

NMCRIS Project Number: 62955

Tsankawi Preservation Project Cultural Resources Inventory and Site Relocation

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Introduction

During September and early October 1998, an archeological crew under my direction completed a survey of about 230 acres of the Tsankawi Unit of Bandelier National Monument. The Tsankawi Unit consists of an 828-acre tract of land isolated from the main unit of Bandelier by some 10 miles. The unit lies on the White Rock USGS 7.5' quadrangle, in sections 20, 21, 28, and 29 of T. 19 N, R. 7 E., in Santa Fe County, New Mexico.

The work described in this report was not related to NHPA Section 106 compliance requirements. The park plans no undertakings in the new survey area at this time. Park management wanted to complete the inventory of the entire unit to facilitate appropriate management of the unit. This purpose of this report is simply to document the fieldwork that was done.

The Bandelier Archeological Survey (BAS) project surveyed some 598 acres at the Tsankawi Unit during 1988 and 1989. They recorded 115 cultural resource sites and 80 isolated occurrences. The area we surveyed covered about 230 acres in the southeast corner of the unit (Figure 1). We recorded 21 new sites and 21 new isolated occurrences.

In addition to completing cultural resources inventory for the unit, I also revisited all 115 previously recorded sites. The purpose of these visits was threefold. First, I recorded UTM locations with the park's PLUGR GPS units. Second, I monitored site condition and recorded current threats to each site, particularly erosion. Third, I assessed the reliability of the information recorded on the site forms.

All the work described herein was a part of the Tsankawi Preservation Project, a multiyear, multidisciplinary, cooperative endeavor of the National Park Service, University of Pennsylvania, and San Ildefonso Pueblo. The goal of the Tsankawi Project is to acquire information about the condition and distribution of cultural and natural resources in the Tsankawi unit and apply innovative preservation techniques to threatened resources in a culturally sensitive and cooperative way.

Environmental Setting of Tsankawi

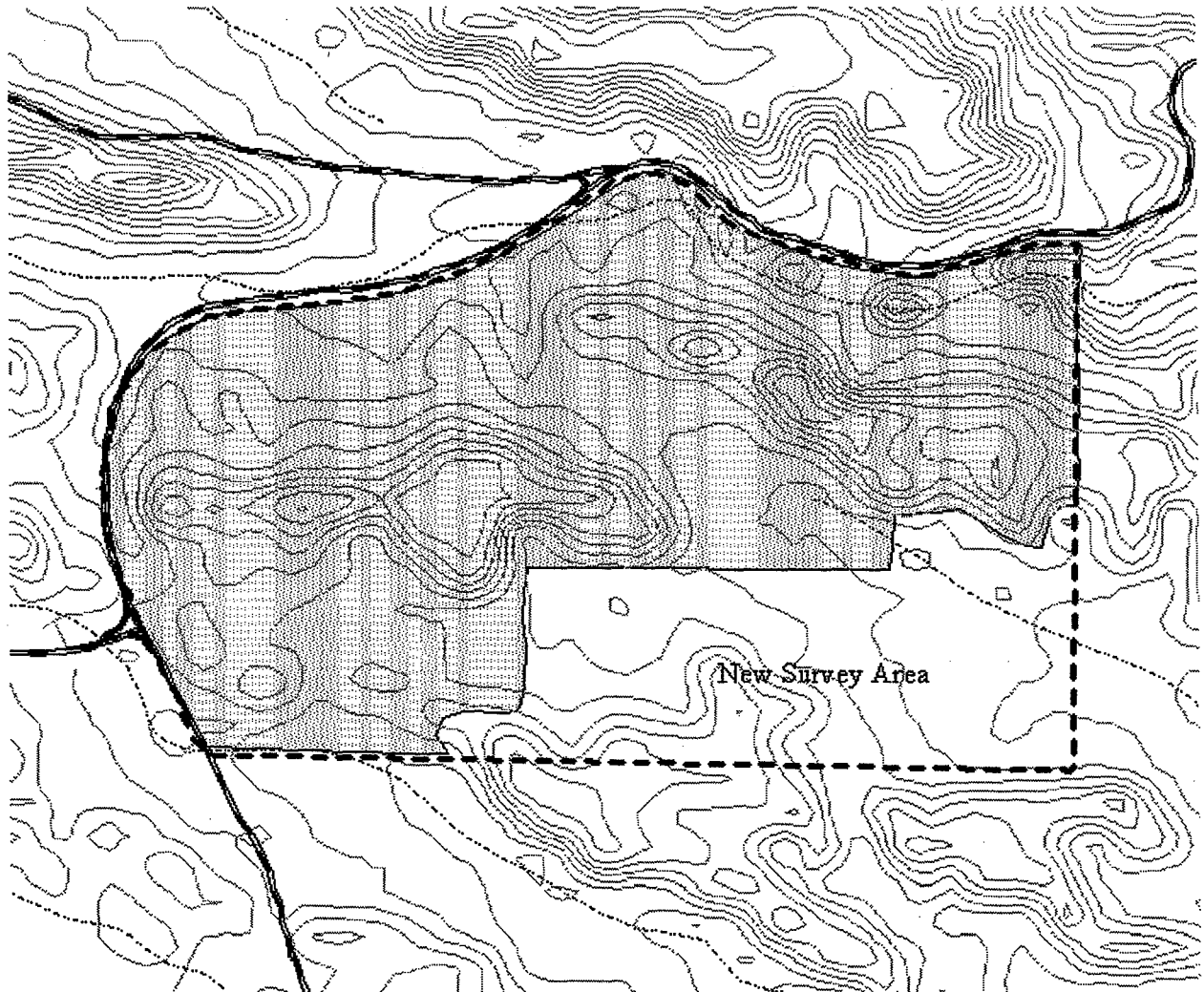
The Tsankawi unit of Bandelier National Monument lies on the Pajarito Plateau, on the eastern flank of the Jemez Mountains of New Mexico (Figure 2). The Jemez Mountains are the result of volcanic eruptions that occurred between 1.6 and 1.2 million years ago. These eruptions left two large overlapping calderas (collapsed volcanic craters), known today as the Valle Grande and the Valle Toledo. Ash deposited by the eruptions fell to the ground and consolidated as it cooled, forming deep deposits of volcanic tuff. These tuff formations eroded, creating the high flat mesa-deep canyon systems that form the Pajarito Plateau.

