CULTURAL RESOURCES INVESTIGATIONS FOR THE SALUDA HYDROELECTRIC PROJECT:

Documenting 13,000 Years Of Human Occupation Along The Saluda River

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DOCUMENTING 13,000 YEARS OF HUMAN OCCUPATION ALONG THE SALUDA RIVER

FERC PROJECT NO. 516

SCE&G®
A SCANA COMPANY

South Carolina Electric & Gas Company
220 Operation Way
Cayce, South Carolina 29033

S&ME
ENGINEERING INTEGRITY.

S&ME, Inc.
134 Suber Road
Columbia, South Carolina 29210

Archaeology

WHAT IS ARCHAEOLOGY?

Archaeology is the study of past human societies, primarily through the recovery and analysis of the physical remains people left behind. The purpose of archaeology is to gain an understanding of the way people lived and how they interacted with each other and their environment. This ranges from studying the artifacts used by some of our first tool-making **hominid** ancestors in Africa nearly 3.5 million years ago to piecing together the plates and glassware your grandparents may have used as little as 50 years ago.

In addition to studying artifacts, archaeologists examine preserved plant and animal remains that may have been used for food, fuel, clothing, medicine, or building materials. Archaeologists also study architectural remains, soils, and even ancient landscapes. All of this information helps us gain a more holistic view of how humans adapted to their social and physical environment.

WHY DO WE DO ARCHAEOLOGY?

Most archaeology in the United States is done as part of **Cultural Resource Management** (CRM) studies. Beginning in the late nineteenth century, the federal government recognized that it had responsibility for the protection and stewardship of important cultural resources, including archaeological sites and historic battlefields, historic buildings, structures, and objects, cemeteries and sacred sites, and historic documents. In 1906, the Historic Sites Act was passed, which prohibited excavation of antiquities from Public Lands. This Act also gave the President the authority to declare historic and prehistoric sites National Monuments. In 1916, the National Park Service was created to oversee the conservation of Natural and Cultural Resources throughout the nation.

Today, most archaeology in the United States is done pursuant to Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f). This section of the Act states, in part:

The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking …. shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license … take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register.

To comply with this requirement, a federal agency must identify **Historic Properties**, consider the effects that its proposed action will have on any significant properties, and then consult with the State Historic Preservation Office, federally-recognized Indian tribes, and other interested parties on ways to resolve potential adverse effects on these resources. The law does not require a particular outcome, although it does give everyone the opportunity to comment on how significant resources should be treated.

In 2004, South Carolina Electric & Gas Company (SCE&G) began its relicensing process for the Saluda Hydroelectric Project. As part of their relicensing, SCE&G was required by the Federal Energy Regulatory Commission (FERC) to perform numerous environmental studies, including those conducted for compliance with Section 106 (Green et al. 2007; Nagle and Green 2010; Norris et al. 2005). This booklet is part of that process and was produced to inform the public about historical and archaeological investigations that took place as part of the relicensing.

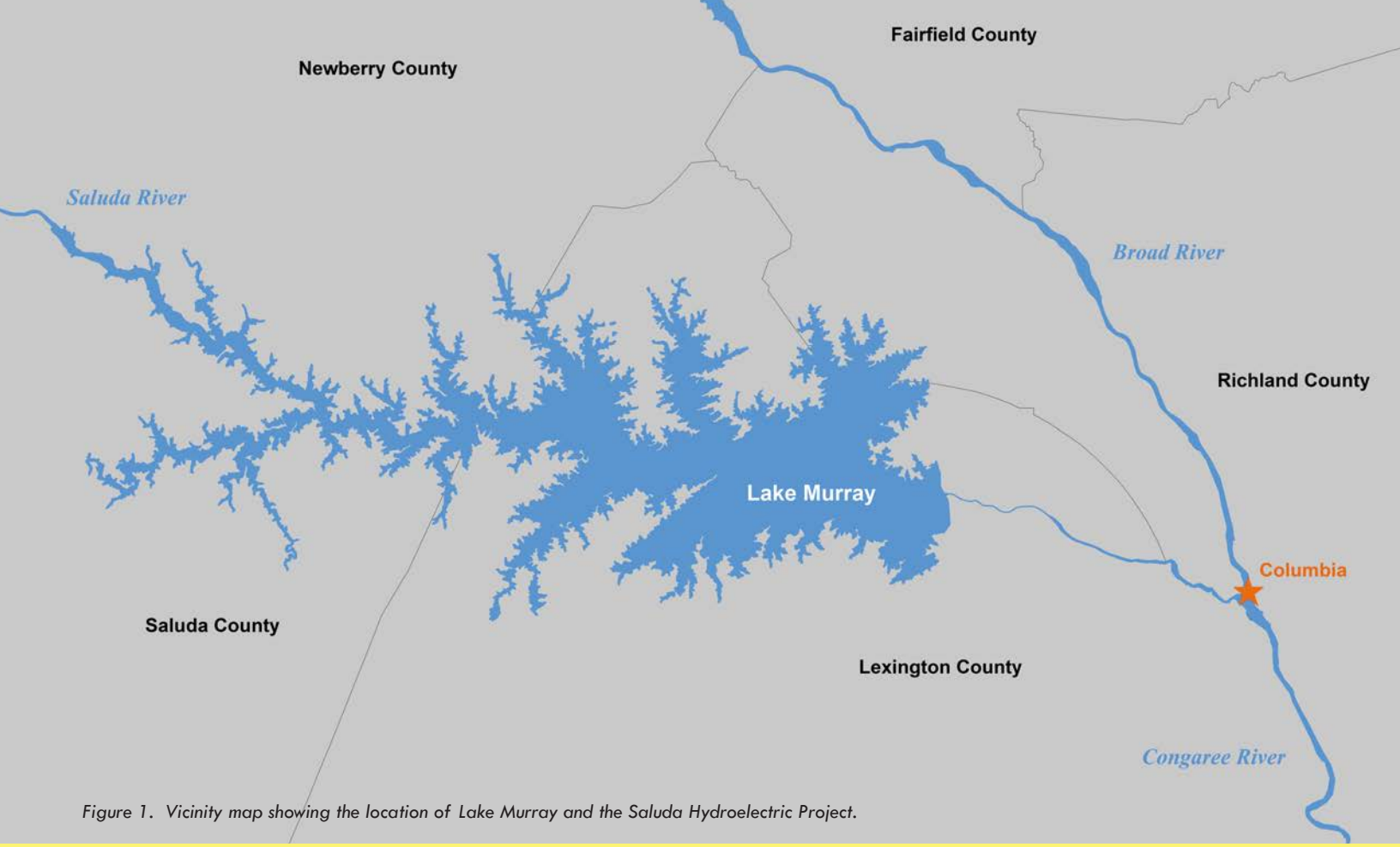


Figure 1. Vicinity map showing the location of Lake Murray and the Saluda Hydroelectric Project.

SALUDA HYDROELECTRIC PROJECT OVERVIEW

On July 8, 1927, the Federal Power Commission granted a license to Lexington Water Power Company for construction of a dam and powerhouse at Dreher Shoals along the Saluda River, approximately 11 miles west of Columbia (Figure 1). The Saluda Hydroelectric Project was constructed in 1927–1930 by the Lexington Water Power Company, which merged with SCE&G in 1943. Since that time, SCE&G has operated and managed the Saluda Hydroelectric Project.

The Saluda Hydroelectric Project area is located in portions of Lexington, Newberry, Richland, and Saluda counties. It encompasses the Saluda River Dam and hydroelectric complex; Lake Murray, which covers roughly 48,000 acres at normal operating elevation and has approximately 650 miles of shoreline; and portions of the Saluda River and its tributaries. From 2005 through 2010, cultural resource investigations conducted in the project area resulted in the identification of 156 archaeological sites and eight historic resources. Of these resources, the Tree House Archaeological Site, the Meetze and Amick family cemeteries, Eptings Campground, and the Saluda Dam and Power House Complex are eligible for inclusion in the **National Register of Historic Places.** Another 19 archaeological sites are potentially eligible for inclusion in the National Register.

History

HISTORIC OVERVIEW

1700's

European settlers began arriving along the Broad and Saluda rivers during the mid-1700s. Indian traders had travelled through the Midlands since the early 1700s, but never established permanent homes in the area (Moore 1993:9). The 1730 Township Plan encouraged settlement of the backcountry as a protective buffer for valuable plantations near the coast (Edgar 1998:52). One of these townships, Saxe Gotha, was established along the Congaree and Saluda rivers, roughly encompassing the area of present day Lexington County (Hicks 2000:21). During the 1730s and 1740s, German and Swiss-German colonists landed in Charleston and came to Saxe Gotha, while groups of settlers from Pennsylvania traveled to South Carolina via the Great Wagon Road (Edgar 1998:54–56; Moore 1993:13; Hicks 2000). A large number of these Saxe Gotha settlers, both foreign immigrants and those who had migrated from Pennsylvania, were German-speaking and they kept their cultural traditions, including religion and language, for many years after coming to South Carolina (Edgar 1998:62).

Cherokee raids occurred throughout the 1750s and many Saxe Gotha settlers left their homes to seek shelter in backcountry forts (Edgar 1998:206-207). The end of the Cherokee threat, in 1761, did not restore order to the Midlands, however. The growing population of the backcountry felt neglected by the Charleston government. Settlers who had sought shelter within the forts during the Cherokee conflict had been victims of greed and extortion by the private fort owners, while the militiamen, who were supposed to be protecting their property, raided and squatted at abandoned homesteads (Edgar 1998:206). The colonial government in Charleston was slow to respond and residents joined together, in a group called the Regulators, to protect themselves. The government, however, did not approve of the Regulators tactics and demand for backcountry equality, and they were arrested as often as the bandits they fought (Moore 1993:25). Ultimately, the Regulator movement lost power and influence by the 1770s (Edgar 1998:215-216).

At the beginning of the American Revolution, most backcountry settlers did not support independence. A 1775 compromise allowed them to remain neutral in the conflict in return for the provincial government basically leaving them alone, which they did until 1880 (Edgar 1998:226). The British capture of Charleston and campaigns into inland South Carolina brought fighting to the area, which created anti-British feelings. Residents then assisted South Carolina troops in defeating the British during nearby campaigns (Moore 1993:30-31).

