(2)

Assessment of the Old Red Rock Indian Line Sycamore Tree, Lake Red Rock, Marion County, Iowa

DACW25-92-M-0414

by
Leah D. Rogers
Project Historical Archaeologist

Fred A. Finney and Stephen C. Lensink
Co-Principal Investigators

Contract Completion Report
328

Office of the State Archaeologist
The University of Iowa
Iowa City
1992

Table of Contents

Tables

Figures

This project involved the assessment of the archival and oral historical record concerning the accuracy of the tradition that a large, extant sycamore tree located at Lake Red Rock, Iowa, is the "old Red Rock Indian Line Tree". This tree reportedly was a well-known landmark and boundary line marker for the Red Rock line associated with the 1842 Sauk and Mesquakie treaty cession. The tree is dead and is currently standing in approximately 3.1 m (10 feet) of water impounded by the Lake Red Rock reservoir. The assessment was conducted to provide the U.S. Army Corps of Engineers, Rock Island District, with recommendations concerning the identification, significance, and possible preservation of this tree. The investigation indicated that this tree is very near the Red Rock Indian Line and would have been an old tree in 1842; however, the legal records from that time make no mention of this tree. On the other hand, oral history and mid-twentieth century written accounts indicate that this is a tree of some historical significance. Despite this unresolved ambiguity, and the ineligibility of the tree for nomination to the National Register of Historic Places, it is concluded that the tree is of local importance and that it has stood as a symbol of the Red Rock Line for a number of years. It is recommended that the tree be marked in some manner to identify its history and to serve as a visual reminder of the Red Rock Line location. It is also recommended that a cross-section be taken from the tree to better document its age, provide important climatic reference data, and to serve as a tangible artifact of this tree before it is lost entirely to decay.

Introduction

This report has been prepared by the Office of the State Archaeologist (OSA), The University of Iowa, under the terms of a contract agreement between the OSA and the U.S. Army Corps of Engineers, Rock Island District (RICOE). The report records the results of an archival, oral historical, and field assessment of the old Red Rock Indian Line Tree located in the extreme north central portion of Section 2, T76N-R20W, Union Township, Marion County, Iowa, within the boundaries of Lake Red Rock (Figures 1–2). The project involved archival research, informal oral history interviews, and the extraction of a dendrochronology sample from the suspected Red Rock Line tree. The purpose of the project was to assess the veracity of the historical record and oral history surrounding this sycamore tree and make recommendations concerning its historical significance and the need for future preservation efforts. The OSA is solely responsible for the interpretations and recommendations contained in this report. All records generated by this project, including the wood sample, are curated at the OSA. Historical research was conducted by the OSA and the RICOE, with the field investigation conducted on May 21, 1992, by Leah D. Rogers, Project Historical Archaeologist, and G. Clark Rogers, Field Archaeologist, with the assistance of Rick Trine, State Wildlife Red Rock Unit Manager, Department of Natural Resources. Fred A. Finney (OSA) served as Project Director.

Project Area Description

The sycamore tree is located within the floodplain of the Des Moines River south of the old river channel and on the south side of a former slough of that river (Figure 3). The river was impounded by Lake Red Rock dam which was begun in 1960 and completed in March 1969. The dam is located approximately 12.9 km (8 miles) east-southeast of the project area. Until recently the elevation of the normal pool level of the reservoir was at 222.5–223.7 m (730–734 feet) National Geodetic Vertical Datum (NGVD). The pool level was raised to 226.2 m (742 feet) NGVD in April, 1992, with proposed annual fall raises to 226.8 m (744 feet) NGVD. At

present, the sycamore tree stands in approximately 3.1 m (10 feet) of water, with at least 3.1 m (10 feet) of the bole extending above the surface of the lake (Figures 4–6). The "Red Rock" bluff, which gave rise to the name of the former town of Red Rock and to the reservoir, is situated north of the tree (see Figure 6b). The tree has been dead for at least 17 years and was finally killed in the early 1970s by the creation of the lake, although the tree had been previously damaged by lightning and fire (Rick Trine, personal communication 1992).

Historical Assessment

METHODS

Ron Deiss, RICOE archaeologist, had conducted some archival research and oral history interviews concerning the sycamore tree prior to the initiation of this project. Contacts were made with Harriet Heusinkveld of Pella, Iowa, and Bill Gilbert of Simpson College, Indianola, Iowa. The materials and information generated by this previous investigation were incorporated into the present study. Additional archival research and oral history interviews were conducted as part of the present investigation. The collections of the following repositories were examined for additional data concerning the Red Rock line and the sycamore tree: the archives, libraries, and manuscript collections of the State Historical Society of Iowa in Iowa City and Des Moines; the collections housed at the Lake Red Rock Visitors Center; the collections of the Knoxville Public Library in Marion County; the legal records and plat maps at the Marion County Recorder's Office in Knoxville; and the library collection of the Office of the State Archaeologist in Iowa City. The archival research included an examination of all available primary and secondary sources. Primary sources consulted included legal records, surveyor's field notes and plat maps, photographs, paintings, and historic plat maps and atlases, while the secondary sources included county and local histories, professional historical studies, manuscripts, and newspaper articles.

Additional, informal interviews were conducted with Rev. Arthur Nichols of rural Knoxville, Laura Browne of Cedar Rapids, Don Varrar of the Botany Department of Iowa State University in Ames, Bill Gilbert of the Biology Department of Simpson College in Indianola, Wayne Wendland of the Illinois State Water Survey in Urbana, Illinois, and John Pearson of the Department of Natural Resources in Des Moines. Dr. Gilbert has worked as a summer ranger at Lake Red Rock for a number of years. Rev. Nichols was born in the nearby former town of Dunreath in 1913 and later lived in the town of Red Rock until 1962 when the town was abandoned for the lake construction. He is well versed in the region's history and provided oral history testimony for the 1987–1988 archaeological investigations at Lake Red Rock (McNerney and Stanley 1988:325–344; Rogers et al. 1989). Rev. Nichols currently resides on the south bluff overlooking the lake and very near the sycamore tree location. Laura Browne is a historian living in Cedar Rapids and has conducted years of study on the Mesquakie oral tradition concerning sites in Linn County. She was able to provide names of potential Mesquakie contacts at the Tama Settlement. Adaline Wanatee, an older resident of the Tama Settlement, was contacted by letter concerning possible oral history of the sycamore tree in Mesquakie tradition.

The field investigation was conducted on May 21, 1992, and consisted of the extraction of a dendrochronology wood core sample from the sycamore tree. Rick Trine of the Department of Natural Resources aided this investigation with the provision of a boat to reach the tree and assistance in the collection of the wood sample. The core was obtained with an increment borer

having a bit length of 0.5 m (20 inches) and a core diameter of 5 mm (0.2 inches). The borer was inserted into the bole of the sycamore tree approximately 0.46 m (1.5 feet) above the lake surface which was at an elevation of 226.3 m (742.47 feet) NGVD on May 21, 1992 (Figure 7). At the time of investigation, the tree was waterlogged and in a state of decay. A large portion of the exposed bole on the south-southwest side is hollowed out from decay (Figure 8). The sample was taken from the intact, north-northeast side of the tree; however, because of the saturation and decay only a portion of the bit length could be extracted. The recovered sample was inserted into plastic drinking straws and labeled as to the location and portion removed. The sample was then examined by counting the annual tree rings after the core had been dried and affixed to a stationary surface. A comparative core sample was obtained from a 2.92 ft diameter, 100-year-old sycamore tree along the Skunk River in Ames, Iowa. This tree was cored on July 29, 1992, by project personnel.

RESULTS

Archival/Oral Historical Research

The history of the Red Rock treaty line is not without controversy, and various sources have postulated two different locations for this north-south boundary line. The line itself demarcated a boundary within the 1842 cession area which encompassed a large portion of central and south-central Iowa and was ceded to the United States by the Sauk and Mesquakie through a treaty agreement (Figure 9). According to the terms of this treaty, the internal Red Rock boundary line served as the western boundary of the government land between 1843–1845, with the Native Americans on the west side of the boundary and Euro-American settlers on the east side. The Sauk and the Mesquakie were allowed to remain at their villages along the lower reaches of the Des Moines and Iowa rivers until May 1, 1843, when they were to move west of the Red Rocks line. By midnight on October 11, 1845, they then had to move out of the Iowa territory onto a reservation in Kansas, with the western portion of the 1842 cession area subsequently opened to Euro-American settlement and in full possession of the United States. During the interim period, the United States government established the Raccoon River Indian Agency and Fort Des Moines III to protect the Sauk and Mesquakie from the Sioux and to prevent Euro-American squatters from encroaching on the Indian territory before October 11th (Gourley 1985:3–4).

The original agreement stated that

> the confederated tribes of Sacs [Sauk] and Foxes [Mesquakies] cede to the United States, forever, all the lands west of the Mississippi River to which they have any title or claim or in which they have any interest whatever; reserving the right to occupy for the term of three years, from the time of signing this treaty, all that part of the land hereby ceded which lies west of a line running due north and south from the painted or red rocks on the White Breast fork of the Des Moines River, which rocks will be found about eight miles, when reduced to a straight line, from the junction of the White Breast and Des Moines (Stiles 1911:4).

