

The Emiquon Archaeological Project: Partnership to the Past

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At the doorstep of Dickson Mounds lies Emiquon, former site of the largest and most productive lake and wetland system in the Illinois River Valley. From the dawn of aboriginal people in Illinois, this unique ecosystem flourished with a mosaic of plant communities and tremendous populations of waterfowl, fish, mussels, and other biologically significant species that served as a vibrant magnet for attracting human populations to the region. Within a century of the first European settlement, however, this natural utopia was leveed, drained, and replaced by agricultural fields. Now, after eight decades of cultivation, The U.S. Fish and Wildlife Service and The Nature Conservancy, a not-for-profit organization dedicated to preserving biodiversity, have purchased 2,200 and 7,063 acres of this area, respectively, with plans to restore Emiquon to its natural state.

Central to this project will be the restoration of Thompson and Flag Lakes, long, narrow, shallow bodies of water that represent ancient, abandoned channel cuts of the Illinois River. Cut off in ancient times as the river changed course and meandered across the bottomland, these oxbow lakes began a slow process of dying as they became inundated with floodwater-borne sediment over the millennia. By European settlement, the original 12-foot-deep Thompson Lake channel cut was half filled with silt, while the older Flag Lake channel had become no more than

a wet marsh. Soon, the water will return, and people, plants, and animals will take their place there again as they have for countless thousands of years.

Much scientific investigation is being carried out at Emiquon in advance of its restoration. Among this work is a cultural resource

program that will document sites of historical and archaeological significance, assess their importance, and develop a plan for their interpretation and preservation. Begun by Dickson Mounds Museum in 2003, this research has resulted in the discovery of 67 new archaeological sites, bringing the total number of identified sites at Emiquon to over 170.

Not surprisingly, all of the newly found bottomland site locations have proven to be small camps and areas of specialized activity. Although

many were clustered in close proximity to the large, permanent bodies of water, archaeological sites also appeared in a variety of locations along old beaches

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and atop low terraces and natural levees bordering abandoned stream channels throughout the bottomland. The absence of sites in some likely areas, the presence of other sites in aberrant locations, and the particular dates of their occupation signified a human settlement pattern at Emiquon inconsistent with locally held concepts about the relationship of archaeological sites to bottomland physiography.

During the 2004 field season, an unforeseen excavation project arose at Emiquon that proved to be critically interrelated with this perplexing research issue—a project that would allow Conservancy and Museum personnel to delve much deeper into the past. Engineers determined that an existing 8-inch natural gas pipeline running under the Emiquon property would have to be anchored to prevent floating upward and rupturing when the area was flooded, and this project required excavation of 750 large holes along over 5½ miles of the pipeline. Because the pipeline route was positioned primarily within the lake beds of Thompson and Flag, it had little impact on archaeological sites. However, the work provided researchers with an unprecedented geomorphological windfall by allowing a detailed examination of miles of bottomland sediments to depths sometimes exceeding 14 feet.

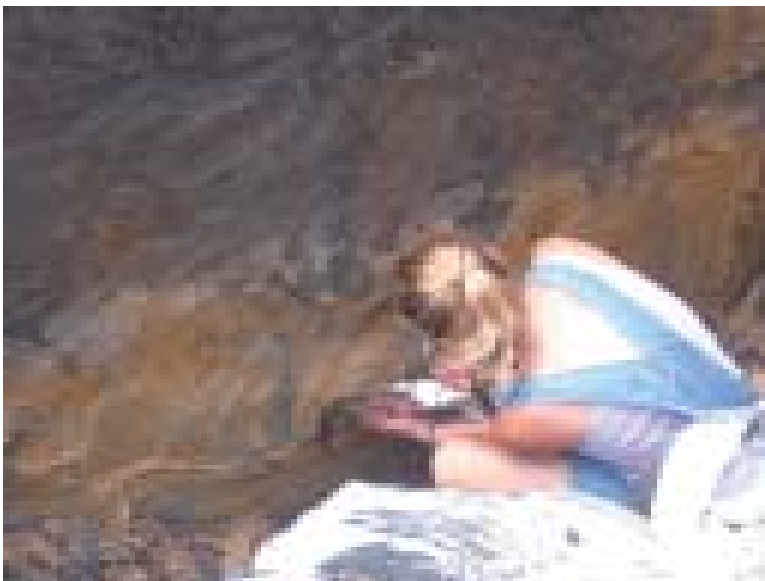
These excavations were carried out by Ameren Corporation, owner of the pipeline, who graciously provided the researchers with equipment and sufficient time to fully examine significant subsurface features that were located there. As the 750 holes were dug, researchers examined the holes for sediment structure, and described, mapped in detail, and photographed more than 200 soil profiles. Sediments were analyzed to determine soil type, texture, and color, and samples were taken of sediment, rock, aquatic snails and mussels, and other types of inclusions. The surprising mosaic of sediment types and their horizontal and vertical distributions soon dem-



