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Citation

Liebmann, Matthew. Losing Control in the American Southwest. In *Engaging Archaeology: 25 Case Studies in Research Practice*, ed. Stephen W. Silliman, 2018.

Permanent link

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Losing Control in the American Southwest: Collaborative Archaeology in the Service of Descendant Communities

Matthew Liebmann

Project Summary

This chapter details a collaborative research project initiated at the request of a Native American tribe (Jemez Pueblo) in the Southwest United States. The tribe was interested in documenting their ancestral ties to the Valles Caldera National Preserve, a place of sacred importance. However, this landscape is largely devoid of artifacts harboring a clear ethnic signature. Our solution to this conundrum was to conduct a study of obsidian artifacts found in association with ancestral Jemez pueblo villages dating to A.D. 1200-1700. We used a strategy of surface collection and x-ray fluorescence to establish links between the archaeological record and this sacred landscape. This research serves as an example of one of the primary challenges facing archaeologists engaged in collaboration with descendant communities: giving up control over the research process. If we view this loss of control not as an obstacle but as an opportunity to explore innovative new research agendas, archaeology stands to benefit from collaboration in ways we cannot yet imagine.

I gnawed my lower lip as I closed my laptop. I'd just received an email from the tribal administrator at Jemez Pueblo in northern New Mexico requesting my presence at a meeting of the Jemez Cultural Resource Advisory Committee (CRAC) the following evening. The message didn't mention what would be on the agenda. I was simply instructed to show up at the Tribal Administration building at six o'clock the next night. I had been conducting archaeological research in collaboration with the tribe for nearly ten years, but I knew that there were good reasons to be nervous. Jemez Pueblo has earned its reputation as one of the most staunchly conservative and traditional tribes in the American Southwest. CRAC meetings are conducted largely in their native language of Towa, a tongue spoken exclusively by members of the Jemez Pueblo tribe. And their community often eschews contacts with outsiders, who are banned from attending many traditional rites and from residing within the Pueblo. This reticence to allow outsiders access to their community extends particularly to academics from big fancy universities

back East. I had heard stories of *bilagáanush* [white people] banned from the Pueblo entirely after writing books about Jemez culture and history. Anthropologist Elsie Clews Parsons was threatened with bodily harm if she ever returned to Jemez after publishing her ethnographic study of the Pueblo in 1925. More recently, a Franciscan priest working on his PhD ran into trouble in the 1980s. When tribal leadership discovered that he had been transcribing their language (a taboo at Jemez, where they strictly proscribe recording Towa as well as study of the language by non-Natives), they carried his bags to the border of the reservation and asked him not to return. Now I worried that a similar fate was in store for me. I had just signed a contract for the publication of my first book, based on my PhD dissertation and a decade of research about ancestral Jemez archaeology. While I collaborated with Jemez people on this research, I feared that some tribal members might have become offended at the idea of this publication.

The next day at the appointed hour I trudged to the Tribal Administration building. I entered the conference room—a fluorescent-lit chamber with a large U-shaped table surrounded by office chairs, reminiscent of a high school teachers’ lounge. Crayola pictures of the village, sketched by the youngest members of the tribe, adorned the walls. Around the table sat six of the Pueblo’s religious leaders, drinking Diet Cokes, eating corn tamales, and cracking jokes at each others’ expense in their native language. I sat down and joined in the joking as much as I could, using the few Towa words I knew (mostly dirty ones). But inside my stomach churned as I waited for the meeting to officially begin. Around 6:15 one of the tribal officials spoke softly in English, saying, “Well I guess we can get started. Will the war captain please lead us in prayer?” One of the men rose and the rest of us followed, bowing our heads while he recited a long incantation in Towa. When the prayer finished, I tensed in anticipation of what would come next.

As it turned out, they hadn't asked me there to excoriate me or to tell me that I couldn't publish my book. I exhaled as the nervous storm in my belly subsided. Much to my relief, it turned out that the CRAC had asked me to the meeting to hear a request. The Pueblo was interested in documenting their tribal history, and they wanted me to collaborate with them on a new archaeological research project. Would I be willing, they wondered, to investigate their ancestors' use of an important locale that had recently been transferred into Federal ownership?