The Tsankawi unit consists of three of these mesa-canyon systems. The mesas have become known as North Mesa, Tsankawi Mesa, and South Mesa. These mesas are between Los Alamos and Sandia Canyons. Los Alamos Canyon forms part of the north boundary of the Tsankawi unit. Minor drainages between North Mesa and Tsankawi Mesa, and Tsankawi Mesa and South Mesa, flow into Sandia Canyon. The canyon drainages empty into the Rio Grande about 2 km east of the east boundary of the Tsankawi unit.

Elevations in the Tsankawi unit lie between about 6,000 feet at the northeast corner of the unit to about 6,700 feet on top of Tsankawi Mesa. Vegetation may be characterized as a piñon-juniper woodland with degrading ponderosa pine stringers extending down the drainages. Soils in the unit are deep but eroded in the bottomlands, shallow to non-existent on the mesatops.

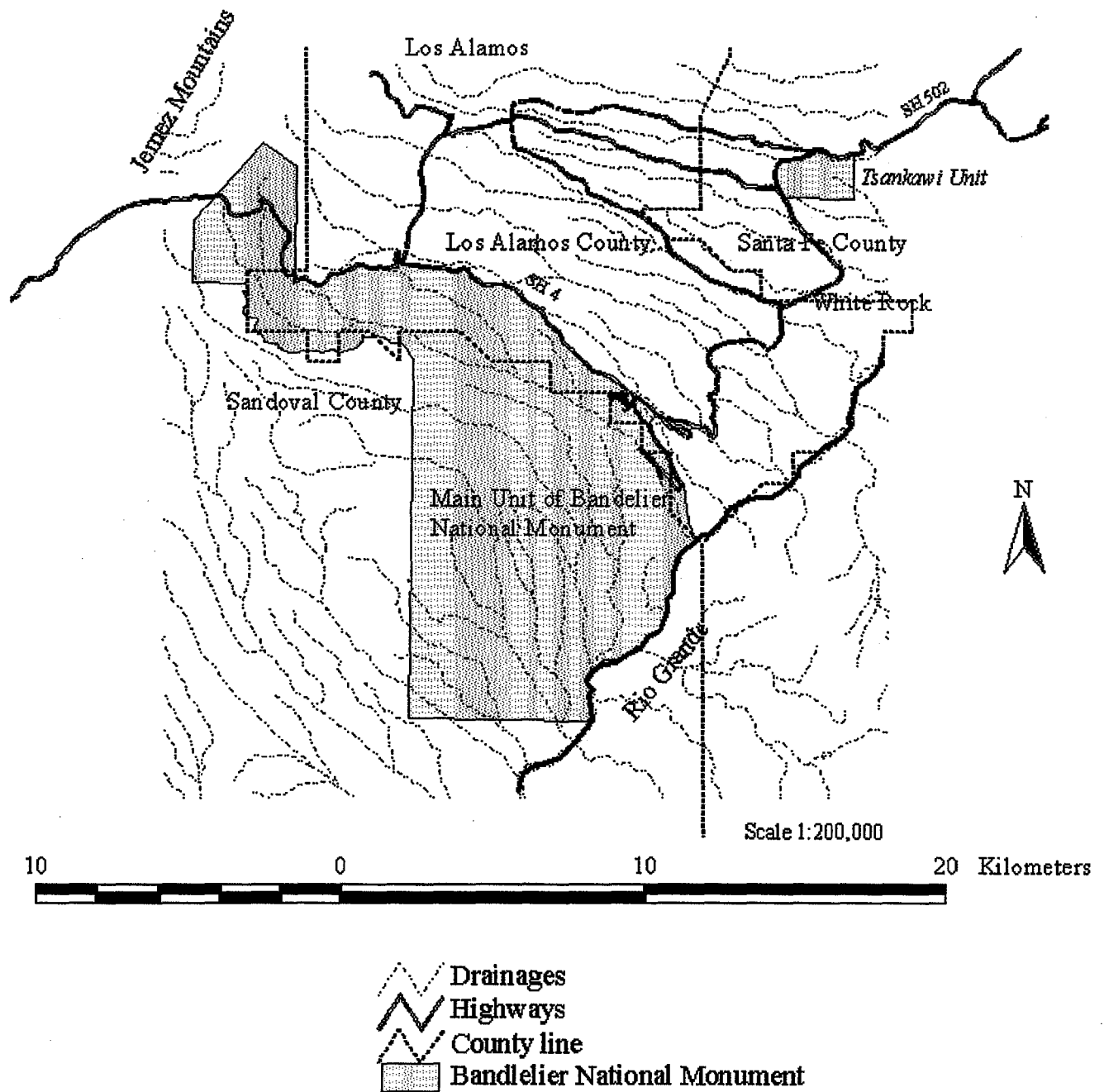
Precipitation averages 15-16 inches per year at the main unit of Bandelier National Monument. Average maximum annual temperature is 68.5° F. Average annual minimum temperature is 32.1°F. Bandelier receives an average of 30.5 inches of snow per year. Much of the remaining precipitation occurs in the form of thunderstorms ("monsoons") during July and August.

