

Louisiana's Comprehensive Archaeological Plan

Final

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Introduction

The Division of Archaeology (Division) is an agency within the Office of Cultural Development, Department of Culture, Recreation and Tourism (DCRT). Its founding legislation states it is:

“the public policy of the state of Louisiana to protect and preserve prehistoric and historic properties, artifacts, treasure troves, and objects of antiquity which have historical value or which are of interest to the public, including but not limited to abandoned prehistoric or historic settlements, sites, properties, sunken or abandoned ships, or other objects, or any part thereof relating to the history, government, and culture of the state” (R.S. 41:1601).

The Comprehensive Archaeological Plan lays out how the Division implements this policy. The Plan has three goals. First, it provides an assessment of the current state of archaeology in Louisiana. This includes an organizational and administrative perspective, as well as a research perspective. Second, the Plan identifies key research themes for future research, and identifies the criteria used in determining which sites are considered significant. Third, the Plan provides the Division with a set of goals guiding future efforts to promote archaeological sites and archaeological research in the state.

The Plan is organized into four parts. Part I provides a broad overview of how archaeological resources are addressed in the state from the perspective of the Division. It discusses the legal framework that defines the Division’s responsibilities and examines how the Division is organized to meet those responsibilities. It briefly reviews the other entities that impact or have an interest in archaeological resources.

Part II provides a brief overview of the state’s physical and ecological regions, and how the characteristics of these regions affect the nature and distribution of the state’s archaeological record. Part III summarizes broad themes in the current state of knowledge about the state’s archaeological history, and identifies important areas for further research. It then presents a set of research themes, drawn from the information just presented, ongoing research efforts in Louisiana and surrounding states, and current thinking in archaeology and anthropology. These themes identify critical areas for research and provide a framework for assessing whether a site is eligible for nomination to the National Register of Historic Places.

Part IV identifies the challenges and opportunities facing the Division and Louisiana archaeology now and in the foreseeable future. It offers a series of strategies for how the Division can address these challenges and opportunities.

Part I

The Division of Archaeology and Other Organizations in Louisiana Archaeology

Introduction

The Comprehensive Archaeological Plan reflects the goals and responsibilities of the Division for the state's archaeological resources. Part I examines the statutory responsibilities of the Division and how it is organized and operates to meet those responsibilities. Other agencies and organizations that have an interest in, or whose activities affect, the State's archaeological sites are also discussed. The Division, together with these other entities, oversees Louisiana's archaeological resources and promotes the preservation and protection of that heritage.

Division of Archaeology

The responsibilities of the Division of Archaeology follow from specific requirements enumerated in federal and state statutes. These duties are subsequently enumerated in the state regulations governing the Division (Louisiana Administrative Code [LAC] 25:101-907). The Division of Archaeology and Division of Historic Preservation within the Office of Cultural Development act on behalf of the State Historic Preservation Officer (SHPO) for Louisiana. Federal requirements for the SHPO pertaining to archaeological resources are the responsibility of the Division. The specific responsibilities of the Division include:

Federal requirements:

- 1) Identify and nominate sites to the National Register of Historic Places (National Register) (54 U.S.C. §302303(b)(2)).
- 2) Prepare and implement a comprehensive statewide historic preservation plan (54 U.S.C. §302303(b)(3)).

Federal and State requirements:

- 3) Serve as the advisor on archaeological resources to federal and state agencies and local governments whose activities may impact sites (54 U.S.C. §302303(b)(5) and R.S. 41:1604(5)).
- 4) Maintain the archaeological site files for the state (54 U.S.C. §302303(b)(1) and R.S. 41:1604(2)).
- 5) Administer the federal Abandoned Shipwreck Act (43 U.S.C. §2101-2106) for the state (R.S. 41:1604(9)).
- 6) Implement a program of activities that will make available to the public information about the historic and prehistoric resources of the state (54 U.S.C. §302303(b)(7) and R.S. 41:1604(4)).
- 7) Administer the state program of federal assistance for historic preservation within the state (54 U.S.C. §302303(b)(4) and R.S. 41:1604(8)).
- 8) Administer the National Historic Preservation Act (NHPA) as it applies to archaeological resources in the state (R.S. 41:1604(6)) by cooperating with the Secretary of the federal Department of the Interior, the Advisory Council on Historic Preservation, other federal and state agencies, local governments, and private organizations and individuals to ensure that historic properties are taken into account in planning and development (54 U.S.C. 302303(b)(6)), and by consulting with appropriate federal agencies on

federal undertakings that may affect historic properties, and on plans to protect, manage or mitigate harm to those properties (54 U.S.C. 302303(9)).

State requirements:

9) Curate archaeological collections obtained from state land or donated from private land (R.S. 41:1604(3)).

10) Advise the Secretary of the Department of Culture, Recreation and Tourism and the SHPO about matters affecting archaeological sites in the state (R.S. 41:1604(7), 1606, 1607).

11) Develop rules and regulations for the recovery and study of archaeological remains on state lands, including river and lake bottoms and offshore waters within state jurisdiction (R.S. 41:1604(1)).

12) Administer the provisions of the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671-681).

13) Administer the provisions of the Louisiana Historic Cemetery Act (R.S. 25:931-943).

As part of its responsibilities under Federal and State Requirements (item 7) above, the Division accepts federal Historic Preservation Fund (HPF) monies from the National Park Service (NPS) in support of the SHPO. The NPS has established measures to assess performance through use of the HPF funds. The Division also tracks several performance criteria for the state. The HPF and state governance criteria are not mandated activities, but efforts to ensure that the criteria are addressed impacts the Division's activities.

The Division tracks its use of the HPF monies through four criteria:

1) Annual (federal fiscal year) number of properties for which a determination of effect and/or National Register eligibility is provided.

2) Annual number of sites identified as a result of HPF-funded investigations and other activities.

3) Annual number of hectares surveyed to identify sites.

4) Annual number of Memoranda of Agreement and Programmatic Agreements signed.

The state criteria include:

1) The number of sites identified and updated annually (state fiscal year).

2) The number of cubic feet of artifacts and associated records annually curated to state and federal standards.

3) The number of interpretative projects completed annually by the Poverty Point station archaeologist.

4) The number of people annually reached through the Division's website, booklets, and Archaeology Month events.

5) Reviewing 100% of the Section 106 projects submitted to the SHPO for their potential impact on historic properties.

Most of the statutory responsibilities enumerated above are also incorporated into the regulations promulgated by the Louisiana Archaeological Survey and Antiquities Commission (1975) (LASAC) and amended by the Division (1994) (Louisiana Administrative Code, Title 25, Part 1 §101-199). The

original publication of the regulations preceded the creation of the Division and identified the LASAC as the responsible party. The Division has subsequently overseen the responsibilities outlined in the regulations.

To address the responsibilities defined in federal and state law, the HPF and state governance performance criteria, and the Title 25 regulations, the Division has six primary program areas. Each is discussed below.

Archaeological Site Files

The Division maintains the records for all known archaeological sites located within the state. The majority of these sites are recorded through compliance with Section 106 of the NHPA. Additional site forms are received from avocational archaeologists and other professional archaeologists working within the state. The Division treats cemeteries and abandoned shipwrecks identified within state waters as archaeological sites and includes them within the site files. Currently the Division houses records on approximately 21,000 archaeological sites, shipwrecks, and cemeteries across the state.

Each new archaeological site is recorded through completion of a site form which is submitted to the Division. A blank form and instructions for completing the form are on the Division's website. The form is reviewed by the Site File Manager within 30 days of submittal to ensure it meets the Division's standards. After review, the site form is returned to the submitter to address any comments. Upon receipt of the final version, the site form is checked to ensure the comments were addressed and then the site is entered into a Geographic Information System (GIS) and one hard copy of the form filed. Information about each site is entered into an online, searchable database.

An updated site form is submitted whenever an archaeologist visits a previously recorded site. The form is reviewed by the Site File Manager, incorporated into the GIS and database, and the hard copy filed. If new information about a known site is obtained without a site visit, such as a radiocarbon date or historical information about its occupational history, a Supplemental site form can be submitted to record the new data. This form is also reviewed by the Site File Manager, and then incorporated into the GIS/database if appropriate and the hard copy filed.

Curation

The Division operates a curation facility that meets the standards of 36 CFR part 79 for housing federal collections. It currently houses approximately 3,200 cubic feet of collections and associated records. Louisiana State University, the University of Louisiana at Lafayette, Northwestern State University, the University of New Orleans, and the University of Louisiana at Monroe also house archaeological collections from across the state and serve as deputy custodians (Title 25, Part 2, §159). In addition, the materials recovered from the Poverty Point site are curated at the Poverty Point World Heritage Site.

The Division curates all materials recovered from state land and that have been donated to the state, except those donated to the Louisiana State Museum or the Office of State Parks. The Division also curates collections generated by Section 106 projects across the state. These collections are donated to the Division by the agency, archaeological firm or landowner having legal ownership of the materials. The Division charges a fee to process each collection and integrate it into the curation facility system.

Collections housed at the curation facility are available for use in exhibits; Division staff assist in exhibit development and review all text and images to ensure they are accurate. Division staff also assist researchers interested in examining collections, and facilitate loans of materials for research.

Public Outreach and Education

This program area promotes the understanding of Louisiana's diverse cultural heritage to foster pride in our past and encourage stewardship of Louisiana's cultural resources. Heritage education is an innovative way to enhance academic achievement, conservation awareness, multicultural understanding, and pride in Louisiana. It also promotes archaeological heritage tourism as an economic stimulus that fosters appreciation for Louisiana's unique past.

In 1981, Louisiana was the first state to create an archaeology outreach position within the SHPO. It has partnered with the National Park Service and the National Center for Preservation Technology and Training (NCPTT) in the Heritage Education--Louisiana program, which focuses on providing training, information, and grants to teachers who want to know about historic buildings, archaeology, and cultural landscapes. These efforts have resulted in the development of educational materials for teachers to use in the classroom as well as educational resources for the general public. Information about Louisiana archaeology is provided to the general public through booklets, classroom activity guides, prehistory posters, online interactive exhibits, emails, advice about exhibit content, and presentations. Archaeology Month allows Louisiana residents to learn more about the discipline of archaeology, the archaeological sites in our state, methods of archaeology, and the laws that protect sites.

A number of outreach and education materials are available from the Division:

1) Heritage Education materials:

- Classroom Archaeology* (classroom activity guide)
- Adventures in Classroom Archaeology* (classroom activity guide)
- Louisiana Indians Long Ago* (picture book)
- Poverty Point Expeditions* (classroom activity guide)
- Prehistory Posters* (5 in series)
- Poverty Point Classroom Exhibit (teaching kit; 4 total)
- El Nuevo Constante Classroom Exhibit (teaching kit; 1 total)

2) Online booklets include:

- On the Tunica Trail*
- The Caddo Indians of Louisiana*
- The Role of Salt in Eastern North American Prehistory*
- El Nuevo Constante*
- Preserving Louisiana's Legacy*
- Louisiana Prehistory*
- Poverty Point*
- Bailey's Dam*

3) And online interactive exhibits:

- Los Adaes
- Poverty Point
- Marksville
- Bailey's Dam
- El Nuevo Constante
- Bayou Jasmine
- Tchefuncte

The Ancient Mounds Trail in northeast Louisiana is a heritage tourism initiative that showcases the state's spectacular mound sites and promotes the public's understanding and appreciation of Louisiana's unparalleled heritage resources. The trail links 39 mound sites in northeast and central Louisiana that are visible from public roadways. Thirty-three sites are privately owned, three are at state parks (Poverty Point World Heritage Site, Marksville State Historic Site, Poverty Point Reservoir State Park), and three

are owned by a non-profit organization, The Archaeological Conservancy. The sites are interpreted through historic markers and a printed trail guide that is available online at the Division's website and at Tourism welcome centers across the state.

The Poverty Point Station Archaeology Program is funded by a grant from the Division. The Station Archaeologist facilitates research, preservation, protection and understanding of the 3,500-year old Poverty Point World Heritage Site. The site is also a U.S. National Historic Landmark and National Monument. The Station Archaeology Program is a partnership of the Division, the Office of State Parks, and the University of Louisiana at Monroe. The Division of Archaeology funds and directs the program, the Office of State Parks houses the program, and the University of Louisiana at Monroe employs the archaeologist and provides administrative support. The Poverty Point Station Archaeologist conducts research at the park, advises the Office of State Parks on activities potentially impacting the site, and curates approximately 1,000 cubic feet of artifacts and records from archaeological work at the site.

Section 106 Program

Under Section 106 of the NHPA, federal agencies are required to consider the effects of federally funded, licensed, and permitted undertakings on cultural resources. They are required to consult with State Historic Preservation Offices (SHPO's) and federally recognized American Indian Tribes as part of that consideration. The Division represents the SHPO in consultations concerning Section 106 for archaeology in Louisiana. It consults with the Federal agency(s) as to how they will consider historic properties potentially affected by their project, and assists them in developing plans to avoid, minimize or mitigate any adverse effects that project would have on historic properties. For SHPO, these consultations are a balancing act between what would ideally be done to preserve/protect the state's historic resources, and the Federal agency's desire to complete a project in a timely manner at an appropriate cost to the taxpayers. Within this process, there is considerable opportunity for the Division to influence how archaeological sites will be addressed, and how best to serve the state's interests.

During the Section 106 process, sites that are determined eligible for nomination to the National Register of Historic Places represent resources that can significantly contribute to our understanding of the past and are worthy of protection or preservation. In many instances, the federal agency does not have archaeologists to assist with their responsibilities and they rely upon the recommendations of the Division and SHPO for assessing their impacts on sites. The Division makes recommendations regarding when surveys to identify sites should be conducted. These recommendations represent a professional judgment based upon the project's setting (see Part II of this Plan), results of previous surveys in the area, and expectations about the probability of sites being present. When sites are identified, the Division makes recommendations as to whether each is eligible for nomination to the National Register of Historic Places. These recommendations are based upon the site assessment provided by the field archaeologist and other factors (see Parts III and IV of this Plan). The Division makes eligibility recommendations for each site to the federal agency. The Division thus has a major role in determining which sites, and the information contained within them, will be preserved, mitigated or destroyed. For those eligible sites that will be impacted by a project, the Division participates in the development and management of Programmatic Agreements and Memoranda of Agreements with federal agencies, American Indian Tribes and clients. These agreements identify how cultural resources will be addressed for that specific project. The Division ultimately reviews all survey, testing and mitigation reports generated through Section 106 activities to ensure that the state's archaeological record is appropriately documented and interpreted. Through the Section 106 process, the Division has a major impact on the state's archaeological resources and the preservation or documentation of the state's cultural history.

Federal landholding agencies, including the Department of Defense (Fort Polk) and the Kisatchie National Forest, undertake systematic survey of their lands to identify historic properties (54 U.S.C.

§306102). This effort includes Louisiana Army National Guard properties across the state because the Guard receives federal funds to operate and maintain these facilities. The Division assigns site numbers to all sites recorded as a result of these surveys, and reviews all the reports to ensure they comply with the Division's standards. Fort Polk and the Kisatchie National Forest are responsible for curating the collections and associated records generated from their lands; the Division curates collections and records from National Guard property because the land is state property.

Several state agencies, including the Department of Transportation and Development and the Department of Environmental Quality, operate under delegated authority from the appropriate federal agency to conduct the Section 106 process for federally-funded or permitted actions that these departments oversee. These consultation processes operate under the Section 106 framework as the federal agency is ultimately responsible for ensuring that cultural resources are appropriately addressed. The Division consults with the state Department of Environmental Quality to pre-approve debris staging sites for use in disasters. Although these sites will be used for federally funded cleanup activities and would fall under Section 106 at that time, having them pre-approved prior to the disaster enables cleanup to begin immediately and proceed more quickly.

The Division operates an electronic submission system for Section 106 projects requiring review, and maintains an electronic database of all projects submitted for review. The Division reviews 5,000-6,000 projects in years without a federally declared disaster. In years with a disaster, the number of reviews can exceed 20,000. The Division has developed standards for fieldwork conducted within the state; these standards cover survey, testing, major excavation, and monitoring projects. In addition, the Division has developed standards for reports of archaeological investigations. The Division reviews all reports of archaeological investigations conducted under Section 106 to ensure that the fieldwork and the reporting meet the Division's standards.

To assist the Division, agencies, and clients in facilitating the Section 106 process, the Division maintains an online Geographic Information System (GIS) and several online databases. GIS coverages identify the location of all previous archaeological surveys across the state and the location of all known archaeological sites. These coverages include marine surveys in state rivers and offshore waters. Another coverage illustrates the location of all known cemeteries in the state. All archaeological reports submitted to the Division are listed in a searchable, online bibliographic database, and the Division has also created electronic copies of all reports submitted to the Division; the electronic or hard copy versions are available to all qualified researchers. The online Excavated Site Database provides basic information about each site in Louisiana that has been investigated by archaeological methods consisting of at least one 1x1 m test unit; over 1,000 sites are included in this database. The Radiocarbon Database lists every radiometric date obtained from Louisiana archaeological sites; currently over 800 dates from nearly 200 sites are included.

Burials and Cemeteries

The Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671-681) and the Louisiana Historic Cemetery Preservation Act (R.S. 25:931-943) give the Division responsibility for these properties. These two Acts overlap considerably in their purview, and most actions that fall under one Act also fall under the other. The Division has not promulgated regulations for either Act to date.

The Unmarked Burial Act applies to the discovery of human remains outside of a recognized and maintained municipal, fraternal, religious or family cemetery, or a cemetery authorized by the Louisiana Cemetery Board (R.S. 8:673(5)). Anyone finding human remains or burial artifacts from an unmarked cemetery should notify the law enforcement agency of the city or parish where the find was made within 24 hours, and the Division within 72 hours. It is the responsibility of the law enforcement agency to

determine if the discovery is a crime scene or if the remains are less than 50 years old. If neither of those conditions are met, the discovery becomes the responsibility of the Division (R.S. 8:680). The activity that uncovered the burial should cease until a permit is issued by the Division. The Division will issue a permit after consulting with all appropriate parties, including law enforcement, landowner, and descendants, and developing a plan for addressing the burial.

The Historic Cemetery Act applies to all abandoned cemeteries in the state. An abandoned cemetery is defined as one that is no longer in use, is not being maintained, and has fallen into a state of disrepair (R.S. 25:933(1)). The Division has the authority to regulate any activity that would impact an abandoned cemetery, including restoration of the cemetery and removal of burials. The Division will issue a permit identifying what activities will occur at a cemetery and how they will be implemented to avoid adverse impacts to the cemetery.

The Division may also issue an Unmarked Burial or Historic Cemetery permit whenever work that might encounter unmarked burials is proposed at a known cemetery, or if there is a reasonable expectation that human remains will be encountered during an archaeological investigation. The permit includes language outlining what work will be conducted, how it will be undertaken, and how the discovery of human remains will be handled.

Other Responsibilities

1) Advise the secretary of the Department of Culture, Recreation and Tourism and the State Historic Preservation Officer about matters affecting archaeological sites in the state. This responsibility is shared with the Louisiana Archaeological Survey and Antiquities Commission. The Division serves as a clearinghouse for inquiries and information about Louisiana archaeology and its archaeological sites. As appropriate, Division staff consults with the State Historic Preservation Officer and senior Department staff about archaeological issues.

2) Identify and nominate sites to the National Register of Historic Places. The Division of Historic Preservation oversees the state's National Register program. The Division assists Historic Preservation with reviewing applications for archaeological sites, and standing structure properties with archaeological components.

3) Prepare and implement a comprehensive statewide historic preservation plan. The Divisions of Historic Preservation and Archaeology cooperate in developing the Louisiana Comprehensive Historic Preservation Plan. This is done in cooperation with other historic preservation organizations around the state. The Plan is reviewed and revised every five to seven years.

4) Serve as the advisor on archaeological resources to other state agencies whose activities may impact sites. The Division consults frequently with the Office of State Parks on activities that may impact archaeological resources. State Parks has several properties that are archaeological sites, including Poverty Point, Marksville, Fort Pike, and Port Hudson, and many other parks have important archaeological components. The Division supports a Station Archaeologist at the Poverty Point World Heritage Site to conduct research, assist State Parks in interpreting the site, and advise State Parks on activities that might impact the site.

5) The Division consults with the Louisiana Army National Guard concerning development of National Guard facilities across the state. As these activities are generally funded entirely or in part by federal funds, they are handled through the Section 106 process.

6) The State Capitol Historic District was created in 1979 and requires a Certificate of Appropriateness to be issued by the Division of Historic Preservation prior to any development that has the potential to affect

the historic character of the District. R.S. 25:784(D) states there will be “no excavating or moving of earth, rock, or subsoil within the district” until the Certificate has been approved. The Division of Historic Preservation consults with the Division prior to issuing the Certificate of Appropriateness.

7) A permit from the Division is also required prior to any excavation that would damage or destroy archaeological resources on state land (R.S. 41:1605.B). Archaeological investigations involving any excavations beyond standard site survey methods (shovel-testing) are issued a permit upon approval of the project and scope of work by the Louisiana Archaeological Survey and Antiquities Commission. This statute can also be interpreted to require a permit for any construction project that would impact a known archaeological site on state land. However, in 2009, discussions between the Lieutenant Governor (the head of DCRT) and the Commissioner of the Division of Administration (that oversees all state construction projects) concerning a specific project on state land resolved that while a permit was required, the Division could not attach any conditions to that permit such as requiring a survey to identify sites, or excavation to mitigate impacts to sites. Subsequent to that resolution, no permits for state construction projects have been requested or issued. The Office of State Buildings does not include funds for archaeological investigations in project budgets. State Building’s staff will occasionally notify the Division of possible archaeological deposits encountered during excavation, but it is up to the Division to undertake any investigation. A shortage of staff results in the Division unable to do anything more than a visual inspection of the location.

8) The Office of Cultural Development also holds a preservation easement for one archaeological site (16EBR51) in Louisiana. The Division advises the Office on the management of this property.

Other Agencies and Organizations

A number of other agencies and organizations across the state are involved in the preservation, protection, and study of Louisiana’s archaeological heritage. The Division works with these entities concerning their activities as appropriate. These entities include:

Louisiana Archaeological Survey and Antiquities Commission

The Louisiana Archaeological Survey and Antiquities Commission (LASAC) is established in the Louisiana Archaeological Resources Act (R.S. 41:1602). As stated: “The purpose of the commission shall be to promote the goals and objectives of the Department of Culture, Recreation and Tourism and to act in an advisory capacity to that department and its secretary in their administration of this Chapter and in matters relating to antiquities, archaeology, and other cultural resources” (R.S. 41:1602). The LASAC advises the Secretary of DCRT on matters regarding archaeological sites on lands owned by the state and within state waters. The Commission also reviews and approves requests for permits to conduct archaeological excavations on state lands (LAC Title 25:105), these permits are then issued by the Secretary of DCRT and administered by the Division.

The LASAC consists of eleven members. Four members are ex officio voting members; they include the state archaeologist, one representative from the Department of Culture, Recreation and Tourism, one representative from the Department of Natural Resources, and one representative from the Governor's Office of Indian Affairs. Seven voting members are appointed by the Governor; at least one appointee will be a member of the Louisiana Archaeological Society (R.S. 41:1602:B(1)). The Commission has regularly scheduled quarterly meetings that are open to the public.

Louisiana Archaeological Society

The Louisiana Archaeological Society (LAS) is the largest and most active of the non-government archaeological organizations in the state. Founded in 1974, the goals of the LAS include:

- 1) Uniting individuals who are interested in the cultural heritage and history of the area;
- 2) The preservation and display of cultural remains;
- 3) The scientific study, investigation, and interpretation of archaeological, ethnological, anthropological, and related subjects;
- 4) The publication and distribution of information concerning archaeology, ethnology, and anthropology;
- 5) The development and promotion of a greater public interest in and appreciation of the cultural heritage of the area;
- 6) To collect, interpret, and preserve information on cultural heritage and prehistory for the use and assistance of all persons having a need for the information; and,
- 7) To raise and collect funds necessary for the carrying out of any of its purposes by any lawful means and administer these funds as directed in the Articles of Incorporation.

The membership is composed of both professional and avocational archaeologists, and has averaged 300 members for the last few years. The LAS has an annual meeting open to the membership and interested members of the public. These meetings involve presentations of archaeological investigations in Louisiana and the region, as well as tours of archaeological and historical sites or museum exhibits in or near the host city. The LAS has an official website at www.laarchaeologicalsociety.org. The Society produces three newsletters per year and an annual journal, *Louisiana Archaeology*, that contains professional quality peer-reviewed articles.

