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Archaeology Southwest

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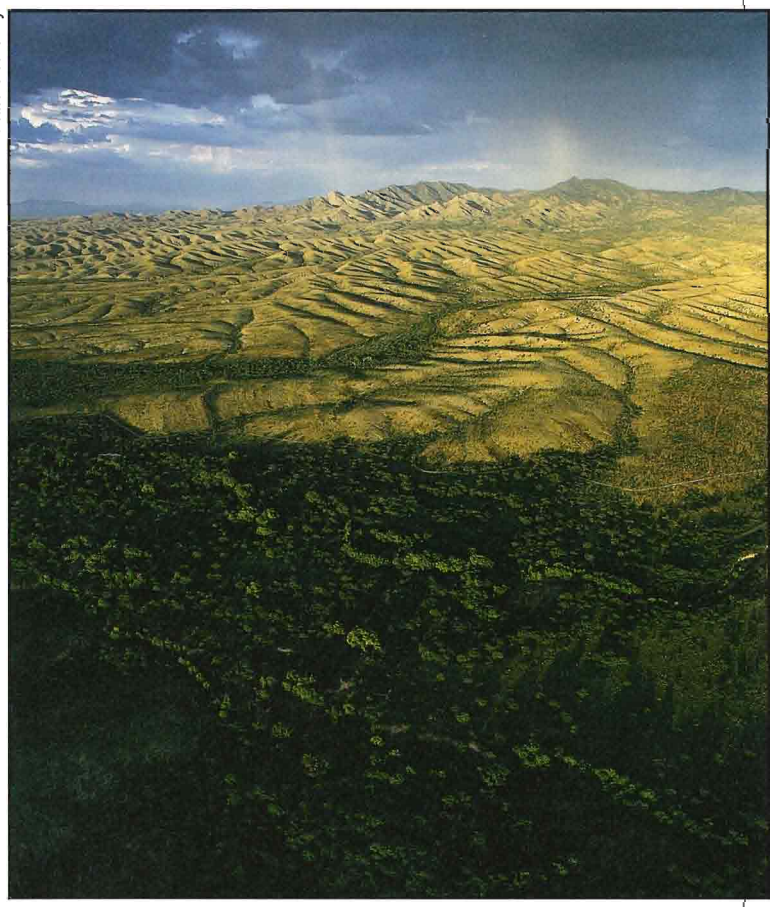
Archaeological Preservation and Environmental Conservation in Arizona's Cienega Valley

Michelle N. Stevens,
Center for Desert Archaeology

I FIRST ENTERED the Cienega Valley in 1992, on a field trip to visit Paleoindian sites in the San Pedro Valley. As I drove on scenic Highway 83 south from Interstate 10 over the Empire Mountains and descended into the valley, I was struck by the open space, the beautiful golden grasslands extending between tall, rugged mountains; the lush green vegetation along Cienega Creek; and the general lack of real estate development. At the time, I thought the valley looked like the quintessential landscape for woolly mammoth and Paleoindian peoples. Although I now know that no Paleoindian sites have yet been discovered in the valley, my appreciation of the area has not diminished.

The environmental and cultural landscape of Cienega Valley is unique in that it contains some of the best-preserved semidesert grasslands in the American Southwest, perennial water, early evidence of prehistoric maize agriculture, and an interesting history of ranching and transportation activities. This issue of *Archaeology Southwest* highlights some of the characteristics that have attracted people to the Cienega Valley for the past 10,000 years. It also explores the importance of the area to our understanding of prehistoric agriculture and cultural boundaries, the history of ranching and transportation in southeastern Arizona, as well as the partnership among landowners, citizens, conservation groups, and government officials that gave rise to the Las Cienegas National Conservation Area in January 2001.

When the Center for Desert Archaeology decided to conduct research in the Cienega Creek watershed in the mid-1990s, the area had not yet been designated a national conservation area. It did, however, contain abundant public lands, including Pima County's Cienega Creek Natural Preserve, the Bureau of Land Management's Empire-Cienega Resource Conservation Area (later the Las Cienegas NCA), Arizona State Trust lands, and the Coronado National Forest. The Center's research in the area was greatly facilitated by these large tracts of public land, which could be easily accessed once the proper permits had been obtained. With the passage of time, public and political support developed for the creation of the Las Cienegas National Conservation Area (discussed by Congressman Jim Kolbe on page 7). The elevation of the Bureau of Land Management's Empire-Cienega Resource Conservation Area to national conservation area status will help preserve the unique natural and cultural resources in the Cienega Valley.

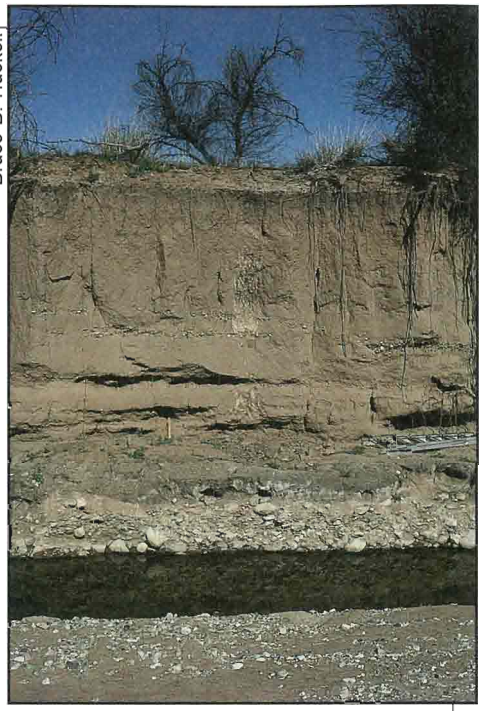


The riparian zone along Cienega Creek (foreground) makes an abrupt transition to extensive grasslands that characterize most of the valley. View is northeast toward the Whetstone Mountains.

Archaeology Southwest is a Quarterly Publication of the Center for Desert Archaeology

History of Archaeological Research in the Cienega Valley

Bruce B. Huckell, The Maxwell Museum, Albuquerque, New Mexico



Bruce B. Huckell

Stratigraphy at the Los Ojitos site. The dark grayish brown cultural deposit is approximately five meters below the top of the bank.

THE PHENOMENAL RECORD of human occupation in the Cienega Valley is still largely untapped and underappreciated by archaeologists. In 1926, Byron Cummings, director of the Arizona State Museum (ASM), excavated two burials exposed by erosion along Cienega Creek some 3.75 meters below the modern ground surface. Based on the depth at which they were found, Cummings believed them to be quite ancient.

In the late 1940s and 1950s, Emil Haury, a student of Cummings and his successor at the University of Arizona, encouraged student research in the Cienega Valley. From 1948 to 1951, University of Arizona student Earl Swanson undertook the first systematic survey of the valley for his Master's thesis, discovering many sites dating to the ceramic and preceramic periods.

