# Project Information Manual:

# CUMBERLAND RIVER/MIDSOUTH PALEOINDIAN PROJECT

# Summer 2010 Field School

## JULY 8th TO AUGUST 10th, 2010

## Bell's Bend Area, Cumberland River, Nashville, Tennessee

David G. Anderson, PhD, RPA, University of Tennessee, Knoxville
Shane Miller, MA, UT, PhD Candidate, University of Arizona
Tom Pertierra, Director, Southeastern Paleoamerican Survey, Inc

http://bellsbend.pidba.org/

**University of Tennessee Knoxville**
**Second Summer Session**
**ANTH 430, Section 003 6 hours Undergraduate Credit**
**ANTH 530 Section 001 6 hours Graduate Credit**

Please fill this out and return to your supervisor.

**I certify that I have received, read, and understood the project manual, and I will be held responsible for adhering to the information contained therein.**

_____

**NAME**

_____

**SIGNATURE**

_____

**DATE**

## EMERGENCY CONTACT INFORMATION

DOB: _____

ADDRESS: _____

_____

_____

EMERGENCY CONTACT: _____

RELATION TO YOU: _____

TELEPHONE:_____

ADDRESS: _____

_____

OPTIONAL CONTACT: _____

RELATION TO YOU: _____

TELEPHONE:_____

ADDRESS: _____

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ALLERGIES AND OTHER INFORMATION: _____

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DO YOU WEAR CONTACTS? _____

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# INTRODUCTION

This project manual has been made available to each person participating in the Cumberland River/Midsouth Paleoindian Project in the summer of 2010. Please read it carefully, and sign the acknowledgement and release forms, and return them to one of the project directors. The sections on Project Specific Living Information, General Behavior, and Safety, are particularly important. Crew safety is of paramount importance during this project.

The Cumberland River/Midsouth Paleoindian Project, an official University of Tennessee, Knoxville field school, will meet daily during the regular workweek from Thursday July 8th through Tuesday August 10th, 2010. Students are expected to arrive at the Bells Bend Outdoor Center on Wednesday July 7th during daylight hours, giving them enough time to set up their camp. Everyone should be ready to work by 7:00 am at the Visitor's Center the morning of July 8th. Camp spaces in the campground will be assigned in coordination with the project directors. Enrolled students successfully completing the field school will receive 6 semester credit hours under ANTH 430, Fieldwork in Archaeology. The fieldwork will be directed to locating and examining prehistoric and historic archaeological sites in and near the Bells Bend area immediately west of Nashville, Tennessee. Students will receive training in a wide range of archaeological field survey, excavation, and analysis procedures over the course of the ca. five week field program.

The project will be based at the Bells Bend Outdoor Center, an 808 acre park managed by the Davidson County Metropolitan Board of Parks and Recreation. They are graciously making their public campground available to project participants, as well as the Visitor's Center for use as a laboratory and to give lectures and public talks, which are expected to occur most afternoons and early evening each day the field work is underway. Accordingly, we agree to follow their rules and regulations, as per a signed research agreement. The park, located in an isolated rural area, provides habitat for plants, migratory birds and other wildlife. Additional information about the Bells Bend Outdoor Center can be found at:
http://www.nashville.gov/parks/nature/bellsbend.asp

The project will be directed by David G. Anderson, D. Shane Miller, and Tom Pertierra, assisted by a number of graduate students from the University of Tennessee, Knoxville, and other institutions of higher education. It will be directed to the complementary goals of student training, public education, and basic research. Should you have additional questions about the project, contact David G. Anderson at dander19@utk.edu, Shane Miller at dsmiller@email.arizona.edu or Tom Pertierra at tomp@thomasmarketing.com . After July 6th we will be at the Bells Bend Outdoor Center, and can be reached via email (which will be forwarded) or via the park number, 615-862-4187, or via email at bellsbend@nashville.gov.

As the project gets underway a website will be posted and updated periodically describing project activity. This site can be accessed via http://bellsbend.pidba.org/ Visitors and volunteers are welcome. Please coordinate your visit in advance with one of the project directors.

## PROJECT RESEARCH DESIGN

A detailed project research design was used to obtain funding for the summer 2010 fieldwork from the Tennessee Historical Commission. A synopsis of this proposal follows, including additional clarification of the research goals. In brief, the field program to be undertaken by the project team is to conduct exploratory archaeological survey and excavation directed to documenting the archaeological resources in and near the Bells Bend area, along the Cumberland River near Nashville, Tennessee. A 13,000 year record of prehistoric and historic occupations is already known to be present in this area, although only limited archaeological fieldwork has occurred at many of the known locations to date. The proposed fieldwork will help expand our current understanding of the archaeological record in the area, and particularly to document the archaeological resources present in the Bells Bend Outdoor Center, who are graciously making their facilities available to the project. We also will assess the impact of recent flooding and looting on local sites.

A specific research goal of the fieldwork is understanding the impact of an extended period of dramatic global climate change on human populations in the Southeast. The last several thousand years of the Pleistocene, from ca. 15,000 to 11,500 cal yr BP, were characterized by dramatic fluctuations in global climate, with major cold and warm intervals like the Bølling, Older Dryas, the Allerød, and the Younger Dryas beginning and ending, in some cases, within a matter of years or decades at most (Björck et al. 1996; Broecker 2006; National Research Council 2002). It has been suggested by some scholars (Anderson et al 2009) that the onset of the Younger Dryas cold reversal from ca. 12,850 to 11,650 cal yr BP had a profound impact in Eastern North America, including a demographic collapse among human populations and a corresponding reorganization of settlement and technology. The Younger Dryas across North America is apparently when the widespread Clovis culture comes to an end, many species of large animals went extinct, and new, poorly defined cultural traditions emerge. Why these events occurred, and how they may have been interrelated, is currently the subject of appreciable debate (e.g., Holliday and Meltzer 2010, Meltzer and Holliday 2010).

Our understanding of what was occurring among human cultures in the southeastern United States during the Late Pleistocene, however, is hampered by a lack of undisturbed, stratified archaeological sites. Locations with archaeological materials dating to within the most dramatic period of climate change, the Younger Dryas, and particularly the initial centuries of this era, are rare in the Southeast, and stratified sites spanning this interval, where change over time might be monitored, are completely unknown (Anderson 2005:32-37; Anderson et al 1996:13-14; Goodyear 1999). The research proposed here will be directed to finding sites with stratified deposits and well preserved organic remains that can provide absolute dating/chronological control, and at the same time inform on the lifeways and subsistence practices of the Southeast's early peoples. Were such sites to be found, examination of associated artifact and paleosubsistence data would allow us to explore the kinds of changes in technology and subsistence adaptation that were occurring. The successful discovery and examination of a stratified Paleoindian site spanning the late Pleistocene in the Midsouth would be viewed as extremely significant within the professional archaeological community, and would unquestionably attract national popular media attention given the interest early occupations have drawn in recent years. The research proposed here is directed to locating such sites through geoarchaeological research, archaeological test excavation, and precise absolute dating. The

project will involve specialists in a number of disciplines, including paleoclimatology, geoarchaeology, and geomorphology, and colleagues from a number of institutions.

The proposed research will be conducted along the Cumberland River in the Bells Bend area immediately west of Nashville in the summer of 2010 (Figure 1). The area was selected because it appears to offer an important exception to the pattern that stratified sites spanning the Paleoindian era are rare to nonexistent in the Southeast. Two deeply buried Paleoindian period sites, Johnson (40Dv400) and Widemeier (40Dv9), as well as several other possible stratified sites, have been discovered in or near this area in recent years (Barker and Broster 1996; Broster and Barker 1992; Broster and Norton 1996; Broster et al. 1991; 2006). The Johnson and Widemeier sites, unfortunately, have been severely damaged by erosion and urban development. Based on the occurrence of Paleoindian artifacts in river bank profiles and in surface collections that we documented during an initial reconnaissance in the summer of 2009, however, it is evident that other early sites have survived in the Bells Bend area.

The fieldwork will be conducted by a team of specialists including professional archaeologists, graduate and undergraduate students through the University of Tennessee and other institutions of higher education, avocational archaeologists, and public volunteers from the local area and beyond. Investigations will be directed to locating and documenting buried archaeological strata along and away from the river. Preliminary reconnaissance investigations in the project area in the summer of 2009 located archaeological deposits and associated carbonized plant remains of presumed late Pleistocene age in several locations along the riverbank, including two yielding Clovis points, suggesting stratified archaeological deposits dating earlier and later may also be present at or near these locations (Figure 2). Such deposits need to be accurately dated and shown to occur in undisturbed stratigraphic context, which will be accomplished by means of limited excavations coupled with high precision accelerator mass spectrometry (AMS) radiocarbon dating. The information collected should provide proof of concept justification that deeply stratified, Late Pleistocene age archaeological deposits exist along the Middle Cumberland River, information that will be used to develop proposals for a much more detailed program of archaeological and paleoenvironmental research in subsequent field seasons. Ideally, proposals for follow up work will be submitted to the Tennessee Historical Commission, the National Science Foundation, and the National Geographic Society in late 2010.

The proposed summer 2010 field research is directed to locating and examining landforms of late Pleistocene age along the Cumberland River in central Tennessee. This drainage has yielded such large numbers of Paleoindian sites that it has been suggested by that the pan-continental Clovis technology may have originated in this area (Anderson 1990; Stanford et al. 2005, Meltzer 2009). Where archaeological deposits are indicated, and many are plainly visible as layers of stone chipping debris, tools, and charcoal layers, the riverbank profiles will be cleaned and examined, and controlled excavation units placed where the possibility of stratified deposits is indicated. Fieldwork will include several weeks examining the Cumberland River shoreline along Bells Bend for exposed archaeological sites. Specifically, this part of the project will consist of recording the location of eroding deposits and exposing--by lightly and minimally invasive scraping of the profile--pre-existing bank walls to record the depth of artifacts relative to the current ground surface. Temporally diagnostic artifacts, radiocarbon datable material, and sediment/flotation samples will be removed for further analysis. In addition to surveying the

shoreline, several weeks will be spent surveying areas in the interior of Bells Bend in areas likely to contain buried archaeological deposits, which will be examined with controlled surface collections, small test units 1x1 or 2x2 m in size, and small backhoe cuts, with all work conforming to federal safety regulations