The LAS has historically been comprised primarily of non-professional archaeologists who are interested in Louisiana archaeology. They record archaeological sites, volunteer for field and lab work, present lectures and activities to the public during Archaeology Month, and support the Society and its Newsletter and Bulletin through their dues. LAS members have been active in working with landowners to preserve and protect archaeological sites and contribute research articles to the Newsletter and Bulletin. The LAS serves as the non-governmental voice for Louisiana archaeology, and individually and collectively the members work on the local, parish and state level to forward the goals of the LAS.

The Archaeological Conservancy

The Archaeological Conservancy (www.americanarchaeology.com) (TAC) was formed in 1980 as a non-profit organization to preserve important archaeological sites across the country by purchasing them or receiving them through donation. In Louisiana, TAC works with willing sellers of archaeological sites and consults with the Division about the sites it acquires within the state. Any site the Conservancy acquires is available for research by qualified individuals.

As of 2018, the TAC owned all or portions of the following 16 archaeological sites in Louisiana (Figure 1): Alexander (16WC41), Bayou Portage Guidry (16SM38), Caney Bayou Mound (16MO69), Caney Mounds (16CT5), DePrato Mounds (16CO37), Gibson Mounds (16TR5), Hedgepeth Mounds (16LI7), Insley Mounds (16FR3), Lower Jackson Mound (16WC10), Mount Bayou (16CT12), Mott Mounds (16FR11), Osceola (16TE2), Reno Brake (16TE93), Troyville (16CT7), Plum Creek (16OU89) and Sims (16SC2). In addition, the TAC has purchased land at Marksville (16AV1) and Watson Brake (16OU175).

that has subsequently been transferred to the State of Louisiana. In all, the TAC has preserved some or all of 18 sites in Louisiana.

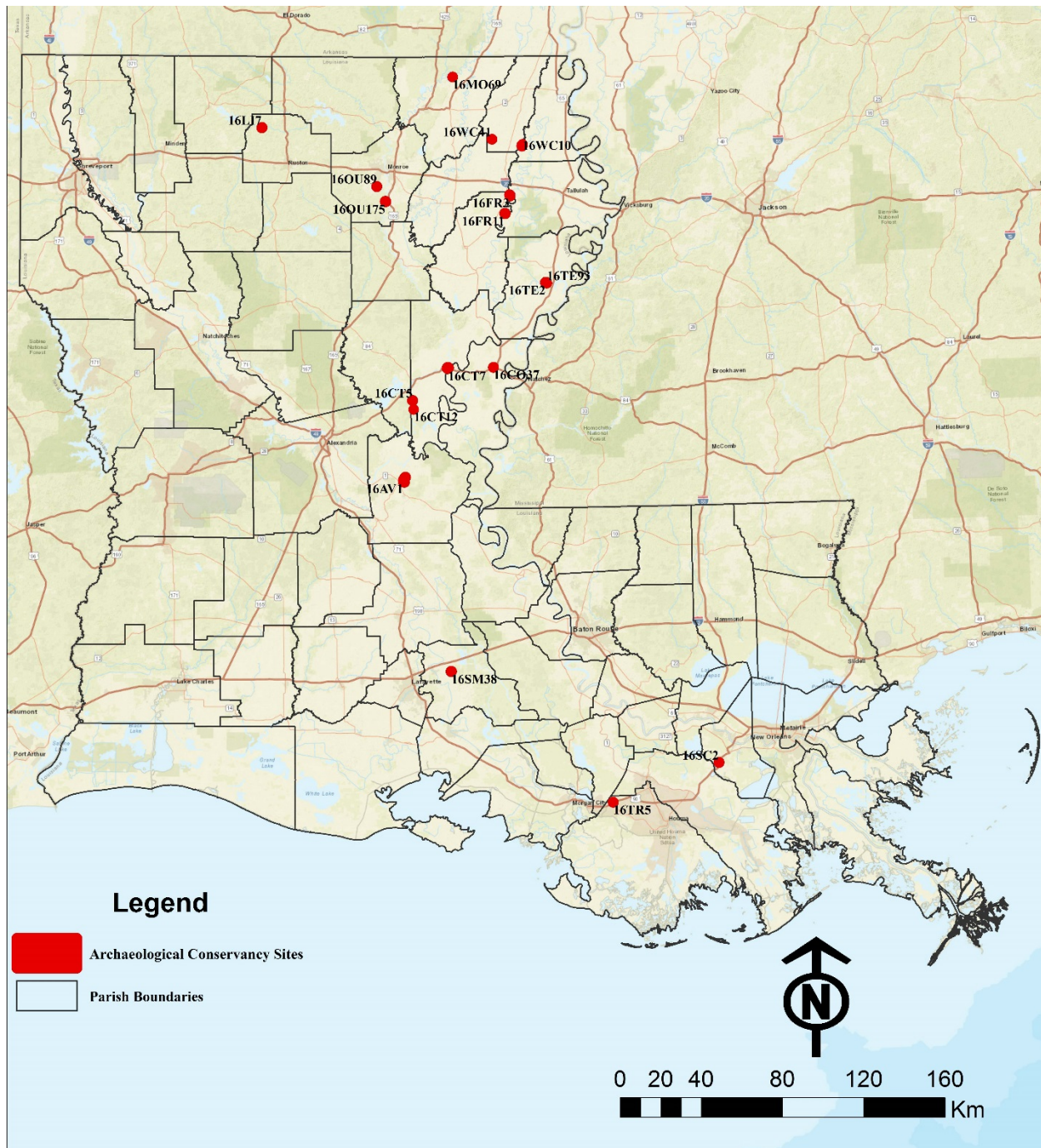


Figure 1. Archaeological sites acquired by The Archaeological Conservancy in Louisiana.

Louisiana Archaeological Conservancy

In 1987, individuals interested in the preservation of archaeological sites in Louisiana formed the Louisiana Archaeological Conservancy (LAC). The LAC, also a non-profit organization, arranges for “preservation servitudes” or “easements” on private property containing archaeological sites. These servitudes define portions of property that property owners agree to set aside from further cultivation or development. Sites that have servitudes administered by the LAC include Lac St. Agnes (16AV26), Highland Road Stockade (16EBR35), Conly (16BI19), and Jake Spear’s Cabin (16WF35).

The LAC also provides funds to support archaeological research in Louisiana such as radiocarbon dates and logistical costs for research projects. The Kleinpeter site (16EBR5), a multi-mound and multi-component prehistoric site, was partially excavated with funding donated to the LAC in the early 1990s.

Archaeological Contractors (Cultural Resource Management [CRM] Firms)

Federal agencies, state agencies with delegated federal authority, and private companies requiring a federal permit or license usually do not have the capability of undertaking the cultural resource investigations mandated by NHPA. These investigations are undertaken by private archaeological consulting companies or university-based archaeologists under contract to the agency or company requiring these services. Investigations may include survey, evaluation of eligibility for the National Register, and mitigation of adverse effects. The archaeological firms undertake all the fieldwork, analyze the recovered materials, prepare the collection for curation, and prepare a report detailing the history, methods and results of the investigation. Since 1974, CRM firms have undertaken the vast majority of the archaeological investigations within the state. Of the more than 1,000 excavated sites within the state, 90% or more have been investigated by CRM firms. Over 5,000 reports of investigations undertaken by contract firms are on file at the Division.

Contract archaeology is undertaken where clients and agencies have proposed projects, and are not based upon archaeological questions or research goals. Consequently, contract investigations have been concentrated in certain portions of the state (Figures 2 and 3) reflecting primarily economic development and disaster response trends. As a result, these investigations have not necessarily resulted in a systematic sample of archaeological resources across the state. Nor have these investigations provided information about the archaeological history of each region or time period. Nonetheless, contract archaeology has provided the great majority of current information about the state’s archaeological history and heritage (cf. Rees, editor, 2010).

The Division website provides contact information for archaeological firms that have asked to be included on this list. The Division does not certify or otherwise endorse or recommend any of the firms on this list. As long as archaeological firms meet the Secretary of the Interior qualifications (36CFR800), they are eligible to conduct work in the state.

Members of CRM firms have contributed to Louisiana archaeology by presenting papers and posters at professional meetings, including the LAS annual meeting, and by contributing articles to professional journals. They have also contributed to Archaeology Month events and other public outreach venues. Some companies have also provided substantial financial or technical support to the LAS over the years that have greatly aided the LAS in continuing its mission.

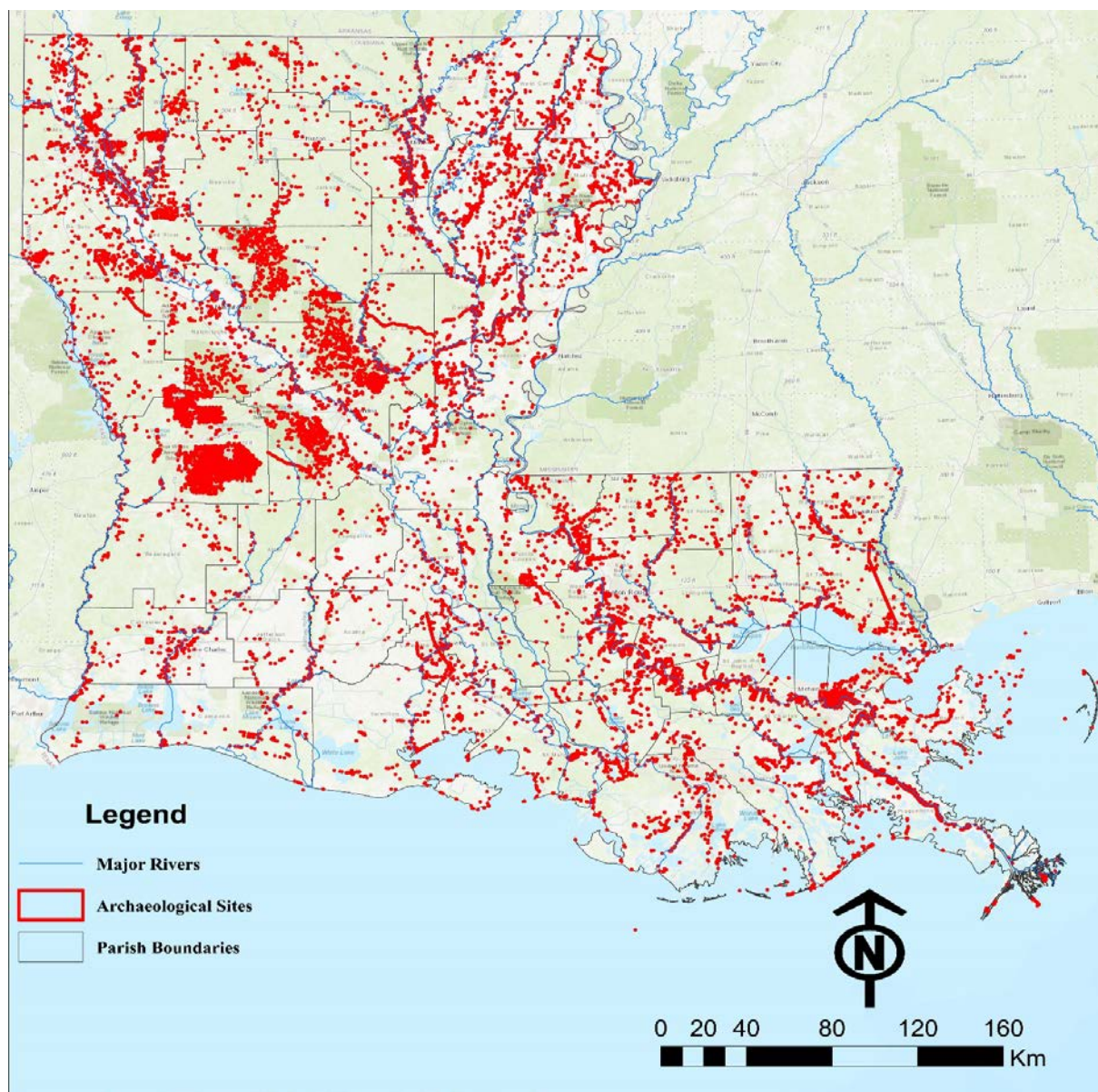


Figure 2. Location of recorded archaeological sites in Louisiana as of October 2018.

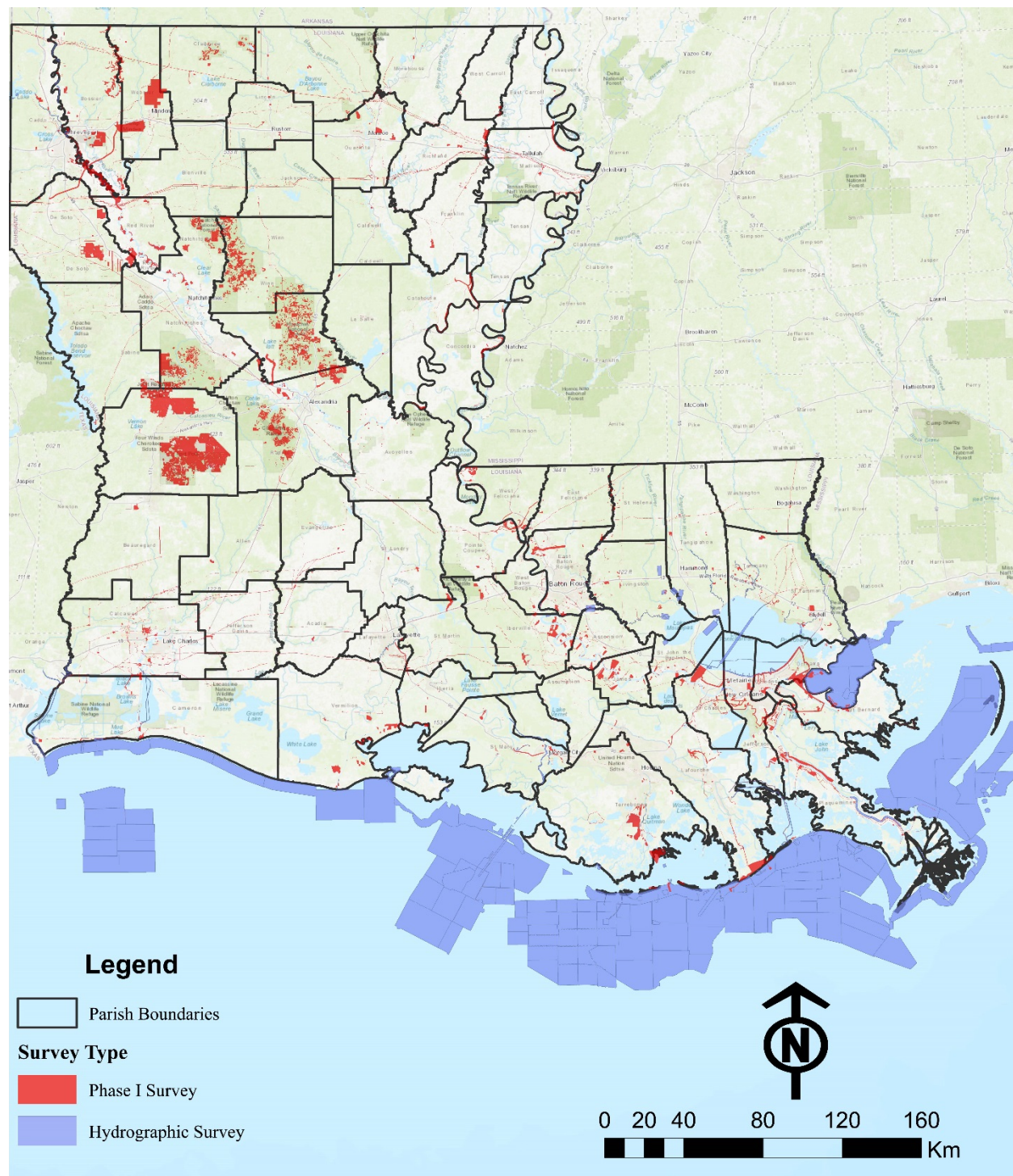


Figure 3. Location of archaeological surveys as of October 2018.

American Indian Tribal Nations

Thirteen federally recognized Tribal Nations (Tribes) have identified some or all of Louisiana as areas of interest to them, including:

- 1) Alabama-Coushatta Tribe of Texas - all parishes;
- 2) Caddo Nation - Avoyelles, Bienville, Bossier, Caddo, Caldwell, Catahoula, Claiborne, Concordia, Desoto, Grant, Jackson, LaSalle, Lincoln, Morehouse, Natchitoches, Ouachita, Rapides, Red River, Sabine, Union, Vernon, Webster, and Winn parishes;
- 3) Chitimacha Tribe of Louisiana - Acadia, Ascension, Assumption, East Baton Rouge, Iberia, Iberville, Jefferson, Lafayette, Lafourche, Livingston, Orleans, Plaquemines, Pointe Coupee, St. Bernard, St. Charles, St. James, St. John the Baptist, St. Landry, St. Martin, St. Mary, Terrebonne, Vermilion, and West Baton Rouge parishes;
- 4) Choctaw Nation of Oklahoma - all parishes except Ascension, Iberia, Iberville, Lafayette, Lafourche, Pointe Coupee, St. Martin, St. Mary, Terrebonne, and Vermilion;
- 5) Coushatta Tribe of Louisiana - all parishes;
- 6) Jena Band of Choctaw Indians - all parishes;
- 7) Mississippi Band of Choctaw Indians - all parishes;
- 8) Muscogee (Creek) Nation – Orleans, East Baton Rouge, and West Baton Rouge parishes;
- 9) Osage Nation – Bienville, Bossier, Caddo, Claiborne, DeSoto, Grant, Jackson, Lincoln, Natchitoches, Red River, Sabine, Union, Webster, and Winn parishes;
- 10) Quapaw Tribe of Oklahoma - Bossier, Caddo, Claiborne, Desoto, East Carroll, Lincoln, Madison, Morehouse, Orleans, Ouachita, Red River, Richland, Union, Webster, and West Carroll parishes;
- 11) Seminole Nation of Oklahoma - Ascension, Concordia, East Baton Rouge, East Carroll, East Feliciana, Iberville, Jefferson, Livingston, Madison, Orleans, Plaquemines, Pointe Coupee, St. Bernard, St. Charles, St. James, St. John the Baptist, Tensas, West Baton Rouge, and West Feliciana parishes;
- 12) Seminole Tribe of Florida - Ascension, Concordia, East Baton Rouge, East Carroll, East Feliciana, Iberville, Jefferson, Livingston, Madison, Orleans, Plaquemines, Pointe Coupee, St. Bernard, St. Charles, St. James, St. John the Baptist, Tensas, West Baton Rouge, and West Feliciana parishes;
- 13) Tunica-Biloxi Tribe of Louisiana - all parishes.

Each Tribe is a sovereign nation under the U.S. Constitution and has certain rights and responsibilities under federal law. Four Tribes, the Chitimacha Tribe of Louisiana, the Coushatta Tribe of Louisiana, the Jena Band of Choctaw, and the Tunica-Biloxi Tribe of Louisiana, have reservation land within the state of Louisiana and exercise sovereignty over that land. Each of the 13 Tribes has a Tribal Historic Preservation Officer who assumes the responsibilities of the SHPO for cultural resources within their reservation, and who consults with the SHPO, federal agencies, and other parties on activities that may impact archaeological sites of interest to the Tribe on lands outside the reservation. The Division works closely with the Tribes in the Section 106 process to meet the needs of the state and the Tribes.

The Division also works with the Tribes concerning human remains found within the state that are determined to be American Indian. Under the Louisiana Unmarked Human Burials Sites Preservation

Act, the Division consults with descendants to determine the appropriate course of action whenever human remains that fall within the Division's jurisdiction are found. This consultation includes discussion of whether and how the remains should be removed, the level of analysis, and the options for reinternment. Depending upon which parish the remains are discovered in, the Division consults with the appropriate Tribe(s) to determine which Tribe will assume responsibility for the remains, and develops a mutually agreeable process for handling the situation.

State Recognized Tribal Organizations

There are a number of non-federally recognized tribal organizations located within the state. Some are recognized by the State, although that recognition does not provide any legal or statutory standing for these organizations. These tribal organizations include:

- 1) The Adai Caddo Indians of Louisiana;
- 2) The Bayou Lafourche Band of the Biloxi Chitimacha Confederation;
- 3) The Isle de Jean Charles Band of the Biloxi Chitimacha Confederation;
- 4) The Grand Caillou/Dulac Band of the Biloxi Chitimacha Confederation;
- 5) The Choctaw-Apache Tribe of Ebarb;
- 6) The Clifton Choctaw Tribe of Louisiana;
- 7) The Four Winds Tribe of Louisiana Cherokee;
- 8) The United Houma Nation;
- 9) The Point au Chien Indian Tribe;
- 10) The Louisiana Band of Choctaw;
- 11) The Louisiana Choctaw Turtle Tribe;
- 12) The Atakapa Ishak Tribe;
- 13) And the Talimali Band of Apalachee.

The Division of Archaeology consults as appropriate with these groups concerning archaeological sites and human remains.

Academic Archaeologists

Up until the passage of the National Historic Preservation Act in 1966, most archaeology in Louisiana was undertaken by researchers based at academic institutions, both inside and outside the state. These individuals were responsible for developing and fleshing out the basic prehistoric culture history and artifact classifications used by archaeologists today. From the 1970s through the 1990s, archaeologists were present at most of the major state universities, undertaking research in the state and training new students for careers in Louisiana archaeology. Today, undergraduate programs in anthropology continue at Louisiana State University, University of Louisiana at Lafayette, the University of New Orleans, and Tulane University. Graduate programs in anthropology are present at Louisiana State University, University of New Orleans, and Tulane University.

Although the role of academic archaeologists in Louisiana archaeology is not as prominent as it was 20-30 years ago, the programs that continue are important for their efforts to introduce new generations of students to Louisiana archaeology and in providing trained personnel for the archaeological firms operating in the state. Academic archaeologists and their students also contribute original research exploring various aspects of the state's archaeological record.

Summary

The Division is charged with numerous responsibilities under federal and state statutes. It meets these responsibilities through the operation of six program areas. Through these programs, the Division has a significant impact on where archaeology is done in the state, how it is conducted, the direction of archaeological research, and which sites are determined significant and worthy of preservation and protection. The Division's primary impact is through the Section 106 process which accounts for the great majority of archaeological work conducted in the state. But it also works with avocational groups, American Indian Tribal Nations, preservation organizations, and other archaeologists to record and preserve the state's archaeological resources, and to make information about those resources available to the state's citizens. The Division is the primary source of information on the state's archaeological heritage for teachers, students, and the general public.

Part II

Regions of the State

Introduction

Archaeological resources are differentially distributed across the landscape in response to a wide variety of natural and cultural factors. The physical landscape provides opportunities and constraints on site location. Historical geomorphic processes have affected the modern distribution and visibility of sites. To examine how the physical landscape in Louisiana impacts the archaeological record and efforts to document it, this discussion divides the state into a series of regions. These regions follow the ecoregions classification of the Western Ecology Division of the United States Environmental Protection Agency (http://www.epa.gov/wed/pages/ecoregions/la_eco.htm). There are six regions at Level III, several of which contain sub-regions. Each region is defined with respect to vegetation, wildlife, geology, physiography, climate, soils, land use, and hydrology. They are useful for understanding the distribution of physical and biological resources through time, and for communication with government agencies, businesses, private landowners, and others with interests in the management of cultural resources. This ecosystem framework also provides a means to examine the contexts where archaeological sites are found or not found. The description of each region includes a discussion of environmental processes that have affected the presence and visibility of archaeological sites in each region and sub-region. The discussion also notes specific threats to sites as a consequence of development, agriculture, or other modern processes in that region.

South Central Plains

The South Central Plains region is separated into three distinct subregions, including the Tertiary Uplands and Associated Streams, the Pleistocene Fluvial Terraces and Flatwoods, and the Red River Bottomlands. These reflect upland, fluvial, and floodplain settings with different geological histories and physical settings. The Tertiary Uplands comprise the majority of the region, divided into two sections separated by the Red River valley. The South Central Plains region covers nearly all of the northwestern third of the state and represents nearly 39.6% of Louisiana.

