

Prehistoric Cultures at the Confluence and the Rise and Fall of Cahokia Mounds

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Cahokia Mounds State Historic Site, Collinsville, Illinois

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INTRODUCTION

The earliest inhabitants in the present-day St. Louis area arrived at the end of the Ice Age, and successive generations experienced and adapted to a number of climatic and environmental changes. This presentation will examine the evolution of late prehistoric cultural traditions in this region around St. Louis and the impact that humans and environment had upon each other prior to the arrival of the French in the late 1600s, the beginning of the "historic" period.

Developments in the American Bottom and nearby bluffs are representative of regional prehistoric developments and settlements. The "American Bottom" (referring to the 18th and 19th century settlement of this region by Americans, who generally displaced the French, English, Spanish and Indians who had preceded them) is usually considered to be the broad expanse of floodplain on the Illinois side of the Mississippi River, bounded on the east by the bluffs stretching from Alton on the north to just south of the mouth of the Kaskaskia River near Chester, approximately 160 km. in length (Figure 1). The northern portion of the American Bottom, from Alton to Dupou, Illinois, is the broadest, reaching a maximum east-west width of about 18 km. between St. Louis, Missouri, and Collinsville, Illinois (Figure 2). This "Northern Bottom Expanse" is primarily the result of the confluence of the Missouri and Mississippi Rivers, just south of Alton, especially the scouring action of the postglacial meltwaters that flooded these river basins. Later, as the river valley filled with deposits of silt, sand and clay, the river took a meandering course, changing its route many times, swinging from east to west across the valley. As former meanders were cut off from the main channel they became lakes, sloughs and marshes; streams draining the uplands captured other old meanders. These various fluvial features formed an interconnected "inland waterway" beyond the eastern banks of the Mississippi. They also provided a superb resource base of fish, waterfowl and aquatic plants. Periodic flooding of the region also deposited fertile soils across the ridge and swale terrain of the American Bottom.

There were scattered woodlands concentrated around the aquatic sources consisting primarily of cottonwood, willow, sycamore, maple and hackberry, surrounded by large areas of prairie. Bluffcrests often were topped with hillside prairies and cedar; denser hardwood forests, primarily oaks and hickories, were concentrated along the bluffslopes and adjacent dissected uplands, and tallgrass prairies dominated the interior uplands.

These various environmental zones would have provided a stable set of floral and faunal resources within less than a day's walk from any settlement and ethnobotanical evidence from archaeological sites show that all zones were being exploited, although in varying degrees in different time periods. However, the stability of these resources would be impacted by increased and even over-exploitation, especially as population densities and distributions increased through time.

CULTURAL TRADITIONS

Archaeologists recognize several prehistoric (pre-European contact) cultural traditions in this region: PaleoIndian, Archaic, Woodland, Emergent Mississippian, Mississippian and Oneota. In turn, most of these traditions are seen to have had several sub-phases of cultural development and change. PaleoIndian is generally believed to have ranged from 9500 to 8000 B.C.; Archaic from 8000 to 600 B.C.; Woodland from 600 B.C. to A.D. 800; Emergent Mississippian from A.D. 800 to 1000; Mississippian from A.D. 1000 to 1450; and Oneota from A.D. 1450 to 1550. Actually, the beginning and ending "dates" for these traditions are imprecise and would vary from region to region, but they represent the generally accepted time frames recognized in the American Bottom area. Each tradition would be characterized by an assemblage of diagnostic artifact types and forms, settlement patterns, domicile types and environmental utilization. The subphase designations and durations are constantly undergoing revision and refinement as new data accumulates from ongoing research.

PaleoIndian peoples first arrived in this area around 9500 BC, traveling in small bands. They were relatively nomadic and are sometimes referred to as big game hunters as they did occasionally hunt some of the large species of animals that lived in this region at the end of the Ice Age, but they also would have hunted smaller animals and gathered some plant foods. There is some debate about what caused the extinction of over 30 species, including the mastodon, mammoth, horse, camel, giant sloth, short faced bear, dire wolf, giant beaver, and long-horned bison, most of which were larger than their modern day cousins. Some say it was the rapidly changing environment following the Ice Age, as the climate grew warmer and drier, the ice receded, and grasslands and deciduous forests replaced tundra and boreal forest conditions. Favored environmental niches were changing and the animals were having difficulty adapting. However,

another new factor was introduced-the PaleoIndians. They were now hunting these animals, perhaps killing them faster than they could reproduce. There are even some that suggest diseases may have contributed to the extinctions as other species moved northward following the expansion of the warmer climate environmental niches, bringing pathogens for which the megafauna had little or no resistance. Most likely, it was a combination of all the above. One of the best represented sites of this period is at Mastodon State Park, just south of St. Louis near Kimmswick. The diagnostic Clovis spearpoints and other tools were found in association with mastodons and other megafauna.

