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Source: Southeastern Archaeology, Winter 2012, Vol. 31, No. 2 (Winter 2012), pp. 221-230

Published by: Taylor & Francis, Ltd. on behalf of the Southeastern Archaeological Conference

Stable URL: https://www.jstor.org/stable/24780099

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DENDROCHRONOLOGICAL DATING OF THE CHIEF JOHN ROSS HOUSE, ROSSVILLE, GEORGIA

Georgina G. DeWeese,¹ W. Jeff Bishop,² Henri D. Grissino-Mayer,³ Brian K. Parrish,⁴ and S. Michael Edwards⁴

The Chief John Ross House is a two-story oak (Quercus spp.) and eastern red cedar (Juniperus virginiana L.) log structure located in downtown Rossville, Georgia. The log structure was reportedly built in 1797 by John McDonald, grandfather of Chief John Ross, for his Cherokee bride. This construction date first emerged in the 1950s, when efforts were underway to save the structure. Historical documents, however, indicate that the structure did not exist until 1816. Ross lived at the structure until 1828, when he was elected the last principal chief of the Cherokee before the tribe's forced removal during the Trail of Tears. Using dendroarchaeological techniques, 28 archaeological (increment) cores were removed from the oak portion of the structure in 2007 to verify the construction date. Cores were processed and dated using the white oak (Quercus alba L.) Piney Creek Pocket Wilderness, Tennessee chronology. Of the 28 cores, 22 (from 19 trees) yielded cutting dates clustered around the winter of 1816–17, indicating the structure likely was not built by McDonald. This construction date does, however, make it possible for Chief John Ross himself to have been the builder. This correction to history should increase public attention and preservation efforts at the structure.

The dating of nineteenth-century historic sites around the Southeast has largely come from historical documents and accounts, land deeds and records, and oral tradition. Traditionally, the use of dendrochronology in Southeastern historical archaeology has been limited by a lack of existing chronologies that can be used to date wood from historic structures, misconceptions regarding the formation of annual tree rings in the Southeast, and poor sampling and preservation practices (Grissino-Mayer 2009). During the preceding decades, however, a better understanding of growth patterns in eastern trees, standardized sampling practices, and the creation of numerous tree-ring chronologies have made dendrochronology a reliable dating method in the Southeast. Thus when traditional methods of dating fail or fall short, dendrochronology can be used to apply Christian calendar years to tree rings contained in wooden structures. The information from this type of analysis helps determine the cutting dates of the trees used in log structures and ultimately provides the construction year(s) of the structures.

Recent dendrochronological studies at several Southeastern historic sites have proven that accepted construction dates based on documentary evidence and oral tradition are inaccurate (e.g., Grissino-Mayer and van de Gevel 2007; Henderson et al. 2009; Mann 2002). Such is the case with this report on the dendrochronological dating of the Chief John Ross House in northwestern Georgia (Figure 1). As described in more detail below, the log structure was reportedly built in 1797 by John McDonald, grandfather of Chief John Ross, for his Cherokee bride. However, historical documents indicate that the structure did not exist until 1816. Dendrochronological dates support the later construction date and the inference that the home was constructed by Ross himself.

Beyond the particulars of the dating of the log structure, dendroarchaeological study of the Chief John Ross House has the potential to provide a new tree-ring chronology for northwestern Georgia where no others currently exist. Tree-ring chronologies of similar importance have been created in the Southeast recently (e.g., Blankenship et al. 2009; Grissino-Mayer et al. 2010; Grissino-Mayer and van de Gevel 2007; Henderson et al. 2009; Lewis et al. 2009; Mann 2002; Slayton et al. 2009; Wight and Grissino-Mayer 2004) and can be used to date other historic sites around the Southeast.

