The Aucilla Research Institute's Newsletter

# THE CURRENT

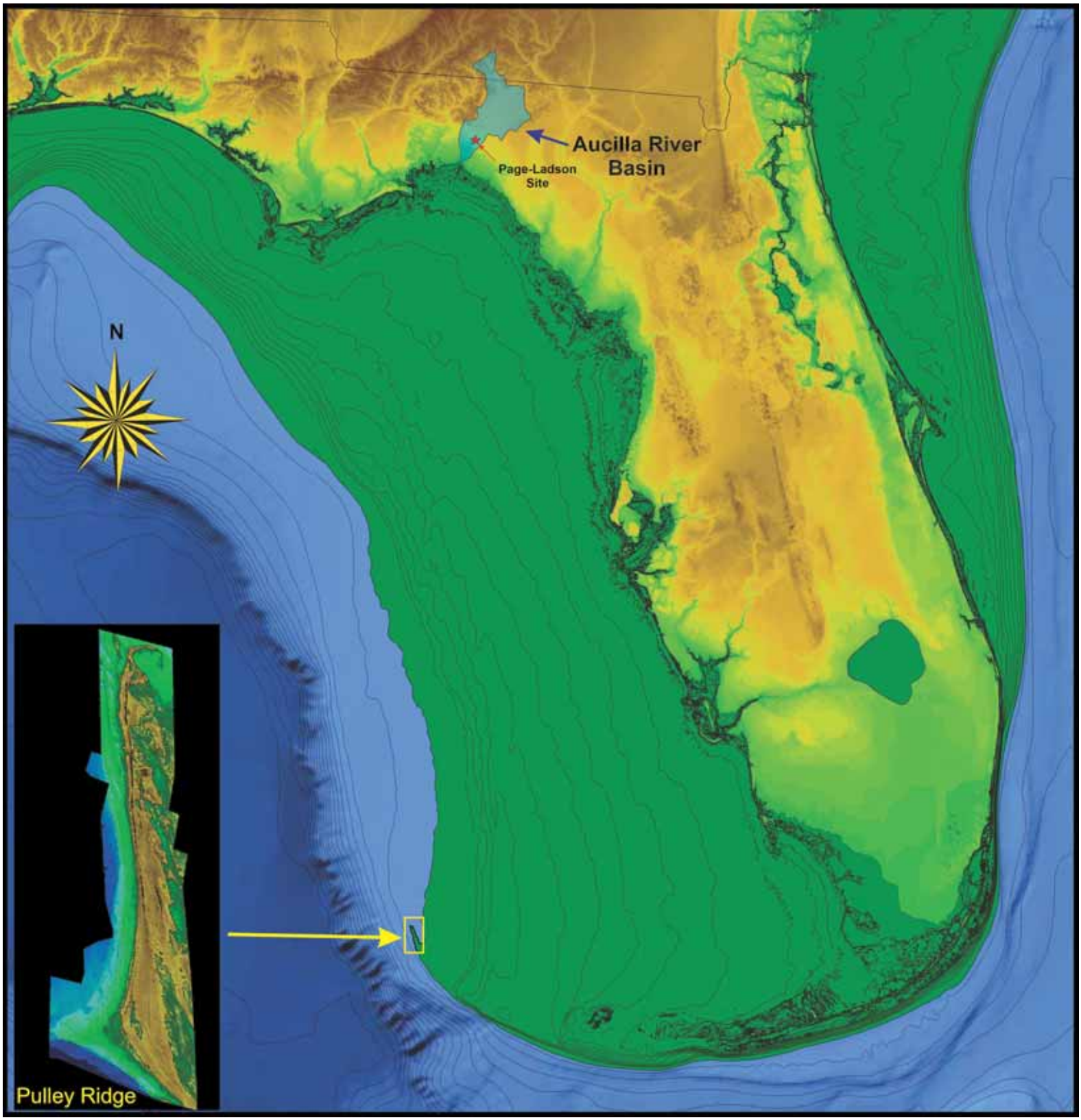
## Through Which Research Flows

Vol. 1 2022

### Inside This Volume:



**And More!**




Research carried out on the Page-Ladson site in the Aucilla River demonstrated that Paleoindians occupied Florida beginning about 14,500 years Before Present (BP). Previously, it was thought that the Clovis culture represented the first occupants some 13,000 years BP or about 1,500 years later. The older occupation discovered at the Page-Ladson site represents a significant milestone in several ways. One of the significant implications is that Paleoindians potentially could have occupied Pulley Ridge on the edge of Florida's southwestern continental shelf. By Clovis times the sea level had risen and drowned both Pulley Ridge and about half of the continental shelf as it transgressed towards its modern level. Pulley Ridge is about 19 miles long north to south and despite sea level rise still maintains evidence of its former barrier islands and backwater estuaries. Also note that the Page-Ladson site in the Aucilla River would have been about 120 miles to the nearest coastline at 14,500 years BP.

## THE CURRENT

is published on an annual to semi-annual basis to update the readership with the status of the Aucilla Research Institute's projects and research. The newsletter is published by the Board of the nonprofit Aucilla Research Institute at:

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Subscription to The Current is **FREE**. Printed versions are available to our supporters and the public as an electronic newsletter.

## Cover Image

The Wacissa River looking east taken from the mouth of the slave canal.

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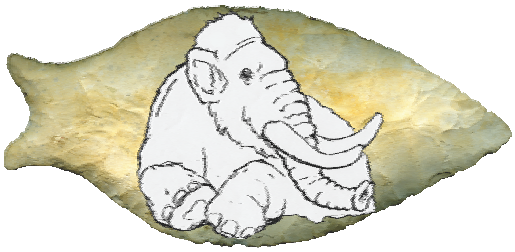
**Centerfold Images**





**Vision Statement**
ARI members, scientists and associates are committed to understanding all facets of the Earth Sciences including Cultural and Natural History as well as their complex connections with Earth's climate change, sea levels, and sustainability. As well, the institute acts as a center of innovative thinking and activity relative to the prehistoric and historic past. ARI is dedicated to training future generations of scientific researchers in discovering the health and wealth of our earth resources and history. This is essential not only to advance knowledge about our planet, but also to ensure society's long-term welfare. Exploring the past to help envision the future to instill good stewardship practices to protect our historic treasures and promote good practices for ensuring a bright tomorrow.

**Mission Statement**
The Aucilla Research Institute (ARI) is dedicated to advancing knowledge of Earth Science including Cultural and Natural History. Through our projects, partnerships and incredible team of researchers, members and associates, ARI has a sustained commitment to enhanced education and research. Investigating the past to envision the future.

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# Part I
# Towards the Nomination of a National Historic Landmark: Page-Ladson Site Discovery in the Aucilla River North Florida

By James S. Dunbar

In 1980 and 1981 archaeologist keen on investigating underwater prehistoric sites began surveying parts of the Wacissa River. The results were promising though short-lived and preliminary. That was to change in 1983 with the publication of a Florida Anthropologist volume dedicated to Paleoindian sites. It included two important articles.

One article documented a site in the Wacissa River that yielded late Pleistocene bison bones. Roger Alexon and his diving buddies from Daytona Beach thought they found the bones of a long-horned steer that still free-ranged the Wacissa basin prior to their removal to pastures in central Florida. Inspecting the skull cap later that evening they found a chert fragment embedded in the skull between the horn cores. Curious about their find, they took it to Dr. David S. Webb, a paleontologist with the Florida Museum of Natural History in Gainesville. To everyone's surprise the bones belonged to an extinct late Pleistocene *Bison antiquus* (see top figure on page 11). Webb contacted the author and asked him to accompany Alexon on a site inspection. They identified bone fragments and artifacts scattered on the surface. The artifacts included Weeden Island and Ft. Walton pottery sherds and a utilized chert flake that was not diagnostic of age. However, an undisturbed sediment level (see top right figure page 21) found beneath loose surface deposits uncovered numerous freshwater shellfish including apple snails and the smaller banded mystery snail. The banded mystery snail no longer inhabits the river systems of the Big Bend area of Florida (still living but extirpated from the area). From the undisturbed, shell-rich sediment, a fragment of bison bone was recovered. It was in pristine condition compared to the specimens exposed on the surface. The bone radiocarbon dated to 13,045 ± 132 calendar years before present (cal. BP), a time just prior to a climate event known as the Younger Dryas. Two articles about the site, one published in the *Florida Anthropologist* and the other in *American Antiquity*. show that Paleoindian, Clovis peoples occupied Florida at that time.

However, another article in the *Florida Anthropologist* was destined to have a lasting impact for the study of underwater Paleoindian sites in river basins. Authored by the late Don Serbousek challenged archaeologists to investigate Paleoindian artifact concentrations in the Aucilla River. As early as 1935[1] articles were published about artifacts including carved ivory shafts, found with mastodon remains and other fossils in Florida rivers. The first underwater archaeologists ignored river channel artifact and fossil concentrations. Instead, cenote sinkhole sites such as Little Salt Springs in Sarasota County and Devil's Den in Levy County became the focus of investigations, perhaps because they were located in areas of still-water environments that were easy for divers to assess. Instead, the first SCUBA divers investigating the spring-fed rivers channels continued to find and talk about the richness of the river sites. Dave Webb, a paleontologist, was quick to recognize the abundant fossil concentrations. In a volume of the National Geographic Society's *Research Reports* for 1968 investigations , Webb characterized the sites in the Aucilla River as potentially "the most interesting Late Pleistocene sequence[s] in Florida". In 1983 a team of research divers including Dave Webb and the author accepted Don Serbousek's request to survey a site in the Aucilla River.

The first field season took place in the fall and most of the time was spent investigating the Half Mile Rise Sink site. At least in the area investigated clear evidence of sediment disturbance was found, and we felt it wise to inspect other sites up and down the river. A number of locations were assessed. Buddy Page, a retired Navy Seal and Vietnam veteran, came with us on the last day of the field project.

Anchoring the boat on a site that would become know as Page-Ladson[2], Buddy asked if we would like to see a "really good" site. We quickly obliged that yes, we would! He casually looked over and told us, "well you are anchored on it". Buddy was in the water first and before we were ready to jump in, he resurfaced with several mastodon and other Pleistocene bones asking, "is this what you are looking for?" To be truthful we were looking for a site that might have stratigraphic integrity. Nonetheless, without hesitation we dropped in the water and descending to the bottom.

The Aucilla River is most often a dark tannin-stained river with little to no silt. In other words, the water is dark but not muddy meaning artificial lighting works and is needed!

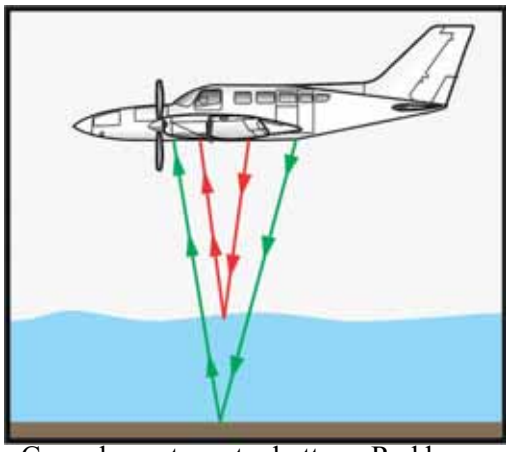
# Bathymetric LiDAR Applications for Underwater Archaeology

## By George M. Cole

At the end of the last glacial maximum, the Gulf of Mexico shoreline in the Florida Big Bend area was as much as 120 miles offshore of the present North Florida coast. As a result, considerable evidence of earlier civilizations is now covered by the waters of the Gulf. Further, such evidence is generally relatively undisturbed compared to that in current upland areas, which has often been disturbed or obliterated by human activity. Yet, very few areas in the Gulf have been mapped with sufficient resolution to detect such submerged archaeological evidence.