Figure 1. Map showing new survey area.



-  Tsankawi Unit Boundary
-  State Highways
-  Drainages
-  40-ft contours
-  Previous (BAS) Survey

Figure 2. Map showing location of Tsankawi Unit and Main Unit of Bandelier National Monument.



Culture-Historical Overview of the Tsankawi Area (summarized from Mozzillo 1997)

Material culture remains attest to the presence of humans in the Tsankawi area from Paleoindian times to the present. The most numerous and best-known cultural materials pertain to the periods of Ancestral Puebloan occupation.

The uniqueness of local Ancestral Puebloan cultural history is reflected in area chronology. While the Pecos classification is commonly used for Anasazi sites and materials, the scheme generally used for the Northern Rio Grande area more effectively encompasses local cultural developments (Wendorf and Reed 1955, and Table 1).

Table 1. Comparison of Northern Rio Grande and Pecos Chronologies.

Dates	Pecos Phases	Rio Grande Phases
AD 1600	Pueblo V	Historic
AD 1300-1600	Pueblo IV	Classic
AD 1100-1300	Pueblo III	Coalition
AD 900-1100	Pueblo II	Late Developmental
AD 700-900	Pueblo I	Early Developmental (continues)
AD 400-700	Basketmaker III	Early Developmental/Archaic
?BC/AD 400	Basketmaker II	Archaic

Cultural Sequence of Bandelier and the Pajarito Plateau

As noted, evidence for human occupation of the region dates as far back as Palaeoindian times, although material cultural remains of that age are sparse in Bandelier and the Pajarito Plateau. An isolated Clovis point recovered south of Capulin Canyon during the Cochiti Lake mitigation work represents the sole physical evidence for a Paleoindian presence within the park found so far (Powers 1994:21; Traylor et al. 1990). In the northern Rio Grande culture area the Archaic Period is dated from about 5500 BC to as late as AD 600. Sixteen Archaic sites have been documented at Bandelier. Archaic sites in and near the park generally consist of campsites and shelters as well as activity areas (e.g., lithic reduction sites); some include evidence for at least incipient cultivation of corn. The persistence of Archaic lifeways in the upper Rio Grande area is striking when comparisons are made to other areas of North America or even elsewhere in the American Southwest.

No Early Developmental sites have been recorded in Bandelier. Evidence for Late Developmental habitation is sparse, although the investigators who developed the Bandelier Survey predicted that Developmental Anasazi settlement should be represented by a small, pioneer population during the last fifty years of the period (Powers 1987).

Site frequency increases greatly during the Coalition period (AD 1175-1325), attesting to a population increase by as much as ten-fold (Stuart and Gauthier 1981). For Bandelier and the Pajarito Plateau, this seems to be the earliest period of substantial human occupation.

Coalition sites generally consist of small (although some are large) masonry pueblos dominated by Santa Fe Black-on-white pottery. The surge in numbers of sites (and presumably, people) is generally attributed to a migration, or migrations, of San Juan Anasazi from the Four Corners area.

During the Classic Period (AD 1325-1600), site size and frequency peaked at Bandelier. By the end of the Classic Period, Bandelier was largely abandoned. Sites exhibit great variability in size and plan, ranging from one-room fieldhouses to large, aggregated communities of several hundred rooms. Ceramic assemblages are dominated by the so-called "Biscuit" wares and Rio Grande Glaze-paint wares as tradewares.

Bandelier continued to be used during the historic period by Native American, Hispanic, and Anglo-American groups. Native Americans have used and continue to use the park for ceremonial purposes. Hispanic and Anglo-American groups have used the park for grazing, logging, hunting, and other uses.

Bandelier became a National Monument in 1916, at first under the U.S. Forest Service. In 1932, Bandelier became a unit of the National Park Service. The most significant historic uses of the Tsankawi area during Forest Service management were for fuelwood collecting and grazing, primarily sheep.

An interesting interlude in the Forest Service management of Tsankawi came during 1918-1928. In 1918, a Californian named Madame Verra von Blumenthal received permission from the Forest Service to build a summer home. The location she chose was adjacent and atop a Coalition Period pueblo site, LA 42. She constructed a large house from building stones scavenged from the pueblo site, and several outbuildings. Madame von Blumenthal and her companion Rose Dougan spent summers at the house. She also funded a program through the School of American Archaeology to reinvigorate San Ildefonso Pueblo's ceramic production. Artists such as Maria and Julian Martinez studied ancient pottery techniques at the house. The ultimate fate of Madame von Blumenthal and Ms. Dougan is unknown. Ms. Dougan became ill in 1928 and both women then returned to the West Coast. Most of the contents of the house were removed to Santa Fe by Kenneth Chapman after a waterpipe froze and burst. The house in ruined form later acquired the name "Duchess Castle".