The Chief John Ross House through Time

The Chief John Ross House is of local and regional historical importance because it reportedly served as one of the first schools in northern Georgia (Bishop 2007:20; Ruskin 1958:28), the first post office (Allen 1936; Bishop 2007:20), and the first business (Allen 1936; Bishop 2007:20) from which not only Rossville, Georgia, but also Chattanooga, Tennessee, would

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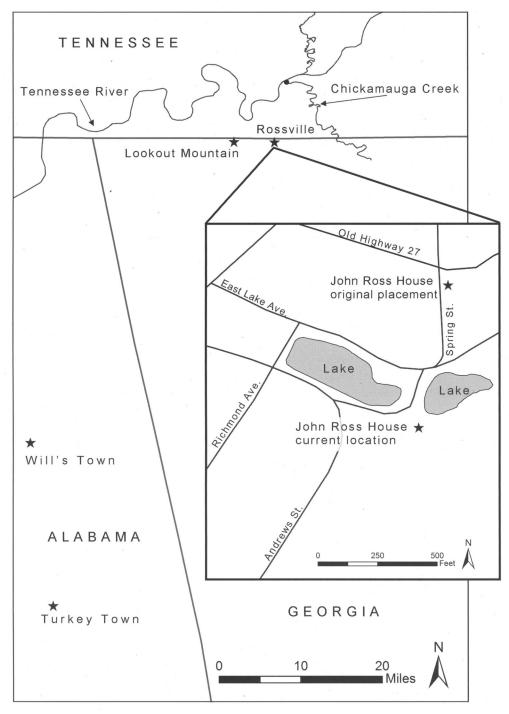


Figure 1. Map showing settlement areas of the McDonald-Ross family. Insert showing the location of the John Ross House, downtown Rossville, Georgia.

develop. The house is a two-story log structure with an open dog trot on the first floor (Figure 2) constructed with oak (*Quercus* spp.) and red cedar (*Juniperus virginiana* L.) logs falling under the category of "rough hewn" and the notches categorized as "V-notch" (Figure 3). It is said to be the boyhood home of Chief John Ross, the last chief to lead the Cherokee before and during the Trail of Tears in the 1830s. The house was one of the few structures in the area to survive the Civil War, serving as an important location for both Union and Confederate operations (Bishop 2007:20; Stafford 1982:13), but it fell into disrepair in succeeding decades.

In an effort to save the house from demolition in the 1950s, Gertrude Ruskin began publishing stories (1958, 1962) about the house that embellished its history.

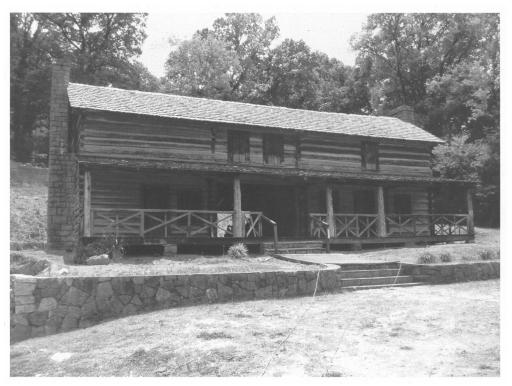


Figure 2. The Chief John Ross House. The house faces west-northwest; the portion of the house at lower right was sampled for this study.

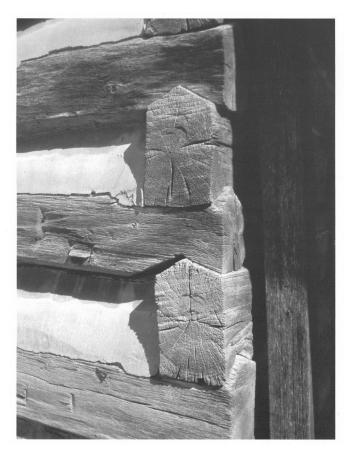


Figure 3. Hewn oak logs on the northeastern corner of the Chief John Ross House.

Ruskin (who often called herself "Princess Chewani") was a Euro-American lay historian/writer who would don the traditional dress of a Cherokee woman, complete with long, braided wig, to publicize the effort to save the house. According to Ruskin, the house had secret rooms, trap doors, and tunnels (Bishop 2007:12; Ruskin 1958:27). In a 1958 article for Georgia Magazine, Ruskin gave the house the construction date of 1797, probably based on an estimate provided by John P. Brown. According to the legend presented by Ruskin, the house was built by John McDonald in 1797 for his Cherokee bride, Ann Shorey (Bishop 2007:20); however, no historical documents or records exist to support this. In fact, by 1797, the McDonalds had been married 30 years and had two adult children, so it seems unlikely that the house is the bridal homestead history has made it (Bishop 2007:27).