The next period of development is called the Archaic. The climate was warmer and drier for the most part, the glacial masses had retreated and deciduous forests and grasslands expanded into much of the Midwest, along with a wide range of other flora and fauna. Human populations increased and settlements were at least seasonally occupied. Regional diversity and territorialism became more important. They often made use of natural rockshelters where available, or built small houses at their base camps or villages from which they would foray at certain times of the year to establish campsites to exploit resources as they became available-fishing and fowling in the floodplain after the spring floods receded, or gathering nuts in the uplands in the fall. Fish, mussels and waterfowl were very important in their diet, as were deer, elk and smaller mammals and other birds, and they gathered nuts, berries, roots and other plant resources. They also began plant husbandry, growing domesticated varieties of squash, gourds, erect knotweed, marshelder, sunflower and lambsquarters. Archaic people also started building a few mounds in some areas, and they began making ground stone tools, not just chipped tools. The atlatl, or spearthrower was the primary weapon, as the bow and arrow would not appear for thousands of years, and their spearpoints were generally large and well-chipped.

In the American Bottom region, the first significant occupations were during the Late Archaic, initially as small base camps, and later as extensive occupations of hunting and gathering groups. The fairly permanent settlements were on the higher, more stable clay meander banks and talus slopes.

Following the Archaic was the Woodland period. In this region, it begins around 600 BC, marked by the introduction of pottery making and the increased emphasis on building mounds, mostly for mortuary purposes. During Middle Woodland times (100 BC-AD 350), these mounds often had a central tomb for high status burials, which were often accompanied by a wide range of exotic and prestige, goods as well as tools and weapons.

Agriculture intensified and expanded to include more seed bearing crops, such as maygrass, little barley, tobacco. Eventually corn, or maize, became an important crop during Late Woodland times, after A.D. 700. The widespread cultivation of maize helped foster larger population densities or concentrations, the production

of larger food surpluses, and the development of more complex political and social organization. The introduction of the bow and arrow greatly changed the hunting strategies as this powerful new weapon allowed harvesting game from greater distances with more accuracy.

The Mississippian period begins to emerge around AD 800. The community pattern usually included groupings of houses and other structures arranged around a courtyard, often with a central post that was sometimes surrounded by pits, and larger structures, probably communal or ceremonial, to one side or in the courtyard area. These formal arrangements suggest the emergence of a ranked form of socio-political organization in the American Bottom region, and perhaps the appearance of chiefs. The presence of large communities suggests population increases.

Corn had become an even more important crop, providing the quantities and surpluses needed to feed larger populations, but the starchy seed crops discussed earlier and many wild plant and animal foods still contributed in major ways to the diet. With this stable food base a foundation was laid upon which the massive community of Cahokia could be built.

Larger populations could be supported and, as population numbers and densities increased, societal ordering became more complex. More well-defined social classes and hierarchies developed; there was increased specialization and division of labor; political alliances became more important; trade was highly structured; conflicts and even warfare between groups and polities increased, perhaps fueled by competition for resources or territory.

Elaborate ritualism also became increasingly important. Perhaps the ultimate expression of this at Cahokia was the construction of a Woodhenge, a circular arrangement of large cedar posts, with a central observation post. From there, the sun priest could observe the rising sun on the horizon as it lined up with certain posts. This calendar could be used to determine the winter and summer solstices and spring and fall equinoxes, as well as other important dates in their ritual cycle. There were at least five Woodhenges built at Cahokia.

During Mississippian, new ceramic forms appeared with a greater variety of form and style than previously seen, and gradually the majority of wares were tempered with burned and crushed mussel shell, mixed with a paste made from local clay outcrops. There was an increase in exotic wares from distant regions, primarily from the south, most likely used as containers for commodities being traded rather than the pottery itself being traded. Exchange networks were well developed and growing, probably under the control of high ranking personages.

