

Ancient Peoples in Scottsdale from the First Hunters and Gatherers Through the Hohokam Culture – An Overview of Scottsdale’s Prehistoric Sites

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Introduction

This archaeology overview provides general background information on archaeological resources in Scottsdale, covering several thousand years of civilization in the Sonoran Desert and the place we call Scottsdale today. It is intended to provide the public with an overview and general understanding of how the Hohokam and earlier people lived in this region 500, 1,000 or even 5,000 years ago. This overview provides background information that can be used by Scottsdale’s Historic Preservation Commission when it considers which local archaeological sites are significant, and resources that should be recognized and listed on the Scottsdale Historic Register.

The intent of this overview is to synthesize the existing data on archaeological resources in Scottsdale and the Salt River Valley. It should provide a framework for relating individual archaeological sites in Scottsdale to what was happening in the larger region around the same time. The overview describes the first people in Arizona and the origins and chronology of the Hohokam. It will then describe many aspects of Hohokam life, including their living in the desert, food, agriculture, crafts, architecture, trade and rituals. There are numerous archaeological sites in Scottsdale of various types, dating from different time periods. Some Scottsdale sites are referenced in the text.

Readers should be mindful that this archaeological statement is written for general public use and is not intended as an academic or scientific paper. Because the consensus of opinion from archaeologists changes over time as more research is completed, and theories change based on new information, this overview will need to be updated as more data is gathered.

First Americans

The Paleo-Indians (14000 B.C. to 8000 B.C.): The first Americans appear to have crossed the land bridge from Asia through the Bering Straits between 20,000 and 10,000 years ago during the last Ice Age (the late Pleistocene Epoch). When the first people, the **Paleo-Indians**, came to the southwest to hunt big game animals, the climate in what is now the Sonoran Desert was not as hot and dry as it is today. If they did venture as far south as Scottsdale, the big game hunters (Paleo-Indians from about 14000-8000 B.C.) would have found more woodlands, grasslands and marshes around the Salt River. They survived in Arizona by hunting mammoths, bison (larger than today’s species), horses, camels, large cats and wolves.

Skillfully made stone spear points (called **projectile points**) from these big game hunters have been found with mammoth bones in the Southwest and in southern Arizona. Mammoth and other big game skeletons have also been discovered in the Salt River Valley. Another physical sign of these first people is the debris found from stone tool making. However, no Paleo-Indian sites have been documented in Scottsdale.

Little is known about the daily lives of the people who lived during this period. Archaeological sites found in the Southwest (about 55 sites in Arizona) suggest that the Paleo-Indians lived in small mobile groups, and traveled hundreds of miles or more each year for hunting and gathering. Only two Paleo-Indian spear points have been discovered and recorded in southern Arizona.

The big game species, called megafauna, began to disappear or move north as the region became warmer. Although animals like the mammoth and ground sloth became extinct over time as the last ice age ended, some big game species may have become extinct as a result of hunters. The Paleo-Indians may have followed the big game north or adapted to the changing climate and hunted smaller game, like Mule Deer and rabbits, still available today in Scottsdale. The extinction of the mammoth and other big game eventually forced the Paleo-Indians to hunt smaller game. This led to the development of a new culture called the **Archaic** by archaeologists. Around 8,000 years ago the Archaic people remaining in Arizona shifted their diet to include smaller game and native plants.

The Archaic Period (8000 B.C. – A.D. 1): The Archaic period lasted from about 8000 B.C. to around A.D. 1. This long period is usually divided into the Early, Middle and Late Archaic to describe how these people adapted to the changing climate, developed agriculture and built settlements. The Early and Middle Archaic people were highly mobile and combined hunting and gathering for food. They differed from the earlier Paleo-Indians in their use of both tools and plants. It appears that people traveled in small groups for much of the Archaic Period. Human populations were probably very sparse and widely scattered across Arizona and the Southwest.

Early Archaic people (around 7000-4800 B.C.) began to use roasting pits, stones for grinding seeds, and bedrock mortars with pestles. Unlike the heavier spears and larger points the Paleo-Indians used for big game, the Early Archaic people changed their spear and stone point design to hunt smaller game. In addition, a device called an atlatl was used to increase the speed and accuracy of these smaller weapons.

The greatest change in the 8000-year Archaic period came around 1500 B.C., towards the end of the Late Archaic period, otherwise known as the Early Agricultural Period. Life changed dramatically as some people adopted a more settled lifestyle and began practicing what we now call floodwater farming. This technique was used along the banks of rivers and streams that flowed year-round, such as the Salt River and Gila River. These early farmers congregated in small villages and lived in homes made from wood posts, covered with brush and mud in shallow pits. Some of the artifacts found dating from the Late Archaic period include arrowheads, clay figurines, carved bone implements, ground stone milling tools, and stone beads. Artifacts for grinding corn and beans called manos and metates were used by these Archaic farmers.

Archaic people appear to have used the sites around the McDowell Mountains for short periods of time, on and off throughout the year. They may have visited the sites seasonally to gather mesquite pods, cactus fruits or other native plants. When gathering native seeds these people may have used nearby granite boulders and bedrock for grinding, since cone-shaped **bedrock mortars/metates** (depressions in the rock) are evident in many locations. Numerous bedrock mortars exist in Scottsdale that were probably used by both Archaic and Hohokam peoples.

Spear points found in rock shelters in Northern Scottsdale are evidence that Archaic hunters frequented the Scottsdale area. Archaic people also made local rocks into stone tools. They left the evidence of their tool making activities (stone flakes) on the south and west sides of the McDowell Mountains. The west side of the McDowell Mountains also contained several Archaic work areas and houses in pits.

Early Peoples of the Southwest

As settlements and farming became more common, differences developed between people living in different regions of the southwest. Four distinct cultures had developed in the southwest: 1) Hohokam, 2) Anasazi, 3) Mogollon, and 4) Patayan. The people in villages and smaller hamlets along the rivers and in the Sonoran Desert (in central and southern Arizona) became known as the Hohokam. The word **Hohokam** is a Pima word meaning “those who have gone”. The people constructing permanent villages in the Four Corners area are known today as the Anasazi. People living along the rim of the Colorado Plateau and the eastern mountains in Arizona and New Mexico are called the Mogollon. The Patayan is the name given to the people who lived along the Colorado River (see map below of early cultural areas in Arizona). In addition to these four peoples living in the southwest United States, people living in the Casas Grandes and Trincheras cultures in what is now northern Mexico, also probably traded and interacted with the Hohokam and other southwest cultures.

The Origins of the Hohokam Culture

The Hohokam were farmers who lived in south/central Arizona and northern Mexico from roughly A.D. 1 to A.D. 1450. They demonstrated their successful adaptation to the harsh Sonoran Desert environment by turning their desert landscape into farmlands and thriving villages. Their skills at building canals for irrigating crops have led some people to call the Hohokam “masters of the desert”.

Archaeologists are still debating whether the Hohokam culture developed from indigenous desert people already living in the Salt and Gila River valleys, or from immigrants and traders that came north from more advanced farming cultures in Mexico and Central America. It can certainly be argued that the Hohokam culture was a new culture that emerged out of the earlier Archaic peoples.



Map of Hohokam culture area and neighboring peoples from Pueblo Grande publication

However, there is evidence that the Hohokam were influenced by Mexican cultures as well. Farming had been well developed in Mexico for thousands of years before the Hohokam culture appeared, and by about 1500 B.C. important Mexican crops such as corn (maize), beans, squash and cotton were introduced to the Hohokam. Most archaeologists believe that corn was introduced to the southwest from cultures to the south in what is now Mexico. Corn was first domesticated in Mexico and Central America somewhere between 3000-7000 B.C. The Mexican plants and agriculture adopted by Southwestern peoples had a tremendous impact on cultural developments and the locations they selected for villages.

Hohokam Chronology (A.D. 1 to 1450)

The Hohokam were a people who lived in permanent village settlements, primarily along river valleys. They made pottery and grew much of their food by farming in fields irrigated by canals. The Hohokam culture evolved from small villages, with primitive crafts and the first irrigation canals, into a large social and political regional system. The fully-developed Hohokam culture and regional system included many large towns, numerous outlying villages, elaborate architecture and rituals, distant trade routes for trading with other cultures, finely crafted jewelry and other items, elaborately decorated pottery, and hundreds of miles of canals in an extensive controlled system along several rivers. Already several archaeology sites have been recorded in Scottsdale attributed to the Hohokam. It is also very likely that additional sites will be discovered when archaeologists survey more land.