Using maps and historical documents, such as diaries, journals, and Ross's own letters, McDonald's movements can be traced around the Cherokee Nation and surrounding Indian territories during his lifetime, helping determine if he could have constructed the Chief John Ross House. In the early 1770s, John McDonald and Ann Shorey settled on Chickamauga Creek near its junction with the Tennessee River, across from the future Chickamauga Town (Bishop 2007:28; Brown 1938:163; Hatley 1995:222–226; Pate 1969:80–81). A British and later a Spanish agent, McDonald left the Cherokee Nation in 1783 for St. Augustine but returned

in 1784 and settled on Running Water, a town on the Tennessee River west of Lookout Mountain (Bishop 2007:30; Brown 1938:246–247; Joseph Martin to Richard Caswell, letter, September 19, 1785, State Library Cherokee Collection, Tennessee State Library and Archives, Nashville, Box 1, Folder 17, Document ch013; Pate 1969:146, 160). McDonald and his family soon relocated to nearby Turkey Town (near Center, Alabama) from 1788 until the end of the Chickamauga War seven years later (Bishop 2007:33). John Ross was born there in 1790. He was the son of Daniel Ross, a Scottish trader, and Mollie McDonald, the quarter-Cherokee daughter of John McDonald and Ann Shorey (Bishop 2007:157; Brown 1938:32).

By 1794, McDonald had relocated to Will's Town (near present-day Ft. Payne, Alabama) (Bishop 2007:52). Historical documents and maps do not place John McDonald or Daniel Ross in Poplar Springs (Rossville) in 1797. Benjamin Hawkins (Hawkins 2003:53j), who traveled through the Lookout Mountain area in the summer of 1799 and knew both McDonald and Ross, makes no mention of them in his journal as he passed through the area where the Chief John Ross House now stands (Bishop 2007:57). Records of Moravian missionaries (Bishop 2007:54-55; Mauelshagen 1986) from 1800 and Ross's personal letters (Moulton 1985:3) written in subsequent years place McDonald and Daniel Ross again living on Chickamauga Creek, on what later became the site of the Brainerd Mission. Sometime after 1803, Daniel Ross built a home at the mouth of Chattanooga Creek at the foot of Lookout Mountain, a number of miles west of McDonald's house (Allen 1936; Bishop 2007:60).

The future Chief John Ross, according to legend, moved into the Chief John Ross House with his grandparents after the death of his mother in 1808 (Bishop 2007:70; Ruskin 1963:15–16), but contemporary historical records give no such indication. Save for his jaunts to the Arkansas territory in 1812-13 and to the Creek territory during the Red Stick War in 1813-14, Ross heads his letters with the location of "Chickamoga" (Bishop 2007:70-74; Moulton 1985), indicating that he likely was still living with his grandfather at the future Brainerd Mission site on Chickamauga Creek. The first written indication that Ross is living in his own home in the Lookout Mountain area, on the Old Federal Road, in likely what is now known as the Chief John Ross House, appears in a November 25, 1816, letter from Rev. Kingsbury to Dr. Samuel Worcester, who is giving out traveling advice: "They will take the main road from Georgia to West Tennessee and proceed on to Mr. John Ross's near Lookout Mountain, on the Tennessee River" (Walker 1993:24). This is right on the heels of Ross beginning a business venture with his brother Lewis Ross on the Tennessee River at Ross' Landing, and right after he is recorded traveling to

New York, in the autumn of 1816, to purchase goods for the opening of a store (Eaton 1921:24). In April 1817, John Ross begins writing letters with the Poplar Springs (Rossville) heading for the first time (Bishop 2007:86; Moulton 1985:30). It is not until 1817 that the McDonalds are recorded as living in Rossville. The McDonalds sold their improvements on Chickamauga Creek to missionaries and moved in with their grandson in late January 1817 (Bishop 2007:85; Phillips and Phillips 1998:27-28). Ross may have built the new house on the former estate of his uncle, Will Shorey, from whom he inherited property in 1809 (Bishop 2007:57-70), and he may have utilized his uncle's outbuildings. Traveler John Norton noted in 1809 that west of McDonald was "the house of a wealthy Cherokee," very likely Shorey, "who by trade and agriculture has acquired a considerable property," including a "capacious building" located on "a pond formed by a Spring" (Norton 1970:60).