Tertiary Uplands and Associated Streams

This subregion covers most of the western portion of the state. Geologic deposits consist of Tertiary age (5-65 million years) alternating beds of massive sands, carbonaceous shales, and calcareous shales and silts. Included are ironstone and limestone concretions, seams of lignitic silts, cherts, and petrified wood gravels. The Tertiary formations were deposited as marine sediments that subsequently were uplifted, faulted, and differentially eroded producing a complex spatial pattern of surface geology and soils. Presently, the region has a low, rolling hill topography with narrow ridgetops and steep adjoining slopes. Soils are predominantly well-drained with sandy to loamy surface sediments. Stream floodplains are characterized by poorly drained clays and loams. Rock outcrops are few and consist primarily of fine to coarse sedimentary stones. Grinding stones, abraders, and more rarely, celts and axes, were made by aboriginal inhabitants from ferruginous sandstone and ironstone. Gravel deposits in streams were sources of chert for stone tools (Heinrich 1987). Several salt domes of economic importance in the Mississippi and Post-Contact periods are present in the northern Louisiana hills.

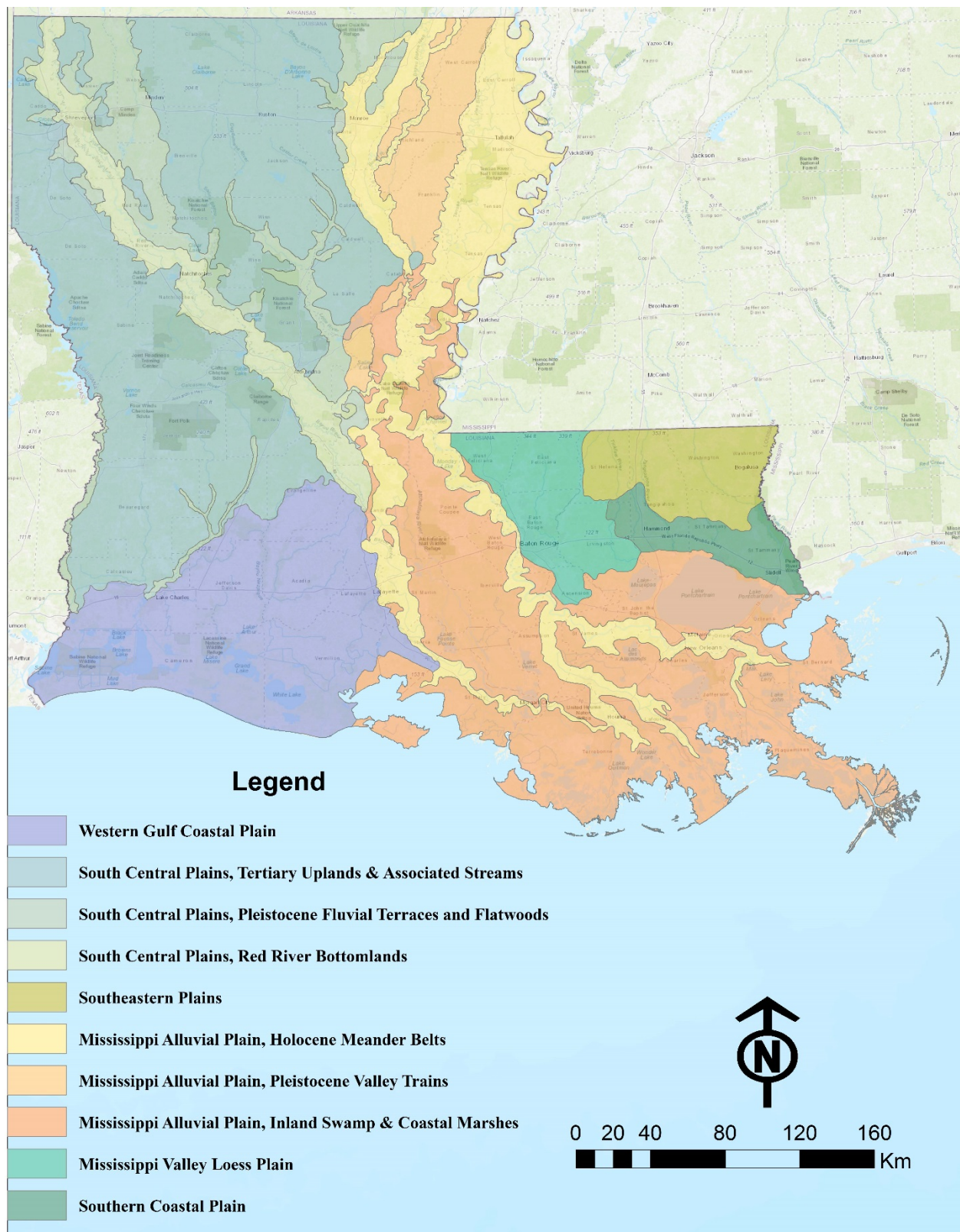


Figure 4. Ecoregions of Louisiana (adapted from U.S. Environmental Protection Agency).

Natural vegetation consists of upland forests with shortleaf pine, loblolly pine, southern red oak, post oak, black oak, white oak, hickories, and sweet gum. Blue jack oak, post oak and small pines occur in sandier areas. Longleaf pine forests are more common in the southern regions. In the major stream floodplains, water oak, willow oak, sweet gum, black gum, American elm, red maple, and swamp chestnut dominate, with water tupelo and bald cypress in frequently flooded areas. In the 1900s, commercial pine plantations have replaced the natural mixed pine-hardwood forest in most undeveloped areas. Sandstone outcrops of the Catahoula formation have upland barrens or glades, and seeps with bog vegetation are present in many of the sandy hills. On early 19th century survey plats there are numerous upland areas designated as “prairies.” It is not clear whether these represent natural clearings (perhaps due to local soil conditions or forest fires) or areas where American Indians had cut trees for settlements or gardens.

Archaeological sites are numerous on upland ridges and ridge slopes. Because most surfaces are stable or eroded, many sites have little depth and materials from long periods of time often are mixed together. Some upland sites with deep sandy deposits exhibit vertical separation of materials from different time periods, but little or no stratification is visible in the sediments. Stratified sites are present in some of the larger floodplain settings. Deeply buried sites may be present, particularly along the lower reaches of the major tributaries.

Most areas in the upland hills are in timber production or pasture, and thick vegetation often makes it difficult to identify sites. Logging activities, building and road construction, erosion, and treasure hunting damage sites in the uplands. In some western areas, lignite mines have impacted extensive areas. The recent upsurge in oil and gas production from the Haynesville shale is also affecting many upland areas.

Pleistocene Fluvial Terraces and Flatwoods

Remnants of late Pliocene (5.0-1.6 million years ago) and Pleistocene (1.6 million to 10,000 years ago) terraces border portions of the Red and Sabine River floodplains. They form extensive contiguous surfaces along Red River tributaries such as Bayou Bodcau and Bayou Dorcheat, and on the southern flank of the region where the Flatwoods subregion is drained by the upper Calcasieu River and its tributaries. The terraces were formed as alluvial deposits from major Pleistocene rivers. Upland, Intermediate, and Prairie terrace complexes have been recognized with the most recent Prairie complex deposited 25,000 to 30,000 years ago (Autin et al. 1991:557). The Pleistocene terraces contain less surface relief than the Tertiary hills. A gently rolling topography dissected by small tributary streams is typical. In some areas these terraces slope gradually to the floodplain; in other areas bluffs as much as 7- to-9 m high are present. Sediments range from clays to sands and often contain gravel deposits that include cherts and quartzites utilized as raw materials for prehistoric stone tools. They were also mined historically for construction materials. Soils are poorly-drained, loamy-to-sandy sediments.

Longleaf-slash pine forest covers extensive portions of the terraces, particularly in the Flatwoods subregion. Mixed-oak pine forest is less extensive. Portions of southwest Louisiana are natural prairies containing grasses such as bluestem, broom sedge, and switch grass. Many of the same kinds of fauna and flora present in the upland hills inhabit the terrace areas.

Archaeological sites are abundant in many settings in the terrace zones, particularly in bluff or other terrace edge settings overlooking the major floodplains. Slopewash from Tertiary Upland ridges has covered portions of some terraces, but, in general, the lack of Holocene deposition on these surfaces precludes the presence of stratified archaeological contexts. Due to the stable surfaces, many sites have little depth and materials from multiple periods are mixed together.

Although some areas are used for crop production, most of the Pleistocene terraces are in pasture or timber, limiting surface visibility. Sites are impacted primarily by logging activity, oil and gas development, treasure hunting, and agricultural activities.

Red River Bottomlands

Cutting through the South Central Plains in northwest Louisiana is the Red River floodplain, with natural levees, point bars, and backswamps in meander belts along active and relict channels. The Red River is noted for its high sediment load, turbid conditions, and frequency of channel shifts. Sediments are primarily sands, silts, and clay with no stone or gravel present.

Natural vegetation is bottomland forest with water oak, sweet gum, willow oak, overcup oak, Nuttall oak, honey locust, water locust, river birch, red maple, green ash, and American elm. Prior to modern agricultural drainage, many low-lying areas were wet throughout most of the year. Major portions of the floodplain are now cultivated with cotton, soybeans, corn, wheat, rice, and to the south, sugarcane as the dominant crops. Urban areas such as Shreveport, Natchitoches, and Alexandria are situated along the floodplain/upland margins.

Archaeological sites are situated primarily along natural levees of active and abandoned river channels. Stable levees may have been occupied repeatedly leading to overlapping cultural deposits. In other settings, stratified sites were created by periodic flooding depositing sediment between occupations. The Red River is an aggrading system and Paleoindian and Archaic age surface are now deeply buried. The River has also migrated numerous times throughout the Holocene (0-10,000 years ago), eroding away many sites, while burying sites of all time periods beneath flood deposits. In many areas, post-contact era floods have buried most pre-contact-age surfaces.

Mississippi Alluvial Plain

The Mississippi Alluvial plain is segregated into three major subregions. It covers most of the eastern half of northern Louisiana and forms a central corridor through the southern part of the state. The region consists of major aggrading floodplain landforms and watercourses. The region represents approximately 38% of the state.

Holocene Meander Belts

The Holocene meander belt subregion includes the courses of the present Mississippi River along with former channel segments and associated alluvial landforms. It also includes the Ouachita/Arkansas River meander belt system in the northwestern part of the region. The region exhibits minimal relief with natural levees along abandoned and active channels representing the highest ground. Natural levees consist of relatively coarse-textured, well-drained soils, and have been of primary importance for human settlement and modern agricultural production. Point bars, swales, and relict channel segments are present at lower elevations. There are also extensive backswamp areas consisting of clayey deposits in poorly drained flats and swales. Many of these areas have been drained for modern agriculture, but earlier occupation would have been limited due to the wet conditions.

In the southern portion of the state, this region includes the Holocene-age deltaic lobes of the Mississippi River. Comprised primarily of freshwater marshes grading to brackish and saltwater marsh along the coast, natural levees along numerous distributaries and relict channels provide the only elevated ground. Periodic river channel avulsion has resulted in erosion of many earlier landforms while regional subsidence has submerged and buried many others. Several Pleistocene-age salt domes protrude above the marsh and represent dry, stable "islands" amidst the constantly evolving coastal marsh region.

Throughout the Holocene Belt Meander region, floodplain forests consisting of oaks, sugarberry, elm, ash, pecan, cottonwood, and sycamore, dominated. Live oak and laurel oak are present in southern areas where precipitation is greater and the growing season longer. In the coastal areas, freshwater marsh predominates with forest, especially live oak, occurring along elevated areas. The marshes consist of brackish and saline marsh vegetation including salt grass, cordgrass, marsh hay cordgrass, black needlerush, coastal saltgrass, and black mangrove.

Sites are found predominantly on higher, better-drained landforms. These are typically natural levees along channels, but may include point bars and other surfaces. The Mississippi River and its numerous tributaries have migrated extensively across this region, eroding away many older landforms and sites, and burying many others beneath flood deposits. In many areas, the distribution and age of sites on the modern surface reflects the geological history of that area, rather than its entire occupational history.

The northern and central portions of this region have been extensively cleared and drained for modern agriculture. Land leveling is a major threat to sites in some areas. In the southern region, coastal land loss due to subsidence and erosion has eroded and/or submerged many sites, and is a major threat to many others. In addition, shell middens were intensively mined for use in construction and road building beginning in the late 1800s. Oil and gas development has dredged numerous channels through the marsh, impacting surface and buried sites in addition to accelerating coastal erosion. These numerous impacts, coupled with current sea-level rise, have had and will continue to have a significant and increasing impact on the archaeological record of the coastal regions.

Pleistocene Valley Trains

Macon Ridge is a Pleistocene age valley train deposit that runs north-south through the northern part of the Mississippi Alluvial Plain. Other deposits lie along the western margin of the Mississippi River valley. Both are buried by up to 5 m of Late Pleistocene loess. The loess is thickest along the eastern margin of the valley trains and gradually thins to the west. Relative to other portions of the Mississippi Alluvial Plain, these surfaces are higher, better drained, and covered by coarser silt or silt loam loess. The area is covered by upland hardwood forests of white oak, southern red oak, and post oak with willow oak, water oak, and swamp chestnut oak along stream courses. Some pine forest and upland prairies may have been present in the past.

Sites are distributed along the numerous small streams that drain Macon Ridge. Paleoindian sites could be buried within the Late Pleistocene loess, especially along the eastern margin of the Ridge, but have been found in surface contexts as well. Later sites will occur on the modern surface with isolated instances of burial beneath flood deposits along larger streams.

Macon Ridge and the valley trains have largely been cleared for agriculture, and because most sites lie at the modern surface, farming activities have a significant impact on sites. Land leveling for agriculture is having an increasing impact.

Inland Swamp and Coastal Marshes

The Inland Swamp and Coastal Marshes subregion represents the transition between freshwater backswamps to fresh, brackish, and saline waters of the deltaic marshes. The Atchafalaya Basin, one of the most extensive bottomland hardwood forest swamps in North America, constitutes a large portion of this subregion. Much of the land is low-lying and subject to seasonal flooding. Numerous bayous drain the region with their natural levees providing the only elevated ground. The natural drainage pattern and ecology has been significantly altered by modern control of the Mississippi River and tributary stream

channels. One result is extensive modern sediment deposition in some areas of the Swamp. Soils are poorly drained with swamp forest (bald cypress, water tupelo) vegetation along with grasses, sedges, and rushes predominating.

Sites are concentrated along natural levees. Channel migration has eroded many landforms, and sediment deposition has buried many others. Regional subsidence has resulted in many older landforms and sites being submerged below the modern surface. Most of the larger shell middens were mined for shell beginning in the late 1800s.

Much of the Atchafalaya Swamp remains undeveloped except for timber and some oil and gas exploration. Sites are primarily affected by erosion and burial by modern sedimentation.

Western Gulf Coastal Plain

The Western Gulf Coastal Plain covers a large portion of southwest Louisiana containing the lower Calcasieu, Mermentau, and Vermillion river basins. It represents approximately 13% of the state. This region is underlain by Late Pleistocene terraces consisting of sands, silts, and clays. The terrain is generally flat with shallowly incised rivers and bayous. Pleistocene age channels of the Red and Mississippi Rivers that flowed across this area 70,000 years ago are manifest as wide, shallow swales with low broad natural levees. The eastern fifth of the region is covered in Late Pleistocene loess derived from the Mississippi valley. The loess is thickest at the eastern margins and thins to the west. During the last 500 years, much of the area was prairie, and may have been throughout much of the Holocene, with forests concentrated along drainages. Forest vegetation includes pecan, water oak, live oak, and elm, with bald cypress in wetter areas.

The Pleistocene terraces slowly dip seaward and are eventually overlapped by the Gulf of Mexico. This segment of the Louisiana coast is relatively stable and exhibits very little subsidence. Over the last 2,500 years, the coast has episodically regressed and prograded. A series of cheniers (fossil beach ridges) marking regressive episodes are separated by stretches of fresh and brackish marsh (progressive episodes). Some segments of this coast are currently experiencing a major regressive episode with up to 1.5 kilometers (km) of land lost in the last 200 years. The cheniers are comprised of sand and shell and rise 1-to-5 m above the surrounding marsh and represent the only elevated ground in the coastal portion of the Coastal Plain. They are occupied by live oak and hackberry forest with palmetto and prickly pear understory. The marshes are comprised of silt and clay with lots of decomposing organic matter derived from the marsh grasses, rushes, and sedges.

Across most of the region, sites occur primarily adjacent to large and small drainages. In some areas, there are extensive fields of pimple (mima) mounds, many of which were utilized prehistorically as living and activity areas. There are very few settings where sites could have been buried, thus most sites are palimpsests with Paleoindian through Post-Contact occupations collapsed across the modern surface. Along the coast, sites are confined to the elevated cheniers. Some chenier segments and sites may have been destroyed by later regressive (erosional) episodes. Sites occupy the modern chenier surface and have not been buried by younger deposits.

Much of the Coastal Plain is used for agriculture, primarily rice, sugarcane, and cattle. As most areas have little potential for sediment deposition, sites are located in surface contexts and are impacted by modern activities. Most of the cheniers have been cleared and are used as pasture. They are also the location for any commercial and residential development. Due to their shallow context, chenier sites are subject to damage by any surface disturbances.

Mississippi Valley Loess Plains

This region consists of rolling hills and bluffs immediately east of the Mississippi Alluvial Plain. It represents approximately 3.8% of the state. The region is underlain by Miocene and Pliocene sand, silt and gravel deposits in the northern half, and by Pleistocene age silts, sands and clays in the south. Cherty gravels eroding from the older deposits accumulate in stream beds. The region is dominated by the thick layer of Late Pleistocene loess derived from the Mississippi River valley that is draped over the gently rolling topography. The loess thins to the east. The region contains a diverse range of forest species including southern magnolia and beech, oaks, and hickories, as well as lesser amounts of sweet gum, Carolina basswood, Florida sugar maple, hophornbeam, tulip poplar, and unique mesophytic herbs. The southern area also includes shortleaf pine and loblolly pine.

Sites are typically situated on higher ridge crests and along stream margins. Paleoindian sites may be buried in the loess deposits. Sites will occur in surface contexts in higher elevations while occasional buried sites may be found in alluvial settings.

This region is experiencing rapid urban growth that impacts many sites. Outside of urban areas, cattle operations and pine plantations are dominant industries. Gas and oil development of the Tuscaloosa shale may have significant future impacts.

Southeastern Plains

This region lies in the northern portions of the Florida parishes and represents approximately 3.6% of the state. It consists of level to gently undulating plains formed in Pliocene and Pleistocene deposits that are covered by thin layers of loess in some areas. These deposits consist of sandy loams, silt loams, and clay loams with cherty gravels present. A series of north-south trending streams and rivers drain the region and cherty gravel bars are common. Most have moderately incised valleys with limited floodplain development, although the Bogue Chitto and Pearl Rivers can have broader floodplains with abandoned channels and ponded areas. Natural vegetation consists of upland longleaf pine woodlands, with some mixed oak-pine forest. The lower portions of river valleys contain bald cypress and water tupelo.

Sites are typically situated on higher ridge crests and along stream margins. Sites will occur in surface contexts in higher elevations while occasional buried sites may be found in alluvial settings.

Sites in surface contexts are impacted by agricultural and timber harvesting activities. Within the larger drainages, gravel-mining operations have destroyed sites within the limits of their activities. Oil and gas development of the Tuscaloosa shale may have significant future impacts on sites.

Southern Coastal Plain

This region consists of late Pleistocene terraces with Holocene-age alluvial and deltaic deposits along the coast. It represents approximately 2.0% of the state. The uplands consist of gently rolling topography dissected by north-south trending streams and rivers. Cherty gravels derived from the Pleistocene sediments accumulate in stream beds. Upland vegetation is dominated by long-leaf pine forests with occasional open savannas on level upland surfaces. Holocene alluvial deposits are in floodplains and on low terraces along the major streams, particularly the Pearl River. These areas have riverine swamp forest vegetation regimes dominated by oaks, bald cypress, and water tupelo.

Sites in the upland areas are concentrated on higher ridge crests and overlooking streams. Most of these deposits are shallow with overlapping occupations and no opportunity for stratified sites. Buried and stratified sites may occur in the floodplains of the larger streams.

The coastal areas are experiencing some of the fastest urban growth of any area in the state. This urban expansion is impacting many sites. There is also significant erosion along the north shore of Lake Pontchartrain which is impacting sites in that area. In upland areas, pine plantations and agriculture are the dominant ground-disturbing activities in areas where sites are generally at the modern ground surface. Oil and gas development of the Tuscaloosa shale may have a significant impact on sites in the future.

Part III

Investigating Louisiana's Archaeological Record

Introduction

The material results of human activity (artifacts and features) are not spread randomly across the landscape, but cluster at varying spatial scales and variable densities. Efforts to document this variability are constrained by surface visibility, expression on the modern surface, time, and cost. As a result, archaeological survey in Louisiana has focused on the 'site', with a 'site' defined as an arbitrarily delimited and circumscribed area where the artifact density is above a specific threshold. This definition segregates the landscape into site and non-site areas. One consequence of this approach is that past activities are seen as a series of discrete locales, and that what happened outside of each locale (the artifacts that do not constitute a site) is not important to understanding the past (Dunnell and Dancey 1983).

Sites can range from a few meters in diameter to several hundred hectares. Site limits can also be defined by topographic features, management concerns, property boundaries, and other modern uses of the landscape. In Louisiana, an archaeological site is defined as a locus that contains at least five artifacts and/or an intact feature, with either surface or subsurface provenience, that are at least fifty years old. Surface scatter sites must consist of five or more artifacts within an area no greater than 30 x 30 m.

Sites constitute the fundamental spatial unit for evaluation and management of archaeological resources. However, more extensive spatial parameters often are employed for addressing many research questions. Concepts and terminology are not standardized within the discipline, but sites may be grouped into localities and regions for analytical purposes. Understanding regional settlement systems, for example, requires mapping all contemporary sites regardless of their size, location, and material density. Information from specific sites may be limited, but is crucial for addressing research topics formulated at larger spatial scales.

Many theoretical changes have taken place in the archaeological discipline over the last 50 years. Some of these changes have implications for the manner in which archaeological data are organized and summarized. This task is increasingly difficult because there is little consensus in theoretical approaches. In many respects, the discipline has become rather fragmented—a trend that has both positive and negative implications. On the negative side, it is difficult to formulate a state plan that stipulates sets of goals and procedures through which archaeologists communicate, bring their data into a unified body of knowledge, and are able to gauge progress in answering specific research questions. On the other hand, by viewing the past from multiple perspectives, we gain insights that were not considered previously. Although Louisiana archaeology does not currently have a unitary perspective with a tidy sequence of subjects and events, the current scheme does offer a more realistic knowledge of the complexity of past human experience, and touches upon a wide range of topics of interest and relevance to a broader body of scholars and the general public.

Of particular significance for future work is widespread questioning of the assumption that human social, political, economic, religious, and other connections are integrated into discrete "cultural" packages. Research now examines differing aspects of human interactions at varying spatial scales and looks for networks of communication that cross cut geographical regions, often in complex ways. Archaeological taxonomies, based primarily on artifact styles, are no longer assumed to reflect past "peoples" that were socially and economically united into geographically circumscribed territories. Stylistic-based taxonomies remain important for organizing and studying the archaeological record, but relationships based on other criteria (e.g., technologies, trade relationships, political integration, religious ideas, and

worldviews) are now also considered when investigating how people organized themselves in relation to one another and to the natural environment.

Detailed overviews of Louisiana's cultural history are presented in Jeter et al. (1989), Neuman (1984), Rees (editor, 2010), Rose and Harmon (1989), and Story et al. (1990) and the reader is referred to those references for substantive information. Part III of the Plan provides a current assessment of our understanding of the state's major cultural periods with particular attention paid to critical research topics. It identifies important gaps in our knowledge and considers new research paradigms that pose questions not considered in earlier work. This discussion does not attempt to include all research questions or theoretical approaches applicable to Louisiana archaeology; rather it provides a framework for the Division to incorporate into future planning and actions. In particular, it identifies areas for targeted research when grant-funded research becomes available.

The research topics and themes outlined in this Part also provide a framework for assessing the eligibility of sites for nomination to the National Register of Historic Places. Although it does not offer, and is not intended to represent, a checklist of criteria against which significance can be evaluated, the research topics and themes outlined here provide one means of assessing the research potential of a given site. Evaluations of a site's significance under the National Register of Historic Places criteria (see below) should be based upon the site's potential to address important research questions, including but not limited to those identified here. Researchers are expected to develop site specific research designs and questions that reflect the particular qualities of the site under investigation.

Pre-Contact and Post-Contact Contexts in Louisiana

Paleoindian and Archaic Periods (ca. 11,500 B.C. – 800 B.C.)