George W. Harrison was instructed to survey the boundary line beginning on March 17, 1843. He understood this line "to be run north from the Painted or Red Rocks on the White Breast to the southern boundary of the neutral ground and south from the said rocks to the northern boundary of Missouri" (Stiles 1911:7). This would have placed the line at a point where it intersected the confluence of White Breast Creek and the Des Moines River; a

location which is depicted on J. Haydn Potter's 1844 map as shown in Figure 10. However, during the process of surveying this line, Harrison found out that

> the undivided testimony of the Indians is that there is no such point [i.e., painted or red rocks] on the White Breast and that the place designated by them on the Des Moines River is the point intended by the makers of the treaty as the starting point of the line which Red Rocks are about 8 or 10 miles in a direct line *above* the junction of the White Breast [emphasis added] (Stiles 1911:7).

Further, he discovered that

> there are no other "Red Rocks" between the points designated and the junction of the "White Breast" with the Des Moines River and that the use of the term "White Breast" was intended to designate these rocks from some "Red Rocks" some four or five miles above on the Des Moines River. Concurring with the Indians in their view of the matter and a subsequent examination of a portion of the valley of the White Breast confirming it, I determined to make the "Red Rocks" *on* the Des Moines River pointed out by them as the starting point of the line, believing that such could only be the intention of the makers of the Treaty... [emphasis added] (Stiles 1911:8).

The final Red Rock boundary line, therefore, intersected the Red Rock sandstone bluff upstream from the confluence of White Breast Creek and just above the subsequent location of the town of Red Rock. Figure 11 reportedly is a tracing from Harrison's original survey map showing the Red Rock boundary line north and south of the Red Rocks. In 1927 Knoxville resident, Robert T. Johnson, relocated the Red Rock line on the 1912 USGS topographic map of the Red Rock area following Harrison's survey notes (Figure 12). This figure shows only that portion of the boundary line within four miles north and south of the Red Rocks bluff.

The controversy in the location of the Red Rock line was also noted by John Beach who was the United States Indian Agent at the Raccoon River Indian Agency during this period. He noted in a letter to John Chambers, Superintendent of Indian Affairs, dated October 25, 1842, that Chambers had

> erred in thinking that the Red Rocks, and thus the 1842 treaty boundary, is on White Breast Creek. Beach reports that the correct position of the Red Rocks is on the Des Moines River, approximately 8 miles upriver from the White Breast mouth (Gourley 1985:15).

Thus, Beach confirms the location of the Red Rock line as finalized by George W. Harrison and as shown in Figures 11 and 12. The later county history books (Donnel 1872:7; Union Historical Company 1881:297, 703; Wright 1915:56) also all noted the location of the Red Rock line as having intersected the Des Moines River a short distance above the town of Red Rock. The starting point of this line on the Red Rocks bluff was marked by Harrison with an earthen mound with timber crosspieces. The rest of the line north and south was marked by rock cairns at various intervals along the surveyed line (Beecher 1975:3; Scarbrough n.d.; Wright 1915:56). Reportedly, when the treaty agreement expired and the western portion of the treaty cession was opened to Euro-American settlement, all of the markers were ordered destroyed, so this physical evidence of the line was lost (Beecher 1975:3). One final note on the location of the Red Rock Line concerns a map in Heusinkveld (1989a:230) which shows the line intersecting the southwest corner of the plat of the town of Red Rock. This is in error as the original line was over one-quarter mile further to the west as shown on Figure 12.

With the question concerning the location of the Red Rock Indian treaty boundary line resolved, the next question is whether or not the extant sycamore tree had any association with this line. Interestingly, there is no mention of the tree in any of the county history books (Donnel 1872; Union Historical Company 1881; Wright 1915) despite numerous references to the Red Rock line and its location in these books. Furthermore, the notes from both

Harrison's original survey of the Red Rock line (Stiles 1911) and from the original General Land Office surveys of the township and section lines of this area contain no references to this tree. Specifically, Harrison's notes as transcribed in the 1911 *Annals of Iowa* (Stiles 1911:9) indicate the following:

SOUTH OF THE RED ROCKS

Miles south	Chains	
	5.60	To the foot of the Bluff.
	6.40	Left or Northern Bank of the Des Moines River. Course S.E. about 5 feet deep and rapid current.
	14.58	Right bank of Des Moines River and enter a body of fine timber.
	31.30	And Black Walnut 20 inches in diameter.
	53.13	A Black Walnut 24 inches in diameter.
	73.30	A ledge of Sandstone Rock about 40 feet high and bearing N.W. and S.E.
1	00.00	Set a post and took for references: White Oak 18 S. 44 degrees W. 41 Links/Marked White Oak 20 N. 46 degrees E. 47 Links/I.B.1.M. This mile is rich alluvial River bottom, no indications of being subject to inundations and covered with a heavy growth of Walnut, Ash, and Hickory timber.

This is the mile within which the sycamore tree is located and yet the only bearing trees noted were black walnuts and white oaks.

The field notes from the General Land Office survey of 1846–1848 (Office of the Secretary of State 1981) indicate the following for T76N-R20W going west along the line between Sections 2 (T76N-R20W) and 35 (T77N-R20W):

Chains West	
31.50	To a wagon road N.E. and S.W.
40.00	Set a post for corner to ¼ section from which a Black Walnut 20 inches in dia. bears N61′ E27 links Black Walnut 18 inches in dia. bears S45′ E38 links
40.23	Enter field N and S
43.50	Morgan's log house unoccupied
57.33	Leave field N and S
80.00	Set a post for corner to Sections 2, 3, 34, and 35 from which a cottonwood 16 inches in dia. bears S65′ E47 links A cottonwood 12 inches in dia. bears N89′ E64 links Timber noted B. Oak, Bur Oak, Elm, Hickory, Hackberry, Buckeye, and .... [the sentence was not completed in the transcribed notes]

This line is within close proximity to the location of the sycamore tree and yet there is no mention of this tree in the field notes. The map produced by this survey is presented in Figure 13. Examination of the field notes concerning the survey of other lines in the vicinity of Sections 2 and 35 also failed to produce any reference to the sycamore tree.

While oral history maintains that this sycamore tree was commonly known for many years as a prominent bearing or boundary marking tree on the Red Rock line (Arthur Nichols, personal communication 1992), the earliest written accounts of the tree in this role date from the 1950s–1960s when the Lake Red Rock reservoir was proposed and interest in local history was stirred. One of these writers was Maude Thomason Scarbrough, who in her 87th year in the 1960s wrote the following:

> this giant tree at shoulder height measures 22 ft.-11 in. in circumference, has lived for hundreds of years on the Des Moines river bottom in Marion County near, where the town of Red Rock, Iowa, used to be—growing only a few feet from the highway can easily be seen from an automobile by driving three quarters of a mile upstream on the river road at the south end of the bluffs near where the old bridge used to be—The big Sycamore's health is good although it was almost scared to death by a road improvement a few years ago, which threatened its existence until local citizen's committees prevented its destruction. The age of the giant tree is unknown..., but it is certain, however, that it watched the parade of historic Indians, the Sioux, Iowa's Pottawater [sic], Winnebagoes, as well as the Sax [sic] and Foxes, as they passed in war and peace from the Red Rocks on the Des Moines river, from which the old tree springs, are well known in the tales and legends of these people who lived in the town of Red Rock, Iowa...Prior to 1842 John Jordan's trading post, in the shade of this big tree, exchanged gun powder, trinkets, and whiskey, for the Indian's fur catch....It watched the settlers cross the Red Rock line at Midnight October 11th, 1845, when the territory was opened to white settlers...It watched the settlement of Red Rock become a bustling river town where, saloons, murder, robbery, were quite commonplace (Scarbrough n.d.).

Scarbrough was a lifelong Red Rock area resident. Her great-grandfather had settled in this area in 1846. She noted that her ancestors had said that this was a beautiful tree until a windstorm broke off the canopy, likely in the late nineteenth or early twentieth century (Scarbrough n.d.). The tree, however, survived this disaster and sprouted new growth. It was reportedly still living when the reservoir was created.

Another account by Otto Knauth in 1968 noted that this was the "old Red Rock Indian Line Tree" and had marked the line south of the Des Moines River. It was further noted that the tree's age was estimated as being upwards of 200 years and had a girth of 7.3 m (24 feet) at chest height with the bole standing 7.6 m (25 feet) high. The branches extended upward from the bole another 6.2 m (20–30 feet). At that time, the base was fire scarred and the top had been truncated by a lightning strike. Knauth (1968) also noted the old Indian trail which later became the river road and led past this tree. This road is referred to by Donnell (1872:229) as "among the many roads in [the] county known to [have been] Indian trails."