John Ross left Rossville in 1827 for Head of Coosa (present-day Rome, Georgia) (Bishop 2007:92; Moulton 1985:128–129). At that point, Mary Coody Scales, the niece of John Ross, took over the Ross house and businesses in Rossville and on the Tennessee River (Bishop 2007:93).

From historical documents, we know that following the relocation of the Scales family in 1832, the MacFarland family purchased the Chief John Ross House (Bishop 2007:93; Walker County History Committee 1984). The house later served as both Union and Confederate headquarters during the Civil War. Photographs taken of the house by George Barnard (1866) following the Battle of Chickamauga in 1863 show a wasteland, with the Chief John Ross House the only thing left standing (Bishop 2007). In succeeding decades, the house was converted into apartments and a kitchen was added. In 1947, the Chief John Ross House was sold by the MacFarlands to Morgan Brothers grocers, with the understanding that the house would not be torn down for 25 years (Bishop 2007; Ruskin 1963). By the 1950s, the dilapidated house was surrounded on all sides by commercial real estate and slated for demolition. In 1957, Gertrude Ruskin, who had been instrumental in restoring the Cherokee landmarks of New Echota and the Chief Vann House, initiated efforts to save the Chief John Ross House.

When the house was relocated in 1962, care was taken to restore the house to its original condition with the aid of old photographs. The roof, kitchen, and weatherboarding were removed, and each log, window, and peg were labeled and carefully moved. In actuality, there are no trapped doors, secret rooms, or tunnels in the structure. Rot and blemishes were cut from the original logs, but there is no documentation of replacement logs (Bishop 2007; Lou Williams to the John Ross House Association, letter, April 1973,



Figure 4. Increment core from the Chief John Ross House.

scrapbook of the John Ross House Association, Inc., Decatur, Georgia). In 1974, the John Ross House was recognized as a National Historic Landmark (Bishop 2007).

Research Objectives

The primary objective of this research was to verify the construction date of the Chief John Ross House and determine if it should be designated a Georgia Trail of Tears site. Until recently, the house was dated to 1797; however, historical documents and maps indicate that the house did not exist until after 1816. By using dendrochronological techniques, the cutting dates of sampled logs in the house, and ultimately the construction date, can be determined. A secondary objective of this research, and in all dendroarchaeological research in the southeastern United States, is to help create a tree-ring database of reference tree-ring chronologies collected from historical structures for the purpose of dating other structures.

Sample Collection and Processing

Field Methods

Wood samples were obtained from individual logs using a drill fitted with a specialized 10-in hollow drill bit (Figure 4). This is typically done in the attic, basement, or the undersides of logs where the holes will be inconspicuous (Figure 5). As many samples as possible must be collected from the structure to ensure that a representative sample of construction-year wood is taken. It is very common to find older, salvage replacement wood in structures as well as younger, replacement wood which can skew the dating of a structure if there is not a proper sample depth.

