 and 11

Snake Wall South – intersection of OL 11 and 12

Observations

1. Nearly all the northeastern sites are located high along the slope of hills and mountains. The location often provides a panoramic view of the region. They are

often associated with springs along the headwaters of tributaries to rivers. The Lewis Hollow Site has all of these characteristics. See Figure 1 above.

2. Some people argue the cairns at Lewis Hollow were constructed after 1492 since roads, agriculture, logging and quarrying would have destroyed the ancient ones. As mentioned above within a linier pattern of cairns we often find damage however at most sites not all of them are destroyed. This same pattern is true for the Lewis Hollow Site.

   During our research in Peru and Chile we frequently dealt with this issue. For example, the Pan American Highway crosses the Pampa San José just north of Nasca where there are several geoglyphs. In this area the geoglyph linear patterns are disrupted by the highway. (Figure 7) Therefore, when mapping the areas of higher permeability and the geoglyphs associated with them, you have to cross the road and locate both features on the other side. Although this is the most obvious example, others are more elusive. In some areas floods during the last thousand years have washed out wide sections of the geoglyphs. At first glance, from a plane or in Google Earth, the geoglyphs on each side of the wash appear to be unconnected. However, when the areas of higher permeability are ground surveyed from one side of the wash to the other, you can determine they are connected.\

Figure 7 - Road Crossing Nasca Lines, Peru - The Tree Figure

3. The Lewis Hollow cairns are very similar to those found at other sites. Although they may vary in size, the construction is the same. The stones are carefully stacked leaning in towards the center to increase stability, and one or more quartzite stones are included in the construction. For example, cairns from two

sites are shown in figures 8 and 9, as well as a detail demonstrating how they lean toward the center in Figure 10.

Figure 8 - Cairn on OL 74 at P 63 – Lewis Hollow Site

Figure 9 - Spruceton Valley Site – tall cairn

Figure 10 - Detail, top of cairn in Figure 9, on OL 74 – Lewis Hollow Site

Others argue the cairns were simply constructed while clearing fields for cultivation or domesticated animals. Nearly all of the northeastern sites Johnson has surveyed are located high along the slope of mountains where soils are very thin and barely cover the bedrock. While clearing fields, the stones were placed where large boulders, wetlands and other natural obstacles were located. Over the years Johnson has both helped and observed Amish farmers in Pennsylvania clear field stones by hand. This work is labor intensive and time consuming. In each case, stones were randomly thrown onto a pile in an out of the way location, and the piles were not spaced evenly along a linear pattern paralleling one another or stacked. Often they were deposited in areas to help prevent slope erosion or fill a depression. The cairn sites do not appear to fit into an agricultural format.

4. At the Lewis Hollow Site cairns were located on each side of an area of higher permeability's width and spaced a few to several yards apart. Cairns along the same areas of higher permeability were consistently the same size in diameter

and height. (Figure 11) The topography of the site does not appear to interfere with the location of cairns. They are located along the width of an area of higher permeability every so many yards, in spite of the slope, bedrock, wet or dry areas.