This tree had also reportedly served as a landmark to Native Americans in the area during the early historic period. Heusinkveld (1989b:19) noted that the sycamore tree "near the banks of the river was a favorite rendezvous" for the Sauk and Mesquakie. A recent article in the *Lake Explorer* noted that

> [the sycamore tree stood] so tall (80 feet) that it served as a landmark. Indian trails met at its base. It had taken on mystical qualities as a meeting ground (Lake Explorer 1991:22).

In an earlier account (Donnel 1872:218) did note a Native American "thanksgiving feast" that took place in the fall of 1844 "at a place near Red Rock village, and on the line between

the United States and the Indian Territory, as designated by an inscription on a board fastened to a post". However, there is no mention of the tree in association with this ceremony. A letter was written to Adaline Wanatee of the Mesquakie Settlement at Tama asking if there was any Mesquakie oral tradition concerning this tree. No reply was received; however, Robin Youngbear of the Trial Office noted that he had never heard of this tree (Robin Youngbear, personal communication 1992).

As noted above, the tree was also reportedly near the site of John Jordan's early trading post (Scarbrough n.d.). Donnel (1872:12) indicated that there were several early trading posts in the Red Rock vicinity. One operated by a man named Shaw "stood on the opposite side of the river from the village [i.e., Red Rock], and another a short distance above it, was kept by John Jordan" (Donnel 1872). A further description of Jordan's post indicated that it was located "on the south side of the river, some distance above the ferry landing" (Donnel 1872:21). This would correspond with the general location of the sycamore tree. After the land was opened to Euro-American settlement, most of the trading posts were abandoned. Jordan left for California and later settled in Missouri, while Shaw ended his days in Red Rock (Donnel 1872:16). There was a log cabin or log house in the vicinity of the tree location when the area was surveyed for the General Land Office (see Figure 13); however, on the plat map and in the field notes, this house is referred to as "Morgan's cabin" and was unoccupied at the time of the survey in 1846–1847.

There is no doubt that the legend of the sycamore tree is as large as its size. It is labeled "the Big Iowa Sycamore" in a *Trees of America* publication (Outdoor World 1973:79) and is listed among the notable trees of size and historical association in the United States. This account describes the tree as follows:

> the centuries-old big Iowa sycamore trunk spans 23 feet in circumference at shoulder height. It is the second largest sycamore in the country, exceeded only by an Ohio sycamore with a 42-foot, 7-inch trunk circumference. The exact age of the tree is not known, but it is certain that the tree witnessed a procession of Indians, the Sioux, Iowas, Potawatomies, Winnebagoes, Sac and Foxes, pass by and, relatively recently, the coming of the white man. The tree was old when the first steamboats came to Des Moines in 1837 and occasioned the development of Red Rock, Iowa, into a bustling, lawless river frontier town in the 1840s (Outdoor World 1973:79).

The oral history is so strong concerning the identification of this tree as the Red Rock Indian Line tree that it must be rooted in some fact. It has been suggested by Dr. Bill Gilbert of Simpson College that a possible explanation for the ambiguity that results when comparing the original survey records and early written accounts with the later oral history may be that the walnut, oak, and cottonwood trees, which were used as bearing trees in the original surveys, were logged out at an early date because they would have been prized as building materials. The sycamore tree, on the other hand, was left unscathed because this type of wood is inferior for building purposes. As a result, this tree began to stand out more and more as the surrounding timber was cut down and removed. It became an easy landmark for people to refer to when asked about the location of the old Red Rock Line as it is very near the original line. Therefore, while it was not an original bearing tree along the line, its proximity to this line and its survival as a large, prominent tree resulted in its identification as a symbol of the Red Rock Line (Bill Gilbert, personal communication 1992).

The final question concerns whether the sycamore tree trunk that is extant at Lake Red Rock is the sycamore tree that is discussed in the oral history and the historical accounts of the 1950s–1960s. On this question, there is no doubt that this is the sycamore tree of local legend. This was concluded from discussions with Rev. Arthur Nichols (personal communication 1992)

and through comparisons with historic photographs and a painting that is housed at the Marion County Museum in Knoxville. The photographs include the one published in 1968 (Figure 14) accompanying an article on the tree in the *Des Moines Register* (Knauth 1968:8T), a series of four small, faint photographs that were brought into the Visitor's Center at Lake Red Rock (Figure 15), and a photograph taken by the Corps of Engineers in the 1970s–1980s and displayed at the Visitors Center (Figure 16a). Unfortunately, all of these photos were taken after the tree had lost its original canopy, but most show its second growth. The photograph taken after the reservoir had been created compares positively with a photograph taken during the present investigation (Figure 16b). The more recent photograph shows the progressive deterioration of the bole. Comparisons of the most recent photograph (see Figure 16b) with the painting of the tree as it was in 1957 (Figure 17) also shows corresponding similarities and further demonstrates that the tree is the same one of local legend. Two photographs taken of the base of this tree (Figure 18) document the enormous size of the tree in the twentieth century.

Field Investigation

The field investigation of the sycamore tree was conducted on May 21, 1992. A wood core sample was extracted from that portion of the bole which presently extends above the water line and is at least 1.8 m (6 feet) in diameter. This location is approximately 3.4 m (11–12 feet) above the base of the tree. While the sample was taken from a higher level on the bole than the chest-height level recommended for tree boring, it is obvious that the original bole of the tree was cored rather than its newer growth.

The sample was not as complete as hoped because it was extremely difficult to extract the core from this water saturated and decayed tree. As a result, a sample of only 0.32 m (13 inches) could be obtained. Analysis of the core identified a total of 322 growth rings, thus indicating that the tree is over 300 years old (Table 1; Figure 19). According to Panshin et al. (1964:546–547) the growth rings in sycamore trees are "distinct, delineated by a narrow band of lighter tissue at the outer margin". There is no mention of more than one growth ring per year in any of the sources consulted (Harlo et al. 1979; Panshin et al. 1964). Thus the growth rings counted under the microscope are interpreted as annual events. Based on the length of the core sample in relation to the tree diameter, it is estimated that the actual age of the Red Rock Sycamore is between 454–539 years. This estimate allows for fewer annual growth rings toward the center of the tree. The reason for estimating fewer rings near the center of a tree involves a greater growth rate that forms thicker rings when a tree is young (see discussion below). This general trend can also be observed in the outer portion of the tree (Figure 19).

Table 1. Annual ring counts for the Lake Red Rock Sycamore tree.

Location	Number of Rings	Difficult to See
0-5 cm	58	0-1 cm
5-10 cm	61	5-7 cm
10-15 cm	57	
15-20 cm	51	
20-25 cm	48	
25-30 cm	35	
30+ cm	12	
TOTAL	322 Annual Rings	

Discussion with Don Varrar (personal communication 1992), indicated that a sycamore tree of the size as described in historical accounts (i.e., 7.0–7.3 m (23–24 feet) in circumference, or approximately 2.23 m (7.3 feet) in diameter in the 1950s) could be at least 100–200 years of age. While sycamore trees grow very fast relative to other tree types, the growth rate does slow down as the tree gets older and achieves a substantial size. Young sycamore trees can grow approximately 0.3 m (1 foot) in 20 years, slowing to one quarter of this rate as it grows older. Sycamore trees that were planted along a railroad track parallel to the Skunk River in Ames around 100 years ago, now have a diameter of 0.9 m (3 feet). A core sample extracted from one of these trees produced a sample 0.39 m (15.5 inches) long and showing 95 annual rings. Based on the rings, this tree is estimated to be approximately 120 years in age. The position of this tree within 15.2 m (50 feet) of the Skunk River is comparable to the position of the Red Rock tree. Its diameter of 0.9 m (2.92 feet), almost half that of the Red Rock tree but having an age only one quarter as long as that of the larger tree, can be explained by the deceleration of the growth rate with advanced age.

Further discussions with Don Varrar and John Pearson indicated that the Red Rock Sycamore tree may represent one of the oldest known trees in Iowa. The question then arose as to whether this tree could serve as a "climatic proxy". According to Wayne Wendland of the Illinois State Water Survey in Urbana, sycamore trees have not been used for this purpose primarily because of their fast growth rates. Oaks, elms, and pines are the most common climatic proxies used in the United States. Wendland noted that information from this tree could be useful for reconstructing flood history if there were sycamores in upland positions in the vicinity that could be used for comparison (Wayne Wendland, personal communication 1992). Generally, climatic studies of a region utilize five to ten trees, with two cores taken from each tree. The results from the sample cores are then averaged. As mentioned above, Wendland also noted that the position of this sycamore tree on the floodplain and on the bank of an old river channel would suggest that while the tree's growth rate would have been faster than that of a sycamore tree in an upland position, it should also have been periodically stunted to some extent by exposure to frequent flooding (Wayne Wendland, personal communication 1992). According to Harlo et al. (1979), sycamores can live to be 500–600 years in age, so the 400–500+ estimated age for this tree is within the realm of possibility. As for the known distribution of sycamore trees in the United States, the location of the Red Rock sycamore is near the western limit of this distribution (Aikman and Gilly 1948; Little 1971:Map 147).