Both red cedar and oak logs were available to core; however, we concentrated our sampling on the oak logs because (1) oak was more commonly used by early settlers to build log structures, and (2) the red cedar logs were deemed too small and too young for tree-ring dating purposes because they had fewer than 20 tree rings. Although no record of replacement logs in the Chief John Ross House was noted, the red cedar logs looked suspiciously young. We extracted 0.5-in diameter cores from oak logs in the cabin from the curved portion of the logs to ensure that sapwood, and potentially bark, were intact. The outermost ring is the most important part of each core because it provides the cutting date of each log. To assist the cross-dating process, logs from all four walls of the oak side of the house were cored. Whenever possible, each log was sampled both at the basal (bottom location on the tree trunk) and distal (upper location of the tree trunk) ends on a smooth, intact, curved surface, where the outermost ring was most likely preserved. By taking at least two cores per log, the expected effects of



Figure 5. Collection of increment cores from the Chief John Ross House.

intraring variability and possible influences of damage to individual cores were minimized. After the appropriate depth was reached, the core was extracted by dislodging the attached end of the core with a hooked, thin steel rod designed for that purpose.

The extracted cores were then immediately glued onto wooden core mounts with the cells aligned vertically so that the wood surface could be sanded on a transverse plane. All relevant information about each sample was written on the core mount. Sample identifications were assigned to the cores, which consisted of an abbreviation for the building (JR), the cardinal direction of orientation of the wall (N, S, E, or W), the log number (beginning with the bottom log = 01), and sequential letters for each core extracted from the log (A and B). Each side of the cabin was sketched and all sampled locations indicated on the sketch (after Slayton et al. 2009).

Laboratory Methods

Absolute cross-dating takes place in several steps: measurement of all tree-ring widths for each core sample, internal cross-dating of all samples against each other, creation of an undated (floating) chronology from core samples collected from the Chief John Ross House, and cross-dating the undated floating chronology against a regional chronology absolutely anchored in time (external cross-dating).

The core samples were mounted on site (Stokes and Smiley 1996) and sanded in the laboratory (Orvis and Grissino-Mayer 2002). Core samples were first crossdated graphically using skeleton plots, which involves basic pattern matching of wide and narrow ring patterns on graph paper (Stokes and Smiley 1996). For statistical cross-dating, all tree rings on all archaeological (increment) cores were measured to the nearest 0.001 mm using a Velmex measuring system interfaced with Measure J2X measurement software. COFECHA (Grissino-Mayer 2001; Holmes 1983), a software package that verifies the quality of cross-dating and measurement accuracy of and among tree-ring series, was used to confirm dates assigned by visual cross-dating methods. Correlation coefficients were tested in 40-year segments as a measure of the strength of the relationship that segment has with other 40-year segments throughout the reference chronologies. For this segment length, the critical correlation coefficient needed for statistical significance at the 99 percent confidence level is 0.37. Segments of series that fell below this critical value were flagged by COFE-CHA to be reinspected for cross-dating accuracy. These flagged segments often occurred in the interior rings of the full measurement series due to erratic ring patterns that could have arisen due to local disturbances. Because the segments on either side of these flagged segments were cross-dated accurately, these segments were retained in the final analyses, although their

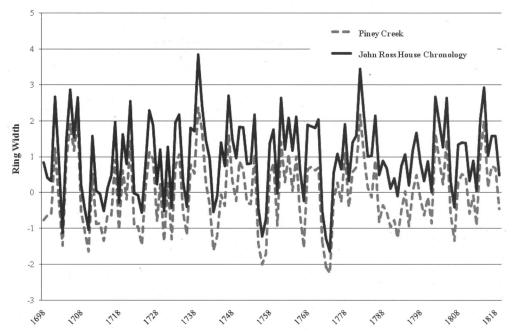


Figure 6. Comparison of the Piney Creek Pocket Wilderness Chronology and Chief John Ross House Chronology.

influence on cross-dating quality was diminished due to the large number of samples collected at each site (Grissino-Mayer 2001). Cross-dating is necessary because errors in dating can result in the overestimation or underestimation of the construction date. The quality of cross-dating is ultimately verified using two descriptive statistics: the average mean sensitivity and the average interseries correlation.

The outermost dated ring on each core sample was inspected under high magnification $(35\times)$ then assigned a symbol to help evaluate the possible cutting date of that tree (Bannister et al. 1966):

- B Bark is present, indicating the outer ring is fully intact (a cutting date).
- r Less than a full section is present, but the outermost ring is continuous around the available surface (considered a cutting date).
- v Date is within a very few years of being a cutting date.
- vv No way of estimating how far the last ring is from the true outside ring.