A graphic example of the lack of high-resolution mapping is a shoal lying a few miles offshore of Florida's Big Bend area. The feature is of significance, having been high ground at the confluence of several of Florida's rivers during the paleo-era. Later, as sea levels rose, it became an offshore island and then, even later, became a shoal along a major route to the Spanish port of St Marks as well as for shipping activity during the early US era. Yet, except for a few lead-line soundings taken by the U.S. Coast and Geodetic Survey in 1881, the shoal has never been mapped.The soundings and contours reflected on the current NOAA hydrographic charts are based solely on those few 1881 soundings. Although this is an extreme case, it serves to point out that higher resolution mapping is needed if submerged areas are to be studied for archaeological evidence. Unfortunately, the relatively shallow water restricts use of most modern hydrographic mapping techniques to provide such mapping by conventional means.

The Aucilla Research Institute has recently been pioneering a relatively new technology to overcome the lack of high-resolution maps, particularly in near-shore areas. This effort involves airborne LiDAR (Light Detection and Ranging). This system transmits timed laser pulses to measure the distance and azimuth to a point on the ground or an above-ground feature. The laser is projected by means of a rapidly rotating mirror that moves from side to side along the flight line. To determine an accurate position of the aircraft, an airborne LiDAR system typically includes a geodetic grade airborne GPS receiver that measures the position of the center of the aircraft every second. For precision, this requires corrective differential measurements from a nearby GPS based station, typically required to be located within 25 KM of the aircraft. Also, to measure the movement of the aircraft around the center position, an inertial measurement unit (IMU) is used to determine roll, pitch and yaw about 200 times/second. The combination of the GPS position and the IMU data allow the determination of a precise position and orientation of the aircraft when a pulse is generated. That knowledge, together with the deflection angle for the pulse and time elapsed, allows the calculation of the location of the ground point hit by the pulse, similar to the process used in land surveying by a total station in determining a position.



Green beam to water bottom, Red beam for water surface

Some modern LiDAR systems are capable of operating at speeds up to 100,000 pulses per second, resulting in millions of points being defined by precise, three-dimensional geographical coordinates. The number of points is increased by the fact that multiple returns are often received for a particular pulse. Thus, a large "point cloud" of data is produced by LiDAR systems. When examining the points in the point cloud, it is not obvious whether a particular point is one that has been reflected off the ground, or one that has been reflected off some above ground feature. Therefore, the classification of points into layers is a significant challenge in the processing of LiDAR data. Various spatial analysis processes have been developed to classify data points into layers such as bare earth, vegetation, and structures based on the trends of the points. Nevertheless, a certain amount of human editing and ground truthing is necessary to get an accurate picture of the bare earth surface and any above-ground features.

Most commercial LiDAR systems for terrestrial applications use infrared lasers with wavelengths between 800nm -1550nm. The pulses from such systems tend to be reflected from water

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# Discovering and Preserving African-American History: ARI's Jefferson County Cemetery Survey

## Willet A. Boyer III

Between 1827 and the beginning of the Civil War in 1861, numerous plantations were established in what is today Jefferson County. Many of the incoming American settlers to the region came originally from South Carolina, where large scale agriculture had been a thriving economy. These new tracts of north Florida farmland were cleared, worked, and maintained by the labor of enslaved African Americans. Some of the first recorded property transactions in the Jefferson County public records are the sale and mortgage of enslaved men, women, and children. Slaves also supported the plantations as carpenters and woodworkers, brickmakers, masons, blacksmiths, farriers, and other skilled craftsmen. Most of the surviving antebellum structures in Jefferson County are made by enslaved workers from local resources, including clay for brickmaking and timber grown on the plantations.

It was the custom on many plantations for the owners' cemeteries and the cemeteries of the slaves to be placed side by side. Slave burials were frequently identified by wooden markers and the dead buried in wooden coffins, which have not survived the years. Since slaves fabricated the bricks used on Jefferson County plantations, a number of early slave cemeteries made use of bricks for burial crypts. This is different from many other areas of Florida, where bricks had to be imported and were therefore a luxury item to which most slave had no access.

After the Civil War, during Reconstruction, many of the formerly enslaved people of Jefferson County continued to live on lands they and their families had lived before. In 1867, prior to the granting of citizenship to African Americans by the passage of the 14th Amendment, many freedmen throughout Jefferson County signed contracts to perform labor for landowners in exchange for a share of the crops they produced. These freedmen's contracts, listing African-American workers and families, show family names whose descendants still reside in Jefferson County. By 1870, with the passage of the 15th Amendment, granting African-Americans the right to vote, at least three African-American militia companies had been formed in Jefferson County. Some of the soldiers of these companies' muster rolls were also signers of freedmen's contracts in 1867, showing that they continued to live in Jefferson County and to establish themselves as citizens. In a number of areas, including the Mount Zion Cemetery north of Dills, plantation owners deeded land to African-American churches for religious worship and for burial areas.

**Mr. Thomas Glen at El Destino**

After Reconstruction ended, various African-American communities survived and maintained a strong cultural tradition of individual and community landownership and practice, including the continued establishment of churches with associated cemeteries and settlements in Jefferson County. In 1910, Jefferson County had a population larger by a third than it does today and had a majority African-American land ownership. In terms of cultural practice, this was reflected in the rise of the pallbearer's societies – organizations that took small payments monthly from their members in exchange for a guarantee of a space within a cemetery and a crypt built and maintained by the society for an individual.

During World War I (1914-1918) and World War II (1939-1945), many African-American men and some women in Jefferson County served in the armed forces of the United States. Some returning veterans of World War II played a role in the organization of the civil rights movement, both in the United States at large and in Jefferson County specifically. Many of these veterans were interred in family church cemeteries.

Despite family and community bonds, many small scale, African American cemeteries have been lost to time. Since 2019, the Aucilla Research Institute has been working with local residents and families to discover, protect, and preserve historical African-American

# The Aucilla River Prehistory Project 1991-1993: Seeking the Holocene - Pleistocene Boundary at the Page-Ladson Site, Aucilla River, Florida.

Irvy R. Quitmyer and Joseph M. Latvis

Scientific enterprises seek to elucidate various phenomena associated with the natural world by assembling a collective knowledge base resulting from observations, hypotheses, theories, data, and peer-reviewed publications about experiments, thus verifying or rejecting such studies. Arguably, science is a self-managing and self-correcting process. It can be viewed as a living process where there can be considerable changes in interpreting our observations' meanings; in this arena, science grants us permission to be wrong, which teaches us more about our subject matter. It is critical to remember that the methods that we use in scientific experiments guide the overall outcome of data interpretations. This issue of The Current provides a short outline of how we changed our excavation and sampling methods to enlighten our view of a changing world environment recorded in the underwater sediments of the Aucilla River during the Late Pleistocene and Early Holocene. We have used the book edited by S.D. Webb, (ed.) et al. 2006. *First Floridians and Last Mastodons: The Page-Ladson Site in the Aucilla River*. Springer, Netherlands, for the preparation of this article. Our readership will find this book a fascinating story of 20 years of exploration and inventive scientific inquiry.

Many people imagine a well-lighted, sterile laboratory with off-white walls when thinking about scientific research; however, our laboratory was the Page-Ladson Site (8Je591) located in the dark, cold waters of the Aucilla River, Jefferson County, Florida. Between 1983 and 1994, co-chief scientists Dr. S. David Webb of the Florida Museum of Natural History (FLMNH) and Mr. James S. Dunbar of the Florida Bureau of Archaeological Research (BAR) guided the research efforts. Under their management, site-specific details of the scientific objectives were directed to FLMNH staff. Site-and mission-specific diving field methods required to safely and efficiently accomplish these research objectives were provided by the director of diving operations, Mr. Joe Latvis, and project operations manager Mr. Irv Quitmyer (1991-1993) FLMNH.

The Aucilla River Prehistory Project (ARPP) is multidisciplinary in scope where a wide array of academic scientists (e.g., paleontologists, archaeologists, soil scientists, geologists, zooarchaeologists, underwater videographers, paleobotanists, stratigraphers, and malacologists) brought their expertise to cooperatively study the physical evidence of the Holocene - Pleistocene boundary recorded in the sediments of Page-Ladson. These researchers were paired with citizen scientists, representing a group of volunteers with diverse life experiences that served as field crew members and research divers. The mix of citizen and professional scientists resulted in a kind of intellectual hybrid vigor where new and exciting ideas about underwater research and science were exchanged on cold nights around a basecamp campfire. Nonetheless, our field methods prioritized crew safety, research quality, and productivity. Educational training, public outreach, and, whenever possible, appreciation and enjoyment of the pristine natural world were encouraged. Easily stated - *The motto of ARPP, faithfully recited for each new group of participants, was: We steadfastly seek the three S's. These were Safety first; then science; thirdly, smelling the roses.* (Webb et al. 2006).

The Aucilla River flows out of southern Georgia, crossing the Gulf Coast Lowlands of panhandle Florida before it spills into Florida's Big Bend in the northern Gulf of Mexico. It passes overland, underground through karst limestone, and swamplands along its course, gaining its dark red tannic color. The Page-Ladson Site is located in Jefferson County, Fl, where the river emerges from underground, thus forming a quiet sediment basin (see bottom figure on page 11) that represents the ARPP's laboratory. The only way to travel to work in this remote location is with the efforts of a large surface support crew, boats, and well-trained divers to excavate the stratigraphic record from the Page-Ladson basin. During all field sessions, SCUBA and surface-supplied air systems were used. Typically, the tannin-stained water was so dark that a 1000 candle power light was needed to excavate and record observations successfully. Test excavations proceeded by hand and the dredge that vacuumed the sediments to a surface and through a floating screen unit where crew members collect the samples.

Early ARPP foundational research began in 1983 with the first of five excavations occurring annually up to 1990 (Units A-E, bottom figure page 11). This work was critical in defining the site and demonstrating that the

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# Enthusiastic Plans and Projects with Glen Doran, First Board Chairman of the Aucilla Research Institute

## Grayal Farr

Glen Doran (1950-2021) was instrumental in creating the Aucilla Research Institute (ARI). His vision was invaluable in launching the nascent ARI, and his international reputation lent instant scientific credibility to its mission. But as a true "dirt"archaeologist, Glen insisted on intellectually and often physically challenging field research projects to challenge ARI staff and its membership. One of them was the GeoProbe archaeological sampling program.

Glen was born and raised in the West Texas "oil patch." He'd never actually worked on an oil rig, a fact provable by him by the fact that he "had all his fingers and toes." Still, you could tell it bothered him a little, as if he'd missed out on part of his youth. One year the Florida State University (FSU) Anthropology Department was offered a big chunk of "left over" budget money for a research project. Glen (Dr. Doran), then the department chairman, opted to buy a device called a "GeoProbe". GeoProbes come in various sizes. Ours was one of the smallest. Think of a Morris Minor-size diesel engine precariously mounted on a set of wheels and equipped with a "direct push" coring device. It wasn't technically a "drilling" rig, and Glen was a little sad about that; however, as with a real oil rig, one had to take care to retain one's fingers and toes. So, it was close enough. Glen loved it.

Archaeological researchers around the Southeast and as far west as Glen's Texas loved it, too. The GeoProbe pulled sediment cores from as deep as 30 feet. It was inexpensive and only

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***Glen Doran and the GeoProbe*** **at the Cape Canaveral base of operations adjacent to Wernher von Braun's former office, Cape Canaveral Air Force Station facility. This is Glen's *I love this look*!**

# So, You Want to Build a Mastodon?

**Tom Harmon**

When I was first asked to think about reassembling a Mastodon cast that was made many years ago by artifact enthusiast Don Serbosck … well I think you can fill in the blank for yourself. You see I was one of the people who had gone down to Daytona Beach to bring back the Don Serbosck collection. I knew better than most the condition it was in. What we picked up filled 2 - 16ft long box trucks and a couple of vehicles. Some of it was in a little bit of order, labeled, but most was not. As the casts of the three Mastodons were in no logical order, loading the transport vehicles and unloading for storage was trying, to say the least. Nevertheless, mission accomplished, and minds turned to just how the assemblage of this disarray would be done.