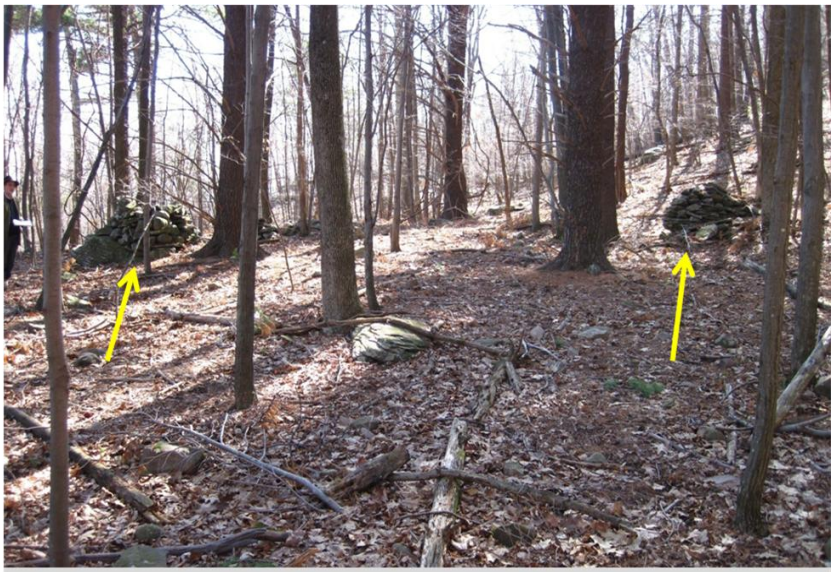


Figure 11 - Cairns on width boundaries of OL 25 – Lewis Hollow Site

5. Frequently quartz and hematite stones / boulders are found placed on or within a cairn, and this is true for the Lewis Hollow cairns. At most of the sites these types of stones are not found in the surrounding area, and there is some evidence that they were considered sacred or having some special function. The web site titled “Stone Structures of Northeastern United States” provides some evidence regarding these issues. Various types of stones were considered sacred by Native Americans. Archaeological evidence suggests both the ancient Hohokam and the Sinagua cultures of Arizona used round red river worn cobbles as ritual items and deposited them in burials and special places (Bostwick 2008: 82). During my survey of Clear Creek Ruin in the Verde Valley, Arizona, I located a red cobble at the intersection of two areas of higher permeability. (Figure 12)

Figure 12 - Ritual stone found near where CCR 1 & CCR 4 intersect at Clear Creek Ruin, Arizona

6. Intersections are often marked by cairns along both areas of higher permeability. If the areas of higher permeability merge with one another, the cairns along one of the areas of higher permeability are located on only one side of the area of higher permeability it intersects. (Figure 13) When two areas of higher permeability cross one another, the paralleling lines of cairns cross one another. At the Lewis Hollow Site most of the great cairns were located where two areas of higher permeability either merged or crossed one another.

Figure 13 - Cairns at intersection of OL 60 & 38 – Lewis Hollow Site

Figure 14 - Stone quarry at Lewis Hollow Site

Figure 15 - Detail of construction of great cairn 1 on OL 34 & 36 – Lewis Hollow Site

7. The Lewis Hollow Site has nine great cairns ranging in size from 30 to 70 ft long and 15 to 30 ft wide with heights reaching 8 to 12 ft. These features do not appear to be randomly or hastily constructed. Figure 14 shows the scattered debris in front of the main quarry located on the southwest side of the Lewis

Hollow. Some of the great cairns are located up to .3 mi from the quarry on the next terrace up where there is no evidence of quarry activity. The base has a well laid dry wall several stones high angled towards the center, and the top is rounded in most cases. (Figures 15, 16 and 17) Some appear to have had small chambers located within them which have collapsed, leaving a depression in the top. All of the great cairns at Lewis Hollow are either located on the intersection of two or more main areas of higher permeability or very close to where one turns sharply. This characteristic has been observed at other sites, such as the Fox Woods Site and Bear Brook Site in New Hampshire.

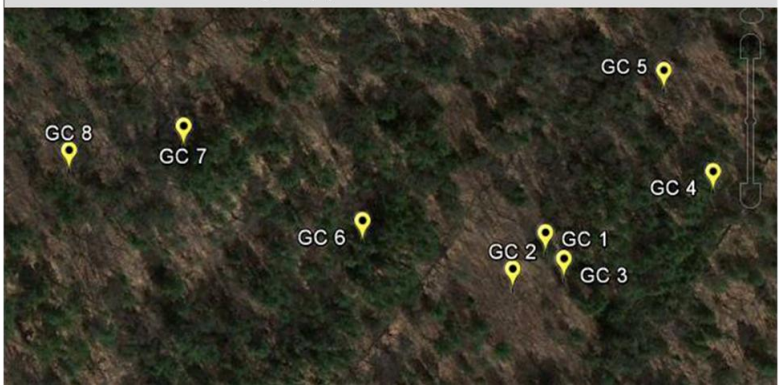
Figure 16 - Great cairn 2 intersection of OL 36 & 37 – 55 ft x 20 ft x 12 ft - Lewis Hollow Site

Figure 17 - Great cairn 3 on OL 36 & 38 – 75 ft x 30 ft x 12 ft - Lewis Hollow Site

Figure 18 - Great Cairns at Lewis Hollow Site forming Draco – Provided by Glenn Kreisberg

8. Native American sites with astronomical alignments are common throughout Native American sites with astronomical alignments are common throughout the Western Hemisphere. At two of the sites Johnson has researched, the great cairns appear to be positioned to represent a constellation. Glenn Krisberger has demonstrated some of the Lewis Hollow great cairns appear to be arranged to represent the constellation Draco. (Figure 18) (Krisberger 2010) After plotting the location of great cairns at the Bear Brook Site in New Hampshire the pattern appears to resemble the Big Dipper / Great Bear constellation. (Figure 19)

