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Rock Art, Settlement Patterns, and a Broader Understanding of Nine Mile Canyon



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As regards the Nine Mile culture in general, a number of inconsistencies are noticeable. House types, pottery and stone work fail to fall into the classical complexes. —JOHN GILLIN (1938:29)

A Wider View: The First Large-Scale Surveys

The publication of John Gillin's *Archaeological Investigations in Nine Mile Canyon, Utah (During the Year 1936)* first brought Nine Mile Canyon's rich and perplexing archaeological resources to the attention of the archaeological world. And it could have been—should have been—the impetus for a new generation of archaeologists to follow in his footsteps, exploring the many questions raised by Gillin's work. The questions are myriad: Are Valley Village and Sky House truly representative of settlement patterns in the canyon as a whole or are they anomalies? Do they represent occupations at the same point in time by identical groups of people? Or did the ancients once live on the valley floor next to fields and water, only to shift to defensible positions high above the valley floor in response to a perceived threat? What was this threat? Were these groups really Fremont farmers akin to those living in the San Rafael Swell and Uinta Basin, or were they immigrants from distant regions bringing with them new ideas and approaches to farming in harsh climates? Most fundamental, when did these events occur?

But such academic interest in Nine Mile Canyon never really materialized, and the region was largely ignored by university scholars for much of the next half century. There was an occasional mention or two of the canyon in professional publications, but there was no serious sequel to Gillin's groundbreaking research (1938). And documentation of the canyon's abundant resources eventually fell to groups of concerned university students and dedicated amateurs whose efforts were driven more by passion for protecting the canyon than interest in addressing basic questions related to human behavior.

The reasons behind the intellectual snub are likely many. After Gillin's departure from the University of Utah in 1937, the university's

OPPOSITE, Bighorn sheep with long, sweeping horns are the most common animal depicted in Nine Mile Canyon rock art. Photo by Ray Boren.

anthropology program lacked any clear theoretical direction or decisive mission (Janetski 1997). Not only was Nine Mile Canyon ignored, but there was little university research being conducted anywhere else in the state. And what scant research was done never rose to the level of prestigious monographs or public attention. Archaeological research virtually ceased with the outbreak of World War II, when many young scholars gave up their trowels and shovels for rifles and bayonets. Some of them never returned.

The arrival of Jesse D. Jennings at the university in 1948 was a watershed moment for Utah archaeology; over his thirty-year tenure there, Jennings restored the university's reputation as a premier research entity of national renown. But Jennings was never much interested in Nine Mile Canyon, preferring instead to direct his remarkable organizational skills toward the establishment of broad but essential frameworks for Utah cultural history—a foundation that remains the backbone of current research in Utah. In the process, Jennings synthesized huge quantities of archaeological data into readable and publicly accessible reports. In 1953, he established the Great Basin Archaeological Conference and expanded the Museum of Anthropology into the Utah Museum of Natural History (Spangler 2002).

The Utah Statewide Archeological Survey

Jennings's organizational skills made him perfectly suited to tackle a wide range of geographically massive projects, all geared toward “big picture” syntheses of vast quantities of regional data. Shortly after his arrival at the University of Utah, Jennings initiated a systematic survey of the entire state to document archaeological resources, most of which had been earlier ignored in favor of large and spectacular sites. Begun in 1949, the surveys were intended to be a ten-year effort that would also serve to train graduate students through field research programs (Gunnerson 1959). In 1951, the project was modified “to give it greater continuity,” and it was assigned the title of the Utah Statewide Archeological Survey. The stated intent of the survey was to (1) systematically survey, record, and collect from as many sites as possible; (2) conduct limited test excavations at significant sites; (3) analyze and report the findings of the survey; and (4)

salvage archaeological data from sites threatened by destruction. The state was divided into five sections, each to be the subject of a separate report (Rudy 1953:ix).

Evolving priorities hampered the “statewide” surveys—in particular the need to salvage archaeological data from the Green River and Colorado River corridors before they were inundated by the Flaming Gorge and Glen Canyon Dams—and large portions of the state were never investigated. Eventually, the Utah Statewide Archeological Survey evolved into a salvage archaeology program that initiated investigations on behalf of the Utah State Road Commission, U.S. Forest Service, Utah State Park Commission, and National Park Service (Gunnerson 1959). In the late 1950s, the survey coexisted with the massive Upper Colorado River Basin Salvage Program, and the survey’s objectives were subsumed within the larger Glen Canyon project (Jennings 1959).

The statewide survey began with work around Virgin City and Gunlock in southwestern Utah in anticipation of the construction of two reservoirs there (Gunnerson 1959; Rudy and Stirland 1950). The Gunlock area was where Gillin had intended to investigate before he retreated “sulkily” to Nine Mile Canyon in 1936. From 1950 to 1952, survey director Jack R. Rudy led a series of surveys in northwestern, western, and southwestern Utah as far south as Iron County and as far north as Box Elder County (Rudy 1953, 1954). In 1952, the survey again shifted priorities, this time to southeastern Utah, where road construction in the Beef Basin area had resulted in rampant vandalism (Gunnerson 1959; Rudy 1955).

The statewide survey generated three major publications (Gunnerson 1957; Rudy 1953; Rudy and Stirland 1950), but only Gunnerson’s *Archeological Survey of the Fremont Area* deals with the Tavaputs Plateau region. This survey was initiated to “place site data on record, to formulate limited generalizations concerning the Fremont Culture” (Gunnerson 1957:1), and to obtain a “better knowledge of the distribution of the Fremont culture and . . . its variations in its later phases” (1957:4). The objective was to visit as many sites as possible and make surface collections. Gunnerson’s reconnaissance, carried out during July, August, and September 1954, was restricted to areas that could be reached by pickup truck (Gunnerson 1955:1).

The Owl Panel in middle Nine Mile Canyon. Photo by Ray Boren.