1800's

After the Revolution, the state's large districts were divided into smaller counties, including Lexington from Orangeburg District, Richland from Camden District, and Newberry and Edgefield from Ninety-Six District (Saluda County was created from Edgefield in 1895). In 1786, the state capital was moved to the newly created town of Columbia; the city grew significantly during the early 1800s, serving as a primary market for the cotton grown in the surrounding areas and benefitting from the expansion of the railroads (Pope 1973:61; Stauffer 1998:9).

At the beginning of the nineteenth century, the region was primarily agricultural and, before 1800, most farms grew only crops for their own use (Edgar 1998:270; Moore 1993:65). The cotton gin made production of the short-staple type of cotton easier and more profitable, allowing it to become the primary crop in the area. High profits allowed cotton farmers to purchase more land and slaves, creating a plantation-based economy (Moore 1993:65-66; Edgar 1998:271). By 1860, slaves made up more than 60 percent of the total population of Edgefield, Newberry, and Richland

counties. Lexington, however, could not support large scale cotton farms on most of its land and less than 40 percent of its residents were slaves.

When the Ordinance of Secession was signed, in December 1860, the majority of upcountry residents, both plantation owners and yeomen farmers, favored seceding from the Union (Moore 1993:183). During most of the war, the area was affected only indirectly. Many farms were run by wives, children, slaves, and old men after volunteers left for the army; the farms that continued to produce crops aided the war effort by supplying food (Moore 1993:183-191; Pope 1973:9-10). In 1865, as the Union army advanced towards Columbia, it looted and destroyed property in a 30 mile radius along its route, including raiding and burning Lexington (Edgar 1998:372; Central Midlands Regional Planning Council 1982). When the army left Columbia on February 20, 1865, it left behind a devastated countryside and significantly damaged the area's largest city (Edgar 1998:373).

The end of the war brought the destruction of the slavery-based plantation system. Agriculture continued to dominate much of the region, although crop production fell during the early Reconstruction era. Cotton remained a primary crop in many areas, with farmers often planting it instead of food crops to make a quick profit and pay their debts. By the 1880s, too much cotton in the market caused prices to fall steadily and pushed farmers further into debt (Edgar 1998:427-428). Plantations were often broken up into smaller units, since most owners could not make such large holdings profitable without slave labor (Moore 1993:210). During the late nineteenth century, tenancy and sharecropping developed across South Carolina as debt increased and landless farmers, both black and white, looked for ways to continue farming to support their families (Orser 1998:57).

At the beginning of the twentieth century, agriculture was still an important part of the area's economy, with one farm for every 9.7 residents (United States Census Bureau 1913). Change was on the horizon for this rural society, however, as Columbia attempted to become a New South city. Industry was a major component of the New South ideal, along with modernization and technological advancement, as southern cities tried new development strategies. Columbia had grown significantly since the Civil War and it had become a trading and manufacturing hub for South Carolina.

Although the Midlands had always had small-scale manufacturing enterprises, industry exploded in the late 1800s. By 1900, both large and small manufacturing establishments had taken hold in Columbia, including Columbia Mill in 1893, the first fully electric-powered textile mill, and several mills financed by W. B. Smith Whaley during the late 1890s (Columbia Board of Trade 1871; Moore 1993:304-307). These mills increased the manufacturing potential of Columbia, as well as the city's employment opportunities (Moore 1993:309). A 1910 article proclaimed the twentieth century as a new industrial age, claiming that increases in manufacturing, rising transportation needs, and the growth of cities would increase demand for electricity. The need for more power to support the growing industrial sector and economy ultimately led to the Saluda Hydroelectric Development. The enthusiasm of the era placed great significance on the new dam, proclaiming that "this stupendous undertaking serves to emphasize the transition of South Carolina from purely agricultural pursuits to the more profitable combination of agriculture with industry" (Columbia Chamber of Commerce 1927:1).

HYDROELECTRIC DEVELOPMENT AT DREHER'S SHOALS

The Saluda River has been a central part of the Midlands landscape from the earliest human settlements in the area to the present. Long before the development of the Saluda Hydroelectric project, people living along the banks of the river used the flowing waters for many purposes. Small, family-owned mills took advantage of water power from the earliest settlements along the river and the Confederate Army considered building large water power facilities along the Saluda River (Associated Gas and Electric System 1930:5; SCE&G 1990:1). Hydroelectric development in the United States began in the late nineteenth century and hydroelectricity was praised for its low production costs and high reliability (Hay 1971). In the 1890s, development of cotton mills in Columbia resurrected the use of the Saluda River for water power and, by 1910, six sites had been developed. Within two decades hydroelectric power would become a significant resource due to the growth of the textile industry, the City of Columbia, and the region as a whole. Although the potential for hydroelectric power from the Saluda River and its tributaries had been recognized for many years, the economic, political, social, and technological conditions that existed in the 1920s made this large-scale development possible (SCE&G 1990:2).

SCE&G has a long and complicated corporate history and is the product of multiple consolidations of numerous smaller utility companies that occurred throughout the twentieth century, before becoming South Carolina Electric & Gas Company in 1937 (Pogue 1964:58). In the early 1900s, Columbia resident G. A. Guignard purchased approximately 20 miles of land and flowage rights along the Saluda River. He founded Lexington Water Power Company in 1903 with plans to build dams at the two most promising sites: Dreher's Shoals and Bear Creek (Pogue 1964:94). In 1907, Guignard sold the Dreher's Shoals site, while keeping the rights to the Bear Creek site and looking for funds for the upper dam project. After passing through multiple owners, the Dreher's Shoals lands were acquired by a predecessor of SCE&G in 1911 (Pogue 1964:94).

On July 11, 1924, Guignard applied to the Federal Power Commission for permission to build a dam at Bear Creek; in September 1924, the South Carolina Power Company filed an application requesting permission to build a dam at the Dreher's Shoals site (Associated Gas and Electric System 1930:6-7). Built separately, the two dams would have had a combined **head** of 140 feet, with Bear Creek having 92 feet and Dreher's Shoals, located downriver, having only 48 feet (Associated Gas and Electric System 1930:7).

William S. Murray, of the New York engineering firm Murray and Flood, realized that the 360 foot contour line (above mean sea level [AMSL]) paralleled both the north and south sides of the Saluda River and came to within 8000 feet of itself near Dreher's Shoals. He believed that a dam could be built to span the gap, creating "the largest power impoundment in the world" (SCE&G 1990:3). This project would be more effective and efficient than building separate dams. With a head of 183 feet, this single dam would be 43 feet higher than the other two dams combined and would create a reservoir that would hold approximately 102 billion cubic feet of water (Associated Gas and Electric System 1930:7).

In 1926, Murray and Flood purchased Lexington Water Power Company (Associated Gas and Electric System 1930:9). Murray proposed his idea of a "mutual development" at the lower site and an agreement was reached in May 1926 (Pogue 1964:95, 101). In February 1927, the Lexington Water and Power Company, now controlled by Murray and Flood, filed an application with the Federal Power Commission that requested permission to build a dam with a 183 foot operating head and a powerhouse at the Dreher's Shoals site (Associated Gas and Electric 1930:10; Pogue 1964:95). On August 5, 1927, the Federal Power Commission agreed to license Project Number 516 and the United States Army Chief of Engineers approved the development's plans (Associated Gas and Electric 1930:10; SCE&G 1990:3; SCE&G 1980:2).

Buyers for the Saluda development's projected electricity output, estimated at 300 million kilowatt hours, were found in Carolina Power and Light Company, Southern Power Company (now Duke Energy), and the Broad River Power Company (Pogue 1964:101; Associated Gas and Electric System 1930:11). To bring the electricity to their customers, the three utility companies would only need to construct their own transmission lines connecting them to the new power plant.

Because the proposed lake would cover such a large area, the company needed to acquire approximately 100,000 acres of land. Although they already owned some land, and held options on other parcels, this amounted to only 14 percent of the total area necessary for the impoundment. The company would have to purchase approximately 1,100 lots, a task that would displace nearly 5,000 people and cover three churches, six schools, and 193 graveyards (Associated Electric and Gas System 1930:11; SCE&G 1990:5). Negotiations for buying the property were handled by real estate agent, Thomas Clay Williams; however, lack of legal ownership records for many of the properties made the job significantly more difficult (Associated Gas and Electric System 1930:11). The majority of land was purchased for $15 per acre, although up to $42 per acre was paid for certain properties; these prices were fair market value for the land (Federal Power Commission 1932:31).

Figure 3. Construction of the penstocks

Williams also spoke with landowners regarding the 2,323 graves that would be covered by the new reservoir, most of them in small family cemeteries. Many families chose to have their relatives' remains left undisturbed, electing for memorial markers in various area churchyards erected by the power company; a large number of the burials were small, unmarked plots and these were also left to be covered by the lake. Some relatives chose to have bodies disinterred and moved to new cemeteries, with a total of 148 bodies being moved (South Carolina Genealogical Society, Columbia Chapter 1997).

Publicity from official channels praised the farmers who sold their property (SCE&G 1990:5; SCE&G 1980:2). Because many of these people moved nearby, and "continue[d] their farming or other pursuits in the same general neighborhood, their removal from the basin was not a loss to the community" (Associated Gas and Electric System 1930:11). However, many families had emotional attachments to their land, houses, and communities that could not be severed by monetary compensation. One landowner took legal action and the case eventually went to the South Carolina Supreme Court. Despite some landowner objections, however, the project continued.

Numerous contractors were necessary to successfully carry out the dam project, all working under W. S. Barstow and Company, the general contractor (Pogue 1964:96-98; Lexington Water Power Company 1928:2; SCE&G 1990:6-7). Temporary field offices and workers' camps were constructed to house between 2,000 and 3,200 workers (SCE&G 1990:7; Associated Gas and Electric System 1930:13; Pogue 1964:96-97). Heavy logging was required to clear 65,000 acres before construction began, a process that resulted in around 100 million board feet of lumber, much of which was used to construct the concrete forms and trestles for the dam and power station (SCE&G 1990:5). A new three-mile railroad spur was used to transport construction materials and machinery to the site (Figure 2). An additional 30 miles of railway tracks were laid and 60,000 feet of trestlework was built between the dam site and nearby borrow pits, allowing 2,000 car loads of fill per day to be transported (SCE&G 1990:11).