Alan Harn excavating from atop saddle bag anchors over pipeline. Photograph by Sally McClure.

onstrated that the floodplain landscape was considerably more dynamic than previously suspected, with massive remodeling of the area having occurred over the millennia. By also documenting the changing type, frequency, and distribution of past life forms tied to the floodplain environment, researchers were able to use these sediment profiles to help complete the story of the lakes and landforms as they came into being and transformed all life around them.

Additional deep test excavations made within the old lake beds and at their periphery also provided unanticipated information about climatic episodes and geological events. Layers of sand and blue silty clay buried 10 to 14 feet under the lake beds produced quantities of perfectly preserved vegetation: accumulations of small twigs, stems, leaves, and seeds in matted layers, as well as large sticks and tree-limb sections appearing as driftwood at a previous water's edge. Selected samples of this vegetation have now been examined by Museum paleobotanists Marjorie Schroeder and Pietra Mueller. Common deciduous trees such as walnut, elm, maple, and oak were present in the sample from the sand layer, but also evident were wood, bark, and needles from spruce and unidentified conifers. Since Illinois pollen records suggest that species such as walnut did not appear in Illinois before about 12,000 BC and that spruce had disappeared by 6,000 BC, it is likely that the sand layer was laid down during this time frame, when the climate was similar to that of present northern Wisconsin. Other fascinating new data are certain to reward



Sally McClure removing sediment samples from a profile wall in the Thompson Lake basin. Note layered bands of sediment. Photograph by Alan Harn.

researchers when this botanical windfall can be fully examined. Although the time of this deposition will be further verified by radiocarbon dating, it is anticipated that the deposit will be related to a major Lake Michigan overflow event that left a similar sand-layered imprint elsewhere in the Illinois River valley at 9,950 BC.

A natural levee sediment accumulation, perhaps created by this 12,000-year-old flooding episode, parallels Thompson Lake about 300 yards to the west. It appears today as a long, narrow ridge of clay running adjacent to the sand layer containing the preserved vegetation. Although the levee has been long assumed to have developed when the Thompson Lake channel was cut, the pipeline excavation raised new questions about the antiquity of this levee and its relationship to hydrological events. Moreover, researchers at the site soon discovered that confirmation of proposed dates for this levee, the sand deposition, and the creation of Thompson Lake itself might already be present in the archaeological record being developed at Emiquon. For instance, of the various classes of artifacts found along the banks of Thompson Lake, none are older than the chipped-stone Matanzas points used by Helton Phase Middle Archaic people, who began occupying the area about 4,000 BC. In this light, it is probable that Thompson Lake did not exist until about 6,000 years ago. It appears to be the last of several oxbow lakes to have once occupied the area and, given the earlier extensive erosional remodeling of the floodplain, it now seems unlikely that evidence has survived for any aboriginal occupations earlier than 4,000 BC.

Did older aboriginal cultures ever reside in the Emiquon bottomland as we know it today, and, if so, what physiographic niches were available for their occupation? Clues are still present to suggest that the westernmost natural clay levee adjacent to the buried sand-wood deposition is an ancient landscape remnant that has survived subsequent erosional remodeling. Located on that levee just south of our excavations is the only Early Archaic occupation in the Emiquon bottomland. Dates between 7,000 and 8,000 BC for the chipped-stone St. Charles and Neuberger points found there would place the creation of that levee well before the deeper Thompson Lake cutting event and probably associate its development with the proposed time of the sand-wood deposition at 9,950 BC. This natural levee remains the only surviving floodplain surface feature apparently available for occupation early in human history.

Are other archaeological sites still hidden from view at Emiquon, masked by the passage of time? It has long been surmised that some sites might be buried by slopewash



Above: Preserved deciduous and coniferous woody vegetation from the deep excavation at edge of the oldest natural levee. Photograph by Sally McClure.



