Changes in the Land and Human Settlement Evolution at the Illinois/Spoon River Confluence Fulton County, Illinois

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In 1930, the University of Chicago ushered in a new era of archaeological innovation with their excavations at the Morton site, now a part of the developing Emiquon Preserve and National Wildlife Refuge at the Illinois/Spoon River confluence. Subsequent reconnaissance surveys of this area have located 29 mortuary sites and 129 habitation areas featuring examples of every prehistoric culture now identified in the region. Twenty-seven archaeological excavations have been carried out at these locations. This corpus of often unique information recently has been combined with data from some 850 subsurface excavations and deep sediment cores to assess landform assemblages, related climatic change, fluctuating natural paleo-biotic resources, and their relationship to observed human activity at Emiquon. This paper reevaluates traditionally held concepts concerning the antiquity of landforms and bottomland fluvial events and underscores the importance of qualifying and quantifying a host of interrelated variables when interpreting human and non human articulation with the landscape through time.

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In the summer of 1930, the University of Chicago came to the Spoon River area of Illinois, intent on "Rediscovering Illinois." Their field headquarters at the Morton lodge on the Illinois River blufftop at Emiquon would be the stage upon which many archaeological concepts and innovations still relevant to us today were first developed, tested, and refined (Cole and Deuel 1937). Their field school at the Morton site is often referred to as the "Birthplace of American Archaeology."

Much relative to the archaeology of Emiquon has been accomplished since Chicago's pioneering exploration. Dickson Mounds Museum's research over the past five decades has included nearly all of the 9,250-acre land parcel now held jointly by The Nature Conservancy and the United States Fish and Wildlife Service that comprises the Emiquon Preserve and Emiquon National Wildlife Refuge (Esarey 1988, 1990; Hajic, Harn and Wiant 2008; Harn 1976, 1978, 1983, 1984, 1990, 1991, 1993, 1994, 1995, and 2003; Harn and Klobuchar 2000; Harn and McClure 2004, 2012; McClure and Harn 2005; Munson 1986; Santure, Harn and Esarey 1990; Schroeder 2012; Styles 2012; White and Seider 1980; Wiant 2010; Wiant, Esarey and Harn 2004; Wiant and Harn 2009). Recorded on the properties are 129 habitation areas and 29 mortuary sites that feature examples of every prehistoric culture now identified in the Central Illinois region. Some 210 human occupations are recorded at these sites, representing 142 separate cultural components.

Most of the sites had long been isolated on an expansive landscape with few roads and protected from public access by a large, very territorial agribusiness. Only one of the bottomland sites had been located by collectors, and most of the upland sites were inaccessible until they were first cultivated following forest and pasture removal in the 1980s. This unusual set of circumstances provided unparalleled opportunities to examine pristine debris scatters unbiased by selective artifact removal.

Information about changes in the land and their effect on human occupation comes from a variety of sources. More than a century of farming had opened much of the project area to surface archaeological reconnaissance surveys that ranged in complexity from opportunistic short-term pickups to carefully controlled piece-plot flagging and mapping of total site scatters. Twenty-seven archaeological excavations have been carried out over the years, many consisting of large salvage projects in the aftermath of site destruction by levee repair and farm development, as well as road construction. Other research by the Museum included long-term biological studies, archaeological field schools, and various other cultural resource investigations.

Recently, an exhaustive multi-year archaeological survey of the Emiquon Preserve property was conducted prior to the restoration of floodplain lake, forest, and prairie habitats. During the second year of this project, research unexpectedly benefitted from the Ameren Corporation's excavation of 750 deep holes to anchor an underground gas pipeline across nearly 5.5 miles of the Emiquon bottomland. This unparalleled opportunity to examine, test, and record soil stratigraphy provided significant insights into the geomorphology and complicated fluvial remodeling of the bottomland terrain (Harn and McClure 2004, 2012).

Following these excavations, The Conservancy provided funding for subsurface coring of the bottomland and valley margins to assess the potential for buried prehistoric cultural remains. This and other machine excavation in the absence of visible archaeological remains proved beneficial in verifying the presence of soilsils and sites buried by both ancient and recent fan and colluvial development. The puzzling absence of archaeological remains on some landforms and suspicious presence of what proved to be redeposited artifacts on others were only clarified when these features were dissected by subsurface exploration and proven to be of post-aboriginal age.