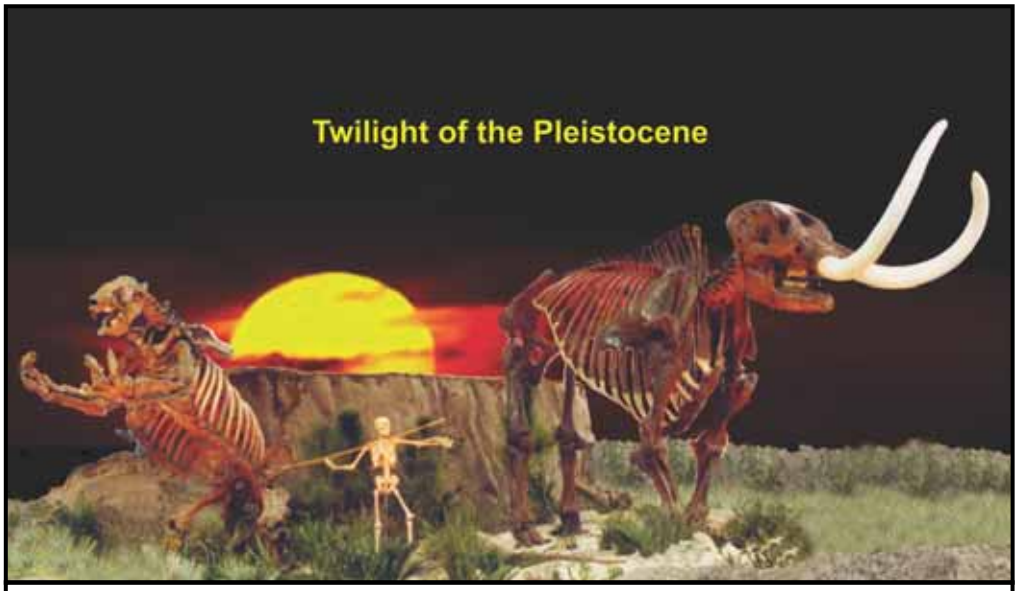
Now, it had been noted that there were different colored dots on some of the bones. Looking at these dots the red won out with the most markings, and a set of bones were assembled using unmarked bones to fill in where no identification colors were found. Like finding pieces to a puzzle, a complete mastodon was eventually laid out. Next mission, how do we erect this thing in a stable fashion keeping in mind that it needs to be taken down and reassembled at different venues?

As individual bones were inspected, some of them had been prepared for exhibit (e.g., joints had been smoothed and prepped for painting); most were not. Those that had not had large strips of fiber glass sticking up or voids at the seams. This assembly of artificial bone was going to take a good bit of work to get ready. I started out trying to use my sanders. Once the ridges are removed then the sanders come into play. Because of the hardness and sharpness of the fiber glass, I succeeded in tearing up the pads. I tried using tin snips on the really large pieces and then filling them down with my rasps. This worked really well, but it was slow, it was hot. I needed something faster (see picture of me and dremell.)

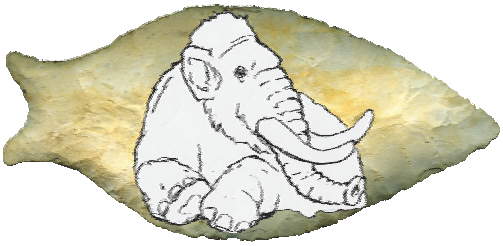
So Mister Dremell came to the rescue. I started using some cutters, spiral and drum. They worked really well, except they were a little aggressive. I then found a flat disk grinder and proceeded to get two, and that did the trick. Over the next month I was able to get all of the excess off the casts and smooth them all down. I started using plaster to fill in the voids. Then I realized the skeleton may end up outside on display. I am now going back and replacing it with a bondo-like product that is waterproof.

The next step will be to build the metal framework to hold Priscilla up and make a base to mount him on (yes, low and behold Priscilla is male). We will see you in March at the Monticello Opera House where Priscilla will get her coming out party with the public.

**END**




**Priscilla and a cast of a giant sloth skeleton with a human skeleton for scale, were on display at the South Florida Fair in the late 1990s. Difficult to say if the atlatl thrown spear would gravely wound the animal or just make it angry. The Priscilla skeleton is actually that of a large male, i.e. a boy named Sue.**



**Don Serbousek May 27, 2004 at his home.**

# Collections Donated to the Aucilla Research Institute

C. Andrew Hemmings

Incredible collections of early fauna and artifacts were recently donated to ARI. This is the Don Serbousek and the Tall Timbers Research Station and Land Conservancy contain materials largely recovered from the Aucilla Basin. Materials from numerous well-known sites throughout the Aucilla and its tributary, the Wacissa, are represented (see page 21, left image) .

**Tall Timbers Collection Highlights**

Tall Timbers researchers collected faunal remains and artifacts from numerous sites in the Aucilla River. Much of their collection was generically attributed to Williams Landing, but several specific sites are also documented, particularly Sloth Hole and adjacent the Cypress Hole. A small volume of fossils from sites in the Wakulla River are also included in the collection.

From 1976 until 1986 David Gillette published articles about the fauna from the Aucilla and Wakulla rivers, particularly the rare Margay-like tiny cat, *Leopardus amnicola.* This roughly 4 lb feline survives today only in Central America. In Florida, it has been documented at thirteen Pleistocene fossil sites, six of which are in the Aucilla (curated at the Florida Museum of Natural History, Program of Vertebrate Paleontology). Paleontologically *L. amincola* is also a rare animal. In the Aucilla, it is present at the Page/Ladson, Sloth Hole, and the Bent Palm archaeological sites. Thus, there seems to be a good chance this small cat was extant when the first people found the Aucilla. A jaw and several tooth fragments, which will require close comparative analysis, were included from the Tall Timber's Sloth Hole collection. David Gillette, then working with Tall Timbers, published the first article documenting the species in North America. The article entitled, *A new species of small cat from the late Quaternary of the Southeastern United States* (1976) placed the Aucilla on the paleontological map.

On the archaeological side, a number of artifacts from the Sloth Hole site were a genuine surprise. There were close to 50 bifaces and biface fragments that included about 25, unequivocally Paleoindian Clovis in manufacture. There were no other identifiable diagnostics, nonetheless, some of the fragmentary pieces are likely to have Clovis origins. Most of the fluted preform fragments (about 15) were clearly made by experienced flintknappers, but the remainder were novice or teaching pieces made by far less proficient apprentices. Sloth Hole was a reliable water source located about ¼ of a mile from a chert quarry during Clovis times. True craftsmen were also making and finishing Clovis tools, no doubt as an educational opportunity and necessity.

A particularly tantalizing addition to the Sloth Hole Clovis toolkit was a teardrop-shaped, fluted, bifacial adze measuring about 3.5 inches long. This artifact is the slightly narrower version of its twin found by the Aucilla River Prehistory Project in the late 1990s. It is similar to what are believed to be woodworking tools found at Clovis and Late Paleoindian stratigraphic levels from the Gault and Buttermilk Creek sites in Texas. They are also found across the Mid-South. This form is decidedly different and may in fact be a little recognized tool for working ivory and bone. Sloth Hole also yielded numerous unifacial tools consistent with Paleoindian types that may be Clovis related.

Several containers of Sloth Hole fossils represent aquatic species. That said, roughly a third represent a mixture of Pleistocene age extinct and extant fauna. Finally, more than eighty percent of the worked ivory from North America has been recovered from Sloth Hole. The Tall Timbers collection has added to the count with several ivory tool fragments along with the second known ivory needle tip found in a bag of unsorted sediment.

A box of Cypress Hole material had about 400 specimens of heavily river-stained and tannic acid-pitted White-tailed deer (*Odocoileus virginianus*) bone from displaced context. There were several unstained bones from an undetermined, *in situ* context that represent both extant and extinct Pleistocene species. Unlike the Sloth Hole sample, few aquatic species were present as well as a few avian (bird) bones. Beaver and the locally extripated muskrat, (*Ondatra zibethicus*), were the only aquatic mammals present. Racoon and fragmentary dog size bones represented the carnivores.

The most interesting unstained bones included a tapir-sized (*Tapirus veroensis*) foot bone and three fragments of tapir to horse-sized (*Equus spp.*) fossils. They were certainly worth the effort to positively identify them. Smaller foot bones, again likely tapir, along with the end of a tapir-size scapula and several small long bones likely associated with the muskrat mandibles are also unstained. Because unstained bone samples from the Aucilla often have surviving collagen, they have the potential to be radiocarbon dated.

Finally, only seven artifacts were present from Cypress Hole but included a stained bone point tip and two smaller bipointed bone tools most likely fishing gorge hooks (both 2-2.25 inches long).

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# The Millennium Park site (8PI018) and the Aucilla Research Institute's New Ground Penetrating Radar Assists in Graduate Research

Emilee McGann

The Millennium Park (MP) site (8PI018) is a late Pleistocene (late Rancholabrean North American Land Mammal Age [NALMA]) paleontological locality in Boca Ciega Millennium Park (BCMP), Seminole and Pinellas Counties, Florida, USA. Paleontological fieldwork conducted in 2007 and 2012-2013 recovered thousands of unmodified fossil specimens, a potentially butchered paleo-llama metapodial, and several human-modified lithics within a 6 m x 3 m excavation block. Fieldwork conducted in July of 2021 set out to investigate whether this site has a potential Paleoindian (possibly pre-Clovis) component.

Since the site data yielded consistent gaps where the human and faunal association was concerned, our study comprised of a ground-penetrating radar (GPR) survey, excavation of a 50 cm x 50 cm test pit, three shovel tests, twenty bucket auger tests, and three 1m x 1m units. The 2012-2013 investigations did not have corresponding geophysical data, only a rough-location GPS point, so the goal of GPR survey was twofold: to locate past excavation areas for future GIS mapping, and to provide the best data for determining where to place excavation units for this project. A depressed area was believed to have been the location of earlier excavations. The borders of the old block were not clear nor were they marked.

Thus, the first objective of GPR survey was to create an image of the sites' subsurface. Due to park regulations, we were only able to clear small lines of vegetation to run the survey. In total, we ran eight lines across the site, which took approximately one hour. The results of the survey post-data-analysis indicated the existence of a paleofluvial feature as well as portions of the old excavation blocks. Additionally, we were able to identify the site stratigraphy, including what we believed to be the Pleistocene surface.

With the intention of ground-truthing the GPR data, we placed a 50 cm x 50 cm test unit near where we believed the old block excavations were, as well as close to the GPR test lines indicating the paleofluvial feature. Testing down to 100 cmbs indicated consistency (though not full proof) of a paleofluvial feature due to a thick, soft, well-sorted sand stratum (like beach sand) with a sharp transition to a much darker brown stratum directly underlying it. A lithic tool was recovered in the white sand stratum, which was consistent with CRM reports from 1999, in which tools were reported to only have been located within the white sand stratum.

Additionally, we dug three shovel tests to confirm the stratigraphic sequence and verify disturbance from the block excavation. Next, we used this information in conjunction with the GPR data to identify the potential corner of one of the block excavations. We then placed twenty bucket auger tests to determine the boundaries of the excavation block (we were hoping to catch the "unit" from which the lithic tool found during the 2012/2013 excavations came). Based on our results, we were able to choose a location for an initial 1m x 1m unit.

We were able to take the 1 m x 1 m unit down to 130 cmbs. While we recovered some Pleistocene fossils, no human material was found. We opened a second 1 m x 1 m unit to catch the edge of the "unit" (within the old block) in which the 2012/2013 lithic tool was recovered. We were able to excavate it to 70 cmbs before the walls collapsed due to ground water infiltration. We believe we caught the edge of the old block, and one piece of human-modified lithic was recovered in a higher stratum. A third 1 m x 1 m unit was placed along one of the GPR lines that indicated a paleofluvial feature. In the white sand stratum, we excavated a feature and recovered a lithic tool within the feature. No other archaeological materials were excavated.