Considerable recent research has been directed toward understanding the timing and route of the earliest migration of human populations into North America (e.g., Anderson and Gillam 2000; Anderson and Sassaman 1996, 2012; Bonnicksen et al. 2006; Dillehay 2000; Haynes 2002; Meltzer 2003, 2009; Waters and Stafford 2007). An ice-free corridor was present along the Pacific coast from Asia to North America by about 11,500 B.C., enabling colonization by Paleoindian groups as well as plants and animals. Earlier human migrations may also have taken place along the Pacific coast. Evidence from several sites widely scattered across North and South America now documents colonization prior to the appearance of the distinctive Clovis points and associated tool forms (Anderson and Sassaman 2012; Dillehay 2009; Goebel et al. 2008; Meltzer 2009; Pitblado 2011). Investigation of pre-Clovis occupations is in its infancy. Clovis cultures, once thought to represent the earliest human occupations in North America, are currently recognized as the first wide-spread cultural adaptation to Late Pleistocene environments across North America. Clovis sites date as early as 11,500 B.C. in the western United States but most dates are between 10,600 and 10,200 B.C. in the east (Meltzer 2003:549) [Anderson and Sassaman (2012:47) use calibrated (cal) dates 11,200 B.C. to 10,900 B.C. for the Clovis period].

Pre-Clovis occupations have not been reported from Louisiana, in part due to the challenges in identifying pre-Clovis technologies (Jennings and Waters 2014). Late Pleistocene landforms that could contain these early sites are present in parts of the state, however much of the Late Pleistocene landscape is now submerged offshore or buried by Holocene sediment. Clovis points and similar forms have been reported from several sites in Louisiana, including the John Pearce site (16CD56) in southern Caddo Parish (Webb et al. 1971), the Twin Bird Island site (16CD118) (Pevny 2014), and the Eagle Hill II site (16SA50) on Peason Ridge in southern Sabine Parish (Servello and Bianchi 1983). Most Clovis points, however, have been recovered as isolated surface finds on eroded Tertiary ridges or as occasional specimens in collections dominated by later artifacts (Gagliano and Gregory 1965). Similar situations are found throughout the southeastern U.S.; this has traditionally been ascribed to high residential mobility of the

Paleoindian groups as they exploited extensive, dispersed food resources (Anderson 1996a), but this model has been challenged recently (Pinson 2011).

Although few contexts have been dated by radiometric means, later Paleoindian points, particularly the type San Patrice, are numerous and have been found throughout the state. Data from surrounding regions suggest that San Patrice points were in use in the 10,500 to 8000 cal BC interval (Jennings 2008a:540). A variety of corner-notched and side-notched point styles have been recognized in the archaeological record for the Early Archaic period after ca. 8000 cal BC in the southeastern U.S. Unfortunately, point style chronologies for Louisiana are poorly developed, although possible sequences have been offered based on work at Fort Polk (Anderson and Smith 2003; Morehead et al. 2002; Morehead and Lafitte 2014). The beginning of the Archaic period has been linked to increasingly general foraging strategies (although foraging in Paleoindian times might have been less focused than once thought—see Meltzer 2009), increasing human population levels, and the development of essentially modern biotic communities and landscapes (Anderson and Sassaman 2012:72).

An increasing diversity of stone tool forms, including grinding stones and ground and polished axes and celts, and larger sites with features such as storage pits and hearths, earthen mounds, and human burials are present by the Middle Archaic period (ca. cal 6000 to 2000 B.C.). In addition to Evans and other stemmed dart points, artifacts associated with sites in this time interval include fired clay cubes, bone beads, bone tools, polished stone beads, and microdrills. Fire-cracked rock or fired earth objects are present at many sites. Present information suggests many groups in Louisiana carried out activities in well-defined territories with increasing use of specific places where multiple natural resources were in close proximity (Girard et al. 2011; Saunders 2010a). By about cal. 3500 B.C., the presence of midden concentrations and earthworks demonstrate increasingly organized use of the landscape and suggest relatively complex social organizations. Riverine settings and use of riparian food resources such as fish, waterfowl, small mammals, and freshwater mussels were of particular importance. However, deer and other upland animals (grouse, squirrel, and cottontail) also were exploited. Plant foods include hickory and acorns, along with some use of wild native oily seed plants such as goosefoot and marshelder (Jackson and Scott 2001; Saunders et al. 2005).

The earliest known mound construction across North America occurs in Louisiana perhaps as early as 5,200 B.C. The 13 known Middle Archaic mound sites were constructed between 3700 and 2800 cal BC (Saunders 2010a:66). Most consist of multiple mounds and some include extensive earthworks in complex arrangements. These sites are poorly understood and the degree to which their development and use reflects changes in social and economic inequality is unknown (Gibson and Carr 2004).

By the Late Archaic period (ca. 2000 to 800 cal BC), much human occupation in Louisiana and the southeastern U.S. focused on aggrading floodplains with well-developed backwater slough environments. Concentrations of freshwater mussel shell provided a significant source of food along with fish, turtle, and other riparian fauna and flora. Outside of Louisiana, oily and starchy seed plants were utilized in some areas with evidence for domestication of squash, sunflower, marshelder, and chenopod. Increases in sedentism, territoriality, and long distance exchange have been posited for many regions in the Southeast, but local variation is increasingly evident (Anderson and Sassaman 2010). Compared to later times, social and ritual leadership positions are likely to have been transitory and not institutionalized, social group composition may have been unstable, and degrees of integration fluctuated.

There is an apparent hiatus in mound construction between 2,800 and 1,700 B.C. Climatic models indicate the timing of this hiatus coincides with the onset of major flooding in the Mississippi River basin (Kidder et al. 2008). The degree to which these events are correlated remains to be determined.

Several comprehensive summaries concerning Poverty Point (16WC5) and related occupations are available (e.g., Byrd 1991; Ford and Webb 1956; Gibson 1996, 2000, 2010; Webb 1968, 1982; U.S. Department of the Interior 2013). The site was built and occupied between 1730 – 1250 B.C. (U.S. Department of the Interior 2013). Poverty Point is best known for its large mounds and distinctive concentric ridges which appear to have been carefully planned, with construction taking place relatively quickly, and likely requiring coordination of immense labor (Gibson 2000, 2010; Kidder 2010). However, the nature of social and political organization represented at the site continues to be the subject of considerable debate (e.g., Gibson 2004, 2007, 2010; Kidder 2010; Sassaman 2005). Exotic stone was imported for tools, vessels, and ornaments. Fired chunks of molded earth known as Poverty Point objects are abundant at the site and have been considered diagnostic of related occupations at outlying sites. Many containers were made of soapstone and fragments of the earliest pottery vessels in Louisiana have been recovered from Poverty Point. The economy was based on hunting, fishing, and gathering wild plant foods, with riverine resources apparently of primary importance (Gibson 2010).

Evidence of the distinctive Poverty Point cultural expression in Louisiana is limited to the Poverty Point site and a few other sites in the northeastern part of the state. Outside of northeast Louisiana there is little evidence of this expression and most Late Archaic sites exhibit similar material and organizational characteristics. Understanding the extent and degree of influence of Poverty Point upon other communities across the state is an important area of research. Equally important is understanding why many communities appear to have been minimally, if at all, influenced by Poverty Point.

Topic 1: Early Human Organization in Louisiana

What were the landscape and climate conditions in Louisiana during the Late Pleistocene to Early Holocene transition? What is the evidence for Late Pleistocene settlement strategies and how did they change over time? What kinds of economic and social strategies were carried out by the earliest residents? Was there variation across the state?

With the decline of glacial runoff in the Mississippi Alluvial Plain, a meandering channel pattern likely replaced an earlier braided stream pattern by 9500 cal BC (Saucier 1994a). The Red River in the South Central Plains region was at least 40 ft. [12m] lower prior to ca. 12,000 cal BC, and the Mississippi River valley was up to 100 feet [30.5 m] lower than modern elevations. Presently submerged areas of the Continental Shelf in the Gulf of Mexico were terrestrial zones during Paleoindian times and may contain evidence of early coastal occupations (Evans 2013; Pearson et al. 2014). In the river valleys, most floodplain surfaces available for human use during the Paleoindian period have been destroyed by channel shifts or are buried beneath later deposits. Identified Paleoindian sites are concentrated on Macon Ridge, a remnant valley train deposit where surfaces are exposed or buried by a thin mantle of Late Pleistocene or Early Holocene loess (Hillman 1990; Saucier 1994b). To the west, most upland surfaces in the South Central Plains have been stable or slowly eroding during the Holocene and evidence of Paleoindian occupation is likely on or near present surfaces. In some areas, such as Fort Polk, early Holocene surfaces have been covered by thick mantles of slopewash or windblown sediments. Upland landforms in the South Central Plains have yielded the largest numbers of Paleoindian artifacts.

Understanding early human settlement is limited by a paucity of sites and material culture in good context. The apparent lack of accumulation of significant material culture at most Paleoindian sites has been interpreted as reflecting high residential mobility of hunter-gatherer social groups (small bands?) as they exploited extensive, dispersed food resources (Anderson 1996a). Kelly and Todd (1988) and others have argued that Clovis period groups moved quickly across North America following and exploiting big game. Others (e.g., Anderson and Gillam 2000; Meltzer 2009) contend that more complex settlement and subsistence strategies were followed by Clovis and other early groups, particularly in the eastern woodlands. Pleistocene fauna have been found on Avery Island and near the city of Lafayette, but not in

association with Paleoindian artifacts (Gagliano 1970; Gibson and Miller 1973). The role, if any, of human groups in the extinction of late Pleistocene fauna remains controversial and subject to new research (Grayson 2006; Martin and Klein 1984).

Paleoindian research in Louisiana has been relatively sparse, but there have been several new developments over the past few decades. Hillman (1990) made several preliminary suggestions regarding the distribution of Paleoindian artifacts along Macon Ridge and linked these to the distribution of re-deposited loess sediments, as well as landform elevation and proximity to streams. Some late Paleoindian sites in the southeastern U.S. contain considerable remains and this may be the case at a few sites in Louisiana, such as those in the Fort Polk area (site files, Anderson and Smith 2003; Mathews et al. 1995; Rees 2010a; Webb et al. 1971). Other models of Paleoindian settlement that may have relevance to Louisiana include Sassaman and Anderson (1996), and Anderson (1996a, 2004).

By late Paleoindian period times, regional distributions of point styles may signify the development of cultural boundaries. For example, there appear to be relatively few Dalton points west of the Mississippi alluvial valley where possibly contemporary San Patrice points are far more numerous. Recent work by Jennings (2008a; 2008b) combines stylistic, technological, and distributional data on San Patrice points to formulate hypotheses regarding social organization and group mobility for the late Paleoindian period along the Plains-Woodland border, including portions of the South Central Plains in Louisiana. Systematic recording of specimens in private collections, even where location information is only at the scale of drainage or parish, may yield significant information about regional distributions of varying point styles (cf. Anderson and Faught 2000; Anderson and Smith 2003; Bousman et al. 2004; Gagliano 1963; Gagliano and Gregory 1965; Prasciunas 2011; Webb 1948). Chronological and functional studies of late Paleoindian technology and settlement can inform on the ecological and cultural effects of the Late Pleistocene to Early Holocene transition.

Topic 2: Human Response to the Development of Modern Climate and Landscape Conditions

How did human groups respond to the formation of modern climate and landscape conditions? Is there evidence of Middle Holocene warm and arid conditions in Louisiana?

A sharp increase in global temperatures took place following the Younger Dryas climatic period (ca. 9500 cal BC). A middle Holocene interval of hotter and dryer conditions with significant landscape effects is well documented for the southern plains and portions of the Midwestern U.S., but conditions in the mid-south appear to have been variable (Peacock 2008:95-96). Smith (1986:18-35) argued that middle Holocene climatic conditions induced river aggradation and stabilization in the southeastern U.S. resulting in channel meandering and the emergence of rim swamp and oxbow environments that were rich in biotic resources. Site distribution patterns and subsistence remains from many places in the Southeastern U.S. show that these environments became focal points for human exploitation. More recent studies have surveyed geographic patterns of plant and animal use, and linked these to variables such as frost-free growing seasons, distribution and abundance of nut-bearing trees and other potential plant foods, and plant and animal species composition in varying microenvironments. Sea level rose steadily during the early and middle Holocene, submerging some sites and providing changing coastal resources and settlement localities. The precise timing of sea level rise in the Gulf of Mexico remains unclear but modern elevation was attained between 6,000 and 4,000 BC.

Good context data for the Archaic period in Louisiana are sparse and concentrated at a few sites such as Conly (16BI19), Watson Brake (16OU175), J.W. Copes (16MA47), Cowpen Slough (16CT147), and Poverty Point (16WC5). Important subsistence studies relevant to Louisiana include Fritz (2008), Gremillion (1996), Girard et al. (2011), Jackson (1989), Jackson and Scott (2001), Ramenofsky (1986), Saunders et al. (2005), and Ward (1998).

Human groups probably continued to be relatively mobile during the Archaic period, but concentrations of debris found at particular sites (such as the Conly site) suggest a greater redundancy in the use of specific places and territories relative to the Paleoindian period. Social changes may have involved the linking of multiple small bands into larger macrobands as foraging strategies became more generalized, population levels increased, and modern floral and faunal regimes developed (Anderson 1996b; Anderson and Sassaman 2012:72). Trade to acquire scarce and distant resources (such as high quality stone) also might have increased as groups became more circumscribed in specific territories.

Landscape and biotic data at varying spatial scales are needed to understand distributions of potential food resources during the middle Holocene. Better documentation of material culture and change through time is critical to identify changes in site distributions relative to differing social and physical environments during the Archaic period. Specific contexts containing datable middens and other features with preserved subsistence remains are of especially high priority.

Topic 3: Middle Archaic Period Monumentality

Were the Middle Archaic mounds in Louisiana the product of a single cultural tradition? How were the groups who constructed the mounds organized? What was the purpose (or purposes) of the mound and earthwork centers? Why were mounds constructed in only some areas of the state?

Monumental earthwork construction began in Louisiana as early as 5,200 BC (Saunders 2010a). At least 13 sites in Louisiana contain Middle Archaic period mounds, including Hedgepeth (16LI7), Frenchman's Bend (16OU259), Watson Brake (16OU175), Stelly Mounds (16SL1), King George Island Mounds (16LV22), Caney (16CT5), Lower Jackson (16WC10), Hillman's Mound/Nolan (16MA201), Tew Lake Mounds (16CT331), Belmont (16SJ1), Hornsby (16SH21), LSU Campus Mounds (16EBR6), and Monte Sano Bayou (16EBR17). Many of these represent the earliest documented construction of earthworks in the U.S. All of them are located in or immediately adjacent to the Mississippi Alluvial Plain.

Understanding the factors leading to initiation of mound construction, their purpose and function, and eventual abandonment is a primary area for research (Hamilton 1999; Peacock and Rafferty 2013).

Climatic data indicate mound construction ceased about the time major Mississippi River flood events became frequent (Kidder et al. 2008; Saunders et al. 2005).

Many of these sites have high artifact densities suggesting long-term residential use. Evidence of earthen platforms and possible structures has been found within and beneath some of the mounds, but elite burials and evidence of mortuary ritual are absent. Evidence for the distribution and organization of the population supporting each mound complex is absent. The complex mound centers developed during the Middle Archaic period has challenged traditional models of social evolution and complexity (Saunders 2010a, 2010b). The degree of social complexity linked to development of these earthworks is debated (see papers in Gibson and Carr 2004). Even the notion of what constitutes "complexity" is being re-considered (e.g., Alt 2010; Randall and Sassaman 2010). Areas of research include the coordination/organization of labor, social power relationships and inequality, population sizes, ritual activities, and cosmological references in site configurations (Anderson and Sassaman 2004; Milner 2004; Sassaman and Heckenberger 2004; Romain and Davis 2014; Saunders 2004, 2010a; Saunders et al. 2005).

Topic 4: Understanding Poverty Point and the Poverty Point Era

Can we define a regional Poverty Point "culture", and if so, what does this mean in social, political, ritual, and economic aspects?

Poverty Point (16WC5) represents a unique cultural expression in North America, and even within the world (U.S. Department of the Interior 2013). Understanding the social, political, and economic processes that resulted in its development and persistence for 400 years is a major area for research. Of particular interest is the mound-building program that was reestablished after a hiatus of nearly 1,000 years. The earthworks at Poverty Point are much larger and more complex than any construction prior to or for some 2,000 years after the site was abandoned. Understanding the factors leading to the re-initiation of earthen construction on such a monumental scale, their purpose and function, and the eventual abandonment of this tradition is important for understanding the site and the Late Archaic Period as a whole. In addition, examining the size, organization, settlement structure, and subsistence base of the community that occupied and interacted with Poverty Point is an important research focus.

Also critical is understanding the extent to which Poverty Point influenced regional developments, and was in turn impacted by other regional cultures. Using distributions of certain material traits, attempts have been made to define and delineate a Poverty Point cultural complex (Broyles and Webb 1970; Byrd 1991; Webb 1968). Webb (1968) saw this as an essentially riverine phenomenon centered in the Lower Mississippi Valley from the Missouri boot-heel to the Gulf of Mexico, with a few outlying sites along the Gulf coast extending as far east as the Florida panhandle. Included among the diagnostic traits were intensive use of baked clay objects for cooking; steatite (soapstone) vessels, clay and stone tubular pipes and figurines, micro tools (perforators and blades), petaloid celts, hematite and magnetite plummets, and lapidary art. More recent summaries (e.g., papers and comments in Byrd 1991; Gibson 2010) note that these traits have differing spatial and temporal distributions and are not likely to form an integrated cultural complex.

Kidder (1991) delineated several site clusters in northeast Louisiana that include regional centers such as Neimeyer-Dare (16MO43); small villages such as Copes (16MA47) and Terral Lewis (16MA16); and numerous small, ephemeral sites whose links to Poverty Point are tentative. Poverty Point was considerably larger and more complex than any contemporary center and Kidder (1991:48) suggested that contemporary site clusters represent relatively autonomous groups of settlements with “cultural or symbolic allegiance to the Poverty Point site.” More recently, Spivey et al. (2015) suggest Poverty Point is a place of pilgrimage whose purpose and function remain unknown but that served to attract people from across much of the central US. These visitors may have contributed labor to construct the earthworks, and/or provided much of the non-local raw materials evident at the site. Across most of Louisiana, there is little evidence of a Poverty Point influence. It appears that most groups continued traditional subsistence and economic patterns established during the Middle Archaic.

Long-distance connections, generally inferred by the presence of exotic raw materials and finished artifacts, also has been a topic of considerable interest (e.g., Carr and Stewart 2004; Gibson 1994a, 1994b, 1999; Gibson and Griffing 1994; Hays et al. 2015; Hill et al. 2016; Jeter and Futato 1994; Lehman 1991, 1994; Spivey et al. 2015; Webb 1968, 1970, 1982). The mechanism(s) of the exchange system and the extent to which Poverty Point tied into existing networks or influenced the development of the system remains unknown (but see Spivey et al 2015 for one recent model).

Woodland Period (ca. 800 B.C. – A.D. 1200)

General summaries on the Woodland period in the Southeast include the classic Lower Mississippi Valley surveys of Jeter et al. (1989), Phillips et al. (1951), Phillips (1970), and Rose and Harmon (1989) as well as more recent overviews by Kidder (2002), Schambach (2002), and other papers in Anderson and Mainfort (2002). Also useful are recent overviews in the *Handbook of North American Indians, Volume 14* - Brown (2004), Early (2004), Jeffries (2004), and Kidder (2004).

Widespread use of pottery and increasingly sedentary communities occurred between about 800 B.C. and 100 B.C. during the Early Woodland period and Tchefuncte culture. For Louisiana, information is best developed in coastal areas from sites such as Little Woods Middens (16OR1 through 16OR5), Big Oak Island (16OR6), Little Oak Island (16OR7), Tchefuncte (16ST1) (Ford and Quimby 1945; Heller et al. 2013; Shenkel 1974, 1984), Bayou Jasmine (16SJB2; Heller et al. 2013; Hays and Weinstein 1999; Neuman 1975) and the Morton Shell Mound (16IB3; Byrd 1994; McGimsey and Cring 2003; Neuman 1984). There is a notable absence of mound-construction during this period, with only a few earthworks identified.

Considerable effort has been made toward understanding spatial and temporal variation in Early Woodland period Tchefuncte pottery. The diversity in ceramic decorations has been attributed to continuations of earlier decorative traditions along the eastern Gulf and Atlantic coasts where Poverty Point connections remained strong (Jenkins and Krause 1986). Although several geographical clusters of Early Woodland period sites have been recognized in Louisiana and assigned phase names (Weinstein 1986, 1995), more work is needed to understand how recognized Tchefuncte pottery types and varieties are distributed across the state. Temporal changes have been recognized at specific sites (e.g., Heller et al. 2013; Weinstein and Rivet 1978), but general trends are not well understood. It is possible that new research will enable identification of multiple cultural groups in different regions across the state during the Early Woodland period.

Current data indicate a paucity of Early Woodland settlement and mound construction in the central and upper portions of the Mississippi River floodplain in Louisiana. This may be tied to a period of frequent, major floods along the Mississippi River, particularly in the 1,000 – 600 B.C. interval (Kidder 2006; Kidder et al. 2008). The degree to which this pattern is reflected in other drainages and the Atchafalaya Basin is unknown.

The Middle Woodland period (ca. 100 B.C. – A.D. 400) is characterized by changes in pottery technology and forms of decoration, and the presence of mounds at sites widely dispersed in Louisiana. Throughout most of the state but particularly along the Mississippi River drainage, the Middle Woodland period has been considered the home of the Marksville “culture” although no uniform way of life appears to have prevailed. The type site is the Marksville site (16AV1) in central Louisiana with its clear ties to the Midwestern Hopewell culture (Toth 1988). Marksville denotes, in part, a suite of pottery types but how these might relate to past ethnic, political, or social entities, or their interconnections, has not been the subject of significant study. Outside of Marksville and a few other sites (Crooks; 16LA3, Big Oak Island; 16OR6, Veazey; 16VM7/8), across most of the state Marksville culture is recognizable only by ceramic styles; mound-building, mortuary traditions, and other characteristics appear to reflect long-standing regional traditions. A general dichotomy between eastern Marksville peoples and Fourche Maline peoples in the far northwestern part of the state (with connections into Arkansas, Oklahoma, and Texas) has been suggested by Shambach (1982, 2001, 2002), but many of the traits considered diagnostic of Fourche Maline either also present at Marksville sites, or are not present in Louisiana. Most Middle Woodland period research has been carried out at mound sites including Marksville (16AV1; Fowke 1928; McGimsey et al. 2005; McGimsey 2010; Ryan 1975; Toth 1974), Crooks (16LA3; Ford and Willey 1940), Bellevue (16BO4; Fulton and Webb 1953; Girard 2012a; Webb 1984), and Coral Snake (16SA48; Jensen 1968; McClurkan et al. 1966). Connections to Hopewell groups in the Midwest (Byers and Wymer 2010; Carr and Case 2005; Charles and Buikstra 2006) are suggested by some mortuary traits and ceramic design styles (Toth 1988), but it is not clear if widespread religious or ideological phenomena are represented, or whether materials were traded or copied and re-interpreted locally.

No widely agreed upon criteria separate the Middle and Late Woodland periods. Cultural taxonomies are poorly defined and in some cases remain controversial. Across most of the state, the earlier part of this interval has been referred to as the Baytown period. Troyville culture existed during the first half of the

period (e.g., Belmont 1984), followed by Coles Creek culture. Troyville culture has been recognized as far north as the Natchitoches region (Girard 2000) and Coles Creek occupations have been identified throughout the state and into western Mississippi, southern Arkansas, and eastern Texas (Story 1990; Webb and McKinney 1975), although most of these probably date to the Early Mississippian period as defined here. As is the case with later periods, cultural variation is based primarily on perceived differences in ceramic design and vessel type assemblages. A similar range of types was present throughout the state, but assemblages with significant numbers of decorated sherds are rare in most of the South Central Plains and Western Gulf Coastal Plains regions. Important cultural changes during the Late Woodland Period (ca. A.D. 400-1150) include the proliferation of ceremonial centers containing multiple mounds and plazas, the first widespread use of the bow-and-arrow, and perhaps a greater focus on use of native seed plants in some areas. Ceremonial centers have been the primary targets of research including Marsden (16RI3; Saunders 2003), Greenhouse (16AV2; Ford 1951), Hoover (16TA5; R. Saunders 1994; Hays 1995; LeBoeuf 2000), Fredericks (16NA2; Girard 2000), Troyville (16CT7; Lee 2010; Lee et al. 2011; Walker 1936), Gold Mine (16RI13; Belmont 1984; McGimsey 2004); and Mount Nebo (16MA18; Giardino 1984).