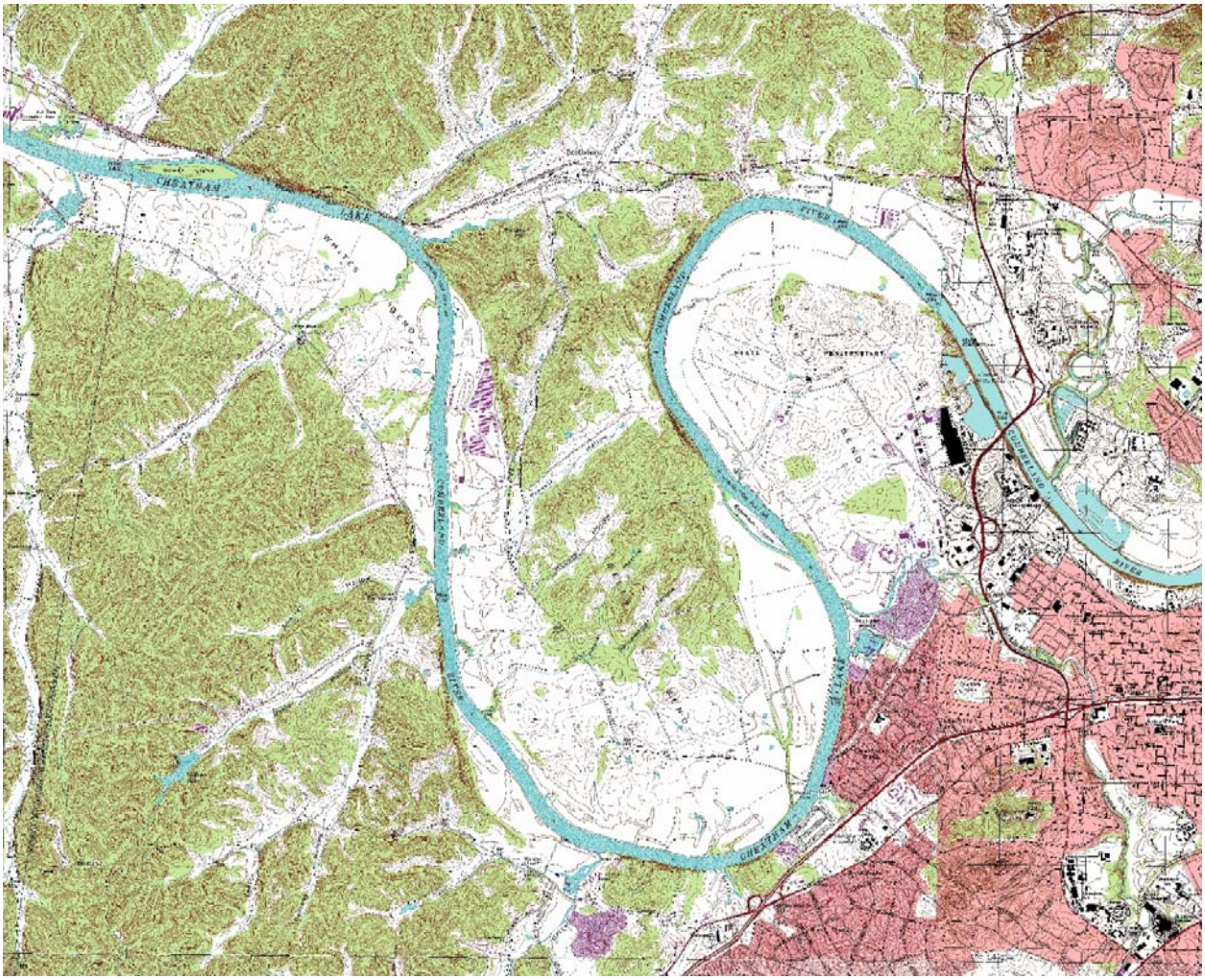

Figure 1. USGS 1:24k Topographic map of the Bells Bend with some of the property boundaries.

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Figure 2. (top) Clovis biface fragment.
(bottom) An example of the eroding bank of the Cumberland River .

All artifacts from the project will be analyzed in the field and after and curated at the University of Tennessee, Knoxville, Department of Anthropology. All sediment and radiocarbon samples will be curated and analyzed at the University of Arizona Geoarchaeology Laboratory and the Accelerator Mass Spectrometry (AMS) Radiocarbon Laboratory. We have obtained promises of support for the project from a number of local residents in the Bells Bend area, and have written

permission to work on the property of several local landowners, and will be actively seeking additional permissions throughout the project. This research has also been endorsed by the Metropolitan Historical Commission of Nashville and Davidson County as well as by the Tennessee State Archaeologist.

Since this project will involve students as well as volunteers, and local residents, it will play a major role in public education as well. We plan to involve local residents in our work, and will have public sessions while we are in the field describing what we are doing and what we have found. We will also have a project web site that we will update periodically both in the field and after. Our goal, besides advancing knowledge, is the education of local residents as well as the citizens of Tennessee in general about the importance of historic preservation, archaeology, and the early human settlement of the state

A detailed technical report describing the fieldwork and its results will be prepared and submitted to the Tennessee Historical Commission, the Tennessee Division of Archaeology, and the Metropolitan Historical Commission of Nashville and Davidson County. The results of this initial study will be used to produce peer reviewed journal articles and to seek additional funding from a variety of private, state and federal sources, such as the National Science Foundation (NSF), the Tennessee Historical Commission, and the National Geographic Society (NGS).

The proposed field research is thus the first essential step in a long term research program directed to better understanding the initial colonization and settlement of Tennessee and the Southeast. This subject has received a great deal of attention in both the scientific literature and the popular media in recent years (e.g., cover stories on the peopling of the Americas have appeared in *Time Magazine* [March 13 2006], Newsweek [16 April 1999], and U.S. News & World Report [12 October 1998]; books and technical summaries on these first occupations have been produced by Anderson and Sassaman (1996), Anderson et al. 2004, and Stanford et al. 2005). Understanding human responses to rapid climate change, besides of interest to prehistorians and the general public, has important lessons for the modern world, which is itself in the process of a period of great change in climate and biota. How people specifically dealt with change then may give us ideas about how to deal with it in the decades and centuries to come.

## PROJECT LOGISTICS: AN OVERVIEW

Participants should plan on arriving at the Bells Bend Outdoor Center during daylight hours on Wednesday July 7th 2010, and give themselves enough time to set up at the park campground. Students commuting from other locations within the Nashville area should make a point of dropping by the park on that date so they will know where to report to the following morning at 7:00 am sharp. The project will run from 7:00 am until 8:00 pm each weekday. Project teams will head to the field at first light, by or as soon after 7:00 am as feasible given safety concerns. Fieldwork will continue for six hours, after which a four hour break will occur for lunch and relaxation. Project team members will then meet at the park Visitor's Center or the project field laboratory, as directed, after 5:00 pm for lab work, project planning, and further instruction, which will run until 8:00 pm. There will be programs in the evening most nights given by visiting scientists, staff and graduate students.

**All project participants are responsible for their own food.** At least two refrigerators will be available for use by team members at the park Visitor's Center, but as there will be 25 people using them, remember space will be restricted and plan accordingly. No alcohol will be permitted in project refrigerators, or is to be consumed in or near the Visitors Center. There are a number of grocery, convenience, and other stores within a few miles of the park where food and ice can be purchased. Team members will be responsible for maintaining the campground and Visitor's Center in a clean and litter free condition.

**Each team member will be responsible for cleaning their area of the campground, and all project members will be responsible for cleaning public areas used by the project, on a rotating basis.**

The senior team leadership will have already been in the project area for several days by the time you arrive. Students should arrive on Wednesday, 7 July in time to set up their camps and become familiar with where they will be reporting on subsequent days. Camp spaces will be assigned in coordination with the project directors. Fieldwork will begin the following morning at 7:00 AM. No experience is necessary to participate in the project, and we welcome beginners. The project is designed to expose you to a wide range of activities over the course of the field season. Our team will teach you what they need to know. We will provide all of the field equipment, although if you have your own trowel or other small equipment, please feel free to bring it along. Most archaeologists carry their small field equipment in a small backpack or metal ammo case.

The fieldwork will be conducted on land owned by the Davidson County Metropolitan Board of Parks and Recreation, and will follow all of their rules, regulations, and guidelines. They are our hosts and their hospitality and generosity is crucial to the success of the project, and every one is expected to do their part to maintain all the areas we use in a clean and litter free condition. We use the public campground as our base camp. This campground is located about 1000 feet from the Visitor's Center, on a low wooded rise. There are a dozen tent platforms, each with an associated firepit, in a ring around the knoll (Figure 3). In the center of the knoll are several picnic tables and a larger firepit, and barn is located nearby where large equipment can be stored (Figure 4). Arrangements are being made for project members to obtain firewood from a number

of local sources. Some field activity, in fact, will be directed to maintaining the camp and to locating wood. The open fires as well as small grills may also be used for cooking in the campground, but all coals and ash must be disposed of properly.

Figure 3. The campground area, showing a typical tent platform and firepit. Spaces in the campground will be assigned in coordination with the project directors.

Team members should bring their own tents and bedding, which should be suitable for the warm summer nights. Mosquito nets are recommended for tent entrances. Team members may drive from a remote entrance to the campground, and are expected to park in the parking areas near the campground or Visitor's Center, in designated parking areas. There is no electricity at the campground. A port-a-john will be place near the campground and team members will be expected to exercise basic sanitation measures during the project.

We may use a nearby historic house as our field lab and will have videos and other public presentations in the evenings at the Visitor's Center. There we will have formal bathrooms with hot and cold running water. There will be two hot showers which will be set up behind the rest rooms at the Visitor's Center. Team members using these showers are expected to stagger their bathing to allow everyone access and warm water, and most importantly bathing must be done using environmentally friendly cleaning projects. The park is a wildlife habitat, and every effort must be made to protect the environment.

Figure 4. The barn near the campground, which is where we will store heavy equipment, and that can serve as a first line of retreat in the event of bad weather. The Bells Bend Outdoor Center Visitor's Center is in the distance.

Two refrigerators will be available for project personnel at the Visitor's Center as well as a microwave oven. No formal meals will be served, and people eating at the center are expected to keep the area clean. No alcohol is allowed in project refrigerators.

Volunteers are welcome to assist, and visitors are welcome, but they will need to confirm the dates they will be present as far in advance as possible. The project will run from Wednesday July 7th through Tuesday, August 10th. The last week will be directed to final fieldwork at key project sites, and to clean up and shut down. The project work week will be from 7:00 am Monday morning until 3:00 pm Friday afternoon, unless notified otherwise by the project directors. After fieldwork ends at 1:00pm on Fridays, two additional hours will be devoted to cleaning up and maintaining project facilities. Students have the weekends off, and may wish to remain at the park, or travel as necessary. As conditions merit, there may be opportunities for work on weekends on a voluntary basis.

The project team involves a number of professional and avocational archaeologists, and the relationship with Southeastern Paleoamerican Survey is an explicit partnership between academia and the interested public. They are providing a wealth of equipment and trained personnel to the project. The role of the avocational is a primary means by which we hope to investigate the project area. On the Bells Bend project we hope to expose the present generation of students to this form of public archaeology and its benefits.

# HOUSING INFORMATION

### *Getting to the Bells Bend Outdoor Center*

From I-40 take exit # 204 and go North on Briley Parkway. Take exit # 24 and turn left onto State Rt. 12. – toward Ashland City Go over 2 miles and turn left at the stop light onto Old Hickory Blvd. Go 4 miles, the entrance to Bells Bend Park (trailhead) is on your right. Go to the second Park entrance for the Bells Bend Outdoor Center.

The park address is
Bells Bend Outdoor Center
4187 Old Hickory Blvd.
Nashville, TN 37218

### *Project Housing*

Team members may camp at the Bells bend Outdoor Center campground, or make alternate arrangements. To get directions to the campground, go to the Visitor Center. They will provide you with directions.

The Bells Bend Outdoor Center visitor's center has electricity, hot and cold running water, and refrigerators. A phone and internet access is also provided for safety reasons only. Please act as a guest would in someone's house, and take care of things. Keep the areas clean, especially after eating.

Because the number of people on the project will vary from week to week, **project members will be expected to make space in the campground as necessary** as people arrive or depart. Bring your own linens and pillow, as well as personal toiletries and towels. Please note: toilet paper is considered a "personal item"—please bring your own for use in the campground!

Pets are not allowed at the Bell's Bend Outdoor Center. Visitors are allowed and indeed encouraged, but please notify the project directors (Anderson, Miller, and Pertierra) in advance.

### *Cooking/Eating Arrangements*

Each person will be expected to provide his/her own food. Refrigerators, a microwave, and grills/firepits are available in the campground or at the park visitor's center. No alcohol will be allowed in project refrigerators. Grocery stores are located nearby and project members will have the opportunity to shop there. Clean all utensils immediately after using them and take out the trash regularly, as a courtesy to your housemates and to avoid attracting undesirable wildlife.

### *Telephones*

Project directors can be reached in case of emergency at:
David G. Anderson 803 259-6289
D Shane Miller 865-696-0508
Tom Pertierra

### *Time Zone Information*

Bells Bend and the metropolitan Nashville area are located in the central time zone.

### *Laundry*

Project members will be expected to make their own arrangements for laundry. There are coin-operated Laundromats at a great many locations in the Nashville area.

### *Drinking Water*

The tap water at the Visitor's Center is safe to drink. Everybody should drink at least eight glasses of water a day (i.e., ca. one gallon) to avoid dehydration and more if it is hot and sunny and you are working in the field. It is very easy to become dehydrated, the first sign of which is a swollen tongue. Drinking alcoholic beverages contributes to dehydration and not allowed during the work day. Personal drink containers are not provided.

Two or more 5–10 gallon coolers with water will be at the Visitor's Center each day, and one cooler will be carried by field teams to sites where work will be occurring. Ice will be provided from nearby grocery stores if necessary.

### *Email Contact*

Internet access will not be available from project quarters. Cell phone coverage is excellent throughout the project area, providing a source of coverage for those with internet access on their phones.

### *Use of Personal Vehicles*

Where appropriate and feasible, project team members may be asked to drive to project sites in their personal vehicles. These locations will typically be no more than a few miles from the campground. Parking at the Bells Bend Outdoor Center will be in designated areas.

