

Field Notes

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2025 KHC Annual Conference

By Louis Herzner, Archaeology Coordinator



ARI Attendees of the 2025 Kentucky Heritage Council Annual Conference, (L-R) Rachel Sharkey, Betsy Dulle, Garret Williams, Tessa Wilk, Forrest Schmitt, Gus Lehmann, Jack Reed, and Louis Herzner

The 2025 Kentucky Heritage Council (KHC) Archaeology Conference, held from February 28 to March 3 at Kenlake State Resort Park, Kentucky, brought together archaeologists, students, and government officials dedicated to preserving Kentucky's cultural heritage. As the State Historic Preservation Office, KHC plays a vital role in identifying, protecting, and conserving the state's pre-European-contact and historic period cultural resources. Each year, this conference provides a platform for researchers to present their latest findings and engage in meaningful dialogue on compelling archaeological issues.

For the Archaeological Research Institute (ARI), 2025 marked the third consecutive year of participation in the KHC conference, solidifying our ongoing commitment to archaeological discovery and public engagement. Reflecting on previous years, ARI's first experience at the 2023 conference, held at Carter Caves State Park, proved unforgettable. A powerful storm left the park without electricity, plunging attendees into darkness during dinner, and necessitating a "rescue" by a convoy of park rangers.

By contrast, the 2024 KHC conference at the University of Louisville was calmer, but no less eventful. ARI's team, composed of ArchaeoCorps members Tessa Wilk, Forrest Schmitt, and Emily Ingram, along with Director of Archaeology Rachel Sharkey and Archaeology Coordinator Louis Herzner, presented groundbreaking research on ways to differentiate between brick and daub (mud plaster), two building materials that sometimes look alike at an archaeological site. The ARI team's work demonstrated the surprising fact that daub can be magnetic, sparking new discussions on how materials can be properly identified in excavation contexts. The conference concluded with a memorable archaeological tour of the Oxmoor Plantation site, providing further insights into ongoing research.

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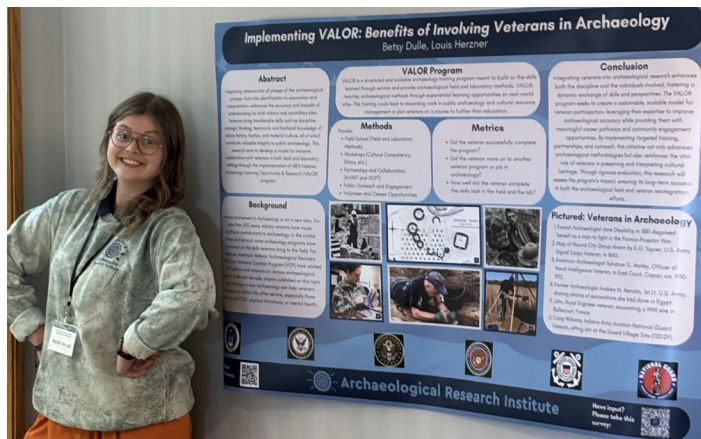
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All fees collected are used to offset the costs of programs offered.

This year's conference at Kenlake State Park was another opportunity for ARI's ArchaeoCorps team to showcase their expertise. Members Tessa Wilk, Forrest Schmitt, Gus Lehmann, and Betsy Dulle were given the unique opportunity to pursue individual research projects aligned with their roles within ARI. Each team member selected a topic of personal interest that reflected their contributions to the organization's work.

Betsy Dulle, ARI's field manager and assistant for the Veterans Archaeological Learning Opportunities & Research (VALOR) program, conducted a study on the skills and benefits veterans bring to archaeology. There were several military-veterans-turned-archaeologists at the conference who were impressed by Betsy's work and provided positive feedback.



Betsy's poster presentation is just one way she is getting the word out about the ARI VALOR Program.

Tessa Wilk, ARI's laboratory manager, focused her research on analyzing a collection of ceramic artifacts found at a location thought to have been the site of a nineteenth-century boarding house. Tessa and lab assistant Garrett Williams did extensive research on the manufacturers of the ceramics, countries of origin, and the dates of manufacture. The lab team found that the dates fit firmly into the mid-nineteenth century, matching the oral traditions of the area.



Tessa and Lab Assistant Garrett Williams combined local folklore and ceramic pattern research in their quest to find the Boarding House.