Archaeologists have developed the chronology in the chart below to describe the changes in the Hohokam and their culture through the centuries. There are four major periods illustrating the progression of the Hohokam in the Phoenix area - the Pioneer, Colonial, Sedentary and Classic periods - which are each divided into one or more phases by archaeologists. The chart below used information compiled in charts by archaeologists Jeffrey Dean, Patricia Crown, and Todd Bostwick. The dates are approximate.

Chronology of the Hohokam

Period	Phase	Approximate Years for Phases	General Characteristics
Historic (post A.D. 1540)		1540-1950	Spanish explore southern Arizona (1540). Historic Tohono O’odham (river) and Akimel O’odham (desert) cultures emerge after Hohokam.
Protohistoric (A.D. 1450-1540)		1450-1540	Hohokam culture collapses. Population decline and dispersion.
Classic (A.D. 1150-1450)	Polvoron	1350-1450	Pit houses are built. Population declines. Social/political changes
	Civano	1300-1350	Big/great houses built. Salado polychrome style pottery.
	Soho	1150-1300	Above ground residential areas with compound walls. Trade/interaction declines. Platform mounds constructed. Ballcourts abandoned. Homes and public buildings out of adobe.
Sedentary (A.D. 950-1150)	Sacaton	950-1150	Mass production of red-on-buff pottery. Increase in ballcourts.
Colonial (A.D. 750-950)	Santa Cruz	850-950	Elaborate decorations on pottery. More elaborate cremations.
	Gila Butte	750-850	First ballcourts. Increased trade with other regions.
Pioneer (A.D. 1-750)	Snaketown	700-750	Red-on-buff style pottery. Cremation of dead common practice.
	Sweetwater	600-700	Large irrigation systems on Salt River.
	Estrella	500-600	First large canals. Red-on-gray style pottery. Bow and arrow used.
	Vahki	300-500	First irrigation canals. Polished red pottery.
	Red Mountain	1-300	Pottery production begins. Small permanent villages. Beginning of Hohokam culture.
Late Archaic (1500 B.C.- A.D. 1)		1500 B.C. – A.D.1	Pre-Hohokam hunters and gatherers with limited farming. Corn introduced.

Pioneer Period (A.D. 1-750): The Pioneer Period was the beginning of the Hohokam as a distinct culture from other southwest peoples and civilizations. This period is defined by the transition of a people from purely nomadic hunters and gatherers to novice farmers who lived in established villages and experimented with different techniques to control water. The most important advancement the Hohokam produced during this period was an innovative technique to control water for irrigation: the canal. The first canals were constructed along rivers to divert water into fields for crops of corn, beans, squash and cotton. The Hohokam people also became more dependent on agriculture than the preceding Late Archaic people.

In addition to farming, another significant feature of the beginning of the Hohokam culture was the production of pottery. After A.D. 1, people started making large ceramic vessels for practical purposes rather than just

simple clay figurines like those made in the Late Archaic Period. Pioneer Period villages were still small and were primarily located adjacent to rivers including the Salt, Gila and Verde Rivers near Scottsdale.

The Pioneer period has five phases with distinct objects or characteristics to differentiate them from each other. The first phase, before A.D. 300, is called Red Mountain and was known for its pottery, which was plain brown. In the second phase, called Vahki, central plazas and settlements were created by grouping houses together and surrounding these plaza areas. Settlements typically had trash mounds near the houses. **Floodwater farming** along rivers and **dry farming** that relied on rainfall (farming techniques are described later under Food) occurred adjacent to small settlements. The first decorated pottery, Estrella Red-on-Gray, appears about A.D. 500 at Snaketown (a large village site located south of Phoenix on the Gila River) and other sites during the third phase, called Estrella. In the Sweetwater phase, the fourth phase, the Hohokam began trading with other areas, including Mexico. Pioneer Period artifacts found in Hohokam sites from other areas included seashells and turquoise, and macaws and parrot bones. In the last Pioneer Period phase, called Snaketown, cremations were the main form of burials and urns began to be used to hold the ashes. In the Snaketown phase pottery was decorated with red designs on a buff-colored background and is called red-on-buff pottery. **Platform mounds** (initially trash mounds with flat tops covered with mud) first appeared in the latter part of the Pioneer period.

In these early centuries the Hohokam had small villages near the southern boundary of Scottsdale and used camps and work sites in northern areas, seasonally, for food production. Settlements were spaced at regular intervals along the Gila River by the end of the period. In fact, these permanent villages along with large-scale irrigation systems characterize the end of the Pioneer period. Today, no Pioneer sites are visible in Scottsdale.

Colonial Period (A.D. 750-950): The Colonial Period represents a time of rapid expansion in the number and size of Hohokam sites and an increase in the complexity of Hohokam society. New settlements developed along many waterways, such as the Salt, Gila, and Verde Rivers. Compared to the preceding Pioneer settlements, construction techniques, and the arrangement and types of structures changed during this period. Structures were grouped in a pattern, called courtyard groups or clusters, and had an associated cremation area for the courtyard group. Villages were composed of several courtyard groups.

Some trash mounds were capped (covered with a hard surface) at this time to create a platform on top, called a platform mound. The construction of **ballcourts** began in this period and continued into the next. Hohokam ballcourts are oval, bowl-shaped depressions of varying sizes, with a smooth playing surface, that were used for a Hohokam ball game and may have also been used as a meeting area (Hohokam ballcourts and their uses are described in more detail under the Homes, Community Structures, and Rituals section). Cremations became common throughout southern Arizona, suggesting a spread in the influence of the Hohokam. The expansion of irrigation canals during this period also shows an expansion of farmland, which was consistent with the population increasing and increases in the number of villages at this time. The expansion of canals along major rivers increased the importance of the villages at the head of large canal systems including Pueblo Grande in Phoenix. Increased knowledge of farming techniques also resulted in more villages and activity in upper desert areas, like north Scottsdale, located at some distance away from the river valleys.

One example of a Colonial village that was not on or near a river was the Pinnacle Peak Village site in Scottsdale, which was along a major wash on the north side of the McDowell Mountains. Pinnacle Peak Village was located over 10 miles from the Verde River to the east and about 20 miles from the Salt River to the south. The fact that this Hohokam village was located far from any river shows that the floodwater and dry farming techniques developed by the Hohokam (described later) could support a permanent village. From the bedrock mortars/metates found within about 5-mile of Pinnacle Peak Village we can surmise that the surrounding desert probably contains several sites where village residents harvested plants. Scottsdale's upper desert has other less significant Colonial period sites on the west side of the McDowell Mountains.

The Colonial period has two phases, the Gila Butte and the Santa Cruz. The first Hohokam ballcourts appear in the Gila Butte phase at the start of the Colonial period. Hohokam ballcourts began to appear over a larger

geographic area as Hohokam population and influence spread. Rituals became more elaborate during this time and great care was taken in the treatment of the dead. Offerings were placed with the cremated remains. These offerings included pottery, decorated stone palettes, stone tools and arrow points. Like ballcourts, cremation rituals reflected an increase in Hohokam social customs in the Colonial period.

In the second phase of the Colonial period, the Santa Cruz phase, pottery design was at its artistic peak, evidenced by the Hohokam's great attention to detail. Other crafts also show increases in skill levels and decoration. These include shell jewelry, stone artifacts and clay figurines. Some shell jewelry and clay figurines dating from this period were found at the Pinnacle Peak Village site. Households or villages may have specialized in crafts like shell jewelry or pottery production.

The Hohokam became important traders in the southwest during the Colonial period. This is evident from the number of Hohokam goods found over a large area, and the variety of goods from other areas found in Hohokam sites. One trade good that came from the Hohokam trading with distant areas is turquoise, which is often found at Colonial Hohokam sites.

Sedentary Period (A.D. 950-1150): The Sedentary Period was a time of significant population growth and increases in the number of settlements for the already well-established Hohokam culture. New canals and villages were constructed and older villages expanded. Seasonal encampments were located for gathering plant resources from the desert, including sites in north Scottsdale. Platform mounds, large trash mounds capped with caliche, have been found in several locations. **Caliche** is the white rock-like material found in underground layers in the desert that can be dug up and used as a building material. The Sedentary Period saw an evolution in construction methods from the capped trash mounds to deliberately built platform mounds, indicating an increased demand for this type of public structure during this period.