### *Pharmacies and Grocery Stores*

Nashville, Tennessee has numerous shops and supermarkets where over-the-counter non-prescription medical products may be purchased.

### *Mail Services*

Mail to project members can be sent to them c/o Bells Bend Outdoor Center, 4187 Old Hickory Blvd., Nashville, TN 37218 Mail can also be posted each day from the Center. Note that the Visitor's Center does NOT sell stamps.

## GENERAL BEHAVIOR

Project members will be expected to behave themselves in a way that reflects honorably on the University of Tennessee, the Davidson County Metropolitan Board of Parks and Recreation, and on the profession of archaeology. Many people are interested in what we're doing, so treat them with courtesy, try to be helpful, and answer questions or refer them to the project directors.

As per the research agreement signed on June 10th between David G. Anderson, Department of Anthropology, University of Tennessee, Knoxville and Linnann Welch and Robert Parrish, Metropolitan Nashville Parks and Recreation Warner Parks, Shelby Bottoms, Beaman Park, Bells Bend, and/or other Metro Parks, the project will proceed according to the following specific guidelines:

1. This natural area is protected and no plant, animal, natural feature, or park property will be disturbed in any way

2. A copy of the results of this study will be sent to the Bells Bend Outdoor Center at the end of the project

3. Metropolitan Nashville Parks and Recreation and the specific parks) will be credited in any publication of this research

4. Any changes in this project will be communicated to the staff contact person immediately (time period, location, etc.)

5. All members of the research project team will be expected to comply with the Metropolitan Board of Parks and Recreation
rules, regulations, and policies.

### *Smoking*

Smoking is not allowed in the field near excavations, or inside the field lab or Visitor's Center. There will also be a designated smoking area at the campground. Smokers will be expected not to litter, that is, to pick up all butts, matches, etc. It is illegal to dump litter in the water or on the land. PLEASE DO NOT PUT YOUR TRASH IN THE PORT-O-LETS.

### *Music and Televisions*

Music, including the use of headphones, is not allowed during the work day in the field. We are here to concentrate on the archaeology, and be respectful of the settings we are working on. In the campground, be courteous to your colleagues and neighbors regarding the selection, volume, and hours when music or televisions are played. Most people will be going to bed early, so remember that any sound, including conversations, can carry a long way. Loud noise in crew houses after 10:00 pm on evenings when fieldwork is planned for the following morning will not be tolerated.

***Attire***

Dress comfortably for the field. When clearing vegetation, which will only occur rarely, long shirts and pants and gloves are recommended. Once clearing is completed, lighter clothing will be cooler, but remember to avoid too much sun, and that some plants may stick or scratch, or cause irritation. Proper attire is expected (no halter/tube tops, bathing suit tops, short shorts, or shirts with vulgar or inappropriate messages, etc.). A hat is a must, as is sun block. During excavation, flat-bottomed shoes or running shoes with minimal tread are fine. Avoid boots with large cleats that will damage the floors of excavation units. Sandals or flip-flops will not be allowed, save for special circumstances along the river, or during flotation or water screening activity water screening. You may bring these but do not wear them unless asked to water screen. Remember, your big toes resemble pink mice to snakes!

***Interaction with Local Residents***

Most of the people that live in the area are friendly and easygoing. They delight in a friendly greeting like "Good morning" or "How are you?" prior to direct questions. If you live the urban hustle and tend to be abrupt and direct, try to practice starting conversations with a friendly greeting. You will feel more at ease and your communication with the locals will be rewarding. Try not to get frustrated, when shopping or dining, if your service seems slow. Relax, chill out, and enjoy the area.

***Historic Preservation***

Defacing, breaking, or removing any natural or historical features is prohibited other than in the context of this project. NOTE: if you are injured due to your negligence or failure to comply with the Park's rules, it does not constitute a "work-related" injury.

***Drugs and Alcohol***

**Illegal drugs will not be tolerated**. Drinking by underage people (under 21 years of age), or excessive drinking off duty and after hours that compromises project safety or your work performance will not be tolerated. NO alcohol will be tolerated in or near the Vistor's Center. Drug selling, possessing, or using is illegal, and the penalties for using or attempting to sell drugs are harsh. You do not want to do jail time anywhere in the rural South.

***Weapons***

Firearms and any other weapons are not permitted.

***Free Time: Notify Others of Your Plans!***

During free time or off days, project members may go where they wish, subject to the following common-sense precautionary measure:

When leaving the crew quarters or field site tell someone where you are going, how you are going to get there, and when you are expected to return. If you are going to be gone appreciably longer than expected, please call in and notify someone. Do not go swimming alone, and always be sure to wear a life preserver when boating or kayaking.

## PROJECT SAFETY

The safety of project personnel is of paramount concern during this and all University of Tennessee Department of Anthropology projects. Project members are expected to read this section carefully, and take its messages to heart. Any violation of these safety procedures may be grounds for your immediate removal from the site and the project. Mr. Tom Pertierra will serve as a designated on-site safety officer during the project, whose instructions in all matters regarding personnel safety will be followed without question. In addition, periodic lectures on crew safety will occur over the course of the project, typically at the start of the day or at the close.

### *Canoeing, Kayaking, Swimming and Diving*

Anyone using a kayak or a canoe during this project will have with them at all times a life vest or flotation device, and wear it when out on the water. You will be expected to provide your own life jacket, which can be obtained for a low price at many stores.

When on the Cumberland in any project vessel, avoid the central channel of the river where speed boats or large vessels, such as barges, may be present. These move very quickly and can overtake you faster than you realize, and their operators may not see you, especially if they are being inattentive.

Great care should always be taken when swimming, diving, or snorkeling. Do not swim in the park, or in the Cumberland River. Never swim alone, and always let people know where you are going.

### *Fires*

Open fires are permitted in the campground. If the park vegetation is dry, and a serious fire could result, fires may be prohibited. Exercise fire safety, and never leave a fire unattended, nor allow fires to be so large as to spread sparks or embers. Shovels and water should be kept near firepits to assist in putting them out.

When gathering firewood, be sure to only do so from areas where you have permission to do so. No one should be using chain saws or other dangerous equipment to gather firewood. Firewood collection will be coordinated with the project directors, the park superintendent, and local residents.

A note to smokers: please take extra caution when putting out cigarettes. Smoke only in designated areas and properly dispose of your trash (i.e., in the garbage bags, not the port-o-lets).

### *Stay Away from the Bank Edges*

The fieldwork will sometimes occur adjacent to a steep slope, the river bank overlooking the Cumberland River. In places this bank may approach 15 or more feet of vertical elevation and it may be undercut, something not obvious when walking near the edge from above. Caution when working near this edge is paramount. Under no circumstances are project members to attempt to climb up or down steep slopes greater than eight feet in height.

***Cars***

Project members may be expected to use personal vehicles to travel to and from project work areas. Crewmembers who wish to drive their personal vehicles will not be compensated. Crewmembers and volunteers must park in designated parking areas.

***Driving Safety***

No vehicle should be driven over 25 mph within the Bells Bend Outdoor Center, as to do so will jeopardize the crew, the vehicle, and visitors to the Center. Project personnel are expected to obey all traffic laws when driving outside of the park, to and from project areas.

***Use of Tools***

Care must be exercised in the use and sharpening of hand held and power tools. Trowels, shovels, and machetes as well as other tools can cause serious injury unless properly used and stored. People using sharp tools should always be aware of the location of people nearby, to avoid accidents. Safety glasses must be worn when using power equipment of any kind, and during nailing or cutting tasks. No one is to use hand tools or chain saws in the collection of firewood without clearing such action with the project directors. Such activity shall occur only in places where permission to do so has been btained.

***Use of Cell Phones***

Cell phones/texting should not occur in the excavation or lab areas during normal working hours, unless such activity is a part of project business.

***First Aid Kits***

Well-equipped First Aid kits will be available throughout the project in an easily accessible area. You do not need permission to use these supplies. If you notice supplies are getting low, please inform a supervisor. Many members of the field crew have formal training in First Aid and CPR, and emergency contact numbers are provided elsewhere in this volume. Provide your own allergy and other medicines as needed. **If you have any allergy that is severe (to medications, foods, stings, etc.), please tell your supervisor prior to beginning work.**

***Bad or Severe Weather***

With any luck we will not experience severe weather during this project. Crews will be notified via cell phone from the Visitor's Center where weather will be monitored throughout the day using the internet. In the event of thunderstorms or tornado warnings, all personnel will relocate to safe places as designated by a supervisor until the danger passes. Typically this will be vehicles in the immediate campground or site area. a solid building, such as the barn near the campground, the historic house on the park, or the Visitor's Center. No work will be conducted in the open or on the river under any circumstances when lightening is present in the general vicinity (i.e., within 1-2 miles). Afternoon thunderstorms are frequent in the summer and usually provide little to no warning. When such storms appear to be brewing, we monitor the situation carefully, and as necessary close the fieldwork as quickly as possible and relocate to shelter. Please act promptly if you are asked to shut down and help close out the fieldwork.

**Under no circumstances is anyone to be on the Cumberland River when thunder or lightening is occurring.**

**In the event of severe weather (i.e., thunder and lightening), go to your car, the barn or the visitor's center. Go to the closest safe location. Do not stay in your tent!**

***Security Considerations***

Visitors tend to assume that normal safety precautions are not necessary in a park. They are. Crime exists, but not to the same degree that it does in larger cities. It's best to stick to the project campground or Visitor's Center at night and, when going into town, use the same kind of street sense that you would in any unfamiliar territory. Traveling alone and at night, as well as camping alone, is not recommended, nor is going to local watering holes.

Do not leave valuables unattended in your tent. Lock them in your vehicle.

***Protection from the Sun and Heat***

The temperature often stays above 90 degrees F and can be extremely taxing physically and mentally. Drink lots of liquids, and watch for signs over overheating, both for yourself and other crewmembers. Even if you have never been sunburned in your life, use sunscreen on this project routinely. If you are dark-skinned, start with at least an SPF 14 and keep it on. If you are fair-skinned, use a sunscreen with a higher SPF (i.e., 25 or 30). Midday is when rays are most intense, so be particularly careful then. Fieldwork will typically cease most days by noon or 1:00 pm, to allow personnel to get under shelter and cool down. You can also burn in this part of the world when it is cloudy, so putting sunscreen on every day, no matter what the weather, is the best strategy. Drink a lot of liquids. Water will be provided. Please note that bees and other insects like liquids, too, so always look in your cup before drinking ("Don't drink the bees!") Judging the amount of sun you can take by how your skin looks is a bad technique; sunburns usually don't appear until hours later. Local nonprescription remedies are often very good; sunburn ointments with *aloe vera* can be particularly soothing.

***Insects***

Mosquitoes can be a problem. These bloodsuckers are more prevalent in the summer season and at dawn and dusk. Off-brand insect repellent is readily available, but you may want to bring something stronger. The most effective repellent is DEET (N, N-diethyl meta-toluamide) an ingredient in most insect repellents. Avoid applying high-concentration (greater than 35%) products to the skin, and refrain from applying repellent to portions of the hands that are likely to come in contact with the eyes and mouth. ALWAYS READ THE CAUTION NOTICE ON THE BOTTLE BEFORE SPRAYING YOURSELF, as some products with DEET recommends absolutely no skin contact. Pediatric insect repellents with 6-10% DEET are available. Rarely toxic reactions or other problems have developed after contact with DEET. For greater protection clothing can be soaked in or sprayed with PERMETHRIN, which is an insect repellent licensed for use on clothing. If applied according to the directions, permethrin will repel insects from clothing for several weeks. The best protection is insect repellent and/or full cover clothing.

Tick-borne diseases are a potentially serious problem in the southeastern United States. Lyme disease, Southern Tick-Associated Rash Illness, Babesiosis, Ehrlichiosis, and Rocky Mountain Spotted Fever all are present within the region. All project members must take care to check for

the presence of ticks by wearing light colored clothing, using insect repellent and thoroughly checking daily. Any crewmember that finds and removes an embedded tick is expected to save the insect in a ziplock bag and, as necessary, seek medical treatment. Detailed information on tick-borne and other insect related diseases present in the Southeast (including the typically mosquito-borne West Nile Virus) can be found at the web site of the Centers for Disease Control, at

http://www.cdc.gov/ncidod/dvbid/index.htm

***Project crewmembers and volunteers are expected to visit this web site and familiarize themselves with the symptoms of these diseases.***

When possible, wear long-sleeves, long pants and socks when outdoors. Treating clothes with repellents containing permethrin or DEET will give extra protection, since mosquitoes or other insects may bite through thin clothing. Do not apply repellents containing permethrin directly to skin. Do not spray repellent containing DEET on the skin under your clothing.