After the ring-width measurements for each core were graphically, visually, and statistically cross-dated against each other, a floating tree-ring chronology was created. Each measurement series was standardized to build the floating chronology using the program CRONOL (Cook 1985). CRONOL standardizes the raw measurements by fitting a trend line or curve to the individual series being modeled using the ordinary least squares technique (Cook 1985). Standardization is the correction of ring widths for the changing age and geometry in a tree (Fritts 1976). By standardizing, influences such as tree size, stand density, and competition within the stand are minimized (Friend and Hafley 1989).

Results

Internal Cross-Dating

Skeleton plotting of the cores from the John Ross House revealed several narrow rings that allowed for easy crossdating of cores against each other. Twenty-two (from 19 trees) of the 28 cores collected were successfully crossdated. The six cores that could not be dated either did not have enough rings, contained a branch node which obstructs the ring pattern, or contained too much rot. Of the 88 40-year segments dated, only eight were flagged due to low correlations; however, visual cross-dating revealed correct temporal placement.

Cross-Dating Verification

COFECHA software was used to confirm dates assigned by visual cross-dating methods. The average mean sensitivity was 0.21, suggesting that the trees were sensitive to climate fluctuations; values of 0.20 are common for southeastern sites (DeWitt and Ames 1978). The average interseries correlation was 0.59, with a correlation of 0.40 or higher being desirable for southeastern sites (Grissino-Mayer 2001; Grissino-Mayer and van de Gevel 2007).

| Table 1 | Statistics | for | Chief | Iohn | Ross | House | cores |
|----------|------------|-----|-------|-------|-------|--------|--------|
| Table 1. | Juliouco | 101 | Cruer | JOILL | 10035 | TIOUSE | COLES. |

| Log | Series | Begin Year | End Year | Interseries Correlation | Mean Sensitivity |
|-----|----------|---------------|-------------|----------------------------|---------------------|
| 1 | JREB03La | 1737 | 1789 | 0.72 | 0.21 |
| | JREB03Lb | 1726 | 1815 | 0.71 | 0.25 |
| 2 | JREB03R | 1727 | 1815 | 0.71 | 0.19 |
| 3 | JREB04La | 1728 | 1816 | 0.57 | 0.21 |
| | JREB04Lb | 1727 | 1816 | 0.55 | 0.19 |
| 4 | JREB04R | 1745 | 1816 | 0.62 | 0.17 |
| 5 | JRN04Lb | 1716 | 1816 | 0.58 | 0.24 |
| 6 | JREB05Lb | 1718 | 1816 | 0.37 | 0.19 |
| 7 | JRN04R | 1766 | 1816 | 0.62 | 0.15 |
| 8 | JRN07R | 1726 | 1816 | 0.45 | 0.20 |
| 9 | JRN05L | 1709 | 1816 | 0.46 | 0.22 |
| 10 | JRN06La | 1728 | 1815 | 0.67 | 0.21 |
| | JRN06Lb | 1758 | 1816 | 0.51 | 0.20 |
| 11 | JRS06Lb | 1710 | 1816 | 0.61 | 0.20 |
| 12 | JRN06R | 1740 | 1819 | 0.62 | 0.16 |
| 13 | JRS04L | 1749 | 1816 | 0.57 | 0.17 |
| 14 | JRS09L | 1711 | 1816 | 0.62 | 0.24 |
| 15 | JRSBEAM | 1742 | 1800 | 0.57 | 0.21 |
| 16 | JRW01L | 1784 | 1808 | 0.61 | 0.21 |
| 17 | JRW04L | 1698 | 1816 | · 0.65 | 0.27 |
| 18 | JRW08L | 1714 | 1816 | 0.55 | 0.18 |
| 19 | JRW10R | 1717 | 1815 | 0.65 | 0.21 |

Table 2. Correlation testing, Chief John Ross House, 40-year segments.