Status as an Historical Property

It can be concluded that the sycamore tree would have been an old tree in the 1840s and would have stood out in the late nineteenth and twentieth centuries as a prominent, highly visible landmark in the area, particularly as other timber was logged off the bottomland. The Rev. Arthur Nichols (personal communication 1992) noted that the only other tree of equal size that he had ever known or heard about in the area was an elm tree located further upstream along the Des Moines River. It remains problematical, however, as to why this tree was not noted in either the Red Rock line survey field notes (Stiles 1911) or in the General Land Office original survey field notes in addition to being unmentioned in any of the county history books despite numerous references to the history of the Red Rock line (Donnel 1872; Union Historical Company 1881; Wright 1915). One possible explanation is the walnut and oak trees that were used as bearing trees on the line were quickly logged out by the early settlers, leaving the sycamore tree, which is very near the line, to serve as the only landmark that people

could later refer to in relation to the Red Rock bluffs as evidence of the orientation of the Red Rock Line.

The results of the investigation were surprising, first in the apparent great age of the Red Rock Sycamore tree and second in the curious lack of nineteenth century historical documentation of its presence. From this, a final question arose as to whether or not this tree constituted a historical property and whether or not it was eligible for nomination to the National Register of Historic Places (NRHP). Natural features can be eligible for the NRHP as "traditional cultural properties"; however, their eligibility requires "sound documentation of their historical or cultural significance" (National Park Service n.d.:9) as outlined in National Register Bulletin 38 and they must meet the NRHP significance criteria and integrity requirements. Consultation with Lowell Soike of the State Historical Society of Iowa resulted in the conclusion that the tree is presently ineligible and does not qualify as a historic property. There is some potential that the tree could qualify as a traditional property on the basis of the later oral tradition, which made this tree a symbol of an important historical event, if there were earlier, "sound documentation" of this oral tradition other than the presently known post–1942 documentation.

An attempt was made to research early twentieth century newspaper articles about the Red Rock area as well as of the excerpted journals and writings concerning the Dragoon marches through this area in the 1830s–1840s; however, all of the available references made no mention of this sycamore tree (Anonymous 1914, 1920; Ingham 1934; Lathrop 1890; Lea 1836; Pelzer 1909, 1917). In addition, the Edgar R. Harlan papers in the State Archives were briefly reviewed and produced some correspondence between Harlan and Jasper Olney of Knoxville in 1913, concerning the relocation of the Red Rock Line, its markers and bearing trees (Harlan 1913; and between Harlan and Bernice Johnson in 1925 [Harlan 1925]). These letters mention a large oak on the Red Rock bluff that had a blaze from the line survey and noted the walnuts and oaks indicated as bearing trees in Harrison's survey notes, but made no mention of the sycamore tree. Olney was a lifelong resident of Marion County and was interested in local history. It is, therefore, particularly interesting that he made no mention of the sycamore tree at a time when it is expected that the oral tradition surrounding this tree should have been strong. Bernice Johnson was the wife of Marion County Engineer Robert Johnson who in 1927 relocated the Red Rock Line on the 1912 topographic map (see Figure 12).

While the tree is presently ineligible for the NRHP because of this lack of pre–1942 documentation of its significance as a traditional property, it is possible that further research may uncover this documentation. Therefore, this determination of ineligibility is contingent upon the lack of documentation. At present, it does not qualify as a historic property nor for Section 106 consideration; however, should future research provide the required documentation, then this tree will need to be re-evaluated as a historic property if it remains extant.

Summary and Recommendations

The archival, oral historical, and field investigation of the extant sycamore tree at Lake Red Rock indicated that the tree is located very near the original Red Rock boundary line of the 1842 Treaty cession and was a large, old tree at the time of this treaty. While it is not recorded as a bearing tree in the Red Rock Line survey notes, the General Land Office original survey notes, in the 1872–1915 county history books, or in early twentieth century written accounts, it does have a strong oral history tradition as a prominent local landmark. The results of the

dendrochronology core sample analysis indicated that the tree was at least 322 years of age at the time of its death in the early 1970s and has an estimated total age between 454–539 years making it among the oldest known trees in the state of Iowa.

It is concluded that the sycamore tree is of local importance as a physical reminder of the "old Red Rock Indian Line" based on the strong oral tradition coupled with the tree's close proximity to the original boundary line. While it was not an original bearing tree along this line, it later came to symbolize the line's location as it stood out because of its great size and survival. There is evidence that an early Indian trail passed very close to this tree and that this trail later became the river road extending west-southwest out of the former town of Red Rock. In addition, an early trading post may have been located "under the shade" of this tree. As such, the tree was a prominent landmark that may have been recognized by the early Euro-American settlers and their descendants and possibly by Native Americans as well. Whether it had "mystical" meaning to the Native Americans is questionable. It is perhaps more likely that the prominent Red Rocks bluff was a place revered by Native American groups. It is known that these groups used the Red Rocks as a reference point for the 1842 treaty indicating that they recognized this bluff as an important landmark.

The investigation of the sycamore tree also included an evaluation of its potential as a historic property and of its eligibility for nomination to the NRHP. It was concluded that the lack of pre–1942 documentation of the oral tradition of this tree as a symbol of the Red Rock Line or even as a local landmark indicates that the tree presently cannot be considered as a historic property and is ineligible for nomination to the NRHP. However, should future research uncover the lacking documentation, then the tree should be re-evaluated if it remains extant. In the meantime, it is recommended that the tree be monitored periodically for stability and deterioration, with the ideal action being preservation in place if at all possible. It is further recommended that the tree's location be marked in some manner to identify its history and the approximate location of the Red Rock Line. This marking could be in the form of signs at the various vantage points from the lake's shoreline and near the Highway 14 bridge. Blazing the tree with a painted band or the placement of a colored pole alongside its bole would help pinpoint its location from a distance.

An additional recommendation is that a section of the tree be preserved and curated at the Visitor's Center at Lake Red Rock to serve as a physical record of the tree and to potentially serve as a climatic record of the Lake Red Rock area. While sycamore trees are not traditionally used as climatic proxies, the great age of this particular tree and its position on the Des Moines River floodplain indicate a potential to provide significant climatic data including flood history reconstruction. The fact that the trunk is in a state of decay, and that the hollowed out area is getting larger, makes it advisable to obtain a section in the near future. This section would not have to be a full diameter cross-section, but rather should be a smaller quarter section. The reason for recommending a smaller section is that in order to obtain a full diameter cross-section much of the trunk presently extending above the lake surface would have to be removed in the process. A smaller, and less damaging, quarter section could likely be obtained from the side of the hollowed out area without the removal of the exposed trunk. If a quarter section is not possible, then it is recommended that a larger diameter and longer bore sample be obtained and preserved.

Acknowledgments

I thank David Asch, Fred Finney, and William Green of the OSA, Ron Deiss and Ron Pulcher of the RICOE, Harriet Heusinkveld of Pella, Iowa, Bill Gilbert of Simpson College in Indianola, Laura Browne of Cedar Rapids, Arthur Nichols, of rural Knoxville, Rick Trine and John Pearson of the DNR, Don Varrar of ISU in Ames, Wayne Wendland of the Illinois State Water Survey in Urbana, Robin Youngbear of the Mesquakie Tribal Office in Tama, and Lowell Soike of the SHSI for discussions, information, and providing assistance for this project. This report was edited by Mary Allen and Fred Finney.

References Cited

Beecher, Mrs. Loyd

1975 The Red Rock Line, Its Marking and Dedication: The State Regent's Bicentennial Project, DAR. Typescript, Manuscript Collections, State Historical Society of Iowa, Iowa City.

Donnel, William

1872 *Pioneers of Marion County*. Republican Steam Printing, Des Moines.

Gourley, Kathryn E. M.

1985 *The Raccoon River Indian Agency Predicted Site Locations*. State Historical Society of Iowa, Des Moines.

1990 *Locations of Sauk, Mesquakie, and Associated Euro-American Sites 1832 to 1845: An Ethnohistoric Approach*. Unpublished Master's Thesis, Iowa State University, Ames.

Harlan, Edgar R.

1913 Letters to and from Jasper Olney of Knoxville, Iowa. Edgar R. Harlan Correspondence 1905-1913, File 48, Part 1, Iowa State Archives, State Historical Society of Iowa, Des Moines.

1925 Letter from Bernice Johnson of Knoxville, Iowa. Edgar R. Harlan correspondence, File 49i, Part 17, Iowa State Archives, State Historical Society of Iowa, Des Moines.

Harlo, William M., Elwood S. Harrar, and Fred M. White

1979 *Textbook of Dendrochronology*. McGraw-Hill, New York.

Heusinkveld, Harriet

1989a Ghost Towns in the Central Des Moines River Valley. In *Take This Exit: Rediscovering the Iowa Landscape*, edited by Robert F. Sayre. Iowa State University Press, Ames.

1989b *Saga of the Des Moines River Greenbelt*. Pella Printing, Pella, Iowa.

Ingham, Harvey

1934 The Story of Red Rock. *Des Moines Register*, December 20, 1934.

Johnson, Robert T.