Figure 19 – Bear Brook Site, New Hampshire – forming Big Dipper – Great Bear



Krisberger's investigation also found that "There are no line of sight solstice or equinox alignments associated with the Lewis Hollow Site that I have discovered. However, a non line of sight alignment seems to exist between the Lewis Hollow and Mink Hollow Site locations, which lies 4.8 miles northwest of Lewis Hollow at a bearing of 317.3° magnetic. This would be along a summer solstice sunset line, at 318° magnetic, from Lewis Hollow to Mink Hollow and a winter solstice sunrise alignment, at 138° southeast, from Mink Hollow toward Lewis Hollow. This alignment also seems to parallel the Hammonasset Line, which is found about 1.8 miles to the northeast." (Figure 20) (Krisberger 2010)

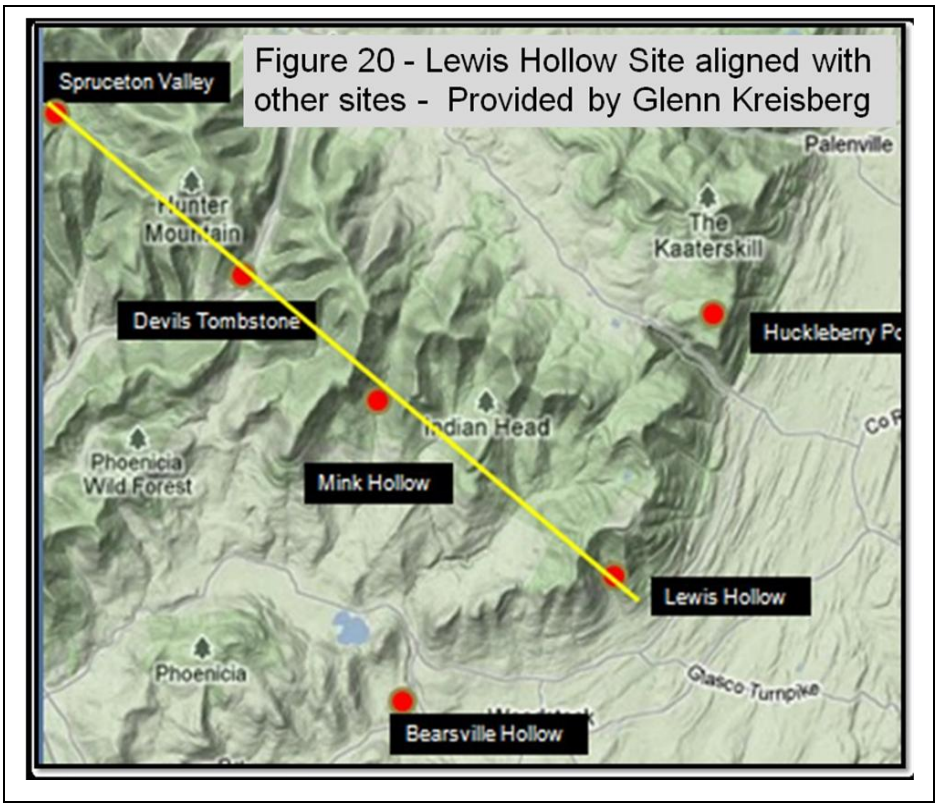


Figure 20 - Lewis Hollow Site aligned with other sites - Provided by Glenn Kreisberg

9. Several of the stone walls associated with the Lewis Hollow Site are straight and continue for long distances, eventually intersecting one another and forming enclosures. (Figure 21) These walls appear to post date the cairns and meandering walls at the site. The dowsing rods did not cross as they passed

over these walls indicating there was no area of higher permeability associated with them. At most cairn sites the dowsing rods crossed as they passed over the meandering walls indicating the walls were mapping the location of areas of higher permeability. The meandering walls at the Lewis Hollow Site terminate without forming an enclosure. This suggests they were not constructed to protect crops or contain livestock, and this is common to all the cairn sites Johnson has surveyed. The two snake walls mentioned below in number 9 are an example.