The prospect of this new collaboration electrified me. For years I had hoped that my archaeological research might prove useful to the tribe. Now they were asking me to apply my expertise to pressing, real-life concerns. This work would be relevant to tribal members in the present day, not just to academic debates inside the Ivory tower. While my previous investigations of ancestral Jemez archaeology had been collaborative in nature (conducted for my dissertation research), the agenda for that project had followed my own academic interests. But this research would be different. This research would be driven by the interests of the tribe.

The project that the CRAC had in mind was an investigation of their ancestors' relationship with a remarkable place: the remains of a dormant volcano known today as the Valles Caldera. To the Jemez this place is better known as *Wavema* (sometimes translated as "the father of all northern mountains"). For hundreds of years, the dormant volcanic crater has served as the focal point of Jemez religious life. When the US government purchased Wavema from private landowners in 2000, federal land managers encouraged the tribe to provide information that could aid in culturally appropriate methods of preservation and management. As part of this effort the CRAC wanted to document ancestral Jemez interactions with this place using the tools of archaeology. In the words of CRAC member Tom Lucero, they wanted to "use science to show how our ancestors used the Valles Caldera." I enthusiastically accepted

their invitation, and we dubbed our collaboration the Wavema Archaeological Research Project (WARP).

Just one problem loomed on the horizon: I had no idea how to accomplish this research.

I had never conducted any investigations in the Valles Caldera myself. The little I knew about this place included the fact that there wasn't much in the way of archaeology there. No villages, no middens full of ceramics, and nothing that I knew of that would address the CRAC's research agenda. Its material assemblage was sparse, with one major exception: lithics. The Valles Caldera was home to some of the most abundant sources of artifact-quality obsidian in the Southwest. But I had never before worked with lithics of any sort. My previous research focused on architecture, ceramics, and rock art—not on projectile points, scrapers, and debitage. I was stumped about how we could even begin to address the CRAC's question about the ancestral Jemez use of this area. After all, flakes of obsidian left on the ground don't normally lend themselves to the sorts of fine-grained study of ethnic identity we would need to address our research questions. I left the meeting at the Tribal Administration building that night the same way I had entered: gnawing on my lower lip. What had I gotten myself into? And more importantly, how would I get myself out of this mess?

I didn't know it then, but by agreeing to collaborate with Jemez on the WARP I had taken the first step of an intellectual journey that would prove to be one of the most satisfying and important experiences in my development as a professional archaeologist. At the time I was worried about how I would bring my knowledge to bear on the problem they had presented. What I didn't realize was the fact that my willingness to investigate new questions and learn new things was even more valuable than the previous expertise I brought to this project. Saying yes to this collaboration forced me to put aside my own agenda and commit myself to that of the tribe.

By dedicating myself to research that served the needs of others rather than myself, I had opened the door to worlds of knowledge that I never would have known existed—and forced myself to learn things that I never would have dared to learn on my own.

The Setting: The Valles Caldera/Wavema

Located about 32 kilometers (20 miles) north of Jemez Pueblo [FIG 1], the Valles Caldera is a landscape of breathtaking and incomparable beauty, a verdant oasis in the midst of the dry northern New Mexican deserts. The volcano's crater forms a vast basin of grass-covered meadows interlaced by clear mountain streams. (The meadows, termed *valles* by the Spaniards who stumbled into this region in the sixteenth century, give the locale its name.) The emerald hues of the Caldera contrast with the desiccated tans and reds of the mesas that form the flanks of the volcano. Ringing the edge of the bowl are high mountain ridges bristling with Ponderosa pines. Looking down into the Caldera from the top of this ridge, “the space before you bursts outward into a giant, grass-carpeted mountain bowl,” in the words of conservationist William DeBuys. “The bottom of the bowl, unbroken grassland with a river meandering down its center, is easily four miles across, to say nothing of its forested sides . . . A seemingly misplaced prairie lies before you, a tawny sea of grass miles deep and broad, which has been dropped into the top of a heavily forested mountain range” (DeBuys 2006:9-10). Beneath this prairie a fitful geothermal world simmers and steams, spilling out into hot springs that mist the surrounding hills on cool mornings. Hawks, owls, and peregrine falcons prowl the skies, while an enormous herd of elk, 3,500 strong, grazes the lush valleys. In order to preserve the unique geology, ecological diversity, and cultural importance of this landscape the federal government purchased