In 1954, another University of Arizona student, Frank Eddy, recorded the alluvial stratigraphy and a number of ceramic and preceramic sites along Matty Canyon and Cienega Creek, also for his Master's thesis. Eddy's interdisciplinary approach to archaeological research and collaboration with a geologist, palynologist, and malacologist were unique at that time. His work demonstrated the Cienega Valley had a rich cultural history, spanning more than 3,000 years, and the spatial patterning of sites could be tied to changes in the floodplain environment. As part of this project, Eddy excavated a preceramic site – AZ EE:2:30 (ASM) – which was buried beneath more than five meters of alluvium and exposed in the channel floor of Matty Wash. It contained human burials, pits, abundant lithic artifacts, fire-cracked rocks, charcoal, and animal bone. Eddy characterized the site as a San Pedro stage, Cochise culture base camp. In nearby sediments dated stratigraphically to the same period, archaeologists Paul Martin and James Schoenwetter discovered pollen evidence of early maize agriculture.

Bruce B. Huckell

Two pit features in the left bank of Matty Canyon at AZ EE:2:30 (ASM).

During the 1960s and early 1970s, occasional small surveys and salvage excavations were conducted in the valley. A salvage excavation by archaeologists E. Thomas Hemmings, M. D. Robinson, and R. N. Rogers at AZ EE:2:50 (ASM) recovered burials resembling those found by Eddy at EE:2:30. The burials were exposed in a vertical arroyo bank under five meters of alluvium.

From 1975 to 1982, the ASM conducted a large-scale, intensive survey and excavation project for a proposed land exchange between the Coronado National Forest and the Anamax Mining Corporation. Numerous Archaic, Hohokam, and historic sites near Rosemont, a former mining town in the northern Santa Rita Mountains, were identified and excavated during this project, greatly expanding archaeologists' understanding of the area.

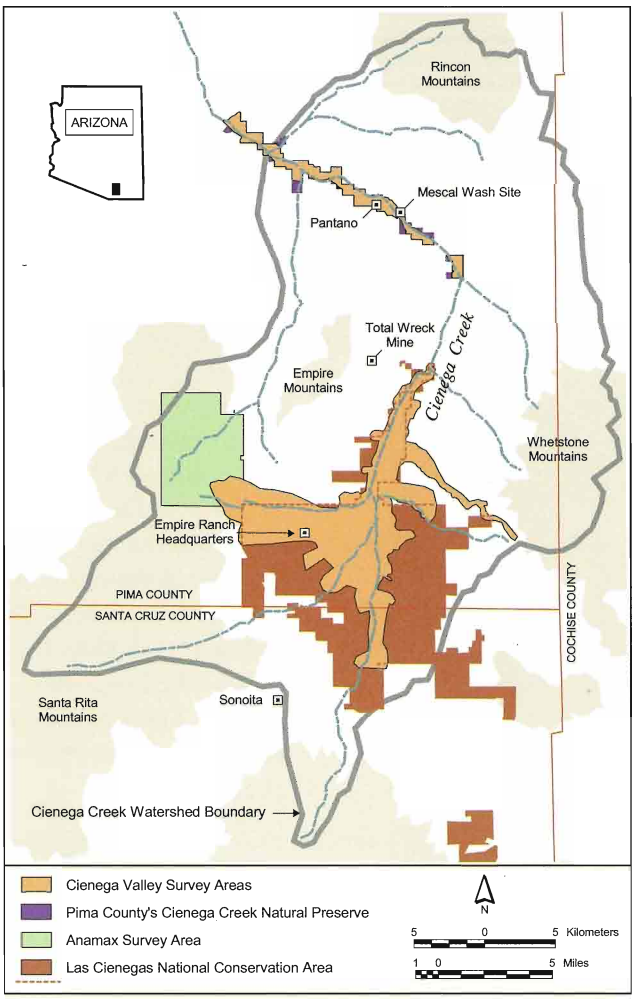
In 1983, John Donaldson, lessee of the Empire Ranch, contacted Haury to report a human burial eroding out of the bank, two meters above the rich cultural deposits at EE:2:30. With the support of Anamax and the University of Arizona, I undertook new excavations at EE:2:30 and a newly identified late preceramic site, Los Ojitos, some 500 meters downstream. The large numbers of artifacts, burials, pits, and pithouses suggested both sites represented early agricultural village settlements occupied for much, or all, of each year for perhaps a decade or more. This work provided the basis for defining the Cienega phase of the Early Agricultural period (800 B.C.-A.D. 50).

The rich record of late Early Agricultural period occupation in the Cienega Valley has significantly increased our understanding of the time when mixed farming-foraging economies were spreading across southeastern Arizona. Diverse biotic communities, first-class farmland along a gently flowing perennial stream, and a relatively long growing season were highly conducive to maize agriculture. Although virtually unexplored, the extensive Hohokam communities that followed almost certainly continued to exploit the same diverse and productive resource base.

Archaic and Early Agricultural Period Land Use in the Cienega Valley

Michelle N. Stevens, Center for Desert Archaeology

HUMAN LAND-USE patterns have changed significantly over time. The earliest hunter-gatherers were highly mobile – moving their campsites many times throughout the year as the seasons changed and new resources became available. When people began farming, however, they started to control where key resources were located on the landscape. Furthermore, to be successful farmers, they needed to change their land-use and mobility patterns. My dissertation research focused on past human land-use patterns as a way to understand changes in human behavior involved in the adoption of an agricultural way of life in southeastern Arizona.

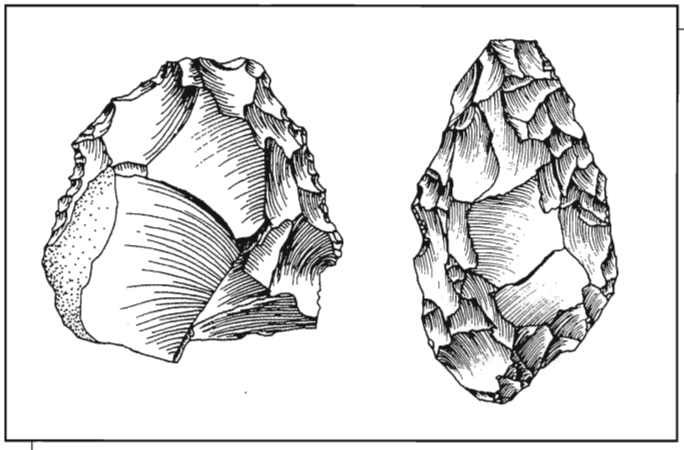


Map of the Cienega Creek watershed.