In all, GPR proved useful in locating ideal areas in which to place excavation units. The model for the MP survey was a 2019 study at Wakulla Springs run by the Aucilla Research Institute, with Jessica Cook-Hale performing the GPR survey and data analysis. At MP, the fossil-bearing layer was found in sandy soil as high up as 60 cmbs, which is 40 cm higher than the average depth (1 m – 1.5 m) of Pleistocene and Early Holocene surfaces in Florida (Cook-Hale 2020:195; Hulbert et al. 2014). Thus, the use of a 60-nanosecond depth profile – which can penetrate over four meters – was more than sufficient for penetrating MP soils. We were able to establish contact surfaces, identify a potential paleofluvial feature, and place a test pit, shovel tests, bucket auger tests, and three 1 m x 1 m units with the highest chances of recovering necessary data. We will be able to build planview maps and stratigraphic profiles based on the GPR survey data to add to my MA thesis data. Additionally, the survey yielded ground-truthing GPR data concerning

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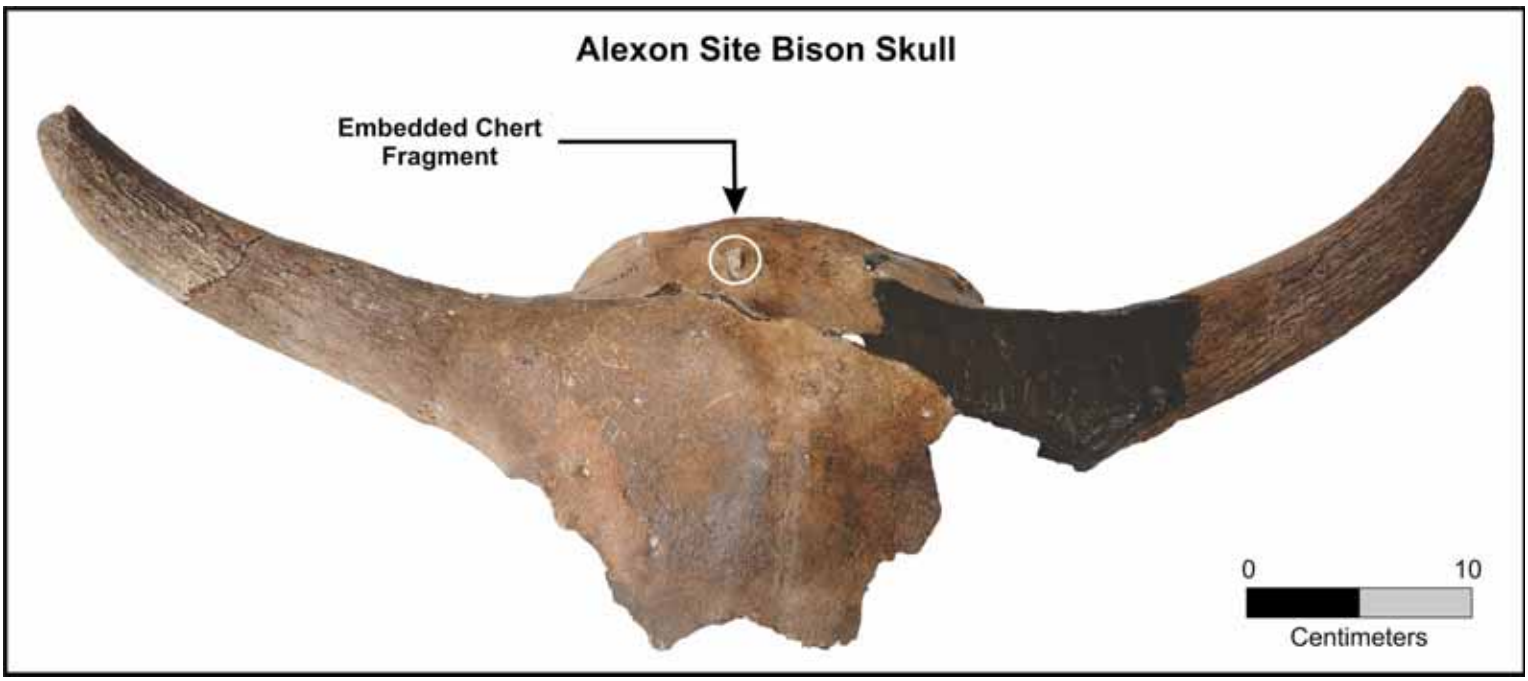
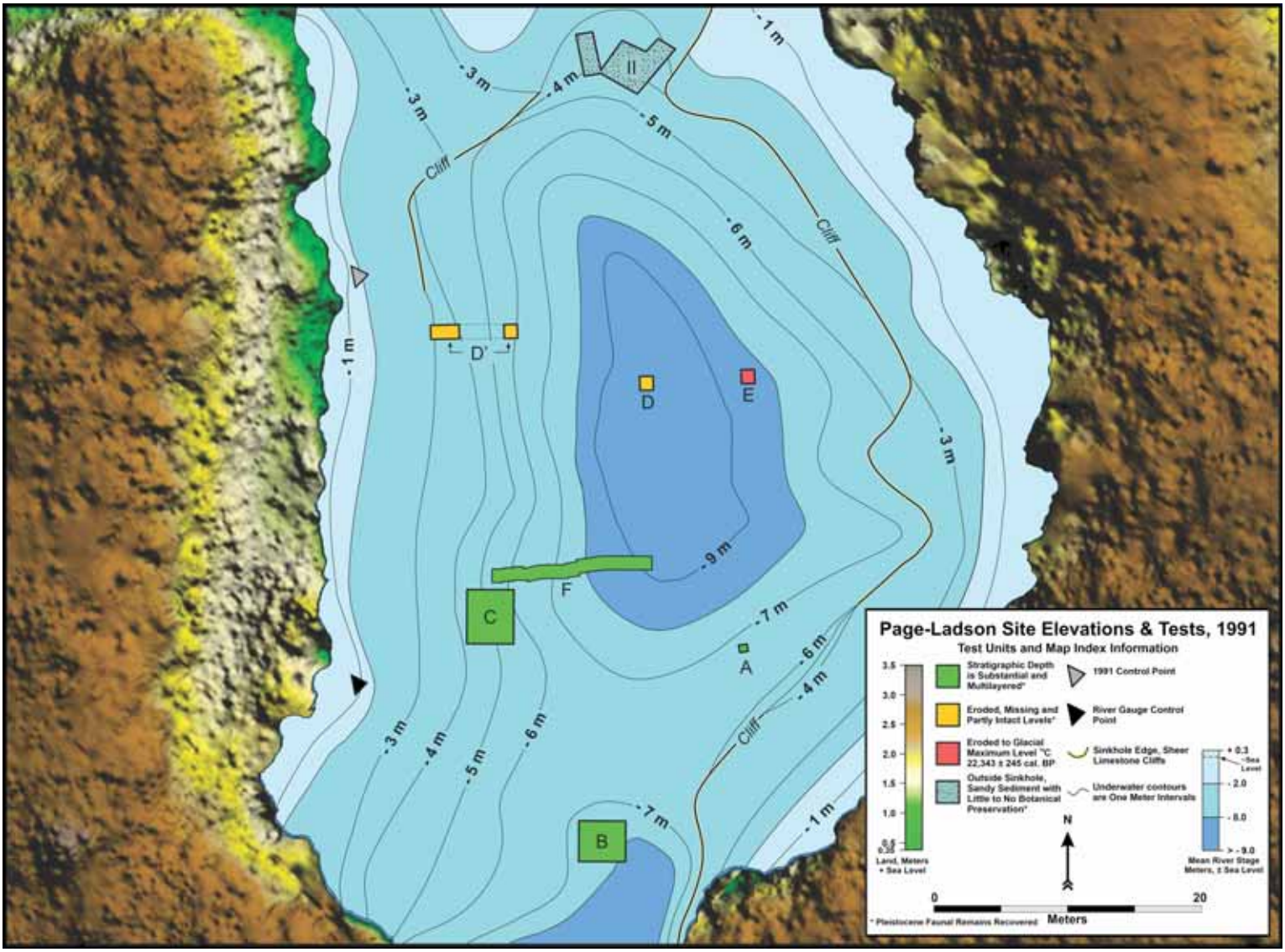
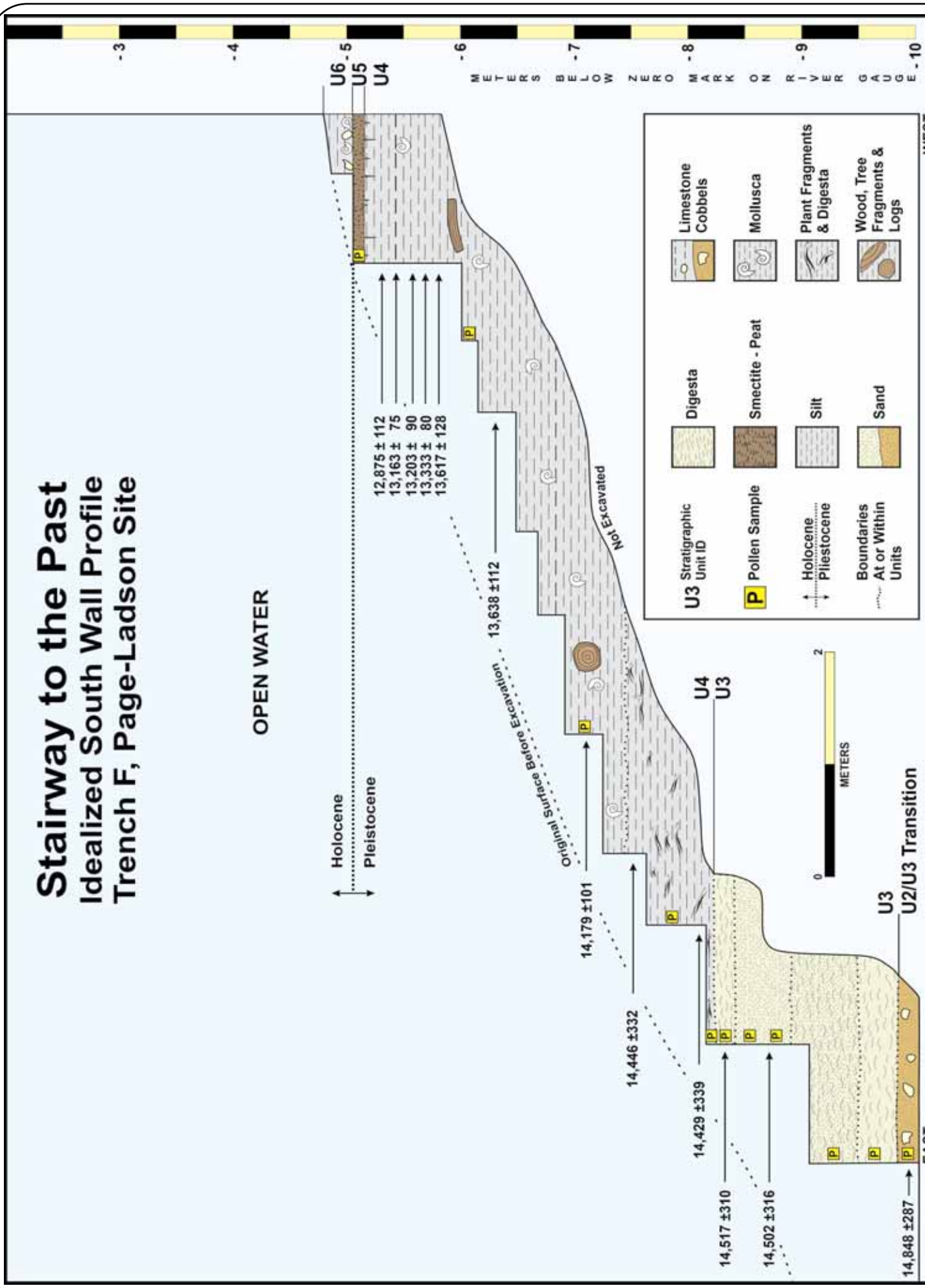



***Bison antiquus*** skull cap with horn cores dated ~13,045 calendar years before present.






Stairway to the Past (Trench F, 1991)Showing the South Wall Profile, Pollen and Radiocarbon Sampling Locations, Stratigraphic Units, Calibrated ages before present and the Pleistocene-Holocene Boundary.