Left: Chipped stone artifacts from the archaeological survey. Bottom row : Early Archaic St. Charles, Hardin, and Neuberger points from the western natural levee. Top row: Middle Archaic Matanzas points.



Machine excavation in progress. Photograph by Kelvin Sampson.

on terrace remnants and alluvial fans nearer the western bluff base, and that these areas would require subsurface investigation. In addition, deeper testing was needed to verify that old buried surfaces did not exist elsewhere in the floodplain. To help answer these questions, The Nature Conservancy provided funding for a series of subsurface investigations, and geomorphologist Dr. Edwin Hajic, a long time Illinois State Museum Research Associate, joined the investigative team.

Utilizing specialized sampling equipment, researchers collected 30-foot-long sediment cores extending from the ground surface to bedrock along a series of transects across the 4-mile-wide bottomland between the Illinois River and western bluff base. Later, a backhoe was employed to further explore selected natural levees in the

bottomland and alluvial fans at the bluff base for evidence of archaeological remains. Although analyses of these investigations are just beginning, the accumulating data invite a major reevaluation of established thinking about river and stream episodes and sediment remodeling patterns at Emiquon. Also under question are natural levee sequences, ancient water levels, antiquity of the lakes, rates and causes of their siltation, and the availability of the landscape for human exploitation throughout prehistory.

Although some of our original hypotheses were confirmed by these investigations, other results were unanticipated. In one example, testing of three atypical natural levees revealed that the small scatters of artifacts located on them represented recent deposition of earlier archaeological remains. These artifacts had been artificially re-deposited downstream within the past two centuries when some catastrophic rain event caused the Big Sister and Keeler Creeks to torrentially bisect existing archaeological sites located on upstream terraces. Documentation of this alluvial event helped explain why areas of high archaeological potential along other bottomland creek levees produced no evidence of human oc-

cupation. All of these archaeologically barren levees may have been developed by the same rain event, long after Native Americans were gone. An important investigative lesson was thus reiterated at Emiquon concerning the complexities involved in understanding early human use of the landscape—a lesson that is too often circumvented today during investigations fettered by inadequate completion deadlines and unrealistic funding. Had we simply accepted the surface results of our archaeological survey without additional geomorphological investigation, the site distribution data would have been skewed and future interpretations about life at Emiquon flawed.

All uncaptioned Emiquon photographs by Gary Andrashko.



The surprising results of the geomorphological testing prompted a reevaluation of old hypotheses about physiographic change in the study area, which, in turn, produced a much clearer understanding of events that had transpired at Emiquon. For instance, one of the old channel cuts with well-developed natural levees remained a prominent feature deeply incised into the northeast side of Thompson Lake. Called “Deep Slough,” it represented the lake’s primary inlet until the time of its draining and had always been viewed as an ancient river meander cutting into the wider, oxbow lake. However, investigation would reveal that the feature was instead a continuation of the torrential channelization by Big Sister Creek, which previously had emptied into Thompson Lake some distance to the south. The explosive energy of the creek torrent cut a new path across the partially sedimented lake bed in creating its own outlet to the river. How long the creek



The Emiquon bottomland as it appears today from the Morton site ridgetop. Photograph by Gary Andrashko.

stayed in that location has yet to be determined. By the time of European settlement, it had changed location again.

Other hypotheses were similarly revised in light of the newly acquired data. Our presumption that many sites would be found inundated by slopewash at the bluff base did not materialize. Although shallowly buried living surfaces were indeed found by the testing, only a few chert (flint) flakes on one of these surfaces revealed its occupation by early people. Instead, we learned that the bluff toe slopes, long assumed to be comparatively recent (Holocene) sediment accumulations, were either ancient geological depositions or shallowly covered outcroppings of bedrock.

Today, there is a silence in the Dickson Mounds bottomland, interrupted only by the hum of the distant highway and vibrations of returning wildlife. But its ancient silence is being broken by

scientists who sift the landscape for voices from the past and bring relevant new information to the present. Despite the exciting finds of the first two field seasons, the Emiquon Archaeological Project has only begun to open the first small window to a fascinating, bygone era. Continuing research through a partnering effort between The Nature Conservancy and Dickson Mounds Museum will provide an unprecedented view of the millennia as researchers proceed in exploration of the remarkable story that still lies buried at Emiquon.