Also a nuisance is the little varmint from the sand-flea family known as the no-see-um. You do not realize you are being bitten until it is too late, and these bites stay, and itch. No-see-ums start getting hungry around 3 pm and are out in force by sunset. They are always more numerous in shady and woody areas. Avon “Skin So Soft” is a remarkable repellent for these pests.

There are wasps and yellow jackets that can give a painful sting, and some ants bite, most notably “fire” ants. Avoid these insects if at all possible. Do not stand on small conical piles of loose dirt; they may well be fire ant nests. Anyone allergic to insect bites or stings should be careful, and bring appropriate medicines. BEFORE GOING INTO THE FIELD, NOTIFY YOUR SUPERVISOR AND COLLEAUGES IF YOU ARE ALLERGIC TO INSECT STINGS.

Watch out for spiders. Most are harmless, but some larger species will bite, and the brown recluse and the black widow’s bites can be quite serious. These spiders have been seen in the project area.

☜ Black Widow (red hourglass on belly)

Brown Recluse (fiddle on back) ☞

Always check excavation units or bank profiles carefully before starting work. Small animals, spiders, snakes, scorpions, and other possible wildlife may be trapped in units, or find them attractive places to hide.

***Dangerous Plant Life***

Some local plants, notably poison ivy and poison oak, produce a caustic juice when cut, and in contact with skin, can cause mild to severe rashes. The best rule is: wash thoroughly after clearing brush, and at the


end of the day. Poison ivy is present in the project area and within the Bells Bend Outdoor Center. **PLEASE NOTIFY PROJECT SUPERVISORS IF YOU HAVE SERIOUS PROBLEMS/REACTIONS TO SPECIFIC PLANTS LIKE POISON IVY**. Become familiar with what poison ivy looks like! Care should be exercised when clearing vegetation and gloves and long sleeved shirts and pants should be used.

***Dangerous Terrestrial Animal Life***

Do not make pets of wild animals (i.e., DO NOT FEED THEM). If you are bitten, rabies treatment may be required. Most snakes are not poisonous, but they can give nasty bites that can become infected. In the site area, rattlesnakes and copperheads are possible in upland areas, where we will be working. In lower areas, near water, cottonmouths (water moccasins) are possible. If any snakes are observed, they should be left alone.

***Looters***

The most dangerous animal you are likely to encounter during this project are looters, people who plunder archaeological sites in violation of the law and with no respect for the remains of the people and cultures they are destroying. Unfortunately, looting has occurred in the recent past in the general project area, at sites located along the river bank.

Site looting without landowner or agency permission is a violation of local, as well as possibly state and federal laws, with punishments potentially ranging from jail time, confiscation of all involved equipment including vehicles, and substantial fines.

**If looters are encountered, do not challenge them. Instead, get away from the area as quickly as possible and call in a description of the activity to a project supervisor. Crew and student safety is absolutely paramount here, and is not to be compromised for any reason.**

One of our goals this summer is provide public education on how private citizens can assist archaeological research in a responsible manner (i.e., recording site locations, and catalog artifacts), and in the process to discourage looting (i.e., digging). For this reason we have sought out landowner and state and federal agency permission, and will not work where we do not have such permission. It is not our job to enforce laws against looting, and indeed is dangerous for project personnel to do so. When encountering illegal activity, you should get away as quickly and discretely as possible, and contact project directors who will notify local law enforcement personnel as appropriate.

The most proactive thing you can do is to get license numbers or photograph of the activity, but only if it can be done discretely (without being noticed) and safely. Looters are often armed, and are well aware of the criminal nature and serious consequences of their activity, and as a result should be considered likely to resort to violence if it would mean they would avoid being apprehended. Be friendly and answer questions to anyone visiting where we were working, but under no circumstances to try to actively stop looters, even if they were damaging sites we are working on.

Our job this summer is to work with and educate people, in a safe and professional manner. Some of our best archaeological information comes from collectors, and we want to work with people, not alienate them. We want to work with the public to promote a better understanding and appreciation for the past.

While a project research goal will be to document damage by both the flooding and looting, that shall under no circumstances be done at the expense of crew safety.

# EMERGENCY CONTACT INFORMATION

### *Police*

Dial 911. The park staff will provide assistance in emergencies. Park staff can be contacted during normal working hours at 615-862-4187. The local Davidson County Sheriff's Office phone number is (615) 862-8170.

### *Hospital Emergency Rooms*

For emergencies or an ambulance dial 911. There are numerous hospitals in downtown Nashville. An air ambulance service is available in severe emergencies. The park will provide assistance in such cases.

### *Basic First Aid and CPR*

Most project staff members and park personnel are trained in basic First Aid and CPR should an emergency arise.

### *Tennessee Poison Control Center*

For immediate help if a poison is ingested or comes into contact with the skin, eyes, mouth, etc., call the Middle Tennessee Regional Poison Center (Nashville): (800) 288-9999. Regional Poison Control Centers are:

**Nashville**
**Middle Tennessee Regional Poison Center, Inc.**
501 Oxford House
1161 21st Avenue South B-101VUII
Nashville, TN 37232-4632
(800) 288-9999 (TN only)
(615) 322-6435
(615) 936-2034

**Knoxville**
Knoxville Poison Control Center
University of Tennessee Memorial Research Center and Hospital
1924 Alcoa Highway
Knoxville, TN 37920
(865) 544-9400

**Memphis**
Southern Poison Center, Inc.
Lebanheur Children's Medical Center
848 Adams Avenue
Memphis, TN 38103-2821
(901) 528-6048

***Medic-Alert***

If you have allergies to certain drugs or insect stings, if you are currently taking a prescription medication, you should have (and wear) a Medic-Alert bracelet or necklace. If you do not, please inform your supervisor immediately of this information. This is extremely important information for medical providers in case of emergencies.

***Personal Emergency Contact Information***

Fill out the personal emergency contact form attached to this manual, and give it to one of the project directors, to be kept on-site in case of emergencies. The Bells Bend Outdoor Center will keep this information as well. If you need an additional or new form please ask a supervisor.

# PROJECT WORK INFORMATION

***Project Chain of Command***

The chain of command for this project is straightforward. David Anderson, Shane Miller, and Tom Pertierra are project co-principal investigators responsible for overall technical management and logistics during the project. In practice, Anderson and Miller will oversee the scientific aspects of the research, and all three will be involved with project logistics, with Pertierra the designated project safety officer. These three are in charge of all personnel matters and will make decisions about the use of volunteers. Erik Johanson, Ashley Smallwood, Thad Bissett, Stephen Carmody, Sarah Walters, and other personnel as appropriate and named, will be considered project field supervisors/crew chiefs. All technical and personnel matters are to be discussed with the project crew chiefs and directors. Other members of the project team may have tasks assigned to them, but all such individuals remain in the chain of command.

***Working on this project***

You must fill out the form acknowledging receiving this manual, and a safety and liability release form. The normal project workweek will be from Monday through Friday, with weekends off. We will spend roughly nine hours working each day, from roughly 7:00 am in the morning until noon, and from 5:00 pm until 8:00 pm. Rain days will be spent processing artifacts, or in other laboratory work and educational activity.

All crewmembers will be responsible for correctly completing work forms. These include excavation unit forms, excavation logs, floatation logs, photographic logs, and other forms that may be required. Instruction and examples of forms and samples of how bags and provenience cards should be filled out will be provided.

To ensure success crewmembers must follow the directions of the principal investigators, crew chiefs, or other task leaders as assigned. Failure to follow instruction or engaging in behavior that is unsafe or dangerous will result in your removal from the project.

You should be present for work at the appointed time unless you have received prior permission from your supervisor.

The work schedule is flexible. Some weeks some of us may work longer hours, as project requirements demand. Opportunities to work on special weekend projects may also become available.

If questions arise as you carry out your duties please do not hesitate to ask. Weeks of work in the field can be completely lost with only a small slip in the lab.

***Laboratory Procedures***

- ✓ Artifacts should always be washed in field sample (FS) order.

  EXAMPLE Wash FS-1 1st
  Wash FS-2 2nd
  Wash FS-3 3rd

- ✓ Never place more than one FS on a screen, except when there has been a permanent divider built into the screen explicitly for that purpose.

- ✓ When drying float samples they should be kept in original mesh and dried on screens reinforced with additional mesh material. They should never be placed on a screen that has not been reinforced. Material can fall through the ¼-inch mesh of the non-reinforced screens, resulting not only the loss of materials in that particular FS but in contamination of the FS below it.

- ✓ When float material is thoroughly dry it should be rebagged over a large container that is cleaned out between each sample.

- ✓ Projects should be checked for missing FS numbers as they are being washed and the crew chief or PI should be informed of any discrepancies.

- ✓ All artifacts should be boxed up at the end of each shift (NOT left on the counter or table). Standard box labels should be filled out and placed on each completed box and said box should then put up in its assigned location.

- ✓ Clean artifacts should not be placed back into dirty bags. The bags can be washed and turned inside out to dry or a new bag can be obtained if necessary. The original bag should always be kept and all information transferred to the new bag.

- ✓ Field and provenience information that is written on the bags should be clear and legible (not smeared). If the information has been compromised then it should be rewritten (exactly as it was in the original bag). If you have any question as to what the original information was please ask a crew chief or PI.

- ✓ All counters and tables should be wiped clean at the end of each shift. The floor is to be swept and the trash emptied as well. The lab is to be clean at the end of each day.

- ✓ The fan in the wet lab should be turned on at the end of each shift in order to facilitate drying of the artifacts and the lights should be turned off.

- ✓ Gloves are provided in the lab and these should be used when handling artifacts, especially when dealing with lead. Lead can be a toxic substance and contact with the mouth and eyes should be avoided.

- ✓ Abrasive wire brushes should not be used to clean artifacts.

- ✓ Supplies should be reordered well before they are gone. It is the responsibility of the individual working in the lab to note when a supply is low. They should make a DI-1 and turn it in to a PI or crew chief so the product can be ordered in a timely manner.

- ✓ Unless otherwise instructed all artifacts except the following should be washed:

- Soil Samples (not to be confused with float samples)
- Float Samples (not to be confused with soil samples)
- Bone (always ask a PI or crew chief when bone is encountered)
- Metal Buttons
- Fragile metal objects or ones that are in a highly deteriorated state
- Cloth
- Paper
- Leather
- Charcoal
- Plant remains
- Lithic tool and projectile points

There are hundreds of items that could be recovered in the field and the above list is in no way all-inclusive. So again, if you have any questions or concerns, please do not hesitate to ask.

***Establishing a Test Excavation Unit***

When the excavation of a test unit is begun at the site, several steps must be performed before any actual excavation begins. The first step is to determine the grid coordinates of the unit. Typically a unit will be oriented and placed relative to an established grid system for the site. The unit coordinates are those for the SW corner. The four corners of the unit are measured out using metric tapes and marked with large nails called gutter spikes. After the gutter spikes are in place, the sides and diagonals of the unit are measured again to make sure they are the exact dimensions specified by the crew chief. A table of unit sizes from one-by-one to five-by-five meters and their matching diagonal distances is provided at the back of this manual. As needed, string will be used to outline the unit. In deeper units vertical control is maintained using strings with weights (typically washers) tied to the bottom. This provides a plumb line excavators can use to ensure the walls are straight and uniform.

The crew chief is responsible for making sure the excavator(s) of a unit understands the grid system at the site, and that they know what the grid coordinates are for any particular excavation unit. This is recorded on each Excavation Unit Form for the unit along with the Accession Number, Field Site Number, Excavation Unit Designation, Level, Zone, and Unit Dimensions. Examples of filled out Excavation Unit Forms are provided in the appendices. A crew chief will check the unit dimensions on a regular basis to ensure accurate provenience and reporting are maintained.