Gunnerson's primary emphasis was sites having ceramic materials and other diagnostic artifacts. Sites were assigned to the Fremont culture chiefly on the basis of pottery, and a second group was classified as tentatively Fremont based on architecture, rock art, or circumstantial evidence. According to Gunnerson, the survey provided information concerning the geographic limits of the Fremont culture, evidence for population density, and data on the range of variation of Fremont culture traits (1957:4).

Gunnerson concluded that Fremont villages were never large but were frequently close together. Dwelling structures were typically found in groups of fewer than five rooms, usually independent of one another (Gunnerson 1957:4-5). Dwellings were generally semi-subterranean open structures or surface structures inside rockshelters (1957:5-7). The predominantly gray ceramics were almost all tempered with either calcite or basalt (1957:9), and projectile points were predominantly triangular and less than 3 centimeters long (1957:25).

Gunnerson's synthesis of the cultural data often lacked specificity and failed to adequately describe Fremont population dynamics, regional variability, or complexity. The survey also lacked any systematic or statistical approach to site distribution, and the primarily descriptive report exhibited a fundamental bias toward well-known and easily accessible sites, appearing to contradict Gunnerson's stated intent to survey the "least known" areas of Utah (1957:i).

Nine Mile Canyon played a very minor role in Gunnerson's synthesis, and he offered no real explanation as to why he gave the canyon such short



shrift. He described only two sites there, although he included several sites in Range Creek, which at that time was largely unknown. One of the Nine Mile sites was Nordell's Fort (42Dc5), which he described simply as an oval fort or tower structure with standing walls 6 to 7 feet high, a doorway with a stone lintel, and wall thickness ranging from 1.5 to 1.6 feet. Preservation of the structure was described as "excellent," except for a small hole at the base of the north side where the bedrock surface had crumbled (1957:68). There was no mention of the slab-lined central fire pit, the doorway's two large lintel stones, or the double-coursed walls with a distinctive style of chinking (Spangler 1993).

The other Nine Mile Canyon site (42Dc6) was located about 0.6 miles west of the Gate Canyon confluence, situated on a rock outcrop about 85 feet above the valley floor. Gunnerson described the remains of several dry-laid masonry walls, one with an oval base about 10 feet by 15 feet. Other structures were largely indistinguishable (1957:68). This site is probably Pete's Village, located on a prominent outcrop at the mouth of Petes Canyon. Although his foray into Nine Mile Canyon was apparently brief, Gunnerson would later make one of the most important contributions to the archaeology of the canyon. He left the University of Utah to complete a Ph.D. at Harvard University, where his dissertation included editing and publishing the long-lost notes from the Clafin-Emerson Expedition, including those from the 1931 exploration of Nine Mile Canyon and the Tavaputs Plateau (Gunnerson 1969).



RIGHT, Aerial view of the interior of 42Dc5, Nordell's Fort, one of two sites described by James Gunnerson in Nine Mile Canyon in 1954. Note the double-coursed walls. Photo by Jerry D. Spangler.

LEFT, Recent view of 42Dc6, better known as Pete's Village, which was described by Gunnerson in 1954. Photo by Ray Boren.



Elaborate rock art panels are found at every cliff level in Nine Mile Canyon to almost 1,000 feet above the valley floor.

Photo by Ray Boren.

Rasmussen Cave Revisited

Despite its rather ostentatious title of “The Archaeological and Historical Research Committee of the University of Santa Clara, California,” this research project, directed by Francis R. Flaim and Austen D. Warburton, could be classified as an expedition led by amateur archaeologists. Flaim, a university botany professor, organized the expedition in 1959 for a group of interested university students for the purpose of archaeological survey and excavations. A published report (Flaim and Warburton 1961) made reference to fieldwork from 1954 to 1959, although the excavations and student involvement occurred only in 1959 (Francis Flaim, personal communication 1991). Research from 1954 through 1958 was apparently confined to informal survey, and in 1959, efforts were focused exclusively on excavations at Rasmussen Cave (42Cb16), at that time owned by Humbert Pressett (Flaim and Warburton 1961:19).

These “excavations” involved sifting refuse from excavations made three decades before by Donald Scott (1931a), Noel Morss (1931a), and various looters. Among the items recovered were several slate beads, numerous

corncobs, dent corn, bone fragments, a bone awl, molded clay fragments, a flint knife, and a 3-inch-long rectangular stone object painted transversely with five red lines and traces of black pigment. The only pottery reported was a single fragment of thick grayware (Flaim and Warburton 1961:20–21). Also reported was a short corncob figurine, approximately 5 inches in length, with its head flaring to a width of 2 inches. The figurine had eyes and body markings that had been burned onto the cob (1961:23). The report also described five unfired clay figurines and five partial figurines found at the rear of the cave.

Flaim and Warburton made reference to ongoing research and future reports (1961:23), but no such reports were ever produced (Francis Flaim, personal communication 1991). No archaeological field notes were kept, and photographs were not taken in any systematic order. The location of most artifacts and field photographs is unknown, although some were in Flaim's personal possession in 1991, and others, including the remains of an infant strapped to a cradleboard, were donated to the Prehistoric Museum at the College of Eastern Utah in Price (Flaim 1961). Flaim was uncertain which artifacts were recovered during the Santa Clara project and which were collected during his own recreational excursions into Nine Mile Canyon.

Making Order of Rock Art

Perhaps no single person has defined Utah rock art research more than Polly Schaafsma, whose work on the topic began with a report for the University of Utah in 1970, followed by her classic monograph *Rock Art of Utah* (1971) for Harvard's Peabody Museum. The monograph, since reprinted, continues to be the most frequently cited report describing Utah rock art styles and chronologies.