From page 9

In the primarily unstained material bag, there was a second distal end bone point of deer in very good condition. The only stone artifact present was the tip of a lanceolate preform broken in manufacture. There is a reasonable possibility that this was made by an apprentice Clovis knapper, as it has many of the expected diagnostic characteristics including beyond midline flaking, keeping the edge straight, making the edge centered on the straight biface. In any case, the biface was broken when a limestone inclusion was encountered. This tip fragment will be checked for a refit against other Cypress and Sloth Hole material in the future.

**Serbousek Collection Highlights**

The Don Serbousek collection included two containers of bone pins\points with several hundred individual tools in at least a dozen different forms. All of them appear to have been found at a handful of sites in the Aucilla. Hidden amongst the deer bone tools were a couple of worked ivory tools. One was a three-inch long section of broken ivory shaft. This specimen has the largest diameter of any ivory tool yet found in the Americas.

The bulk of the collection includes large bone fragments as well as boxes with complete bones and teeth from sites in the Aucilla River. While there are plenty of larger animals represented (mastodon, mammoth, horse, bison, etc.) Don really had an eye for the medium and smaller exotic taxa, and his collection includes a spectacular array of now extinct South American species such as both capybara's (*Neochoerus pinckneyi* and *Hydrochaeris holmesi*), the glyptodont (*Glyptotherium floridanum*), tapirs, and at least two species of sloth (*Megalonyx jeffersonii* and some *Paramylodon harlani*).

Thankfully, Don collected and retained a large volume of unsorted matrix from several Paleoindian sites. Don sorted some but there are many containers yet to sort. The next container of matrix to be sorted appears to have about 3000 specimens. The majority is represented by riverine species, limestone pebbles and sediment, yet many important specimens are likely be found.

It goes without saying that paint dries faster than one can sort through a box of matrix, yet it keeps one riveted because the next handful is as likely as any to contain an artifact or fossil that no one has seen for thousands of years. It might be a carved ivory tool or an archaeological first of its kind. It takes a dedicated form of patience and, similar to a box of Cracker Jacks, one never knows what type of incredible prize might be found.

**Conclusions: Overview, Future Possibilities**

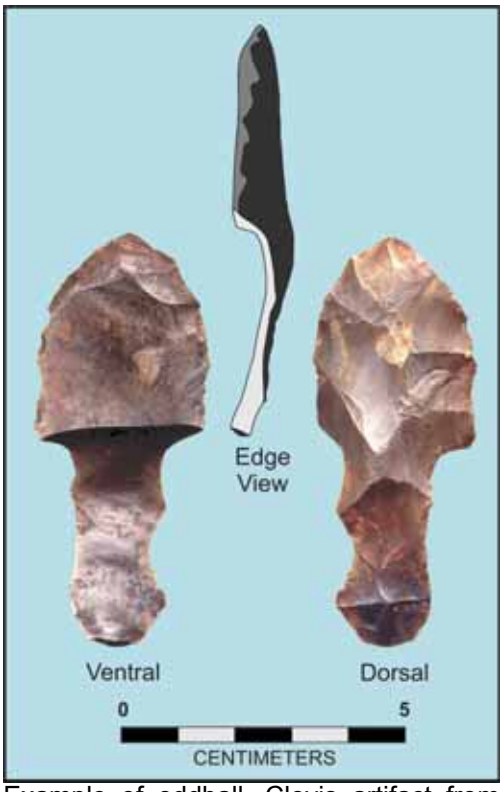
Truth be told the ARI is incredibly grateful to be entrusted with these collections and will be pushing the archaeological discipline forward when all is sorted and accessioned properly. In 2018 ARI assisted Jessica Cook-Hale conduct a University of Georgia field school on an underwater site in the Aucilla. The field school recovered two carved ivory artifacts, and so far in our collections we have found nine additional ivory tool segments. When all of this material is processed, I am willing to bet we will double that number!

As exciting as the artifacts are, the greatest knowledge about the terminal Pleistocene is likely to come from the abundance of uncommon animal bone species that are, coincidently or not, associated with Paleoindian sites. There will certainly be more rare animal bones rediscovered in the containers to be sorted. A few more also worth mentioning are as follows.

The larger capybara *Neochoerus* was previously only known from Sloth Hole in the Aucilla and the Vero site in Indian River County. *Hydrochoerus*, the smaller capybara, was only known from Sloth Hole and Page/Ladson. The ever-popular glyptodont, the M1 Abrams tank of armadillo-related species) was previously only known from Lewisville outside Dallas, Texas, Vero, Page/Ladson and Sloth Hole. In many cases we have doubled the known number of sites where these animals are represented, which increases the chances that Paleoindians once interacted with them.

Unstained fossils of both peccary species, the American Lion, saber cat, spectacled bear, extinct giant beaver, and numerous smaller animals give us the opportunity to sample their genetics via ancient DNA, or look at the stable isotopes preserved in teeth and bones that can tell us about an individual's life history and what the environment was like, and even where it lived.

It is a very exciting time to be working with these collections at ARI, and we will be documenting discoveries in publications to come!




Example of oddball, Clovis artifact from Sloth Hole. A Clovis preform tip with adhering flute attempt failure. Base is missing except for flute platform.

From page 7

minimally invasive. A GeoProbe survey was a great investment in evaluating potential excavation sites and planning detailed work priorities. So, the stage was set for a series of archaeological adventures with Glen, the GeoProbe local researchers, and a succession of crewmen, including key ARI staff and a series of FSU graduate students. All of whom, by the way, still retain all of our fingers and toes.

A recurring site for GeoProbe testing was at Vero Beach. There, in 1915, human skeletons were found in sediments also containing bones of various Pleistocene fauna. After almost a decade of controversy, the human remains were declared by the self-appointed arbiters of such issues to be relatively recent, simply because humans had ostensibly not been in the Western Hemisphere for long enough to have been associated with extinct animals. The issue was turned into an academic "third rail" and dropped for decades. In the early 2000s, Dr. Barbara Purdy, University of Florida Professor emerita, launched an effort to re-evaluate long-neglected Florida archaeological sites, which she felt might be worth reevaluation with modern techniques. A varying cast of people including ARI Board members and associate scholars Dr. James "Jim" Dunbar, Dr. C. Andrew "Andy" Hemmings, and Glen Doran accepted the challenge. They, Dr. Thomas "Tom" Stafford, Dr. Jack Rink, then soon-to-be Doctor Ryan Duggins, and others, such as your author, began a series of GeoProbe visits to Vero Beach. The stratum in which the two human skeletons were found was indeed chock full of Ice Age animal bones; we even had one of our sediment core tubes jammed up by the knuckle of an extinct camel! Ultimately, analysis of our cores allowed then Mercyhurst professor Dr. James Adovasio and Andy Hemmings to initiate a state-of-the-art excavation.

GeoProbe work at Vero was interesting but relatively straightforward. After work there, things got a little wild. Offshore of Cape Canaveral, excavations of a ship from the 1700s was found to be lying on a stratum containing Clovis artifacts and extinct animal bones. Cape Canaveral is home to Patrick Air Force (now Space Force) Base and also home to Tom Penders, the Air Force Archaeological and Cultural Resource Manager. Tom is one of Glen Doran's grad students. When he learned of the GeoProbe work at Vero, he started making plans to contract for GeoProbe work there. As it is known that coastal barrier islands are accreting, Pender thought it likely that Pleistocene sediments from Paleoindian times might be below the barrier island sand, like the shipwreck-and-Clovis site offshore. As we prepared our equipment to investigate the earliest human migrations into North America, we were surrounded by the abandoned installations from which men were first sent to explore space. Our staging area was overlooked at close range by Werner Von Braun's old office, Braun a pioneer of rocket and space technology in the United States. It was a little disorienting.

The GeoProbe had to be easily moved over various terrain. It's wheels and all-terrain vehicle tow vehicle, were on-the-fly modifications by our team. The deep beach ridge sands on the Cape created maddening problems for GeoProbe use, mostly only dealt with by brute force dragging – rather than rolling it through the dunes. An even less tractable challenge was the need to extract crucial cores from the bottom of a small lake. Glen's proposed solution was to float a little coring platform out to the middle of the lake, but no such platform existed. Ryan saw this as an opportunity to create one. The "***Pond Scum***", as it was christened, could be disassembled and loaded into a rental trailer, driven to the edge of the lake, reassembled, and used as a platform for coring. However, the lake was only accessible through a thick border of cattails and other aquatic vegetation. We began to suspect that getting ***Pond Scum*** designed, built, disassembled,

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**Before launching the *Pond Scum*, someone had to clear the path through the scum and mire! The author on the left and Glen on the right. Behind the camera, high and dry, Jim Dunbar.**

From page 6

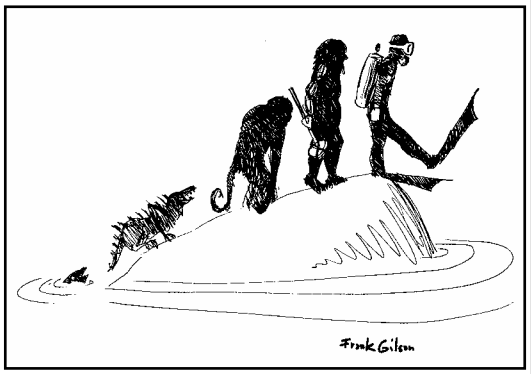
Page-Ladson sediments were in undisturbed stratigraphic sequence and chronologically recorded the early Holocene and late Pleistocene epochs. This record included radiometric ($^{14}C$) dating, the presence or absence of Pleistocene fauna, incredibly well-preserved plant materials, and artifacts positioned in correct stratigraphic order. The data gleaned from these eight years of field and laboratory work showed that Page-Ladson had formed under a remarkably even and slow accumulation of various types of materials that quietly settled into the depths of Page-Ladson over nearly 20 millenniums. It had become apparent that a well-constrained chronology of sedimentological, palynological, paleontological, and archaeological data could be achieved by ARPP researchers through rigorous, fine-scale excavation methods. Such methods could enable the interweaving of these various *ologies* into a pattern of enviro-human interactions at the end of the late Pleistocene (Webb et al. 2006).

In 1991 ARPP researchers launched what has become known as the *Stairway to the Past* or Test Unit F (see figure on page 12). Rigorous, systematic sampling was a hallmark of our excavation methods between 1991-1993. Research divers excavated 27 - 1 m X 1 m X 20 cm squares in a stairstep fashion transect downslope from the west bank of the river eastward into the depths of Page-Ladson. The excavation was facilitated with the aid of a four-inch dredge, and the sediments were washed through a ¼ inch screen at the surface. We hand sampled *in situ* radiocarbon ($^{14}C$), pollen, bulk botanical, paleontological, and archaeological samples with each excavated square. At the very bottom of the section, in around 30 feet of water, little or no ambient light could be seen, and a 1000 candle power light lighted our work. After each dive rotation, the divers were debriefed, and notes were entered into the research journal. Still photographs and videography were an integral part of the excavation record. The samples were submitted to our various research scientists at the end of each annual field season (Webb et al., 2006). Their findings influenced the research methods to be used in the following field season.