Previous Archaeological Work Around Tsankawi

(adapted from Mozzillo 1997)

Adolph F. Bandelier made five field trips to the Pajarito Plateau during the 1880s as an associate of the Archaeological Institute of America. He visited sites in Frijoles Canyon and on the Cañada de Cochiti, and described what he saw in his journals (Lange and Riley 1966; Lange et al. 1970, 1975, 1984; cf. also Bandelier 1892).

Bandelier investigated, sketched, and made surface collections at many of the larger pueblo sites, including sites now preserved within Bandelier National Monument. He also noted the presence of many small structural sites and believed them to be seasonally occupied farmers' shelters or hamlets. He believed these supported idea of continuity of Puebloan agricultural practices from ancient to modern times (Bandelier 1892:111; Lange et al. 1975:64, 86, 160).

Tsankawi began to be noticed by the general public after a National Geographic article by George Beam appeared in 1906. Beam's well-illustrated article also discussed the sites of Puyé, Otowi, and Navawi.

Edgar Hewett's Work

Archaeological fieldwork continued with the arrival of Edgar Lee Hewett, who initiated reconnaissance in 1896 and 1897 of the area between Santa Clara Canyon and the Rito de los Frijoles. Following these two seasons, he conducted some additional fieldwork, including excavation, in the area on a sporadic basis until 1903 (Hewett 1904; Mathien 1986). Hewett excavated at Tsirege, Ceremonial Cave, Long House, Talus House, Tyuonyi (and associated structures, including Big Kiva), Frijolito, San Miguel, Yapashi, Big and Little Otowi, and Tsankawi, and Puye. Some of these were major excavations, but the reports that exist are brief and sparse, or deal only with specific aspects such as ceramic typology, chronology, or rock art. Hewett's major contribution to Bandelier archaeology probably lies in his definition of the Pajarito Plateau as a distinct culture area within the larger Jemez Plateau.

Hewett's work at Tsankawi included excavation of three "burial mounds" (Mathien 1989; Barnes 1991:282). He removed 29 burials and numerous artifacts from the three mounds. Hewett saved 28 of the sets of human remains. The remains appear to now be in poor condition. In Barnes' words, "only 25 incomplete and poorly preserved individuals represent Tsankawi in the National Museum of natural History's human skeletal collections" (284).

Early Stabilization and Excavation Work near Tsankawi

J.W. Hendron stabilized the Potsui'i II (in what was at that time the detached Otowi section of the monument) and emphasized its importance as one of the first small, early sites to be excavated (1945). Robert Lister (1939, 1940a and b) continued park stabilization work on the Otowi tract (including some Tsankawi cavates), also completing a small amount of excavation.

Test excavations were carried out at many Plateau sites from 1931 to 1940 by W.S. Stallings, Jr., of the Laboratory of Anthropology (1933, 1937). His goal was to develop a tree-ring chronology for the Upper Rio Grande district: large sites he investigated include Tsiping, Tsankawi, Tschirege, Water Canyon Ruin, Tyuonyi, Rainbow House, and Frijolito.

John F. Turney (1962) of the NPS conducted the first systematic survey inside the park boundaries at the detached Otowi unit in the 1950s, locating and describing 55 sites. Ceramics collected during the course of this work dated from AD 1200 to the 1500s. In particular, ceramic data for Otowi and Tsankawi (the largest sites) provided evidence of habitation prior to the construction of the large pueblos, as well as attesting to late Classic occupation for both sites. Unfortunately, the notes and any other data resulting from this work were apparently lost (Mathien 1986 2:12).

Other Relevant Tsankawi Area Research

James N. Hill of the University of California at Los Angeles carried out the ambitious Pajarito Archaeological Research Project (PARP) in the late 1970s. Designed as a stratified random sample survey project, PARP was originally proposed to investigate selected areas on the Pajarito Plateau, including acreage within the park. Although no fieldwork was ultimately conducted in Bandelier, some 400 square miles (1036 sq. km) were investigated, during the course of which some 889 sites were recorded. PARP survey data were used by Jan Orcutt (1981) for her dissertation, which investigated the long-term response of a prehistoric society to stress induced by food shortages. Noting that Classic populations were aggregated at lower elevations, she highlighted more efficient agricultural exploitation as a major factor that conditioned the selection of such a strategy by apparently large numbers of Classic populations in the area.

A recent study that incorporated data from small prehistoric structures on the Pajarito Plateau was carried out by Robert Preucel (1990), as part of PARP. The focus of his research was investigation of Ancestral Puebloan mobility strategies, particularly seasonal agricultural circulation in the Garcia Canyon area a few miles northwest of Tsankawi. Excavation and survey data from a variety of sites, including small structures, were used to test a model of variable agricultural settlement for subsistence farmers that incorporated seasonal circulation.

Ethne Barnes completed a dissertation in 1991 that presented the results of osteological analysis of selected human remains from the Pajarito Plateau. Her study included analysis of 25 individuals excavated by Hewett in 1905.

James Snead's (1996) dissertation work focused on community dynamics on the Caja del Rio Plateau. Using survey data that included large villages, small structural sites, petroglyphs, and shrines, Snead determined that early Classic communities were not organized primarily to facilitate agricultural production, but instead served to structure social integration among autonomous agriculturists.

Nancy Olsen completed an attribute analysis of selected Bandelier rock art in 1997. Her analysis included some of the Tsankawi rock art.