Schaafsma's first attempt to define Utah rock art came with the unpublished "Survey Report of the Rock Art of Utah," in which she attempted to "locate the outstanding sites and to relate them to the known archeology of the region" (1970:1). Relevant to Nine Mile Canyon, the report mentions the well-known Great Hunt Panel in Cottonwood Canyon (Schaafsma 1970:28), the abundant and unusual rock art found inside Rasmussen Cave (42Cb16) (1970:61), a panel in middle Nine Mile Canyon characterized by naturalistic figures and horned trapezoidal anthropomorphs (1970:63–64),



“Shield figures” are common in Nine Mile Canyon. Photo courtesy of the Colorado Plateau Archaeological Alliance, Ogden, Utah.

and the enigmatic Sheep Canyon pictographs, which reflect both Barrier Canyon and Fremont styles (1970:84–85).

Schaafsma’s subsequent report for the Peabody Museum was based almost entirely on photographs made by previous researchers, primarily the Donald Scott Collection but also photographs from the Reagan and Beckwith expeditions. From this database, Schaafsma identified a Fremont style in the Tavaputs Plateau area that she labeled “San Rafael Fremont: Northern Zone” (1971:28), a term that is still the preferred nomenclature.

The dominant motif in all Fremont rock art is unquestionably the distinctive trapezoidal anthropomorph. However, from region to region these anthropomorphs exhibit considerable variability in size, shape, internal features, and appendages. Generally, Fremont anthropomorphs have broad shoulders. These figures often exhibit elaborate headdresses (horns, antlers, antennae-like projectiles, feathers, fringes), jewelry, and clothing. Hair bobs similar to those observed on Basketmaker figures are common in northeastern Utah and northwestern Colorado. Facial decorations are frequently shown, suggesting the depiction of masks (Schaafsma 1971; see also Cole 1990).



Typical “Northern Zone” anthropomorphs found in Nine Mile Canyon. Photo courtesy of the Colorado Plateau Archaeological Alliance, Ogden, Utah.

Schaafsma suggested that the San Rafael Fremont: Northern Zone “petroglyphs and rock paintings...exhibit a stylistic phase of Fremont rock art which is internally consistent and distinct from that of the Uinta region and which can be differentiated from that of the southern San Rafael zone” (1971:28–29). In particular, the Northern San Rafael Style prevalent in Nine Mile Canyon lacked the large, precisely executed trapezoidal anthropomorphs and shield bearers with detailed ornamentation commonly found in the Vernal area. Instead, the panels were crowded with small, solidly pecked figures, often carelessly executed and ill-defined (1971:29).

According to Schaafsma’s analysis, Northern Zone anthropomorphs exhibit a typological norm of a trapezoidal body and bucket-shaped head. The body form may be flared at the base to suggest a kilt, and some anthropomorphs were portrayed with long, rake-like horns or antlers. These figures have arms, which are commonly bent at the elbow, and hands with spread fingers. Legs are usually short and straight. Some anthropomorphs display rectangular or triangular body shapes instead of the usual trapezoidal configuration. The majority of anthropomorphs, regardless of size, are solidly painted or pecked (1971:29–31).

A predictable weakness in Schaafsma’s research stemmed from her raw data, which were inherently biased toward large or aesthetically pleasing sites that had drawn the attention of photographers over the years. She made no attempt to catalog all rock art sites in any given area, and she had no idea whether these large panels were in fact a valid sample of the thousands of rock art panels that are present in Nine Mile Canyon alone. Certain



Typical “horned snake” figure in Nine Mile Canyon. Photo by Jerry D. Spangler.

elements Schaafsma dismissed as not present are, in fact, present, often in significant numbers. For example, she claimed there were no examples in the Northern Zone of foot exaggeration, a common characteristic of Uinta Basin anthropomorphs (1971:29). In fact, this motif is a frequently seen anthropomorphic element in the Tavaputs Plateau, particularly in lower Nine Mile Canyon (Spangler 1993).

Also, Schaafsma claimed that the hump-backed flute player motif was nonexistent in the Nine Mile Canyon region. Actually, this motif has been observed throughout Nine Mile Canyon (Gillin 1938:30; Reagan 1933a:62–63; Strevell and Pulver 1935:17; Spangler 2011a). In yet another example, Schaafsma noted only 13 serpent representations in the entire northern zone, five of which had horns or plumes (1971:36). Many intensive surveys in middle and lower Nine Mile Canyon since 1991 have revealed that snake-like figures, more often with horn-like representations than without, are the second-most common zoomorph reflected in Nine Mile Canyon rock art, numbering well in excess of two hundred such images (Spangler 1993, 2008, 2009, 2011a, 2011b).

More recent large-scale surveys of Nine Mile Canyon rock art have also demonstrated that the classic Fremont anthropomorph—the human figure with broad shoulders tapering to a narrower waist—is actually surprisingly rare. In fact, it represents a very minor portion of all anthropomorphs depicted (less than 10 percent). The reality is that Nine Mile Canyon anthropomorphs come in every imaginable shape: round, oval, cigar-shaped, square, rectangular, amorphous, trapezoidal, and even combinations of shapes. Some are imposingly large (greater than 1 meter in height), and others are tiny (less than 5 centimeters in height). In short, when the entire catalog of images is considered, it begs the question whether the images are even Fremont rock art, at least as Schaafsma defined it.

Nevertheless, Schaafsma’s efforts should be lauded, not for the fundamental weaknesses in her approach (e.g., her small sample of sites) but for her attempts to create order amid the chaos that defined rock art studies throughout the state at that time. Rather than speculate endlessly as to the meaning of rock art, she reviewed raw data and offered up a hypothesis, thereby inviting other scholars to test its validity. Few have taken on that challenge.



Typical “Fremont” figure in Nine Mile Canyon. Notice the small Fremont figure inside the large one in bas-relief. Photo courtesy of the Colorado Plateau Archaeological Alliance, Ogden, Utah.

Can Rock Art Speak?