The next step is to determine which transit/level datum station is most appropriate for recording elevation information for each unit.. The elevations of the four corners of the unit and the center will be recorded using a transit/level and stadia rod, with the transit/level datum station number and the readings recorded on the Excavation Unit Form. It is the crew chief's responsibility to ensure the transit/level elevation readings and station number are made and correctly recorded, so do not be surprised when they come behind to check your readings. The beginning corner elevations are recorded in terms of centimeters below datum (cmbd).

Natural zones are lettered alphabetically beginning with Zone A. The second natural zone encountered in a unit will be Zone B, the third Zone C, etc. Zone designations are assigned to

major stratigraphic units, not rodent runs, tree root stains, etc. These will be assigned feature or disturbance numbers, as appropriate. Subzones using letters and numbers (i.e., A1, A2, etc.) may be assigned to smaller stratigraphic zones within a major zone. This may be done, for example, when a stratigraphic zone is observed to grade from a darker to lighter color with increasing depth, but a clear distinction cannot be drawn to separate it into two separate zones. A somewhat arbitrary line can then be drawn through the zone and the upper portion referred to as Zone B1 and the lower portion referred to as Zone B2. In situations where a plowzone is present at the surface of the site, this may be called plowzone (PZ) and the next zone can be referred to as Zone A. Typically, designation of stratigraphic zones are made by the PIs and crew chiefs.

Soil smears will be taken from each level/strata, and major distinctive fills within each level/strata, and recorded on the field form. Every zone and subzone identified within a level needs to be described according to color, soil texture, degree of homogeneity (mottling, mixing, laminations, etc.), and material content. The color is determined by comparing the soil with a Munsell soil chart. The texture is determined by feel and described according to the proportions of sand, clay, and silt within the soil. For example, loam has equal amounts of sand, clay, and silt within it, while a sandy loam has all three but the sand is higher in proportion. If you are not confident in your ability to distinguish and describe soil texture, ask a crew chief or PI for assistance. The degree of homogeneity of the soil is usually determined by the variety of soil colors within the zone. A purely homogenous soil is only one color. A soil with mottling has dots of color scattered throughout the primary soil matrix. Mottling is primarily the result of bioturbation: roots, insects, worms, and other small creatures burrowing through the soil. This results in the displacement of soils from other zones that differ in color from the primary matrix. When the bioturbation is so extensive that no one soil color is dominant in the matrix, then the soil is described as mixed. If the soil colors in the matrix consist of thin layers of different colored soils, then it is laminated. Laminated soils are typically the result of soil deposition in an aqueous environment. Material content refers to the presence of mineral particles within the soil larger than sand, or the presence of charcoal and artifacts. Examples of soil descriptions appear on the Excavation Unit Form provided in the appendices.

If artifacts are recovered during the excavation of a unit or level, a brief description of the artifacts is to be included on the Excavation Unit Form with particular mention made of unique finds within the unit. The field specimen numbers assigned to the bags of materials collected from the unit are then listed next to the headings “Material Bag FS#’s” and “Flotation Sample FS#’s”. Bags containing pottery, lithics, etc. are listed as Material Bags on the Excavation Unit Form, as are pollen samples and radiocarbon samples. Soil samples taken for flotation analysis are listed separately as Flotation Samples. If no material is collected from the unit, then the words “No Artifacts” are written on the Material Description line.

If photographs are taken of the unit during or at the completion of a level or zone, then the photograph numbers are entered on the Excavation Unit Form. The crew chief and project directors are responsible for deciding if photographs are necessary (ask the crew chief first and let them ask the project directors if necessary). The photographer is responsible for entering the photographic information for each picture on a Photographic Record Form. The procedure for doing this is presented in the Photographic Section of the policy manual.

If a plan view or profile map is made of the unit during or at the completion of a level or zone, then the map numbers are entered on the Excavation Unit Form. These plan maps will be made on separate sheets of graph paper and kept with the forms at the conclusion of each level. The crew chiefs will tell you if these drawings are needed. Profile maps and plan view maps of units are kept with their matching Excavation Unit Forms at all times.

If, at any point, all of the information that needs to be entered on an Excavation Unit Form cannot fit legibly on the blank lines allowed for that information, a notation is made on the front of the form and the information is legibly written on the back of the form.

***Labeling Excavation Material Bags***

Depending on the excavation provenience, different information may be recorded on the material bags in which the artifacts are placed for shipment to the lab. The following information is always placed on the material bags, regardless of the excavation method: park acronym, accession number, excavation unit, level or strata or feature number, field specimen (FS) number, date of collection, and initials of the collector. These data are written along the left hand side of the bag, leaving the right hand side of the bag for writing catalog numbers and for lab processing notations.

If the bag of material represents an arbitrary level, for example Level 2, the words “Level 2” are written on the bag beneath the excavation unit designation. If the bag of material represent a natural zone or subzone, such as Zone B2, then the words “Zone B2” are written on the bag below the excavation unit designation. If the material represents a natural zone within an arbitrary level, then the level information and the zone information is written below the level designation, separated by a comma. If the bag of material represents a piece-plot, then the words “Piece-plot” are written on the bag and the specific grid coordinate and depth below datum is written on the bag. Examples of how each of these types of material bags should be written out are presented in the appendices.

If the artifactual material collected from a level or zone is too great to fit in a single zip-lock bag, or some materials are too fragile to be bagged with the rest of the provenience without damaging them, then multiple bags are used with each bag labeled with the same provenience information and the same field specimen number. Each bag should be marked to show how many bags in all were collected using that particular FS. This is done by labeling the first bag with the words “Bag 1 of x” the second bag with the words “Bag 2 of x” and so forth, with x being the total number of bags collected for that individual field specimen. The number of bags collected for a particular FS is also indicated on the Field Specimen Provenience Forms.

***Filling Out Field Specimen Provenience Forms***

When artifacts are collected from a site, then an entry needs to be made on a Field Specimen Provenience Form for each field specimen (FS). The field specimen number acts as the link between the contextual information entered on a provenience form and the artifacts collected from that provenience. For this reason, each field specimen number is unique to a Project and cannot be duplicated, even if the Project runs for multiple field seasons.

The FS numbers are assigned consecutive integer numbers beginning with 1 (one). This method is the simplest and easiest to do. Therefore there can only be one FS Provenience Form Log.

It is the crew chief's job to assign the field specimen numbers and to record the provenience and bag information on the Field Specimen Provenience Form. After the FS number has been assigned, it is the crew person's duty to make sure the FS number is written on all of the bags from that provenience, and that the FS number is properly recorded on the appropriate Surface Collection, Shovel Test, Unit Excavation Form, or Feature Excavation Form.

After the bags and forms have been filled out by the crew person, it is the crew chief's job to check the forms and bags for proper completion and accuracy and to note completion of the check at the bottom of the appropriate Surface Collection, Shovel Test, Unit Excavation, or Feature Excavation Form. When the material bags are brought in from the field, it is the crew chief's job to make sure all of the bags are accounted for, and as each FS is brought in, to initial the "Check In" blank on the Excavation Unit Form for each FS.

***Collecting Radiocarbon Samples***

There are a number of materials that can be used to date a stratigraphic level, zone, or feature using the radiocarbon dating method. The most commonly dated materials found archeologically in the eastern United States are carbonized plant remains (wood, nuts, seeds, etc.), bone, and shell. The advent of accelerator dating now permits the dating of samples with very small amounts of carbon.

Since the radiocarbon dating is only as good as the sample submitted for analysis, it is important that samples be selected carefully and handled properly. It is important that the sample is collected so there is no question regarding its provenience and lack of contamination. For this reason, during this project, only materials observed in situ and from impeccable context (i.e., unambiguous features or occupation/mound stage surfaces) will typically be kept for radiocarbon analysis. Always ask a crew chief before taking radiocarbon samples. <u>All areas where radiocarbon or other absolute dating samples (i.e., OSL, archaeomagnetic) are collected must be photographed, ideally showing exact sampling location</u>.

When a sample is collected for radiocarbon analysis, the proper procedure is to touch the sample as little as possible. Use a clean (free of petroleum products, insect repellent, etc.) trowel, spoon, or other metal object to pick up the sample. Then place the sample on a sheet of aluminum foil large enough to wrap around the sample to protect it from damage and possible contamination. Avoid collecting as much dirt as possible. The foil wrapped sample is then placed inside a plastic zip-lock material bag and it is labeled like a usual excavation material bag except that the words "C-14 Sample" are clearly written on the bag below the provenience information. The bag is assigned a field specimen number by the field crew chief, and the appropriate information is entered onto the Field Specimen Provenience Form.

***Collecting Flotation Samples***

Soil samples collected for flotation analysis are another case where special field handling is necessary in order to avoid contamination of the samples. Trowels should always be cleaned of

soil before the collection of each sample, and flotation samples should only be put into new clean bags provided specifically for that purpose.

Flotation samples are typically collected in the form of a square column from an excavation unit, mound stage filling episode, mound floor unit, or from a feature.

When a series of flotation samples are taken in the form of a column from the corner of an excavation unit, each sample should be labeled like a usual excavation material bag except that the words "Column Float Sample" are clearly written on the bag below the provenience zone information. The quadrant the sample was taken from must also be noted on the field form and column sample bag.

If the flotation sample is too large to fit in one bag, then multiple bags may be used with each bag labeled with the same provenience information and the same field specimen number. Each bag should be marked to show how many bags in all were collected for that particular sample. This is done by labeling the first bag with the words "Bag 1 of x" the second bag with the words "Bag 2 of x" and so forth, with x being the total number of bags collected for that individual floatation sample.

***Excavation of Features***

When a feature (pit, hearth, house, postmold, etc.) is encountered during excavation, or any disturbance whose deposits should not be mixed with general level, strata, or feature fill (including modern disturbances such as fence posts), it is to be treated as a separate provenience from the rest of the excavation unit and is to excavated separately, with all fill kept separate as a separate FS. At the point where the feature is first identified, and excavation of the feature begins, all the excavation information is recorded on Feature Excavation Forms. In many ways, the Feature Excavation Form records the identical types of information recorded on an Excavation Unit Form, but it also has spaces for recording special information applicable to the manner in which features are excavated and interpreted.

When a feature is first identified, it is assigned a feature number by the crew chief. Feature numbers are assigned consecutively. After the area around the feature has been troweled smooth, it will typically be photographed (ask your crew chief). The photographic numbers are recorded on the first Feature Excavation Form started for the feature as well as the Photographic Record Form. The Feature will then be mapped.

After the feature is mapped in plan view, the map is shown to the crew chief who checks it for accuracy and completeness. This check for accuracy includes measuring the distance between the cross-section nails indicated on the map, and those on the ground to make sure the distance between the two match. The crew chief also checks at this time to make sure that any superpositioning between this feature and other possible features or zones is recorded on the Feature Excavation Form. Each feature plan map should have a title, site number, a scale, a north arrow, the initials of the mappers, the date the map was made, grid coordinates, cross-section or profile line, limits of excavation, soil designations, and appropriate labels. Soil descriptions of the feature fill zones and the natural subsoils around it are written on the map. If there is

insufficient room for all of the soil descriptions to fit on the map, they are continued on the back. Soil smears are to be taken of all distinctive strata in the feature, and included on the drawing.

All maps are made at a scale of 1:10 on metric graph paper and are organized in the manner shown on the example plan view map provided in the Mapping Section of the policy manual. All maps should be oriented so that north is to the top of the sheet with the 3-ring binder holes along the left hand side of the page. If the mapping paper needs to be turned ninety degrees in order to fit the map onto the page, then north should be oriented toward the 3-ring binder holes. Larger sheets will be used for larger area maps.

After the plan view mapping has been completed, the top elevation of the highest point on the feature is determined by measuring from the datum. The unit datum information is recorded on the Feature Excavation Form in the same manner it is recorded on the Excavation Unit Form, in terms of centimeters below datum. This elevation is recorded on the Feature Excavation form in the Top Elevation blank. Every time a different zone is identified, a new Feature Excavation Form may be started and used to record the result of excavating within that provenience. Ask your crew chief if this is necessary. It may or may not be, depending on how complex the feature is. Typically one form will suffice for most features, but if a large pit with multiple filling episodes is encountered, much greater documentation will be required. When the bottom of a zone or level within a zone is reached, the depth below datum is recorded in the Bottom Elevation blank of the form.