The Bandelier Archaeological Survey (BAS)

From 1987-1991 teams of field archaeologists employed by the National Park Service, Southwest Region, were deployed at Bandelier National Monument to locate and document cultural sites on park lands. Their efforts were guided by a research design intended to satisfy inventory and other management needs as well as facilitate academic inquiry into one of the important problems of Bandelier and Northern Rio Grande Anasazi archaeology (not to mention world archaeology). The central research question of the BAS was: Why does population aggregation and what changes result as a consequence of it" (Powers and Van Zandt 1994). When the fieldwork was complete, 43% of the park's 32,737 acres had been surveyed using both judgmental and probabilistic sampling protocols. 1,959 cultural sites were identified, including types ranging from communal pueblos and small structures built by Ancestral Puebloans to the remains of activities pertaining to the historic era. About 600 acres of the Tsankawi unit was surveyed during 1988 and 1989. Crews recorded 115 sites and 80 isolated occurrences.

Tsankawi Cultural Resources Inventory

Survey Methods

Ethan Giedraitis was the crew chief for the survey. Peter Dudley was a crew member. I was in the field with them about 25% of the time. The survey was conducted during the period September 8-October 7, 1998. We first identified the survey area by relocating the survey boundaries of the BAS by GPS and flagging the interior boundaries on the north and west of our survey area. We then walked parallel transects, generally oriented north-south, across the landscape between natural features such as drainages or cliffs, or the fenceline at the south edge of the survey area. The transect interval was between 10-15 meters. We surveyed cliffs and steep slopes by walking contours at our transect interval.

When we observed cultural material we marked our transects and investigated the material to determine if it should be recorded as a site or an isolated occurrence. We used the BAS definitions of site and isolated occurrence as guidelines, but applied professional judgment in borderline cases. Some cultural materials we observed were clearly associated with habitation sites some distance away and were not recorded separately. We generally recorded one or a few isolated artifacts, or a single non-habitation feature, as isolated occurrences. We generally recorded features associated with artifacts as sites.

We used slight variation of the BAS site form to record sites, and a short form to record isolated occurrences. We collected GPS data from each of the newly recorded sites. We mapped each site. We photographed each site. We placed an aluminum tag with each site's field number in the ground at each site. We will replace the tags with aluminum site stakes with the Laboratory of Anthropology site number on them. We did not flag or otherwise mark site boundaries.

Results of the Survey

We recorded 21 archeological sites (Table 2) and 21 isolated occurrences (Table 3) in the 230 acres we surveyed (Figure 3). The sites were generally prehistoric and dated to the period AD 1300-1500, although three sites had features associated with historic sheepherding of the last century. Eleven of the sites were cavate structures. Four were small structures. Three were unknown rubble piles. Two were agricultural sites. One site was an unknown alignment.

Figure 3. Sites and isolated occurrences recorded during the survey.