Archaeologists are notoriously reticent to study rock art. Most of those who choose to work in the Nine Mile Canyon region are understandably awestruck by the sheer quantity of images, and in some cases at the remarkable skills and fearlessness of the ancient artists, whose images can be found high on cliffs and along the narrowest of ledges. But a fundamental goal of archaeology is to explain human behavior, and therein is the problem: How do you construct a sound, testable scientific hypothesis related to rock art when we in the twenty-first century have no clue as to the ancients’ world view? Rock art is generally viewed as a symbolic representation of ideas. But what and whose ideas are represented? Is it representative of actual events? Is it a manifestation of the abstract—of religion, cosmology, and belief systems? All these concepts are ones that archaeologists find difficult to address within the constructs of scientific methods. In many respects, rock art is commonly viewed as background noise, a distraction to scholars who grapple with broader behavioral questions like human responses to changing climates.

The irony is that rock art—and Nine Mile Canyon has more of it than any other place in Utah—represents visible, tangible evidence of what is otherwise intangible. And as such the canyon represents an ideal outdoor laboratory where rock art can be studied within the context of sound science

Rams, ewes, and lambs at the Great Hunt Panel. Photo by Ray Boren.



(respected archaeologists elsewhere in the Southwest are embracing new theoretical approaches to rock art studies with exciting potential; see, for example, Geib 1996, Hayden 1998, Robins 1997 and 2002, and Robins and Hays-Gilpin 2000). A key element to these studies is statistical analysis of spatial distribution of rock art sites and certain diagnostic images, and their relationship to topographic features and other archaeological sites. This approach—greatly accelerated today by the proliferation of global information system technology—was first attempted about 80 years ago when Julian Steward published *Petroglyphs of California and Adjoining States* (1929b), in which he plotted the geographic distribution of various motifs.

In northeastern Utah, a similar attempt was initiated in the 1980s. Years earlier, Nine Mile rock art had come to the attention of Kenneth Castleton, a medical doctor and amateur rock art enthusiast with a close personal relationship with Jesse Jennings. With Jennings's encouragement, Castleton began organizing his vast collection of Utah rock art photographs, which was eventually published by the Utah Museum of Natural History in two volumes, along with Castleton's personal observations gleaned from a lifetime of visiting Utah rock art (Castleton 1984, 1987).

Castleton noted obvious differences between Nine Mile Canyon rock art, characterized by large numbers of solidly pecked figures, and that of the Vernal area to the north, where figures were more dominating, typically

pecked in outline and executed with a stylistic artistry absent in Nine Mile Canyon. Castleton described the rock art in Nine Mile Canyon as “small and often rather densely packed, with many animals, especially deer or sheep” (1984:82). He was also struck by the sheer quantity of sites, noting hundreds of panels and thousands of figures in the canyon.

Castleton’s photographic catalog was also used to establish statewide geographic distributions of selected rock art elements (Castleton and Madsen 1981). When the distribution of various elements was plotted on statewide maps, several definite patterns emerged. Predictably, elements common to the Uinta Basin and Tavaputs Plateau included mountain sheep, anthropomorphs with horns or antennae, triangular anthropomorphs, bows and arrows, necklaces, facial features, and shield figures. More telling was that all the elements examined were significantly more common on the Colorado Plateau than west of the Wasatch Mountains:

The large number of these elements and the number of sites in which they are found suggest that there was a relatively high degree of interaction north and south along the drainages of the Colorado River, and somewhat more limited interaction between the Great Basin and Southwest generally. In terms of rock art alone, a case could be made for a higher degree of interrelatedness between Anasazi [Ancestral Puebloan] and Fremont on the Colorado Plateau than could be made for interaction between the Fremont of the Great Basin and those of the Colorado Plateau [Castleton and Madsen 1981:173].

There have been a few more recent attempts to tease human behavior from the Nine Mile rock art panels. Ray Matheny and colleagues (1997) examined the Great Hunt Panel in Cottonwood Canyon and other hunting scenes in Nine Mile Canyon within the context of animal behavior. They determined that the prehistoric artists had an intimate understanding of bighorn sheep behavior. The proportion of rams, ewes, and lambs is representative of that observed in nature during the late fall or early winter when an entire herd gathers for the annual rut. Other accuracies include the isolation of rams from ewes, a hierarchical order of bighorns in procession, rams engaged in dominance behavior, and tails depicting alarm (or absence thereof). In short, “indigenous rock art of Nine Mile Canyon

Nine Mile Canyon features an abundance of images depicting individuals carrying large packs. Photo courtesy of the Colorado Plateau Archaeological Alliance, Ogden, Utah.



possessed structure and was not a kind of doodling or random efforts of passersby” (Matheny 2005:4).

Matheny and others also examined the distribution of images that depict humans carrying what appear to be backpacks—he calls them “burden bearers” (Matheny et al. 2004; Matheny 2005). Some 340 burden-bearer images were identified, most of them in association with hunting scenes depicting bighorn sheep. Fremont hunting scenes often show anthropomorphs with outstretched arms as if driving bighorn sheep toward archers with arrows pointed at oncoming animals; canines driving animals toward hunters; and utilization of enclosures and nets, all of which have been documented in ethnographic contexts in the Great Basin.

Matheny (2005) has further argued that the rock art of Nine Mile Canyon, dominated by hunting scenes, suggests a socioeconomic system that extended far beyond the canyon and may indicate that Fremont peoples exploited Nine Mile Canyon primarily for animal products that they exported. Systematic hunting expeditions used nets, dogs, and ambush strategies to acquire bighorn sheep, mainly during the late fall and early winter. The depiction of rows of individuals carrying large packs is indicative of human transport of procured meat, and the predominance of these figures at the mouths of side canyons that offered access to the highlands suggests trade routes by which the meat was transported to sedentary groups for winter consumption.



Organized burden bearers in Nine Mile Canyon and their association with bighorn sheep suggest a specialized quest for high-rank animals. Elk and deer and a stray bison may be fortuitous game taken during the specialized hunt for bighorn sheep. The evidence here negates the down-the-line model where trade goods moved from individual to individual as an explanation for the rock art. Instead, the evidence fits a larger trade network model not yet formulated for the Fremont involving procurement expeditions, perhaps by professional traders, and possibly by villages with controlling sociopolitical organizations [Matheny 2005:14].