Figure 2. Railroads used in construction of the dam

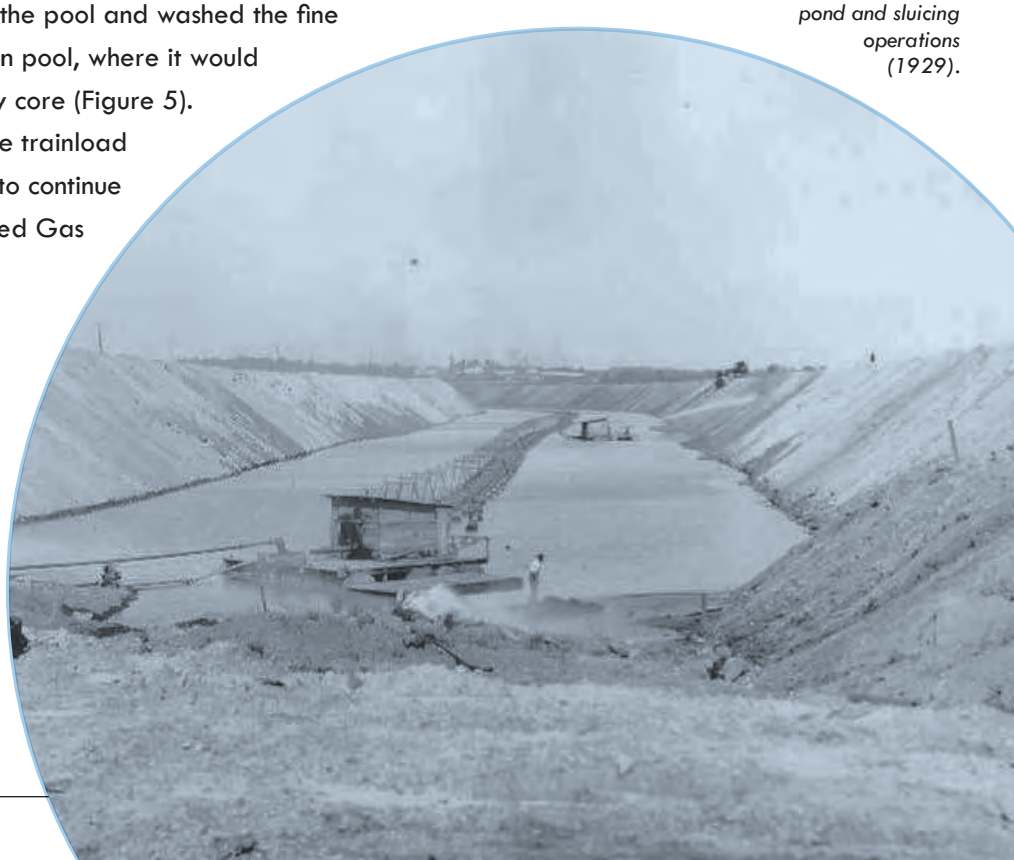
The first step in the actual dam construction was the installation of the **penstocks** and **arch conduit**, the tubes that would transport water from the lake to drive the water wheels at the power station. The site was excavated down to **bedrock** and trenches for the penstocks were excavated another eight feet into the rock (Associated Gas and Electric System 1930:14). Each penstock, measuring 16 feet in diameter and 986 feet in length, contains 129 steel plate rings, measuring 7 feet 11 3/8 inches long, with over 220,000 rivets used in the assembly of the four tubes (Figure 3). The arch conduit is larger than each of the penstocks, with an internal diameter of 48 feet, and was originally used to divert the Saluda River during the dam construction (SCE&G 1990:7).

Five intake towers (Figure 4) were built to bring water from the bottom of the lake into the penstocks, with construction of these towers requiring 636,000 bags of cement, 122,012 tons of gravel, 5,200 tons of sand, 3,981 tons of steel plate, 329 tons of refined steel, and 1,401 tons of structural steel. The four smaller towers serve the original four penstocks, while the single large tower was intended to draw water into the arch conduit. The smaller towers each have two Broome roller gates, lifted by a 234-ton hoist, that control the flow of water; the large tower has six of these gates. When the gates are opened, water flows from the lake into the penstocks, moving the massive **turbines** in the power station (Associated Gas and Electric System 1930:15).

Figure 4. Intake towers (1929).

The dam itself was built in three parts and covers approximately 99 acres. It rises 208 feet from the river bottom and spans a length of almost 1.5 miles; the width at the base is 1,150 feet, narrowing to only 25 feet at the top (Associated Gas and Electric System 1930:15). Altogether, 11 million cubic yards of earth were moved to the site and packed to form the dam. The upstream and downstream portions of the dam were built first. When there was 500 feet between the two sections, the chasm between the upstream and downstream mounds, which would become the solid clay core, was filled with water to create a "segregation pool" (Associated Gas and Electric System 1930:19). Flat-bottomed boats pumped water from the pool and washed the fine earth from both banks into the segregation pool, where it would settle into the bottom to form a dense clay core (Figure 5). Additional fill material was dumped by the trainload and sprayed with the high velocity water to continue filling the gap with fine material (Associated Gas and Electric System 1930:19-20; SCE&G 1990:12).

Figure 5. Segregation pond and sluicing operations (1929).



A **spillway** was built to allow for the release of water from the lake without having it pass through the penstocks, a measure that is utilized during flood conditions. The power station was constructed of concrete, brick, and steel (Figure 6). The original four turbines weigh 30 tons each, measure 26.25 feet in diameter, and are mounted on 20 ton shafts that have a

diameter of 29 inches (Figure 7) (Pogue 1964:101; Associated Gas and Electric System 1930:25; General Gas and Electric Corporation 1929). Each turbine was connected to a generator (Figure 8).

In August 1929, Lexington Water Power Company began filling the reservoir, which would be named Lake Murray after the project's innovator. On December 1, 1930, 10,000 kilowatt hours of electricity, the first produced by the development, were delivered to Duke Power Company (SCE&G 1990:14; SCE&G 1980:3). The new dam was a success.

In 1971, SCE&G increased the potential output of the dam by adding a fifth, larger turbine, connected to the large intake tower through the arch conduit, resulting in a total generating capability of 206 megawatts (SCE&G 1990:8). A new backup dam was begun in 2002, in response to studies that expressed concern about the stability of the dam in the event of a large magnitude earthquake. The backup dam, which provides added flood protection to the areas downstream from Lake Murray, was completed in 2005.

Lake Murray has become an important Midlands attraction in its own right. At elevation 360 feet plant datum, it covers approximately 50,900 acres and spans 41 miles long by 14 miles wide at its largest extents. Its 691 miles of shoreline, including islands, have become popular destinations for both residents and visitors (SCE&G 1990:16).

Figure 7. Turbine #4 (1930)

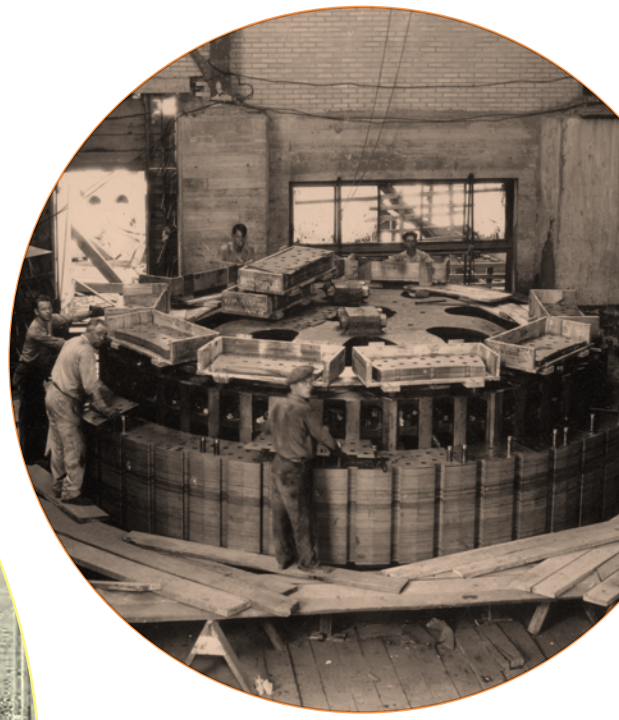
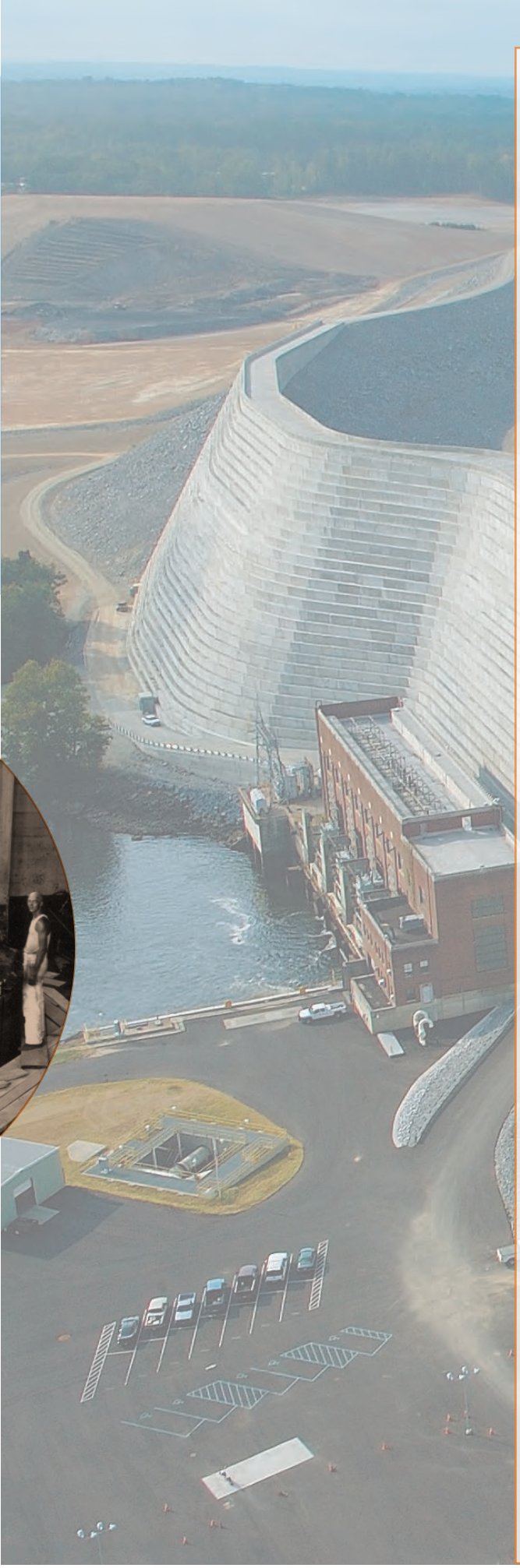


Figure 8. Construction of rotor for generator #4 (1930).