Cienega Valley was an excellent location in which to conduct such research. Existing excavation data from AZ EE:2:30 (ASM) provided evidence of permanent or near-permanent occupation along Cienega Creek by the Cienega phase of the Early Agricultural period (800 B.C.-A.D. 50) (see Bruce Huckell's article, page 2). Additionally, several archaeological research projects conducted in the Cienega Valley provided interesting and detailed information about several Middle Archaic (3000-1700 B.C.) and Early Agricultural (1700 B.C.-A.D. 50) period sites in deeply buried floodplain contexts and in the surrounding mountains. Therefore, additional archaeological survey work in valley bottom and middle bajada settings could help put existing data into a broader context.

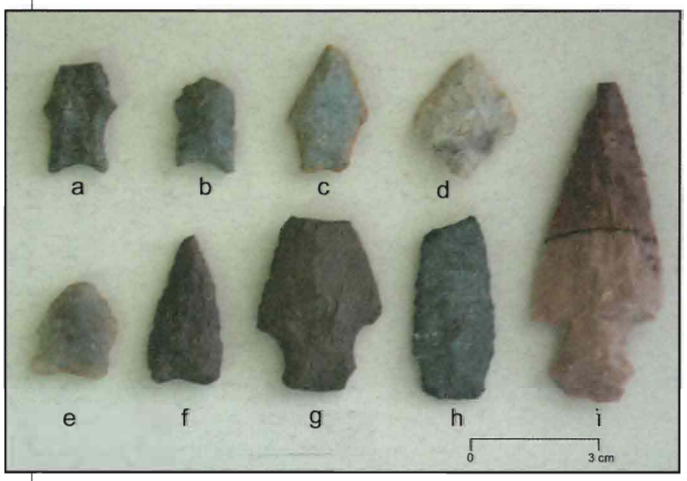
Land-use studies focus on the relationships among population size, length of site occupation, activities conducted at sites, and the spatial and temporal distribution of resources. Two of the most useful types of data for land-use studies are settlement patterns and mobility strategies. To collect settlement pattern data, I conducted the Center for Desert Archaeology's Cienega Valley Survey (CVS) – a volunteer survey along two sections of Cienega Creek – between January 1995 and May 1998. We began our work at the northern end of the valley in Pima County's Cienega Creek Natural Preserve and then moved south to what is now the Las Cienegas National Conservation Area (NCA). The CVS covered approximately 44 mi^2 and more than 550 prehistoric and historic sites were recorded. We returned later and systematically surface collected lithic tools (flaked stone and ground stone tools) at 14 newly identified Archaic and Early Agricultural period sites. Settlement pattern data from other areas in Cienega Valley were obtained from published reports and from site cards at the Arizona State Museum (ASM).

Settlement pattern studies assess the relationships between the locations of different classes of sites and the distribution of available resources. It is particularly important to determine the ages of sites, site function, and relative duration of site occupation as accurately as possible. Archaic and Early Agricultural period sites were primarily dated by temporally diagnostic projectile points and occasionally by stratigraphic positioning and radiocarbon dates. Site function was evaluated by identifying the number and types of features and flaked stone and ground stone tools at each site. Sites with features and abundant lithic tools suitable for a variety of activities were interpreted



Unifacial (left) and bifacial (right) flaked stone tools and cores (stones from which flakes are struck) were collected at 14 Archaic and Early Agricultural sites. Debitage (unmodified flakes and shatter) were not collected. (Drawings by R. Jane Sliva.)

Michelle N. Stevens



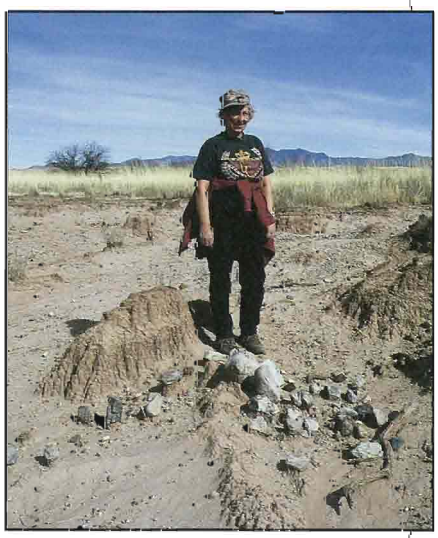
Archaic and Early Agricultural period projectile points collected during the CVS (from top, left to right): (a,b) San Jose; (c) possible San Jose; (d) Gypsum; (e) Chiricahua; (f) Cortaro; (g) San Pedro; (h) Empire; and (i) Cienega.

as residential sites where multiple activities were conducted. Small sites containing at least some specialized tools were interpreted as task-specific sites. The duration of site occupation was evaluated primarily by artifact density, spatial discreteness of features, artifact concentrations, temporal components, and site size. The assumption was that sites occupied for long durations should have evidence of a wide range of activities and abundant discarded artifacts.

Archaic and Early Agricultural mobility strategies in the Cienega Valley were examined by comparing the number, type, and physical attributes of flaked and ground stone tools from the 14 Archaic and Early Agricultural period sites surface collected during the CVS. Published excavation reports were also used. Mobility strategies of prehistoric groups varied along a continuum from low to high. Although many factors can influence the relationship between mobility and stone tool manufacture, the assumption is that mobility places certain constraints on the manufacture of flaked and ground stone tools.

Mobile foragers carry various flaked stone tools with them as they move about the landscape and engage in subsistence activities. Highly mobile groups depend a great deal on maintaining and transporting flaked stone tools and require portable tool kits such as bifaces and formal, unifacially retouched implements that can be used as cores to produce sharp flakes and as tools that can be repeatedly resharpened. As the flaked stone tools are used and resharpened, their shape changes. Since resharpening occurs on the edges of these tools, the lengths and widths of flaked stone tools are most likely to be modified during resharpening activities; the thickness of a tool is not typically significantly modified. Therefore, length-to-thickness and width-to-thickness ratios of bifacial and unifacial tools can be used to gauge the relative amount of prehistoric mobility, provided the size and quality of the lithic raw material are relatively constant throughout the study area – which they are in the Cienega Valley.

Michelle N. Stevens



Severely eroded thermal feature at a ceramic period site in the Cienega Creek floodplain.

Since less mobile groups do not need to transport their flaked stone tools, their tools are less likely to be maintained and resharpened. As a result, the flaked stone assemblages of less mobile groups are more likely to contain large amounts of debitage and utilized flakes, few formal retouched tools, large single or multiple platform cores, and high length-to-thickness and width-to-thickness ratios of bifacial and unifacial tools.

My research indicates Early Agricultural flaked stone assemblages were resharpened less than Middle Archaic assemblages, suggesting a decrease in mobility between the two periods. A similar shift is seen at this same time in the nearby Tucson Basin.