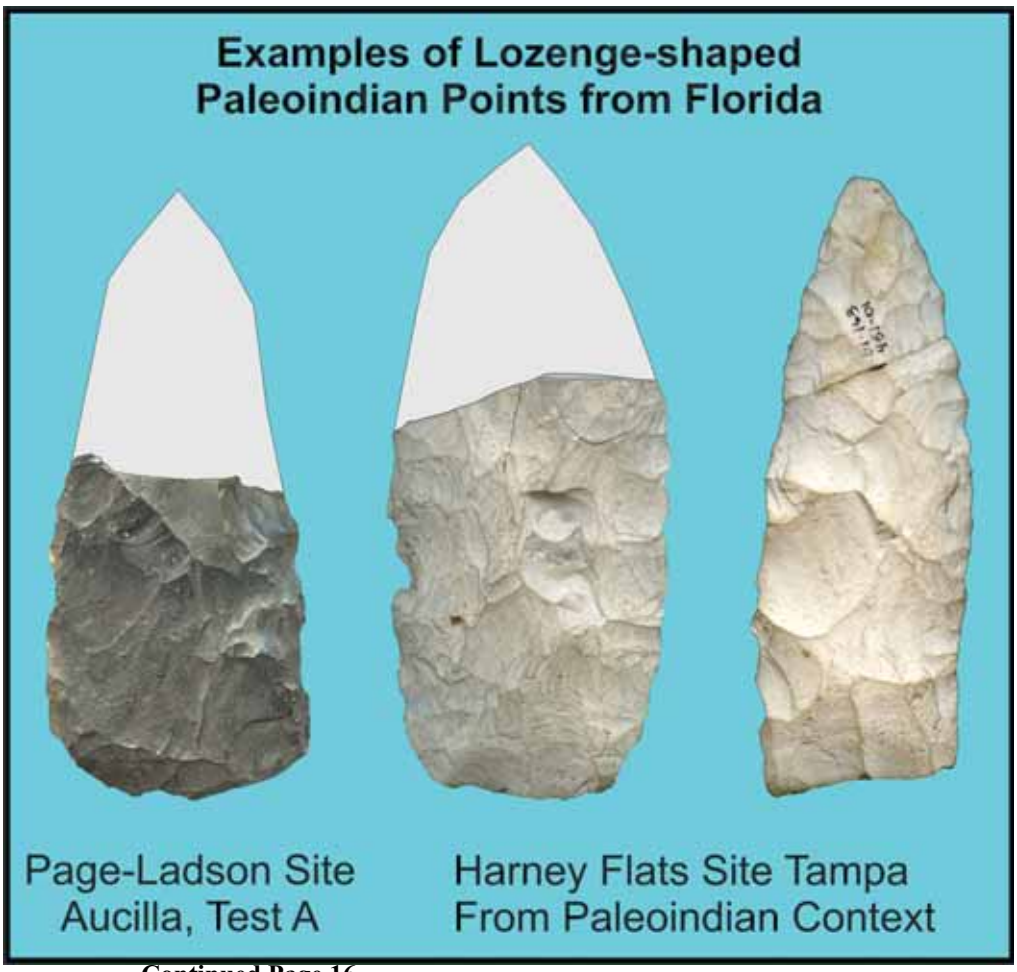
The question arises, what did we learn from the research efforts at Page-Ladson? The answers to this question are voluminous and would not fit into the small space of this newsletter, and we encourage our readership to consult the edited research found in Webb et al. 2006 for greater detail. However, in summary, ARPP researchers developed the technologies to safely and productively conduct scientific research in less than optimal conditions such as dark, cold water diving, sample collection, and careful positioning of excavation and test units. Professional and citizen scientists collaboratively developed these methods. These hard-won research methods resulted from failures and successes where we charted a chronological record of changing plant communities (Webb et al. 2006). Such changes were most likely associated with the evolution of various environmental episodes of the Late Pleistocene, such as Heinrich's HI & H0. The Heinrich episodes were particularly cold in the northern North Atlantic but not in the so-called *South-Easter Thermal Enclave* the heart of which, was in North Florida. Between these Heinrich episodes, in a wetter interval took place from about 14,500 to 13,000 years ago. During the early end of the wet interval the first evidence of human activity is found. There is also a well-preserved mastodon (*Mammut americanum*) digesta (gut track contents) that has measurable levels of mastodon steroids, epithelial cells, and one of the earliest identified gourds (*Cucurbita pepo* seeds) in North America (ca. 12,500 years B.P.) (Webb et al. 2006). The oldest site with gourd seeds and mastodon digest is in the nearby Latvis-Simpson site, dating about 38,000 year ago. The presence of extinct Pleistocene megafauna in association with humans is indicative of a predator-prey relationship. For example, cutmarks identified on the terminal end of a whole mastodon tusk (see page 21 bottom right image) indicate such a relationship. The mastodon tusk has its own story to tell. A biogeochemical study of the tusk showed that it was well-nourished and most likely a herd member that annually migrated as far north as the Appalachian Mountains. Our extensive and fine-grained radiometric ($^{14}C$) dating determined that the Late Pleistocene – Holocene boundary is generally located in the first meter of our excavation units.

Finally, we end with a quote from Dr. Ian W. Brown, Professor Emeritus, Alabama Museum of Natural History, regarding research methods.

*Recovery methods do matter, and they need to be set forth clearly so that people can assess the strength of conclusions. Without method, theory is irrelevant. Without theory, archaeology is irrelevant. And without archaeology, life is no fun.* (Ian W. Brown, 2003. Bottle Creek: A Pensacola Culture Site in South Alabama. University of Alabama Press.)




**SCUBA Divers begin the search for their ancestors starting in the 1950s**

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The water darkness varies from weak ice tea to dark-roast coffee, the latter being most frequent. When the water looks like dark roast coffee, the sunlight disappears at a depth of ten feet or less below the surface. Many of the sites in the Aucilla are more than twenty feet deep. Underwater lights can penetrate the darkness to reveal a small illuminated field of bottom details. Luck sometimes happens and on the first dive and first excavation, Test A resulted in the recovery of a broken fragment of mastodon long bone and the base of a small lozenge-shaped point. Significance of the finds cannot be understated. The remains came from a pale-tan organic-rich matrix that looked similar to chopped-grass. A radiocarbon date on the chopped grass-looking material yielded an age of 14,778 ± 421 cal BP, some 1,780 years before Clovis. Don mentioned that chopped-grass looking material was found at another mastodon in the river. We named the site Page-Ladson and returned to it the next year.

Filed seasons at the site varied from two to three weeks. For two years we returned to work on Test B. When completed Test B reached 14 ft below the channel bottom with numerous sediment layers, some containing artifacts. Demonstration that deep stratigraphic sequences existed in river channels was established but what about the site's age? A radiocarbon date on a wood sample from a large log yielded an age 14,298 ± 481 cal BP, an age some 1,298 years older than Clovis. Had people occupied North Florida prior to Clovis?

As the project moved into a new era, the National Geographic Society began funded the Aucilla project in 1987. By 1991 we had an adequate chronology of Pleistocene sedimentation along with artifact levels to ask for outside consultation. Through the museum Webb arranged for a Aucilla River Research Project, Council Meeting held May 17 to 19, 1991. The Council Meeting participants included archaeologists Dr. Robson Bonnichsen, Dr. George Frison, Dr. Albert C. Goodyear, Dr. Vance Haynes, Dr. Bill Marquart, Dr, Jerry Milanich, and Dr. Dennis Stanford. Other earth science specialists included Dr. Joseph Donoghue geologist, Dr. Barbara Hansen micro-paleo-pollen spcialist, Dr. Lee Newsom macro-paleo-botanical specialist, Dr. Elizabeth Wing, Mamologist (Zooarchaeologist), and Dr. Patricia Shipman paleoanthropologist and taphonomist. Given our findings, we sought guidance on how best to approach the next phase of the project.

Irvy Quitmyer developed the council's recommendations into a unified procedure. A meter-wide trench from the shallowest to the deepest part of the sediment filled sinkhole was to take place in what was to be called Trench F. We excavated in one-meter blocks in 20 cm levels using the same sampling procedures for each level. As needed, we moved downslope to the next "stair-step" square meter. Each meter unit was taken down level by level before moving downslope to the next meter unit. We excavated through 27 levels and 17.7 feet of sediment. Trench F was nicknamed the ***Stairway to the Past*** (see bottom figure on page 11).

The ***Stairway to the Past*** uncovered yet another thick sediment package only this time it was an almost uninterrupted sequence of late Pleistocene to Early Holocene sediments dating 18,720 ±390 cal BP on the old end to 9,090 ± 290 cal BP on the young end. From the oldest level upward, there were fifteen fully dated levels of progressively younger strata stacked on top of one another. The operation also uncovered a deep-buried cultural level (Unit 3) dating 14,585 ±225 cal BP.

Our first objective at the site had been accomplished prior to the 1992 field

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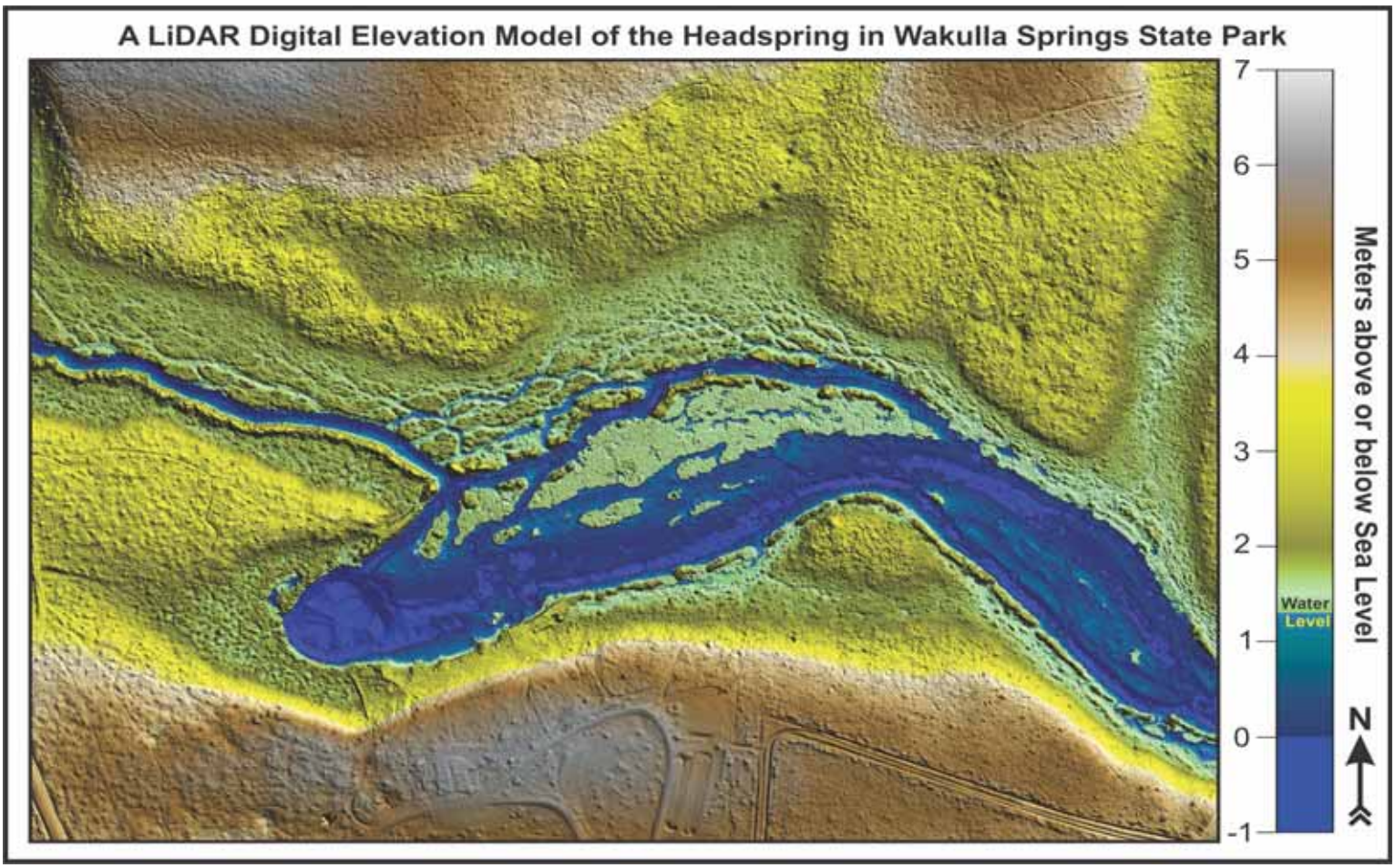


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season, but the controversial hypothesis, referred to as the *Clovis First* paradigm, was something we needed to consider. Could Page-Ladson have a *pre-Clovis* site?! *Clovis First* naysayers, some armchair archaeologists, steadfastly struck down any site whose researchers made claims a site was *pre-Clovis*. Frequent arguments simply stated that *pre-Clovis* sites do not exist or that there was something wrong with the site in question. What array of arguments might be lodged against the *pre-Clovis* component at the Page-Ladson site? In the next volume of the *Current* we will explore the steps taken to test the *pre-Clovis* level of the Page-Ladson and provide data for the *Clovis First* faction of American archaeologists to consider.