Figure 6. Saluda Hydroelectric Development Power Plant (December 1930).



THE SALUDA DAM COMPLEX

The Saluda Dam Complex is a multi-component architectural resource that includes the Saluda Dam, the Saluda Hydroelectric Facility, the McMeekin coal-fueled power plant, and other structures associated with these facilities. The various components have construction dates that range from 1927 to 1958, with some of the structures undergoing more recent alterations (Figure 9).

The Saluda Dam, Powerhouse, and Lake Murray. Construction of the dam began in September 1927 and was completed in September 1930; on December 1, 1930, the first power was produced by the hydroelectric plant. At the time of its completion, it was the largest earthen dam constructed for hydroelectric power in the world (Associated Gas and Electric System 1930:15, 19). The Saluda powerhouse is a two-story rectangular structure constructed of brick, concrete, and steel; much of the early twentieth century equipment remains in use today and a fifth power assembly was added in 1971. Lake Murray was created by the damming of the Saluda River; it encompasses over 79.5 square miles and holds 650 billion gallons of water

The Entrance Gates to the dam are stone walls with bronze plaques, located along both the north and south ends of SC Route 6 as it passes over the dam. These gates are commemorative objects, erected in 1930 to signify the naming of Lake Murray.

The Saluda Dam Spillway is located approximately 500 ft. from the south end of the dam and was originally constructed in 1930 with four gates. The spillway allows the release of water from the reservoir without having it flow through the penstocks, which can relieve flood conditions. The spillway has rarely been needed since the dam's construction, although the gates are opened for testing annually (SCE&G 1990:25).

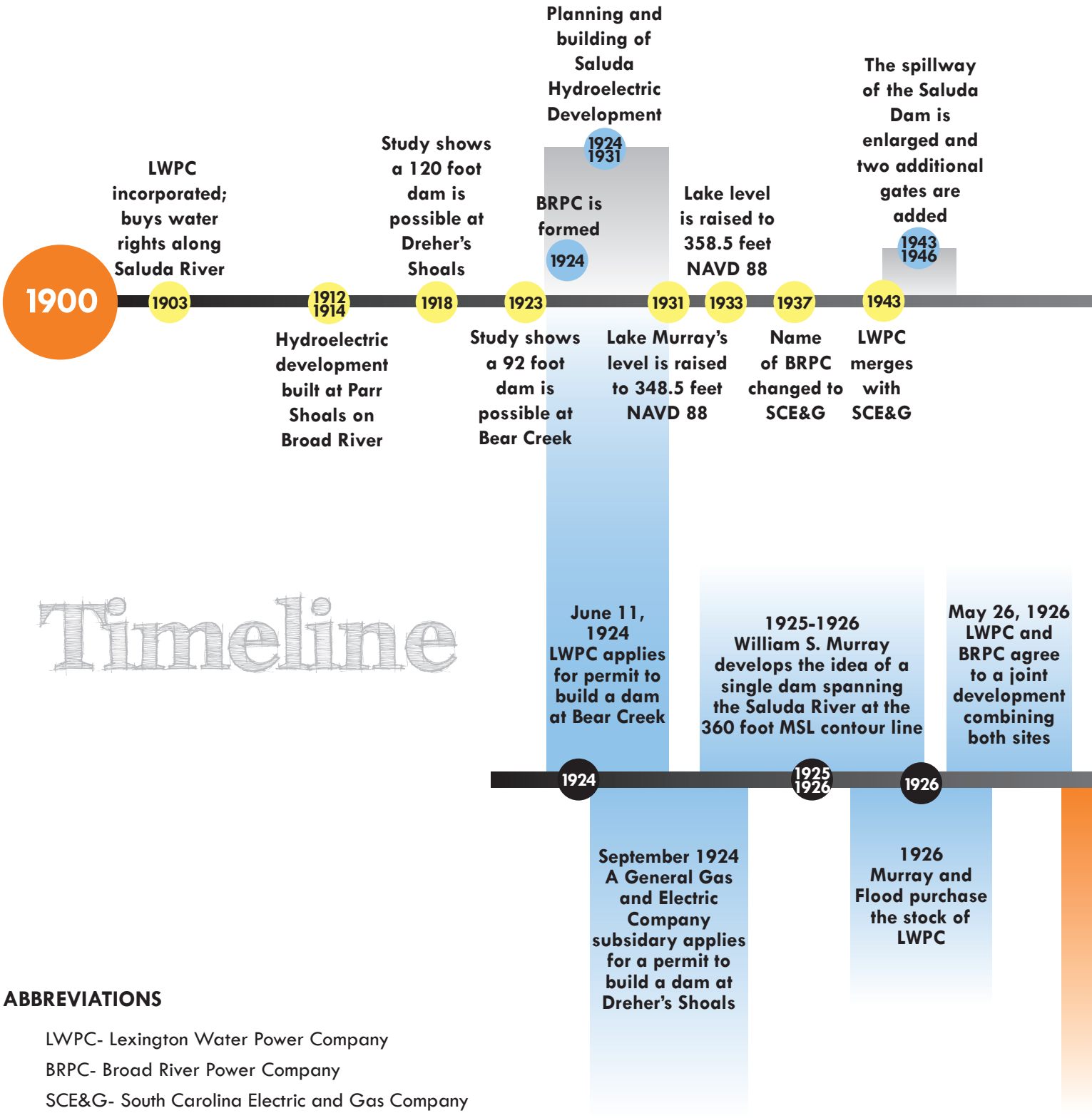
The Spillway Switching Building is a single story, square-shaped brick structure, with a flat concrete roof. The switching building was constructed in 1930 and houses all of the electrical controls for the spillway gates.

The McMeekin Fossil Fuel Steam Generating Plant, also known as McMeekin Station, was completed in 1958. It is a 252 megawatt, coal-fired plant that utilizes the cold water (about 52 degrees Fahrenheit) from the bottom of Lake Murray to cool its turbines; it utilizes around seven million gallons of lake water per hour (SCE&G 1990:15). This resource is actually comprised of two adjoining buildings: the main plant building, which has steel framing and asbestos siding, and a smaller brick structure that contains offices, meeting rooms, and storage spaces.

The McMeekin Track Hopper House is a rectangular, steel-frame building with sheet metal walls. It was built at the same time as the McMeekin Fossil Fuel facility and serves as an unloading station for the coal utilized by McMeekin Station.

The "Power for Progress" Sign is situated along a slope north of McMeekin Fossil Fuel facility. The sign consists of three foot high plastic letters mounted on a steel frame. Originally illuminated by an internal mechanism, the sign represents the growing availability of electricity in the late 1950s and the corporate boosterism of SCE&G.

Timeline



ABBREVIATIONS

LWPC- Lexington Water Power Company
BRPC- Broad River Power Company
SCE&G- South Carolina Electric and Gas Company
FPC- Federal Power Commission
FERC- Federal Energy Regulatory Commission
MSL- Mean Sea Level
NAVD 88- North American Vertical Datum 1988

ydroelectric Development

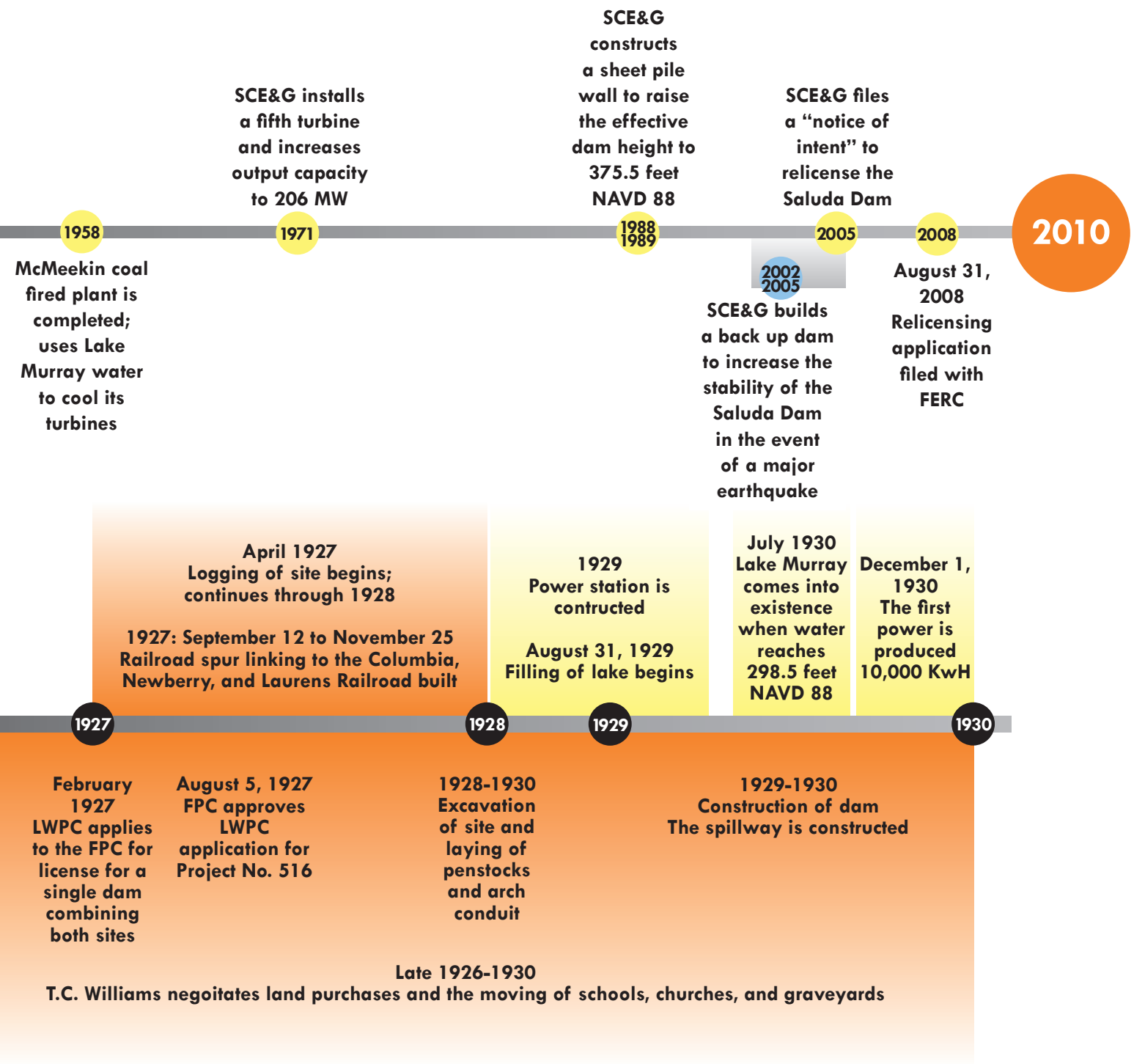


Figure 9.