Settlement patterns also differed between the two periods. During the Early Agricultural period, particularly during the Cienega phase, there was a shift in settlement toward areas better suited to agriculture. In the northern Santa Rita Mountains, Early Agricultural period sites were located slightly downslope in more open, less dissected areas. Task-specific sites were found near springs in the

upper reaches of small drainages. Along Cienega Creek, residential sites shifted to parts of the creek with perennial surface flows. It is possible that Early Agricultural period people moved sequentially between upland and valley bottom locations, following a seasonal round. Alternatively, the sites we found could represent occupations not directly related to one another – with one group living only in an upland setting and another group living only in a valley bottom setting. Most likely, these folks were not restricted to a single environmental zone but moved both within and between upland and valley bottom settings at different times throughout the year.

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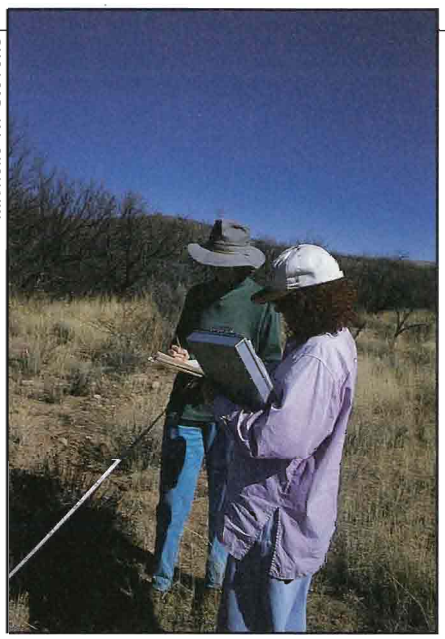


Volunteers were an essential component of the CVS, helping to record and surface collect numerous sites in the Cienega Creek watershed.

The shift in settlement to areas best suited to agriculture and changes in the artifact assemblage suggest Early Agricultural groups had a less mobile lifestyle and conducted more frequent trips to procure wild plant and animal resources. This trend, seen throughout southeastern Arizona, may have caused foraging ranges to decrease through time, because forager-farmers could gather many wild plant foods in floodplain settings near agricultural fields. Periodically, specific task groups could be sent from settlements to procure more distant plant resources. Interestingly, a general decrease in the size of foraging ranges and a less mobile lifestyle may have required an increase in hunting ranges, because hunters would eventually deplete the large game in the local areas surrounding their settlements.

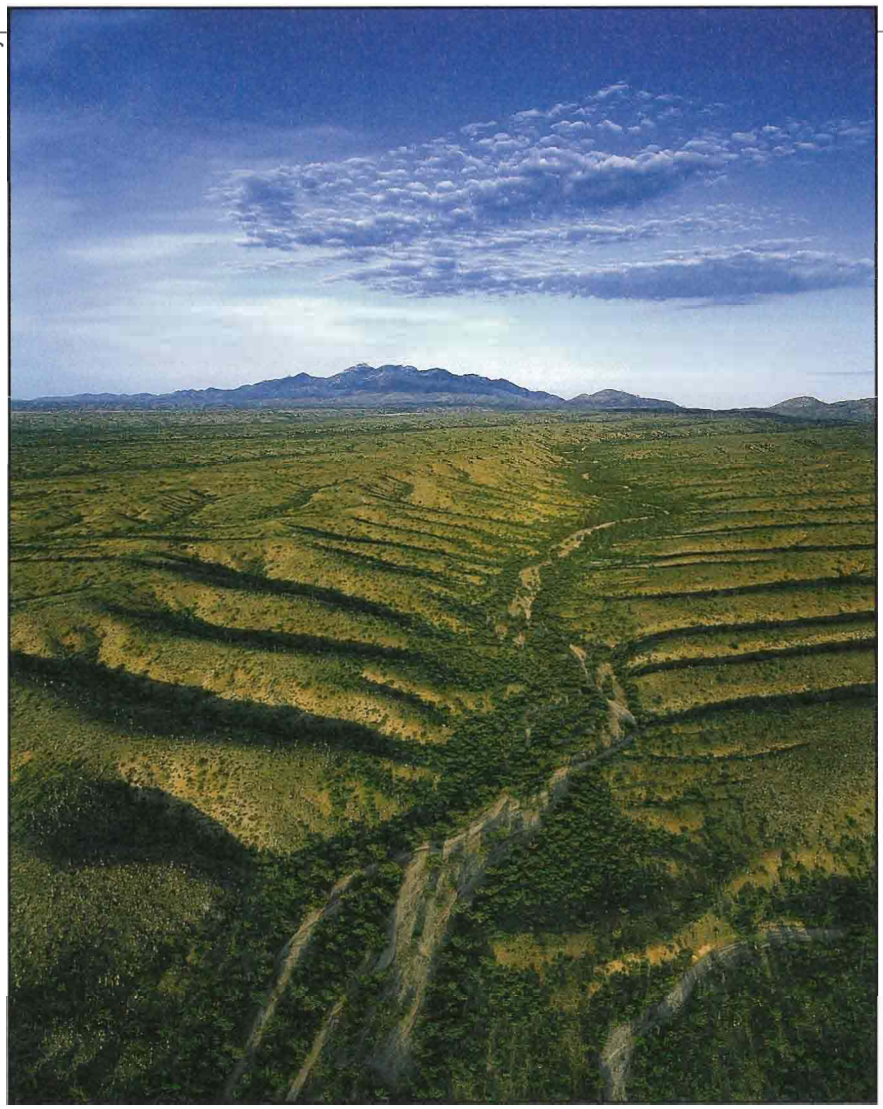
Despite these changes, artifact assemblages and site locations do not indicate a major settlement reorganization between the Middle Archaic and the Early Agricultural periods. This suggests continuity between the Middle Archaic and Early Agricultural periods and that it was indigenous farmers who adopted agriculture, not a group of immigrants who brought maize with them and settled in the valley. The evidence also suggests dependence on maize agriculture gradually developed over a period of 1,000 years after it was introduced to the Southwest during the late Middle Archaic period. Additional research, particularly on the late Middle Archaic period, should help further refine our understanding of mobility strategies and land-use patterns throughout southeastern Arizona.