[1] Simpson, H. H. - 1935 Mementoes of the past in Florida. *Hobbies* 40(4):93-94

[2] The site was named after Buddy Page who showed us the site and Mr. John Ladson and his family, the owners of the property who have supported us through all these the years.

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surfaces. In contrast, LiDAR designed for bathymetry use two systems, one in the infrared spectrum with a typical wavelength of 1064 nm and another in the green spectrum with a typical wavelength of 532 nm. The infrared wavelength signal is reflected by the water surface and thus determines the distance to the water surface. The green wavelength pulse penetrates the water and is reflected from the submerged ground. Due to the speed with which the data are acquired, LiDAR bathymetry provides considerable reduction in productivity time compared to surveying with a hydrographic vessels.

In addition to the power level of the laser transmitter, the turbidity of the water and the reflectivity of the submerged surface being mapped are the limiting factors for bathymetric LiDAR. As an example, in a recent project, good returns were received from 30-foot depths in the clear waters of Manatee Springs, Florida. Yet, where the spring water joined the Suwannee River, no valid LiDAR returns were experienced at depths greater than 8 or 9 feet, even though the water was relatively clear. This was apparently due to the lack of reflectivity of the black mud bottom.

In another recent project to map Wakulla Springs with its extraordinarily clear waters, no returns were received from areas with depths greater than 16 feet, apparently due to poor reflectivity of the bottom. Fortunately, for offshore projects in the Gulf of Mexico, neither turbidity nor bottom reflectivity is generally a limiting factor in areas clear of the influence of the tributary rivers. As an example, in a recent project of the offshore paleo-channels of the Aucilla and Econfina Rivers, no LiDAR returns were received in the channels near the

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mouth of the rivers. But, once out into the open Gulf, excellent returns were experienced.

With such a two-system setup, both the submerged ground as well as any bordering upland topography may be surveyed at the same time. This is illustrated by the image of the Wakulla State Park headspring elevation model based on land and bathymetric LiDAR. Blue represents the submerged areas and the brown, yellow, and green represent the uplands.

As may be seen from the provided information, bathymetric LiDAR offers great promise for exploring the near-shore and interior rivers, not only for archaeological purposes but also for mapping features such as offshore springs and features in coastal marshes, open caves etc. Thus, it is a useful tool, for archaeology, the earth sciences and other disciplines.

END

**Continued From Page 5**

region, and to engage members of the community about the rich and vibrant history of the area through documentary and archaeological research.

Between 2019 and 2020, ARI worked to record every known historical cemetery in Jefferson County in the Florida Division of Historical Resources' Florida Master Site File (FMSF). This is a digital database that stores all locations and related information of prehistoric and historic sites identified in Florida. Recording sites helps landowners and local residents gain awareness of these cultural resources, facilitating their protection. At the start of the Jefferson County Historical Sites Survey, only fifteen such cemeteries had been recorded in the FMSF. Today, ARI has recorded 153 additional cemeteries and associated historical structures and archaeological sites – nearly ten percent of all comparable sites recorded in the State.

In cooperation with the Jefferson County Clerk of Court, ARI has made digital copies of more than 6,000 pages of Jefferson County public records between 1826 and 1871. These documents include lists of enslaved people by name, age, and the landowners and land with which they were associated. ARI researchers have also recorded documentary interviews with older members of the local community, who could provide information about specific historical sites throughout the region. In conjunction with the freedmen's contracts of 1867 and the Black companies' muster rolls of 1870, this has demonstrated a direct tie between families of the 19th century and those still live in this area today.

Moreover, archaeological study at several Jefferson County plantation sites has begun to develop a picture of what the early nineteenth-century plantations in this region were like for the people who lived and worked there. ARI's survey has located the apparent site of the Aucilla Place plantation, owned by Thomas and Laura Randall, as well as the site of the antebellum Panola plantation owned by members of the Bailey family. Studies of several plantation brickery sites, in conjunction with pXRF studies of the composition of bricks from both the brickery sites and historical structures, has created a link between the archaeological sites and the people associated with them, even where no direct written records exist.

The work by ARI on the Jefferson County Historical Sites Survey has helped to protect and preserve numerous cemetery and historical sites throughout this area and to provide a deeper understanding of the rich African-American history of Jefferson County and its ties with larger American history over the past two centuries. Through documentary research, oral histories, and archaeological study, new avenues have been opened for understanding the extraordinary culture and landscape of Jefferson County.

END

# Tribute to Glen Doran

Due to the enthusiasm generated by the original "First Floridians, First Americans Conference", a group of business and community leaders assembled to discuss furthering the research and educational opportunities in the Jefferson County and Big Bend area of Florida by forming a 501(c)(3) nonprofit. The then Chairman of the Department of Anthropology at Florida State University (FSU), Dr. Glen Doran was one of the first and most ardent supporters of the idea. The organization formed as the Aucilla Research Institute with Glen a founding member and its first board chair. Glen lent a great deal of prestige to the fledgling organization. Even after stepping down as chair, he continually contributed wise counsel to Its officers. One of his last recommendations was to have the next *First Floridians, First American Conference* (slated from March 2022), live streamed for public consumption. We intend to follow his advice. All of the members of ARI honor his memory and spirit.

END

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transported, and reassembled was going to be the easy part. Getting it onto the water from our lakeside assembly point was going to resemble the famous Humphry Bogart "Leeches, I hate leeches"scene from "African Queen." Glen was never one to shy away from anything, and he gleefully took on all of the tasks, which is why field archaeology are branded as "high-brow blue collar labor", especially if they involved wet site archaeology. Our "African Queen" suspicions were abundantly confirmed - happily without leeches - as Glen and your author cut a machete path in neck deep water through the vegetation wide enough for ***Pond Scum*** to be dragged into position and accomplish its design purpose. We extracted our sediment cores, but for all our team's innovative solutions to unusual problems, we found that the oldest beach ridges are less than 6,000 years old and that beneath them are only strata far too old to have been utilized by Paleoindians or their megafaunal prey. Seldom has such a disappointing result been achieved with so much good fellowship and laughter.

**Norden site coring operation left to right, Glen Doran measuring up, Jack Rink taking notes, and Charles Fredrick measuring down. Coring device is Jack Rink's Vibra-Core donated to ARI.**

Another project was the return to the Norden site. Norden had been discovered in 1974 by Jim Dunbar, then an employee of Florida's Bureau of Archaeological Research. It was clearly an important site, containing excellent artifact and faunal evidence of the Suwannee Late Paleoindian culture. Dunbar organized the 1997 Santa Fe River Archaeological survey, to evaluated the site. The survey work at Norden, immediately next to the Santa Fe, expanded our understanding of the site, but also addressed archaeological questions associated with the Aucilla watershed. In 2009 Jim enlisted Glen, Optically Stimulated Luminescence (OSL) expert Dr. Jack Rink, ARI BOD member ED Green, your author, and Colorado Geoarchaeologist Dr. Charles Fredrick to undertake the project. Enthusiastic plans were made to finally "do" Norden the right way: "We're going to be excavating with spoons!", exclaimed Jim, to ensure careful and detailed recording. Unfortunately, that was not to be.

**Eighty percent of the Cape Canaveral Crew, left to right: Jack Rink, Glen Doran, Ryan Duggins, and the author Grayal Farr.**

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The enterprise was heavily rained on. All consideration of spoon excavations went by the way as the rain turned a stratum of nasty, sticky clay into a level impenetrable by anything but – pick mattocks. The hilarious contrast between good intentions and tool-swinging, crude reality was not lost on any soaked, mud-smeared, laughing participant. One artifact found in 2009 demonstrates the potential for the site. The 7-centimeter long point of a broken Suwanee preform was recovered from the terrestrial excavation. It reminded Dunbar of a river find at Norden from 35 years earlier. Upon return to Tallahassee Dunbar found what he was looking for, the base of the same artifact. The exact locations of both finds were known. It was one of several refitted pieces of artifacts broken in manufacture and hurled (no doubt with an expletive!) away from the tool maker's location. Together, they reinforce the conclusion that Norden was no casual, temporary habitation, but a base camp utilized over time for a range of Paleoindian activities. In the end, Norden kept many of its secrets for a future project. OSL and geoarchaeological analysis remains puzzling. We were all a little disappointed, but we may return to Norden, armed with analytical techniques still in their developmental stages in 1974, 1997, and 2009, when the site had been studied. I knew Glen very well. He would love the fact that the challenge is still out there and would be eager for us to go and meet it. Maybe even with spoons.

END

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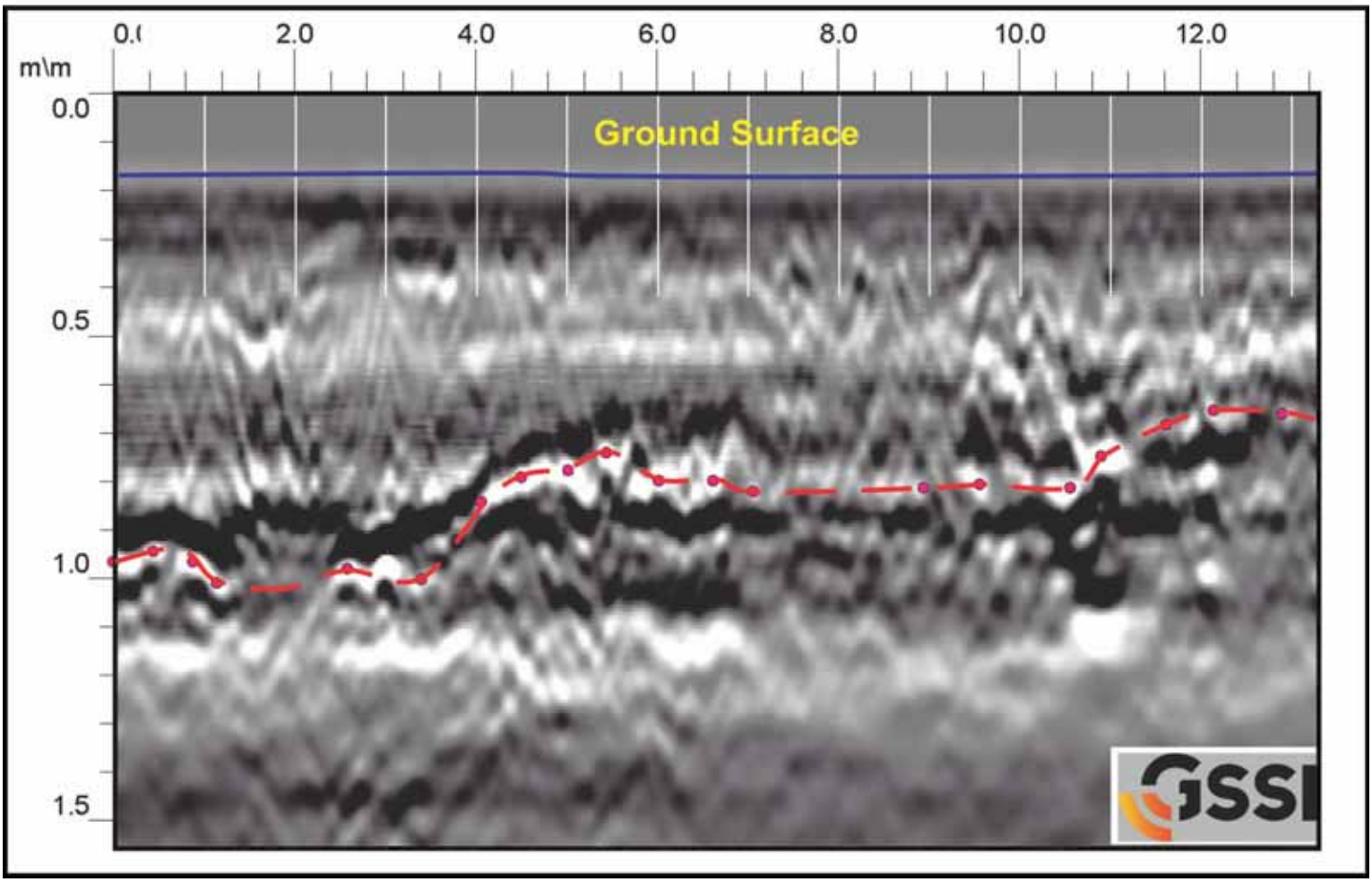
Pleistocene sites, which we hope will contribute considerably to further understanding the potential of GPR survey to identify the best excavation locations for Paleoindigenous sites in Florida, an aim that ARI and other Paleoindigenous scholars in Florida share.