TREE HOUSE ARCHAEOLOGICAL SITE

People have lived along the Saluda River for thousands of years. From hunting and fishing, to farming the rich floodplain soils, to using the river for transportation, the Saluda has been an invaluable natural resource to those living along its banks.

Tangible evidence of more than 13,000 years of human occupation along the Saluda River was found at an important archaeological site called the Tree House Site, also known by its official state site number 38LX531 (the 531st archaeological site found in Lexington County, South Carolina). The site, discovered during an archaeological survey conducted in April 2006, is situated on a high bluff overlooking the Lower Saluda River (Figure 10). Initial investigations indicated the site had a very high potential to contain very old, deeply **stratified** archaeological remains. Because of the importance of the site, SCE&G retained S&ME to conduct more extensive data recovery investigations.

Data recovery at this nine acre site took place over a nine month period in 2008 (Figure 11). This included the hand excavation of approximately 2,150 square feet in three separate blocks, approximately one percent of the total site area. Blocks ranged in size from 225 to 1,290 square feet and were excavated to depths of more than 12.5 feet below the ground surface where evidence of human occupation was no longer found. As a result of the excavations, more than 37,500 artifacts, animal bones, and plant remains were recovered, some dating back more than 13,000 years. There were also 80 features uncovered—pits, hearths, and **post molds** that indicate the presence of numerous campsites and long-term habitations through the millennia (Figure 12).

The discussion below describes the results of archaeological investigations at the Tree House Site. This discussion is arranged by archaeological period, which are temporal divisions spanning hundreds or thousands of years where human life is assumed to have remained relatively constant. Different periods are marked by changes in environment, subsistence, technology, settlement patterns, or social life, or more often a combination of these changes. Shorter term temporal divisions are indicated by sub-periods and phases, which are defined by less drastic changes such as changes in **projectile point** or pottery styles.

Figure 10. View of the Saluda River from the Tree House Site.

Figure 11. Block A excavation, facing south.

Figure 12. Excavating one of the many features at the Tree House Site.

The Tree House Site

Pre-Clovis (ca. 15,000–13,500 years ago)

Over the last two decades archaeologists and other scientists have debated the timing of when humans first arrived in the New World. The traditional interpretation is that humans first arrived in North America approximately 13,500 years ago by crossing the Bering land bridge that connected Alaska to Siberia. From Alaska and northern Canada, these migrants moved southward through an ice-free corridor separating two massive glaciers, just east of the Canadian Rockies (Figure 13). Within a few hundred years, these people, referred to by archaeologists as Clovis, had settled across most of the Americas.

In addition to coming through an ice-free corridor, recent evidence from California suggests people may have migrated to the Pacific Coast in boats traveling from east Asia. Other researchers have speculated that some of the first Americans may have come from Europe; however, DNA evidence has cast doubt on this explanation, with an overwhelming amount of evidence pointing to an Asian origin for all Native Americans (Goebel et al. 2008).

Recently, a number of sites providing possible evidence for a pre-Clovis presence in the New World have been discovered. Sites dating between 15,000 and 13,500 years ago, although far from numerous, have been found in Alaska, Florida, Oregon, Wisconsin, and southern Chile. Even older sites are reported, with the oldest being the Topper Site in nearby Allendale County, South Carolina (Goodyear 2005). Researchers working at the Topper Site have reported radiocarbon dates in excess of 50,000 years from a possible hearth; however, the evidence is hotly contested and the earliest artifacts found at this site may have been formed through natural processes.

One area of research at the Tree House Site was to determine whether the site contained evidence of a Pre-Clovis occupation. Although excavation units were dug into soils dating back more than 18,000 years, no evidence of a Pre-Clovis occupation was found.

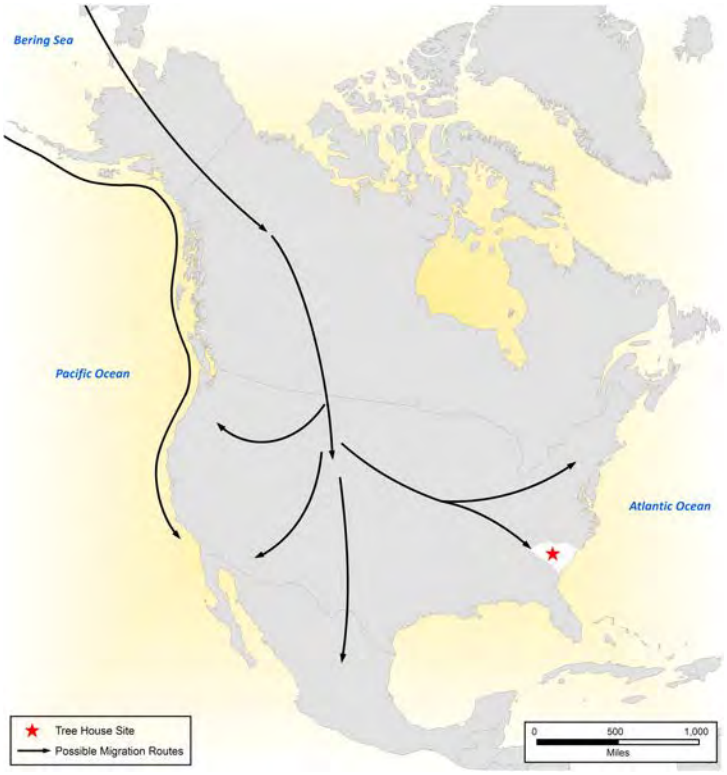


Figure 13. Possible migration routes from Asia into North America.

Figure 14. South Carolina's geographical regions and Paleoindian coastline.

Paleoindian Period (ca. 13,500–10,000 years ago)

During the Paleoindian Period, as the glaciers to the north began retreating, precipitation increased, winters became cooler, and summers became warmer. At the beginning of this period, most of South Carolina was cool and dry, with boreal tundra and spruce-pine forests covering most of the state. Sea level was more than 230 feet lower than current levels, with the coastline located approximately 15 miles away from the current South Atlantic shore (Figure 14). By the end of this period, the climate ameliorated, rainfall was more frequent, and the state was covered with deciduous forests that contained beech, elm, hickory, oak, and birch (Anderson et al. 1996; Goodyear et al. 1989).

It is thought that during the Paleoindian Period, people lived in small, highly transient bands in settlements concentrated along major rivers near the Fall Line and in the Coastal Plain. Settlements were comprised of five distinct, but interrelated site types: quarries, lithic reduction camps, short-term maintenance camps, residential base camps, and hunting camps/kill sites (Gardner 1994).

The artifacts seen in Figure 15, found during excavations at the Tree House Site, are among the oldest found in the New World. Made sometime around 13,000 years ago, these tools were used for hunting and processing extinct species of animals such as mammoth, mastodon, bison, giant sloth, and tapir. The people who made Clovis points lived during the early portion of the Paleoindian Period, but seem to have largely disappeared with the onset of the Younger Dryas, a significant cooling trend that occurred between 12,800 and 11,500 years ago. During that time temperatures dropped an average of approximately 10° Fahrenheit and many of the large animals they hunted died out.

Figure 15. Paleoindian Tools (from left to right): Coastal Plain chert side-scraper; Coastal Plain chert end-scraper; Clovis point made of Black Mingo Chert; Tool made from petrified wood, probably used to split animal bone and cut and scrape hides.

There are two Paleoindian components represented at Tree House: an Early Paleoindian Clovis occupation (13,500–12,900 years ago), and a Late Paleoindian Dalton occupation (10,500–9900 years ago). Judging by the number of artifacts, these were the two smallest occupations at the site. Artifacts associated with these two components included one Clovis point, one Dalton point, two scrapers, one expediently made retouched tool, 15 pieces of lithic debitage and 6.5 ounces of fire-cracked rock (FCR). More artifacts may have been associated with these components, but they were stratigraphically indistinguishable from the later Early Archaic component. In addition to the artifacts, a Late Paleoindian date of 10,137±62 years before present (B.P.) (Cal. 10,093–9455 B.C., UGASM-RO1602) was obtained from a shallow pit feature found in the wall of an excavation trench at about 95 inches below the ground surface.

Paleoindian artifacts found at Tree House indicate short-term use of the site by relatively mobile populations. All of the tools found could have been used for hunting and butchering, and it is likely that the site was used as a hunting camp during the Early and Late Paleoindian sub-periods. Lithic raw materials associated with the Paleoindian component tended to be high quality materials such as Black Mingo chert, Coastal Plain chert, and crystal quartz, although lesser quality, harder to knap local materials such as milky quartz were used as well.

Early Archaic Period (ca. 10,000–8000 years ago)

Environmental change at the end of the Pleistocene (the last glacial epoch) led to changes in human settlement patterns, subsistence strategies, and technology (Figure 16). As the climate warmed and many large animals became extinct, population size increased and there was a decrease in territory size and settlement range. For most of the year, people were organized into small communities of 25 to 50 people whose main territory surrounded a portion of a major river, such as the Saluda and Broad rivers. During the early spring, groups would hunt and forage for food in the lower Coastal Plain, and then move inland to temporary camps in the Piedmont and mountains during the summer and early fall. In the late fall and winter, people would assemble at larger base camps in the upper Coastal Plain, near the Fall Line. It is believed that during this period people would gather into groups of about 500 to 1,500 people for communal food harvesting, performing rituals and ceremonies, trading, socializing, and exchanging information (Anderson and Hanson 1988).

Figure 16. Early Archaic points. Top row: Dalton point and two Palmer points; Middle row: Taylor Side-notched points; Bottom row: Kirk Stemmed points.

The Early Archaic artifact assemblage at Tree House included two Palmer points (one made of crystal quartz and one coastal plain chert); three Taylor side-notched points (all orthoquartzite); three Kirk Stemmed points (two non-local rhyolite and one quartz); six bifaces (five quartz and one non-local rhyolite) (Figure 17); two quartz utilized flakes; one quartzite retouched flake; 117 pieces of lithic debitage; and just over two pounds of FCR. These artifacts exhibit a greater diversity of raw materials than the preceding Paleoindian Period. Based on this assemblage, it appears that a shift had begun from primarily using high quality lithic resources to using a combination of high quality and readily available raw materials.