Figure 21 – Corner of historic wall forming enclosure – Lewis Hollow Site

10. Often effigy walls and cairns are associated with these sites. The Lewis Hollow Site has two snake walls. (Figures 22 and 23) They meander for a short distance, and one end intersects a large boulder or bedrock feature which gives the appearance of a snake's head. The two at Lewis Hollow are located along OL 11 on the eastern boundary of the site. Although turtle shaped cairns are commonly associated with these sites we did not locate any at this site. (Figure 24)

Figure 22 - North snake wall – Lewis Hollow Site

Figure 23 - South snake wall – Lewis Hollow Site

Figure 24 - Turtle cairn - Spruceton Valley, New York

11. Springs are associated with most cairn sites. Frequently the main concentration of cairns extends up slope from the springs. (Figure 25) Johnson's data consistently indicates the cairns up slope are documenting the flow of areas of higher permeability to where they surface creating springs. The springs associated with the Lewis Hollow Site are located along the northeast side of the site between OL 44 and 60. In addition to several springs, there are two spring houses which are filled with water year round. (Figure 26)

Figure 25 - Spring on OL 70 – Lewis Hollow Site

Figure 26 - One of two spring houses on OL 42 – Lewis Hollow Site

12. Some researchers and Native Americans have suggested the cairns mark the location of burials. Some of the cairns, such as the larger ones, could have been used for this purpose. However some of the cairns, especially smaller ones, are located in wet areas, on or adjacent to springs, which suggest they would not be considered suitable for burials. It is possible these areas could have been drier on the surface in the ancient past; however the springs appear to be old based on erosion patterns. One of the problems is very few cairns have been scientifically studied. Another concern is if the body was cremated and the ashes placed in a cairn, precipitation would have washed the evidence away within a few decades. Burials associated with cairns have been documented in North America. For example, the University of Texas at Austin has documented burials associated with cairns (Texas Beyond History 2013).

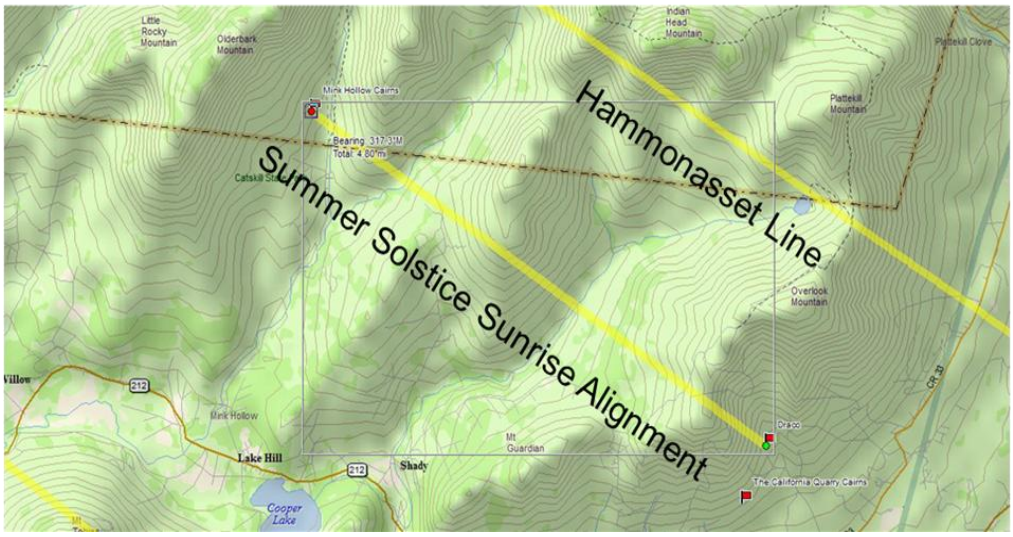
13. Large stones / boulders are often associated with cairn sites. We have observed boulders which are centered on narrow areas of higher permeability and others located along the outer edge of wider flows. There is a boulder on the edge of a cliff which is centered on OL 7 which is similar to the one of TR 9 at the Turtle Rock Site. (Figures 27 and 28)

Figure 27 - Boulder on OL 7 - Lewis Hollow Site

Figure 28 - Boulder On Aquifer TR 9 –
Turtle Rock Site

14. All of the sites appear to be aligned with large unusual boulders and other sites located several miles away in either direction. The Lewis Hollow Site is aligned with the following sites to the northwest: Mink Hollow, Devil's Tombstone and Spruceton Valley. (Figure 29)

Figure 29 - Summer Solstice Sunrise Alignment from Mink Hollow to Lewis Hollow & the Hammonasset Line – Provided by Glenn Kreisberg



15. At Lewis Hollow, as well as the other sites we have examined, we have not found any artifacts such as pottery, projectile points, flint chips or fire cracked rocks on the surface. Professional excavations and comments from looters suggest there are very few artifacts associated with these sites, however keep in mind that very few of these sites have been excavated thoroughly. The only artifacts associated with this site are mentioned above in the site's history. There are a few locations along the ledges that could have been used as rock shelters by Native Americans. (Figure 30)