Meanwhile, field manager Gus Lehmann teamed up with experimental archaeology manager Forrest Schmitt to explore and reproduce precontact salt-production techniques. They realized there was a dietary situation as people settled down into sedentary villages. As they increased the amount of maize in their diets they were not getting the sodium needed for their diet. Forrest and Gus realized that several of the local waterways in the area have "salt" or "lick" in their name. With permission from the staff at Big Bone Lick State Park, they collected brine water from the salt springs at Big Bone. They were able to collect 27 grams of salt through evaporation of one gallon of water. A detailed account of their findings and of the processes used to acquire salt will be published in a future edition of Field Notes.



Gus discussing salt collection with Gwynn Henderson, Education Director at the Kentucky Archaeological Survey.

The 2025 KHC conference proved to be another success for ARI's team, as their diverse research projects, along with the professional connections made, energized their work and set the stage for future discoveries. As ARI continues to make its mark in the archaeological community, the impact of these conferences grows, fostering collaboration and innovative research for years to come.

The ARI Team Reflects on... The Kentucky Heritage Council's 2025 Annual Conference



Betsy Dulle: Field Manager, VALOR Program

"The KHC conference provided valuable insights into preservation, research, and collaboration opportunities. I had the chance to share the research Louis and I have been doing for the VALOR program, and it was rewarding to discuss how our work supports veterans while receiving positive feedback from professionals in the field."

Tessa Wilk: Laboratory Manager

"Conferences like KHC offer an incredible opportunity to learn about on-going projects while connecting with other professionals. The chance to engage in conversations about our research—often with people who raised new questions we hadn't considered—was one of the most valuable aspects. I'm eager to move forward with fresh perspectives."



Gus Lehmann: Field Manager, GIS

"KHC allowed me to present and defend my ideas in front of experienced archaeologists. The feedback I received was invaluable, and I was able to create meaningful professional relationships. Presenting at this conference boosted my confidence in my archaeological skills and left me optimistic about my future in the field."

Forrest Schmitt: Experimental Archaeology Manager

"KHC is a great opportunity to connect with local archaeologists and learn about the work happening in our area. Collaboration was the key takeaway for me this year. Gus and I made our project intentionally collaborative, and the insights we gained through conversations with fellow attendees will shape our next steps. Moving archaeology forward depends on teamwork."



Sign Up for ARI's 5k, Adventure Trek and Grand Opening on May 31st, 2025!



Register Now!

Your single registration allows entry to both the 5k and the Adventure Trek, but you are not required to participate in both. You can choose one or the other if you like. However, we strongly encourage all participants and guests to attend the Open House at the Guard Archaeological Preserve (GAP) to learn about ARI's 2025 field season research, explore our new educational programs and hands-on experiences, and connect with staff and volunteers. It's also the perfect time to become a member, get involved, or donate to support ARI's mission.





INSTRUCTORS:

- RACHEL SHARKEY,
DIRECTOR OF PUBLIC
ARCHAEOLOGY
- LOUIS HERZNER,
ARCHAEOLOGY
COORDINATOR

THIS FIVE-WEEK COURSE NEAR LAWRENCEBURG, INDIANA ENGAGES STUDENTS IN PUBLIC ARCHAEOLOGICAL METHODS IN THE FIELD AND LAB.

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- ✓ REGIONAL HISTORY

THIS SUMMER, JOIN US IN EXPLORING THE ~10,000 YEARS OF HISTORY AT THE MT. NEBO SITE (33HA152) IN NORTH BEND, OHIO. HELP THE COMMUNITY UNDERSTAND WHAT REMAINS OF THIS MULTI-COMPONENT, CULTURALLY SIGNIFICANT SITE NEARLY DESTROYED BY MINING OPERATIONS. ADD TO OUR KNOWLEDGE OF LAND USE, LIFEWAYS, AND MOVEMENTS OF PEOPLE THROUGH TIME IN THE TRI-STATE AREA.

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Archaeological Research Institute

The 2025 ARI Field Season - Identify to Preserve

By Rachel Sharkey, Director of Public Archaeology



Fog settling over the Mt. Nebo site in Southwest Hamilton County, Ohio, October 3, 2024

ARI functions under four primary pillars – Explore, Research, Preserve, and Educate. The past two years fieldwork has been guided by two of these pillars– Explore in 2023 and Research in 2024. In 2025, we plan to focus our efforts on Preserve by protecting local archaeological sites through identification. We cannot know what we need to protect without knowing first what is there!