After the feature has been photographed and mapped, the crew chief will inform the crew person(s) how to proceed to excavate the feature. If the feature is a large pit or post, it may be cross-sectioned, with one half removed, to view internal stratigraphy and permit its subsequent documentation and excavation. Smaller features (i.e., small posts) may be excavated in entirety. Ask your crew chief about how to proceed (i.e., excavation by cross sectioning, or in entirety), and as needed they will consult with the project directors. If a feature is to be cross sectioned, a string held in place with two nails may be placed across the feature to mark the cross-section line and to act as future reference points when the profile map is drawn of the cross-sectioned feature. Ask your crew chief, but typically cross-sectioning will proceed using cardinal directions as major axes of orientation. That is, the line will be oriented along a cardinal direction, and the north, south, east or west half of the unit will be removed, as appropriate. Typically all the features in a given site area will be removed the same way. If large numbers of features are found, and the unit floor is already level, the feature may be sectioned without the use of nails, but always ask the crew chief first. After half the feature has been removed (as in the case of large features), or the entire feature has been removed (as in the case of small features), a profile map of the feature will be drawn on a separate sheet of graph paper showing the limits of the feature and its relationship relative to the unit and the cross-section line.

If during the course of excavation, other superpositionings become evident, then it may be necessary to return to this portion of the form to make appropriate note changes. The blank for “Fea. Type” can be filled out when excavation of the entire feature is completed. The rest of the blanks on the Feature Excavation Form are filled out in the same manner as regular Excavation Unit Forms. It must be mentioned in the Interpretation/Comments Section, however, which side of the Feature was excavated first.

If a feature has been cross sectioned, and half of the feature has been excavated, it is prepared for photographing by trowel cleaning the entire profile flat beginning at the top of the feature and working down to the bottom. The profile is photographed. The photograph numbers are recorded on the Photographic Record. After the crew chief has scribed in and photographed the feature profile, then a profile map of the feature is drawn by the crew person(s). Profile maps are drawn at a scale of 1:10, as shown in the profile map example included in the Mapping section of the policy manual.

The same sorts of information recorded on a plan view map are recorded on a profile map: a title, a scale, excavation limits, which profile (e.g., N, S, E, or W), the profile line, the initials of the mappers, the date the map was drawn, soil designations, and appropriate labels. No north arrow is placed on a profile map. The orientation of the profile map is indicated by the grid coordinates of the profile line nails. These coordinates are taken from the plan view map, which also shows the locations of these nails.

Profile maps should be drawn on a separate piece of graph paper for each feature. Profile maps can be drawn on the same sheet with a plan view map if both the plan view and the profile map are of the same single feature, and both plan and profile maps will fit on the page with the appropriate scale.

After the profile map has been completed, the crew chief checks the map to make sure it is accurate and complete. This includes measuring the distance between the profile nails to make sure that they match the distance shown on the profile map. The crew chief then assigns a map number, which is recorded on the upper right hand corner of the map and on a Mapping Record Form.

After the crew chief has checked off the profile map and the paperwork has been completed for the first half of the feature, he or she may request that the second half of the feature is excavated in natural zones with flotation samples taken from each zone. Flotation samples are taken at the initiation of each zone, and a ten-liter sample is measured and bagged using the procedures described above for taking flotation samples. If less than ten liters is available because the zone is small, then the entire zone is collected as a flotation sample. This is noted on the Feature Excavation Form under “Comments” and the volume of the sample is measured and recorded on the Form as well.

When the second half of the feature has been completely excavated, the forms for each of the levels and zones generated during the excavation of the feature are assembled in the order in which they were excavated. Plan view and profile maps are placed behind the forms. The forms and maps are looked over by the crew person(s) to make sure all of the blanks have been filled out correctly. The forms are then given to the crew chief who makes sure that they are all filled out completely, and that they are legible and accurate.

***Human Burials***

Human burials are special in that they must be treated with the respect and consideration that is due to the burial place of a fellow human being. There are state and federal laws that must be

considered whenever human remains are unearthed during excavation. The Cumberland River/Midsouth Paleoindian Project has coordinated with the Tennessee Division of Archaeology about this subject, and will notify them should any human remains be encountered. In the event that human burials are encountered during excavation all work will stop immediately in that area, and the unit will be covered up. In the event isolated human remains are found, specifically individual bones or bone fragments, the Tennessee State Archaeological has asked that they be collected and their location carefully documented, and that they be turned over to their office.

***Project Photography***

Digital shots will be taken throughout the project. Photography is used most often to record archeological data, to provide illustrations in publications, and for images for public presentations. We will be taking high resolution digital still and video film images during the Cumberland River/Midsouth Paleoindian Project.

Cameras and film are never to be left in locations where they will be in direct sunlight. The heat can damage camera electronics. Cameras are to be covered when not in use to protect them from rain or dirt.

Always use the autofocus setting on the camera, unless a crew chief or one of the project directors tells you otherwise. Our extensive experience has shown that this feature always provides better images than most nonprofessional photographers can provide. SLR cameras typically have built in light meters which allow the user to set the camera to an aperture setting (F-stop) that will produce an average exposure for the subject under view. The problem with using the built in meter, however, is that it averages the light for the entire picture or a portion thereof, and may not be the best setting or even adequate to properly record the true subject of the photo, such as a shaded profile wall. To insure the likelihood that the best picture is obtained, you should bracket the exposure as necessary. Check the digital images to see that the picture was taken successfully before proceeding.

Whenever a picture is taken, a menu board should be included in the photograph to identify the subject of the photograph. The menu board should have the following information on it: project name, field or formal state site number, provenience information, the subject name or type if warranted, and the date the photograph was taken. The menu board should be positioned in a location where it will not obstruct the subject of the picture, but should be easily readable in the viewfinder.

Along with the menu board, two other reference devices must be included in every photograph of a feature or excavation unit: a north arrow and a metric scale. These should be placed in locations where they do not obstruct the subject of the picture, but should be easily readable in the viewfinder.

Every time a photograph is taken, it needs to be recorded on a Photographic Record Form, Photographic Record Forms are fairly straightforward in the information that needs to be recorded on them.

***Field Conservation***

The proper treatment and handling of artifacts, field notes, maps, and other documents is an essential part of the data collection process and needs to be performed conscientiously during all phases of fieldwork. Because the documentation and artifacts represent the only means for recording the provenience of artifacts and reconstructing the archeological record, proper field procedures will be followed in order to ensure that the materials are delivered to the lab in the best condition possible. Once they have arrived at the lab, proper handling procedures must be maintained to ensure that all project documents are archived in the best condition possible for future researchers. Most of these procedures are common sense but need to be a conscious part of everyone's performance during the field recovery and laboratory process.

Sunlight, heat, and humidity are factors that cannot be avoided during the investigative process, but their effect on field notes, film, artifacts, etc. can be minimized by exposing them to the elements as little as possible. Paperwork and maps should not be left exposed to the sun or rain. Film and cameras should never be left in vehicles where they can be subjected to high temperatures. All documentary materials shall be kept in air-conditioned facilities when they are not being used in the field.

Field and laboratory analysis forms will be printed using acid free paper only. Note taking on these forms will be performed using soft lead pencils only. Note taking will not be performed with pens, hard lead pencils, or markers. Hands should be kept as clean and dry as possible to prevent soiling and smudging of forms. Maps should not be folded if they are to be curated after field use.

During shovel testing and test excavations at open-air sites it is possible to encounter artifactual materials of different durability and composition, which will require different types of handling. But, because fragile items are preserved infrequently at open air sites, most artifacts encountered are generally relatively durable materials (lithics, pottery, etc.) and do not need special handling other than being careful not to stack heavy bags on top of one another.

Should large quantities of burned stone, brick or other heavy items, be encountered during excavation, they will be bagged separately from the rest of the materials to prevent artifact breakage. Any potentially fragile materials, such as bone, shell, and so forth that are encountered during the investigation will be bagged separately from other less fragile materials within the same provenience if bagging them with the other materials could lead to artifact damage. These material bags would still receive the same FS number because they came from the same provenience, they would simply be bagged separately from the other artifacts to prevent artifact damage. Particularly fragile items will be supported and padded using suitable containers and padding (see Field Conservation of Fragile Artifacts section below).

After non-lithic artifactual materials have been placed in a bag or container, they should be placed in a location where they are not exposed to the sun. Exposure to the sun causes water evaporation and condensation, which can be very detrimental to the artifacts, particularly metal, bone, and shell. When artifacts are transported from the field to the lab, care will be taken to make sure artifacts are not crushed under equipment or other bags.

Similar precautions will be used when transporting artifacts from the field lab back to the curatorial facility in Knoxville, Tennessee. Maps, field notes, and other paperwork will be transported in map tubes, file folders, and/or large envelopes to prevent exposure to the elements and physical damage. Artifacts will be packaged in artifact storage boxes. Artifacts will be packed into the storage boxes with care so that heavy items are packed separately from fragile items, and fragile items are provided the additional protection (packing material, individual containers, etc.) necessary to insure their safe transportation to the curatorial facility.

***Field Conservation of Fragile Artifacts***

The guidelines presented here will be followed when collecting fragile or perishable artifacts. Arranged by material type, the guidelines contain a description of the kinds of fragile materials.

Before any fragile specimens are collected from a site, they will be photographed *in situ* and carefully collected, as appropriate. Ask a crew chief about how to proceed. Artifacts collected from dry environments will be kept dry; artifacts collected from damp environments will be kept damp; artifacts collected from wet sites will be kept wet. All objects will be protected from exposure to the sun and to extreme heat. During periods of travel on foot, fragile objects will be carried by hand; during travel in vehicles, fragile objects will be hand held. When they arrive back at field headquarters, fragile objects will be stored in the field laboratory until they can be transported to the curatorial facility in Knoxville.

Items deemed too fragile for removal from a site without consolidation will be left *in situ* until appropriate personnel can be contacted and consulted regarding the possible use of a consolidating agent on the specimen. Consolidation typically refers to the application of an adhesive solution to reinforce a weakened or fragmented object. Consolidation of objects in the field will only be undertaken under the advice of an appropriate specialist.

During field investigations, shipments of fragile items encountered during site investigations will be made to the curatorial facilities in Knoxville at intervals commensurate with their stability. Items will be securely packed in protective containers, and will be transported by. If it is believed that immediate stabilization or treatment of a fragile item is necessary, arrangements will be made to accommodate the situation, by either arranging for the treatment of the object at the Park or by making an immediate trip to SEAC with the fragile item.

***Vegetal Materials***

Vegetal materials that may be encountered include items made of: 1) processed vegetal fibers such as sandals, fabric, and cordage, 2) items made of minimally modified plant parts such as “gourd” containers and reed basketry, 3) objects fashioned from wood such as bowls and tool handles, as well as 4) various plant food byproducts including seeds, cobs, and stems. Preservation of such materials is likely to be poor in the project area, but such remains may be found.

Non-carbonized vegetal materials tend to decompose rapidly in variably damp environments. Carbonized vegetal materials tend to preserve very well in most environments because most the organic materials have been converted to inert carbon, but due to their extremely brittle nature,

carbonized materials rarely survive as totally intact objects except in the case of very small items such as seeds.

The primary dangers to these items will consist of exposure to sunlight, changes in humidity, and mechanical damage as a result of moving the specimen. Transporting wet specimens in plastic containers or bags filled with just enough water to keep them wet, but not allowing for jostling during shipment will reduce these potential threats to the integrity of such specimens. The specimen will be protected from exposure to light. The container will also have the provenience information recorded on it.

Dry specimens deemed sturdy enough for transport without consolidation will be shipped within a box padded with acid free tissue. The tissue padding placed in the box will be just enough to prevent movement of the object without subjecting it to pressure. The box will have a lid to protect the specimen from exposure to light. The box will be placed in a plastic bag on which the provenience information will be recorded. The bag will be sealed and several small holes will be punched in the bag to allow for the exchange of humidity, and a colored tag will be affixed to the bag to mark it as a fragile item.

Vegetal items that are too big to be placed in boxes and bags for transportation will be left at the site until arrangements can be made to retrieve the specimen. Appropriate specialists will be consulted prior to this action, since extraordinary measures will no doubt be necessary for the safe transportation and conservation of such items.