This coursed masonry structure was one of only five sites with architecture described by Hurst and Louthan during their 1974–75 survey. Photo courtesy of the Colorado Plateau Archaeological Alliance, Ogden, Utah.

The Concerned Students

One significant attempt to organize and understand the rock art of Nine Mile Canyon occurred in the mid-1970s, when a group of Brigham Young

University students, worried about the deterioration and vandalism of Nine Mile Canyon rock art sites, created the Public Archaeology Research Group to conduct an intensive rock art survey along a 3.6-mile section of the canyon. The purpose of the project, conducted between March 1974 and June 1975, was to obtain a complete rock art inventory of as much of the north wall of the canyon as possible (Hurst and Louthan 1979:5). Because of the difficulty of the terrain, much of the survey was confined to lower canyon levels, while the survey of the upper levels was inconsistent at best (Winston Hurst, personal communication 1992).

The selective nature of the “intensive” survey—with its greater emphasis on the lower cliff levels, where rock art is not only more accessible but more abundant—may account for the skewed ratio of rock art sites to structure sites. Some 122 sites were recorded during the course of the survey, of which 117 were rock art sites with 325 separate panels. The five remaining sites were architectural structures of coursed masonry or slab-lined structures. A few rock art sites were also associated with architectural remains, but the rarity of architecture was especially noteworthy (Hurst and Louthan 1979:22–24).

Two distinctive site distribution patterns were noted. The density of sites decreased in proportion to the distance from the canyon bottom, and rock art tended to be clustered around the mouths of side canyons. There were exceptions to both patterns. For example, site 42Dc212 was located 700 feet above the canyon floor. Researchers also attempted to categorize the rock art style of Nine Mile Canyon by using trait and element analysis and examining the superimposition of newer images over older ones. Five styles were identified, suggesting “a greater variety of occupation periods than previously indicated” (Hurst and Louthan 1979:53–54).

Unlike previous rock art projects that focused on large or aesthetically pleasing sites, this project constituted the first attempt to consider the distribution of *all* rock art features in a defined area. Some sites were predictably large with hundreds of images. Others were small with one or two images. But the total was substantially greater than anyone had previously surmised—about 30 sites per linear mile. In 2010, roughly half of the sites described in 1974–75 were reidentified and redocumented by the Colorado Plateau Archaeological Alliance as part of an ongoing study of site degradation over time. This effort found that the 1974–75 survey had understated



One of the many sites first described by BYU students in 1974–75 and redocumented in 2010. Photo courtesy of the Colorado Plateau Archaeological Alliance, Ogden, Utah.

the number of rock art panels by about 20 percent *and* that architectural features are actually present in substantial numbers (Spangler 2011b).

The lasting legacy of the BYU students' brief foray in the canyon rests not with the scientific contribution of their monograph, the first to have been published on the archaeology of the canyon since Gillin's in 1938. Rather, the project established a template for a later, decade-long effort to comprehensively catalog all the canyon's resources. This subsequent effort was led by Pam Miller, at the time an archaeologist at the Prehistoric Museum in Price; her husband, Blaine Miller, the Bureau of Land Management archaeologist in Price; Deanne Matheny, an archaeologist and attorney; and her husband, Ray T. Matheny, an archaeology professor at Brigham Young University. The Millers and Deanne Matheny were among the "concerned students" who participated in the 1974–75 surveys. Their efforts in the 1980s and 1990s rank as probably the largest volunteer archaeological project ever undertaken in the state.

Carbon County Volunteers

In 1986, the Utah Legislature appropriated funds for the establishment of a training program for amateurs interested in preserving and recording archaeological sites. Three years later, Carbon County and the Castle Valley Chapter of the Utah Statewide Archaeological Society (USAS) applied for state historical preservation funds with the express purpose of conducting "an inventory of the cultural resources of Nine Mile Canyon" (Miller and Matheny 1990:123). The first survey, in 1989, employed 51

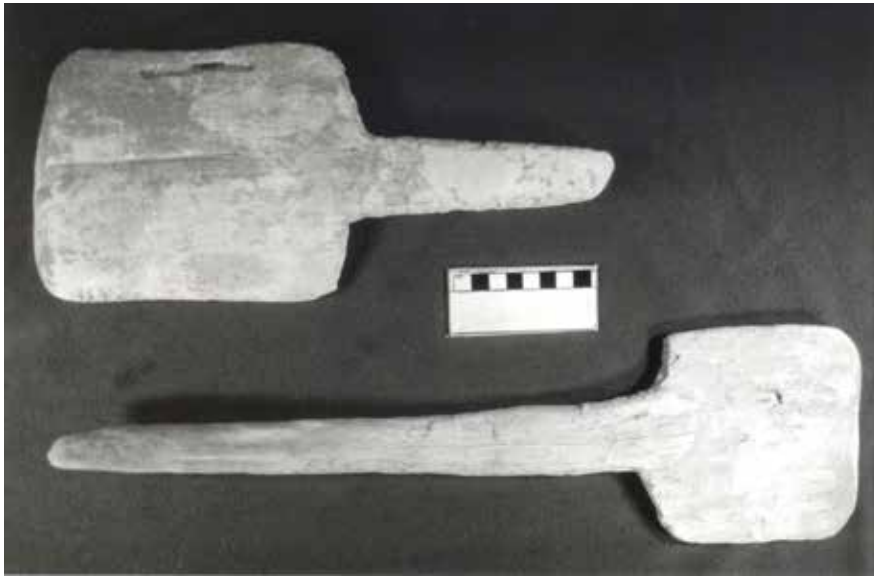


The Sheep Canyon pictographs were initially mentioned by Gillin and were later formally documented by Carbon County volunteers. Photo courtesy of Jerry D. Spangler.

volunteers, many of them graduates of the Utah Avocational Archaeologist Certification Program. The goals of the long-term project were to (1) provide an opportunity for amateurs to be involved in a worthwhile archaeological project, (2) determine what types of archaeological sites were represented in Nine Mile Canyon, (3) locate sites that could be used as points of interest for the increasing number of recreational visitors to the canyon, and (4) use the information from the inventory as justification for the nomination of Nine Mile Canyon to the National Register of Historic Places and possibly the World Heritage Site List (Miller and Matheny 1990:125). More than 300 sites were ultimately recorded and several radiocarbon dates were reported, all consistent with Fremont farming.