Historic Timeline for Events in the Cienega Valley

1846	Philip St. George Cooke and the Mormon Battalion built a wagon road through the Cienega Creek area
1857-1858	San Antonio and San Diego Mail Line operated along Cienega Creek
1858 to March 1861	Butterfield Overland Mail Company operated along Cienega Creek
1861 to mid-1870s	Stage line service through the Cienega Creek area interrupted
1871 to 1873	Army troops from Fort Lowell near Tucson sent to the Cienega Creek area to protect travelers and others from Apache raids
1874	The 160-acre homestead that later became Empire Ranch was settled by William Wakefield
1874 to 1880	Several new cross-country stage lines crossed the Cienega Creek area, including the Southern Pacific Mail Line (1874-1880), the National Mail and Transportation Company (1878-1880), and the Texas and California Stage Line (1878)
June 1876	Wakefield sold the Empire Ranch homestead to his brother-in-law, Edward N. Fish
August 1876	Edward N. Fish sold the Empire Ranch homestead to Walter L. Vail and Herbert R. Hislop
Spring 1880	Southern Pacific Railroad arrived in the Cienega Creek area and the New Mexico-California stage lines disappeared
1881	Total Wreck silver mine, bought by Vail and Carrol Gate, begins production
1882	Pantano was shut out of the freighting markets to mines south of Sonoita and Patagonia due to construction of the Benson-Nogales railway by the New Mexico and Arizona Railroad Company
1928	Frank Boice, director of the Chiricahua Ranches Company, bought Empire Ranch from the Vail family
1960s	Boice family sold the Empire Ranch to the Gulf American Corporation for residential development
1970s	Anamax Mining Corporation bought Empire Ranch from the Gulf American Corporation
1988	The Bureau of Land Management acquires the land and begins to stabilize and preserve the Empire Ranch historical buildings
January 24, 2001	President George W. Bush signs a bill creating Las Cienegas National Conservation Area

Cienegas

Fred Nials, Center for Desert Archaeology



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View west of North Canyon, a seasonal tributary of Cienega Creek. The Santa Rita Mountains are visible in the distance.

View nort Mountain

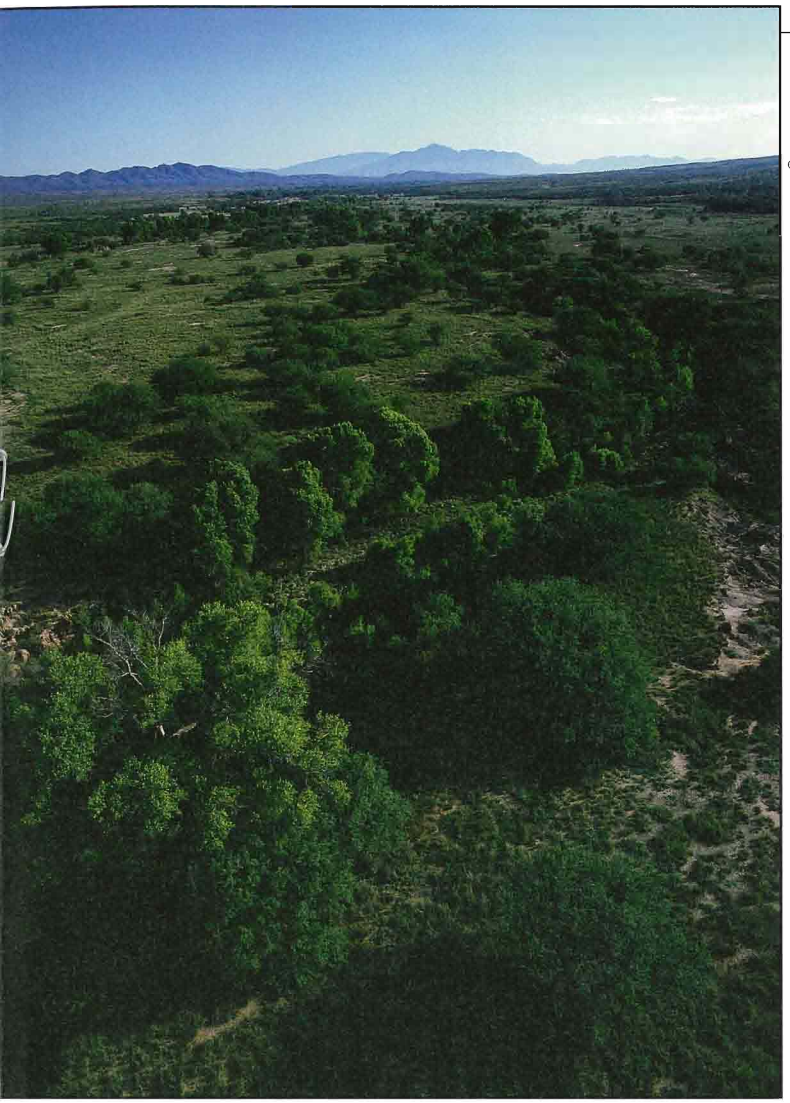
EARLY SPANISH EXPLORERS observed riparian marshlands, which they termed cienegas (or ciénagas), in many southeastern Arizona valleys. Cienega Creek, whose name probably derives from Cienegas de los Pimas, runs between the Santa Rita and Empire mountains on the west and the Whetstone Mountains on the east, and provides an excellent example of past and present cienega environments. Historic records show cienega environments dominated more than 30 kilometers of the valley bottom, and associated groundwater fed perennial flow and other cienegas as far downstream as Fort Lowell in the eastern Tucson Basin. More than 10 km^2 of cienega or meadow environment may have been present along the drainage south of modern Interstate 10.

Massive floods in the 1880s and 1890s, exacerbated by the effects of overgrazing, led to the incision of Cienega Creek. Deep, rapidly accumulated alluvial deposits are now exposed in modern gully walls over five meters high. Only remnants of formerly extensive cienega environments remain in upstream areas, usually as a result of human intervention. Much of the former valley bottom now contains sacaton and galleta grass interspersed with stands of mesquite. Cottonwood, willow, and ash tend to be concentrated along the modern watercourse. Nevertheless, the area remains green in comparison with adjacent hillsides.

Cienegas, and particularly the areas adjacent to them, were crucial to the development of agriculture in the Southwest. Recent studies in the Tucson area have shown that corn was introduced a few centuries after alluviation began in Cienega Creek. Clearly, the Cienega Creek area appears to have played an important role in the development of Early Agricultural period settlement and subsistence patterns in southeastern Arizona and has provided important clues about the use of cienegas by prehistoric populations.

Michelle N. Stevens

Water first comes to the surface in upper Cienega Valley.



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h of Cienega Creek, with the Empire Mountains on the left horizon and the Rincon s on the center horizon.

Las Cienegas National Conservation Area

Representative Jim Kolbe, 5th District, Arizona

THE LAS CIENEGAS National Conservation Area (NCA) and the Sonoita Valley Acquisition Planning District are the result of significant effort and unique partnerships among local citizens, private landowners, conservation organizations, ranchers, recreationalists, and government agencies. By working together, these groups hope to preserve something of the original landscapes of the Cienega and Sonoita valleys. This broad-based community support is particularly important in recent years, as population increases and land-use changes across southern Arizona threaten this unique landscape and the cultural resources found here.