Figure 30 - Possible rock shelter at Lewis Hollow Site

Conclusions

Throughout the northeastern states cairn sites such as Lewis Hollow share a commonality in setting, association with springs, cairns, effigy features and wall types. As more sites are added to the data base, the similarity remains consistent suggesting these sites were constructed by people with a common belief or origin. The site's features reflect the three dimensional characteristics of earth itself, as well as traditional Native American beliefs. For example, springs with the underworld, surface features such as walls and cairns with the present world and astronomical alignments with the cosmos. Since several of the sites have been referred to by the earliest European settlers as existing at the time of their arrival, and Native Americans associate them with their ancestral heritage, it suggests many of these sites were constructed by the Native Americans who occupied the region for thousands of years.

Observations Regarding David Johnson's Archaeological Site Survey Techniques

By Max Taylor
Water Resources Technician
The Hopi Tribe Water Resources Program

On September 18, 2012 Shirley and I, along with a couple of the Hopi Cultural Preservation, staff attended a presentation by David Johnson on water dowsing (finding water using metal rods or wood twigs), which, according to Mr. Johnson, is intertwined with ancient archeology. In his presentation, Mr. Johnson stated he has conducted extensive research and study throughout the United States and South America using this technique to prove his theory that the ancient people had knowledge of water dowsing and used it in their survival, as well as celebrating ceremonies. His data suggests the ancient people marked areas of higher permeability in the groundwater with cairns and dwellings, etc. Through his study and the practice of using water dowsing, he has found the same results that archeology is related to these concentrated flows and is not just a coincidence.

Following the presentation, he asked if he could be taken out to the field to conduct a blind survey (not informing him of anything that is out there) to prove his theory. I took him out to Burro Springs range unit for this blind test. Once we started out from the office he took out his dowsing tool which was two metal rods, each fitted on

plastic tubing which keeps his hand from having direct contact with the rods. The rods moved freely as we drove down the highway and he explained to me what the movements of the rods meant. He stated that when in direct line over an area of higher permeability (underground stream) the rods crossed, but when intersecting a area of higher permeability from the side the rods will point in opposite direction. Knowing this he knows which direction the flow is. The rods will continue to hold this position till he has crossed the width of the flow, giving him measurement of the width. As we were driving I observed what he had described.

As we drove down State Route 264 we stopped at one spot where the rods crossed. At this location the mesa is narrow, and I knew there are springs at the base of the slopes on each side of the road however I did not tell him until he completed his test. Johnson located an area of higher permeability crossing the road. I could see what he meant about the positions of the rod when on the boundary of the area of higher permeability was located and when in direct line with the flow. As we drove along Route 87 he located another area of higher permeability paralleling the road along the left side. Continuing for another half a mile the rods pointed to the left before I finally stopped to show Johnson that the rods were pointing to a water main for the community.

As we neared the Little Burro Springs his dowsing rod swung to the north, in the direction of the spring and an archaeological site. When we stopped he walked north following the rods, passed the spring about thirty feet where the rods detected the boundary of the area of higher permeability, which was an east to west flow. He measured the width of the flow using the metal rods and then the direction of flow which was east to west direction. As he walked around the spring he detected another area of higher permeability in a north to south direction. All of the information on these concentrated flows was GPSed and documented.

While he was tracking the direction of flow with his compass, he noticed a rock cairn in the distance on top of a high ridge in direct line with the area of higher permeability he was mapping. We drove on the dirt road and parked below the ridge with the rock cairn, his rods continued pointing in the direction of the cairn. We followed the rods up to the cairn, and at the cairn, his metal rods went out at right angles indicating that it had detected the southern boundary of the area of higher permeability. He measured the width of the flow and took his compass reading to the west, where he spotted a second cairn which also aligned perfectly with the area of higher permeability which he was following. (Note: These cairns are very old and the purposes of the markers are lost to the present day land users which are the Hopi). At another location I had him survey the area to determine if there was an area of higher permeability since I knew there was another cairn located in the area. I did not tell Johnson about this or its location. He located an area of higher permeability and began following it directly to the cairn which he could not see. Along the way he also located an archaeological site I didn't know about.