Platform mounds begin to appear in some villages as deliberately constructed mounds used for a public structure, probably for ceremonial or ritual use. Mesa Grande in Mesa, and Pueblo Grande in Phoenix, both have large platform mounds and were located near the head of extensive canal systems serving numerous villages. The combination of platform mounds and one or more ballcourts in a village is generally recognized today as a strong indicator of the political and/or social power of that village.

The construction of ballcourts that began in the Colonial period, continued during the Sedentary period with many new ballcourts being constructed in larger more prominent villages. Hohokam ballcourts were probably borrowed from or influenced by ballcourts and a similar ball game found in Mexico and further south in Central America, such as those played by the Aztecs and Mayans. Ballcourts also tended to be spaced at regular intervals of about three miles along river valleys indicating that they were probably gathering points for several surrounding villages not containing ballcourts. Most Hohokam villages did not have a ballcourt. One ballcourt site has been found in north Scottsdale near Pima Road. Ballcourts have also been found at Pueblo Grande in Phoenix and along the Verde River east of Scottsdale.

The Hohokam culture reached new heights of social, economic, political and ceremonial complexity and influence during the Sedentary period, making the Hohokam a powerful regional system. The number and size of villages grew; the amount of land being farmed was much greater than earlier periods. Trading also became more widespread. The influence of the Hohokam covered its largest geographic area, as evidenced by the spread of ballcourts and shell jewelry throughout the region. The Hohokam regional system rivaled other regional systems including the Chaco regional system in the Four Corners area to the northeast, centered on Chaco Canyon, and the Casas Grandes regional system in Chihuahua, Mexico with a core city called Paquime. Macaw feathers and copper bells from trade with Casas Grandes in Mexico have been found in Hohokam sites in Arizona. A copper bell from Mexico was found at the Pinnacle Peak Village site.

Classic Period (A.D. 1150-1450): The Classic Period is generally characterized as a transitional period that displayed some major changes in the culture. Familiar Hohokam traits in earlier periods changed dramatically or disappeared. These changes can be seen in architecture, pottery, funeral customs, canal systems and the

distribution of the population. No new ballcourts were built in the Classic period, except in the Phoenix area, and platform mounds became more important public structures. Although the Hohokam had been known for centuries for cremating their dead, in the Classic period, burials are seen more frequently. This indicates either changing customs or the increasing influence of other cultures, and the immigration of other peoples. The Classic period had three phases, the Soho, Civano and Polvoron.

The Hohokam began experimenting with adobe construction in the Classic period. Housing clusters began to be enclosed within adobe walls to form compounds. Several adobe houses were attached and had common walls in some of the later villages. A religious or social elite may have arisen around this period. The more important people lived in compounds surrounding platform mounds, and had ceremonial burials for their dead.

Late in the Classic period the Hohokam began to construct residential structures on top of the platform mounds in some villages, and people lived on top of the platform mounds for the first time. Some archaeologists think the changes in architecture, particularly ritual or ceremonial structures, strongly indicate the immigration of people with different customs into the Hohokam region. The culmination of the adobe style construction was the building of multi-story great houses or **big houses** (important multi-story adobe buildings). The most famous big house today is at Casa Grande Ruins National Monument in Coolidge near the Gila River.

The Hohokam canal systems reached their peak in size and extent in the previous Sedentary period. Some archaeologists have now examined data on flooding and reached the conclusion that major flooding during the Classic period severely damaged these extensive canal systems. They estimate that it took one or two years to repair the canal system after major flood damage, which would have been disastrous for villages at the far end of the canals. Flooding around A.D. 1300 may have resulted in most of the Salt River canal systems becoming damaged and unusable, which may have forced some of the villages with no water to relocate to survive. There is evidence of the reconstruction or remodeling of canals around this time period.

Decorated red, white and black polychrome pottery appeared during this period in Phoenix and Tucson, while the production of red-on-buff pottery declined. Geometric designs on pottery replaced curving forms, and the more ornate earlier craft items either become simpler in design or disappear entirely in this period.

There was a dramatic reduction in the number of occupied Hohokam villages in the Classic period. There were also major shifts where the Hohokam people located across the land. Some small newly established communities were expanded including a new community near Marana, just north of Tucson. The Marana community was settled in the early Classic Period and appears to have been abandoned by the middle 1200s.

By the end of the Classic period, A.D. 1450, more and more of their villages were abandoned. A new type of walled village began to appear late in the Classic period. Walled villages were built on hilltops suggesting that the people wanted to have a good defensive position. One of these walled villages is the Sears-Kay Ruin northeast of Scottsdale in the Tonto National Forest. Hilltop villages have been found in many areas, including around the Cave Creek and Verde Rivers and in the Mazatzal Mountains north of Scottsdale. Some people call walled villages fortified villages or Trincheras. No walled/fortified villages are found in Scottsdale.

Theories on the Decline and Collapse of the Hohokam Culture: The Hohokam people and their culture had largely moved from the Phoenix area by A.D. 1450. Although the decline of the Hohokam and the reasons for their apparent abandonment of the Sonoran Desert are explained in many ways, there is no consensus on what happened to them. One theory is that the political powers who ultimately gained control in the area were non-Hohokam immigrants from another region. Therefore, the Hohokam began rejecting the platform mound ritual system and moving their villages away from the dominant political centers. People may have moved away from the river valleys to establish new hilltop walled villages to get away from these new rulers.

A second theory is that the decline related to changes in climate or the environment. This theory assumes possible deterioration in environmental conditions because of prolonged drought, severe flooding and the salinization (the overabundance of salt) of irrigated fields. We know that severe floods certainly did damage canal systems. Other theories are based on warfare, suggesting that raiding groups, including the Apache, were responsible for the end of the Hohokam. However, little evidence has been found to prove these theories.

The final theory is that the Hohokam did not disappear at all, but that their descendants are still around today. It is generally accepted by archaeologists that the Tohono (desert) O'odham and the Akimel (river) O'odham descended from the Hohokam. Tohono O'odham (once call Papago) people live today at the Gila Bend Reservation southwest of Phoenix, the Tohono O'odham Nation southwest of Tucson, the San Xavier District south of Tucson, and other areas. Akimel O'odham (also called Pima) people live at Salt River Pima-Maricopa Indian Community east of Scottsdale, Gila River Indian Community south of Phoenix, and other areas. Residents of these Native American communities and reservations consider the Hohokam their ancestors. The Yoeme (Yaqui) people living in Scottsdale, Guadalupe and Tucson are not related to the Hohokam but immigrated into Arizona from Sonora, Mexico long after the Hohokam culture declined.

Living in the Sonoran Desert Environment

Today we know how harsh the Sonoran Desert can be in the summer, and wonder how people could have survived the long summer heat without air conditioning. However, there are characteristics of the Sonoran Desert that, unlike some deserts, made it possible for people to live and thrive in an arid environment thousands of years before modern technology. The Hohokam people are known for learning these characteristics and ultimately mastering the desert.

The Sonoran Desert in south-central Arizona and northern Mexico, covers approximately 100,000 square miles and is one of four major deserts in North America. Of these deserts, the Sonoran is the richest in terms of the diversity of native species. The unique pattern of summer monsoon and winter rains contributes greatly to the diversity and density of the Sonoran's native plants and animal species. Current rainfall averages around 7-1/2 inches per year near the Salt River in southern Scottsdale, and closer to 14 inches per year at higher desert elevations at the north end of Scottsdale.

As stated above, the Sonoran Desert in Scottsdale contained suitable conditions for people to live here thousands of years ago, and even made it possible for the Hohokam to thrive in the desert for over 1400 years. These conditions included two seasons of rain, a long growing season, a variety of game for hunting, variations in temperatures depending on the season and elevations, a variety of native plants that produced edible products, and a year-round water supply from perennial rivers and mountain springs.

The variations in rainfall, flooding, slopes, soils, plants and other features of the desert had a direct impact on the Hohokam lifestyle. Variations between the four sub-areas determined where the Hohokam constructed their villages and canals, what local materials they could use to build their structures, where they gathered and grew plants for their food, and where they hunted game for meat.

Four sub-areas of the desert terrain in Scottsdale are described below. The Scottsdale General Plan divides Scottsdale into four types of desert terrain that will be used to describe the desert sub-areas in this overview – Valley Floor, Lower Desert, Upper Desert and Mountains.