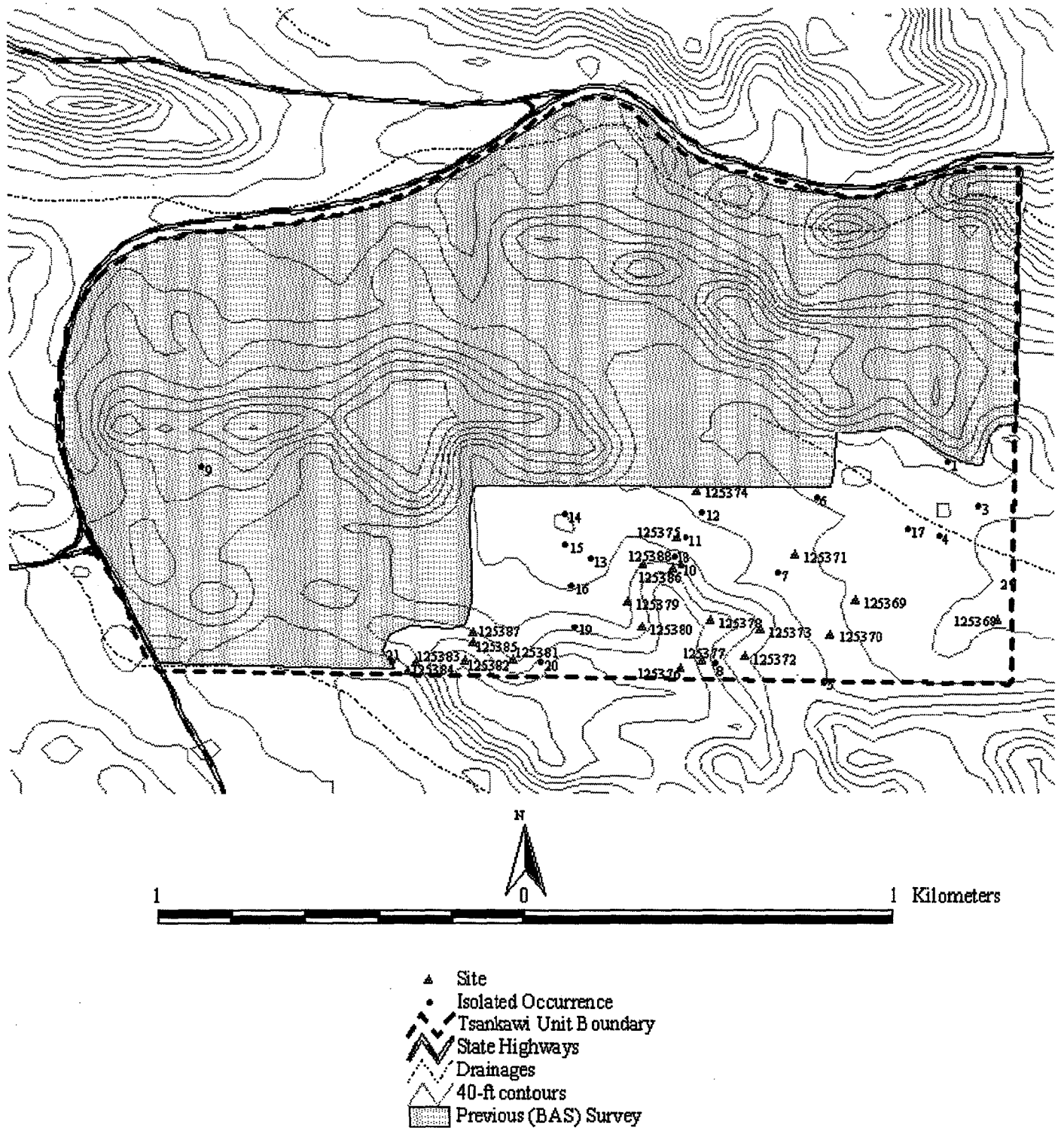


Table 2. Sites recorded during the survey.

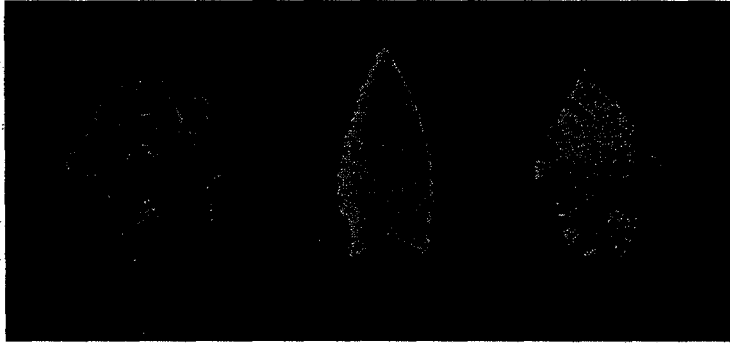
LA	Field number	City	Primary site type
125368	BF-TS-98-01	6290	unknown rubble pile
125369	BF-TS-98-02	6359	small structure
125370	BF-TS-98-03	6373	small structure
125371	BF-TS-98-04	6383	unknown rubble pile
125372	BF-TS-98-05	6496	cavate structure
125373	BF-TS-98-06	6527	cavate structure
125374	BF-TS-98-07	6364	unknown rubble pile
125375	BF-TS-98-08	6409	small structure
125376	BF-TS-98-09	6548	unknown alignment
125377	BF-TS-98-10	6514	cavate structure
125378	BF-TS-98-11	6468	cavate structure
125379	BF-TS-98-12	6489	cavate structure
125380	BF-TS-98-13	6500	cavate structure
125381	BF-TS-98-14	6547	cavate structure
125382	BF-TS-98-15	6597	cavate structure
125383	BF-TS-98-16	6555	cavate structure
125384	BF-TS-98-17	6490	cavate structure
125385	BF-TS-98-18	6524	cavate structure
125386	BF-TS-98-19	6437	small structure
125387	BF-TS-98-20	6477	water control
125388	BF-TS-98-21	6440	water control

Table 3. Isolated occurrences recorded during the survey.

Field post	IO number	Description	collection
IO-TS-98-	1	rock alignment, possible check dam	
IO-TS-98-	2	5 sherds and 1 lithic	
IO-TS-98-	3	2 sherds and basalt projectile point	yes
IO-TS-98-	4	unknown rock alignments, basalt scraper	
IO-TS-98-	5	barbed Polvadera obsidian projectile point	yes
IO-TS-98-	6	steel bucket	
IO-TS-98-	7	unknown rock alignments	
IO-TS-98-	8	3 pieces groundstone	
IO-TS-98-	9	Jemez obsidian projectile point	yes
IO-TS-98-	10	unknown rubble	
IO-TS-98-	11	unknown rubble	
IO-TS-98-	12	unknown rubble, metate fragment	
IO-TS-98-	13	2 possible check dams	
IO-TS-98-	14	groundstone fragments	
IO-TS-98-	15	check dam	
IO-TS-98-	16	check dam	
IO-TS-98-	17	sherd and lithic scatter	
IO-TS-98-	18	check dam	
IO-TS-98-	19	vesicular basalt metate fragment	
IO-TS-98-	20	stairs	
IO-TS-98-	21	anthropomorphic petroglyph	

We collected three artifacts, all projectile points from isolated occurrences 3, 5, And 9 (Figure 4). They will be curated at Bandelier National Monument.

Figure 4. Artifacts collected during the Tsankawi Survey.



From left to right, IO 9, material = Jemez Obsidian, IO 3, material = basalt, and IO 5, material = Jemez Obsidian.

Relocation of Previously Recorded Sites

Another task I completed during summer 1998 was the relocation of 115 previously recorded archeological sites within the Tsankawi Unit. Archeologists had first recorded some sites, such as Tsankawi Pueblo, in the 1920s. Most of the previously recorded sites in the unit were recorded by the Bandelier Archeological Survey (BAS) in 1988 and 1989. The BAS also revisited all the previously recorded sites. They surveyed about 600 acres of the unit. Table 4 describes the BAS sites I revisited.

Table 4. Sites recorded during the Bandelier Archeological Survey that I revisited.