Topic 1: The History and Context of Ceramic Technology

When was pottery first made and used in significant amounts across Louisiana? Was adoption linked to particular socioeconomic factors such as long-term settlement of particular sites or territories, or intensification of subsistence practices? What technological and social factors influenced the evolution of ceramic form, style, and function?

Although pottery was present in small amounts at Poverty Point and several contemporary sites along the Gulf Coast to the east, it did not become widely used in Louisiana until the first millennium B.C. Varied ceramic technological traditions appear to be represented at Poverty Point, but the un-tempered pottery referred to as Tchefuncte persisted and diffused across many portions of Louisiana beginning about 800 B.C. It is not known whether the spread of pottery was a time-transgressive east-to-west phenomenon or was developed and adopted in widely dispersed nuclei from which it eventually dispersed. Tchefuncte pottery has been found primarily in sites located within the Mississippi Alluvial Plains ecoregion with a few sites in the Southern Coastal Plains and Western Gulf Coastal Plains. With a few exceptions, the South Central Plains region either was devoid of pottery during the Early Woodland period, or else pottery use was sparse, and perhaps had characteristics that cannot yet be differentiated from later ceramics.

The adoption of ceramic technology, and the appearance/disappearance of technological and stylistic attributes, has been linked to economic changes, such as intensification of subsistence strategies and/or restricted mobility. But it was also a conscious choice by people. Rather than linking the spread of pottery to economic or settlement factors, Sassaman (1993; 2004) has suggested that factors such as alliance building and kinship patterns might have influenced decisions by different groups about adoption of ceramic technology. Research focused on the factors affecting those choices, and the social, economic, and historical contexts within which they occurred, reflects recent scholarship. Prior models wherein ceramic types were correlated with social groups need to be more closely examined in light of recent data on the timing, distribution, and persistence in ceramic attributes.

Topic 2: Monumentality, Mortuaries, and Social Organization

Does the development of multiple mound/plaza centers indicate the consolidation of regional polities linking outlying communities? Are religious or political leadership positions reflected in Woodland Period mortuary ritual?

Understanding the implications of the increase in construction and use of mound complexes is a major research theme, particularly for the Late Woodland period. Complexes might indicate expansion of communities at larger spatial scales than in previous times and formalization of rituals at particular centers may have enabled the persistence of cultural institutions over relatively long periods of time. Dispersed populations may have become integrated through ritual, exchange, or military aggression and defense. Bathtub-shaped fire pits at Marsden (16RI3), Gold Mine (16RI13), and Neely (16WC4), similar to those first identified by Ford at the Greenhouse (16AV2) site, are thought to be associated with large, communal feasts, and perhaps funerary rituals (Lee 2010). Areas such as the Lower Ouachita, Lower Red, and Tensas River basins of the Mississippi Alluvial Plain appear to have been particularly important in these developments.

Coordination of construction activities and the spread of common ritual practices likely necessitated relatively strong leadership. But, in contrast to many later Mississippian societies, evidence that power and prestige were based on, or symbolized by, wealth accumulation is equivocal for the Woodland period in Louisiana (Kidder et al. 2010). Burial mounds at Marksville, Crooks, and Coral Snake during the Middle Woodland period contained ceramic vessels and pipes, chipped and polished stone items, and copper ornaments, which might indicate wealth. However, not all of these items were interred with individuals, and most burials lack grave goods. A wide range of burial treatments are represented, but this diversity has not been the subject of scrutiny. Few Middle Woodland period burials in non-mound contexts are known and their identification would greatly enhance abilities to interpret variation in social statuses for this period.

Burials at Late Woodland period ceremonial centers appear to have been communal and not reserved for elites. Little or no individual or group status differentiation is evident by mortuary programs at Troyville or other Late Woodland period centers. Masses of secondary interments were placed on platforms later covered by moundfill at sites such as Morton Shell Mound (16IB3) and Gold Mine. Few grave goods were placed in burial areas, although there are exceptions such as the spectacular painted effigy vessels from Gold Mine. However, these vessels did not appear to be associated with specific individuals (McGimsey 2004). Interpretations for studying mass secondary burials that are directed toward issues of social display rather than individual identity might provide new perspectives (cf. Brown 2010).

Mound construction is confined primarily to the Mississippi Alluvial Plain, the Red River valley, and immediately adjacent upland areas. Late Woodland Coles Creek societies exhibit considerable political and economic regional variation. Research into the development of that variability and the accompanying social organization, shifting away from the prior conception of a regionally uniform culture, is important. Political consolidation, competition, and conflict, or the lack of evidence thereof, should be examined (Wells 1997). Elsewhere, evidence for the social and material changes characteristic of the Woodland period is limited primarily to small numbers of ceramic sherds. In many of these areas, there is little evidence for significant change in subsistence and economic patterns from preceding Archaic traditions. Understanding the divergent trends in monumentality and presumed social organization across different landscapes is an important area for study.

Topic 3: Woodland Period Subsistence Economies

Is there evidence of utilization and intensification of production of native seed crops in Louisiana during the Woodland period? How is the presence or absence of intensification reflected in social and political organization?

Evidence for domestication of native seed plants appears as early as the Late Archaic in some areas of the southeastern and midwestern U.S., with maize agriculture appearing by the end of the Late Woodland period (Buikstra and Milner 1991; Gremilion 2002; Jackson and Scott 1995; Schoeninger 2009). In

Louisiana, the limited data indicate minimal use of domesticated native plants and no evidence for maize until the very end of the Woodland period (Kidder and Fritz 1993; Roberts 2004, 2005; Wells and Weinstein 2007). Traditional patterns of hunting, fishing and gathering of wild foods persist in nearly all settings across the state. The causes and consequences of these choices provide insight into social organization, means of production, gender roles, and ritual (feasting) within communities. There is insufficient data to determine whether different subsistence practices supported the increased population sizes and sedentary communities in the major river valleys versus the apparently smaller communities in other regions.

Topic 4: Lithic Technology and Adoption of the Bow and Arrow

When, and in what cultural contexts was the bow-and-arrow first used in Louisiana? What were the economic and social implications of this technological development?

A critical technological change that occurred during the Late Woodland period was the introduction of the bow-and-arrow, generally indicated by the presence of small “arrow” points in lithic assemblages, and increasing evidence of technologies based on flake modification rather than direct core reduction (cf. Kelly 1988; Parry and Kelly 1987; Railey 2010). Adoption of the bow-and-arrow has been inferred to result in a change from communal to individual hunting practices. One consequence may have been the dispersal of smaller groups across the landscape away from villages, which may have resulted in rising conflict related to competition for hunting territories (Blitz 1988; Nassaney and Pyle 1999; Tomka 2013). Movements of people and development of fortified villages are one response to conflict. To date, there is little evidence of warfare or fortified villages in Louisiana. Understanding the timing of the adoption of the bow and arrow in Louisiana, and any resultant changes in social, political, and economic systems is of considerable importance for understanding the Late Woodland period.

Mississippi Period (ca. A.D. 1200 - 1700)

Changes from the Late Woodland period in Louisiana are linked to the development of the widespread “Mississippian” phenomenon that occurred across the southeastern U.S. and into portions of the midwestern U.S. The traditional Mississippian cultural concept was based on the presence of specific traits such as shell-tempered pottery, wall-trench house construction, pyramidal flat-topped mounds, and corn agriculture (e.g., Griffin 1967). By the 1980s, other definitions had become popular including ecological characterizations of Mississippian as an “adaptation” to resource rich floodplain environments (e.g., Smith 1986; 1990). These definitions included an emphasis on political economy as constituted by hereditary “chiefdoms” (e.g. Barker and Pauketat 1992; Scarry 1996); or an emphasis on religion, ceremony, and iconography (e.g., Knight 1986; Lankford et al. 2011; Reilly and Garber 2007). Many recent summaries combine these to consider Mississippi a time period with considerable cultural variation when increasing interconnections between societies resulted in the widespread presence of many of the traits used in traditional definitions of Mississippian “culture”, and many (but not all) societies adopted common economic, political, and religious practices identified in more recent definitions of Mississippian.

Although there is no distinct temporal point at which the Late Woodland to Early Mississippi transition can be placed, important changes occurred in Louisiana and adjacent portions of the eastern U.S. between A.D. 900 and 1,000. Recent summaries focusing on the Mississippi period in Louisiana include Girard (2010), Girard et al. (2014), Kidder (1990, 2004, 2007), Rees (2007, 2010b), and Roe and Schilling (2010).

The period after A.D. 900 is not marked by dramatic changes in ceramic assemblages in the Mississippi Alluvial Valley, and the Coles Creek cultural taxonomic unit spans the Late Woodland and Early

Mississippi periods. The cultural ambiguity characteristic of the Late Woodland period in the South Central Plains continues into the first century of the Early Mississippi period, but by ca. 1075 A.D., most of the region is considered as part of the vast Caddo culture area (Girard et al. 2014). Although the Coles Creek and Caddo cultural traditions differ in material culture (particularly ceramic assemblages), settlement patterns, and mortuary behavior, considerable interaction likely took place and probably involved population movement.

Throughout most of Louisiana outside of the Caddo area, occupations dating after about A.D. 1200 are classified as Plaquemine culture (Kidder 2007; Rees 2010b; Rees and Livingood 2007). Although much continuity between Coles Creek and Plaquemine cultures is evident, Plaquemine sites sometimes evidence greater influence from Mississippian groups located north and east of Louisiana. The presence of shell-tempered ceramics was once thought to mark the diffusion of a distinct Mississippian “culture” to the south, perhaps even the intrusion of non-local Mississippian peoples or the “acculturation” of local populations to Mississippian ways (cf. Brain 1989; Neuman 1984; Phillips 1970; Williams and Brain 1983). However, recent summaries have questioned equating ceramic temper with distinct cultural traditions (e.g., Feathers 2006; Kidder 2004; 2007; Rees 2010b). Use of shell-tempered pottery is variable across the state and appears rarely if at all in some regions, but generally was adopted later than in the Mississippian cultures to the north (Pertulla et al. 2011; Weinstein and Dumas 2008). Understanding regional variation in Mississippi period changes in the context of more widespread cultural dynamics in the eastern United States remains an important research topic.

The Red River drainage north of the Natchitoches area and regions to the west are part of the Caddo area. Changes in ceramic assemblages and settlement patterns mark a transition from the Early to the Middle Caddo period that corresponds temporally with the Coles Creek to Plaquemine transition in the rest of the state. Use of the generic “cultural” dichotomy of Plaquemine and Caddo likely glosses over the complexities of social, political, economic, and religious behaviors across the state for this time (Girard et al. 2006). Future research needs to address regional variation within these culture areas and look for connections that cross-cut geographic regions.

Studies of the Mississippi period in Louisiana have concentrated on ceremonial centers—sites containing multiple mounds often surrounding plazas. It is evident that the number and geographical distribution of ceremonial centers expanded dramatically early in the Mississippian period, especially within the Mississippi Alluvial Plains region. Hierarchical settlement systems have been proposed for northeastern Louisiana after A.D. 1200. Kidder (1992c:154-155) argued the Osceola (16TE2) site was a regional center with smaller mound centers and hamlets in surrounding areas in the Early Mississippian period. The Mott (16FR11) and Raffman (16MA20) sites on Bayou Maçon may have served at the apex of successive site hierarchies as well. There are insufficient data on settlement systems elsewhere in the Mississippi Valley to correlate known multi-mound sites such as Bayou Grande Cheniere (16PL159) with surrounding sites. Rees (2010b:178) points out that Plaquemine sites in Louisiana are of a considerably smaller scale relative to the immense centers in the Yazoo basin of Mississippi such as Winterville (22WS500) and Lake George (22YZ557). Correlating mound center sizes with socio-political complexity can oversimplify that complexity and limit assessment of why regional variation occurs and understanding the related historical processes.

The presence of shell-tempered pottery with Mobile Bay-area designs at scattered sites in the Southern Coastal Plain and Mississippi River delta may indicate late prehistoric interaction along the coast and/or the actual movement of people into these areas (Weinstein and Dumas 2008). The nature of these interactions is not well understood (Rees 2010b). At least some movement has been ascribed to the procurement of salt at selected locales (Brown 1999).

Fortifications were common in regions north and east of Louisiana by A.D. 1300, and there is evidence for large-scale conflicts by A.D. 1450 (Dye 2004). There is little evidence of conflict at contemporary sites in Louisiana. Explanations for the apparent lack of conflict have not been developed. The political economy of hunter-gatherers may have constrained group consolidation and the resulting increased conflict between agricultural polities elsewhere in the southeastern U.S. (Rees 2010b; Wells 1997).

Ceremonial centers were also constructed in the Red River floodplain but, compared with the Mississippian Alluvial Plains, relatively few ceremonial centers are present in the South Central Plains ecoregion. Considerable residential habitation appears to have existed at centers such as Mounds Plantation (16CD12) and Pace (16DS268), but few contemporary outlying settlements have been identified and the extent of regional influence wielded by these centers is not known (Girard 2012b; 2014; Webb and McKinney 1975). After A.D. 1200, extensive villages consisting of widely spaced habitation areas and solitary mounds developed in portions of the Red River floodplain (Girard 2006, 2010, 2012b; Kelley 1997; Kelley et al. 2010; Pertulla 2012).

Disruption of Mississippian societies occurred in many portions of the southeastern U.S. as early as A.D. 1475 (see papers in Brose et al. 2001), perhaps related in part to extended periods of low precipitation with multi-year droughts (Stahle et al. 2007). These changes appear to have included abandonment of several major ceremonial centers (e.g., Knight and Steponaitis 1998), dissolution of the Southeastern Ceremonial Complex (Brain and Phillips 1996; Muller 1997), and de-population of some areas including the formation of a “Vacant Quarter” in the central Mississippi Valley and adjoining regions (Williams 1990; 2001). By ca. A.D. 1500, changes in settlement patterns and ceramic assemblages are evident in several areas of Louisiana (e.g., Kidder 1986; 1992a; 1993), but the relationship, if any, to the better documented ‘abandonments’ elsewhere in the southeastern U.S. is not known. The first European intrusions into the Mississippi Valley area postdated the initial Late Mississippian period changes, but had profound effects on many indigenous societies. In northeast Louisiana, there is evidence for population shifts and eventual apparent abandonment of this part of the state by A.D. 1700 (Kidder 1993b). It is not yet clear what causal processes and factors resulted in these patterns. Greater continuity into the historic period occurred in the Caddo Area and the southern half of Louisiana, with numerous villages occupied at the time of European contact.

Topic 1: Beginnings of the Caddo and Plaquemine Cultural Traditions

To what degree do Caddo and Plaquemine societies represent continuity from local antecedent Fourche Maline or Coles Creek groups? How important were connections with Cahokia and the other Mississippian regions in structuring Caddo and Plaquemine societies?

Modeling the emergence of Mississippian societies has emphasized either parallel adaptations to floodplain environments in various regions across the southeastern U.S. (e.g., Smith 1990) or the spread of ideas and material goods from a few core areas—namely the American Bottom and Cairo Lowlands in the central Mississippi Valley (e.g., Anderson 1999; Blitz and Lorenz 2006). For Louisiana, the beginnings of the Caddo cultural tradition have been attributed to influences, if not direct connections, with Late Woodland groups in the Lower Mississippi Valley, as well as possible interactions with Mesoamerica (e.g., Girard et al. 2014; Webb and Gregory 1986). Schambach (1982; 2002) and others emphasize local continuity with Late Woodland period Fourche Maline groups and see little influence from the east. Likewise, interpretations of Plaquemine culture in the Lower Mississippi Valley have vacillated between emphases on local developments and contacts with other cultures of the Mississippian period to the north and east (Kidder 2007; Rees 2010b; Rees and Livingood 2007). Discussions have focused on diffusion of general organizational traits such as construction of ceremonial centers (Girard et al. 2014); similarities in style, particularly regarding ceramic decoration (White 2005; White and Weinstein 2008); and the spread of technologies such as use of shell temper in ceramics (e.g., Pertulla et

al. 2011; Weinstein and Dumas 2008). Possible connections with the Cahokia region have been of special interest because of the potential that developments there had fundamental consequences for the rest of the southeastern U.S. (Emerson et al. 2003; Emerson and Girard 2004; Girard et al. 2014; Pauketat 2004; Wells and Weinstein 2007). Although it is clear that neither the Caddo or Plaquemine areas developed in isolation, more work needs to be directed toward understanding the nature and significance of inter-regional and extra-regional interactions. For example, do connections represent trade and exchange, emulation of styles and behaviors from neighboring regions, diffusion of technologies of practical significance, or perhaps movements of corporate groups, families, or individuals?

With regard to local developments, the Caddo and Plaquemine areas exhibit remarkably different trajectories. A rather abrupt and dramatic suite of changes is notable in the Caddo area during the A.D. 900 – 1050 interval with the appearance of multi-mound ceremonial centers, new ceramic vessel forms and decorative styles, a unique and widespread set of elite mortuary rituals, and an apparent rapid settlement shift toward habitation in major floodplain settings (Girard et al. 2014). In contrast, Lower Mississippi Valley changes over the A.D. 900-1300 interval are considerably more gradual with many Plaquemine traits being traceable well back into the Woodland period. Contact with other groups, ecological variation, and evolving social-political organizations may have played roles in these different trajectories. The role and timing of the adoption of maize and other cultigens may also be an important factor.

Topic 2: Communities and Politics

How were habitation sites and ceremonial centers linked into communities? How variable were communities for different regions and periods of time? Were separate communities aggregated into polities at more extensive spatial scales? To what degree were Mississippian community organizations in Louisiana similar to those in other areas in the southeastern U.S.?

Communities can be viewed as settlements or groups of settlements organized to coordinate social interaction, subsistence and technological production, exchange, facility construction, defense, ritual, and other activities. Communities can be based on factors such as allegiances to leaders, rituals, important events or commemorations of such (histories), religion and symbolic systems, kinship, and notions of common ancestry (ethnicity). Some recent studies consider notions of social identity as primary for defining communities. Important to the consideration of communities are notions of spatial contiguity, spatial boundaries, and the presence of central places, although communities also can involve networks of identity and communication that may lack spatial contiguity, connecting settlements in different geographical areas and creating divisions at local spatial levels (Canuto and Yaeger 2000; Kolb and Snead 1997).

Community alliances and regional polities have been investigated through examination of the spacing of ceremonial centers and delineation of ceramic style zones (e.g., Blitz 1999; Blitz and Lorenz 2006; Livingood 2010), calculation of mound volumes and maximal distances over which communication and authority was in place (Hally 1993, 1996; Muller 1997), and critical examination of landscape surfaces and site distributions (Lipo and Dunnell 2008). Efforts to define communities in the Caddo area have recently been carried out by Fields and Gadus (2012), Girard (2010, 2012b), and Perttula and Rogers (2012), and in the Lower Mississippi Valley by Wells (1997). These studies emphasize geographical scale and boundaries, ceramic variation, and differentiation of public and domestic zones.

Specific issues of particular interest in Louisiana include: (1) delineation of dispersed floodplain communities and how space was differentially used within them; (2) understanding how small upland communities were interconnected and how they may have interacted with floodplain villages; and (3) tracing how community ties were established, developed, and dissipated.

Topic 3: Mississippi Period Political and Sacred Economies

How centralized, complex, and stable were Mississippi period societies? Is there evidence of conflict and fortifications? What roles did ceremonial centers play in maintaining social, political, and ideological cohesion? Did certain material items function as objects of power and wealth and circulate as objects of power, wealth, identity, and prestige. What were the conditions of production and exchange for such items?

In some portions of the southeastern U.S. it has been argued that “complex chiefdoms” were present in many regions that consisted of three or more tiers of political hierarchy dominated by a powerful central place; whereas others contend that multiple polities were largely independent and competitive, perhaps with periods of alliance or confederation (cf. Blitz 2009; Cobb 2003; Kidder 1992c; Knight and Steponaitis 1998; Pauketat 1994). Concepts such as stability, fission-fusion, chiefly cycling, and network/corporate dichotomies have been developed to address these issues (e.g., Anderson 1994, 1996c; Blitz 1999; King 2003; Scarry 1996; Trubitt 2000).

Although most Mississippian societies appear to have had ranked social organizations, including “chiefdoms” where positions of social leadership were institutionalized and inherited through kinship affiliation, recent research has indicated that considerable diversity existed across the southeastern U.S. (Anderson and Sassaman 2012; Blitz 2009). In the Caddo Area, mortuary practices, especially deep “shaft” graves in and beneath mounds, contain single individuals or small groups of individuals often with numerous grave goods suggesting the interment of political or religious leaders and their retainers or families (Moore 1912; Webb and Dodd 1939; Webb and McKinney 1975). In contrast, social hierarchies are not well represented in the burial practices of Late Coles Creek and Plaquemine sites, although treatments vary with regard to age and sex (Kassabaum 2011). The mass burials present in the Middle and Late Woodland period contexts dropped out of use during the Early Mississippi period. However, Kidder (1992c, 1998) has examined the ways site configurations and mound features relate to Coles Creek social hierarchies.

Understanding differences in social hierarchies and leadership strategies between the Caddo Area and Lower Mississippi Valley is of considerable research importance (Girard et al. 2014). Some recent studies have argued that mortuary ritual and its material accoutrements are not necessarily a direct reflection of individual social status and have interpreted mass burials, disarticulated bodies, and spatial patterns of offerings as constructed sacred spaces (see papers in Sullivan and Mainfort 2010). Some areas of Louisiana, including the southwestern portion of the South Central Plains, the Western Gulf Coastal Plain, Mississippi Valley Loess Plains, and the Southeastern Plains exhibit little evidence of Mississippian mound and mortuary behaviors. The extent to which communities in these areas participated in these traditions, or maintained traditional mortuary practices, remains unclear.

Structures were placed on mound platforms at some sites and burials have been found in mounds in both the Caddo and Lower Mississippi Valley areas. It is not always clear whether these represent elite houses, religious or mortuary related facilities, council houses, or other functions. Religious shrines recognized by multiple communities or even varying cultural groups may have existed at some centers (cf. Brown 2010, 2012).

Specially crafted or exotic items may have been vital for developing and upholding social order in the diverse Mississippi period societies across the state and elsewhere. Maintenance and reproduction of social differentiation and hierarchies has been linked to circulation of prestige items such as fineware ceramics and large bifaces within the Caddo area (Girard et al. 2014). Links to other regions, particularly the large Cahokia site in the American Bottom region are evident by the presence of Cahokian pottery in

the Lower Mississippi Valley at the Lake Providence site (Wells and Weinstein 2007; Weinstein 2005), and ornamental copper and carved stone effigies at the Gahagan site in the Red River drainage (Emerson and Girard 2004; Emerson et al. 2003; Webb and Dodd 1939). After A.D. 1,000, numerous sites along the eastern Gulf Coast show stylistic ties to communities in coastal Alabama and Florida. Identification of non-local items and their source areas is a critical step for these studies. Techniques such as petrographic analysis and INAA (Instrumental Neutron Activation Analysis) provide insights regarding the presence of non-local ceramics (e.g., Cecil 2012; Ferguson and Glasscock 2012; Perttula and Selden 2013; Rodriguez-Alegria et al. 2005). Claystone has been sourced using PIMA (Portable Infrared Mineral Analyzer; Emerson et al. 2003), and attempts have been made to examine trace elements in copper using PXRf (Portable X-Ray Fluorescence; Girard et al. 2008).

Agricultural surpluses have been inferred to support large central communities and may have represented tribute to elites. The use of maize and other cultigens dramatically increased in the southeastern U.S. between A.D. 900 and 1200 (Fritz 2011; Gremillion 2011; Kidder 1992b). Communities in the Mississippi and Red river valleys do not appear to rely on agriculture as their primary subsistence base until the end of this period (Kidder and Fritz 1993; Listi 2007; Wilson and Perttula 2013). Domesticated maygrass, chenopod, and knotweed have been recovered at a few Coles Creek sites (Roberts 2004, 2005), and it is likely that there was a continuation of the importance of hickory, pecan, acorn, and other gathered plant food sources. Elsewhere in the state, there is little evidence for agriculture. If subsistence production remained focused on hunting, fishing, and gathering organized at the household level, how did that affect larger social and political organization?

Topic 4: European Introduction and Consequences

How did the appearance of Europeans and Africans affect the indigenous communities they encountered, and vice versa? What role did introduced diseases play in altering American Indian communities and their social, political and economic relationships with each other and the Europeans? How did American Indian communities negotiate this rapidly changing cultural world, and what strategies were developed to manage the new social, political, economic, and material landscapes?