One hundred sites were recorded during the 1989 survey, which concentrated on a two-mile area of upper Nine Mile Canyon from the mouth of Argyle Canyon to the Duchesne County line, then upstream through Nine Mile Canyon to Sheep Canyon and the Rich Ranch (Matheny and Matheny 1990:6–7). This area had earlier been investigated by John Gillin (1938), and several of the sites documented by the USAS crews had been described by Gillin, including Valley Village, Beacon Ridge, and the Sheep Canyon pictographs. Two other sites, located 770 and 750 feet above the valley floor, respectively, “include several units and other features but likely were not habitations. The access to water is hundreds of vertical feet below and the sites must have had a special function in the society to warrant the expense of labor to construct and maintain them in such inconvenient places” (Matheny and Matheny 1990:23).

Volunteer crews returned in 1990 and documented an additional 79 sites in an area of middle Nine Mile Canyon approximately 1 mile long, from 0.5 miles east of Blind Canyon to the mouth of Dry Canyon. Researchers noted a marked increase in the density of sites in this area of the canyon compared with the upper canyon area surveyed in 1989. These included a greater number of small granaries tucked away in rockshelters and residential sites situated on knolls and ridges just above the floodplain. Maize from a storage structure at 42Cb615 yielded a radiocarbon date of 990 ± 70 BP (cal AD 896–1213). And maize from 42Cb667 returned a radiocarbon date of 1710 ± 80 BP (cal AD 129–537), the earliest evidence of horticulture so far documented in Nine Mile Canyon (Matheny et al. 1991).



Shovel-shaped implements recovered by Carbon County volunteers in Nine Mile Canyon. Photo courtesy of Jerry D. Spangler.

Two shovel-shaped implements constructed of cottonwood were located in a camouflaged subterranean storage structure (42Cb729), and a digging stick was recovered at yet another storage facility (42Cb731) (Matheny et al. 1991:9). A portion of one cottonwood shovel from 42Cb729 was radiocarbon dated to 1100 ± 90 BP (cal AD 692–1157), and wood from a digging stick at 42Cb710 yielded a radiocarbon date of 990 ± 50 BP (cal AD 978–1162). The cottonwood shovels are virtually identical to wooden implements recovered in Douglas Creek, Colorado (Wenger 1956), by private collectors in Nine Mile Canyon (Gunnerson 1962), and in Desolation Canyon (Spangler and Jones 2009).

The 1991 Nine Mile Canyon survey began where the previous year's survey ended at Dry Canyon and proceeded east downstream a distance of less than a mile. Fifty-two sites were recorded, among them Rasmussen Cave (Matheny et al. 1992). In 1992, crews surveyed the portion of Nine Mile Canyon from the mouth of Dry Canyon to the mouth of Cottonwood Canyon. Seventy-four additional sites were recorded, and researchers recognized an emerging pattern: granaries were visible in most cases from a considerable distance, and no attempt was made to hide them, whereas small subterranean cists were intentionally concealed in "places that are difficult to access and they may not have been storage units for ordinary food items" (Matheny 1993:4).

The USAS surveys continued through 1999, but enthusiasm gradually waned. The number of volunteers dropped dramatically, and those who were still participating got older and less capable of ascending the steep slopes. Hundreds of sites were documented between 1993 and 1999, but the site forms were never completed or archived with the state, and formal reports of the later field seasons have not yet been completed. Nonetheless, the Nine Mile Canyon surveys are unique in the annals of Utah archaeology in that certified amateurs provided the field crews necessary for an intensive survey. Thousands of volunteer hours were donated, and hundreds of sites were formally recorded. And for the first time, broad areas of the canyon had been thoroughly examined, demonstrating a site density of 30 to 50 sites per mile in the upper reaches of Nine Mile Canyon and 80 to 90 per mile in the middle portion—a staggering density that rivals even that of the famed Cedar Mesa in San Juan County. More importantly, scores of sites documented by the volunteers have now been listed on the National Register of Historic Places.

Frank's Place

At the same time that Carbon County volunteers were working in middle Nine Mile Canyon under Matheny's direction, Matheny was leading a Brigham Young University field school in lower Nine Mile Canyon from 1989 to 1991. The field school, based at the historic Pace Ranch, where the Claflin-Emerson Expedition had camped in 1931, excavated seven small structures and documented 178 archaeological and historic sites, most of them in the previously uninvestigated 11-mile portion of the canyon between the Pace Ranch and the mouth of Nine Mile Canyon. These investigations also resulted in the first significant catalog of radiocarbon dates from the canyon, as well as the first scientific excavations here since John Gillin some 50 years before.

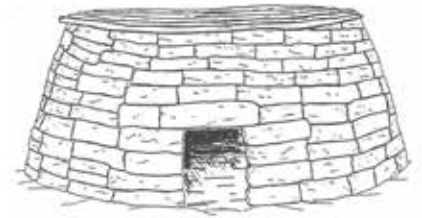
The BYU excavations focused on two residential sites located on a stream terrace above the valley floor—a different topographic setting from those investigated by Gillin (1938) and without a doubt the most common setting for residential sites in Nine Mile Canyon. One of these sites, assigned the moniker “Frank's Place” (42Cb770), featured three possible residential structures that



may have been used as temporary dwellings because they had small firepits but almost no midden material. Excavation of the outside use area adjacent...revealed considerable midden material along with numerous firepits and at least one ramada-like structure made of willow and cane. It was in this area that most of the pottery fragments, stone flakes, projectile points and charred food remains were found [Matheny and Alhand 1991:2].