Mt. Nebo Site (33Ha152)

The Mt. Nebo site is a multicomponent (spanning multiple time frames) site that is located on the property that is now Carriage House Farm in North Bend, Ohio. This site was listed on the National Register of Historic Places but has since been heavily disturbed by gravel mining activities. We will be conducting archaeological surveys and exploratory unit excavations at the site in early summer 2025 to help Carriage House determine what, if anything, remains of the site and how to protect it moving forward.

Stay Tuned - The Mt. Nebo site is one that many in the area have known about or even collected from in the past. Given the disturbed nature of the site, we plan on holding an artifact sharing day where we invite people with artifacts from Mt. Nebo to bring them for a show-and-tell sit-

uation. Much like our Artifact ID days (every second Saturday of the month!), we will work with collectors to identify what they have, take notes and pictures, and send them home with their finds. We want to use this opportunity to learn about the types of items that came from the site before it was disturbed in a new “reverse-archaeology” - using the artifacts recovered to recreate a site.

GAP Access Corridor

Later in the summer, we will be once again assisting our Land Stewardship team by working in the access corridor that runs along the gravel road to the Guard Archaeological Preserve (GAP). ARI hopes to make this area an engaging part of the GAP experience in the future, but first we need to know what is under the surface. Between 2022 and 2024 various methods such as shovel testing, selective augering, and even magnetometry, were utilized to explore the area for buried cultural resources. Not a lot has been found in the area, but there is enough evidence to warrant some larger-scale exploration. Our goal is to open exploratory trenches in the access corridor to better define the possible archaeological resources below the surface. These trenches are excavated like excavation units, just much deeper! The goal is to identify any archaeological deposits that are under the surface to help our Land Stewardship team plan how they can beautify the corridor and make it engaging for visitors while also avoiding sensitive areas that shouldn't have a signpost or walkway placed over them.

2025 in the ARI Lab

By Tessa Wilk, Lab Project Manager

While many archaeologists are itching to get back outside as the weather warms up, the team back in the ARI lab is working indoors, processing all of the artifacts recovered during the previous excavation season. The field season is limited by weather; if you've ever tried to dig in frozen ground, you'll understand why. Lab work, on the other hand, continues year round.



Garrett Williams, Lab Technician, and author documenting artifacts in the ARI Lab

Some people find it surprising to learn that for every hour spent in the field, archaeologists spend three hours or more in the lab. That's because all of the artifacts gathered from the field will come back to the lab to be cleaned, sorted, analyzed, and documented. In addition, bags of dirt from the dig site will be brought back to the lab where they will be emptied into our flotation tank, from which we recover tiny items such as seeds, pollen grains, bone fragments, and chert flakes that yield information about ancient diets and lifestyles. The lab process is thorough and time intensive.

Once all the data from the previous season is completed, we will turn our attention to incoming artifacts, and we can work on developing our current processes.

One of this year's development goals is to build out our "comparative collections," which allow us to look at examples of known artifacts as an aid to accurately identifying those brought in from the field. Currently, we have a large sampling of different faunal remains such as deer, cow, turkey, turtle, and many others. These bones can be compared to pieces of faunal bones recovered in the field to identify the animal from which the bones

came, as well as which bones they are. We also have a large sample of different types of rocks that can be found within the area during excavations. While we have all kinds of rocks, we want to focus specifically on building out our comparative chert collection, as these samples can help us identify stone tools and points that are recovered from both pre- and post-European contact sites.

Throughout the entire lab, organization is key. Currently, we are looking into purchasing many more metal shelving units to hold, in one location, all of our artifacts in the process of being analyzed and researched. We are also looking to update our reference library inventory and to get all of our books organized on bookshelves, in one convenient location.



Artifacts sorted into boxes on the new shelves: white boxes for artifacts that have been processed and gray for those awaiting processing

All of our efforts in the lab are meant to support the work that the field crew does as well as to provide us a solid foundation for ongoing research into the areas we excavate. Many people do not know what happens to artifacts after they have been collected, cleaned, and sorted. While it may seem like they just sit in boxes on shelves, it is the goal of the Archaeological Research Institute to make all of our artifacts readily available for study as we pursue a deeper understanding of our area's rich cultural history.