Testing likewise corrected long-held perceptions about the antiquity and nature of other geomorphological events, which contributed significantly toward clarifying the complex man-land relationships independently suggested by the archaeological fieldwork (Harn and McClure:103-140). Had we taken data from the archaeological reconnaissance surveys at face value without subsurface verification, the resulting interpretations would have been decidedly distorted. These interrelated archaeo-geological investigations now provide the best documented record of landscape evolution yet generated in the Illinois River valley (Hajic, Harn and Wiant 2008).

The study area was once comprised of a mosaic of wetlands, forest, and prairie collectively described by early European explorers as a biological paradise. Although the Emiquon bottomland appeared deceptively broad and monotonous, it featured significant topographic variation. Numerous channel scars resulting from large-scale fluvial overflows, natural creek relocations, and other minor flooding events occurred throughout the floodplain, many of sufficient consequence to have developed bordering natural levees. Early EuroAmerican settlers saw the remnants of these fluvial events in the form of sloughs, backwater basins, and lakes occupying former channels, all dominated by Thompson Lake (Harn and McClure:31-48).

Contrary to long-held belief, investigation revealed that the current Thompson Lake paleochannel was simply the most recent in a long series of fluvial events that remodeled the bottomland in the aftermath of the great Kankakee Torrent, a catastrophic event that cut a 26-mile-wide channel from Emiquon eastward about 13,500 BC. New channels in the floodplain appeared over the millennia and were active for long periods before their flows were cut off and the beds in-filled. As these channels cut across the floodplain or were later reactivated, their newly created levees and terrace exposures were quickly occupied by early man.

Results of previous excavations combined with comprehensive archaeological surveys suggest that land use and related human settlement patterns fluctuated significantly over time in response to environmental change (Harn and McClure:146-156). Most obvious were the gradual abandonment of sites along extinct, in-filling water courses and the rapid relocation of human activity when new courses were formed. Artifacts from the earliest cultural group to appear on each landform were employed as time markers to calculate the relative age of fluvial events, from the appearance of the earliest Paleo Indian people by 9,000 BC to when the Illinois River last changed its course during the Late Archaic period about 4,000 years ago. These surprisingly accurate age estimates for changes in the landscape, based solely on archaeological site distribution analysis, were later confirmed by radiocarbon assays.

Site sizes and occupational permanence varied significantly. Activities that transpired at the smaller occupations, principally those in the floodplain, are the most difficult to interpret. All of the bottomland sites are positioned on somewhat isolated landforms subject to seasonal overflow, and the narrower range of activities that transpired there is reflected in the low number and general simplicity of their archaeological remains, which typically include widely scattered chert flakes, heat-cracked rock, and a rare chipped stone tool. Limited use episodes of the floodplain are indicated, probably revolving around fishing, gathering, and hunting, along with the processing of food. Most of the sites appear to have represented day-activity stations placed to extract specific resources.

Site scatters on the higher valley margin fans and narrow terrace exposures nearer the bluff increase somewhat from those in the floodplain in terms of size, debris density, and artifact complexity, with two concentrated multicomponent occupations occurring at Coal Creek's point of entry into the bottomland.

Overall, the Illinois River blufftop exhibits evidence of the greatest landscape stability, and with it the greatest occupational permanence. This is characterized by larger site sizes, more complex artifact inventories, a widespread presence of permanent structures and other subsurface storage facilities, and the creation of cemeteries for disposal of the dead. This wonderfully preserved data bank, with its complex artifact inventories, provides a clear window into ancient life at these larger and more permanent occupations. More than two dozen major scientific analyses have resulted from this work.

The overall spatial distribution of Emiquon sites can only be broadly postulated, in part because it cannot be demonstrated that the observed patterns conclusively reflect all human activity that may have transpired in a given location. For instance, Paleo Indian and Early Archaic sites dating 6-9,000 BC may once have been present throughout the bottomland, but Paleo sites may now survive only on the bluff base fans and Early Archaic sites only on the highest surviving landforms because fluvial action had remodeled nearly all of the floodplain landscape after their passing.