The creation of the act to establish the Las Cienegas NCA in the Cienega Creek watershed was the culmination of five years of effort by people who live and work in the area. Its enactment on 6 December 2000 (signed in January 2001), marked the beginning of an effort to preserve 142,800 acres of land so future generations can enjoy Arizona's heritage of ranching, outdoor recreation, and vast open spaces of desert filled with wildlife.

The management plan of the Las Cienegas NCA is based on the local partnership's land-use plan, which was a collaborative effort. To better understand the needs of the community, several events were held, ranging from small technical working groups to large public open houses. Many people, most of them residents of the communities inside and adjacent to the Cienega Creek Watershed, participated in these events.

The events were designed to allow people from this area to continue to shape the legislation based on their needs and values. There is a broad array of interests in the natural resources of the region such as caves and geology, history and archaeology, ranching, recreation, wildlife, and the list goes on.

This legislation reflects a balanced approach to land management. Several perspectives were brought to bear on the establishment of the NCA, and many groups were involved in this consensus-building process. I am honored to represent the people of southeastern Arizona, who have made a conscious choice to work with their neighbors, understand differing interests, and devise a plan that meets everyone's needs.

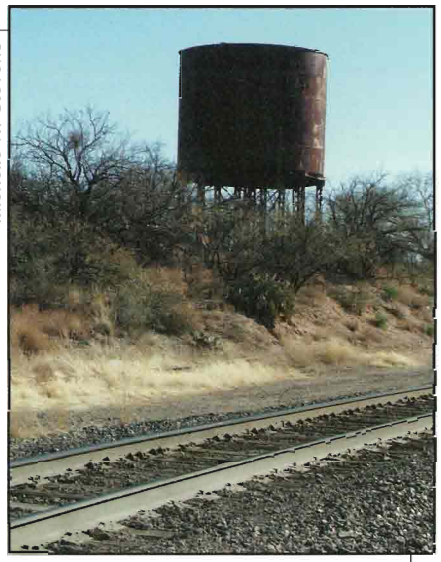
Our mission was to give to future generations this corner of Arizona so that it will forever be what we all picture the West to be – cowboys, desert wildlife, vast open tracts of land, and people enjoying the land. But this mission is not over, and no one knows more than the people from the Cienega Creek area what it took to care for this area – and no one knows more than these folks what it will take to preserve it.

Michelle N. Stevens

Sacaton grass in the Cienega Creek valley bottom looking east toward the Whetstone Mountains.

Pantano: The Development and Influence of a Small Railroad Community

James E. Ayres, Tucson, Arizona



Michelle N. Stevens

This water tank is the only visible standing remains from Pantano. The modern Union Pacific railroad line is in the foreground.

NEARLY FORGOTTEN TODAY, the small railway community of Pantano had a significant economic impact on the development of southern Arizona. Its location – along Cienega Creek between the Santa Cruz and San Pedro rivers, where water, forage, and food resources were always available – encouraged the flow of communications, people, and goods throughout the region. From the late 1600s to the mid-1850s, Spanish and Mexican travelers passed through the Cienega Creek area, but no settlements were established. Travel through the region increased after Philip St. George Cooke, in charge of the Mormon Battalion, built a wagon road here in 1846, on his way to California. After 1854, when southern Arizona became a U.S. territory with the Gadsden Treaty, use of the valley by Anglo-Americans increased and concentrated on transportation, ranching, and mining activities.

By 1857, the first stage line passed through the Cienega area, connecting Tucson with the outside world. Stage service was interrupted between 1861 and the early 1870s, due partially to the Civil War and an increase in the number of Apache raids in the area. Between 1871 and 1873, the U.S. Army dispatched troops from Fort Lowell near Tucson to the Cienega area to protect travelers from Apache raids. By the mid-1870s, cross-country stage line service by a variety of companies resumed.

In 1880, the Southern Pacific Railroad (now the Union Pacific) was constructed near Cienega Creek, and the New Mexico-California stage lines fell into disuse. By July 1880, Pantano, a small railroad community with a population of 75 people, had been established. Pantano contained several buildings, including a railroad depot and other railroad facilities, a Wells Fargo Express Company office, a post office, a hotel, and two warehouses. Unfortunately, several miles of the railroad were constructed in Cienega Creek, a decision that resulted in many expensive washouts between 1880 and 1887. When the railroad was moved to higher ground in 1887, Pantano was abandoned, and another Pantano was constructed on the new line a short distance away.

Michelle N. Stevens

The Pantano cemetery has not been used since the mid-1930s. However, an infant's grave from that time continues to be maintained.

Although the railroad controlled most of the flow of people and goods into southern Arizona after 1880, it did not replace the local stage lines and freight companies, whose services provided the life blood for mining camps, railroad communities, military posts, and ranches not on the railroad. These companies provided Pantano with a way to receive and ship various products across southeastern Arizona – eliminating direct contact with Tucson for goods and services. Communities served by Pantano included Tombstone, Huachuca, Greaterville, Rosemont, Patagonia, Sonoita, Washington Camp, Charleston, Empire City, and Total Wreck to the south, and Mountain Springs and the Rincon Mountains to the north.

The arrival of the railroad and establishment of the Pantano station were boons to ranchers and miners in the area. Instead of driving cattle or sheep to Tucson or elsewhere to sell, ranchers loaded livestock, wool, and hides on cars at Pantano and shipped them across the country. By 1895, Pantano was sending some 300 cars of cattle annually from local ranches, mostly from the Empire Ranch. Cattle were shipped from Pantano until the early 1950s. The railroad also made mining in the nearby mountains economically feasible between the 1870s and 1936, by bringing in large mining machinery and providing relatively inexpensive and fast transportation for ore and other mine products. Some companies were rather short-lived, but seven mining companies maintained at least nominal offices in Pantano between 1905 and 1936, where there was telephone service. Pantano continued to serve its neighbors until the early 1950s, when the railroad discontinued service there. The site rapidly declined after that time.

Cattle Ranching and Mining on Empire Ranch

Max Witkind, Bureau of Land Management, Tucson, Arizona

CATTLE RANCHING was first introduced to the Cienega Creek area in 1699, by Padre Eusebio Kino, a Spanish missionary who delivered 150 head of cattle to the ranchería of Sonoita, near the headwaters of Cienega Creek. However, it was not until after the Civil War that ranching became an important activity in the area. By the 1870s, the movement of cattle to Arizona was well under way, and several ranches had been established in the area, including the Empire, Cienega, Sanford, Bonita, Wakefield, Agua Verde, and Tanque Verde ranches.