The People Who Came Before Us

A Timeline of Ancient Ohio Valley Inhabitation

By: Kay Jackson and Lee Strange

Long before Euro-American settlers came to live and establish farms and cities in this part of North America, the area was home to other groups of people. As currently known, human habitation in the central Ohio River Valley began at least 12,000 years ago, and possibly long before that. Over the millennia, many groups of people came and went, leaving behind clues to their lifestyles and their cultures. While it is not easy to piece together the histories of diverse groups of people who left no written records, archaeologists are able to gain insights from oral traditions passed down to living people, and from artifacts such as stone tools, spear points, and pottery sherds, and from features such as mounds, ceremonial earthworks, ancient fire places, middens (trash pits), and post holes, (remnants of ancient structures). Using these long-preserved clues, archaeologists have come to recognize four major historic periods prior to the arrival of European Americans: Paleoindian, Archaic, Woodland, and Fort Ancient (also called Mississippian or Late Pre-contact).

This is the first in a series of articles on the subject of Native American habitation in the middle Ohio Valley. This article presents a broad overview of the four generally accepted pre-European-American time periods. Each time period will be addressed in greater detail in a future issue of *Field Notes*.

The Paleoindian Period >14,000 to 8,000 BCE

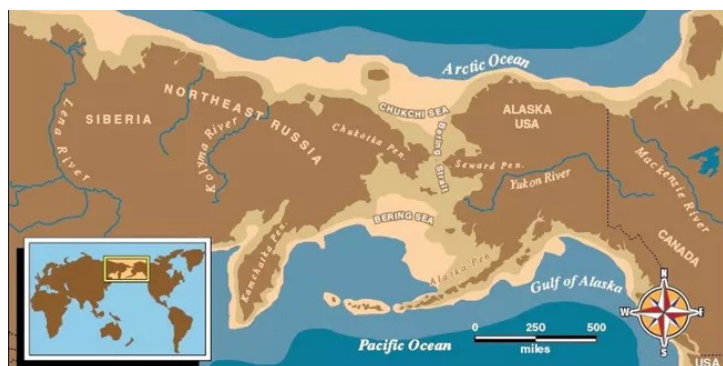


Paleo points and blades such as the Clovis, (left), and the Paleo Lanceolate, (right), display advanced knapping skills.

The land we live on is ancient and, for many people, sacred. We occupy a place which people have called home for over 10,000 years, a land which has

seen many, many changes in climate, flora (plants), fauna (animals) as well as the social-cultural relationships and lifestyles of the people living in the area

One of the most hotly contested debates in Archeology today is the question of when the first humans arrived on the North American continent. Not long ago, there was only one widely accepted theory of how and when people came into the New World. It was believed that by 16,500 to 13,000 years ago, planetary cooling had caused vast amounts of water to be locked up in ice sheets, resulting in a significant drop in ocean level. This resulted in the creation of what scientists called The Bering Land Bridge, a dry land route between Siberia and Alaska. Over time, many groups of hunter-gatherers followed migrating animals across this land bridge into North America.



U.S. Park Service map showing Beringia, the location of the Bering Land Bridge between Siberia and Alaska.

While the Bering Land Bridge migration is still believed to have occurred, there is a problem with the timeline and possibly the single-point-of-entry migration theory. Recently there have been archeological finds as far away as Monte Verde, Chile and as near as Meadowcroft Rock Shelter in southwestern Pennsylvania that suggest earlier arrivals and even question whether migration was by foot, boat or both. This also raises an interesting possibility that people may have entered the Americas at different times and through multiple points of entry. However people came, it generally accepted that by 14,000-10,000 years ago Paleoindians were living in and around the Ohio Valley in a landscape far different from today's.

The environment in Ohio and Indiana would have been much colder at that time - think Arctic. So, when people entered this part of the Midwest, even though the glaciers were slowly retreating into Canada, the weather was still quite cold. This environment supported very different species of plant & animal life.

South of the glaciers, the Great Lakes region was covered by vast grasslands interspersed with spruce and pine forests. Large animals, collectively called “megafauna,” populated the area. Among them were dire wolves, saber-tooth cats, musk oxen, giant ground sloths, caribou, peccaries, giant short-faced bears, mammoths and mastodons.

Paleo-Indians were hunter-gatherers who lived a nomadic lifestyle, traveling in small groups of perhaps 50 to 100 people, following the animal herds on which they depended for food, hides, and tools. Hunting was likely the primary method of food acquisition, but the Paleo-Indians also supplemented their meat diet with whatever edible leaves, berries, roots, and tubers they could find. The land also provided the materials necessary for clothing, shelters, medicine, and the chert and hardstone rocks needed for making points, knives, and other stone tools.