On September 19th I took Mr. Johnson out again, this time up to Second Mesa in the vicinity of Weaver Selina's Arts and Craft Shop. During the previous day as we were

driving through there, Mr. Johnson's dowsing rods had detected an area of higher permeability in this vicinity, so he was very interested to conduct his blind test there. At this location he immediately detected two areas of higher permeability which intersected each other; one was flowing north and south along the highway and the other flowing northwest to southeast. He mapped the location and direction of flow. He decided to follow the flow to the south. As he followed it using his dowsing rods it soon turned to the west and we followed it till we got to the edge of the mesa, below there is a shelf and then a drop off to the base of the mesa. Since I am familiar with this area I knew there was no springs in that vicinity, but keep that information to myself. I informed Mr. Johnson that there was a road to a point to the west where there is a trail down to the shelf. We drove to the point and walked down to the shelf. Again with dowsing rods in hand, Mr. Johnson located an area of higher permeability almost at the shelf which he GPSed and took a compass reading. We continued to walk toward the shelf where he picked up another flow; this one was the same width as the one we had followed at the top of the mesa. We followed this flow back to the east around the bend of the shelf. It kept going east till we got to where it joined with the one we had followed at the top of the mesa. Along the route we had seen scatter of pottery shards and some pottery baking sites. We walked back to where we had started on the shelf. From there we continued following the flow to the north, and where it curved to the northeast, following the shelf around the point, (note: this map is included in this report as an attachment). As we followed this concentrated flow Mr. Johnson stated he has never encountered a pattern such as this. We did not complete the entire route of the flow and turned back to the west. On the way back he detected two more areas of higher permeability to the north which dropped off the mesa. At the point of the shelf he detected another one; this went in the direction of the archeological site which I knew about and he didn't know about and could not see its location. We did not continue on as it was getting late.

This was an interesting exposure to water dowsing and its connection or relation to archeology. Mr. Johnson is planning on returning next year if given permission by the Hopi Cultural Preservation Office.
Phone – 928-734-3714
Email – mtaylor@hopi.nsn.us

Observations Regarding David Johnson's Archaeological Site Survey Techniques

By Dr. Curtiss Hoffman

Dave Johnson and his wife came to the Bridgewater State University campus, Massachusetts, on Thursday, June 7th, 2012. He had agreed to attempt to locate an archaeological site I know about and which he knew nothing about by locating an area of higher permeability / aquifer using dowsing rods and following it to the site. I led him on a roundabout path through the woods around Great Hill. Actually, I led him to an entrance to the woods distant from the known Native American sacred site and let him find his way from there without guidance from me. He used his dowsing rods to locate

several aquifers running off the hill, though the water tower and the cell tower threw some of his results off. We came to the sacred site last, and without my telling him anything about it, he accurately located an aquifer whose edge conforms to the orientation of the stone row. He then went off downhill to find the opposite edge, and was visibly startled to discover the large split rock right at that edge! He traced the aquifer on uphill, and it turns out that there are 2 other aquifers crossing the solstice sunset line, which are also marked by stones. I would say that this was a good confirmation of his method, though I think he can make it more quantitative - for example, his readings on aquifer strength are ranked categories (weak, moderate, strong, very strong) depending on the angle at which the rods cross. I suggested he attach a goniometer to one of the rods to actually measure the angles.

Best regards,

Dr. Curtiss Hoffman

Department of Anthropology
Bridgewater State University, Massachusetts,
Phone – 508-531-2249
Email - C1HOFFMAN@bridgew.edu

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Comments Regarding Johnson's Blind Surveys

The following people can be contacted as references regarding Johnson's blind surveys.

Brooks Marshall, Has assisted with research at Salmon Ruins

Phone – 505-360-1924

Dr. Curtiss Hoffman, Archaeology Professor, Bridgewater State University, Massachusetts

Phone – 508-531-2249

David Gutkowski, Curator of Council Rock Archaeological Site in Pennsylvania

Phone – 507-606-3321

Dr. Edward Doucet

Phone – 845-541-2051

Ettie Anderson, Navajo Nation Historic Preservation Department

Phone – 928-871-7145

Glenn Kreisberg, Vice President of New England Antiquities and Research Association

Phone – 845-417-8384

Ken Zoll, Verde Valley Archaeological Center

Phone - 928-284-1228

Matthew Guebard, Chief Archaeologist, Montezuma Castle National Monument, including Montezuma Well and Tuzigoot.

Phone – 928-649-6195

Max Taylor, Hopi Tribe Water Resources Program

Phone - 928-734-3714

Walter Gosart, Volunteer in Archaeology, Coconino National Forest, Arizona

Email - **wwwally2@yahoo.com**