89,000 acres in 2000, naming the area the Valles Caldera National Preserve [VCNP]. Fifteen years later that property became part of the National Parks system.

For centuries the Jemez have utilized Wavema to sustain their unique way of life. Within the Caldera the Jemez conduct hunting expeditions; collect plants and herbs; gather minerals, stone, and clay; pasture livestock; and perform some of their most important ceremonial and spiritual activities, including prayer, pilgrimages, retreats, and ritual initiations. Given the astonishing natural beauty of the Valles Caldera it is no wonder that the Jemez hold this place in particular esteem. Their primary shrine—a stone structure where tribal members communicate with the spirit world—adorns the top of Redondo Peak, the highest summit in the Caldera. The importance of this place is rooted deep in ancestral Jemez history, stretching back to their ancestral migration into northern New Mexico more than 700 years ago.

In the Jemez worldview Wavema is the source of all life. It serves metaphorically as the heart of Jemez culture, the place from which vital forces emerge and flow. Wavema provides life to newborns and a place for spirits to return after shedding their earthly skins (Parsons 1925:125). As one contemporary Jemez tribal member noted, “Wavema is Jemez heaven. That’s the place where the ancestors live.” Its Judeo-Christian equivalent would be something like the Garden of Eden and Heaven all rolled into one: the place where life began, from which life springs forth today, and to which the spirits of the deceased eventually return.

The Jemez people revere Wavema because it is home to spirits, ancestors, and supernatural creatures. These beings interact directly with Jemez people through a relationship of mutual cooperation, and humans can access them directly at various “portal” locations scattered throughout the landscape. For the Jemez, many of these portals are located at the springs that well up out of the grounds in the Valles Caldera. Spirit beings dwell on Wavema’s

mountain peaks as well. These summits provide homes to the *katsinas* (masked spirit beings) and *dyasa* (cloud or rain people), who are associated with moisture and precipitation in all forms: rain, snow, fog, mist, and clouds. Tribal members communicate with these beings at mountaintop shrines, the most important of which is located on top of Redondo Peak (Sando 1982:11).

One of the singular resources of Wavema draws particular attention from archaeologists: superior-quality obsidian. In the northeast quadrant of the Valles Caldera a literal mountain of obsidian rises up from the grassy plain. Known to the Jemez as *Gee way kia shin* (Shining Rock Hill), and as Cerro del Medio to the Anglophone world, its sheer bulk makes this the largest obsidian source by volume in the Southwest U.S. (Shackley 2005:72). Jemez people seek stone from Shining Rock Hill specifically for use in prayer and religious ceremonies because obsidian carries special meanings for Pueblo people. Traditional Pueblo belief holds that obsidian “is formed by lightning striking the ground” (Ford 1992:122). Lightning, in turn, is believed to endow the land it strikes with fertility. Through this link to lightning, Jemez people associate obsidian with fertility, rainfall, and the life-giving powers of Wavema.

Finding the Right Data

When we began to plan our research strategy for the WARP, it quickly became clear that the biggest obstacle we would face was the sparse nature of Wavema’s archaeological remains. Compared with the kinds of sites I had investigated in my previous research—large, stone-masonry Pueblo villages with clearly visible middens chock-full of ceramics—the archaeological record within the Valles Caldera could charitably be described as lacking in diversity. With a narrow assemblage consisting primarily of obsidian debitage, hammerstones, and chipped stone tools, the artifacts thinly scattered throughout this landscape lack a clear ethnic signature.