Gradually, as the earth warmed and the glaciers retreated into Canada, the environment in the Ohio Valley changed. Hardwood forests replaced the spruce and pine and the landscape began to resemble what we see today. Unable to adapt to the changes brought by the warming climate, the megafauna died out, opening the area to species coming up from the south, such as deer, small mammals, turkey and other game birds. It was a new world, and lifestyles changed to adapt to this new reality.

The Archaic Period **About 8,000 to 1,000 BCE**



The hafting notches on the Thebes point, (left), and the invention of the bannerstone atlatl weight, (right), are examples of Archaic adaptations to the changing environment.

The Archaic Period came about in response to the warming environment. Like their predecessors, the Archaic people were hunter-gatherers, but they were less dependent on migrating animals, and their land was home to many more species of edible plants and animals, making it possible to survive without leaving the area. Settlements were made along rivers and streams. Fish, birds and mammals were abundant. The recently arrived deciduous trees and shrubs produced fruits and nuts.

The fields provided edible seeds from such plants as sunflowers, goosefoot, and maygrass. New tools were developed, such as the grooved stone axe, and the mortar and pestle, used to grind seeds and separate nuts from their hulls. Container manufacturing transitioned from rock to pottery. The bannerstone, was developed to improve the effectiveness of the atlatl spear-throwing tool. There is also evidence of the beginnings of long-distance trade, as items made from marine shells, mica, and copper appeared. It was likely a good time to be living in the Ohio Valley, and the population grew.

The Woodland Period **About 1,000 BCE to 1,000 CE**



An Adena stemmed projectile point (top left), a Hopewell copper celt (top right), and Hopewell platform pipe, (bottom) are products of the Woodland Period.

The Woodland period marks a crucial phase in the history of Pre-Contact Native American cultures. Horticulture took a big step forward, as did clay pottery technology. Mound building flourished. This period witnessed significant advancements in cultural practices and societal structures. Building on the trends established during the Archaic period, the Woodland peoples began to explore new ways of living, particularly in the Ohio River Valley. Here, several prominent cultures emerged, most notably the Adena and Hopewell. Each of these societies contributed to the rich tapestry of Native American heritage through innovations in burial practices, trade networks, and agricultural development.

The Adena culture, which thrived from approximately 500 BCE to 100 CE, is one of the earliest and most significant cultures to emerge during the Woodland period. The Adena are often credited with pioneering the tradition of building earthen mounds – large, rounded, and sometimes conical constructions used for burials and ceremonial purposes. These mounds, scattered across the Ohio River Valley, are considered iconic symbols of the Adena people.



At 65-feet high, and 800 feet around, the Adena Miamisburg Mound in Miamisburg, Ohio is the largest conical earthwork in the state, and the second largest East of the Mississippi.

The Adena culture was not monolithic, but likely consisted of several related societies sharing a common ceremonial and burial tradition. The cultural influence of the Adena extended beyond Ohio into parts of Kentucky, West Virginia, Indiana, Illinois, southern Wisconsin, and western Pennsylvania. Through their mound-building practices, the Adena left an enduring legacy that would be built upon by future cultures, particularly the Hopewell.

A few centuries after the rise of the Adena, the Hopewell culture emerged, flourishing from approximately 100 BCE to 500 CE in the Ohio River Valley. The Hopewell culture was not a single unified society but a broad network of diverse groups connected by extensive trade routes. This network, known as the Hopewell exchange system, spanned vast distances, from the northern shores of Lake Ontario to the Crystal River Indian Mounds in Florida.

At its height, the Hopewell exchange system facilitated the trade of exotic materials such as copper, obsidian, mica, and marine shells. These items were crafted into finished goods—such as mica effigies, shell beads, and steatite pipes—and distributed across the region.



This Hopewell effigy depicting a human head in profile was recovered in Southeast Indiana. It is made of mica brought from North Carolina.

The Hopewell people were known for their complex ceremonial practices, including the construction of large, geometric earthworks, which may have served both as burial sites and ceremonial centers. These earthworks are believed to have drawn people from hundreds of miles away to participate in shared religious rituals.

The trade and cultural exchanges among Hopewell communities fostered a rich and dynamic society. The reason for the decline of the Hopewell is unknown and has been a subject of rigorous scientific debate.

The end of the Hopewell era was followed by the Late Woodland period during which sites were smaller and more dispersed than those that came before and after. Despite the population size, a momentous technological advance occurred during the Late Woodland period – the development of the bow and arrow.