***Faunal Materials***

Bone, antler, and shell are relatively stable materials, and are typically well preserved where the addition of wood ash, bone, and shell has raised the pH of the soil to near neutral or alkaline levels. Preservation of such materials is currently unknown in the project area, save at shell midden sites where it is likely to be excellent.

Since the shells of molluscs grow differentially in response to season fluctuations during the life of the animal, much like the growth rings of a tree, mollusc shells also hold the potential of acting as seasonal indicators for the periods when sites were occupied prehistorically. The usefulness of shells as seasonal indicators relies, however, on the completeness of the specimen; whole shells being most useful for such analysis, and good provenience.

Damp bone, antler and shell objects will be kept damp by placing them in a box with a lid to protect the specimens from the sun. The box will then be placed in a plastic bag with the appropriate provenience information written on it. The plastic bag will have several small holes punched in it, to prevent the condensation of moisture within the bag. A damp piece of tissue will be placed inside the bag but outside the box to act as a humectant. The bag will be labeled with the appropriate information, and a colored tag will be affixed to the bag to mark it as a fragile item. Dry bone, antler and shell objects will be similarly treated except that the damp tissue will be omitted from the process.

Other faunal materials that may be encountered include objects derived from the soft portions of animals such as hide, feathers, hair, and the like. As was the case with vegetal materials, the

primary dangers to these items will consist primarily of exposure to sunlight, changes in humidity, and mechanical damage as a result of moving the specimens. These potential threats to the integrity of such specimens will be reduced by transporting such specimens deemed sturdy enough for transport without consolidation within boxes padded with acid free tissue, within appropriately labeled plastic bags. The tissue padding will be just enough to prevent movement of the objects without subjecting them to pressure. The boxes will have lids to protect the specimens from exposure to light. The bags will be sealed and several small holes will be punched in the bags to allow for the exchange of humidity. A colored tag will then be affixed to the bag to mark it as a fragile item.

All faunal items deemed too fragile for removal without consolidation or too large to be placed within a box and bag will be left *in situ* until an appropriate specialist can be contacted and consulted regarding the best possible means for retrieving the specimen.

***Metric and English Conversions***

1 meter = 39.37 inches = 3.2808 feet = 1.0936 yards
1 foot = .3048 meter
1 sq. meter = 10.763648 sq. feet
1 sq. yard = .8361306 sq. meter
1 hectare = 10,000 sq. meters = 2.4709936 acres
1 acre = 43,560 sq. feet = 4046.955 sq. meters
1 sq. mile = 640 acres = 2,590,051 sq. meters = 2.59 sq. kilometers
1 sq. kilometer = 247.099 acres

***Conversion Formulas***

feet x .3048 = meters
meters x 3.2808 = feet

feet ÷ 3.2808 = meters
meters ÷ .3048 = feet

| | | |
|---|---|---|
| 1 ft. = .3048 m | 6 ft. = 1.8288 | 10 ft. = 3.048 m |
| 2 ft. = .6096 m | 7 ft. = 2.1336 | 25 ft. = 7.620 m |
| 3 ft. = .9144 m | 8 ft. = 2.4384 | 50 ft. = 15.24 m |
| 4 ft. = 1.2194 m | 9 ft. = 2.7432 | 75 ft. = 22.86 m |
| 5 ft. = 1.5240 m | | 100 ft. = 30.48 m |

***Hypotenuse Table, meters***

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | 1.414 | 2.236 | 3.162 | 4.123 | 5.099 |
| 2 | 2.236 | 2.828 | 3.606 | 4.472 | 5.385 |
| 3 | 3.162 | 3.606 | 4.243 | 5.000 | 5.831 |
| 4 | 4.123 | 4.472 | 5.000 | 5.657 | 6.403 |
| 5 | 5.099 | 5.385 | 5.831 | 6.403 | 7.071 |

# BELLS BEND AREA GENERAL INFORMATION

### *General Facts*

Just recently opened in 2007 and located west of downtown Nashville, Bells Bend takes its name from a bend of the same name in the Cumberland River and consists of 808 acres of reclaimed pastures, riparian woodlands and weedy fields. It offers residents and visitors access to a unique three-fold experience: cultivating knowledge of the natural world, developing outdoor recreation skills, and understand cultural impacts on the land. Several miles of paved, or mulched hiking trails and old farm roads are accessible at both entrances of the park.

### *Area Shopping*

Wal-Mart

Start out going North on Old Hickory Blvd toward Cleeces Ferry Road for 4.43 miles. Turn Left onto Hydes Ferry Pike/TN-12. Continue to follow TN-12 N for 8 miles. Make a U-Turn onto TN-12 S/Lindahl Pkwy. Wal-Mart will be on your left.

Target

Turn right onto Old Hickory Blvd for 4.2 miles. Turn right at Hydes Ferry Pike for 2.7 miles. Take the ramp onto Briley Pkwy/TN-155 S for 4.1 miles. Take exit 27B towards I-40 W/Memphis and merge onto Robertson Ave. Continue onto White Bridge Pike for 1.4 miles and turn left.

Costco Whole-sale

Turn right onto Old Hickory Blvd for 4.2 miles. Turn right at Hydes Ferry Pike for 2.7 miles. Take the ramp onto Briley Pkwy/TN-155 S for 4.1 miles. Take exit 27B towards I-40 W/Memphis and merge onto Robertson Ave for .3 miles. Turn right at Charlotte Ave/TN-24 W/US-70 W for 1.5 miles. Turn right at Annex Ave for .2 miles. Costco Whole-sale will be on your left past the U-Haul of Hillwood Pla.

### *Recreation Activities*

Bells Bend is 30 minutes away from downtown Nashville, which has a variety of shops, theaters, and restaurants.

There are many activities to enjoy in Nashville, such as:

- a visit to the Parthenon http://www.nashville.gov/parthenon/
- The Opryland Hotel http://www.gaylordhotels.com/gaylord-opryland/nashville-tn-entertainment-attractions/index.html
- The Country Music Hall of Fame http://www.countrymusichalloffame.org/
- NashTrash tours http://www.nashtrash.com/
- The Grand Ole Opry http://www.opry.com/
- The Nashville Zoo http://www.nashvillezoo.org/

***Restaurants***

Sonic, Jack in the Box and McDonalds are 10 miles away from Bells Bend park area and Rafferty's, Chili's, Outback, Old Charley's, and Red Lobster are about 20 miles away. Other food options: Applebee's Neighborhood grill 4.4 miles away about 10min from living quarters.

***Hotels and Motels in Area:***

Super 8 Motel – 7551 Old Hickory Blvd
Whites Creek, TN 37189
(615) 876-3971

Ramada Limited – 5770 Old Hickory Blvd
Nashville, TN 37218
(615) 889-8940

Super 8 Nashville/ West- 6924 Charlotte Pike
Nashville, TN 37709
(615) 356-6005

Baymont Inn and Suites – 5612 Lenox Ave
Nashville, TN 37209
(615) 353-0700

Comfort Inn – 412 White Bridge Place
Nashville, TN 37209
(615) 356-0888

Best Western Belle-Meade - 5600 Obrien Avenue
Nashville, TN 37209
(615) 354-1711

***Climate***

Local area climate for the summer months is generally lows in the 70s and highs in the 90s. Summer thunderstorms are prevalent and are typically in the afternoon/evening and can rise up with little warning. Tornados can be a summer phenomenon. Plan for hot, humid weather when packing but do not forget to bring long pants and shirts for wading through high grass and foliage.

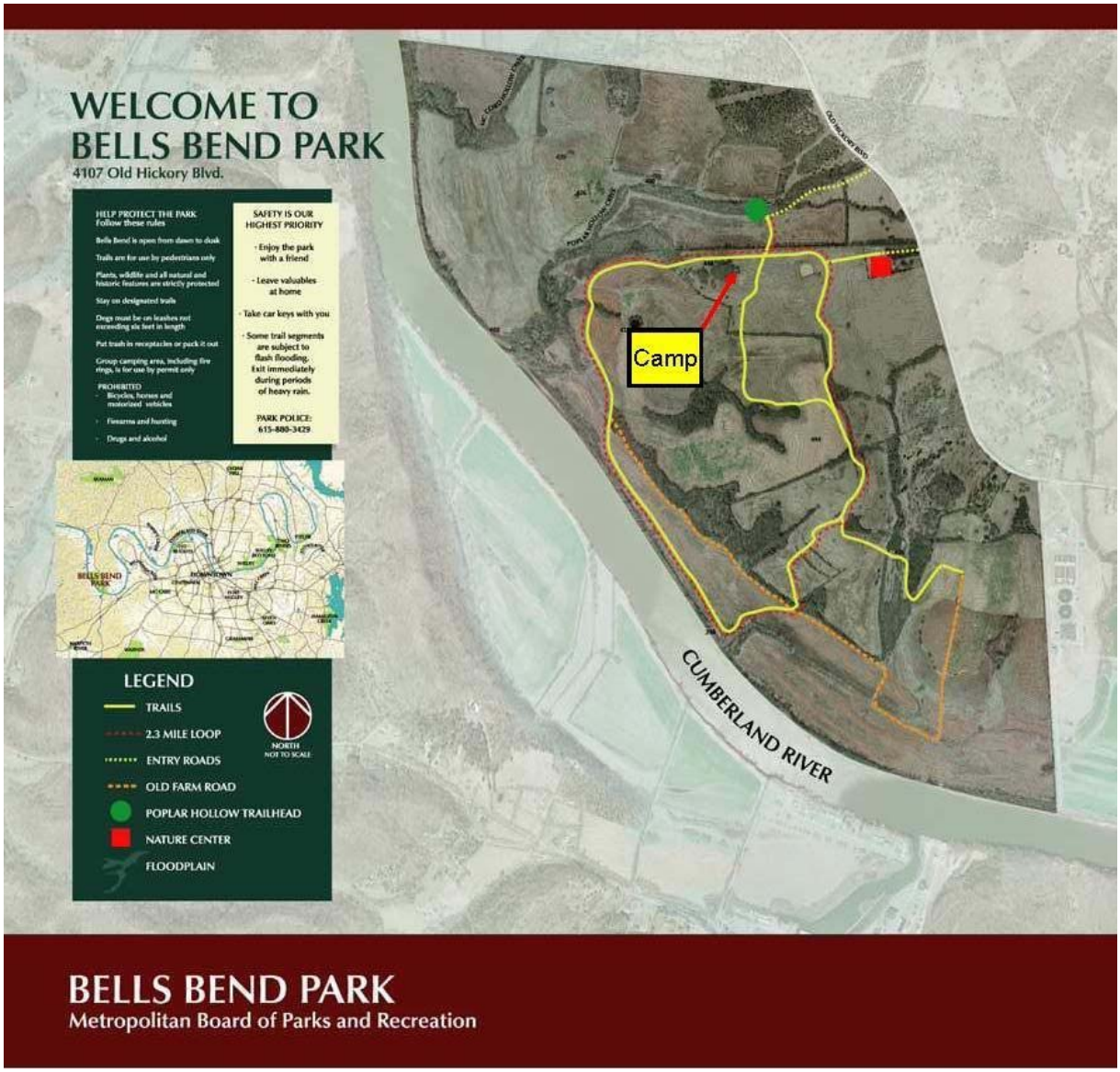
**In the event of severe weather (i.e., thunder and lightening), go to your car, the barn or the visitor's center. Go to the closest safe location. Do not stay in your tent!**

# BELLS BEND OUTDOOR CENTER

***Park Map and Guide***

Review of the park: http://www.nashvillescene.com/pitw/archives/2010/04/19/bells-bend-park-a-review

Map of the Park: http://www.nashville.gov/parks/nature/bellsbend.asp



A Closer look at Camp (from Google maps):