The DeSoto Entrada of 1540-1541 represents the first appearance of Europeans in the southeastern U.S., but this intrusion was not followed by later explorers moving along the Mississippi River until A.D. 1673 (Young and Hoffman 1993). The first settlements of Natchitoches (A.D. 1713) and New Orleans (A.D. 1718) brought a permanent European presence to Louisiana. The effects of these newcomers on American Indian communities was profound and all communities were impacted (Thomas 1990). The effects of European diseases upon American Indians has been the subject of much debate (Ramenofsky 1987; Thomas 1990), including the timing and severity of epidemics. Their impacts in Louisiana are less well known. The effects of European diseases may have been felt in Louisiana even before there were permanent settlements. They may be one explanation for the apparent absence of population in northeast Louisiana by A.D. 1700 (Kidder 1986).

The upheaval in native communities may have been exacerbated by changing climatic conditions that affected settlement patterns and food availability. By A.D. 1300, climatic conditions throughout the eastern United States were cooler than previous and rainfall patterns were less consistent from year to year. This interval lasted until ca. A.D. 1850, and has been labeled the Little Ice Age (Anderson and Sassaman 2012:163). Tree-ring sequences on cypress trees from north Louisiana suggest that rainfall was unusually high in several years between A.D. 1168 and 1180, but there was considerable instability during the next few centuries, with frequent droughts after A.D. 1430 (Stahle and Cleaveland 1995). These circumstances may have resulted in population movements as groups sought more reliable subsistence territories.

The presence of Europeans and Africans also brought opportunities for American Indians. New technologies such as iron tools and guns offered more efficient hunting and food production. In addition, some groups positioned themselves as important traders and middlemen between other American Indian groups and Europeans. Understanding how Mississippian societies operated and were organized immediately prior to the arrival of the Europeans is critical to recognizing how each group responded to the appearance of foreigners with different social, political, economic, and material systems and expectations. American Indian responses were varied as each group pursued different strategies with their neighbors and the colonists.

Post-contact Period (ca. A.D. 1650 to 1950)

In A.D. 1682, Rene Robert Cavalier, Sieur de La Salle, voyaged down the Mississippi River and explored what became Louisiana. The subsequent settlement of Europeans and American Indians from other areas of the southeastern U.S. greatly affected Mississippi period settlement distributions, economies, social systems, and religious practices. In the South Central Plains, Caddo groups occupied the Red River drainage in the Shreveport area until raids by the Chickasaw forced them to relocate elsewhere. One group, the Yatasis, eventually re-coalesced in what is now eastern DeSoto Parish ca. A.D. 1750 and became important in the French-Caddo commerce (Girard et al. 2008; Vogel 1995). The Kadohadacho villages in the southern Arkansas portions of the Red River floodplain were occupied until A.D. 1790 when Osage raids and epidemics (Smith 1995; Swanton 1942) forced migration to the south around Caddo Lake. Population losses resulted in fewer villages through time. Perttula (1992:170) notes that five villages were present in A.D. 1690; only three by A.D. 1719; and finally, all the Kadohadachos were in a single village in A.D. 1790 (Parsons et al. 2002). Economies became increasingly diverse and dependent on trade, raiding livestock, hunting and fishing, and employment on ranches and farms owned by peoples of European descent, and less on traditional farming practices (Girard 1997; Girard and Gregory 2002; Kelley 1998; Perttula 1992; Sibley 1922; Swanton 1942; Webb and Gregory 1986; Williams 1964).

In the Mississippi Valley region of northeastern Louisiana, the Tunica probably resided in the Vicksburg area along the lower Yazoo River in the A.D. 1600s, moved downstream near Angola in A.D. 1706, and later to Avoyelles Parish near Marksville (Brain 1979, 1988). The related Koroa apparently lived in the northeast Louisiana during the late A.D. 1600s and early 1700s, perhaps ranging as far west as the Ouachita River. It is possible that the Glendora (16OU18) and Keno sites (16MO31) relate to the Koroa or the Natchezan-speaking Taensa. The Taensa had a village on Lake St. Joseph in Tensas Parish before A.D. 1706, but archaeological remains pertaining to this village have not been found. Kidder (1992b, 1993) argued that a rapid decline in population of the Boeuf basin took place in the early A.D. 1700s, possibly due to disease and intense economic competition. There is little evidence of occupation after A.D. 1720 due to Chickasaw and Choctaw raids. Trade between the Caddo and Tunica took place along more a southerly route in response (McWilliams 1981).

The historic Natchez resided east of the Mississippi River in the Natchez Bluff area in Mississippi (Brown 1985; Neitzel 1965, 1983). In A.D. 1716, the French established Fort Rosalie near the Grand Village of the Natchez. During the Natchez Revolt in A.D. 1729, many French settlers were killed and Fort Rosalie was destroyed. After the French attacked the Grand Village in A.D. 1730, a group of Natchez established a fort (16CT18) near Sicily Island that was attacked by the French in A.D. 1731. This attack resulted in the disintegration of the Natchez as an organized polity.

In coastal regions, the Chitimacha, Houma and Atakapa remained in their ancestral territories. Despite conflicts with the French, the Chitimacha remained in the Atchafalaya Basin throughout the colonial period. Both the Chitimacha and Houma persisted in this area throughout the post-contact period. The

Atakapa lived in southwestern Louisiana through the early 1800s. Although not recognizable as an organized community for the last 200 years, modern descendants have reorganized as the Atakapa-Ishak.

French settlement began at Fort St. Jean Baptiste in in northwestern Louisiana in A.D. 1713 and resulted in Natchitoches becoming a predominantly European settlement during the A.D. 1700s (Burton and Smith 2008). In response to the French, the Spanish government built the nearby presidio of Nuestra Senora del Pilar de Los Adaes. It was occupied between A.D. 1721 and 1773. Archaeological studies have documented the complex commercial, political and social interactions between these two settlements (Avery 1997, 2010; Gregory et al. 2004; Pleasant 2013).

In the southern part of the state, Pierre Le Moyne d'Iberville and his brother Jean Baptiste Le Moyne, Sieur de Bienville, established a series of forts and settlements along the modern Alabama, Mississippi, and Louisiana Gulf coast during the first decade of the A.D. 1700s. In A.D. 1718, the French established a more permanent settlement on the Mississippi River, New Orleans, to serve as a seaport and capitol to manage the French territories. Despite its governmental purpose, the new colony received only minimal support from the French government. As a result, the city, and by extension, the colonial economy, politics, and social practices followed an independent trajectory. African slaves were brought to New Orleans soon after its founding. New Orleans remained small throughout the French period and only a few outlying French settlements were established between Point Coupee and New Orleans along the Mississippi Valley; along Bayou Teche (Poste des Atakapa's; Poste des Opelousas); and the Red River (Natchitoches, Poste du Rapides). Industry was minimal and directed primarily toward local needs (sawmills, bricks, pitch, and tar). Transportation overland was by horseback across old Indian trails, and via small boats along rivers and bayous. New Orleans itself was connected to the larger Caribbean and world economy through commercial shipping, and these diverse connections brought new influences to the city and colony.

The French ceded the Louisiana Territory to Spain in A.D. 1762. European settlements expanded rapidly, particularly in southern portions of the Mississippi Alluvial Plain and into the Mississippi Valley Loess Plains. Louisiana colonists living in towns enjoyed the benefits of a steady growth of industry, public infrastructure, and an overall rise in the quality of life under the Spanish administration. Increased river trade to New Orleans contributed to urban population growth as settlers upriver brought their products to market. The proximity of the British, and then American-controlled Florida Parishes, provided additional access to goods. Land grants attracted settlers of diverse ethnic backgrounds (German, English, French, Acadian, and peoples of mixed ethnic heritage), along with a new wave of enslaved Africans. Other groups, such as the Canary Islanders (Isleños) were recruited by the Spanish government to come settle in the New World to establish Spanish claims to the land and to defend these claims. Cultural identities became complex, contested, and often ambiguous as people of different backgrounds intermarried and coalesced into rural and town communities. Acadians settled along Bayou Teche, Bayou Lafourche, and the Avoyelles Prairie between A.D. 1764 and 1785 (Rees 2008). Farms producing subsistence crops (corn, wheat, barley, rice, and vegetables), livestock, poultry, and cash crops (tobacco, indigo, sugar) expanded in the major river valleys while upland areas produced deer and buffalo hides and bear oil. Industry remained small in scale, largely organized at the household level, and directed toward local needs. Major portions of the uplands of the South Central Plains, and northern portions of the Mississippi Alluvial Plain were sparsely settled (Espey, Huston & Associates 1983; Price et al. 1976). In northeast and much of central Louisiana, European population remained sparse until the A.D. 1820s when large cotton plantations were established and rural habitations increased.

Adding further complexity to notions of cultural identity and social relations, American Indian tribes and fragmented remnants of tribes from the eastern and southeastern U.S. began coming into the state during the late A.D. 1700s. Most of these groups (which include the Coushattas, Apalachees, Pascagoulas, Chatots, Choctaws, Biloxis, and Quapaws) initially settled along major rivers, and eventually moved out

of the region or retreated into the surrounding uplands (cf. Hunter 1990, 1994; McCrocklin 1990). Following the A.D. 1835 signing of the Caddo Treaty, the Caddos, as an organized group, moved west to the Brazos River in Texas, and eventually to west central Oklahoma. Some Caddo-related peoples, however, such as the Adai west of Natchitoches, remained in Louisiana. Other Tribes, including the Chitimacha and Houma, resisted these pressures and remained in their traditional homelands.

Following the Louisiana Purchase in A.D. 1803, an influx of Euro-Americans from other parts of the United States, French Creole refugees from Saint-Domingue (including free people of color), enslaved people from Africa and the Caribbean, and many European immigrants increased with people settling in towns and rural farmsteads throughout Louisiana. In the early A.D. 1800s, the number of plantations increased along the Mississippi River and Red River floodplains. Cotton initially became the dominant cash crop on many Louisiana plantations. Archaeological investigations of these plantations have examined the physical layout of buildings and features, and focused on understanding daily life in the quarters of the enslaved population (Brown 2008; Hunter 2004, 2014; Keel 1999; Miller and Wood 2000; Ryan et al. 1997; Wilkie 2000; Wilkie and Farnsworth 1992, 1993). In the southern Mississippi Alluvial Plain, sugar production had begun in the late A.D. 1700s, expanded significantly after A.D. 1820 and soon dominated the planter economy (Dawdy et al. 1997; Goodwin et al. 1983; Markell et al. 1999; Yakubik et al. 1994). Both of these crops were very labor intensive and required large populations of workers, both free and enslaved. The slave trade ran through New Orleans and imported thousands of African and Caribbean slaves directly from Africa or via the Caribbean. Federal law banned the importation of enslaved people in A.D. 1808. However, the inter-U.S. slave trade continued legally along with illicit slave importing until emancipation in A.D. 1864.

Technological improvements, including sugar crystallization, the cotton gin, and the steam engine helped to grow the region's economy. In particular, the development of the steam-powered boat enabled merchants and farmers to rapidly and efficiently transport goods to market. By the A.D. 1830s, New Orleans was the world's largest cotton market and became the commercial and exchange hub for goods from the continent's interior to be exported for transoceanic sale. Towns and cities became focal points for economic, political, social, and religious activities. Most of these continued to develop during the late A.D. 1800s through the 1900s, greatly altering earlier configurations of structures, transportation routes, and natural landscape features. Archaeological examination of early A.D. 1800s communities has focused on Natchitoches (Hahn et al. 2010) and New Orleans (Dawdy 1998; 2000a; 2000b; 2008; Dawdy and Matthews 2010; Gray and Yakubik 2010; Yakubik and Franks 1997).

The Civil War left a much smaller physical record in Louisiana than in many states to the east. A number of military camps, forts, and smaller fortifications have been identified, primarily along the lower Mississippi River and Red River. The Mississippi River was the focus of most military activity. Archaeological traces of the Civil War include entrenchments, camp areas, burials, discarded munitions, weapons, and personal items (Ashworth and Fraering 2010; Gregory et al. 1984; Hays 1997; Manheim and Whitmer 1989; Rogers and Clark 2011; Smith 2011). Battlefields encompass extensive tracts of the landscape and may consist of dispersed artifact scatters not easily isolated into "sites." Even portions of battlefield sites that contain little research information often are considered to have significant heritage importance. Documentation of battlefield sites requires the collaboration of archaeologists and military historians. Due to the importance that rivers played during the war, numerous shipwrecks dating to the conflict are present, only a few of which have been located (Goodwin and Seidel 2004; Pearson 2000; Pearson and Birchett 2001).

In addition to the physical scars of the war, it radically transformed many segments of the multi-ethnic social, economic, and political structure. The plantation economy was destroyed in many areas and required many years to recover, often with new owners who imported new technologies and crops. More

transformative was the demise of slavery and the beginning of wage labor. Although the differences were not always readily apparent, the consequences of this shift were significant and permanent.

Following the Civil War, former slave quarters on plantations became homes to wage laborers and other farm laborers. Tenant farmers established residences along roads on the margins of agricultural fields throughout the state. By the early A.D. 1900s, maps show thousands of such residences, particularly in the Mississippi and Red River floodplains. Although hundreds of these sites have been recorded, few have been subject to significant archaeological research (Wilkie et al. 2010).

Prior to the Civil War, commercial-scale production was limited primarily to plantation agriculture, with crops transported to market primarily by water. Most plantations operated their own processing facilities, specifically cotton gins and presses, as well as grist, saw, sugar, and rice mills. Initially human or animal powered, these facilities became more mechanized with the adoption and expansion of steam power throughout the nineteenth century. However, mechanization did not bring standardization. These facilities remained locally-built vernacular structures, which were altered over time to accommodate new technology and repair damage from fires, floods, and storms. These changes are reflected in the archaeological remains of those facilities (e.g., Martin et al. 2008; Maygarden et al. 1994; Ryan 2009; Ryan et al. 2011).

Brick making to provide building material for these buildings was often limited to small single-use brick clamps suitable for construction on a single property or of a single structure. The brick industry, however, was among the first to be developed in the state with brickworks operating in New Orleans as early as 1725. Established brickworks were initially limited to larger urban areas where there was greater demand. Clays along the north shore of Lake Pontchartrain soon brought the industry to that area where it grew through the nineteenth century and into the twentieth. Only a very few of these works have been examined archaeologically (Handly et al. 2007; Ryan and Duplantis 2001). Many lesser industries, including ceramic and glass works, drop shot towers, ropewalks, sash manufacturers, and foundries also operated in the state, but few have been investigated archaeologically.

Salt procurement and processing sites, such as Potters Pond (16WE76), Drake's Lick (16WN30), and Avery Island (16IB22), were utilized in late prehistoric times, often for trade (Brown 1981, 1999; Eubanks 2014; Girard 2006). These efforts were primarily at the individual or household scale of production. In the A.D. 1700s and early 1800s, these same areas were exploited at a commercial scale, ~~during and~~ which increased markedly during the Civil War and afterwards.

After the Civil War, industrial-scale production in both agriculture, natural resource extraction, and manufacturing became viable with the rapid expansion of railroad lines. Old settlements thrived or died based on their proximity to these railroads, while new railroad towns developed along the lines. Water transport of goods within the state remained viable into the early twentieth century, when it was superseded by rail lines and later by highways.

Subsistence seafood harvesting and ship building commenced in coastal areas in the 1700s. Commercial fishing, plus the canning and ice manufacturing businesses it required, began in the mid nineteenth century to serve the New Orleans market. Post-Civil War railroad expansion opened up national markets to the state's growing seafood industry. Likewise, the ship-building industry grew rapidly in coastal areas during the late nineteenth century and into the twentieth.

Agricultural production remained focused on sugarcane, cotton, and rice. However, post-Civil War financial insolvency among landowners led to the consolidation of plantations and the centralization of their processing facilities. Multiple growers, or the owners of multiple plantations, could then process their crops in a single, technologically advanced facility or factory. A few plantation processing facilities were expanded and improved, or completely new gins, rice mills, sugar factories and refineries erected to

service entire regions. Many had their own regional railroad lines. Company towns to house workers subsequently developed around some of these centralized complexes.

Meanwhile, manufacturing facilities, including foundries, sugar refineries, cotton mills, and elevators for imported grain were established or expanded in New Orleans, Shreveport, and other urban centers. Urbanization and its associated industries required the development of utility plants for power generation, streetcar lines, water and sewer services, and roads and highways (e.g., Avery et al. 2013; Hahn et al. 1997).

Plantation sawmills gave way to full-time timbering operations during the nineteenth century. Timber harvesting developed as a major industry in the late 1800s and exploited large areas of central and northern Louisiana. By 1914, Louisiana was the leading producer of lumber in the nation, with most of the timber then coming from the swamps that flanked the lower reaches of the Mississippi River. Most areas were clear cut, as evidenced by elevated railroad beds and radial drag lines preserved in the landscape (e.g., Hahn & Schwab 1998; Kniffen 1968; Ryan et al. 2019a). When an area was logged out, entire mill complexes were often moved. When the cypress was depleted, some mills extended their rail networks into more northerly pine forests. The concomitant turpentine industry developed primarily in southwestern Louisiana and on Lake Pontchartrain's north shore. Multiple sawmills developed near urban transportation hubs in cities such as Lake Charles and Shreveport. Company towns centered on the mills developed and housed workers, an increasing number of whom were immigrants. The sites of several former sawmill towns are preserved, although few have been investigated (e.g., Castile et al. 1979; Castile and Pearson 1980; Hahn & Schwab 1998).

Roughly contemporaneous with the timber boom was the mining of sulphur in portions of the state. These mines also spawned company towns. Brick and concrete foundations, plus subsurface wooden tanks and channels, from the drainage, water and sewer systems, which served the residential and industrial portions of these sites, remain extant in the landscape (e.g., Kniffen 1968; Hunter and Ryan 2006).

In 1901, the first successful oil well was drilled in southwest Louisiana, heralding the beginning of a major new industry. Pipelines, natural gas plants, and refineries were built to process the output from a proliferation of wells, located first on, and later off, shore. The petrochemical industry, promoted by the demands of World War II, soon followed. Access to deep-water ports, shipping channels, and rail lines proved crucial to the import and export of these international commodities, which revived riverine and coastal shipping and promoted the rapid growth of nearby communities, such as Baton Rouge and Lake Charles (Kniffen 1968). These events also spurred the growth of the ship building industry along the coast as companies constructed service vessels and off-shore rigs.

World Wars I and II led to the development of military installations, including air fields, bases, ammunition and supply depots, dry docks and naval yards, in both urban and rural portions of the state, which were adjacent to adequate transportation corridors (e.g., Haley et al. 2015, Ryan et al. 2019b).

The petrochemical and other industries drew people away from farms and into urban centers, which gradually encroached on agricultural land. As a result, in many areas, row crops gave way to livestock rearing, which required fewer people. Louisiana ultimately became a major hub for oil and gas production, transportation, and refining, and currently contains three of the country's largest port facilities. Ship building and the production of salt, sulphur, timber, seafood, cattle, sugarcane, rice, cotton, and also soybeans, remain vital to the state's economy.

Topic 1: Colonial Encounters

What were the regional economic consequences of colonial encounters for different social and economic groups in the 18th century? What were the effects of colonial interactions on group identity and persistence? How did transactions/interactions between American Indian, European, and African groups affect settlement patterns, lifestyles, and social/political systems?

A major research issue for this period concerns furthering understanding of the broad purposes and effects of European colonization (e.g., resource extraction, capital investment, political and military domination, population expansion). Recent interpretive perspectives examine relationships of material culture and people, and cultural meanings and identities (e.g., households, family, gender, and ethnicity) within particular historic contexts (Hicks and Beaudry 2006).

Multiple concepts have been used to understand the ways that colonial encounters transformed cultural identities both for American Indians and colonists. Traditional concepts of “acculturation” based on a lineal trajectory of change as American Indians passively succumbed to a “superior” culture have been rejected in favor of dynamic models. These models see all parties as active and creative agents in determining their future. They examine how and why American Indians and colonists accepted or rejected new technologies and ideas; strategies of accommodation and resistance by American Indians to European colonial hegemony; and meanings of transactions/interactions in social and symbolic terms (e.g., Ruberton 2000). New concepts such as trans-culturation and ethnogenesis (Deagan 1996), creolization (Cusick 2000; Dawdy 2000a), and hybridization (Stein 2005) have been developed to address these concerns.

Efforts to examine the impacts of colonization also look at the various immigrant populations that arrived in Louisiana and how their traditional cultures were transformed in a new physical and cultural environment. The Acadian settlers have been a traditional focus of such study, but the Isleños and Philipinos represent other populations brought to the state for specific purposes that survived and grew. In the larger cities, New Orleans in particular, Germans, Italians, and Irish among others, represent various waves of immigration that integrated into and transformed the urban social, political, and economic landscape.

Few archaeological sites and material assemblages associated with colonial communities have been identified and studied to date (Brain 1979, 1988; Bordelon 2015; Loren 2000, 2001; Mann 2012; Morgan and McDonald 2011; Scott and Dawdy 2011).

Topic 2: Plantation Economies and Societies

How were plantation landscapes organized in terms of economic efficiency, security, and power symbolism? What kinds of production activities were carried out at plantations, how did production technology change over time, and what were the consequences of these processes upon the people involved? How did the economy and society of the enslaved populations interact with the planter economy and social structure? How did enslaved and tenant farmers operate within, and resist, the dominant social structures?

Plantation sites generally are extensive and complex, including main houses, slave quarters and tenant housing, production facilities such as sugar and cotton mills, and various outbuildings and other facilities relating to crop production and processing. One avenue of research is focusing on the scale and means of plantation production, generally sugar cane or cotton. The organization of space and specific production technologies provide insight into how labor, land, and technology were combined. The comparison between plantations over time and in different settings indicate how these factors changed over time, how those changes affected production, and the social and economic consequences of those changes.

A second avenue of research focuses on the people involved in the work. Most effort has examined enslaved and tenant populations. Forced to live in a new environment and separated from family and traditional culture, many people resisted domination in a variety of means and persisted with traditional practices when possible. In a few cases people escaped and formed free communities at the edges of the colonial world (Maroons as one example). Some resisted with violence, but in most cases resistance and persistence occurred in small and subtle ways (Brown 2008; Manning 1999, 2014; Wilkie et al. 2010). Understanding these processes is a critical element of understanding the consequences of slavery and documenting the history of the enslaved.

Conditions may have changed only marginally for many former enslaved people after the Civil War and emancipation. Many continued to work on plantations as wage labor and responded to different economic and social circumstances. Over time, many individuals left the plantations, partly as a response to increasing mechanization, but also in search of a better life. Understanding the factors that influenced these decisions is an important area of research. The reimplementation of segregation after Reconstruction had significant affects for nearly all individuals and communities that continue to this day. Documenting and understanding these affects is an important research topic.

Topic 3: Settlement and Urbanization

How did urban landscapes develop with regard to landforms and key natural resources? How are ethnicity and power relationships symbolized in material culture, and how are these embodied spatially within urban environments? How did different immigrant populations respond to their new economic, social, political and material culture environments? How did the different groups seek to maintain their traditions while (re-)creating new traditions and practices?

Archaeological research in urban areas poses special challenges because continued occupation impacts older deposits and limits opportunities for investigation. The development of standard sanitation practices in the early 1900s resulted in material waste being deposited away from the place of use, hindering interpretations of on-site activities. Difficulties exist for isolating specific temporal contexts.

Urban areas are places of cultural complexity—ethnic, social, and economic variation is compressed within relatively small spatial parameters. Households, city blocks, and neighborhoods may constitute unique spatial scales of study. Identification of material distinctions and commonalities between groups at varying spatial scales such as households, blocks, and neighborhoods, has been a focus of research. Archaeological studies have the potential to produce histories about segments of urban populations that have little representation in traditional historical narratives (Bordelon 2015; Goodwin et al. 2015).

Urban expansion has been examined in terms both of planned zoning and expansions based on historical contingencies. For New Orleans, Dawdy (Dawdy 2000a; Dawdy and Matthews 2010) has distinguished three periods of development, each with unique archaeological material signatures and spatial patterns. The earliest (transplantation) consists of the first generation of foreign-born settlers (including many indentured servants and convict laborers) who were surrounded by more numerous populations of American Indians who greatly influenced many of their cultural practices. The second period (ethnic acculturation) was that of Spanish political rule after A.D. 1769 when a distinctive Creole ethnicity developed, enslaved Africans became more numerous, and American Indian populations declined (Gray 2015). Fires in A.D. 1788 and 1794 greatly changed the spatial layout of the city and have been stratigraphically identified in the archaeological record. The third period (hybridization) is the American Antebellum period when the city was greatly affected by transportation and commercial needs linked to the statewide change to a cotton economy. The city experienced huge increases in population and development of “faubourgs” or suburbs during the early 1800s. Of particular importance in recent studies

are perspectives that examine how the built environment and material culture actively structured human lives rather than being seen as a passive reflection of past activities.