1927 Red Rock Line indicated on USGS 1912 as surveyed by G. W. Harrison in 1842 and recorded in *Annals of Iowa* 10(1). Relocated and traced in 1927 by Robert T. Johnson, Knoxville, Marion County, Iowa. Map Collections, Archives, State Historical Society of Iowa, Des Moines.

Knauth, Otto

1968 Indian Tree in Triumph Once Again. *Des Moines Register*, March 3, 1968, page 8T.

Lake Explorer

1991 *Once Tall Sycamore Could Tell Tales*. Lake Explorer, Red Rock Lake Association, Knoxville, Iowa.

Lathrop, H. W.

1890 Early Explorations in Iowa. *Iowa Historical Record* 4:535-553.

Lea, Albert M.

1836 *Notes on the Wisconsin Territory: Particularly with Reference to the Iowa District, or the Black Hawk Purchase*. Henry S. Tanner, Philadelphia.

Little, Elbert L., Jr.

1971 *Atlas of United States Trees, Volume 1, Conifers and Important Hardwoods*. Miscellaneous Publication 1146, Forest Service, U.S. Department of Agriculture, Washington, D.C.

McNerney, Michael J., and David G. Stanley

1988 *Archaeological Site Testing, Lake Red Rock, Iowa: Pool Raise Project, 1987 Season*, Volume 5. CRM Report 127, American Resources Group, Carbondale, Illinois.

National Park Service

n.d. *Guidelines for Evaluating and Documenting Traditional Cultural Properties*. National Register Bulletin 38. National Park Service, U.S. Department of the Interior, Washington, D.C.

Office of the Secretary of State
1981 1846 Plat Map of T76N-R20W and 1848 Plat Map of T77N-R20W. Office of the Secretary of the State, General Land Office. WPA copy of original survey plat maps (3 volumes). State Archives, Iowa State Historical Department, Division of Historical Museum and Archives, Des Moines. Microfilm on file, Office of the State Archaeologist, University of Iowa, Iowa City.

Outdoor World
1973 *Trees of America*. Outdoor World, Country Beautiful Corporation, Waukesha, Wisconsin.

Panshin, A. J., Carl de Zeeuw, and H. P. Brown
1964 *Textbook of Wood Technology*, Volume 1. Second Edition. McGraw-Hill, New York.

Pelzer, Louis
1909 A Journal of Marches by the First U.S. Dragoons 1834-35, edited by Louis Pelzer. *Iowa Journal of History and Politics* 7(3):331-378.
1917 *Marches of the Dragoons in the Mississippi Valley*. State Historical Society of Iowa, Iowa City.

Potter, J. Haydn
1844 Map of the Route passed over by Company "I", 1st Dragoons in the Indian Country in the Northwest part of Iowa Territory during the summer and fall of 1844. Map Q118 Headquarters Map File, Records of the Office of the Chief of Engineers, Record Group 77, National Archives, Washington, D.C. Miscellaneous Microfilm 437, Roll 31, State Historical Society of Iowa, Des Moines and Iowa City.

Rogers, Leah D., Candace J. Lutzow, Terrance J. Martin, and Robert C. Vogel
1989 *The Sutton (13MA266) Site and the Townsites of Percy (13MA347) and Dunreath (13MA449): Data Recovery at Three Historic Sites, Lake Red Rock, Iowa*. BCA 1, Bear Creek Archeology, Decorah, Iowa.

Scarbrough, Maude Thomason
n.d. History of Red Rock Area. Typescript, Manuscript Collections, State Historical Society of Iowa, Iowa City.

Stiles, C. C.
1911 The White Breast Boundary Line. *Annals of Iowa* 10(1):1-33.

Union Historical
1881 *The History of Marion County, Iowa*. Union Historical, Des Moines, Iowa.

Wright, John W. (editor)
1976 *History of Marion County, Iowa, and Its People*, Volume I. S. H. Clarke, Chicago.

Additional Sources Examined

Iowa Territorial Papers, Cartographic Records Relating to the Territory of Iowa, 1838–1846. Microfilm Publications, Special List No. 27, Washington, D.C.: National Archives. Miscellaneous Microfilm 437, Roll 31, State Historical Society of Iowa, Des Moines and Iowa City.

Map Collections, Archives, State Historical Society of Iowa, Des Moines.

Edgar R. Harlan Collection, Archives, SHSI, Des Moines.

Real Estate Acquisition Map No. RR-PT-K7, Lake Red Rock, U.S. Army Corps of Engineers, Rock Island District, Rock Island, Illinois. Attempted to examine the acquisition records for Tract No. 848 but the records were found to be missing or misplaced in the Real Estate vault at the RICOE.

Surveyor's Records, Books A, B, 1 and 2, Recorder's Office, Marion County Courthouse, Knoxville.

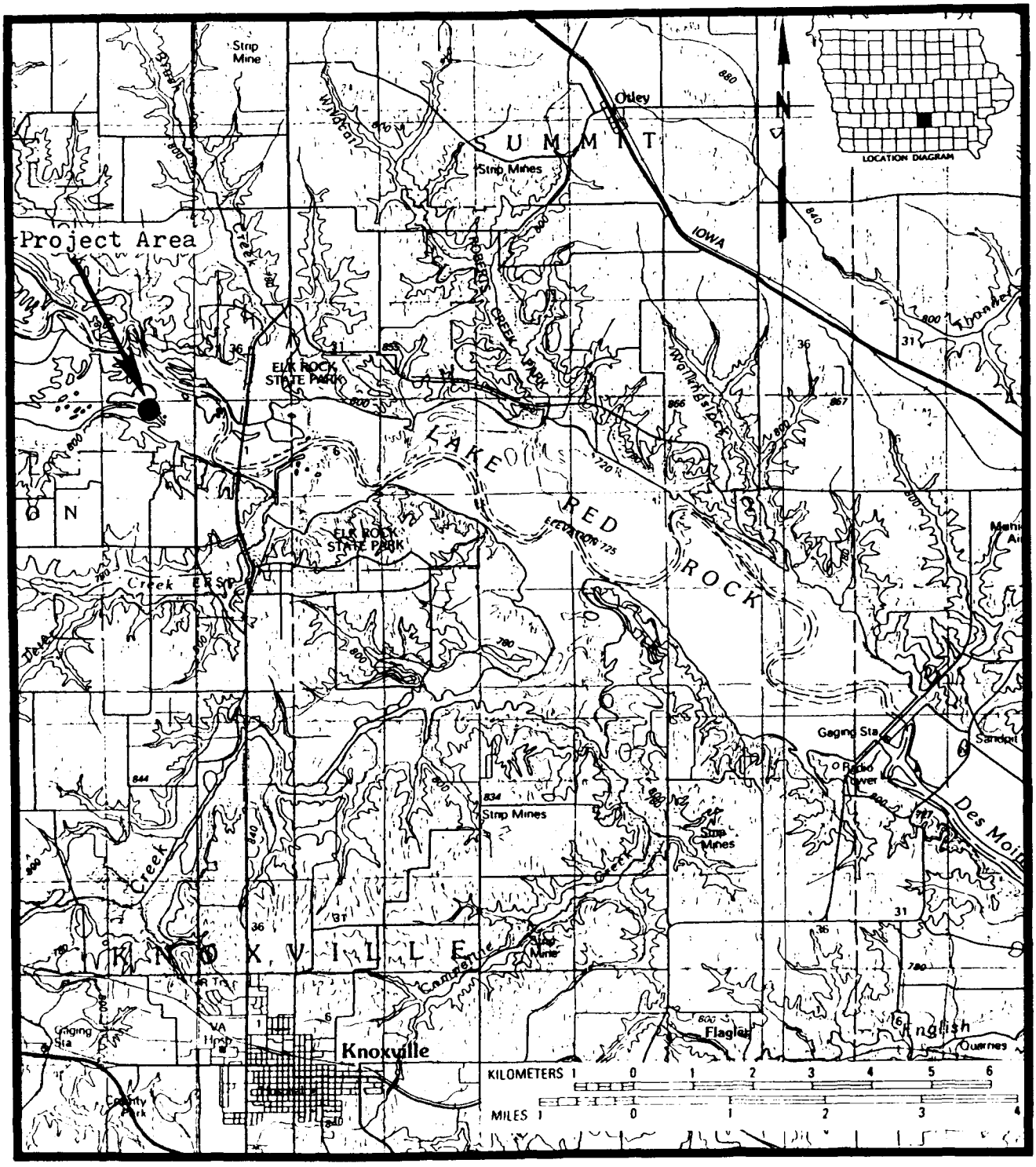


Figure 1. Location of project area (from USGS Marion County, Iowa 1:100,000 scale topographic map, 1985).