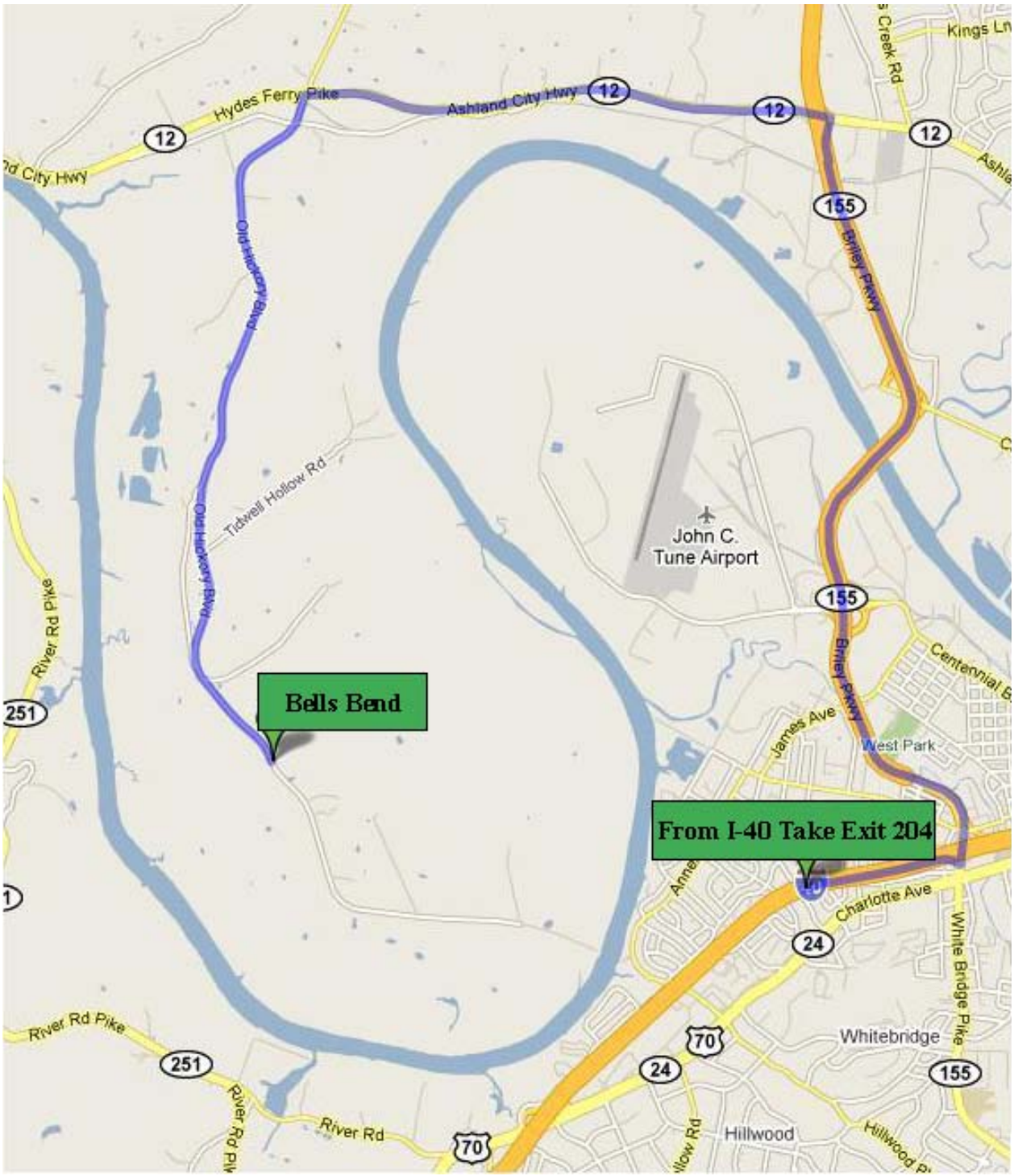

***Operating Hours, Seasons***

Seasonality is year round. Bells Bend park is open 7 days a week from daylight until dusk.

The Bells Bend Outdoor Center is open on Tuesdays and Thursday from 12 noon – 4pm, Saturdays from 9a.-4pm and by appointment.

***Getting There***

From I-40 take Exit #204 and go North on Briley Parkway/Stat Rt. 155. Take Exit #24 and turn left onto State Rt. 12 – toward Ashland City. Go over 2 miles and turn left at the first intersection onto Old Hickory Blvd. Go 4 miles, the entrance to Bells Bend Park (trailhead) is on your right. Go to the second Park entrance for the Bells Bend Outdoor Center.



***Accessibility***

The Visitor Center is accessible to people using wheelchairs, with one wheelchair available upon request. Parking spaces for those with disabilities are located at the Visitor Center Parking Lot.

***Contact Information***

Bells Bend Outdoor Center
4187 Old Hickory Blvd.
Nashville, TN 37218
615-862-4187

Email: bellsbend@nashville.gov

Park Police office: 615-880-3429

For Non-life threatening emergencies
Call: 615- 862-8600

## 2010 VOLUNTEER JOB DESCRIPTION AND FORMS

Prospective volunteers are welcome and encouraged to participate, but we ask that you contact in advance one of the project directors, or the project volunteer coordinator, as listed on the project web site http://bellsbend.pidba.org/ for approval and scheduling. Before volunteers begin work at the site they must sign an agreement form to cover them under Worker's Compensation. Minors (under 18 years of age) who wish to participate must have a signed **Parental Approval Form**. **A note to minors: you will be unable to work without the Parental Approval Form signed by a parent or guardian, please plan in advance.**

Volunteers are expected to work alongside project staff and supervisors. Volunteers will be assigned to a team of archeologists at the beginning of their workday and should follow the direction and guidelines set by this team. Project supervisors have ultimate authority over the fieldwork, so please follow their direction at all times. Likewise, all direction given by the lab supervisor must be followed at all times. Respect for the land, the site, the work, the archeological crew, and the park staff is a must.

Volunteers are asked to devote between four and eight hours on each day signed up towards the project. Please contact us in advance so we can schedule your involvement. Volunteer jobs will vary each day depending on the needs of the crew. These jobs will include field and lab responsibilities. The primary field jobs include hauling fill to the screens, screening for artifacts (dry and wet screening), and careful and accurate documentation of artifact and provenience information. The primary lab jobs include washing and sorting the collected artifacts. A flotation machine may also be used. A project lab will be functioning, and volunteers are encouraged to work both in the field and in the lab to gain broader archeological experience.

Standard equipment to bring on-site includes: **HAT, WATER, LUNCH, SUNSCREEN, BUG SPRAY, and GLOVES**. Extras of these (minus the hats and lunch) will be available at the site, although in limited quantities. It is recommended that volunteers bring their own supplies, but please remember to label them. Volunteers will be held to the same dress code and code of ethics as all project members. Proper attire and shoes (no halter/tube tops, bathing suit tops, short shorts, shirts with inappropriate or vulgar messages, no open-toed shoes, etc.), 'clean' language, and proper behavior are a must. "Water shoes" are allowed for anyone working in the water screening area (we advise you to bring these each day just in case). Absolutely no alcohol or other drugs are permitted in the park or on site areas during normal workday hours. Water will be available to all volunteers and staff. Port-o-lets are located near the campground. Volunteers, like staff members, are allowed breaks when needed. Please clean up after yourself - do not leave trash or cigarette butts on the ground.

If there is an emergency of any kind go directly to the nearest staff member, park ranger, or supervisor. For insect bites/stings, scratches/cuts, and other minor infractions, fully equipped First Aid kits are on-site. Volunteers are welcome to use these supplies when needed and without permission, however please let a staff member know there has been an incident.

Thank you for your interest and participation on the Cumberland River/Midsouth Paleoindian Project. Your commitment is greatly appreciated.

# A SYNPOSIS OF SPECIFIC FIELD STRATEGIES 2010 SEASON

***Research Goals***

1) Re-locate previously recorded sites in Bells Bend with particular emphasis on those with Paleoindian and Archaic components.
2) Survey of Cumberland River shoreline to identify and map eroding archaeological deposits.
3) Survey the Bells Bend Outdoor Center property to identify undocumented archaeological sites.
4) Extend the survey to private property areas where we have obtained permission from the landowner.
5) Conduct in field organization, cleaning and stabilization, and preliminary analysis of samples and materials collected.

***Terrestrial Site Evaluation Teams***

*Research Goals*

The initial goal for this team will be to relocate previously recorded historic and prehistoric archaeological sites on the property of Bells Bend Outdoor Center, followed by the examination of terrestrial components (i.e., away from the river bank) of new sites discovered by the survey team, on the park property or on other properties where written permission to investigate has been granted. The fieldwork will involve using GPS and topographic maps to identify preexisting site locations, and then define a grid oriented to magnetic North starting with N100E100 as the site origin. Shovel tests (30x30 or 50x50 cm) at systematic grid intervals (i.e., 5, 10, 20, 30, etc. as appropriate) to a maximum depth of one meter will be excavated to determine the boundaries and assemblages at each site. This group also examine targeted areas where deposits are likely to shallowly buried to identify undocumented sites. In areas where surface artifacts are present, controlled collection procedures involving the mapping of specific artifacts or sample units will be employed. Where buried archaeological deposits are found or suspected, larger (i.e.,1x1m, 1x2m, 2x2m) test units may be opened at the survey team leader's discretion. A datum consisting of a piece of rebar or some other permanent object will be placed at each siteexamined, and GPS coordinates will be obtained at the location of this datum.

*Personnel*

This component of the survey will consist of two teams. The first team's responsibility will to be to relocate previously known sites, while the second team will focus on opportunistically surveying areas where undiscovered sites are likely to occur. Each team will be led by a graduate student and consist of 3-4 field school participants. The graduate student will be responsible for completing all paperwork (including field notes), taking photographs, recording GPS locations, submitting artifacts to the field lab manager, and for reporting their findings on a daily basis.

*Logistical Needs*

Shovels, screens, 2-3 field supervisor kits, camera and photoboard, bags, and a GPS unit for each team. Total stations may also be used for laying out site grids

*Paperwork*

Forms for both shovel tests and test units, graph paper for profile drawings as needed.

*Teaching Tasks*
Basics of site grid systems and systematic surface data collection and subsurface shovel test and small unit excavation, screening, and artifact collection and identification.. Basic soil description (describing strata/soil horizons and using a Munsell chart). Laying out and excavating test units.

***Riverine Site Survey Team***
*Research Goal*
This group's primary goal will be to locate archaeological deposits eroding into the Cumberland River. This will involve cleaning 50cm wide sections (vertical profiles) of the river bank every 50 meters or, if conditions do not permit use of such an interval (due to the presence of vegetation, rock faces, time constraints, or safety concerns), at greater intervals. Flexibility will be a watchword of this team, with the opportunistic targeting of favorable locations also undertaken, particularly where artifacts are observed in the profile or along the river bank. At locations where archaeological deposits are encountered, the profiles will be cleaned for the visible extent of the eroding deposits. Additionally, any temporally diagnostic artifacts that have eroded will be recovered. All profiles sections and archaeological deposits will be drawn or photographed, and their locations determined employing a GPS and, where feasible, a total station. Total stations will not be transported on the water or where there is a potential for embankment collapse.

*Personnel*
This component of the survey will consist of two teams. Each team will be led by a graduate student and consist of 3-4 field school participants. The graduate student will be responsible for completing all paperwork (including field notes), taking photographs, recording GPS locations, submitting artifacts to the field lab manager, and for reporting their findings on a daily basis.

*Logistical Needs*
Kayaks and canoes plus life jackets for 8 people. Equipment for clearing brush and facing profiles. One field supervisor kit and GPS unit per team. Cameras and photoboards in waterproof containers. Pin flags. Flagging tape. 100m measuring tape. Care will be taken to prevent sediment from falling directly into the river, with hay bales and filter cloth employed as needed. Ladders, as necessary, to reach higher portions of bank profiles.

*Paperwork*
Forms for bank profile recording. This will need to record the location of the section, whether archaeological deposits or buried soils are present, and at what depths. Graph paper and Munsell books, string and nails. A good way to clean, draw, and photograph profiles is to establish a 1m grid on it using pin flags/nails and string.

*Teaching Tasks*
Basic artifact identification and collection. Cleaning a profile for mapping. Mapping profiles and recoding site locations.

***Laboratory Team***
*Research Goal*

This team will be responsible for organizing the collections on a daily basis for analysis and curation. Lab work will be a part of daily activity. All collected samples will be logged and temporarily stored, after which initial processing [washing, sorting, bagging], cataloging, and analysis will occur.

*Personnel*
This team will be led by a graduate student and consist of 3-4 field school participants. The graduate student will be responsible for maintaining an artifact catalog and overseeing the washing, sorting, and cataloging of artifacts by the field school participants.

*Logistical Needs*
Sample, processing, and analysis logs by type, bags and boxes suitable for temporary and long term sample storage, markers and cataloging equipment. Specialized materials as necessary to stabilize and protect fragile materials.

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