Figure 17. A variety of chipped stone tools from different time periods. Top row (left to right): Two unifaces and an adze. Bottom row: a knife, drill, and two bifaces.

There were also at least eight Early Archaic features found, including four fairly large (8-inch diameter) post molds that could have been part of a structure. The possible structure was discovered in Block A between 86 and 91 inches below the ground surface. A hearth was identified 10 feet north of the structure and a radiocarbon sample taken from the feature yielded a date of 9500±60 B.P. (Cal 9140–8970 and 8940–8630 B.C.; Beta-252727). This hearth, and a concentration of FCR located inside of the possible structure, would seem to indicate it was occupied during the colder months. Supporting this was the recovery of hickory and walnut shell found in some of the Early Archaic features. These remains indicate that the site was occupied during the fall when nuts could be gathered.

Middle Archaic Period (ca. 8000–5000 years ago)

The Middle Archaic Period coincides with the start of the Hypsithermal, a significant warming trend where pine forests replaced the oak-hickory forests of the preceding period. Large Middle Archaic sites like Tree House tend to occur along rivers, while numerous small, lithic scatters dot the uplands between river valleys. Subsistence was based on a wide variety of plant and animal resources such as white-tailed deer, squirrel, nuts, fish, and migratory birds. Middle Archaic tools (Figure 18) tend to be expediently manufactured from locally available raw materials like quartz and have a more rudimentary appearance than those found during the preceding Paleoindian and Early Archaic periods (Sassaman and Anderson 1995).

Figure 18. Middle Archaic points, all made from quartz or quartzite.

There were at least three Middle Archaic occupations at the Tree House Site. These are represented by five quartz Morrow Mountain points, 11 quartz Guilford points, two Brier Creek points (one local rhyolite and one quartz), and at least nine features (pits, posts, and hearths). There were also 99 chipped stone tools including 38 bifaces, nine scrapers, two gravers, one drill (Figure 17), 25 retouched flakes, and 24 utilized flakes (Figure 19). Other artifacts from the Middle Archaic components included eight hammerstones and anvils, 21 cores, 2,109 pieces of lithic debitage, 14 pieces of hematite, and more than 145 pounds of FCR.

Some of the nine Middle Archaic features found at the site contained hickory and walnut shell, pine, and dense concentrations of FCR. There was also a possible structure identified in Block A at 69 inches below the ground surface that included at least three post molds and a small pit. All of this evidence indicates intensified use of the site during the Middle Archaic and that it likely functioned as a repeatedly occupied semi-permanent base camp.

Figure 19. Utilized flakes. Arrows indicate utilized edge.

Late Archaic Period (ca. 5000–3500 years ago)

The Late Archaic Period saw a number of important developments in the region, including an increase in sedentism, the introduction of soapstone (Figure 20) and ceramic vessel technology, the use of pit storage, and possibly the beginnings of small-scale horticulture. Recent analyses of Late Archaic settlement patterns in the sand hills and adjacent areas indicate that large groups gathered at sites along major rivers in the spring and summer, and established base camps near large tributaries that were occupied during the spring through early fall. These large gathering areas may have been used for ritual feasting and other communal activities.

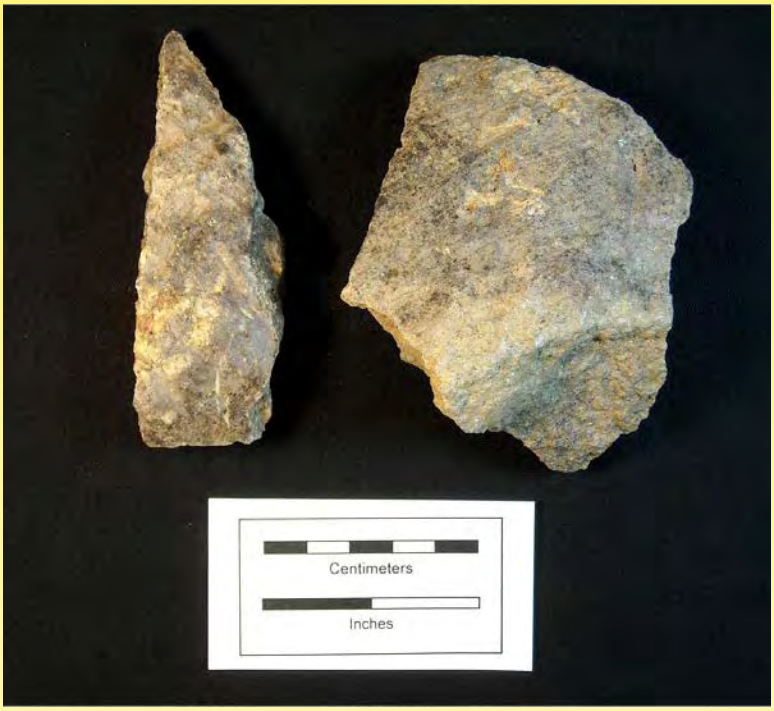


Figure 20. Soapstone cooking vessel fragments.

During the spring and summer, Late Archaic people gathered large amounts of shellfish. It is not known why this productive resource was not made use of earlier, but one explanation is that the environmental conditions conducive to the creation of shellfish beds were not in place until the Late Archaic. Other resources that would have been used in the spring and summer months include anadromous and freshwater fish, white-tailed deer, small mammals, birds, and turtles. During the late fall and winter, people moved into the uplands and subsisted on white-tailed deer, turkey, and nuts such as hickory and acorn. It is also likely that plants such as squash and gourds, sunflower, sumpweed, and chenopod were being cultivated on a small-scale basis at this time (Sassaman et al. 1990).

There is at least one Late Archaic component at Tree House, a Mill Branch Phase component dating from around 4700 to 4200 years ago. This component contained 15 Savannah River points (seven quartz, six non-local rhyolite, one local rhyolite, and one diabase) (Figure 21); 75 additional chipped stone tools (17 bifaces, one perforator, one knife, 26 retouched flakes, and 30 utilized flakes; four hammerstones, two anvils, one abrader; five cores; two soapstone cooking disk fragments; 5,222 pieces of lithic debitage; over 100 pounds of FCR; and two possible features. Overall, evidence obtained from the site indicates that during the Late Archaic the site may have been used as a repeatedly occupied seasonal base camp, possibly during the spring through early fall.

Figure 21. Late Archaic Savannah River points.

Figure 22. Vincent pottery sherd with a mending hole. This sherd was TL dated to 3420±180 years ago.

Transitional Late Archaic/Early Woodland Period (ca. 3500–2600 years ago)

The transition from the Late Archaic to Woodland period saw a number of important developments in the region, including a gradual increase in population and sedentism; the widespread adoption of ceramic vessel technology; the introduction of bow and arrow technology; the intensification of horticultural activities; the establishment of long distance trading networks; and the use of conical burial mounds for interring the dead. Like the preceding Archaic Period, the Woodland is traditionally divided into three sub-periods: Early Woodland (3000–2600 years ago), Middle Woodland (2600–1500 years ago), and Late Woodland (1500–1000 years ago).

By 2600 years ago, pottery was used throughout most of the Southeast and there is a proliferation of different pottery styles in the Carolinas and Georgia. The limited data available on Early Woodland settlement patterns in the Upper Coastal Plain indicate a shift away from riverine settings, with small, semiautonomous groups living in the uplands at sites containing relatively few artifacts and little artifact diversity (Sassaman et al. 1990). In the Piedmont, there are few documented Early Woodland sites and a low population density is inferred. Subsistence data indicate a continuation of Late Archaic diet, including white-tailed deer, bear, small mammals, reptiles, and freshwater fish. One major difference, however, is that unlike the preceding Late Archaic Period, shellfish do not appear to have been an important part of the diet (Hanson and DePratter 1985).

Figure 23. Transitional Late Archaic/Early Woodland and Middle Woodland projectile points.

One piece of pottery found at the Tree House Site, tentatively identified as belonging to the Vincent pottery series (Figure 22), was thermoluminescence (TL) dated to 3420±180 B.P (UW1991). Vincent pottery is not usually found in this area; however, it is typically found with Thelma points in the North Carolina Piedmont. This pottery type has never been reliably dated, although its association with Thelma points has led researchers to conclude that it is an Early Woodland type. The unexpectedly early TL date on the Vincent pottery might have been dismissed except the pottery was found in place, stratigraphically below the Middle Woodland levels and in close proximity to a number of transitional Late Archaic and Early Woodland points (Figure 23). There were also two unusual burnished sherds, three soapstone-tempered sherds (Figure 24), two soapstone vessel fragments, nine chipped stone tools (eight bifaces and one uniface), three hammerstones; five cores; 741 pieces of lithic debitage, 24 additional pottery sherds, and one box turtle shell fragment found in close proximity to the Vincent pottery.

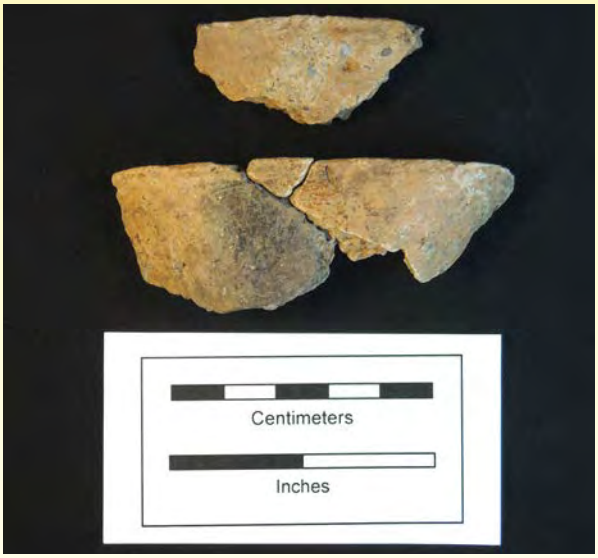


Figure 24. Soapstone-tempered pottery, part of the transitional Late Archaic to Early Woodland Craig Phase artifact assemblage.

Based on this evidence, it appears that a previously unidentified transitional Late Archaic/Early Woodland component dating to around 3500 years ago is represented at the Tree House Site. During this time the site appears to have been used as a short-term, special purpose encampment, perhaps a hunting camp. If additional work confirms the existence of this new artifact complex, it will be named the Craig Phase after the landowners of the Tree House Site.