Valley Floor and Its Rivers: The Valley Floor includes the lowest elevation land areas and the land with the most gentle slopes. The lands in Scottsdale generally south of the CAP Canal are part of the Valley Floor sub-area and have elevations from about 1,000 to 1,500 feet. Significant river valleys run through the middle of the Valley Floor including the Salt, Verde and Gila Rivers. The edges of these rivers (floodplains) will flood after heavy rains. The flat lands near rivers that is on top of the riverbanks and normally above flooding are called terraces. The ground in the Valley Floor is composed mostly of soil and rocks, carried by the runoff from higher elevations or carried downstream by the rivers. Riverbanks were once covered with dense Cottonwood trees, Mesquite trees and other vegetation. Floodplains also once included marshlands along

major rivers. The Salt and Gila Rivers flowed year-round centuries ago before any dams were constructed on these rivers. The Indian Bend Wash is the largest drainage channel in Scottsdale. Indian Bend Wash did not flow year round but flooded after heavy rains in the past, just as it does today.

Lower and Upper Desert: The land between the Valley Floor and the mountains is divided into two sub-areas, Lower and Upper Desert, with differences in elevations, drainage and native plants. The Lower Desert has gentle to moderate slopes, elevations from around 1500 to 2000 feet, and contains a mix of plants including creosote, brittlebush, cholla, mesquite and palo verde trees. When the runoff from the mountains and higher ground reaches the Lower Desert, the water in the washes slows down its pace and spreads out over fan shaped areas where materials carried by the water get dropped. This type of drainage area where shallow flooding can occur is called an alluvial fan. Several alluvial fans exist in Scottsdale around the CAP Canal. These fans include Lost Dog, Taliesin, Reata, Rawhide and Beardsley Washes.

The Upper Desert sub-area includes land with moderate slopes and elevations from about 2,000 to 3,000 feet. This area includes an inclined plain running uphill to the north, from the Lower Desert land up to the base of the Continental Mountains, where the Desert Mountain development is now located, and to the southern edge of the Tonto National Forest. The rainfall in the Upper Desert averages more than the Valley Floor, and temperatures are typically a few or several degrees cooler. Vegetation is lush, including high densities of cacti. These cactus and succulent species include saguaros, chollas, agaves, prickly pears and hedgehogs. The higher elevation desert land in this overview is called Upper Desert.

Mountains: The last type of terrain is Mountains. Several of the mountains and mountain ranges in the Phoenix area are separated from other mountains, which is typical of a broader landscape that geologists call the basin and range formation. All of Scottsdale is within this formation. The McDowell Mountains in northeast Scottsdale cover about 25 square miles, ranging in elevation from around 1,500 to 4,000 feet, and are an island of steep mountains surrounded entirely by upper desert. Some geologists call isolated mountain ranges like these “sky islands” because the ranges typically contain plants and animals that are not typically found in the surrounding areas.

The varieties of plants and game on the steep slopes and on top of the McDowell Mountains are quite different from other areas of the Sonoran Desert. Deer, coyotes and javelinas make their homes in and around mountain ranges like the McDowell Mountains and the Continental Mountains in far north Scottsdale. Predators like bobcats, bears, and mountain lions can also be found in the mountains and the surrounding desert. Cooler temperatures at higher elevations and in the mountains not only add diversity to native plants and animals, but they also make it more comfortable for people to live or work in the desert during the summer, unlike the Valley Floor and Lower Desert lands near the rivers.

Food: Hunting, Gathering, and Farming

The Hohokam satisfied their food needs and survived in the desert by using a combination of hunting, gathering and processing wild plants, raising crops and fishing for their diet. In the early centuries of the Hohokam culture, there was a greater reliance on hunting and gathering for food. Later, however, the Hohokam relied more heavily on farming because their extensive canals enabled them to irrigate large areas of land for crops. Still, the Hohokam never made a complete shift from hunting and gathering to full-time farming. Their diversified strategies for food production would have served them well in years of drought or at times when major flooding damaged the canal systems.

Each of the three main strategies for Hohokam food production – hunting, gathering and farming – and the techniques they used for each activity will be described below.

Hunting: Hunting was always an important part of the Hohokam diet and provided the main source of protein throughout their history. Villagers from along the rivers probably took hunting trips into the northern Scottsdale area and other upper desert and mountain areas, to hunt deer and other game for their villages. Aside from deer, the Hohokam hunted bighorn sheep, pronghorns, foxes, and badgers. They initially hunted

game using spears, but later used bows and arrows with finely crafted stone arrowpoints. They probably caught smaller game like rabbits, squirrels, and quail with snares, traps, nets and clubs. Other animal remains found at Hohokam sites include ducks, turtles, fish, and muskrats from the rivers and riverbanks.

The Hohokam used animals for more than just food. Skins and furs were used for clothing; skulls, claws, feathers, horns, jawbones and other animal objects were used to decorate clothing, for ritual purposes, or for making tools. There is no evidence that Hohokam animal products were used for long-distance trading.

Plant Gathering: Wild plants were critical sources of food for the Hohokam, and for the people who lived in the desert before them. The Hohokam regularly collected many edible plants including mesquite pods, saguaro fruits, cholla cactus buds, prickly-pear cactus buds and pads, and hedgehog cactus fruit. Mesquite pods were ground into flour using stone tools. There is evidence that suggests how the Hohokam prepared many of these plants for food. For example, in the upper desert, in northern Scottsdale, there are mortars (holes) in boulders and bedrock that indicate places where mesquite pods were ground into flour by stone tools. Roasting pits found in seasonal camps, including a site in Scottsdale near the CAP Canal, are other examples of food preparation sites. These pits were used to cook agave, cholla pads or other food. The camps themselves were used to gather and process plant seeds, fruits, buds, and pods when they were in season were used to gather and process plant seeds, fruits, buds, and pods when they were in season. Hohokam villages like Pinnacle Peak Village in Scottsdale would have relied on more than just native plants for food. Villagers would have used a combination of hunting, gathering, and raising crops for their food.

Some agave species (a type of succulent plant) were probably introduced to the southwest from Mexico in later Hohokam periods, but native agave species were also available. More than likely, the Hohokam began collecting the native agave plants and then using them in their farming rather than collecting agave plants in the wild. Roasting pits to cook agave or other food have been found at food processing sites, seasonal camps, and villages in Scottsdale and throughout the Hohokam region.

Farming: The Hohokam have been called the “masters of the desert” because they learned to survive in the harsh desert climate by mastering three different farming techniques: floodwater farming, irrigation, and dry farming. Their skill in these techniques was impressive because they had to use what little rainfall there was in the desert to their best advantage. Each farming technique was used depending upon the availability of water, rainfall, soil conditions, land slopes, and elevations. All three farming techniques were used in Scottsdale.