IO	Site	Primary Site Type	Other Site Type	Comment
42	6412	pueblo	historic structure	Duchess' Castle
211	6680	pueblo		Tsankawi Pueblo
2992	6416	sherd and lithic scatter		
50976	6611	cavate pueblo		Toll's site
61036	6302	sherd and lithic scatter		
61047	6342	sherd and lithic scatter		
61048	6373	sherd and lithic scatter		
61049	6406	pueblo		Isolated small structure
65655	6484	historic trash		
65656	6587	cavate pueblo		
65657	6557	cavate pueblo		
65658	6512	cavate structure	historic camp	
65659	6545	cavate structure		
65660	6485	water control		
65661	6589	cavate pueblo		

LA	elev	Primary site type	Other site type	comment
65662	6582	cavate pueblo	animal husbandry	
65681	6407	sherd and lithic scatter		
65682	6067	cavate pueblo		
65683	6447	trail		
65684	6413	cavate pueblo		
65685	6453	rock art		
65686	6437	cavate structure		
65687	6510	trail		
65702	6476	pueblo	historic camp	
65703	6387	water control		
65704	6417	water control		
65705	6449	small structure		
65706	6426	water control		
65707	6442	small structure		
65708	6406	water control		
65709	6375	small structure	historic trash	
65710	6332	sherd and lithic scatter	historic camp	
65711	6647	cavate structure		
65712	6567	cavate structure		
65713	6615	cavate structure		
65714	6596	cavate structure		
65715	6696	cavate structure		
65716	6608	cavate structure		
65717	6608	cavate structure		
65718	6637	cavate structure		
65719	6586	cavate structure		
65720	6512	small structure		
65721	6475	small structure		
65722	6616	small structure		
65725	6310	sherd and lithic scatter	historic trash	
65726	6355	unknown structure		
65727	6314	water control		
65728	6305	unknown structure		rock pile should be hist site
65729	6506	cavate structure		
65730	6390	storage		
65738	6490	trail		
65739	6431	cavate pueblo		
65740	6591	trail		
65741	6554	rock art	historic rock art	Conquistador petroglyph
65742	6506	cavate pueblo	historic trash	"Doll House"
65743	6539	cavate pueblo	historic trash	
65744	6539	rock art		
65745	6440	sherd and lithic scatter	historic camp	
65746	6446	sherd and lithic scatter	historic camp	

	Site #	Primary site type	Other site type	Comments
65747	6400	sherd and lithic scatter	road	
65748	6581	cavate pueblo		
65749	6557	cavate pueblo		
65750	6556	cavate pueblo		
65751	6579	cavate pueblo		
65752	6680	trail		
65753	6615	cavate pueblo		
65754	6706	rock art		
65755	6614	cavate pueblo		
65756	6608	cavate pueblo		
65757	6632	rock art		
65758	6538	cavate structure		
70905	6471	road		
70906	6506	cavate pueblo		
70907	6458	historic trash		
70908	6509	water control		
70909	6432	historic camp	road	
70910	6534	cavate structure		
70911	6508	water control		
70912	6505	water control		
70955	6521	cavate structure		
70956	6624	trail		
70957	6588	cavate structure		
70958	6465	cavate structure		
70959	6448	sherd and lithic scatter		
70960	6421	small structure		
70961	6423	small structure		
70962	6419	unknown rubble pile		
70968	6324	small structure	historic trash	
70969	6388	water control		
70970	6341	small structure		
70971	6283	small structure		
70972	6270	water control		
70973	6250	sherd and lithic scatter		
70974	6264	small structure		
70975	6297	small structure		
70976	6286	small structure		
70977	6249	sherd and lithic scatter		
70978	6252	sherd and lithic scatter		
70979	6275	sherd and lithic scatter		
70980	6290	animal husbandry		big walls for a sheep pen
70981	6323	sherd and lithic scatter		
70982	6504	water control		
70983	6472	water control		

	id	Primary site type	Other site type	comment
70984	6335	small structure		
70985	6336	water control		
70986	6345	sherd and lithic scatter		
70987	6425	cavate structure		
70988	6413	unknown alignment		
70989	6601	trail		
70990	6450	sherd and lithic scatter		
70991	6468	sherd and lithic scatter		
70993	6556	trail		
70997	6364	small structure		
70998	6283	hearth		
84021	6421	small structure		

I relocated all 115 previously recorded sites. I used a GPS unit to record UTM locations for all sites. I completed a brief condition assessment for all sites using a form that I developed from the park's monitoring form. I examined the site forms and made corrections to maps and some data. I did not have time to review most of the data recorded by the BAS crews. I made recommendations for additional work.

Comments on the BAS Sites

It should be made clear that my comments here are made in hindsight. I thought the BAS survey at Tsankawi was of generally high quality. I thought that BAS crews did find most of the sites in the area they surveyed. I found the mapped site locations for BAS sites to be generally quite accurate. I could normally walk right to their sites just by using the base map. I found the site sketch maps to be highly variable in quality ranging from excellent to, in a few instances, unacceptable. I found the artifactual data (the limited amount that I reviewed) recorded on the forms by BAS crews to be generally good, with some exceptions.

There is a problem with the survey boundary on the west end of the unit. The base map prepared by the BAS archeologists seems to indicate a small area there was not surveyed, though it is difficult to read. Moreover, there are two unrecorded cavate sites on the west end of Tsankawi Mesa that almost surely would have been recorded had the area been surveyed. The BAS project director informed me, however, that the west end of the unit was surveyed all the way to the highway. This area should be (re)surveyed and the new sites should be recorded.