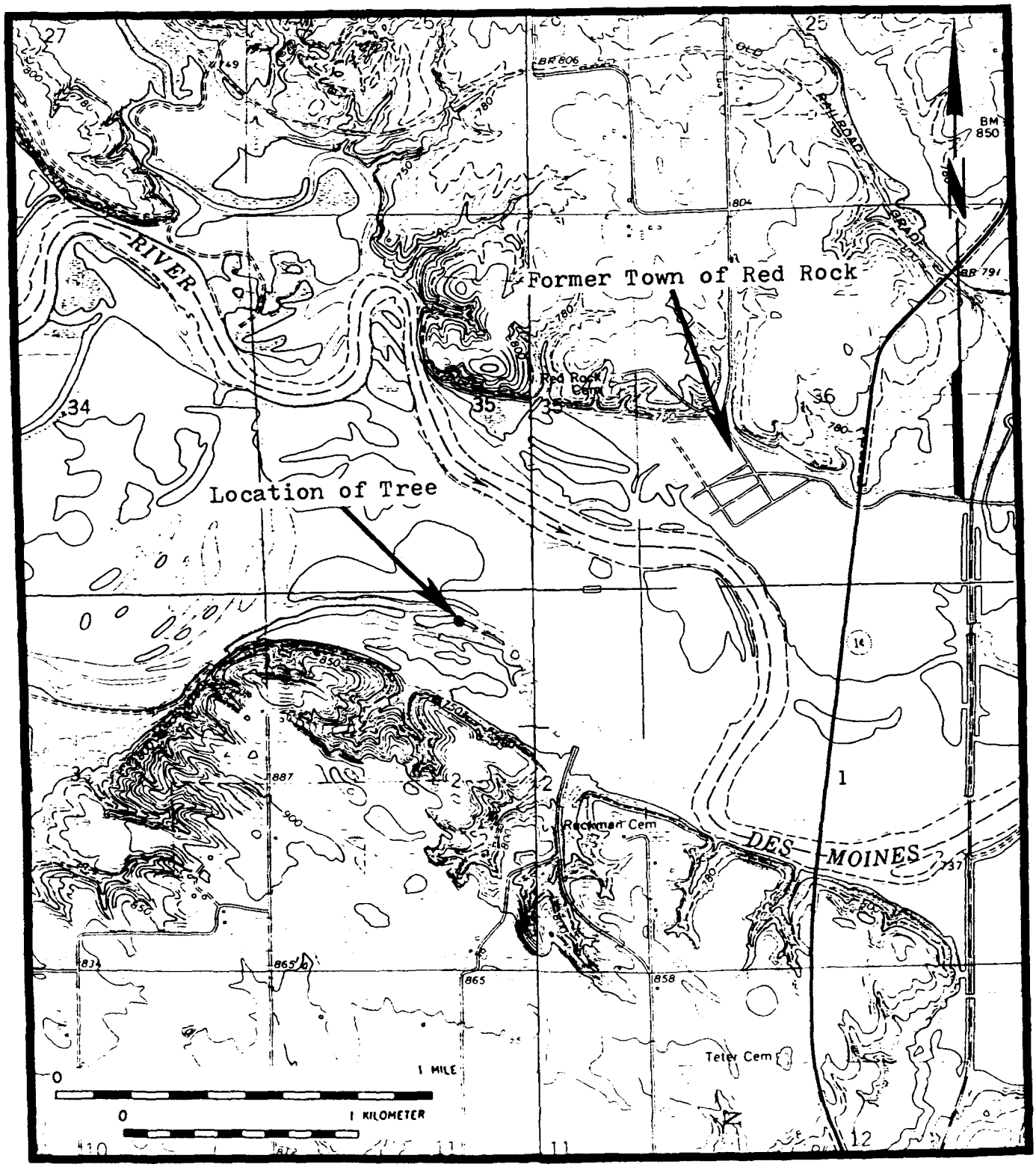


Figure 2. Location of Sycamore tree and former town of Red Rock (from USGS Knoxville NW, 1965, and Otley, 1965, topographic quadrangle maps, 7.5′ series).

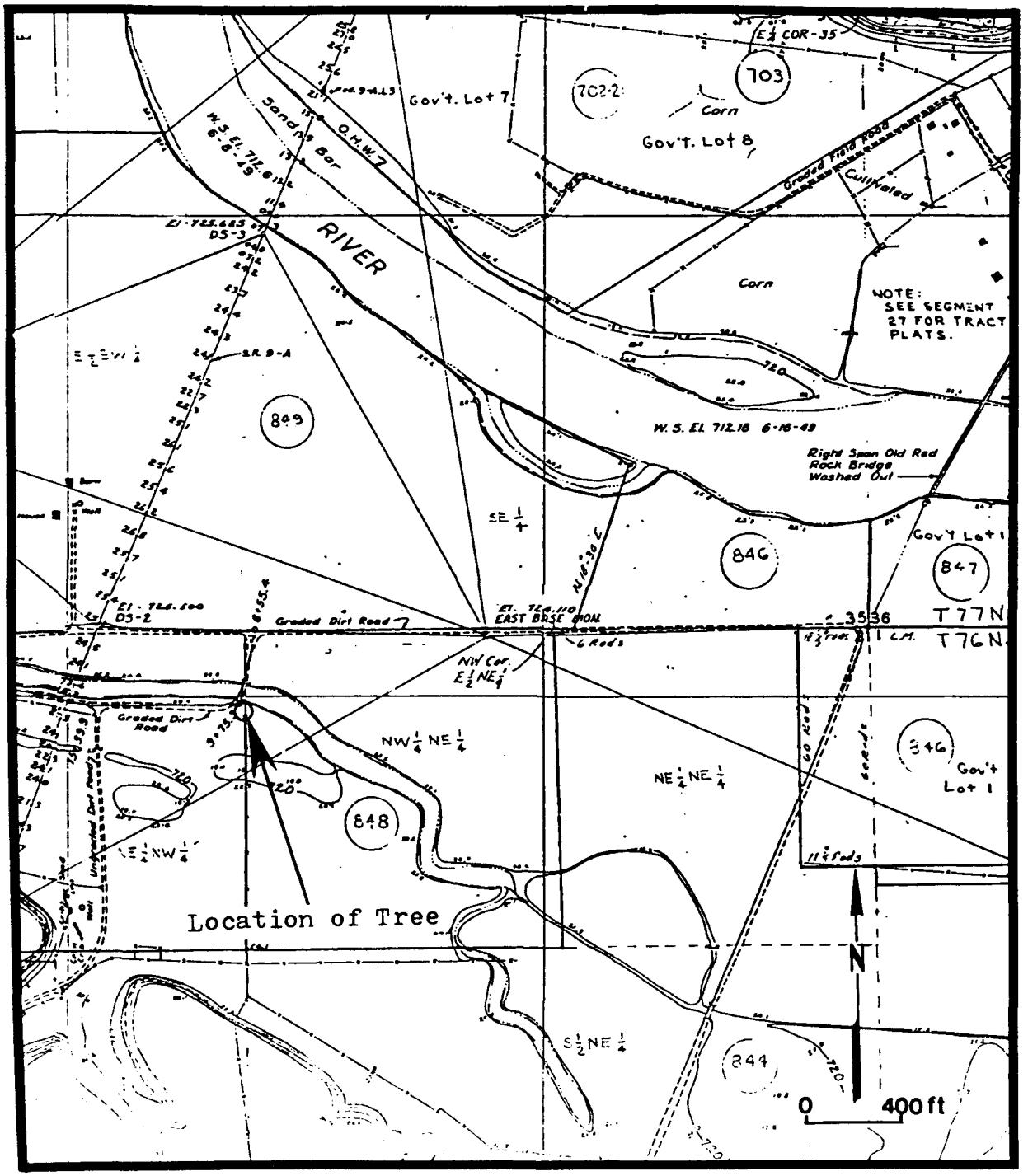
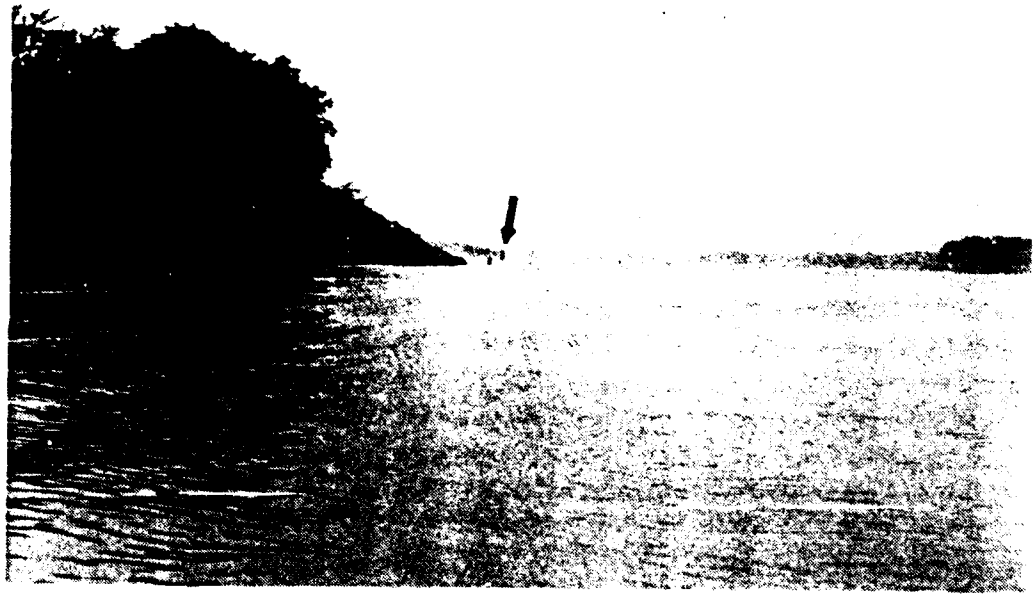