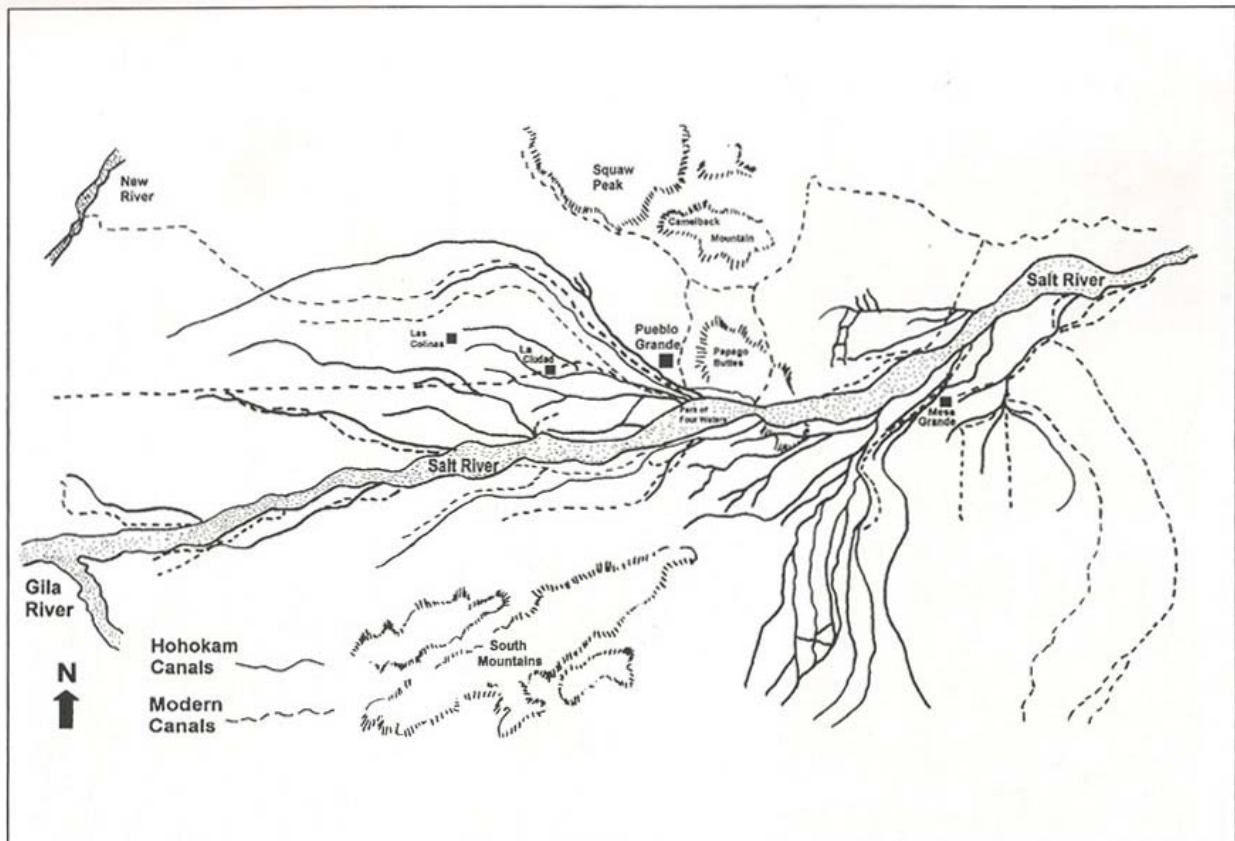
Although, the Hohokam grew several different crops, not all crops were available throughout their history. Crops grown in floodplains and terraces adjacent to rivers included corn, cotton, beans, pumpkin, summer squash, and amaranth. Amaranth and pumpkins may have been later additions to the crops available. Crops in the upper desert areas included corn, bean, gourd, agave, and summer squash. The cultivation of agave probably originated in Mexico, later moved into the southwest, and then was introduced into the Phoenix area and Scottsdale. Corn appears to have been one of the primary food crops for the Hohokam judging from the kernels of corn and corncobs found at many sites including Pueblo Grande and Pinnacle Peak Village.

Floodwater Farming: The first technique used by the Hohokam to grow crops was floodwater farming. The simple approach was to plant crops next to rivers and to rely on flooding after rains to irrigate the floodplain. Marshlands were cleared and used for this type of farming with little labor or construction required. A more complex form of floodwater farming captures the runoff from rainfall and is called ak-chin farming. The word ak-chin comes from the Tohono O’odham word for mouth of the wash. Ak-chin farmers placed crops at the mouth of the wash, called alluvial fans, so the crops would be watered from the runoff after it rained. One advantage of both techniques for floodwater farming was that the soil was enriched continuously from nutrients carried by the floodwater and runoff.

Water flowed, in large washes, down from steep mountains and upper desert areas into the more gently sloping lower desert. Often the water spread out in the lower desert and flooded a broad area of the lower wash, now called an alluvial fan. Ak-chin farming used ditches and brush barriers to channel and capture the shallow

runoff in alluvial fans and divert it into the planted fields. The Hohokam probably used the ak-chin floodwater farming technique in central and northern parts of Scottsdale around the McDowell Mountains. Ak-chin ditches and dams may have existed near what is now the CAP Canal, where runoff from the mountains and higher desert flows into the more level valley floor. However no floodwater farming structures have been discovered in this area.

Irrigation Farming: The second and most well known farming method used extensively by the Hohokam was irrigation. The large canal systems built by the Hohokam along the Salt River and other rivers are typically the most well known cultural feature of the Hohokam culture. The Hohokam tapped into the major rivers in the desert by constructing irrigation canals to bring the water to nearby fields on the valley floor, on the flat floodplains and on terraces close to the rivers. The Hohokam built the largest prehistoric irrigation system in North America. Their canal systems, built by simple hand tools, were a major construction accomplishment.



Map of main canals in the Salt River Valley from 1929 Omar Turney map. A maximum of 1000 miles of canals irrigated about 100,000 acres of fields. Some modern canals used the same routes as the Hohokam system.

The Turney canal map above shows the extent of these canals as well as the locations of modern canals along the Salt River. The map was developed in 1929 before most of the southern part of Scottsdale was developed. The map shows that the southern end of Scottsdale once contained canals that started at the Salt River to the east and extended west into Scottsdale across what is now the Salt River Pima-Maricopa Indian Community. The canal systems on both sides of the Salt River probably reached their peak in size around A.D. 1200-1250. A large portion of the relatively flat valley floor in the Phoenix area was once covered with Hohokam canals, irrigated fields and villages.

The most complex irrigation systems were along the Salt River with several main canals beginning on either side. Pueblo Grande and Mesa Grande were the major villages near the head of these canal systems. As many as 10 main canals were in use at the same time at Pueblo Grande. The Salt River system of canals grew in length over time as the Hohokam population grew and more villages were established along the developing

system. Other river valleys also had canal systems developed including the Gila River, Verde River, Santa Cruz River, and San Pedro River. As the population grew and spread out over a larger area in the Sedentary and Classic periods, new canals and settlements were built in areas north along the Verde River and along the Santa Cruz River around present day Marana, north of Tucson.

Building and maintaining such large canal systems required social and political organization. The Hohokam culture and regional system was undoubtedly at its peak when the canal systems irrigated the greatest land area. Hundreds or perhaps thousands of miles of canals irrigated fields (around 150 square miles) in the Salt and Gila River valleys. The longest known canal reached about 20 miles from Pueblo Grande to present day Glendale. The later decline of the Hohokam system paralleled the decline in the canal systems and the eventual abandonment of villages along the Salt River canals.

The Hohokam canal system had several parts with different functions (see illustration at right). Beginning at the river, the system started by using some form of barrier, such as logs or bushes, to divert water into the main canals. After the main canals, the water flowed through headgates that diverted the water into one or more secondary canals. These secondary canals were then channeled through headgates into smaller distribution canals. From there the water flowed to numerous laterals into the fields for irrigation. Water probably flowed into fields between the rows of plants. The types of architecture and the artifacts found in larger villages at the headgates to the canal systems strongly suggest that villages in these strategic locations had more power than other villages because of their role as gatekeepers for these systems.

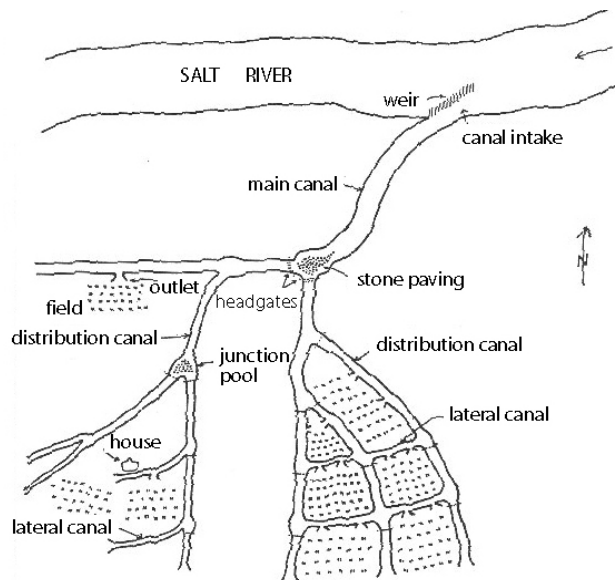


Illustration on the different parts of Hohokam canals from John Andrews and Todd Bostwick, 2000.

The Hohokam constructed the canals with stone and wooden hand tools since they did not have draft animals. The largest canals were over 50 feet wide and the deepest channels were 20 feet deep. As mentioned above, the longest canal was 20 miles long. The locations for canals had to be carefully laid out so the water would flow continuously over long distances, taking advantage of minor changes in slopes and elevation. Hohokam canals were engineered to be wide at the headwaters and gradually narrowed as they reached the end. The slope of the bottom of the canal regulated how fast the water traveled in the channel (gradient). It was a major engineering feat to get the water to flow through the canals at a reasonable speed from beginning to end. Slopes in one canal were measured to be from 1.2 feet to 4.8 feet per mile

Dry Farming: The third farming technique used by the Hohokam was dry farming. This method used rainfall directly or diverted the rainfall to where it was desired. Dry farming was used in upper desert areas of Scottsdale that were not close to any source of water, such as a river or large wash. Dry farming was prevalent in the central upper Sonoran Desert, including northern Scottsdale, but was not found in southwestern Arizona where the annual rainfall was probably too low.