Many thanks to everyone at the Aucilla Research Institute for their endless help with this project, especially Jim Dunbar and Tom Harmon, as well as the team at the Alliance for Weedon Island Archaeological Research and Education, especially Bob Austin, for their many contributions. I would additionally like to thank Jessica Cook-Hale, Matthew Newton, Susan deFrance, Ken and Tammy Marks, Michelle Birnbaum, Dennis Pierson, and numerous other volunteers and advice-givers who help guide this project from start to finish.

END




**Millennium Park example cross-section of GPR showing the Pleistocene old surface (red dots & line)**

# Supporter Acknowledgments:

USDA United States Department of Agriculture
Natural Resources Conservation Service

TALL TIMBERS

Florida Division of Historical Resources

FLORIDA MUSEUM

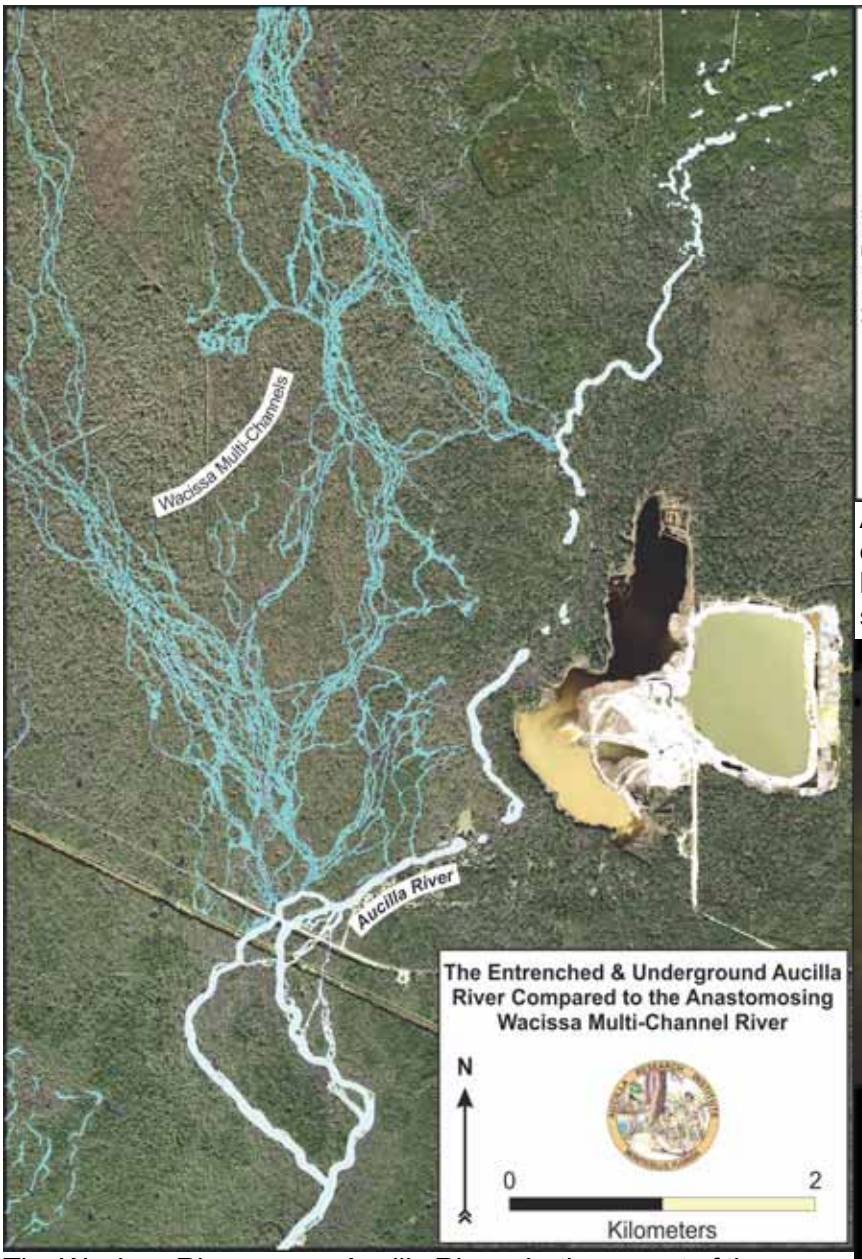
The Perkins Charitable Foundation

John Ladson Family

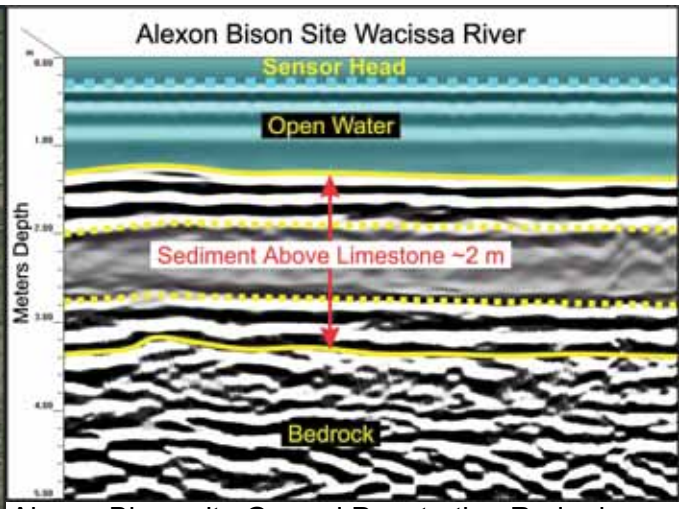
Ted Serbousek Family

Florida First Foundation

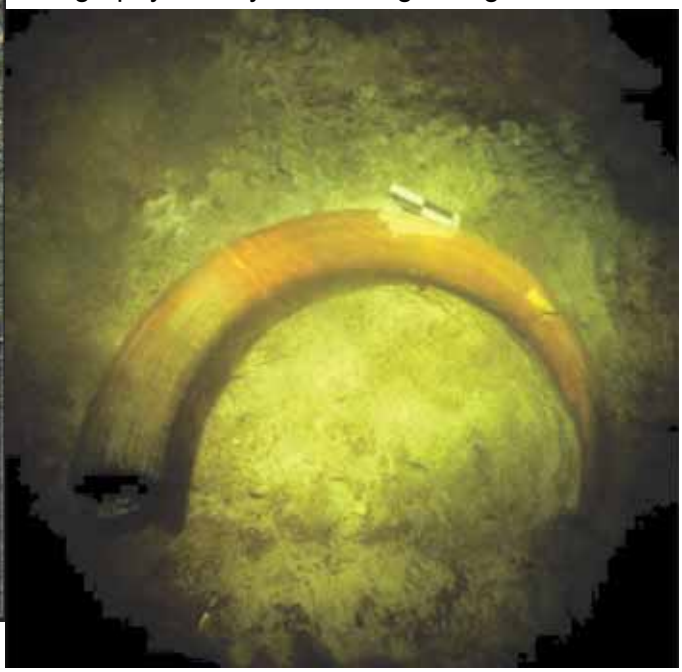
PANHANDLE ARCHAEOLOGICAL SOCIETY at TALLAHASSEE (PAST)




The Wacissa River versus Aucilla River - both are part of the same river basin, yet both are worlds apart in appearance & developmental characteristics. The Wacissa is an unconfined surface river whereas the Aucilla is an underground river slowly emerging to the surface. Both are part of nature's true wonders.




Alexon Bison site Ground Penetration Radar image of a ~2 meter thick stratigraphic section above limestone bedrock that is indicative of a substantial stratigraphy of likely archaeological significance.



Page-Ladson site butcher-marked mastodon tusk just after being fully exposed. In the next issue of THE CURRENT, we will discuss Part II of the Page-Ladson site story and the tusk's discovery & its importance.

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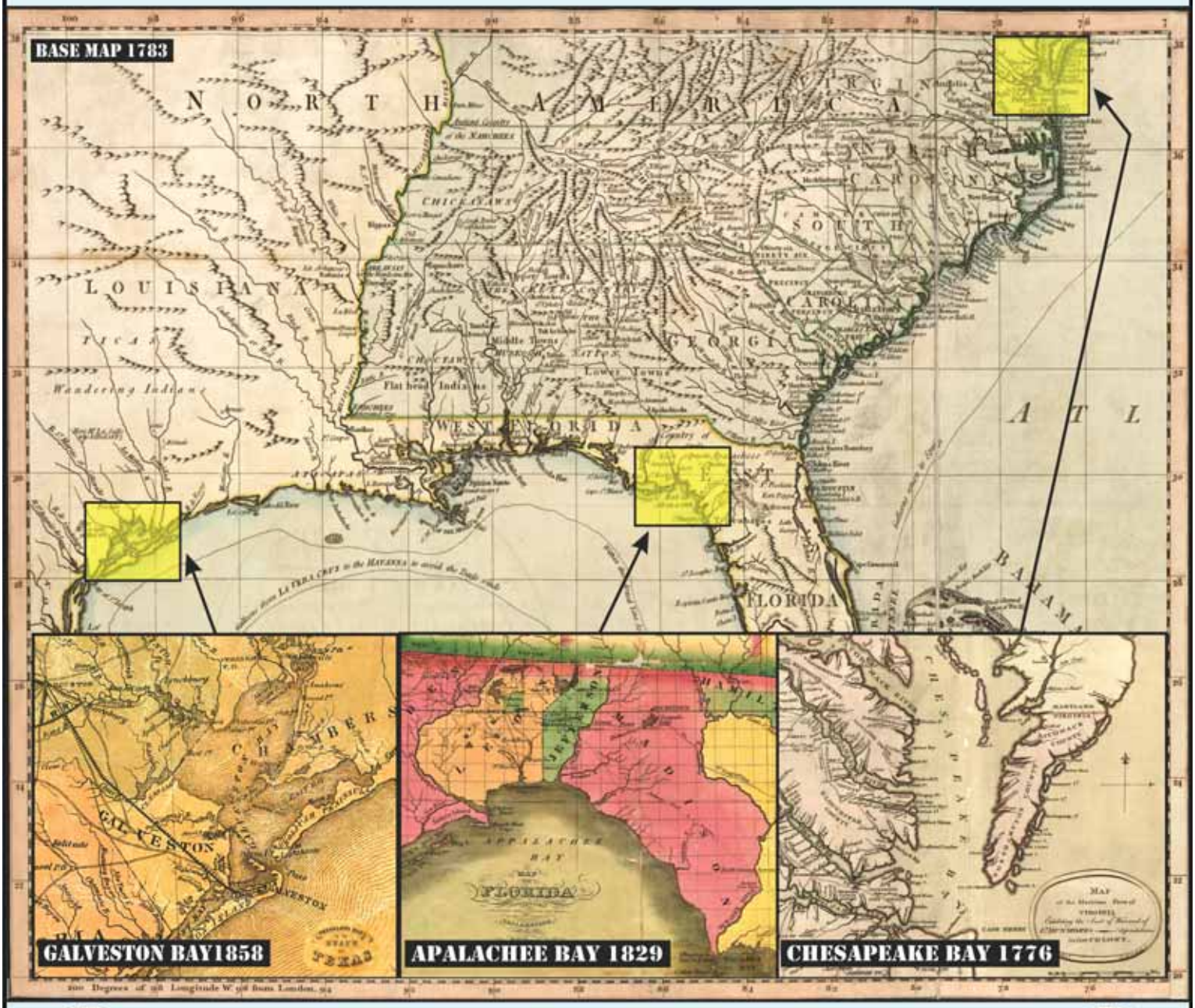


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