| | с . | 1700 | 1720 | 1740 | 1760 | 1780 |
|-----|----------|------|------|-------|------|------|
| Log | Series | 1739 | 1759 | 1779 | 1799 | 1819 |
| 1 | JREB03La | | 0.80 | 0.81 | 0.66 | |
| | JREB03Lb | | 0.76 | 0.73 | 0.74 | 0.65 |
| 2 | JREB03R | | 0.86 | 0.88 | 0.63 | 0.45 |
| 3 | JREB04La | | 0.39 | 0.57 | 0.78 | 0.75 |
| | JREB04Lb | | 0.60 | 0.57 | 0.66 | 0.44 |
| 4 | JREB04R | | | 0.75 | 0.65 | 0.39 |
| 5 | JRN04Lb | 0.65 | 0.69 | 0.71 | 0.65 | 0.40 |
| 6 | JREB05Lb | 0.51 | 0.51 | .0.54 | 0.53 | 0.14 |
| 7 | JRN04R | | | | 0.69 | 0.53 |
| 8 | JRN07R | | 0.34 | 0.45 | 0.55 | 0.42 |
| 9 | JRN05L | 0.26 | 0.37 | 0.62 | 0.69 | 0.57 |
| 10 | JRN06La | | 0.76 | 0.89 | 0.76 | 0.37 |
| | JRN06Lb | | | 0.59 | 0.58 | 0.50 |
| 11 | JRN06R | | | 0.84 | 0.67 | 0.25 |
| 12 | JRS04L | | | 0.72 | 0.70 | 0.56 |
| 13 | JRS06Lb | 0.69 | 0.75 | 0.71 | 0.64 | 0.50 |
| 14 | JRS09L | 0.72 | 0.69 | 0.71 | 0.59 | 0.38 |
| 15 | JRSBEAM | | | 0.66 | 0.73 | 0.59 |
| 16 | JRW01L | | | | | 0.61 |
| 17 | JRW04L | 0.69 | 0.81 | 0.77 | 0.61 | 0.52 |
| 18 | JRW08L | 0.77 | 0.80 | 0.69 | 0.48 | 0.29 |
| 19 | JRW10R | 0.64 | 0.66 | 0.72 | 0.77 | 0.67 |
| | Ave | 0.62 | 0.65 | 0.70 | 0.66 | 0.48 |

External Cross-Dating

Twenty-two cores were successfully cross-dated internally and make up the floating chronology. The floating chronology was then anchored in time using the Piney Creek Pocket Wilderness (1651–1982) white oak reference chronology (Duvick 1981, 1983) from southeastern Tennessee. The resulting Chief John Ross House chronology was 122 years long, extending from 1698 to 1819 (Figure 6). As independent environmental records, trees are unlikely to have identical ring patterns, but year-toyear fluctuations are in agreement. The years between 1772 and 1775 and between 1778 and 1780 were periods of low growth in all samples (although with varying magnitude), yielding the most useful rings for dating.

Cutting Dates

Cutting dates assigned to each log should not be confused with outermost ring dates. A cutting date is assigned to a sample taken from a log that still had bark or had all of the sapwood intact. Outermost ring dates are assigned to samples from logs that are missing a portion of sapwood; this is common with hewn logs. Cutting dates for the Chief John Ross House cluster around 1816–17 (14 cores) (Tables 1–3). There were four logs that did not cluster around this period, including one (JREB03La) that had an outermost ring date of 1789. It is important to note that this sample was incomplete and is missing a portion of its sapwood. It

Table 3. Cutting/outer ring dates for the Chief John Ross House.