The Late Pre-Contact> About 1,000 CE to 1,600BCE



Late Pre-Contact artifacts: Fort Ancient arrowheads (left) and a sandstone face pipe (right).

The Late Pre-Contact period was home to a number of distinct cultures, including the Ft. Ancient, which began to emerge around 1000 CE. Occupying the region along the central Ohio River and its major tributaries, the Fort Ancient people inhabited areas of modern-day Ohio, western West Virginia, northern Kentucky, and southeastern Indiana. They are considered contemporaries of the Mississippian culture, another significant Native American civilization, though they developed distinct cultural practices.

One of the defining features of the Fort Ancient culture was their introduction of maize (corn) agriculture to the Ohio River Valley, which significantly altered the social and economic landscape of the region. Fort Ancient people, and more specifically Fort Ancient women were the region's first true farmers. Among their primary crops were corn, beans, squash, and sunflowers, with corn being the most important.

They also became known for their ceremonial mound sites, such as the Great Serpent Mound, which is associated with the culture. Evidence suggests that the Fort Ancient people did not directly descend from the Hopewell but were instead a separate cultural group with their own unique practices and beliefs. The Fort Ancient cultural complex is thought to be the ancestors of the modern-day communities of the Shawnee, Miami, Kickapoo, and Peoria. The Late Pre-Contact Period continued up until contact with European settlers, beginning in the 16th century.



The 1,348 foot-long Serpent Mound in Adams County, Ohio, is the largest known serpent effigy in the world.

The Woodland and Late Pre-Contact periods represent a time of significant cultural development in the Ohio River Valley and surrounding areas. The Adena, Hopewell, and Fort Ancient cultures each left lasting marks on Native American history through their mound-building traditions, expansive trade networks, and agricultural innovations. These cultures' legacies can still be seen in the many earthworks and ceremonial sites that continue to captivate archaeologists and historians today. As we study these early Native American societies, we gain a deeper understanding of the complexity and richness of life in North America prior to the arrival of European-Americans.



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Climate Change and Human Adaptation In the Ohio Valley Before the Arrival of Europeans

By Craig Williams, ARI Volunteer & Geologist

Climate change is a frequent topic in daily news, scientific discussions, political and economic debates, and personal conversations, often accompanied by reports of record-breaking temperatures. For instance, a NASA headline from January 10th confirmed 2024 as the warmest year on record. Although there is ongoing debate about the extent of human influence, the vast majority of climate scientists agree that human activities—particularly those that release CO₂ into the atmosphere—are contributing to climate change. Throughout history, the primary drivers of climate change have varied, with global temperatures rising and falling, but humanity's ability to adapt has consistently played a crucial role in survival.

Climate Change Over Time (A Cycle of Cold and Warm Periods)

Humans living in the Ohio River Valley today are able to enjoy the advantages of warmer weather associated with a temperate climate, compared to the colder year-round temperatures our ice age ancestors experienced from an arctic climate that dominated most of the earth's northern hemisphere. Scientific investigations have shown that, over the past 400,000 years, our planet has undergone a series of warming and cooling trends. And although we seem to be in a trend of warming, some scientists believe that another ice age is possible within the next 100,000 years.

Inspection of climate data obtained from polar-ice-cap drill samples found temperature and CO₂ levels have followed a recurring cycle up and down over the past 400,000 years. The data trends revealed by the ice samples show temperature and CO₂ levels spiking at a high point about every 100,000 years. Interestingly, it only takes about 25,000 years for warmer climate temps to reach their highest peaks from the previous lows, leveling out for about 10,000 years, followed by a much longer 75,000-year average drop, lowering temperature for about 10,000 years, then suddenly rising back up again. The previous highest temperature and CO₂ levels occurred around 100,000 years ago, then dropped for about 75,000 years, with the last glacial maximum ending almost 25,000 years ago. As global temperature rose, ice age glaciers melted, retreated, and by about 12,000 years ago most of North America below the Great Lakes was free of ice.



As recently as 20,000 years ago, a scene like the one above could have been seen across much of Ohio and Indiana.