Described as pithouses, the structures were semi-subterranean with wall construction of dry-laid stone masonry. The floor of the larger pithouse was located about 0.5 meters below ground level. The structure had a north-facing entry with a prominent lintel stone. An identical feature was noted at another pithouse located just downslope. The third, smaller pithouse had no discernible entryway (Thompson 1993; Matheny and Alhand 1991:2). The structures at one time probably had wooden beams spanning the distance from wall to wall.

A burial was found in a deep, slab-lined cist located below the floor of the largest of the three pithouses. An analysis of the bone indicated that the individual was an adolescent who suffered from metabolic stress, a chronic advanced tooth infection initiated by trauma to the mouth, and a debilitating congenital back condition. The teeth exhibited considerable wear, a pattern “consistent with the gritty diet of early agriculturalists



LEFT, View of Frank's Place in lower Nine Mile Canyon before excavation. Photo courtesy of Jerry D. Spangler.

RIGHT, This artist's reconstruction of a similar site near the Utah-Colorado border could be how Frank's Place appeared when it was occupied. Image from Marie Wormington's *A Reappraisal of the Fremont Culture*, Proceedings of the Denver Museum of Natural History No. 1, Denver, Colorado, 1955. All rights reserved, Bailey Archives, Denver Museum of Nature and Science.

who processed plants (mostly corn) with stone tools” (Miller 1993:10–11). A Nawthis side-notched projectile point was recovered from the right upper chest region. However, no evidence of traumatic injury was found in the ribs or upper arm bones (1993:13).

A radiocarbon analysis of the burial floor yielded a date of 880 ± 70 BP (cal AD 1018–1281). Charcoal from the floor area of the dwelling returned a radiocarbon date of 1160 ± 70 BP (cal AD 665–1025), a date somewhat earlier than dates of 980 ± 50 BP (cal AD 981–1186) and 980 ± 60 BP (cal AD 904–1210) from an associated hearth and exterior work area (Thompson 1993:103).

The Brigham Young University field school excavated two additional sites. Site 42Dc619 was a pithouse structure similar to Frank’s Place, and 42Dc618 was a nearby work area that was probably associated with the pithouse. Both sites were located about 1 mile downstream (east) from Frank’s Place. The pithouse exhibited the same characteristics of dry-laid masonry construction as noted at Frank’s Place except that the entryway faced east. The work area contained abundant midden material, including charcoal, unworked chert, ceramics, numerous slab-stone metates, manos, turtle-back scrapers, flake scrapers, and waste flakes. Among the 20 projectile points recovered, 7 were identified as Rose Spring corner-notched points and 6 as Uinta side-notched points, and 7 had no identifying diagnostic features (Matheny and Alhand 1991:3). Charcoal from a pithouse hearth yielded a radiocarbon date of 880 ± 50 BP (cal AD 1173), a date statistically identical to those from nearby Frank’s Place. Collectively, these dates (Thompson 1993:103) corresponded to the narrow temporal range suggested by tree-ring dates from Sky House (Ferguson 1949; Schulman 1948, 1951).

The BYU Surveys

The Brigham Young University surveys of lower Nine Mile Canyon were initially confined to the area around the historic Pace Ranch, at the time owned by Richard Calder. The Claffin-Emerson Expedition had superficially surveyed this area in 1931 (Gunnerson 1969; Scott 1931a), and Gunnerson (1957) later visited the same area but described only Nordell’s Fort (42Dc5). The BYU surveys eventually expanded to include the entire



Typical residential structure in lower Nine Mile Canyon. Photo by Jerry D. Spangler.

canyon area to its confluence with the Green River—spatially the largest single survey ever attempted in Nine Mile Canyon.

Over three field seasons, 151 prehistoric sites were documented, primarily dwellings, storage facilities, rock art panels, cairns, rock alignments, and masonry walls of undetermined utility. Most of the prehistoric architectural sites that were recorded exhibited characteristics of sedentism and/or horticulture commonly attributed to a broader Fremont lifeway, although surveyors noted the rarity of diagnostic artifacts throughout the survey area. That some prehistoric residents of Nine Mile Canyon were at least semi-sedentary was implied by the abundance of stone masonry architecture. Much of the architecture exhibited elaborate and energy-expensive construction. Horticulture was certainly part of the local subsistence strategy, as maize was observed at 11 sites. Ceramics do not appear to have been a significant part of the local lifeway. Of the 151 prehistoric sites recorded, only 25 contained potsherds, none in significant quantities (Spangler 1993).

The distribution of sites is similar to that noted in other areas of Nine Mile Canyon. Residential sites tended to be located on stream terraces 50 to 125 feet above the floodplain, and most were either surface or semi-subterranean structures with horizontally laid slabs defining the walls. They were typically 7 to 16 feet in diameter. The survey recorded 27 residential sites and 43 residential structures. Eighteen of the sites contained



ABOVE, Massive stone cairn, probably prehistoric, near the mouth of Nine Mile Canyon. Similarly large cairns are found throughout lower Nine Mile Canyon. Photo by Jerry D. Spangler.



UPPER RIGHT, Desolation Village, a defensible cluster of surface residences along a narrow butte with a single access point. Photo by Jerry D. Spangler.



LOWER RIGHT, Small circular structure, dubbed a “playpen” by the BYU field school. These are common in lower Nine Mile, but their purpose is unknown. Photo by Jerry D. Spangler.

a single semi-subterranean or surface structure, five contained two such structures, and two had three dwelling structures. Two sites were potential villages, one with eight residential structures and the other with nine. The residential sites were located on stream terraces on both the south and north sides of the canyon, although residential sites were more frequently located on the south side (Spangler 1993).