| Log | Cutting/Outer Ring Date | Ring Type ^a | Comments | Inferred Period for Cutting | | | |
|----------|----------------------------|---------------------------|---|--|--|--|--|
| JRSBeam | 1800 | vv | Taken from hewn portion of log; no sapwood | Cutting date not possible to determine | | | |
| JRW01L | 1809 | vv | Sapwood missing | Cutting date not possible to determine | | | |
| JREB03Lb | 1815 | r | 1815 ring possibly complete, latewood present | Tree cut anytime from winter 1815 to spring 1816 | | | |
| JRW10R | 1815 | v | Sapwood present | Close to cutting date, but not possible to determine | | | |
| JREB04Lb | 1816 | В | 1816 ring possibly complete, latewood present | Tree cut anytime from winter 1816 to spring 1817 | | | |
| JREB04R | 1816 | r | 1816 ring possibly complete, latewood present | Tree cut anytime from winter 1816 to spring 1817 | | | |
| JRN04Lb | 1816 | v | Sapwood present | Close to cutting date, but not possible to determine | | | |
| IRN04R | 1816 | r | 1816 ring possibly complete, latewood present | Tree cut anytime from winter 1816 to spring 1817 | | | |
| JRN05L | 1816 | r | 1816 ring possibly complete, latewood present | Tree cut fall 1816 | | | |
| JRN06La | 1816 | r | 1816 ring possibly complete, latewood present | Tree cut anytime from winter 1816 to spring 1817 | | | |
| JRN07R | 1816 | r | 1816 ring possibly complete, latewood present | Tree cut fall 1816 | | | |
| JRS04Lb | 1816 | v | Sapwood present | Close to cutting date, but not possible to determine | | | |
| JRS06Lb | 1816 | В | 1816 ring possibly complete, latewood present | Tree cut anytime from winter 1816 to spring 1817 | | | |
| JRS09L | 1816 | r | 1816 ring possibly complete, latewood present | Tree cut fall 1816 | | | |
| JRW04L | 1816 | r | 1816 ring possibly complete, latewood present | Tree cut anytime from winter 1816 to spring 1817 | | | |
| JRW08L | 1816 | r | 1816 ring possibly complete, latewood present | Tree cut anytime from winter 1816 to spring 1817 | | | |
| JREB03R | 1817 | v | Sapwood present | Close to cutting date, but not possible to determine | | | |
| JRN04La | 1817 | . v | Sapwood present | Close to cutting date, but not possible to determine | | | |
| JRN06R | 1819 | В | 1819 ring possibly complete, latewood present | Tree cut fall 1819 | | | |

^a B = bark is present, indicating the outer ring is fully intact (a cutting date); r = less than a full section is present, but the outermost ring is continuous around the available surface (considered a cutting date); v = date is within a very few years of being a cutting date; vv = no way of estimating how far the last ring is from the true outside ring.

was included for chronology development, not for dating the structure. Three additional cores have outermost ring dates of 1800, 1807, and 1809 and are also missing a portion of their sapwood. One core has a cutting date of 1819 and was likely a replacement log added to the home after its initial completion.

Discussion

Based on historical documents and tree-ring analyses, it is not possible to attribute the construction of the Chief John Ross House to John MacDonald. John Ross himself is recorded in Poplar Springs in 1808 living with his maternal uncle, William Shorey. The following year, he inherited his uncle's property there, but he did not take up residence until 1817. Based on the evidence provided by historical documents, the Chief John Ross House was more likely constructed by Chief John Ross himself.

The Chief John Ross House oak chronology had a high average interseries correlation for a southeastern site, which in addition to the above average mean sensitivity, indicates the trees composing the Chief John Ross House were sensitive to climate and dated correctly. Seasonality indicates the trees were cut during the winter of 1816-17. Based on the cutting dates of the logs, the house was built late 1816-early 1817. This is in agreement with historical documents showing that John Ross did not live in Poplar Springs until 1817. By 1817, William Shorey was deceased and could not have constructed the house. Therefore, historic documentation and dendrochronology demonstrate that the Chief John Ross House was built by Chief John Ross himself. These findings should increase the historic importance of the house in Georgia history, Cherokee history, and in the future Georgia portion of the Trail of Tears. For archaeologists, this study provides another in a growing body of work supporting the utility of dendrochronological dating in the Southeast.

Notes

Acknowledgments. The authors thank the John Ross House Association, Inc., and its president, Larry Rose. We also thank all of the field and lab assistants: Randa Harris, Matt Boehm, Jessica Dawkins Beck, and Dawn Liverman. The dendrochronological samples from the John Ross House are currently housed at the University of West Georgia.

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