Cowboys on Empire Ranch, circa 1885. (Photo courtesy of the Bureau of Land Management.)

Empire Ranch was established by William Wakefield in about 1874, as a 160-acre homestead. In June 1876, Wakefield sold the homestead to his brother-in-law, prominent Tucson businessman Edward N. Fish. In August 1876, Walter L. Vail and Herbert R. Hislop, two young men recently arrived in Arizona, bought the ranch from Fish and his partner Simon Silverberg for $1,174. This purchase price included a four-room adobe house with packed dirt floors, a corral, and 612 head of cattle.

Laura, Dusty, and Bill Vail, grandchildren of Walter Vail (early to mid-1920s). (Photo courtesy of the Bureau of Land Management.)

During the late 1800s, ranching operations in the Cienega Valley expanded and prospered. However, after a period of prolonged and severe drought in the 1890s, Vail bought out many neighboring homesteaders and ranchers, building his ranch into a true "empire," stocked with more than 30,000 head of cattle. By 1905-1906, the Empire Ranch sprawled over approximately 1,000 square miles of land in Pima and Santa Cruz counties and was the largest ranching operation in Cienega Valley.

In 1881, the Empire Mining and Developing Company, owned by Vail and his friend Carrol W. Gate, bought the Total Wreck silver mine in the Empire Mountains and installed a 70-ton mill. By 1883, the Total Wreck camp sprang up around the mine and contained 200 to 300 residents, 50 houses, 3 stores, 3 hotels, 4 saloons, a butcher shop (operated by Vail's brother Edward), several Chinese laundries, and a lumber yard. Water to operate the mine and supply the residents of Total Wreck camp was pumped through an intricate system of tanks and pipes from Cienega Creek. At its peak, the Total Wreck mill could process more than 50 tons of ore per day, which were then transported to distant markets by the newly arrived railroads. Profits from the mine were invested in Vail's cattle ranching business. Although the mine and the mill operations closed in 1884, mining was done on a limited scale until about 1911.

The Vail family continued to successfully operate Empire Ranch until 1928, when they sold their ranch and adjacent property between the Santa Rita, Whetstone, and Rincon mountains to the Chiricahua Cattle Company (later the Chiricahua Ranches Company), headed by Frank S. Boice, his family, and partners. The Boice family bought out the other partners and operated Empire Ranch until 1960, when it was sold to the Gulf American Corporation for a proposed real estate development, which never occurred. The Anamax Mining Company bought Empire Ranch in 1974 for its water rights and mineral potential but put the land up for sale when copper values dropped in the 1970s. Beginning in 1988, the Bureau of Land Management acquired the ranch lands in a series of land exchanges and initiated efforts to stabilize and preserve the historic Empire Ranch buildings. Bolstering the effort is the Empire Ranch Foundation, a nonprofit organization founded in 1997, which is dedicated to the preservation of the historic buildings, history, and landscape of Empire Ranch and its development as a Western heritage site and educational center. Empire Ranch is on the National Register of Historic Places.

The Mescal Wash Site: A Persistent Place along Cienega Creek

Rein Vanderpot,
Statistical Research, Inc., Tucson, Arizona

THE MESCAL WASH SITE (AZ EE:2:51 [ASM]), located on a broad ridge at the confluence of Mescal Wash and Cienega Creek, covers a nearly one-square-kilometer area. Its position between the Tucson Basin and the middle San Pedro Valley places it in an ecological transition zone between Sonoran Desertscrub vegetation to the west and Chihuahuan Desert grasslands to the east. It lies in a cultural transition zone between prehistoric agriculturalists to the west, considered to be part of the Hohokam culture, and those to the north and east, recognized as Mogollon. Although the site was discovered more than 40 years ago, it is only recently that archaeologists have had the opportunity to excavate and study it in depth.

The Arizona Department of Transportation (ADOT) plans to rebuild a traffic interchange and railroad overpass inside the boundaries of the site. In 2000 and 2001, Statistical Research, Inc. (SRI), with funding from ADOT, tested and excavated those portions of the site that would be affected by the proposed rebuilding activities. Four of the eight loci identified by SRI during the testing phase were excavated. By the time the fieldwork ended, SRI had exposed nearly 2,500 archaeological features and excavated approximately 100 houses and 350 extramural features.

Our preliminary assessment indicates the four loci were intermittently occupied between about 1200 B.C. and A.D. 1450. The earliest occupation consisted of several small, circular structures predating A.D. 750. Many densely clustered and superimposed pithouses dated between about A.D. 750 and 950. However, between A.D. 950 and 1150, the occupation shifted to other, unexcavated portions of the site, including an area where an estimated 25 to 50 houses were inhabited, presumably by farmers exploiting the nearby Mescal Wash floodplain. Interestingly, little evidence was found for occupation from A.D. 1150 to 1350. Finally, a series of adobe houses dating to between A.D. 1350 and 1450 were excavated.

Cultural variability is evident in different pithouse styles. Many houses dated between A.D. 800 and 1000 are identical to Hohokam houses. The exceptions are pithouses containing recessed hearths – circular, straight-walled depressions, with a hearth in the floor in front of the entrance. Similar pithouses were documented in the 1930s and 1940s during the Amerind Foundation's excavations at the Gleeson site near the Dragoon Mountains and at the Tres Alamos site along the San Pedro River, in southeastern Arizona.

Modern features such as Interstate 10, the traffic interchange, and the Union Pacific railroad structured the fieldwork at the Mescal Wash site. (Photo courtesy of Statistical Research, Inc.)

At Mescal Wash, two burned houses with recessed hearths were intruded upon by pithouses without recessed hearths. Except for the absence of recessed hearths, the intrusive houses were identical to the earlier recessed hearth-style houses, including deep storage pits in the same location. On the floor of one earlier house was a small clay rattle, which looked like a ceramic version of a copper bell. Another pit structure contained a series of parallel grooves in the floor outside the recessed area, suggesting a raised floor. Since this structure was the largest excavated at the site and the only one with an east-facing entryway, it may have had a communal function.

Extramural pits occurred in higher ratios – nearly 25 for each house – than usually found at Hohokam sites. Most were simple, basin-shaped pits of indeterminate function; roasting pits were also common. Bell-shaped pits, used for storage and baking, date primarily to the site's early occupation. A series of heavily oxidized, slab-lined roasting pits, with abundant animal bone and flaked stone, but few or no ceramics, were present in one of the loci. Most were recovered near the modern ground surface, suggesting a late prehistoric or even protohistoric age. Inhumations and cremations were found in equal proportions. Inhumations included flexed and sitting types, and many intruded upon houses. Primary cremations consisted of east-west-oriented subrectangular pits with interior postholes. Some secondary, pit-and-urn cremations were clustered in cremation areas; others were scattered across the site.