Climate Change's Effect on the local Physical Landscape

The physical landscape of the tri-state Ohio-Indiana-Kentucky region displays terrain features consisting of hills, valleys, rivers, creeks, and lakes. Most of these terrain features are a result of multiple glacial-period advances and retreats. Ice buildup, movement, and melting are the main mechanisms that formed and modified our local terrain features. Most noticeable within this area are a number of large river valleys, flanked by hills made of sedimentary (fossiliferous limestone) bedrock layers. Most of the river valleys contain large amounts of gravel made up of all three rock group categories—sedimentary, igneous, and metamorphic. The gravel made of sedimentary material was typically dislodged from local bedrock surroundings, whereas, the igneous and metamorphic rocks were most likely derived from Canada, broken loose and transported south into the tristate area by glacial movement and meltwater.



Glacial outwash, deposits of sand and gravel, exposed in the bank of Indian Creek in Butler County, Ohio.

Climate Change Effect on the local Flora and Fauna (plant and animal life)

Flora: If one were to drive north today through upper Michigan and into Canada it would become apparent that the number of coniferous (needle leaf) trees begin to outnumber the broadleaf trees, and shrubs and thick grasses become more prevalent in the landscape. The ecosystem becomes limited to colder-weather plants and trees than would be found in the warmer southern “temperate” regions of North America. As our regional and local climate warmed over the past 14,000 years, the number of broadleaf plants and trees that thrive in a warmer environment began to outnumber the needle-leaf variety. Remnants of these earlier needle-leaf days can still be found as pockets of spruce trees in the upper Appalachian mountain tops, and in a number of nearby parks including the Indiana Dunes area, the Hocking Hills in Ohio, and Kentucky’s Red River Gorge.

Fauna: 14,000 to 10,000 years ago, the most recent ice age was coming to an end as the overall climate temperature was once again on the rise, leading eventually to the ecosystem that exists today. The cold-weather megafauna such as woolly mammoths, giant sloths, short-faced bears, big cats and giant beavers, were being replaced by deer, bison, small game and waterfowl who were better suited to a warmer environment.



12,000 years ago, the changing environment ended the reign of megafauna depicted in an outdoor diorama at Big Bone Lick State Park, KY (top photo), and opened the area up for the deer, small mammals, and game birds we see today.

Climate Change Effect and Human Adaption

The effects of climate change on human beings over the past 14,000 years reflect adaptations to the warming climate and the changes in plant and animal food sources. As the ecosystem evolved, so did human lifestyles and technologies. As described in the article, “The People Who Came Before Us,” (Page 8 of this issue), the Paleo people of the late glacial period lived nomadic lifestyles, following the herds of migrating megafauna. They hunted with both throwing and thrusting spears.

As the planet warmed and the cold-weather plants and animals gave way to warm-weather species, the Archaic people lived as semi-sedentary hunter-gatherers. They gathered fruits, nuts, seeds, and roots. They developed new hunting techniques, using dart points, attached to shafts, launched with a spear-throwing device called an atlatl. They attached stone hammers and axe heads to wooden handles. They knapped chert (flint) points, knives, scrapers, and drills.

As the climate became more temperate, the Woodland people developed pottery for cooking and storing food. They hunted, fished, and collected freshwater mussels. They gathered seeds, nuts, and fruits, and they began to cultivate useful plants. More varied and reliable food sources gave them time to develop art, religion and extensive trade routes from which they acquired exotic materials such as obsidian, mica, copper, and marine shell, much of which they turned into beautiful works of art. They built mounds and vast ceremonial earthworks that drew people from many miles away.

The Fort Ancient people of the Late Pre-Contact Period, enjoyed better hunting success thanks to the development of the bow and arrow. The more temperate climate also meant a longer growing season which made possible the first Ohio Valley farms. Corn, beans, squash and other food plants led to increased populations, and the creation of large villages.

Climate change has been well documented throughout the past. One thing that has been consistent is that people are resilient and able to adapt to this amazing, changing, world in which we live.

Introducing...

“Midwestern Archaeology”

A New Podcast Exploring Ancient Histories in America’s Heartland

ARI is excited to announce the launch of our brand-new podcast, Midwestern Archaeology Podcast — or MAP for short! Hosted by Lee Strange and Amanda Duncan, this show dives into the rich and often overlooked archaeology (and sometimes paleontology) of the Midwest.

Many people don’t realize that this region of the U.S. holds a deep and fascinating human past. Through this podcast, we hope to shed light on the ancient stories embedded in the Midwestern landscape—from prehistoric settlements to groundbreaking discoveries shaping our understanding of the past.

We are currently in the middle of a series exploring the four periods of Native American Pre-Contact history. Up next: the Archaic Period! Tune in as we uncover how early communities adapted, innovated, and thrived.