Settlement patterns also changed, and there was greater variety in community size. During most of the Mississippian phases, communities outside of Cahokia

were small and moundless, referred to as "homesteads," "farmsteads" or "hamlets." However, a number of villages of small to moderate size were scattered throughout the area, some with one or two mounds that were probably local centers. There seems to be a nucleation of settlement associated with the Cahokia site and some smaller administrative centers, mostly identifiable as multiple-mound towns such as those near the present-day communities of St. Louis, Missouri, and East St. Louis, Dupon, and Mitchell, Illinois. They were not all necessarily contemporary, nor were their peak periods of equal duration. At their inception, some of these communities may have been equal in power or size to Cahokia, but Cahokia soon outpaced them and dominated the area for a couple centuries. Cahokia may have been at its greatest during the Lohmann phase (A.D. 1000-1050), but the subsequent Stirling phase (A.D. 1050-1150) was also a time of dense population and elaborate cultural complexity, and Cahokia rose to dominance as the largest Mississippian site in eastern North America.

The dominant features of Cahokia then and now, are the mounds, as many as 120 of them in Cahokia proper. They were constructed entirely of earth, carried in baskets from Cahokia's many borrow pits. The mounds come in three forms: platform, conical and ridgetop. Platform mounds were the most common, serving as elevated bases for temples, residences of the elite, community storage facilities, council lodges and other important buildings. The conical mounds have been interpreted as burial mounds but few have been excavated and few burials located. The ridgetop mounds seem to mark important locations along Cahokia's major axes, and those that have been tested indicate they do have mortuary functions as well. However, most people were not buried in mounds but in cemeteries; only elite or ritual burials seem to have mound associations, such as Mound 72 with its elite and numerous mass graves of sacrificed young women. All mounds examined thus far show evidence of several stages of construction, perhaps commemorating calendric cycles, the deaths of leaders or ascent of new ones, or ritual reburial of the mound in a rite of purification.

A majority of the "downtown" mounds are clustered around several suggested plazas, the largest being the 40 acre Grand Plaza, south of Monks Mound, which excavations have shown to be artificially filled or leveled. It was as important as the mounds, being the central gathering place for festivals, rituals and public gatherings. It was the heart of their city.

Population estimates for Cahokia have varied greatly. However, many modern researchers tend toward conservatism in conjunction with more recent research and reevaluation of the earlier data, suggesting that population at its peak was probably 10-20,000, sometime between A.D. 1050-1150. Cahokia had the largest known concentration of prehistoric peoples north of Mexico, and was substantially larger than any other Mississippian community, the largest of which are usually referred to as "temple towns," and by virtue of its scale I believe "city" is an appropriate term for Cahokia.

Cahokia was involved in a network of exchange. Its proximity to the confluence of the Missouri, Mississippi and Illinois rivers was probably instrumental in its development as a gateway center. These "highways" for canoe travel and trade gave Cahokia access to the resources provided by the drainages of these great waterways and their many tributaries and the different resources and environments associated with them.

The rise of Cahokia to dominance is in part related to its role in a number of exchange webs that operated both locally and externally. Many exotic materials were being brought into Cahokia. Most abundant was marine shell originating from the Gulf of Mexico and the Atlantic, used mostly for ornament, such as beads, pendants, gorgets, and decoration for clothing. Vast quantities have been recovered from Cahokia and surrounding sites, and possible workshop areas have been identified where the raw material was processed into finished goods. The acquisition of marine shell was probably under the control of certain elites at Cahokia and other administrative centers, who may have served as patrons to craftsmen who fashioned the shell into ornaments and these elites would then control the redistribution.

Copper was also imported, mostly from the area around Lake Superior. Almost pure copper nuggets were cold-hammered into ceremonial ornaments and specialized tools. Sheets of mica from the southern Appalachians were often cut and fashioned into ornaments. Other minerals, such as lead, hematite and ocher were imported, mostly from southeastern Missouri, and primarily processed to make paint pigments, or an occasional rare ornament. The majority (around 80 percent) of the chert (flint) for making tools and weapons came from quarries and outcrops south of St. Louis, and the rest came from several sources in Monroe and Union counties in Illinois. Salt brines were extracted from springs in numerous locations in southern Illinois and eastern Missouri, and evaporated in large pans, and the resulting salt was used in cooking foods and was widely traded.

THE DECLINE OF CAHOKIA: ENVIRONMENTAL AND CULTURAL IMPACTS

What caused Cahokia's demise? There is no single cause or answer, but a combination of factors are believed to have been involved.

A population of any size has to be fed and, considering the estimated size of Cahokia, this would have been a major undertaking. Massive amounts of land would have to have been allocated for agricultural fields. This would mean clearing many acres of grasses, trees and brush for areas of preferred soils, possibly resulting in siltation from run-off into the various waterways, impacting wildlife as habitats were altered or destroyed, and affecting the availability of

certain faunal resources. Also, hundreds of years of farming may have exhausted the nutrients in the soils, reducing yields.