I felt that the BAS forms and methods were good for recording prehistoric surface structures and artifacts. I think there more data should have been recorded at cavate sites, rock art sites, historic sites, and trail sites, but perhaps time considerations prevented this.

New Sites in BAS Survey Area

I did not look for new sites in the BAS area. However, while looking for the recorded sites in the BAS survey area, I did observe several unrecorded sites, and several others in an area on the west end of the unit that appears to be unsurveyed. I did not have time to fully record these sites but I did record GPS data and take notes regarding them. Table 5 describes these sites.

Table 5. Unrecorded sites I observed in the BAS survey area and probable unsurveyed area on the west side of the Tsankawi unit.

Field site number	Description
TS-ME-98-1	Small structure about 60 m northeast of 65705
TS-ME-98-2	Storage structure near LA 70997
TS-ME-98-3	Six cavates west end of Tsankawi Mesa
TS-ME-98-4	Artifact scatter near 65727
TS-ME-98-5	BAS IO 569? Historic campsite
TS-ME-98-6	Prehistoric/historic camp
TS-ME-98-7	Unrecorded stairs near 70993
TS-ME-98-8	Single cavate structure w end Tsankawi Mesa
TS-ME-98-9	BAS IO 571, historic/prehistoric campsite
TS-ME-98-10	Old roadcut on west end of unit
TS-ME-98-11	Old powerline on west end of unit
TS-ME-98-12	Prehistoric campsite near asphalt trail reroute

I also found features recorded together with other features at two sites that should, in my opinion, be recorded as separate sites. These include a small structure recorded as part of LA 61049 that is more than 100 m away from the pueblo that is the main feature of the site, and the "Doll House" feature, a probable historic carved rock model of a pueblo (Figure 5) that is recorded as part of LA 65742, a cavate pueblo. The small structure is too far from the pueblo to be considered part of it. The Doll House feature is unique for Bandelier and should have its own number. It could be recorded separately with the historic artifact scatter that is now recorded as the second component of LA 65742. The historic features and artifacts overlap but do not coincide completely with the prehistoric features and artifacts and should thus be recorded separately.

Figure 5. The “Doll House” feature at LA 65742.



Photo: J. Courtney White, used with permission.

Site Condition Assessments

The BAS recorded a variety of site impact information, which they referred to as natural, human, and potential. I recorded similar classes of information for the 115 sites that BAS recorded. We used the BAS forms for the new sites, so site condition information is available for them, too. Virtually every site I visited exhibited some erosion damage, most often movement or covering up of artifacts.

Archeology of the Tsankawi Unit

The combined results of the BAS and Tsankawi Project inventories have provided information on 136 sites and 101 isolated occurrences in the 828 acres of the Tsankawi unit. Table 6 provides a breakdown by site type.

Table 6. Breakdown of all sites recorded in the Tsankawi Unit by primary component type.

Type	Number
animal husbandry	1
cavate pueblo	18
cavate structure	30
hearth	1
historic camp	1
historic trash	2
pueblo	4
road	1
rock art	5
sherd and lithic scatter	19
small structure	21
storage	1
trail	8
unknown alignment	2
unknown rubble pile	4
unknown structure	2
water control	16
Total	136

The archeology of the Tsankawi unit is distinctly different from that of the main unit of Bandelier National Monument. The principal empirical differences that I have observed after visiting every known archeological site in the Tsankawi unit are these:

- There are few sites or artifacts dating prior to the Classic Period.
- There is more utilization of chert and Polvadera Obsidian than Jemez Obsidian.
- There are fewer small structures (fieldhouses) and more cavates.
- There are more agricultural features, particularly on north-facing slopes.
- There is more evidence of pre-National Park Service human impacts in the form of woodcutting, sheep grazing, roads, and a powerline.
- Erosion is more widespread and intense, particularly in the new survey area.
- There are more visible prehistoric trails.
- Cavates are in the red tuff layer (a color which does not extend into the main unit of the park) are in very poor condition generally.

Some of the observed differences may be due to cultural factors. Tsankawi lies firmly within the Tewa interaction sphere. The main unit of Bandelier lies mostly in the area utilized by the Keresan speakers and their ancestors. Some of the differences may also be related to the smaller size and greater environmental homogeneity of the Tsankawi unit.

The archeology of the Tsankawi unit raises a number of potential research questions. The park should encourage directed anthropological and archeological research in this part of the park.

Recommendations

I have several general and specific recommendations for future work in the Tsankawi unit.

- Record the new sites found in the BAS survey area.
- Record the "Doll House" feature at LA 65742, and the isolated small structure at LA 61049 as separate sites.
- Survey the small area on the west end of the unit that BAS apparently did not survey and record the new sites.
- Rerecord all cavates, emphasizing feature data and condition assessment.
- Rerecord all rock art, both at rock art only sites, and at cavates and other sites.
- Rerecord the trail system; use GPS to map a trail layer for the park GIS system.
- Reevaluate historic resources and rerecord where necessary.
- Select a sample area for landscape treatments and initiate a pilot project to control erosion.
- Conduct a boundary land survey to establish the park boundary and determine which sites near the fenceline that are the park's responsibility.
- Restake sites with missing stakes, and place stakes on the newly recorded sites.

Many of these recommendations can be accomplished relatively easily, quickly, and cheaply. Others will take considerable time, energy, and funding.

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