Figure 3. Location of Sycamore tree in relation to Old Slough, river road and bridge in 1949 (from RICOE real estate acquisition tract map RR-PT-K7).

a



b

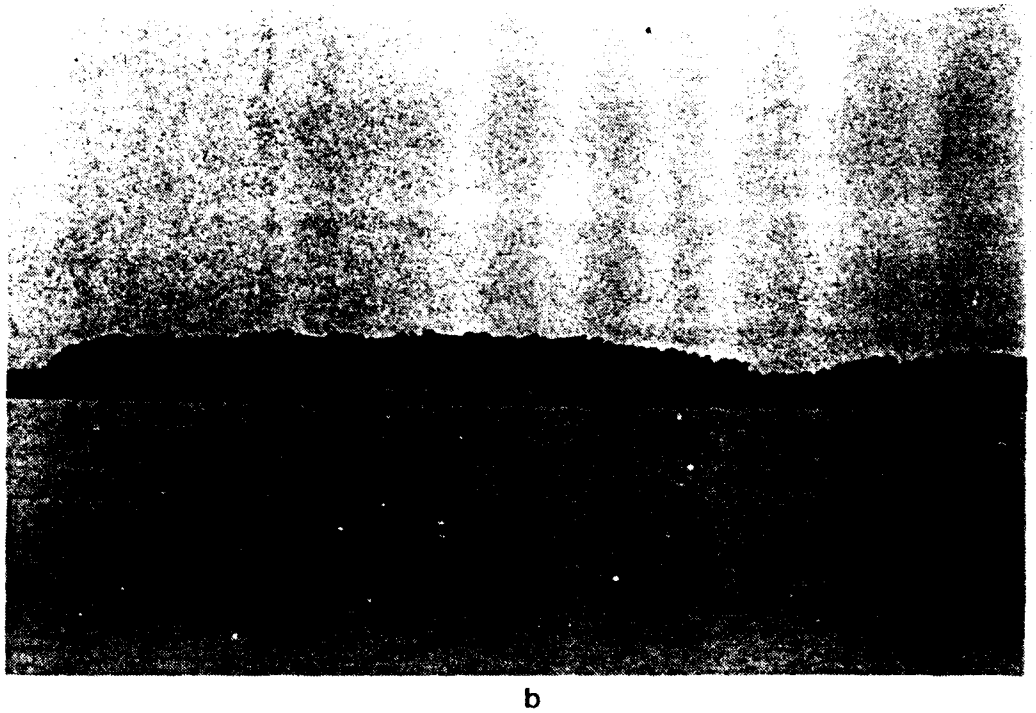
Figure 4. A: Photograph of project area (arrow points to tree location), View to west-northwest from Highway 14 bridge. B: Photograph of project area (arrow points to tree location), view to northwest from near boat ramp. Field date: May 21, 1992.

a

b

Figure 5. A: Photograph of tree, view to the southwest. B: Photograph of tree, view to the southeast. Field Date: May 21, 1992.

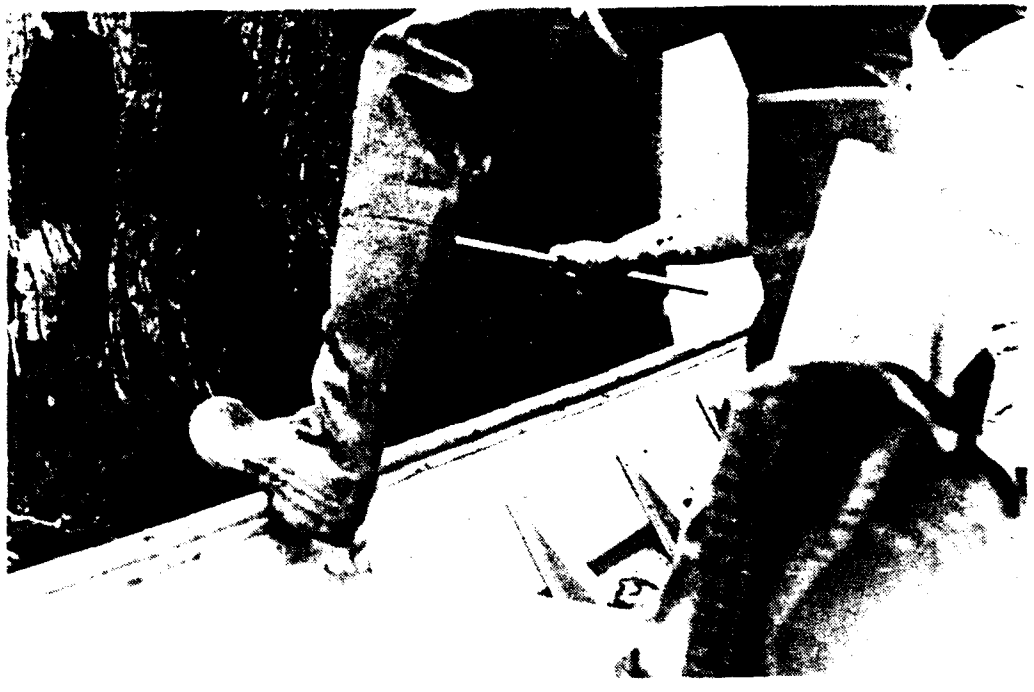
a



b

Figure 6. A: Photograph of tree, view to south. B: Photograph of Red Rock Bluff, view to north. Field date: May 21, 1992.

a



b

Figure 7. A: Photograph showing tree boring in progress. B: Photograph showing tree boring in progress. Field Date: May 21, 1992.

Figure 8. A: Photograph showing hollow portion of tree. B: Photograph showing hollow portion of tree. Field Date: May 21, 1992.

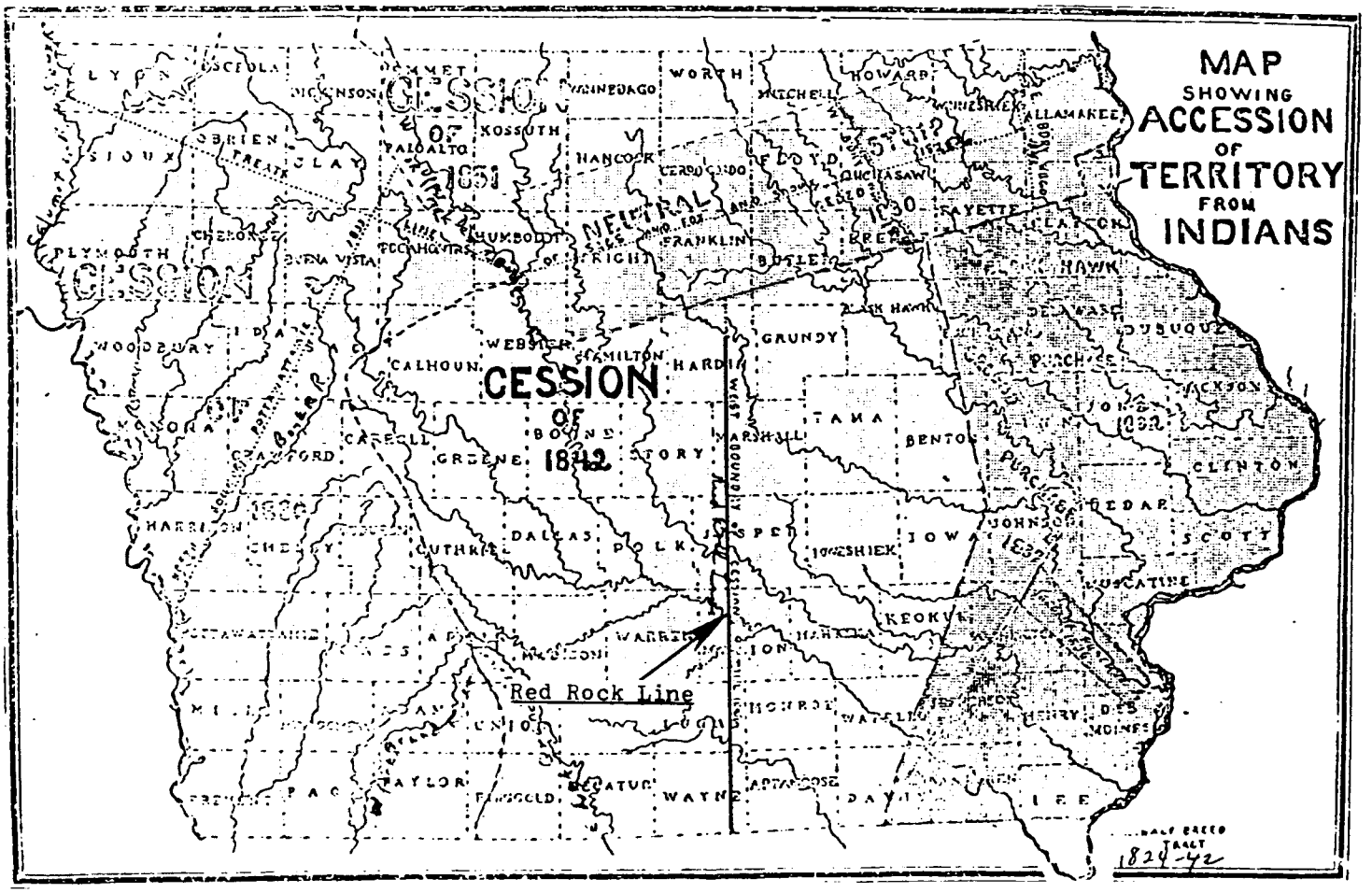


Figure 9. Map showing location of Red Rock line within treaty cession area of 1842 (from Beecher 1975).