Much of the land surrounding Cahokia may have been essentially deforested to satisfy the need for firewood and construction timber, which came mostly from the slopes, valleys and uplands of the bluffs to the east. An estimated 20,000 logs were needed for each of the four stockade wall constructions, which are estimated to have been 1.75 miles (2800 m.) long. Large areas of forest would be stripped of suitable trees, not only affecting forest cover but also the associated forest flora and fauna which were important to Cahokians. The construction of thousands of houses and countless fires burning for hundreds of years were also major impacts. It has been suggested that increased cutting of bluff forests would elevate the amount of erosional runoff and resulting siltation of bottomland streams. In turn, this would lead to increases in localized flooding episodes which would endanger areas of cropland.

Also, a reduction in local resources meant the Cahokians had to travel greater distances to obtain what they needed. There would be subsequent increased competition, perhaps even conflict, between the regional polities for the remaining resources. The presence of the Stockade is indicative of socio-political changes and indicates regional stresses had escalated. Built during the period from A.D. 1150-1250, the four successive Stockades were primarily defensive features--their ultimate purpose was to protect or defend the central, sacred precinct of the community. From the bastions, warriors could launch arrows at attackers, but the identity of the enemy is uncertain, or if they ever attacked. Perhaps the increased competition for the existing and less abundant resources led to interregional conflicts, or maybe it was more intraregional, as local polities became more autonomous and less dependent on Cahokia, occasionally massing to threaten or raid the once more powerful center.

Within the walled area were Monks Mound and 17 other mounds, the Grand Plaza, and most likely the residences of the ruling class (although excavations have yet to be conducted to verify the latter). Admittance was probably limited to those who lived there or those who had business with them, or for the general population on ceremonial occasions and for public gatherings. Thus, the wall had a secondary purpose, as a social barrier. We are not sure who got to live within, but they were probably affiliated by kinship with the paramount chief. Besides the general population residential areas, there were also definite elite areas outside the wall, but at this time it is not clear how they were distinguished from those within.

Climate change occurred after AD 1200, characterized by increased incidents of late spring and early fall frosts, which would affect cultivated plants and result in a shorter growing season. This was apparently accompanied by a shifting or less reliable rainy season, leading to a greater frequency of moisture extremes such as

drought and flood. Couple this factor with the aforementioned siltation of local streams associated with deforestation and cultivation, and flooding from heavy summer thunderstorms would have had disastrous effects on bottomland maize fields. It is interesting to note that during the Moorehead Phase (A.D. 1150-1250) at Cahokia and much of the American Bottom, there is a decline in population and most settlement is concentrated on the slightly higher elevations, suggestive of wetter conditions and higher water tables. There is also a population dispersal and increase in Moorehead Phase settlements into the uplands.

It is possible that the spread of bison into the region may have affected Cahokia. With waning local resources, the appeal of bison hunting west of the Mississippi may have encouraged some to leave and pursue this resource, if not from Cahokia itself, at least from some of the surrounding settlements. Bison do not appear to have been in Illinois until just before European contact, possibly the 1500s, and no remains have been found at Cahokia.

Other factors which have been suggested as contributing to, but not causing, Cahokia's decline, include nutritional and health problems. There is some evidence that Mississippians elsewhere, and presumably at Cahokia, suffered more health problems than their predecessors. The spread of diseases may have been due in part to the release of soil borne organisms stirred up by the intensive digging for agricultural fields and mound construction, but the greater concentration of populations living in close proximity to each other increased the incidence of contagion.

It was probably a combination of some or all of the above, coupled with economic and political degradation, that sealed Cahokia's fate. It could never be what it once was. Ultimately Cahokia may have collapsed under its own weight. There is no direct evidence for any disaster or traumatic event; it was a gradual process that accelerated during the 13th century and by A.D. 1400 Cahokia was essentially abandoned. The population gradually dispersed as small groups, probably into the local area at first, especially the uplands, then gradually to other areas. They may have established new cultural identities or been assimilated into existing groups, perhaps where they had kin ties.

Another cultural tradition known as Oneota, which may have its roots in Mississippian, had begun to emerge around A.D. 1100 in the Upper Mississippi River Valley and spread into the American Bottom region by the 1400s. Only a few scattered sites have been found locally and it is not well understood at this time, but seems to have been an intrusion into this area. Oneota has distinctive tool types, structures and ceramic decorations that differ from those of the Mississippians. To the west and north it is believed that the Iowa, Missouri, Osage, Otoe, Winnebago and a few other later tribal groups are descendants of Oneota peoples. It is not known who the direct descendants of the Cahokia

Mississippians are, as oral traditions of later groups do not show direct ties to this once great and unique community.