Determining who exactly left these lithics on the mountain slopes and grassy meadows of Wavema is difficult, if not irresolvable. Furthermore the VCNP is perched at elevations higher than 2,500 m (8,300 ft) above sea level, which keeps this area particularly cool. Although surrounded by the high deserts of northern New Mexico, Wavema enjoys less than three months of frost-free mornings per year. A 90-day growing season is simply too short to raise corn, rendering maize agriculture (the staple crop of Pueblo peoples) untenable within the Caldera. As a result, ancestral Jemez farmers did not build any of their characteristic plaza-oriented, stone-masonry pueblos within Wavema's confines. Instead they chose to inhabit lower elevations where their crops could flourish.

Given the realities of this archaeological record, instead of looking for traces of the Jemez at the VCNP, we decided we would look for traces of the Valles Caldera where the Jemez lived. This meant we would have to search outside of Wavema's grassy bowl for our evidence. Luckily for us, between A.D. 1200-1700 the Jemez constructed more than 35 large villages (of 50 rooms or more) and thousands of small (one to four room) fieldhouses on the mesas that form the lower flanks of the dormant volcano. When the first Europeans entered this region in 1541, they wrote that the occupants spoke a common language (Towa) and identified themselves as ethnically "Hemes," (which the Spaniards later transliterated as *Jemez*). The region's inhabitants also shared a penchant for the same characteristic pottery, favoring black matte-paint designs applied over a chalky, oyster-white slip. Known as Jemez Black-on-white, this distinctive style of pottery dominates the ceramic assemblages of archaeological sites throughout the region. By focusing WARP investigations on these sites, we were able to confidently say that the evidence we would collect had been produced by ancestral Jemez people (and not the ancestors of one of the other 18 Pueblo tribes in the state of New Mexico). The middens at Jemez pueblos brim not

only with Jemez Black-on-white pottery, but also with lithic debitage. Chipped black obsidian is scattered the ground at these sites like glassy leopards' spots. And this obsidian forms the link we needed to trace ancestral Jemez use of Wavema.

Five primary sources of obsidian issue from the peaks and domes surrounding the Valles Caldera. All five of these obsidian sources exhibit unique trace element compositions, which can be differentiated using x-ray florescence (XRF) spectrometry. The elemental makeup of obsidian artifacts act like fingerprints, revealing the location from which that obsidian was originally mined. The idea for the WARP study was deceptively simple: collect obsidian from ancestral Jemez sites, and perform XRF analysis on this obsidian to ascertain its original location. By determining how much of the obsidian came from Valles Caldera sources, we could establish links between the people who lived at those villages and Wavema itself.

Not all of the obsidian artifacts in our study proved useful for determining ancestral Jemez interactions with the Valles Caldera, however. Deposits from four of the nearest sources erode into adjacent river drainages, resulting in what geologists call "secondary deposits." These secondary deposits mean that flintknappers in the past could have harvested one type of obsidian at a variety of locations throughout central New Mexico. In fact, nodules from some of these sources have been discovered in river gravels as far away as Chihuahua, Mexico—more than 540 km (340 miles) to the south. Finding obsidian from sources with these secondary deposits thus offers little conclusive evidence regarding flintknappers' interactions with the Valles Caldera in the past, as they plausibly could have collected that obsidian from many different locations.

But the fifth of these sources is the Cerro del Medio (or CdM) source, and that source tells a different story. Unlike the aforementioned four other sources in this region, CdM obsidian does not erode into any of the surrounding canyons and river valleys. In order to obtain CdM

obsidian, someone had to journey directly into the Valles Caldera to procure it. They couldn't pick up a nodule mixed in with the river gravels of the Rio Grande or one of its tributaries. This unique quality establishes a direct link between artifacts made of CdM obsidian, the sites where those artifacts are found, and Wavema itself. It allowed the WARP project to use the CdM obsidian found at ancestral Jemez pueblos as a proxy for the inhabitants' interactions with the Valles Caldera.