Another theme of interest has been to illuminate past dietary preferences through studies of faunal remains. Scott and Dawdy (2011) compared faunal data from A.D. 1700s contexts at the Madame John's Legacy (16OR51) and St. Augustine Plantation (16OR148) sites, both located within the present city limits of New Orleans. They attempted to link dietary preferences to social and economic status but found it difficult to draw conclusions. However, they found that there was much greater use of wild species by French/Spanish colonists, relative to later Anglo-American occupants of the sites. This pattern may have some connection to differing European culinary traditions, but may also have been due to local developments. Other studies (Coughlin and Wittie 2015) have examined disparities in diet between historical accounts and what is preserved in the archaeological record.

Topic 4: Transportation Technologies and Corridors

How do archaeological remains of residential and commercial areas correspond to past transportation routes? How and by what routes did imported manufactured goods circulate in Louisiana during the 18th and 19th centuries? What were the construction details of small, vernacular vessels that ran along Louisiana's rivers during the 18th and 19th centuries? How do remains of military vessels contribute to our understanding of the Red River campaign and other Civil War events? How did the construction of transportation corridors (rail lines, canals, roads) affect the settlement of communities and the creation of support facilities and infrastructure?

Because watercourses were of primary importance to long distance movement of goods during the Colonial, Antebellum and Postbellum periods, boat wreck sites have been the focus of archaeological research regarding transportation. Boat wreck sites provide information about transportation technologies, trade, group interaction and mobility, and other research topics. Smaller vernacular vessels are particularly poorly documented in historic records and information is lacking (Saltus and Pearson 2010:314).

A Colonial Period shipwreck, that of El Nuevo Constante (16CM112), was investigated off the Gulf Coast (Pearson et al. 1981; Pearson and Hoffman 1995) providing important information about trade and exchange. Knowledge of boat technology and construction techniques has been acquired from investigation of several vessels, including the Kentucky (16BO358; Goodwin and Seidel 2004); the Eastport and Dix (16GR33; Pearson and Birchett 2003), the New Iberia Shipwreck (16IB80; Pearson et al. 2007); and the CSS Arrow (16ST99; Pearson 2000).

Topic 5: Industrialization

What environmental/landscape factors influenced the development of industries? How did industrialization alter the physical landscape, affect settlement patterns, and contribute to urbanization? What raw materials were required, what products produced, and what transportation methods employed in industrial facilities? What was the production process, how did it change through time, and how is that reflected in structural remains and artifact assemblages? What populations were employed in these industries, how did they interact, and is their ethnicity, gender, age, or socioeconomic status reflected in the material culture found on industrial sites?

The industrialization of commercial activities in the state was both dependent upon, and directly affected by, Post-contact Period Topics 2-4, discussed above. Like archaeological investigations in urban areas, research on industrial sites is challenging. The sites themselves, and the features they contain, are often very large and cannot be accurately interpreted if not fully exposed and examined in detail. Mechanical

excavations are often necessary to provide this exposure before hand excavations commence. Constant alteration and expansion of industrial facilities makes isolating specific temporal contexts difficult, but not impossible, if detailed field recordation is employed. On some sites, continued operation and the accumulation of hazardous waste byproducts impacts older deposits and limits opportunities for investigation. In addition, the availability of heavy machinery by the mid 1900s can result in the deposition of material waste well away from its place of use, thus hindering interpretations of on-site activities.

Thousands of industrial facilities have been erected in the state, including sawmills, cotton works (gins, presses and mills), sugarhouses and refineries, rice mills, drainage machines and pumping stations, brick and shipyards, foundries, mines, seafood processing plants, municipal utilities, and petrochemical facilities. However, far less than 0.5 percent of them have been examined archaeologically to any significant degree. Among those are portions of a few brickworks, streetcar barns, cotton mills, sulphur mines, sawmill towns, and sugarhouses (e.g., Avery et al. 2013; Castille et al. 1979; Dawdy et al. 1997; Hahn and Schwab 1998; Handley et al. 2015; Hunter and Ryan 2006; Martin et al. 2008; Maygarden et al. 1994; Ryan 2009; Ryan and Duplantis 2001; Ryan et al. 2011; Sanders et al. 2007). Louisiana archaeologists have also examined a sawmill and waterworks in nearby Mississippi (Hahn et al. 2005; Ryan et al. 2005).

Due to a lack of previous investigations, most of these initial studies, necessarily focused on technology and process, such as defining the archaeological features and material culture associated with specific industries and how those changed through time. More of this is needed for industrial site types that have been investigated minimally or not at all. In addition, residential deposits preserved in former worker housing areas can be examined for evidence of ethnic and socioeconomic differences. For instance, a comparison of artifact assemblages associated with Black and White workers at two early 1900s sawmill sites in Terrebonne Parish indicated that the artifacts used by workers of all races were surprisingly similar, and reflected their shared limited access to goods and low economic status (Hahn and Schwab 1980). At a New Orleans cotton mill site, the overall absence of debris, and specifically personal items, which can reflect gender, age or ethnicity, was interpreted as an ideological attempt by management to protecting the product from contamination and separate workers from their handiwork and the profits it produced (Dawdy et al. 1997).

Research Themes

Introduction

This part of the Plan identifies research themes currently of particular importance to Louisiana archaeology and for understanding the state's 15,000 year history. This section takes a broad view of Louisiana archaeology and archaeological theory. It does not attempt to identify all potentially important research questions that could be asked, but focuses on goals and objectives of particular interest in Louisiana archaeology at this time. These themes are developed from the past 30 years of archaeological research across Louisiana, regional and national perspectives, and ongoing discussions of broader archaeological and anthropological goals (see Kintigh et al. 2014 for one view). Many of the goals and objectives outlined below are applicable to both pre-contact and post-contact period sites, reflecting their broad scope and the applicability of many questions to a wide range of sites and time periods. This Part is intended to provide a framework for developing site-specific research goals and questions.

The research goals and objectives also represent a framework for identifying sites worthy of protection and preservation. Sites that have the potential to address these and other themes are candidates for preservation by organizations such as The Archaeological Conservancy and the Louisiana Archaeological Conservancy (see Parts I and IV), or efforts to work with landowners to preserve them (such as a site stewards network – see Part IV).

Paleoenvironments

General Goal:

This theme examines how changing natural landscapes and climates over the last 15,000 years affected human settlement and adaption. It also applies to documenting landscape changes over that time and how these changes have affected the visibility and distribution of sites in the modern landscape.

Research Objectives:

- 1) Delimit and date meander belts in the Mississippi and Red River floodplains, including the development and abandonment of Mississippi River delta lobes and distributaries. Archaeological sites provide an important means to date the establishment and abandonment of geomorphic features such as river and distributary channels. This objective also considers which surfaces were available at a given point in time, and which have been eroded away, buried, or submerged.
- 2) Document the timing, extent and rate of sea-level rise and its impacts on delta development, coastal geomorphology and ecology, human settlement, and site visibility.
- 3) Document the timing, rate and extent of subsidence along the coast and particularly in the Mississippi River delta, and its impacts on landscape development, ecology, human settlement, and site visibility.
- 4) Document the timing, rate and scale of climatic and biotic change during the Late Pleistocene and Holocene, and the effects on human settlement.
- 5) Document the geomorphological evolution of the Upland and Pleistocene Terrace landforms and how these changes affect settlement patterns and site visibility.

Settlement Patterns and Cultural Landscapes

General Goal:

To understand how past human groups organized themselves at a regional scale across the landscape in relation to natural features, other settlements, and cultural principles. In addition, examine how subsequent environmental processes have altered past landscapes and impacted analyses of settlement patterns.

Research Objectives:

- 1) Examine site distributions across major landform categories at regional scales, and whether/how those distributions change through time.
- 2) Identify site distributions relative to important natural resource zones (for example, gravel bars and other lithic sources, lakes, ponds, bayous, upland springs, salt domes, specific biotic resource areas).
- 3) Identify clusters of sites with similar cultural traits that might signify past communities; understand the growth and abandonment of communities and neighborhoods in urban localities.
- 4) Examine how site distributions reflect political, economic and social relationships between communities, and exchange network systems (such as trail, river, road and rail networks).
- 5) Look for relationships between site location and cosmic and religious principles.

- 6) Apply knowledge of patterns of historical landscape changes (river meanders, delta development, etc.) toward documenting past distributions of biotic and natural resources, and human settlement patterns.
- 7) Examine the human impact on the natural and physical environment and how that impact (whether intentional or inadvertent) has affected settlement.

Architecture and Site Configuration

General goal:

To understand how communities organized themselves at the point or site scale across the landscape in relation to the physical landscape, social, religious, and political forces, and cultural beliefs and traditions. This goal also includes how people physically modified the landscape to accommodate these factors, including specific construction methods and techniques.

Research Objectives:

- 1) Understand the spatial arrangement and sequence of construction of earthworks, buildings, and other constructed features at sites with regard to natural and cultural landscapes, community planning, cosmology, and other cultural principles.
- 2) Examine the differential use of space (habitation, commercial, plazas, parks) within communities, structures, and proscribed areas with regard to structure and facility arrangements, activity areas, refuse disposal patterns, and other social/cultural factors.
- 3) Isolate occupation events or components at sites occupied over long temporal intervals.
- 4) Examine how the archaeological record compares with the historic record for community organization and development and the factors responsible for the patterns.
- 5) Examine temporal patterns of settlement expansion and contraction, and develop models to explain the factors affecting those patterns.
- 6) Examine details of architectural remains and relate to site activities and past cultural traditions.

Subsistence Economy

General Goal:

To understand past subsistence practices with regard to food acquisition, means of production, preparation, and consumption.

Research Objectives:

- 1) Document the foods obtained from wild, horticultural, and agricultural production and the economic, social, and other factors influencing those choices. Understand the mixture of hunting, plant and other (mollusc) food gathering, and fishing in pre-horticultural economies.
- 2) Investigate how a community acquired, transported, prepared, and used animals for food, tools, textiles, housing and other purposes.

- 3) Investigate how a community selected, planted, harvested, transported, and used plants for food, tools, textiles, housing and other purposes.
- 4) Determine the timing of first use and subsequent degree of reliance on cultigens and the factors responsible for their adoption.
- 5) Identify material technologies associated with food acquisition, production, transportation, and storage.
- 6) Understand the tools and facilities associated with food preparation, consumption, and storage.
- 7) Ascertain the degree to which food production was directed toward local consumption or for use as a commodity.
- 8) Relate food preferences and preparation techniques to specific cultural traditions.
- 9) Relate subsistence practices to means of production, particularly in regard to class, gender, race, and ethnicity.

Material Technology

General goal:

To understand past manufacturing technologies including raw material procurement, manufacturing methods and strategies, and the organization of production.

Research Objectives:

- 1) Determine the distribution in space and time of specific material types.
- 2) Study American Indian chipped stone and ceramic production strategies and techniques.
- 3) Determine how production activities are distributed across the landscape in relation to physiographic, ecological, social, economic, transportation, and other factors.
- 4) Identify raw material sources and/or places of manufacture for non-local artifacts.
- 5) Examine household modes and scales of production, and how these changed over time.
- 6) Examine commercial modes and scales of production and how these changed over time. Examples include salt production, large-scale agricultural practices (e.g., indigo, sugar cane, cotton, etc.), subsistence farming, logging/lumbering, shipbuilding and naval stores (pine tar, pitch, and turpentine), ceramic production (pottery and bricks), and railroads.

World View/Cosmology

General goal:

To understand how ideology, religion, iconography, ritual, and world views shaped human settlement, political economy, and organization.

Research Objectives:

- 1) Study the spatial configuration and organization of earthworks, buildings, and communities, and examine how these may represent past cosmological principles and other cultural beliefs.
- 2) Identify and interpret symbols or items of ritual or ideological significance and production.
- 3) Relate mortuary practices to cosmological or religious doctrines.
- 4) Examine the material correlates of continuity and change in cosmological beliefs and practices over time within similar groups and between dissimilar groups.

Social Identity/Status

General goal:

To identify how material culture reflects social identity and status, and the significance of this variation for understanding past social, economic, and political systems.

Research Objectives:

- 1) Study mortuary traits for evidence of differing social status, symbols of power, and wealth accumulation.
- 2) Examine how peoples in conditions of servitude or of ethnic minority status symbolized aspects of cultural origin and resistance to authority.
- 3) Investigate how artifact decorative styles and other stylistic attributes relate to past social and political landscapes.
- 4) Relate recovered personal items (clothing, jewelry, other) to group affiliation or status.
- 5) Assess spatial distributions of recovered artifacts with regard to gender, age, and kinship affiliations.
- 6) Study the material conditions, worldviews, agency, and resistance of enslaved populations during the Post-Contact period.
- 7) Examine material expressions in the formation, transformation, and destruction of social and/or ethnic groups, including processes such as creolization, ethnocide, and transculturation.

Group Interaction, Conflict, and Mobility

General goal:

To explore how past peoples moved across the landscape and interacted in social, political, and economic terms.

Research Objectives:

- 1) Study sources and distributions of materials and products as reflecting patterns of mobility or exchange.

- 2) Examine spatial clustering of archaeological traits on regional scales to identify past cultural territories.
- 3) Document exchange networks (trails, roads, rivers, rails) and transportation technologies and facilities (watercraft, docks, fords, ferries, bridges, etc.).
- 4) Identify the material markers of conflict and warfare (e.g., forts, fortifications, camps, and other military installations; battlefields; bioarchaeological evidence for warfare/interpersonal violence).
- 5) Examine the social, political, and economic consequences of coercion and conflict at the household, community, and regional scale.
- 6) Examine the material signatures and social, political, and economic consequences of different forms of colonialism in Louisiana (e.g., French, Spanish, British, and American).

Physical Condition, Health, and Leisure

General goal:

To examine health, demography and activities of past populations.

Research Objectives:

- 1) Examine activity patterns through physical evidence on skeletal remains including bone geometry, incidence and location of osteoarthritis, and fractures.
- 2) Identify sex ratios in past populations.
- 3) Identify birthrate and infant mortality rate in past populations.
- 4) Study morbidity and mortality patterns.
- 5) Examine material indicators of past medical practices.
- 6) Identify material indicators of individual and community social and leisure activities.
- 7) Examine skeletal remains for physical markers of nutritional stress or disease.

Assessing the Eligibility of Archaeological Sites for Nomination to the National Register of Historic Places

Each site examined during a Phase I or Phase II investigation must include a recommendation of its eligibility for nomination to the National Register of Historic Places. That recommendation should:

- 1) Address each of the National Register criteria. In addition, the Criteria Considerations A-G, as appropriate, should be addressed (see National Register Bulletin:37);
- 2) Provide a clear rationale for the recommendation, based upon the NPS criteria and supplemented by the Division's factors (see below). If recommending a site as eligible, the discussion should explicitly identify what aspects of the site contribute to that determination, and identify (in general) the information that the site could yield. If recommending a site as not eligible, the discussion should clearly indicate which qualities of the site support this determination.

Disturbance by agricultural and silvicultural activities is not, in and of itself, a sufficient criterion for recommending a site as not eligible (see Little et al. 2007:27). The NPS guidelines also note that integrity should not be employed as an initial screening of a site's significance.

A site may be eligible under Criterion A if it is associated with a specific historic event that is important at a local, state, or national event (such as a battlefield). A site may be eligible under Criterion B if it is associated with a specific person who is significant under a given historic context (a historically important Euro-American, African-American, American Indian, or other community individual for example). A site may be eligible under Criterion C if it has distinctive characteristics of a type, period, or method of construction, represents the work of a master, or represents a significant and distinguishable entity with multiple components, each of which individually may not be eligible but taken together represent an important context. Examples could include a mound or mound group, a group of ephemeral prehistoric sites that represent the range of activities around a village, or a plantation that represents a use of technology or land important in local cultural and commercial contexts. Districts are often developed in the context of Criterion C to encompass a range of sites or activities.

Eligibility of sites under Criterion D is based upon assessments of five factors (Little et al. 2007:29):

- 1) The site's data sets or categories of archaeological, historical, or ecological information. Elaboration of these categories is presented below.
- 2) The historic contexts appropriate for evaluating the site. The Comprehensive Archaeological Plan provides historic contexts for the state.
- 3) The research questions the data sets can address. These are further elaborated below.
- 4) The integrity of the site's data sets and their appropriateness for addressing the research questions; and;
- 5) The important information that a site has yielded or can yield.

Within the context of the five NPS criteria, the Division considers eight factors in assessing the eligibility of an archaeological site. An eligibility assessment should consider those factors that are relevant to that site. The eight factors include, but are not necessarily limited to:

- 1) Age - some time periods are very poorly represented and documented in the state and thus any site from the period may be significant. For example, a single-component Paleoindian site has yet to be identified in Louisiana, and a site of this age would be significant even if it were contained entirely within a plow zone or other disturbed context.
- 2) Environmental Setting - sites which occur in atypical or unusual locations on the landscape likely represent a unique or different element of the settlement pattern. These sites have the potential to provide important information on landscape use and social organization not found at typical sites of that time period. Similarly, a post-contact home site that is occupied by a social or ethnic group distinct from the surrounding neighborhood may illustrate important patterns of immigration, assimilation, cultural adaptation and/or separation.
- 3) Historic Setting - these sites include those that can be tied to important individuals, communities, organizations, or industries within a given community or time period. It can also represent sites that reflect important periods of material and social transition; examples might include the shift from slave to tenant relationships, the efforts of Tribes to manage the impact of Europeans and European goods and practices, and the transition from a hunting-gathering subsistence to one incorporating horticulture and/or agriculture into the subsistence base. The Comprehensive Archaeological Plan provides a set of context statements that can be referenced; however, simply citing a line from the Plan does not constitute a sufficient discussion.
- 4) Integrity of Deposits - this is the traditional criterion for eligibility and requires a site to have at least some undisturbed deposits, typically sheet middens, pit features, or structural remains. One or more components representing a specific occupation, time period, or activity that can be horizontally and/or stratigraphically defined should be present. This criterion also includes the presence of any earthworks or other preserved landscape modification associated with a specific occupation, individual or time period. Pre-contact, any site with a mound or earthwork exhibits undisturbed deposits and represents a location that may represent a special place in the past. Similarly, gardens, street/sidewalk constructions, and terraforming for military, commercial or industrial use can represent important post-contact period activities.
- 5) Archaeological Richness - this criterion addresses the degree of preservation and abundance of the possible material classes. Sites which have good faunal and floral preservation, for example, have a greater opportunity to provide information and thus may be more significant than sites that lack these material classes.
- 6) Research Potential - this criterion provides an opportunity for an archaeologist to develop a robust argument that a particular site can provide information important to understanding the past. Different theoretical frameworks can require different data sets and provide opportunities to examine sites from very different perspectives. Research potential is not limited to the issues discussed in the Comprehensive Archaeological Plan; each site is unique and may have a potential to address other important questions.
- 7) Cultural or Religious Significance to Tribes, Descendent Groups, or Communities - any site with an American Indian component may be of importance to a Tribe for reasons separate from its archaeological characteristics. Similarly, a post-contact Euro-american site may be important to a descendent group or traditional community for non-archaeological reasons. Non-archaeological sites representing a Traditional Cultural Property are also considered within this criterion. Although the archaeological contractor may not have this information, consideration of a site's eligibility should keep this factor in mind.

8) Human Remains – The presence of human remains at a site engenders several state laws that will play a large role in determining future actions at a site. However, the presence of human remains also addresses the Archaeological Richness and Research Potential criteria and their presence represents an important opportunity to address research questions that cannot be answered via other data sets.

Part IV

Challenges and Opportunities for the Future

Introduction

It has been 50 years since the passage of the National Historic Preservation Act, which led to the creation of the SHPO and the need for the state of Louisiana to address the responsibilities outlined in that Act and its accompanying regulations (36CFR 800). This Act, together with developments on the state level, led to passage of the state Archaeological Treasures Act and the creation of the State Archaeologist and Archaeological Survey and Antiquities Commission in 1974. These two entities were incorporated into the Division of Archaeology in 1981. Shortly thereafter, the Division published the first Comprehensive Archaeological Plan (Smith et al. 1983). That Plan outlined the organization and goals of the Division, summarized the current state of archaeology in Louisiana, and presented a plan for managing the state's cultural resources.

Over the subsequent 35 years, enormous progress and significant changes have taken place in Louisiana archaeology and the Division. These changes reflect a number of disparate and often overlapping factors, including evolution of the Division's role in many areas, the enormous changes in the scope and scale of Section 106 archaeology since the 1970s, the expansion of educational and public outreach technologies and opportunities, the growth of population and industrial development across the state, and the impact of long-term landscape changes. This section examines the challenges and opportunities currently facing the Division and Louisiana archaeology. A comprehensive approach to these challenges and opportunities will involve the other parties involved in Louisiana archaeology (see Part I and the Louisiana Comprehensive Historic Preservation Plan). Review of the issues raised here will enable other organizations to identify areas where they, in cooperation with the Division in many instances, can contribute to preserving and promoting Louisiana archaeology.

The challenges and opportunities are grouped into five broad topics. Each topic is briefly discussed and strategies for addressing that topic identified. The topics are broad in scope and there is considerable overlap among them. The strategies focus on actions that the Division can take to address each topic. They range in scale from broad concepts to narrowly targeted goals. A number of strategies are applicable to multiple topics and are presented under each topic.

Topic I - Manage the Division's responsibilities

Part I of this Plan outlines the responsibilities of the Division as enumerated in state and federal statutes. A major challenge for the Division is retaining the funding and staff to enable it to fulfill those responsibilities in the future. This has been particularly true over the past few years as the state fiscal situation has resulted in substantial reductions to the Division's budget and staff. These reductions have hindered the Division's ability to maintain services and severely limited opportunities to implement new and improved services. In addition, the reduced funding has resulted in the elimination of the grant-funded regional archaeology program that contributed very important research into Louisiana's past while providing regional service to landowners, students, agencies and private companies. The loss of these resources has forced the Division to concentrate on the increasing use of GIS and electronic forms of data submittal and record storage as a primary means for a small staff to reduce paperwork and maintain basic services to researchers, agencies, clients, and the public.

- 1) Maintain or increase the Division's funding.

Additional staff will be necessary to allow the Division to provide important services; examples of these staffing needs are noted in subsequent items. In an era of limited funding and small staffs, it is critical that qualified staff be retained. If it becomes necessary to replace staff, it is important that experienced individuals be hired. The workload does not permit inexperienced staff to be trained and 'eased in' to their responsibilities.

The Division has made a major commitment to using GIS to manage the state's archaeological data, and for sharing that data with agencies and clients. It has also committed to managing important records through their digitization as well as the electronic distribution of information to the general public. It is critical that the hardware and software required for these efforts be maintained and upgraded as necessary. A fee for online access to the GIS was implemented to provide funding necessary to maintain the software and hardware employed in electronic databases, data management systems, and public outreach venues.

It is also important that training of existing staff continue. GIS and database management technology changes rapidly and the Division's dependence upon these systems to manage its data and present it in a user-friendly form to users requires staff to remain current with their system knowledge.

2) Develop the capacity to manage current and future curation needs.

The Division's curation facility has limited space to accept new collections. Acquisition of additional compactible shelving will provide some immediate additional space. In addition, the Division has implemented a culling procedure for Phase III collections from post-contact period sites in an effort significantly reduce the size of these collections. These efforts, however, will sustain available space for only a few years; known outstanding collections anticipated to arrive over the next five years will fill the existing and new space. At that time, if the facility is to continue to accept collections from across the state, new facility space will need to be acquired.

The Division also has a significant backlog of collections to be accessioned into the database management system. Until these collections are incorporated, the Division does not have a complete record of what projects and sites are present in its collections. These collections are also not available to researchers and for exhibits. Developing funding to support staff to get the collections accessioned is necessary for the Division to adequately manage its collections.

3) Provide information about Louisiana's archaeological heritage to the public.

The State has a remarkable archaeological record. Bringing that information to the public is one of the key responsibilities of the Division. In the past, it has developed booklets, teaching kits and tools, a driving trail, and interactive exhibits to accomplish this goal. Staff and funding to revise and upgrade existing resources, as well as create new outlets, are necessary to bring this story to the public. Increased outreach efforts will create a greater awareness of the State's heritage among students, teachers, and the public, as well as encouraging greater protection and preservation of archaeological resources.