There was also an abundance of impressive architectural features located on pinnacles, buttes, and rock outcrops, sometimes hundreds of feet above the valley floor and in easily defensible positions. The structures were all constructed on bedrock and featured dry-laid stone masonry. Some were elaborately constructed, while others were little more than circles of stone one to three courses high. Artifacts of any kind were rare at these sites (Spangler 1993). Also unique to lower Nine Mile Canyon were massive stone cairns and tiny circular structures—far too small for residences and unlike anything known for storage—perched on the edges of cliffs (Spangler 1993).

Storage structures of a variety of shapes and sizes were recorded. At least 20 sites were labeled as exclusively storage sites, while an additional nine dwelling sites had associated storage structures, usually subterranean cists located inside or adjacent to the residences. Storage structures were of several types: (1) small slab-lined cists made up of four to seven vertical stones and usually associated with dwelling structures; (2) structures of

The “Shroom Room,” an isolated pinnacle tower identified and documented by the BYU field school in 1991. Photo by Jerry D. Spangler.

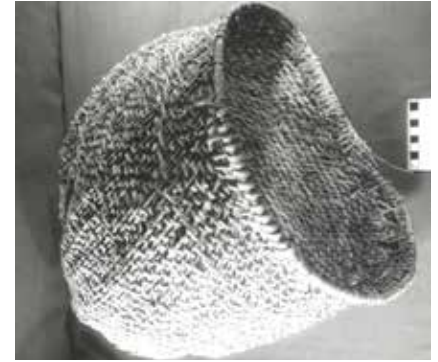
UPPER, Ray Matheny, of the BYU field school, removes the capstone from an intact granary, one of a series of small chambers situated high on a cliff face and accessible only with a long ladder. Photo by Jerry D. Spangler.



LOWER, This small, easily accessible “granary” structure, documented by the 1991 field school, is typical of lower Nine Mile Canyon. Photo by Jerry D. Spangler.



stone slabs and adobe construction situated on narrow cliff ledges where access is extremely difficult; (3) square or rectangular block-like structures of stones and adobe, also situated on cliff ledges; (4) camouflaged structures of pole, stone, and adobe located in small rockshelters; and (5) adobe and stone structures of various shapes with large, adobe, collar-like entrances, also located in small rockshelters but with no evidence of attempts at concealment (Spangler 1993).



LEFT, Interior of a typical granary. The wooden beams can provide important tree-ring dates. Photo courtesy of the Colorado Plateau Archaeological Alliance, Ogden, Utah.

RIGHT, Willow basket, about 500 years old, recovered by the BYU field school near South Franks Canyon in 1989. Photo by Jerry D. Spangler.

Radiocarbon dates were obtained from three storage structures. A portion of a wooden digging stick from 42Dc665, an adobe-collared storage structure located in a small rockshelter, yielded a radiocarbon date of 1090 ± 60 BP (cal AD 780–1030). Wood materials from 42Cb776, a complex stone and adobe storage structure located in a crevice in a cliff face in South Franks Canyon, yielded a radiocarbon date of 690 ± 50 BP (cal AD 1258–1396). Whereas the first date is consistent with the occupations of Sky House and Frank’s Place, the latter date raises the possibility that some farmers remained here perhaps as late as AD 1300, or a century or so after farming had been abandoned elsewhere in the region (Spangler 1993).

Also noteworthy, crews recovered a remarkably well preserved basket that exhibited a weaving technique more akin to that of later Ancestral Ute peoples. The willow basket yielded a radiocarbon date of 395 ± 70 BP (cal AD 1410–1650), and shredded juniper bark from a nearby cist (42Cb779) yielded a date of 250 ± 60 BP (cal AD 1484–1948) (Matheny et al. 1991:4), providing evidence that the prehistoric occupation of Nine Mile Canyon persisted long after the Fremont farmers had given up on agriculture. These hunters and gatherers—probably ancestors of the modern Utes—were present in the canyon at about AD 1500.

Settlement patterns in lower Nine Mile Canyon are consistent with Fremont manifestations observed elsewhere on the northern Colorado



Panoramic view of lower Nine Mile Canyon. This area is now roadless. Photo by Jerry D. Spangler.

Plateau. Residential sites generally consisted of one to three semi-subterranean pithouses located on terraces offering immediate access to permanent water and arable lands. Village sites were rare and were generally small, featuring fewer than a dozen residences. Sunstone Village (42Dc699) and Desolation Village (42Un1926) were both located on narrow mesas with precipitous drops on all but a single narrow access point, suggesting a defensive orientation. The residential architecture exhibited few internal features, and temporally diagnostic artifacts were rare. The Fremont certainly used pottery, but there is very little evidence that they made it here. Given the small number of potsherds found at any particular site, this technology was but a minor part of their lifeway (Spangler 1993).

The BYU investigations, coupled with the USAS surveys in middle Nine Mile Canyon, were without a doubt the most comprehensive conducted in Nine Mile Canyon up to that time. In many respects, these studies built on the framework established by John Gillin, offering a spatially encompassing view of Nine Mile Canyon settlement patterns through time. At their core, the BYU studies reinforced what Gillin first observed in 1936: some Fremont sites are located in close proximity to the valley floor

with efficient access to fields and water, and others are located high on easily defensible ridges and pinnacles. In most cases, sites are small, artifacts are frustratingly rare, and rock art is inexplicably pervasive.

These broad-scaled surveys established a framework for the more comprehensive investigations that would be initiated a decade later. The discovery of massive deposits of natural gas on the plateaus high above the Nine Mile Canyon corridor would, in the early 2000s, result in systematic inventories of ever larger blocks of the canyon ecosystem, from high-elevation plateaus to the canyon corridor itself and the myriad side canyons in between. Unlike the academic interest of the past, these investigations would be driven in large part by compliance with the federal National Historic Preservation Act and by private attempts to reach a delicate balance between the preservation of Nine Mile Canyon's remarkable heritage and the development of the extensive natural gas reserves.