Methods

The first step in our study involved the collection of obsidian. Four tribal collaborators and I began by visiting 30 ancestral Jemez archaeological sites. This group included nearly all the large pueblos of region with occupations spanning the period from A.D. 1200-1700. Fortunately, these sites generally exhibit a high degree of artifact visibility, so we were able to collect samples directly from the ground surface (within midden contexts) at each village, avoiding the need to excavate. The tribe preferred this non-invasive strategy because it ensured that we would not disturb any burials in the course of our investigations. Surface collection also allowed us to sample a larger number of sites than we would have been able using invasive techniques, because excavation is both costly and slow-going by necessity.

After collecting an average of 75 obsidian flakes at each site, we analyzed a total of 2,222 artifacts from 30 Jemez sites using a portable XRF spectrometer (colloquially known as an XRF gun, or simply pXRF). Sample sizes ranged from 15 to 170 artifacts per site, with lower numbers collected at sites with limited surface visibility, usually due to heavy ground cover—pine needles sometimes obscure the ground at these sites today. Our sample includes unmodified primary and secondary obsidian flakes, debitage, and lithic shatter. We deliberately selected

artifacts from the early stages of production (rather than finished projectile points, scrapers, knives, etc.) to better represent patterns of acquisition. In other words, we looked for obsidian that showed signs of being knapped at that location, rather than finished artifacts. Knives and arrowheads are more likely than debitage to have travelled from the place they were originally produced, either through trade or movement during their use-life. And while it is theoretically possible that “raw,” unworked obsidian could have made its way to these villages through exchange, the proximity of these sites to the Valles Caldera sources negates the likelihood of down-the line trade. In short, the presence of CdM obsidian at these sites suggests that at some point in the formation of these artifacts, a Jemez person had to venture into the Valles Caldera in order to quarry obsidian at *Gee way kia shin*/Cerro del Medio.

Results

After subjecting all 2,222 individual artifacts to XRF analysis, we discovered that CdM obsidian was the most common of the five local sources of obsidian utilized by ancestral Jemez villagers. Jemez flintknappers made more artifacts out of CdM obsidian (n=1173) than from obsidian derived from all the other sources combined. (In total, 52.8 percent of the artifacts analyzed were made of obsidian derived from Cerro del Medio.) What’s more, when we compared the assemblages from these 30 sites to one another, CdM obsidian emerged as uniquely ubiquitous. It is the only quarry among the five local sources that appears in the lithic assemblage of each and every site we sampled. Each of the four other local sources appeared at some of the 30 sites we sampled, but not others.

The use of the CdM quarry by ancestral Jemez people clearly varied through the centuries, however. If we break down the WARP sample chronologically we can see distinct

temporal trends in this data. CdM obsidian acquisition increased dramatically from the 1200s through the 1600s (i.e. the pre-Colonial period). At pueblos settled during the first three centuries of this era, CdM obsidian accounts for just over one-quarter (26.5%) of the assemblage. But the middens at sites occupied after 1500 are bursting with three times as much obsidian from Wavema (78.6%). While much of this increase has to do with the proximity of these early sites to closer, alternative obsidian sources, this intensification nonetheless demonstrates a surge in the use of the Valles Caldera landscape by Jemez people through the first four centuries of settlement in the region.

The abundance of CdM obsidian at ancestral Jemez pueblos attests to the extensive ties that existed between the residents of these villages and Wavema. Its presence and quantity indicates that ancestral Jemez people made frequent trips into the Valles Caldera landscape, procuring CdM obsidian along the way. Jemez interactions with Wavema began shortly after their migration into the Jemez Province around 1200. As time passed the Jemez utilized the Cerro del Medio obsidian quarry with increasing frequency and intensity, peaking in the sixteenth century. This upward trend of CdM exploitation suggests that ancestral Jemez familiarity with this landscape grew during pre-Colonial times.