Future episodes will explore major themes like the development of agriculture, the rise of warfare, and the birth of mound-building cultures. We’re also excited to bring you interviews with leading scholars in the field. Upcoming guests include:

- **Dr. Christopher Carr** on how LiDAR is transforming archaeological research
- **Dr. Aaron Comstock** on the fascinating Fort Ancient culture
- **David Howe** discussing early dog domestication in North America

Have a topic you’re curious about? We’d love to hear from you! Send suggestions or questions to us at edupm01@exploreari.org.

You can listen to Midwestern Archaeology anywhere you get your podcasts. Join us as we unearth the stories of the Midwest’s ancient past—one episode at a time!



Hosts of the podcast, Lee & Amanda (above) their cover art for the Midwestern Archaeology Podcast

Find the Midwestern Archaeology Podcast (MAP) on the following platforms!

Apple Podcasts
Spotify
Amazon Music
Pandora
iHeartRadio

Visit RSS.com for a full list of where to listen!



Latest Happenings at ARI!

By Samy Norris & Molly Miniard

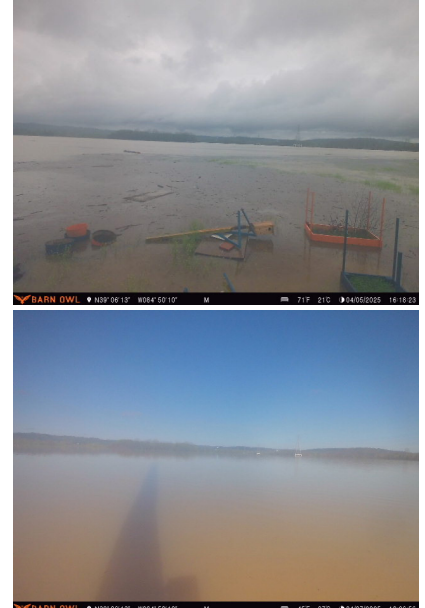
With field season just around the corner the ARI Team has been hard at work getting ready for what is bound to be our biggest and best summer yet! From The Story of Whiskey City Gala to Adventure Trek and GAP Grand Opening planning spring is not a slow time here at ARI.



Forrest Schmitt, Experimental Archaeology Program Manager, swapping shirts with Queen City Clay (QCC) Member, Jon Stein, after his residency with QCC in March.



The side lot of ARI has been looking a little different recently. We are working to beautify the space and we found some archaeology in our own backyard along the way!



With the worst of the flooding behind us for this year, here is a look back on how high the water was at the GAP. The top picture was 4/5 and the bottom picture was 4/7.



An ARI field trip to visit Angel Mounds. Record flooding kept the team from exploring all of the grounds but a fun and educational time was had nonetheless!



The Story of Whiskey City was the party of the year here in Lawrenceburg, at the Whiskey City Liberty Theater.



Archaeological Research Institute



May

22nd.....Great Miami Heritage Tour (GMHT) Morning Tour Starts at 10AM | Afternoon Tour Starts at 1PM
27th.....ARI CLOSED for Memorial Day
28th.....First Day of Field School
30th.....VIP Grand Opening 5:00 PM - 7:00 PM
31st.....ARI Public Grand Opening, 5K, & Adventure Trek 9:00am - 2:00 pm

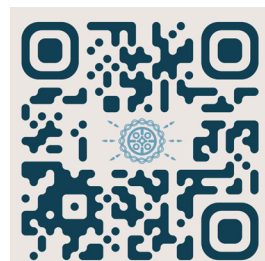
June

7th.....Lawrenceburg, Farmer's Market 9:00 AM - 1:00 PM
10th.....Happy Hour History Speaker Series: Dr. Aaron Comstock 5:30 PM - 7:30 PM
14th.....Artifact, Rock, and Fossil Identification Day 10:00 am - 2:00 pm
17th-20th.....High School Camp 10:00 am - 3:00 pm
24th-27th.....5-8 Year Old Camp 10:00 am - 12:00 pm & 1:00 pm - 4:00 pm

July

8th.....First Day of University of Cincinnati Field School
8th.....Happy Hour History Speaker Series: JeMiah Israel 5:30 PM - 7:30 PM
8th-11th.....9-12 Year Old Camp
12th.....Artifact, Rock, and Fossil Identification Day 10:00 am - 2:00 pm

**ARI is open to the public every
Wednesday and Saturday for
experiences starting at
10 AM and 2 PM.**



BOOK TODAY!