4) Develop the expertise to oversee and manage the state's submerged archaeological sites.

The Division is responsible for all shipwrecks in state water-bottoms as well as archaeological sites that have become submerged due to coastal erosion, subsidence and sea-level rise. It currently does not have any staff who are qualified underwater archaeologists, and lacks the expertise to revise and update the 1990 Louisiana Submerged Cultural Resource Management Plan. Developing the funding to support a staff member to oversee this aspect of the Division's responsibilities is an urgent need.

5) Increase the number of Programmatic Agreements with federal agencies to reduce the Division's Section 106 workload and enable staff to focus on the important projects.

The Division currently reviews over 5,000 projects a year. In times of disasters such as hurricanes, this number can rise to over 20,000 a year. Many projects have little or no potential to impact cultural resources. Programmatic Agreements with federal agencies provide a mechanism whereby the parties agree on which projects should be reviewed and which do not require review. These agreements could significantly reduce the Division's Section 106 workload.

6) Revise and update the LAC Title 25 regulations to reflect the current status, organization and responsibilities of the Division and the Louisiana Archaeological Survey and Antiquities Commission.

The Title 25 regulations were originally published in 1975 and updated in 1994. They reflect how the Division and Commission viewed their roles and responsibilities at that time. Since then, the roles and responsibilities of both the Division and Commission have evolved, and today the Division has subsumed a number of Commission duties. Revising and updating the regulations to better reflect the current status of the Division and Commission will provide clear guidance to both entities and to the general public as to the obligations and responsibilities of each.

7) Manage information about unmarked burials and historic cemeteries. This is addressed in greater detail in Topic V.

Topic II - Improve the management of archaeological information

The Division serves as the state-wide clearing house for information on archaeological sites and the state's cultural history. This information is used by researchers, by professional archaeologists, agencies and organizations fulfilling their Section 106 responsibilities, and by the general public, students and teachers looking for information about Louisiana's archaeology. Improving access to, and the distribution of, information about our archaeological resources will be a critical issue in the future.

1) Maintain and improve online access to information for agencies and organizations operating within the Section 106 process.

Many of the strategies outlined in Topic I also impact the Division's ability to address this goal. The GIS fee will provide a funding base to maintain and upgrade the GIS hardware and software as needed, and provide for the appropriate staff training in the new technologies. Improving the quality of the records provided to researchers, agencies, and organizations is a key strategy for meeting this goal. Upgrading existing hardware and software and improving records quality may require reorganizing databases to take full advantage of the new systems. In some instances this process will result in additional data entry and organization that will require temporary staff to accomplish.

The Division maintains a bibliographic database of all Section 106 and 110 reports that have been submitted. Expanding this database to include all publications on Louisiana archaeology, including journal articles, books, theses and dissertations, would improve its utility for researchers and Division staff, as well as agencies and organizations involved in Section 106 and 110 work. The Division also has a limited search capability to organize information about archaeological sites. Search criteria include type of site and which cultural components are present. However, the current structure of this database does not permit searches on other important criteria. Reviewing and editing the site database would enable more informed searches for researchers and Division staff.

2) Ensure that online records meet quality standards for access by agencies and clients.

The Division has converted many of its records to digital format. This has occurred through a variety of means and processes over the past 10-15 years. As a result, many digital records do not reflect modern standards. To provide the best data for the Division's needs as well as those of professional archaeologists, agencies, and clients, the records should be reviewed and rescanned with current technologies as necessary. In addition, Division staff should continue regular QA/QC of GIS data records to ensure they represent accurate information.

3) Develop information on and a management strategy for submerged sites in state waters.

This strategy includes both shipwrecks and submerged terrestrial sites. Currently the Division lacks staff with expertise in submerged sites, particularly shipwrecks. At the same time, increasing coastal land loss is resulting in greater numbers of terrestrial sites being submerged. Developing funding to support a marine archaeologist within the Division will be necessary to address this gap in the Division's capabilities. This individual would be able to provide technical assistance and advice to agencies and clients whose projects threaten submerged sites, and to update and revise the 1990 Louisiana Submerged Cultural Resources Management Plan enabling the Division to provide effective oversight and assessment of these resources.

4) Institute a regular review of the Culture History and Research Themes in Part III of the Plan.

The Culture History and Research Themes identify important regions, research, and types of sites across the state. This information provides an important basis for assessing whether a site is eligible for nomination to the National Register of Historic Places. As new information becomes available and important avenues of new research identified, these sections of the Plan should be updated to reflect current knowledge about the state's archaeological resources.

5) Develop protocols for integrating information about Traditional Cultural Properties (TCPs) into the Section 106 process, and for the appropriate distribution of the information to concerned parties.

TCP's are places that are of historical and/or current significance to modern communities, and in many instances their location cannot be shared with outside agencies and individuals without the community's permission. In this situation, information about TCP's cannot be presented to agencies and organizations in the same way that archaeological site information is provided. TCP's were first recorded in Louisiana during the MC252 oil spill event (2010-2015). Managing this information to protect the rights of the community while ensuring that these properties are taken into account during future Section 106 actions will require the Division to develop new procedures.

6) Increase public access to information about the state's archaeological resources.

This issue is addressed in Topic IV.

Topic III - Preserve and Protect Archaeological Sites

Archaeological sites lie in all areas of the state, from heavily urbanized settings to forested upland ridges. A variety of activities can damage or destroy sites, but several threats of are particular importance in Louisiana (outlined below). Other threats more characteristic of specific regions across the state are noted in Part II of this Plan. Although many threats are beyond the ability of the Division or anyone to control (coastal land loss and natural disasters as examples), a number of actions can be taken to increase protection and preservation of sites across the state. In addition to the strategies discussed below,

increasing public awareness of archaeology is another key strategy for preserving sites; this issue is addressed in Topic IV.

1) Identify the major threats to archaeological sites in Louisiana.

The five major threats listed below can impact large numbers of sites across broad segments of the state. Each of them identifies areas where archaeological investigations should be targeted when funding for discretionary projects become available.

a) from Vermilion Bay in St. Mary Parish east to St. Bernard Parish, coastal subsidence and erosion are responsible for the average loss of 42 acres a day, and in the last 50 years, over 1900 square miles of land have been lost in Louisiana (Coastal Protection and Restoration Authority 2012). This has resulted in the loss of hundreds of archaeological sites, and as Figure 5 illustrates, predictions for ongoing land loss indicate that over the next 50 years an additional 1750 square miles and 2500 known sites will be lost in addition to all the sites in this area that are unknown. A major challenge in Louisiana

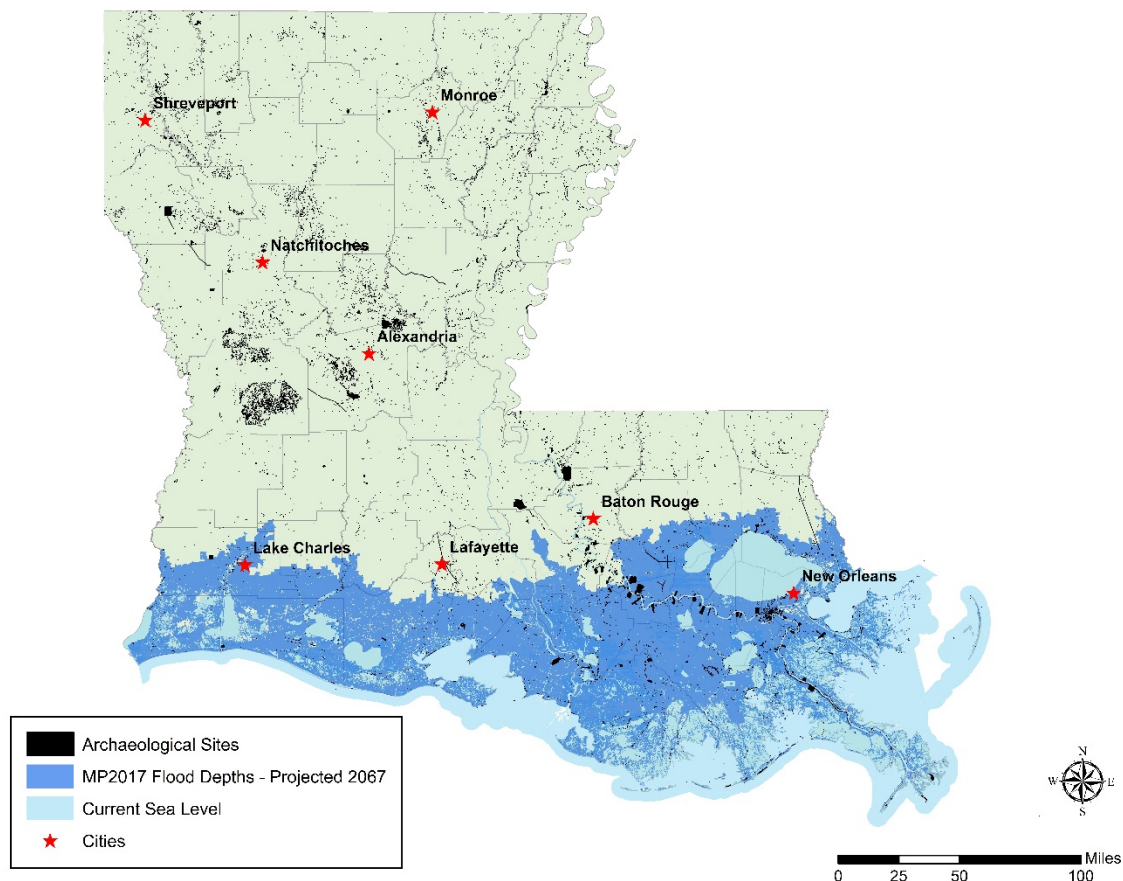


Figure 5. Projected land loss in Louisiana by 2067 (data from U.S. Office of Coastal Management [Digital Coast 0 ft or current sea level, <http://coast.noaa.gov/slr>] and Louisiana Coastal Restoration Authority [2017 Coastal Master Plan – Flood depths, <http://cims.coastal.louisiana.gov/masterplan/GISDownload/>])

archaeology is to record and document these sites before they are lost. They represent a significant part of the state's history, and in the case of the period A.D. 1000-1500, an entire cultural expression (Mississippian culture reflecting eastern Gulf Coast influences and/or immigrants) may be lost before it is understood.

b) several areas of the state are experiencing rapid urban and industrial development. These include the areas in and adjacent to New Orleans, Baton Rouge, Lafayette, Lake Charles/Sulfur, Alexandria, Monroe, and Shreveport, the north shore of Lake Pontchartrain, and the Mississippi River corridor between Baton Rouge and New Orleans. Although some projects (mostly industrial plants) are addressed through the Section 106 process, the majority of development projects are not assessed for their impacts on archaeological resources. As urban areas, especially New Orleans, contain much of the state's early colonial and antebellum history, ongoing development is erasing that history at a rapid rate.

c) in agricultural areas, land leveling is being increasingly practiced by many farmers. This practice usually involves removing dirt from topographically higher areas to lower-lying areas in fields. As people in the past preferentially lived on higher, better-drained locations, leveling can impact many sites. In some parts of the state, such as northeast Louisiana, thousands of acres have been and will be leveled over the next 25 years. This will have a significant effect upon the archaeological record of those areas.

d) oil and gas development has a long history in Louisiana. The state is currently home to 38,389 oil and gas wells (as of 2015; Department of Natural Resources 2016) and an unknown number of miles of pipelines. In coastal areas, canals excavated through the marsh have cut through sites and contribute significantly to coastal erosion. In recent years, the Haynesville shale development has resulted in hundreds of wells being drilled in northwest Louisiana, with the concomitant placement of thousands of miles of pipeline. The majority of these wells and pipelines are not subject to Section 106 review. The potential impacts to the archaeological record are difficult to measure but have likely been severe. In the future, development of the Tuscaloosa shale that lies beneath much of the southern half of the state may have a similar impact on sites in that region of the state.

e) natural and man-made disasters have a significant impact on archaeological sites. In the case of man-made disasters such as oil spills, the spilled material is not addressable under Section 106. However, all activities undertaken in response to the spill are subject to Section 106 review. The emergency nature of spills and the immediacy of the response (within 24 hours of the spill) make it very challenging for the Division to consult in a timely manner with the relevant federal agency and private companies to address archaeological sites in the impacted area.

Natural disasters such as hurricanes can have significant impacts, primarily erosion, on sites in coastal areas. However, the greatest impact to sites comes during the response effort after the storm. Like spills, federal agency actions in response to a disaster are subject to Section 106 review. Their actions can cover a large part of the state, be extensive, and continue for many years after the event. As a result, the response effort has the potential to impact many sites in very different settings.

2) Develop funding for a grants program for targeted research on critical sites, regions, or research topics.

With the loss of the Regional Archaeology program, the Division does not have archaeologists around the state who can record sites and conduct research in critical areas. Developing a consistent source of state or federal funding that can be applied to grants aimed at important sites, specific regions with threatened sites, or research themes is one key approach to addressing the major threats to sites across Louisiana.

3) Develop a state tax credit for landowners who preserve significant archaeological sites.

A state tax credit could be designed to provide a landowner with a means to set aside a tract of land containing an archaeological site such that it is not further impacted by agriculture, development, or other action. The set-aside would then qualify for a credit against their annual state tax assessment. The Division of Historic Preservation oversees a similar program for renovating historic buildings and it has proven to be very popular and successful in preserving the historic character of many structures. Implementing an archaeological tax credit would require the Division to establish criteria for qualifying a site for the credit, and might also require significant time visiting the site to establish its boundaries and context. If implemented, such a program would likely require additional staff to implement. Such a program has the potential to have a very positive impact for many sites and represents a very proactive effort toward the goal of preserving and protecting significant sites.

4) Work with The Archaeological Conservancy (TAC) and the Louisiana Archaeological Conservancy (LAC).

TAC is a national non-profit organization that purchases critical sites to preserve them. As noted in Part I of this Plan, TAC has purchased part or all of 17 sites in Louisiana over the last 20 years. Site acquisition is limited to property with a willing seller and often occurs when property comes up for sale. Similarly, the LAC works with landowners to develop easements on specific segments of property that prevent future development of that tract; to date, all or portions of four sites have been protected. Promotion of these options so that more landowners are aware of them will provide greater opportunities to protect sites. The Division and archaeologists around the state who interact with landowners can make them aware of these programs.

5) Create a marine archaeology position within the Division and revise and update the 1990 Louisiana Submerged Cultural Resources Management Plan.

This item is discussed in Topic I (d) and Topic II (b).

6) Increase the number of archaeological sites nominated to the National Register of Historic Places.

The National Register is an honorary designation and does not provide any legal protection to a site, except when a listed site would be impacted by a Section 106 project. Listing does provide visibility to a site and is a very public statement of the site's significance. Currently, there are only 75 Louisiana archaeological sites on the National Register, while nearly 700 sites have been identified as eligible for nomination.

As a result of Section 106 actions, any identified site is recommended undetermined, ineligible, or eligible for nomination to the National Register. In nearly all situations, the federal agency will treat a site recommended eligible as if it were listed, and as a result few if any 106 projects actually go to the step of formally nominating a site to the Register. This reflects the additional time the nomination process would require, time that could significantly delay implementation and completion of the project.

The Division does not currently have staff available to prepare National Register nomination forms. In many instances, some additional fieldwork would have to be undertaken at an eligible site to develop the specific information required for a successful nomination. Developing a mechanism to prepare the nomination forms would allow more sites to be nominated to and listed on the National Register.

7) Increase the use of remote sensing techniques at archaeological sites.

Remote sensing (including ground-penetrating radar, magnetometry, and resistivity) enable archaeologists to explore large areas of a site in a short period of time. Although these techniques are not effective in all settings, in the right circumstances they provide data on a scale that is impossible to obtain through excavation alone. The use of these techniques can yield information important to assessing the significance and eligibility of a site that is not obtainable any other way.

The data produced can also identify areas with the greatest potential to provide important information upon excavation. This allows limited archaeological resources to be targeted at those areas with the greatest potential to answer research questions. This strategy also minimizes the area impacted by excavation and preserves the remainder of the site.

8) Increase the use of existing collections for research and study.

The Division, Louisiana State University, the University of Louisiana at Lafayette, the University of Louisiana at Monroe, Northwestern State University, University of New Orleans, Tulane University, and Poverty Point World Heritage Site have extensive collections of materials from archaeological sites across Louisiana. Many of these collections have not been systematically studied or have only been partially examined. New investigative techniques also provide opportunities to gain new information from old collections.

Topic IV - Increase public interest in and involvement with Louisiana archaeology.

The federal NHPA and the state Archaeological Resources Act state that historical and cultural resources, including archaeological sites, are important to the nation's and state's citizens, and that information about these resources should be provided to them. As Louisiana's population becomes increasingly concentrated in urban and suburban settings, the number of people exposed to archaeology through finding artifacts and sites as a part of their daily activities diminishes. The result is fewer and fewer people who have an awareness of archaeology beyond what they may encounter on television or the Internet. One particular challenge is getting people to recognize the presence of archaeology in Louisiana and in their neighborhood. Addressing this challenge requires fostering a public awareness of, and appreciation for, our shared cultural heritage and the places that illustrate that heritage. The goal would be to translate this knowledge into an increased interest in preserving and protecting sites. Efforts to increase public information about archaeological sites are an important strategy for preserving and protecting sites across Louisiana.

1) Increase the availability of archaeological information available on the Division's website.

The Division currently has information on over 21,000 archaeological sites across the state. Although specific locations cannot be provided to the general public in order to protect landowner rights and protect the sites, developing a GIS map that enables the general public to explore general patterns of sites across the state would enable citizens to explore the state's rich archaeological heritage. Similarly, developing a database of public articles about Louisiana archaeology would provide citizens access to information about the state's archaeological heritage. Both of these options would provide new educational opportunities to inform the public about the state's archaeology. Both options would require funding and staff to operationalize.

The Division has several products designed to provide information to teachers, students, and the general public, including teaching kits, online booklets, online interactive exhibits, and an Ancient Mounds Driving Trail through northeastern Louisiana. The online booklets and exhibits were accessed by over 80,000 visitors during state fiscal year 2016/2017. This level of interest indicates the potential for additional products to reach the public and inform them about Louisiana's archaeological heritage.

- 2) Develop an effective strategy for public outreach to be incorporated into Section 106 mitigation agreements.

If an archaeological site eligible for nomination to the National Register will be significantly impacted or destroyed by a development project subject to the Section 106 process, an agreement specifying how the adverse effect to that site will be addressed is prepared. As part of that agreement, there is an opportunity to specify how the information gained from the excavation of the site will be presented to the public. Developing effective means within the constraints of the Section 106 process to accomplish that goal is challenging. Specific strategies will vary given the nature of each project, but developing a list of viable alternatives would be an important step toward providing more information to the public.

- 3) Encourage research at Louisiana sites by university staff and students.

Beginning in the 1930s and continuing through at least the 1960s, Louisiana and the lower Mississippi River valley region was one of the key regions in the country for developing American archaeology. This emphasis was reflected in the state's ten public and private universities, most of which at one time had degree programs or classes in anthropology and archaeology. Today only three universities offer undergraduate degrees in anthropology and an opportunity to specialize in archaeology; within these programs there are few opportunities for students to focus on Louisiana archaeology. And the interest in this region of the country has steadily decreased such that few students from other universities come to Louisiana to do research. Increasing awareness of the rich archaeological heritage at the university level and encouraging academic research would increase our knowledge of the state's history and cultural development. In addition, academic researchers are not limited to locations and sites to be impacted by Section 106 projects, thus they can explore areas where little research has been conducted. Developing strategies to promote Louisiana's archaeological record at the academic level will be challenging.

- 4) Encourage participation in the Louisiana Archaeological Society (LAS).

The LAS is the primary organization for interested individuals to participate in, and learn about Louisiana archaeology. Efforts to promote the LAS and increase membership and participation in its activities are effective measures to promote awareness and interest in archaeology and archaeological sites. The LAS and Division can be effective partners in preserving and protecting sites, and efforts that support the LAS will also support the Division's goals. The Division staff can provide advice and technical assistance to the LAS and LAS members in various projects, such as Archaeology Month events, the annual meeting, publications, and other activities.

- 5) Create a site stewardship program.

A stewardship program would recruit individuals to monitor individual sites, and to work with the landowners to preserve and protect these sites. The program could focus on key sites around the state and offer a means to maintain awareness of critical sites while educating landowners about their value. It would also provide individuals a real opportunity to participate in Louisiana archaeology and make a specific contribution to protecting the state's heritage. The program could be organized through the LAS and provide members in the organization an opportunity to become involved in archaeological sites. The Division could provide training and technical assistance in establishing the program and developing an online system for volunteers to report their work and the status of their sites.

- 6) Develop exhibits using collections curated by the Division and the various universities around the state.

Significant collections with exhibit-worthy materials and interesting stories to tell provide an opportunity to showcase the state's cultural heritage. Exhibits could be made available to public libraries, museums, schools and other organizations to highlight our archaeological heritage and educate students and the public about our past.

Topic V - Manage unmarked burials and historic cemeteries

The Division has statutory responsibility to oversee the discovery of unmarked human burials, and to ensure the preservation and protection of abandoned historic cemeteries. In the event of a burial discovery or a request to work at an abandoned cemetery, the Division will consult with the appropriate parties and then issue a permit to the responsible party. The permit spells out exactly what will be done with the burial or cemetery, who is responsible, and where any remains or other materials will be reinterred.

Cemeteries are a very visible reminder of the state's history, and represent important community, family, symbolic, and historical ties to a place and time. There is great public interest in cemeteries, and in protecting and preserving them. Given its statutory responsibilities, the Division plays an important role in preserving cemeteries and providing information about them to the public.

1) Develop rules and regulations to implement the Unmarked Human Burial Sites Preservation Act and the Historic Cemetery Act.

The preparation and publication of regulations for each Act will clarify the Division's roles and responsibilities under each Act. This will provide clear guidance to Division staff and members of the general public as to how discoveries of unmarked burials and requests to cleanup, maintain, or rehabilitate abandoned cemeteries will be handled.

2) Develop an online database of Louisiana cemeteries.

A number of organizations provide information on cemeteries but none include information on their specific location. Development of a GIS coverage accessible to the general public would enable citizens to determine if a cemetery has been reported, and if so, what information is known about it. The Division has initiated construction of a GIS coverage for cemeteries, but has not yet completed compilation of information from public sources (USGS quad maps and other references) and the Division's site files. The coverage for internal Division use includes prehistoric American Indian cemeteries but these cemeteries will be excluded from any public presentation of the data. Preparation of the existing database has been accomplished with Division staff, but additional funding and staff may be required to complete the project.

When partnered with Goals (c) and (d), the online cemetery portal will provide a comprehensive source of information for individuals and organizations interested in Louisiana cemeteries.

3) Develop an online application for individuals to report and record cemeteries with the Division.

Louisiana has hundreds, if not thousands, of small, abandoned cemeteries whose location has been forgotten or is known to only a few individuals. Getting all these cemeteries recorded is a major challenge. One approach is to enlist the aid of citizens around the state to report cemeteries. An online application that would enable an individual to use a smartphone to record basic information about a cemetery is one strategy to implement this goal. This application would link to the Division's website and allow information to be incorporated into the online cemetery database.

- 4) Develop an online database of information about preserving, protecting, and restoring cemeteries.

Many individuals want to preserve and restore cemeteries in a way that maintains their historic character. The Historic Cemetery Act gives the Division the responsibility to ensure that appropriate preservation and restoration activities are undertaken. Compilation of information about methods and techniques appropriate for historic cemeteries would be beneficial for individuals and Division staff. This information would help ensure that cemeteries are preserved and restored using appropriate methods and materials.

- 5) Develop funding for a grants program under the Historic Cemetery Act to enable cemeteries to be cleaned and restored.

Over the years, individuals interested in preserving cemeteries have contacted the Division requesting help in undertaking that process. These requests often fall into two categories: 1) requesting help in determining the boundaries of cemeteries, and 2) seeking assistance in cleaning up abandoned cemeteries. Many early cemeteries were not marked with fences or other distinct boundaries and determining the extent of burials is a challenging task. Defining the cemetery boundary is a critical step in developing a management plan for the cemetery. The use of remote-sensing techniques is one possible means to determining a cemetery's boundaries, but these technologies are usually limited to companies that charge for their services. A grant fund that could be used to hire a company would provide critical assistance to individuals and groups working to preserve cemeteries. Similarly, a grant fund that provides support to an organization to clear brush, timber, and trash from existing cemeteries would enable them to be better taken care of.

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