In dry farming, several different types of structures were used to retain the runoff. These included check dams across small wash bottoms (built perpendicular to the channel), contour terraces along slopes, catchment basins, rock piles, and bordered gardens. Each technique was designed to conserve scarce rainfall. Remnants of rock piles are found most often in combination with check dams along a wash. Evidence of dry farming has been found at Pinnacle Peak Village, and at Spur Cross Ranch around Cave Creek Wash, just northwest of

Scottsdale. In the later Hohokam periods (Sedentary and Classic) check dams and rock piles were used to grow agave.

Craft Production, Artistry, and Trade

The Hohokam people produced a variety of objects that showed their talents as craftspeople and skills as artisans. Remnants of their crafts can be seen in artifacts of shell, stone, bone, clay, cotton, designs on boulders (called petroglyphs), and sometimes wood. A variety of artifacts of Hohokam crafts have been found at sites in Scottsdale. Several types of crafts are described below, followed by a description of trade.

Shell: Shell jewelry and ornaments were important to the Hohokam. It took considerable effort for the Hohokam to travel from the Salt and Gila River areas, including Scottsdale to the source of shells for jewelry: the Gulf of California or the Pacific Ocean. The Hohokam used up to 30 different species of shell and used several techniques to fashion shells into jewelry. They were proficient at cutting and grinding shells into shapes for rings, bracelets, pendants, and ornaments containing animal figures. A special technique used by the Hohokam on shell was called etching. This was probably done by painting a design on the shell with pitch or resin. The shell was then immersed into acidic cactus juice so the juice would eat away any unprotected surface, leaving the design. Small shells were also drilled and strung into necklaces or bracelets. Shell jewelry and ornaments were used for trading both inside and outside the region. Shell ornaments have been found at Pinnacle Peak Village in north Scottsdale, and at Pueblo Grande in Phoenix.

Stone: Stone was fashioned by either chipping or grinding stone into tools and other objects. Stone was chipped to produce arrow/spear points, knives, scrapers, axes and choppers. Types of stone used for chipping included obsidian, chert, basalt, quartzite and jasper. A couple of quarries have been found in the Lost Dog Wash area in Scottsdale with two types of stone, quartzite and rhyolite. Obsidian was popular for making points for spears and arrows. Obsidian must have come from stone quarries at some distance from Scottsdale and Phoenix since no obsidian quarries exist in this area. Hohokam spear points and arrowheads were well crafted and generally triangular in shape, with notches towards the base for attaching the point to an arrow.

Stones the Hohokam used to make weapons were different from the ones they used to make tools for food preparation. The tools, manos and metates (ground stones), were fashioned from certain types of stone in order to grind food. One source of this ground stone material was located near the border between Scottsdale and Fountain Hills where volcanic rocks, called basalt, are found. Another type of ground stone material was obtained from the New River area. River rock was also used to make manos, metates, and stone axes. And finally, bedrock mortars were the last type of ground stone material the Hohokam used to grind food. In fact, numerous bedrock mortars have been found scattered around the northern Scottsdale area.

In addition to stone tools, the Hohokam made jewelry, palettes, and bowls out of stone. Stone jewelry included beads, pendants, rings, lip and nose plugs, and mosaics and figurines. The argillite and turquoise stone used for jewelry came from the upper Verde and upper Tonto Creek basins, the Tucson basin, and turquoise mines in eastern Arizona, New Mexico, and California. The Hohokam also used stone to make decorated rectangular palettes that have been found with cremations. The Hohokam made both stone and clay figures resembling humans and animals. Some people think the human figures may have represented actual ball players (people that played ball games in Hohokam ballcourts) since many figures appear to be wearing shoulder and arm pads.

Rock Images: Another Hohokam artistic activity was to make designs on rocks by pecking out an image on the face of a darkened boulder or cliff, or carving away part of the rock. The pecking removed the weathered darker surface of the rock, called patina or desert varnish, and created a design out of the lighter shade of rock below the surface. These pecked designs on rocks are called petroglyphs. Debate continues on whether these rock images in stone are decorations, signs, some other form of communication, or sacred religious images. Petroglyphs are found on isolated small boulders as well as on large boulders or cliffs. Rock images vary greatly from geometric patterns to animals or figures.

Scottsdale has numerous petroglyphs sites around the McDowell Mountains and at scattered locations. Two major concentrations of petroglyphs are located along washes or near springs on the east and west side of the McDowell Mountains. Each site contains many petroglyphs including designs with both geometric patterns and animals or figures. One Scottsdale site listed on the National Register of Historic Places is called the Empie site, located near Scottsdale Road and the Town of Carefree. The rock images at the Empie site may have had ritual importance but, like all rock images, the meanings of the images are subject to interpretation. Images at the Empie site include calendar markings for the summer and winter solstice, and carvings that may represent female genitalia. The presumed female genitalia images are rare and have not been found elsewhere in Scottsdale or the valley but have been identified at other southwestern sites.

Cotton and Weaving: The cotton grown in Hohokam fields was used to make a variety of cotton goods such as blankets, shirts, kilts or skirts, and breechcloths. Although Hohokam cotton goods are rarely found in the desert because the fabric deteriorates rather quickly, fabric has been found at Tonto National Monument near Roosevelt Lake. The Hohokam used stone or wooden drop spindles to spin cotton into yarn. Stone spindles (often schist) are commonly found at Hohokam sites. Agave fibers were also used to weave belts and ropes. Other plant materials were used for weaving mats, probably used for sleeping, and for sandals. Plant fibers were also used to produce baskets. Devil's Claw was also grown so the pods could be used for basket weaving.

Pottery: Pottery is the most common artifact found at Hohokam sites and may be considered the civilization's highest quality craft. Although the Hohokam produced a wide variety of pottery, such as bowls, jars, scoops, and plates, all pottery was generally of three types - plain, red, and red-on-buff. The styles of the pottery and the techniques used to make and decorate it changed through the centuries, with the artistry improving for centuries and eventually declining in quality.

The changes in the style of pottery are an important factor used to date the different phases of Hohokam culture, as discussed in the earlier chronology section. The locations where Hohokam pottery has been found are also considered good indicators of the geographic extent of the Hohokam culture and trading. However, even with the evidence of differences in style and location, archaeologists continue to debate the timetable for each phase or period of the Hohokam culture.

The first Hohokam pottery (plainware) in the early Pioneer period, around A.D. 200, was undecorated, plain in design, and crudely made. The earliest plainware is called Vahki Plain, which sometimes had a red slip added (called Vahki Red). The Hohokam produced other types of plainware pottery, and plainware style jars may have been produced and exchanged along each canal system.

After plainware pottery came the first decorated pottery in the middle of the Pioneer period, around A.D. 500. Red paint was added to the gray surface to make Red-on-gray pottery with simple, thick line decorations, and was probably applied by the fingers. The pottery from the next Pioneer phase, called Sweetwater Red-on-gray, had more elaborate designs and finer lines. During the last phase of the Pioneer period, called Snaketown phase, a new pottery style emerged called Red-on-buff. Snaketown style Red-on-buff pottery used more geometric elements and greater detail than earlier Pioneer pottery styles. Another characteristic of Pioneer pottery was a set of parallel grooves added to the outside of the vessel. This groove or incised technique continued into the next Colonial period but eventually died out.

Following the Pioneer period pottery, the red-on-buff style continued in the first phase of the Colonial Period, called Gila Butte, with the designs becoming more elaborate. The best examples of Hohokam decorated pottery occurred around A.D. 850 in the Santa Cruz phase, the second phase of the Colonial period, when artistry in Hohokam pottery design reached its peak. Active human and animal forms were used in the design for Santa Cruz pottery, with great attention to detail and highly stylized designs. Human figures are shown performing various activities in Colonial pottery, including hunting with bow and arrow, carrying burden baskets, and dancing. A variety of animals in motion are used in designs on Santa Cruz pottery.

During the Sedentary period, after A.D. 900, pottery vessels may have been mass-produced in some Hohokam villages. The layout for the designs, applied to the Sacaton phase red-on-buff pottery in this period, includes a new layout called a quartered design (four sections around the pot). By the last Hohokam period, called the Classic period, the quality of Hohokam red-on buff pottery declined considerably. A new style also emerged in the Classic period called Salado Polychrome (also called Roosevelt Red Ware). Polychrome style pottery uses red, black and white colors in the designs.