Middle Woodland Period (ca. 2600–1500 years ago)

Middle Woodland occupations in South Carolina are not well documented, especially in non-coastal areas. Coastal models tend to follow those created for the Florida and Georgia coasts, which posit that during the winter and summer months groups moved to the coast and lived in small, semi-permanent villages located adjacent to tidal creeks and marshes. From these locations they would fish, gather shellfish, and exploit a variety of other marine and estuarine resources. In the fall, small groups moved inland to terraces adjacent to swamps to gather nuts and hunt white-tailed deer. Horticulture is thought to have increased in importance during this period, with plants such as maygrass, goosefoot, knotweed, and sunflower being harvested (Milanich and Fairbanks 1980).

In contrast, evidence from a large site in the central Savannah River Valley suggests a year round settlement occupied by a small resident population. Several hundred pits, posts, human burials, and dog burials were found at the site. White-tailed deer was the primary food source, with alligator, turtle, fish, turkey, freshwater mussels, hickory, and acorns also being used (Sassaman et al. 1990). On the other end of the settlement spectrum, a small site in Columbia located approximately 10 miles southeast of Lake Murray contained few features and had little artifact diversity, suggesting a repeatedly occupied, seasonal hunting/butchering camp (Anderson 1979). Taken together, these sites seem to indicate a pattern where small villages were occupied on a year-round basis, with smaller outlying sites representing seasonally occupied special purpose camps.

The Middle Woodland Period (2600–1500 years ago) at the Tree House site is represented by at least two Deptford Phase occupations: a Deptford I component dating to around 2100 years ago as indicated by two pottery fragments that were TL dated to 2110±120 B.P. (UW1992) and 2060±90 B.P. (UW1990), and a Deptford II occupation dating to around 1700 years ago as indicated by a radiocarbon date of 1700±40 B.P. (Beta 252726) obtained on charcoal from a fire pit. The two Deptford occupations contained two quartz Yadkin points; 12 bifaces; two scrapers; one uniface; one **adze** (Figure 17); one retouched flake; four utilized flakes; 1,188 pieces of debitage; five hammerstones; one abrader; 10 cores; 37 pounds of FCR; 434 pieces of Deptford pottery (Figure 25); and over two pounds of clay **daub** that may have been used for plastering the walls of houses. There is also at least one structure, but there is very little daub or burned clay around the structure indicating it may have been covered in thatch instead of daub. In contrast, a second possible structure, located in the northern portion of Block A, contained at least four post molds, as well as relatively dense concentrations of daub and pottery.

Figure 25. Middle Woodland Deptford Check Stamped pottery.

The first Middle Woodland structure appears to be oval or D-shaped, with a double line of posts along the exterior of the structure and an entrance facing toward the southwest. There was a one foot lens of light gray fine sand found in the interior of the structure (Figure 26), indicating it may have been set partially below the ground. Seven small post molds in the interior may have been posts for racks or benches. Hearths and FCR were found outside of the structure, suggesting that it may have been used as a spring or summer habitation (Figure 27).

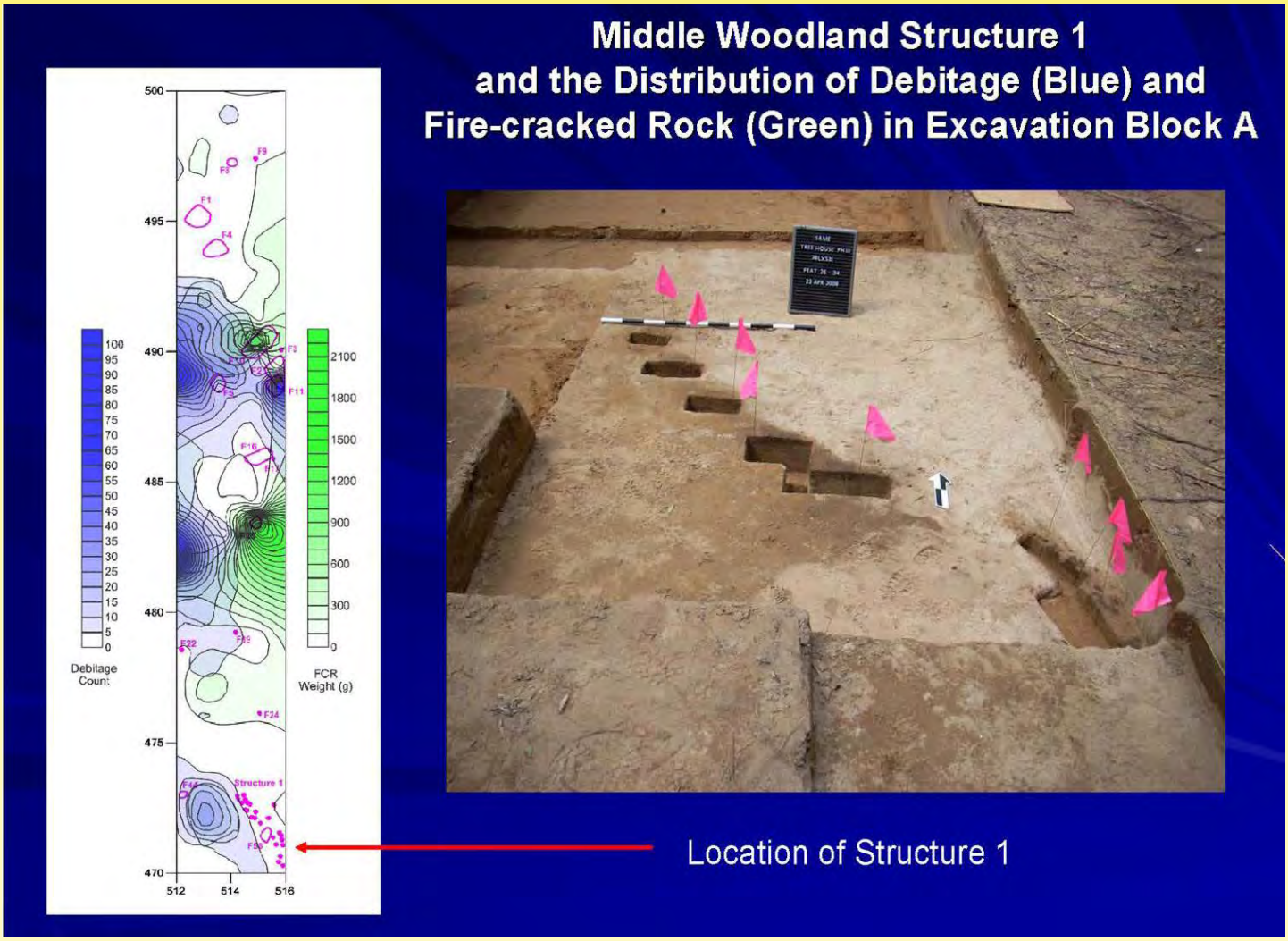


Figure 26. Remains of a Middle Woodland house found at the Tree House Site. In the image on the right, the pink flags are the location of individual posts and the lighter colored sand is the entrance and interior of the structure. On the left is a distribution map of artifacts found in the same excavation trench as Structure 1. The artifact voids near the center and top of the map may indicate the location of additional structures.

Figure 27. Feature 25, Middle Woodland hearth, facing west.

The Middle Woodland components at Tree House seem to be indicative of a semi-sedentary hamlet or small village that was occupied primarily during the summer and fall. Wood charcoal found in Middle Woodland features included pine, hickory, maple, oak, and white oak, while nutshell included hickory, walnut, and acorn indicating a fall occupation. Seeds found in Middle Woodland features include maypop and crabgrass, which are available for harvest from July through October, and blackberry/raspberry, which is available for harvest in June and July. Plum pit fragments were also recovered, with plums ripening in July and August. Faunal remains included white-tailed deer, box turtle, and freshwater mussel. In addition, residue analysis of two Deptford pottery sherds revealed varying levels of plant and meat residues on the interior of cooking vessels, indicating that a wide variety of food resources were being used.

Late Woodland Period (ca. 1500–1000 years ago)

Very little is known about the Late Woodland Period in South Carolina as sites of this time period are rarely encountered. In general, Late Woodland societies tend to be marked by an increasingly sedentary lifestyle and improvements in food storage and food preparation technologies. Although corn and squash were used in the region at this time, they did not comprise a significant part of the diet.

Some have suggested that the South Carolina Piedmont may have been a relatively uninhabited buffer zone between warring groups as it was during portions of the subsequent Mississippian Period (e.g., Trinkley 1990). Another possible explanation is that sites of this time period are underrepresented because of the difficulty in distinguishing Late Woodland artifacts from other artifact assemblages. There was no definite Late Woodland component found at the Tree House Site, although some of the Triangular points shown in Figure 28 may date to this period.

Figure 28. Mississippian and possible Late Woodland triangular points from the Tree House Site.

Mississippian Period (ca. 1000–500 years ago)

The Mississippian Period saw a number of dramatic changes across most of the Southeastern United States. Mississippian societies were complex sociopolitical entities that were based at mound centers, usually located along the floodplains of major rivers. The flat-topped platform mounds served as both the literal and symbolic manifestation of a complex sociopolitical and religious system that linked chiefdoms across a broad network stretching from the Southeastern Atlantic Coast to eastern Oklahoma to southern Wisconsin. Mound centers were surrounded by outlying villages that were usually built along major rivers to take advantage of the rich floodplain soils. Smaller hamlets and farmsteads dotted the landscape around villages, and provided food, tribute, and services to the chief in return for protection and inclusion in the sociopolitical system (Green and Bates 2003). Pottery of this time period tended to be more elaborate and better made than that found during the preceding Woodland Period (Figure 29).

Figure 29. Mississippian Pottery.

The Mississippian component at the Tree House Site contained 12 triangular points (10 quartz, one non-local rhyolite, and one quartzite) (Figure 28); nine bifaces; four retouched flakes; four utilized flakes; one hammerstone; two cores; 2,975 pieces of debitage; 38 pounds of FCR; 54 pieces of pottery; and just over two ounces of daub or burned clay. Based on the pottery, the site appears to date to the Savannah Phase, approximately 850–700 years ago. In examining the triangular points recovered from the site, it was noted that many were very well-made, with some being finely serrated. Some of these well-made points were made of quartz, which is very difficult to knap. This likely indicates these points were made by people specializing in this type of tool manufacture.