Speculation about chronologically later bottomland site distributions is less tentative because, other than river relocation, the landscape remained relatively unchanged after 4,000 BC and was similar to the present in that it was occupied by lateral lakes that evolved into intermittent backwater lakes in the Late Holocene. An increasingly larger Middle Archaic population began to appear on the newly formed natural levees of the final, active Thompson Lake channel after 4,000 BC, with heavy concentrations of living debris occurring on two of the largest sites. However, site distribution throughout the back floodplain appears to have decreased during Late Archaic times, when occupation began to shift to the banks of the present Illinois River channel that apparently had just recently formed.

It is not known that this vacant place pattern was influenced by the cessation of flow through the Thompson Lake paleochannel around 2,000 BC, but it is a pattern that continued throughout later prehistory. Except for one sizeable Early Woodland Black Sand occupation

strategically placed along the abandoned Thompson Lake oxbow at the Lynch Slough outlet, and for a short period when small Late Woodland Maples Mills sites were dispersed throughout the landscape, occupation by later cultures was characterized by larger, permanent villages on or near the bluff and smaller temporary occupations along the Illinois River bank.

Although the landscape remained relatively stable after 2,000 BC, other factors would influence subsequent site distributions. Among these was increasing saturation of the floodplain surface as the in-filling of extinct water courses undergoing atrophication and the buildup of laterally continuous beds of overbank sediment caused surface water to disproportionately spread across the floodplain in relation to its moderate pool height increase. Aboriginal site relocation might then represent a response not so much to habitable land reduction as it was to increased levels of sediment saturation that discouraged occupation by cultures requiring subsurface excavation for their housing and storage facilities.

Few firm population estimates can be generated for prehistoric groups at Emiquon other than the Oneota, the last people to occupy the site after A.D. 1300. It is now obvious that group sizes generally were smaller than once imagined, and individual occupations often were short term and discontinuous. Use of many sites probably could be expressed in terms of hours interspersed over the centuries, with most having had no type of formal structures or facilities at all. Many occupations probably represent seasonal redistributions of the same population; others a continuum of dispersed occupations by the same small group over lengthy periods of time. Once inhabitants left their home bases on the blufftop or higher ground at the valley margin, a majority probably entered the wet bottomland via the Coal Creek fan and dispersed across the landscape pursuing daily activities and seasonal rounds that were dependent upon resource availability.

Thompson Lake was the largest water body that existed in the Illinois River valley and, until its draining in 1923, was internationally known as a hunting and fishing paradise. Few places in the Illinois River valley would have been as attractive for habitation by early man, and hundreds of archaeological sites blanket the regional landscape, representing a plethora of occupational episodes (Harn and McClure: Fig. 19).

This impressive human signature, coupled with the biotic munificence of the Illinois-Spoon River juncture, have long encouraged perception of the Thompson Lake environment as home for an uninterrupted sequence of burgeoning Native American cultures throughout prehistory. However, current research suggests that its early residential populations may have been sporadic and only ranged in size from a few extended families to later occupations that may not have been appreciably larger. No larger populations existed until a late Mississippian group seasonally occupied Emiquon in the early 13th century A.D. And even then, the small numbers of burials in their cemetery and infrequency of house rebuilding in their settlements suggest that both this group and the later Oneota people may have occupied Emiquon for periods of less than 20 years (Harn 1991).

A wealth of new information about the past now has been generated at Emiquon. Sediment coring has succinctly documented landscape evolution (Hajic, Harn, and Wiant 2008).

Deep excavations exposed ancient invertebrate accumulations (Styles 2012) and quantities of preserved, uncarbonized vegetation consisting of various hardwoods, conifers, masses of seeds, and mats of other preserved vegetation (Schroeder 2012) that document natural resources and paleo climates dating between 2,760 and 12,880 BC.

Archaeological excavations produced information on more than 500 human burials, and habitation sites featured numerous burned Pompeii-like houses that had their entire contents preserved intact on the floors (Cole and Deuel 1937; Harn 1991, 1995; Harn and Klobuchar 2000; Santure, Harn, and Esarey 1990). Discarded remains in associated refuse pits added critical information about man's use of the natural landscape in the form of carbonized seeds, nuts, and other vegetation, invertebrates, and copious remains of animals, birds, and fish—as well as tools and equipment used to harvest them. This unprecedented new information is now combining to illustrate how human societies have drawn upon the ever-changing Emiquon landscape and its resources to sustain life there over time.

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