In a few cases, villages we sampled are located closer to an alternative source of artifact-quality obsidian, yet their residents still preferentially chose to use CdM in greater quantities. Previous studies indicate that all of these sources provide excellent flintknapping material. Why would the people who lived at these villages choose to journey *farther* to obtain obsidian from Cerro del Medio, rather than simply going to their local neighborhood obsidian source nearby?

One possibility is that obsidian obtained from within Wavema retained special meanings for the Jemez—possibly tied to the associations of life, fertility and power that they may have

made with the Valles Caldera landscape. Another possibility is that this obsidian was collected opportunistically, while Jemez people were in the Valles Caldera tending to other tasks (such as retreats, pilgrimages, and ritual hunting expeditions). In either scenario the presence of Cdm obsidian suggests the special meanings that the Valles Caldera landscape held for the residents of these sites.

Reflections and Lessons Learned

The results of the WARP analysis clearly demonstrate that ancestral Jemez people used the Valles Caldera landscape routinely and continually over the course of 400 years. What's more, the intensity of their use of Wavema increased through time, at least until access to Cdm was curtailed first by Spanish colonialism and later by private landowners in the eighteenth, nineteenth, and twentieth centuries. Our study shows that not only was Wavema an important place to ancestral Jemez people between A.D. 1200-1700, but that Cerro del Medio was *the most* important source of obsidian for them over the course of four centuries.

Looking back on the WARP, I'm pleased with the results. Luck and geography were on our side, of course, as we were fortunate that Cerro del Medio obsidian has the unique quality of not being distributed in secondary contexts. Then too, we were lucky to stumble onto this question at a time when the techniques of XRF had become relatively affordable and well-established. In the end, the ability to link a well-defined research question with a robust dataset—through the use of an appropriate methodology—helped to produce satisfying results. Of course, we were challenged by the sparse archaeological record of the Valles Caldera and had to re-focus our research to the adjacent pueblo villages when it became apparent that we could not identify a clear ethnic signature among the artifacts scattered about Wavema. And while

some archaeologists might view not being able to excavate as a limitation, the use of non-invasive surface collection was a boon to our project, allowing us to sample a far greater number of sites than would have been possible using standard sub-surface techniques. But again, we are lucky to work in contexts with superlative surface visibility.

More importantly, my tribal collaborators at Jemez are understandably thrilled with the results of this research. To them, the science we employed in the WARP reaffirmed what they already knew—namely, that Wavema has always been a sacred place of great importance to the Jemez people. While many constituencies might find such an outcome maddening (if archaeology only tells us what we already know, why spend the time and money to do it?), to the Jemez this was exactly what they were looking for. The WARP provided another piece of evidence linking the tribe to Wavema—the kind of scientific evidence recognized in a court of law. Ultimately, the Pueblo hopes that the data collected by WARP will help them to reassert their ownership over Wavema. Whether or not the Jemez will get their day in court—and whether or not the WARP data will play a role in the proceedings—remains to be seen. (A case is currently wending its way through the 10th Circuit Court of Appeals.) At the end of the day, however, WARP was a success regardless of the outcome of any future litigation. The research we conducted stands on its own, as sound science testifying to the enduring relationship between the Jemez people and Wavema.

For me personally, the greatest lesson I learned by participating in this project was the importance of leaving yourself open to new research questions. Had I walked into the meeting that night at the Jemez Tribal Administration building with a preconceived agenda about what my next research project would (or should) be, I would have missed out on multiple opportunities: the opportunity to serve those who had aided me in my previous research; the

opportunity to learn about entire areas of archaeological investigation and techniques that I knew nothing about; the opportunity to make my archaeological interests relevant outside of academia. One of the primary challenges facing archaeologists who endeavor to engage in collaborative research is giving up control over the research process. But if we view this loss of control not as an obstacle but as an opportunity, we stand to benefit in ways we can't even imagine. What's more, we open ourselves up to the investigation of questions that had not even occurred to us previously—ultimately producing archaeology that is less partial, more balanced, and more innovative.

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