Trading: Now that the types of goods produced by the Hohokam have been described, it is worth looking at where these goods were traded and what the Hohokam received in return. Trade was important to the Hohokam. The spread of their pottery, shell jewelry, and other items at the height of the Hohokam culture reveals an extensive trade network. The influence and power of the Hohokam culture or Hohokam regional system is clearly evident from both the spread of the population over a large region and the presence of Hohokam trade goods in other regions. The reason archaeologists call the Hohokam a regional system, and not just a culture, is that the Hohokam influenced a large area and impacted people in other cultures.

The Hohokam culture began in the river valleys of the Salt and Gila Rivers, and trading occurred between villages along these river valleys as more settlements and villages developed. Trade items of the Hohokam included farm products, pottery, shell jewelry including bracelets and armbands, salt (obtained from the gulf and possibly the Verde River Valley as well), cotton fabric, stone bowls, jewelry, and other crafts. Hohokam shell jewelry appears to have been in demand by people in other regions judging from the large region in which these objects have been found. Hohokam pottery has also been found in remote cultural regions and may have been used as a trade item or to carry salt.

Trade items found at Hohokam sites imported from other regions include goods from the Hopi to the north, the Anasazi to the northeast, the Mogollon to the east and southeast, the Trincheras and Casas Grandes to the south in Mexico, and the Patayan along the lower Colorado River to the west. The Anasazi regional trading center was at Chaco Canyon in what is now Chaco Culture National Historic Park in New Mexico. Hohokam trade routes stretched for hundreds of miles from Mexico to northern Arizona and from California to New Mexico.

Through trade, the Hohokam acquired a variety of goods and materials, including pottery, turquoise for jewelry, and argillite and steatite for both jewelry and tools. They also traded for copper bells, obsidian, macaws, and parrots from the Casas Grandes area in Mexico. The colorful bird feathers were probably used in ceremonies and the copper bells have rarely been found outside large Hohokam villages. The presence of these more exotic trade items could have been a sign of prestige or status for the wearers and their villages.

Hohokam villages were the centers for trade within the region and with other cultural regions. The greatest variety of imported trade goods are found in the largest and probably most powerful Hohokam villages that also contain ballcourts or platform mounds. These trading centers include places like Pueblo Grande in Phoenix, Azatlan on the Verde River, Snaketown on the Gila River, and Casa Grande in Coolidge on the Gila River.

Sites in the upper desert in Scottsdale that were used seasonally for harvesting native plants are unlikely to have imported trade goods directly from outside the region. Villages built away from the main river valleys, like Pinnacle Peak Village, do contain some imported trade goods. However these imported goods may have been the result of trading with other larger Hohokam villages along the rivers, like Pueblo Grande or Azatlan, rather than from trading directly with other regions.

Homes, Community Structures, and Rituals

The Hohokam are known for their construction of large canal systems described in the Food section. However, their construction of homes and other structures, and how their buildings changed dramatically over time, is also interesting. Unfortunately, since most Hohokam homes and public buildings were constructed in the open desert out of mud and caliche, most Hohokam structures have eroded away over the centuries.

Unlike the remains of Anasazi dwellings that are more intact and typically easier to see today because they were built of stone (i.e. Chaco Canyon, New Mexico) or in recessed caves in cliffs (i.e. Mesa Verde, Colorado), even the late Classic period adobe structures built by the Hohokam show no visible evidence of construction, or simply resemble mounds of dirt today.

Most of the Hohokam population lived near rivers where the best building materials available were wood, brush, mud and caliche. Caliche is the white, rock-like material found in underground layers in the desert that can be dug up and used as a building material. Unlike caliche layers, the round stones (river cobbles), found in the Sonoran Desert along river bottoms, were not good for stacking. However, the Hohokam still used these stones for reinforcement in adobe construction.

Rock Shelters/Caves: Small recesses in cliff walls (rock shelters) or caves under boulder piles were the earliest and most simple protection ancient people had from the harsh desert heat. A few rock shelters or caves were used in Scottsdale, including sites used by late Archaic hunters before A.D.1. The Hohokam also used these same rock shelters and caves in later centuries. For example, Brown's Ranch rock shelter in Scottsdale is a site that was used from Archaic to Hohokam times.

Houses in Pits and Pithouses: Hohokam houses were first constructed inside shallow pits with wooden posts to hold up the walls and roof. Sticks and brush covered the wood frame and mud covered the outside (called wattle and daub construction). These early **Houses in Pits** differed from the later **Pithouses** built in the Pioneer Period. **Pithouses** were constructed over, rather than inside, pits so that the walls of the house included the sides of the pit.

To construct a pithouse the Hohokam dug pits down to the caliche layer, about three feet deep, plastered the floors with clay and constructed walls and a roof of wood and mud on top of the pit walls. Pithouses also contained a hearth for cooking fires or for heating the dwelling. Additional cooking facilities were located outside the houses and included roasting pits and ovens (hornos). Pithouses were the dominant type of home construction for most of the 1,450 year Hohokam history. Some pithouses were built in lower and upper desert areas and were used on a seasonal basis during harvesting. Numerous Hohokam pithouses have been found in Scottsdale at Pinnacle Peak Village, around the McDowell Mountains, and in other locations.

Hohokam houses were grouped around central work areas. Larger groups of houses had bigger work or gathering areas called plazas. Some houses were larger than others or were constructed somewhat differently, suggesting a possible higher status for the residents. In latter Hohokam periods, the grouping or clustering of homes became even more intentional and deliberate when walls were built around the compounds or clusters. Each compound may have been home to an extended family or clan group. This style of grouping dwellings into compounds was used at Pueblo Grande and Casa Grande in the Sedentary and Classic periods. Houses in compounds also began to have common or shared walls between houses.

Adobe and Other Types of Construction: In order to build several homes attached to each other, a new style of construction was necessary. The Hohokam began to construct houses by layering mud (adobe or coursed adobe) over itself. Each layer, or course, was allowed to dry before another layer was added. Some adobe construction included caliche to make a harder mixture (caliche-adobe), and some construction used rounded river rocks for reinforcement (cobble and adobe). Another type of construction used wooden posts to reinforce the adobe walls (post-adobe). These Hohokam adobe buildings are distinct from the earlier construction method of using mud to cover a frame of brush and sticks. The Hohokam did not typically use the more recent adobe construction method that uses stacked courses of sun-dried adobe blocks or bricks. Some villages appear to have used pithouse construction in some areas and coursed adobe construction in other areas. The Hohokam used adobe construction in later periods for larger more important structures.

In addition to the plazas used for more public or group activities, the Hohokam constructed two types of public structures that are considered very important for their social and political organization, and probably for their ritual and ceremonial traditions as well. These two critical structures are called ballcourts and platform

mounds. Archaeologists have used the locations of ballcourts and platform mounds as key indicators for mapping the growth of the Hohokam culture and for tracking the extent of their regional system and influence.

Hohokam Ballcourts: About 1,000 years ago ballcourts were constructed and used by the Hohokam over a large area. The extent of the ballcourts represented the greatest area of influence for the Hohokam. These ballcourts are believed by many to be related to the ballcourts and ball games played hundreds of miles away in Mesoamerica. It has not yet been proven that the oval Hohokam ballcourts, surrounded by raised embankments, were used for the same ritual game the Aztecs played.

Ballcourts were dug out of the ground and typically had a floor plastered with caliche. They ranged in size from 80 to 200 feet long. More than 200 Hohokam ballcourts have been identified, over 30 of them along the Salt River. The first ballcourts were constructed in the Colonial period (A.D. 750-950). Many more ballcourts were constructed in the Sedentary period (A.D. 950-1150). Ballcourt locations were spread over a large area and ballcourts took a great deal of labor to construct. Villages along the rivers tended to be spaced at regular intervals and the spacing of ballcourts followed this same pattern. The regular spacing of ballcourts along river valleys suggests an organized plan for their locations. Ballcourts appear to have been open to the public since there is no evidence that access was restricted.

The sacred or ritual uses for ballcourts, and whether the game was associated with a cult or social elite, are unknown. Archaeologists believe that Hohokam ballcourts had an important social and/or ritual importance. The location of these structures shows some hierarchy among the villages or differences in their political function. Only the largest most prominent villages had one or more ballcourts, and small villages had no ballcourts. One of the largest ballcourts was found at Snaketown, a large village along the Gila River south of Phoenix. The large village on the Verde River called Azatlan in the Tonto National Forest had five ballcourts. Only one ballcourt has been recorded in Scottsdale so far and it is located in the upper desert far from these river villages. Additional ballcourts have been found along the Salt and Verde Rivers.