Throughout much of the Mississippian Period, subsistence was focused primarily on maize agriculture and supplemented by the hunting and gathering of aquatic and terrestrial resources (Anderson 1994). There is no evidence for horticulture or agriculture at the Tree House Site; however, hickory/walnut shell and blackgum seeds, both indicating a fall occupation, were recovered. In addition, large numbers of white-tailed deer, box turtle, mud turtle, and other mammal and vertebrate remains were recovered from a large pit feature at the site. Wood charcoal recovered from the same feature included pine, hickory, oak, and white oak.

Based on the results of initial testing, and the relatively small number of Mississippian artifacts found during the data recovery, the majority of the Mississippian component seems to be located in unexcavated portions of the site. Given the available evidence, however, the site would appear to represent a small Mississippian farmstead.

GLOSSARY

Abrader – A stone tool used for smoothing a rough surface. Typically made of sandstone or a similar abrasive material.

Adze – A chipped or ground stone tool used for shaping wood.

Anvil – A block of stone used for making chipped stone tools. A core is placed on the anvil and then struck by a hammerstone to either shape the core into a tool or to obtain usable flakes.

Arch Conduit – A large water transport tube that was used to divert the Saluda River during the construction of the Saluda Hydroelectric Project dam.

Backcountry – A general term referring to a remote or isolated geographical area. In South Carolina it generally referred to the northwestern half of the colony in the 1700s.

Biface – A stone tool having two opposing chipped surfaces that converge to form a sharp edge. A projectile point is specific type of biface.

Boreal – Pertaining to the northern latitudes, particularly forested areas of the North Temperate Zone that are dominated by coniferous trees such as spruce, pine and fir.

Burnished – A pottery surface that has been rubbed to make it very smooth or shiny.

Chert – A cryptocrystalline or microcrystalline sedimentary rock that is the preferred material for making chipped stone tools in the eastern United States. Flint and chalcedony are high quality types of chert. Chert can be found in several areas of South Carolina including Allendale and Clarendon Counties, and in the Blue Ridge Mountains of Georgia, North Carolina, and Tennessee.

Component – A single occupation of a site that is interpreted to be the remains of a group of people living together over a relatively short period of time. Similar components across multiple sites make up a Phase.

Cooking Disk – Perforated soapstone slabs used for indirect cooking. The slab is heated and then dropped into a pot to heat the contents.

Core – A piece of rock that exhibits evidence of intentional flake removal. Used as the basis for making chipped stone and flake tools.

Cultural Resource Management – A process used for the identification, evaluation, protection, and management of archaeological and historic sites, buildings, and other objects of cultural and historical importance.

Daub – A clay coating that is applied to timber or wattle (interlaced twigs) walls to create a smooth, weather-resistant surface.

Deciduous – Trees and other plants that lose their leaves during certain seasons of the year. The opposite is evergreen.

Diabase – Also known as dolerite, is a dark, fine-grained igneous rock sometimes used for making chipped or ground stone tools. When crushed, it can be used as a tempering agent in pottery.

District – South Carolina's local judicial unit, established in 1769 and converted to counties in 1868.

Feature – Any non portable archaeological remain. Examples include storage pits, hearths, burials, and structural remains (e.g. post molds). Features can be contrasted with artifacts, which are portable.

Fire-Cracked Rock (FCR) – Rock that has been reddened and cracked by repeated heating. Typically they are locally available stones that are used in hearths or firepits.

Flake – A thin piece of rock removed from a core.

Graver – A stone tool with a chiseled tip that is used for incising organic materials and soft stone.

Head – The difference in height between the source of water and its output; the head of a dam helps determine its potential energy.

Hematite – The mineral form of iron oxide. Often reddish in color, it can be ground into powder and used to make pigments.

Historic Property – An historic property, as defined in 36 CFR Part 800.16, is any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places.

Hominid – The taxonomic family of great apes (hominidae). This includes humans and their closest relatives, chimpanzees, gorillas, and orangutans.

Knap – The process of removing flakes to create stone tools.

Lithic –Derived from the Greek word meaning stone or pertaining to stone.

Lithic Debitage – Stone tool chipping debris (e.g., flakes). This is the byproduct of making stone tools.

National Register of Historic Places – The official federal list of districts, sites, buildings, structures, and objects significant to American history, architecture, archaeology, engineering, and culture. It is also often referred to as the National Register or the NRHP. The National Register is administered by the National Park Service and listing in the National Register is an honorific recognition.

New South – A term coined by Henry W. Grady of the Atlanta Constitution referring to a modernized and industrialized South, in contrast to the plantation based Old South.

Orthoquartzite – A sedimentary rock composed almost entirely of cemented quartz grains. High quality orthoquartzite can be used to make chipped stone tools. Peachtree Rock in Lexington County is the closest known source of orthoquartzite to the Tree House Site.

Penstock – An intake structure that controls water flow. At the Saluda Hydroelectric facility it is an enclosed pipe that delivers water to the hydroelectric generating equipment.

Perforator – A stone or bone tool typically used for puncturing animal hides.

Pleistocene – The geologic epoch spanning the most recent glaciations from about 2.6 million years ago to 11,700 years ago. This is followed by the Holocene, which is the modern epoch.

Post mold – The organic staining of the soil left behind after a wooden post decomposes.

Projectile Point – A bifacial stone tool with a hafting element that is used as a projectile tip. Examples include arrowheads, darts, and spear points.

Reconstruction – The period of readjustment in the South following the Civil War, between 1865 and 1877.

Regulators – An uprising of inland residents rebelling against colonial governments in North Carolina and South Carolina from 1760 to 1771.

Retouched Flake – A flake that has been intentionally modified for use as an expedient tool. These flakes typically exhibit small, regularly spaced flake scars along one or more edge.

Rhyolite – A fine-grained igneous rock that is the volcanic equivalent of granite. Rhyolite can be used for making chipped or ground stone tools. There were two main sources of rhyolite found at the Tree House Site: Spring Branch rhyolite from western Saluda County, South Carolina (referred to as local rhyolite), and rhyolite from the Uwharrie Mountains in North Carolina (non-local rhyolite).

Scraper – A chipped stone tool used for scraping hides or shaping wood. The working edge is steep, usually with an angle of between 60 and 90 degrees. Common forms include endscrapers and sidescrapers.

Sedentism – The process of settling down to live in a particular area for an extended period of time.

Semi-permanent – Occupation of a site through several seasons. The site is frequently reoccupied on an annual basis.

Sharecropping – Arrangement where a landowner rents land to farmers in return for a portion of the crops grown on the land.

Short-staple cotton – A coarse strain of cotton, with relatively short fibers, that could be grown in a variety of soils and climates but had fibers that were difficult to separate from its seeds.

Soapstone – Also known as steatite. This is a soft metamorphic rock composed largely of talc. It has a soapy feel and is easily carved to make cooking vessels and cooking disks. It is an ideal substance for cooking as it absorbs and even distributes heat without fracturing. Prehistoric soapstone quarries are found in Cherokee and Spartanburg counties, South Carolina.

Spillway – A structure that allows the release of water from a reservoir in order to relieve flood conditions.

Stratified/Stratigraphy – Soil and rock layers that comprise a geological or archaeological deposit. Based on the law of superposition, older deposits will be more deeply buried than more recent deposits.

Temper – Material such as sand or crushed quartz that is intentionally added to pottery before it is fired. The tempering agent makes the pot more resistant to cracking, which can be caused by expansion of the clay during heating.

Tenancy – Economic system where a land is rented to farmers, usually for cash or for a combination of cash and a share of crops.

Thermoluminescence (TL) – is a dating technique that measures the amount of accumulated radiation since the pottery sherd was last heated. This technique can also be used for dating sediments by measuring the accumulated radiation since the soil was last exposed to sunlight.

Turbine – A rotary engine that uses fluid flow to produce electricity. At the Saluda Hydroelectric facility it consists of a drum with blades attached mounted on a shaft, which rotates when water flows through it.

Uniface – A chipped stone tool modified on only one surface. A scraper is type of uniface.

Utilized Flake – A flake that has been used as an expedient tool without intentional modification. Utilized flakes typically exhibit usewear in the form of micro-flake scars and/or grinding along the utilized edge.

FOR MORE INFORMATION

Archaeology in South Carolina

Archaeological Society of South Carolina – http://assc.net/

South Carolina Institute of Archaeology and Anthropology – http://www.cas.sc.edu/sciaa/

Archaeology in the United States

National Park Service – http://www.nps.gov/archeology/

Paleoindian Database of the Americas – http://pidba.utk.edu/main.htm

Society for American Archaeology – http://www.saa.org/

OTHER RESOURCES

Advisory Council on Historic Preservation – http://www.achp.gov/

National Register of Historic Places – http://www.nps.gov/nr/

National Trust for Historic Preservation – http://www.preservationnation.org/

South Carolina State Historic Preservation Office – http://shpo.sc.gov/

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SUMMARY OF THE TREE HOUSE SITE

The Tree House Site is an extremely important archaeological site that has provided a wealth of information on nearly every archaeological time period extending back more than 13,000 years. Because of its importance, SCE&G is preserving the entire portion of the site located on their property for future generations, approximately half of the total site area. In doing so, SCE&G has demonstrated its commitment to understanding and preserving the archaeological heritage of South Carolina and has received State and National acclaim by winning the 2011 National Hydropower Association Outstanding Stewards of America's Waters Award, a 2011 Excellence in Engineering Award from the American Council of Engineering Companies of South Carolina, and the 2009 Palmetto Trust for Historic Preservation Corporate Stewardship Award.

PROTECTING OUR ARCHAEOLOGICAL HERITAGE

Archaeological sites are a fragile, non-renewable resource. Once a site has been looted or vandalized it can never be replaced. Thousands of archaeological sites across the country are damaged each year by people collecting artifacts for monetary gain or as a hobby. Whether done for illicit purposes or not, collecting artifacts from a site, even from the surface, causes irreparable damage. It's like removing pieces of a jigsaw puzzle—the more pieces that are removed, the harder it is to get a picture of what a site may have looked like when it was inhabited. Information from that site is lost forever. Disturbing human remains or gravesites is even worse and is considered a felony under South Carolina state law.

Collecting artifacts from around Lake Murray is considered trespassing. The same applies to privately owned property around the lake. Without the landowner's consent, you cannot enter their property to collect artifacts. To collect artifacts in and around Lake Murray for legitimate purposes, you may apply for a permit from SCE&G and submit the form to the SCE&G Fossil/Hydro Technical Services Manager of Civil Engineering.