Artifacts recovered from the site included stone palettes and censers reminiscent of Hohokam types and ceramics associated with cultures farther east. Decorated ceramics for the A.D. 750-1150 period were equally divided among Phoenix Basin buff wares, Tucson Basin brown wares, and San Simon/Dragoon brown wares. The late ceramic period, dated to about A.D. 1350 and 1450, contained Tonto, Gila, and Babocomari polychromes. Contemporary late Ceramic period ceramics from the Tucson Basin, such as Tucson Polychrome and Tanque Verde Red-on-brown, and farther north, such as Maverick Mountain series types, were conspicuously absent.

Top: A cluster of four superimposed houses in one of the loci dating between about A.D. 750 and 950. Bottom: Large house with recessed hearth area and parallel floor grooves. (Photo courtesy of Statistical Research, Inc.)

The Mescal Wash site lies along a portion of Cienega Creek that is both a cultural and an ecological crossroads. One key to the site's longevity was the resource diversity available to its inhabitants, although the site was probably never more than a simple agrarian community, occupied by 25 to 50 people. The original occupants of the site, like their contemporaries elsewhere in the Southwest, were hunters and gatherers. They later adopted a forager-farmer economy that was clearly successful, for there is no evidence of any significant change from the time agriculture was adopted until the end of prehistory. Unlike similar agrarian communities in the Tucson Basin, however, the inhabitants of Mescal Wash did not participate fully in the nearby Hohokam or Mogollon cultures. Rather, they appear to have been resistant to change, observing and borrowing from, but hardly embracing, the changing cultures surrounding them. Some evidence for their insularity can be found in the unique architectural styles found at the site. Instead of a ballcourt, Mescal Wash contained what is known as a big house. Although both ballcourts and big houses may have served as integrative structures, perhaps attracting people from outside the community, the big house at the Mescal Wash site is considerably smaller than a ballcourt, suggesting the inhabitants of the Mescal Wash site interacted with few outsiders. The only evidence of shared symbolism may be the recessed hearth-style pithouse. This short-lived, unique architectural style, which flourished about A.D. 1000, may represent the peak of cultural cohesiveness in the area.

Although analyses of our excavations are only beginning, it is clear the Mescal Wash site was a persistent place, where culture and environment converged in an adaptation successfully maintained for millennia.

See the Center for Desert Archaeology website for more information: <http://www.cdarc.org>

THE CENTER FOR DESERT ARCHAEOLOGY, a private, nonprofit organization, promotes stewardship of archaeological and historical resources through active research, preservation, and public outreach. The Center is a 501(c)(3) organization and is supported through donations, memberships, and grants from individuals, foundations, and corporations. Center members receive an annual subscription to *Archaeology Southwest*, substantial discounts on other Center publications, opportunities to participate in archaeological projects, and invitations to special lectures and events. For more information or to join, contact Linda Pierce, Programs Manager, at 520.882.6946 or lpierce@cdarc.org.

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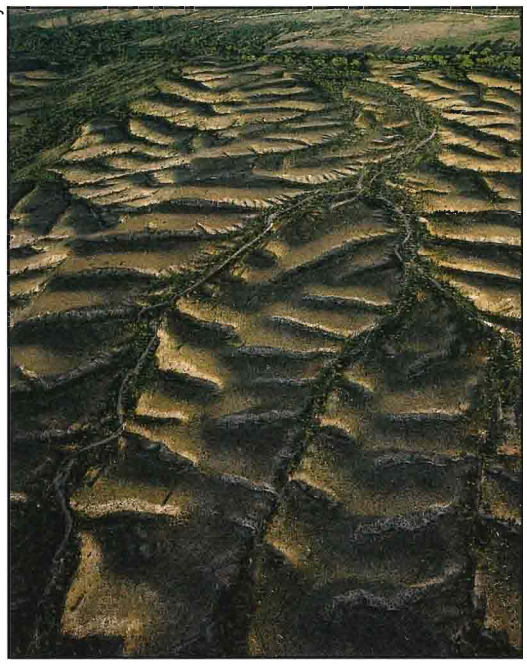
BackSight

THE FOUNDATIONS OF THE Center's Preservation Fellowship program were built on blind faith. With the addition of large measures of hard work, that faith has paid huge dividends.

The concept for the program emerged in 1994, as the Center was wrapping up fieldwork for our Lower San Pedro Survey. We wanted to initiate a new field program, and we wanted to make sure its director had a strong incentive to carry the work through from start to finish.

After brainstorming, we advertised dissertation support for a graduate student who would conduct the Cienega Valley Survey. There were no sources of outside funds, just a promise of basic logistical support and part-time salary from the private firm Desert Archaeology, Inc.

We interviewed three candidates and were pleasantly surprised to find that Michelle Stevens, the person we knew the least about, was the best prepared to take on our survey. So, in January 1995, Michelle initiated the Center's Cienega Valley Survey. Now, seven years later, Michelle has completed her dissertation at the University of Arizona and is writing up the last of the survey results. She is also now married, has a two-year-old son, and is expecting her second child in March.



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The natural beauty of the Cienega Valley complements the rich archaeology, making it an ideal location for a volunteer survey.

In addition to accomplishing the job in a professional manner, Michelle has been a wonderful ambassador to the broader public. Over the years she organized 725 person-days of effort by volunteers, traveling to the field on 77 different days. Five volunteers, in particular, deserve special mention because they participated in well over half of those field days. They are Valerie Conforti, Ken Fite, Cheri Freeman, Bob Conforti, and John Murray.

While Michelle earned a doctoral degree, the Bureau of Land Management gained invaluable information to help it manage the new National Conservation Area, as did Pima County for its preserve. And as Michelle and her family have grown, so has the Center. Our Preservation Fellowship is becoming a flagship program. Thanks to gifts from several generous donors, one fellowship position is now fully endowed, and we have special funding to carry out another three-year fellowship. In the future, we hope to endow two more fellowships, enabling us to begin a new one every year.

Blind faith alone does not get a job done. It was a necessary initial condition for our Preservation Fellowship program, but hard work, skill at building relationships with volunteers, and a commitment to achieving a goal are the essential ingredients Michelle brought to our program. Her role in helping launch a major Center program will be a lasting legacy. She has set a high standard for all future Fellows to meet.

William H. Doelle

William H. Doelle
President & CEO
Center for Desert Archaeology

back sight (băk sīt) n. **1.** a reading used by surveyors to check the accuracy of their work. **2.** an opportunity to reflect on, and evaluate the Center for Desert Archaeology's mission.

Center for Desert Archaeology
Archaeology Southwest
300 E. University Blvd., Suite 230
Tucson, AZ 85705

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