Platform Mounds: Another type of specialized Hohokam construction was the platform mound. In the earliest period, the Hohokam had trash mounds around their settlements and villages. Starting in the late Colonial period and going into the Sedentary period some trash mounds were capped with a hard surface of caliche. Unlike the earlier capped trash mounds, the latter platform mounds were deliberately constructed in the Sedentary period as public or ritual structures. The large rectangular mounds took a great deal of labor to construct.

At the end of the Sedentary period, starting around A.D. 1100, the construction and use of ballcourts declined and platform mounds were constructed instead of ballcourts. Platform mounds dominated major villages in the Classic period (A.D. 1150-1450). They were constructed in very prominent locations in the middle of villages and were constructed from scratch in the Classic period, not as capped trash mounds. The locations of villages with platform mounds were not as spread out as villages with ballcourts. There were a total of about 50 platform mounds in the Salt River Valley compared to around 200 ballcourts.

Platform mounds could represent the rise to power of an elite group within the Hohokam. Access to the mound was restricted by compound walls. Large residences were also constructed within the compound. Rare and precious possessions (macaw feathers, copper bells, and turquoise) have been found in the houses and cemeteries by platform mounds. The evidence suggests that the mounds had ritual and/or political importance and that the people living around them and using the mounds had higher prestige and status than the rest of the village and society. There are no known platform mounds in Scottsdale but they are found in major villages along the Salt River. In general the decline in ballcourts and the increase in platform mound construction marks a time of significant transitions for the Hohokam and signals the beginning of the long decline in influence of the Hohokam after A.D. 1150.

Big Houses: The last phase of construction in Hohokam architecture was a change in the use of platform mounds and the appearance of a new type of ceremonial structure. In the latter part of the Classic period (after

around A.D. 1300) adobe structures and dwellings were built on top of the platform mounds. This change can be seen clearly at Pueblo Grande in Phoenix. Another late style of construction was the big house or great house as seen at Casa Grande. Both the construction of buildings on top of mounds and new multi-story adobe buildings seem to represent a similar evolution in the construction of large tall buildings in prominent villages, constructed near the center of villages. There are similar theories on the use of big houses and buildings on top of platform mounds as the thoughts on the purpose of platform mounds – elaborate rituals, homes for an elite class, and centers of political power.

Another theory related to rapid changes in ritual structures, and the construction of residences on platform mounds and big houses, is that the residents of these prominent buildings were actually immigrants from another region who took control of the canal system and political control. The Hohokam people may have rebelled against the immigrant leaders, and/or abandoned villages in the river valleys to escape their control. More research is needed to answer the mystery of why the Hohokam culture and regional system collapsed before the Spanish arrived in Arizona.

Population Distribution and Interaction

Major topics of discussion for archaeologists even today are how the Hohokam population and culture expanded over a large area of Sonoran Desert, and how the Hohokam of different areas interacted with each other. Rather than considering only the types of structures at any individual site, archaeologists have looked at locations of all the different types of Hohokam work areas and villages in order to piece together Hohokam growth patterns, trade patterns, influence on other cultures and social behaviors. The Hohokam definitely grew from small early settlements along the river valleys to an extensive regional system. Their regional system included canal networks, large and small villages, seasonal camps, farming areas, ballcourts, platform mounds, and trade routes.

Since no major rivers exist within Scottsdale's borders, there was never as high a density of Hohokam population in Scottsdale's upper desert as there was near the major rivers like the Salt and Verde Rivers. Nevertheless, archaeological sites in Scottsdale can illustrate how the Hohokam produced food and learned how to survive in the desert. Scottsdale sites can also provide data on how people in the major villages, along the more populated river valleys, interacted with people living and working in the upper desert and mountains, such as north Scottsdale and the McDowell Mountains.

The Hohokam built their villages in areas where supplies of water and food were most abundant. As described earlier, they were masters of the desert and used a diversity of farming techniques to utilize both river water and rainfall to the greatest extent. As they grew more dependent on farming and more successful with their crops, Hohokam population and villages expanded along the river valleys where they also constructed extensive canal systems. However, they could also live in villages miles away from the river's edge where they used a combination of farming, hunting and gathering for food. Upper desert villages in Scottsdale include Pinnacle Peak Village, the Dixileta site, and smaller residential areas on the west side of the McDowell Mountains. Check dams along major washes could have been used to grow crops at these upper desert locations. Dry farming techniques could also have been used in open desert areas.

The social, economic and political ties between villages in the upper desert, like Pinnacle Peak Village, and the larger villages along the river valleys, like Pueblo Grande, have not been clearly defined. Some authors have theorized that there were close ties between the river villages and the upper desert areas. One theory is that villages did not function independently but had close ties with other villages and areas. Specifically, a farming community may have included a combination of river villages with canals and irrigated fields, upper desert villages or seasonal camps with farming areas and plant collecting areas, and even more remote hunting areas in the mountains and high desert. The theory is that with this type of vertical interaction between the rivers and higher elevation areas, the people in the community could survive floods and droughts by using a variety of food production methods.

Scottsdale contains several locations with evidence of Hohokam food production or tool making. It has been speculated that specific villages on the Salt or Verde Rivers used these sites in Scottsdale. Sites used seasonally include: areas on the west side of the McDowell Mountains that appear to have been camps for harvesting native plants or for making tools like arrowheads; an area near 90th Street and Frank Lloyd Wright Boulevard that appears to have been used for food processing; and the Brown's Ranch area.

In addition to villages and seasonal camps, there is evidence that the Hohokam used some areas in Scottsdale for other limited activities. Such areas include sites adjacent to water sources such as the Ochoa Ranch area on the north side of the McDowell Mountains, and a wash and petroglyph area near Dixie Mine on the east side of the mountains. There are also quarries in the mountains that were mined for stones. Some areas have scattered rock fragments as evidence of people using the site to make arrowheads, stone axes or other tools. Several sites for tool making have been found and some locations could even have been used by Archaic people before the Hohokam (prior to A.D. 1).

Some sites were also used primarily for petroglyphs. Usually, petroglyphs are found on isolated small boulders as well as on large boulder or cliff faces. Scottsdale has numerous petroglyph sites around the McDowell Mountains, and one site, the Empie site on Scottsdale Road, is now listed on the National Register of Historic Places. Rock images vary greatly from geometric patterns to animals or figures. Different styles of petroglyph rock images are now associated with different ancient people. The distribution of particular styles of petroglyphs is another way for archaeologists to trace the spread of the Hohokam people.

Another limited activity area is a site that was used to grind native plants like mesquite pods. Evidence of this grinding is found in depressions in bedrock and boulders where the rock was used as a mortar. Bedrock mortars have been identified in numerous locations in Scottsdale where desert plants were being harvested in season. If no villages existed near these mortars, it can be assumed that people must have been coming into the upper desert for food harvesting from other areas like the Salt or Verde River valleys.

Summary of Overview and Archaeology in Scottsdale

Much has been learned about the Hohokam culture and its regional system in the last two decades. It is likely that additional surveys and research by archaeologists in the future will increase our knowledge of how these people survived and flourished in the Sonoran Desert. Archaeologists are still debating many things about the Hohokam culture, therefore a lot of this overview will be subject to future revision as knowledge increases and archaeologists change their theories about the Hohokam.

Although some of the Hohokam canals and settlements in the southern part of the community have been lost and covered by development, Scottsdale has many remaining sites representing the Hohokam and earlier peoples that, fortunately, have not yet been impacted by development. Some of these known sites are on land acquired by the city for the McDowell Sonoran Preserve or on State Trust land planned for acquisition by the city for the McDowell Sonoran Preserve. Archaeologists have also estimated that many sites exist in Scottsdale that have not yet been surveyed or recorded.

There are many undisturbed archaeological sites in Scottsdale spread over a broad area. These include villages, seasonal camps, quarries, tool making sites, food producing areas, and petroglyphs. The majority of the known archaeological resources relate to the Hohokam period with a few sites used by earlier peoples. Efforts will continue to protect known Hohokam sites in Scottsdale and to identify additional cultural resources.

Related Archaeological Information

1. Summary of Archaeological Sites in Scottsdale Referenced in Archaeology Overview
2. Summary of Major Archaeological Sites Outside Scottsdale Referenced in Archaeology Overview
3. Archaeology Overview References List