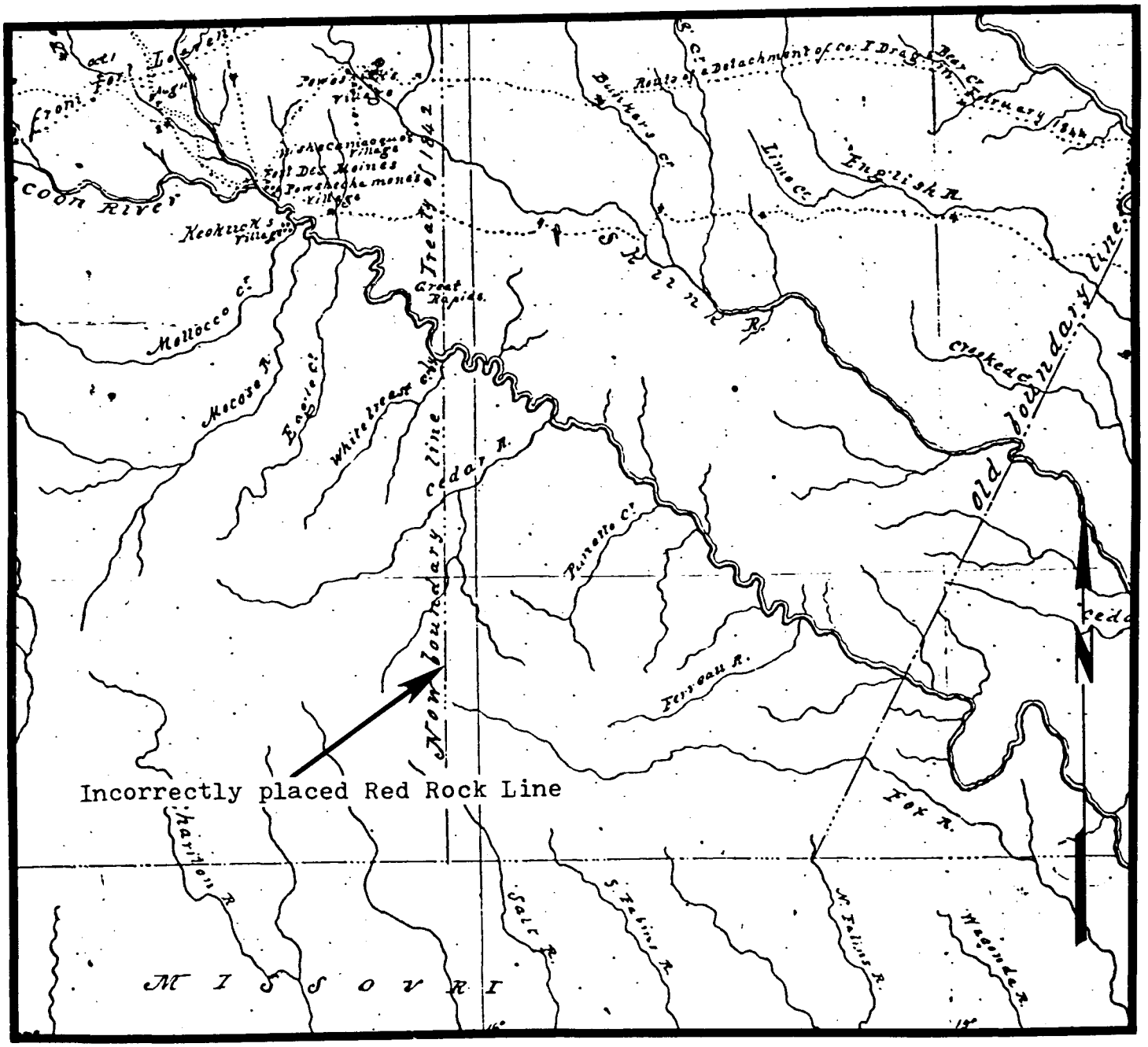


Figure 10. Portion of 1844 map showing incorrect placement of Red Rock line at mouth of White Breast Creek (from Potter 1844).

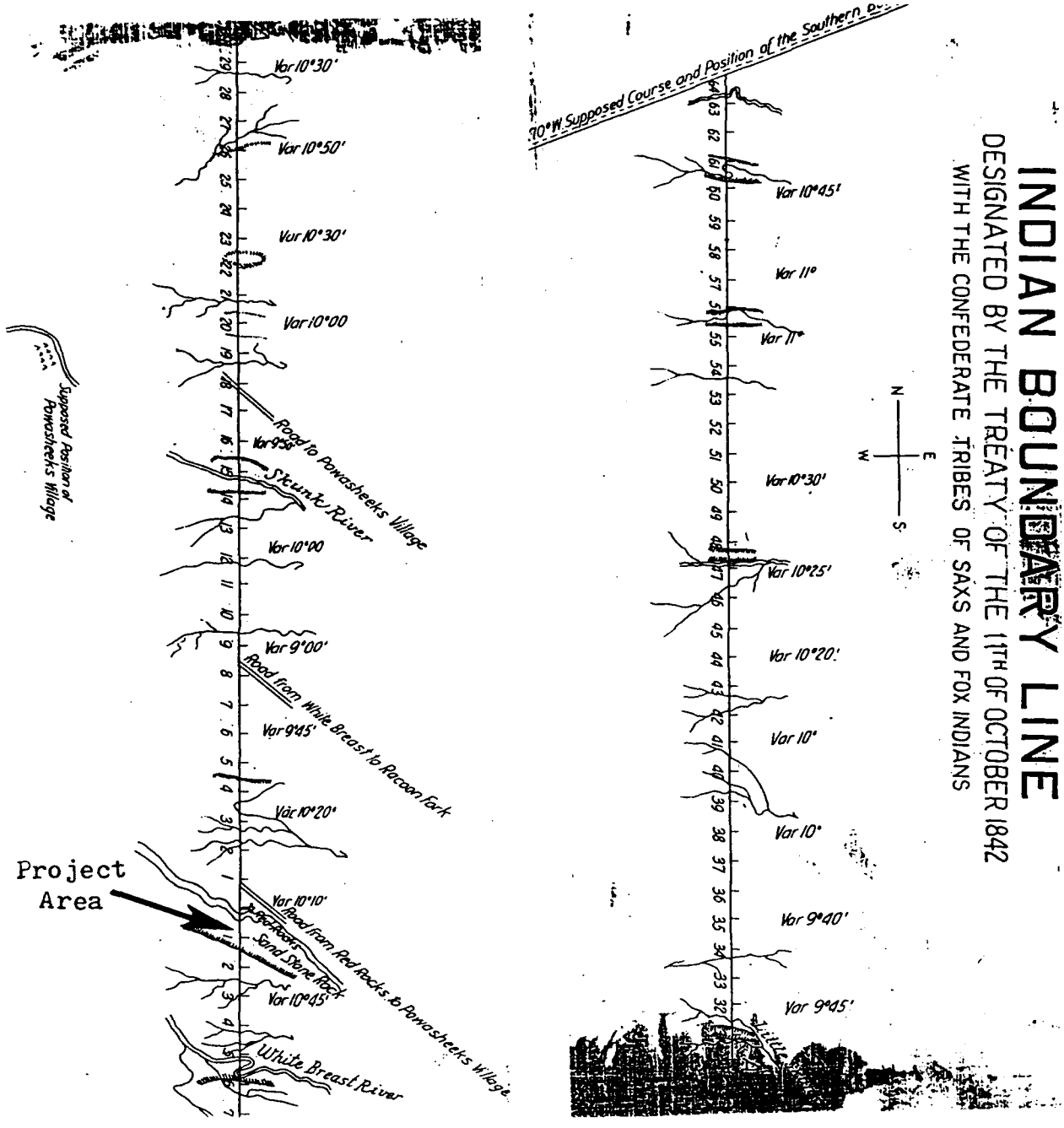


Figure 11. Map of Red Rock line as surveyed by George W. Harrison in 1843 (from Map Collection, Archives, State Historical Society of Iowa, Des Moines).

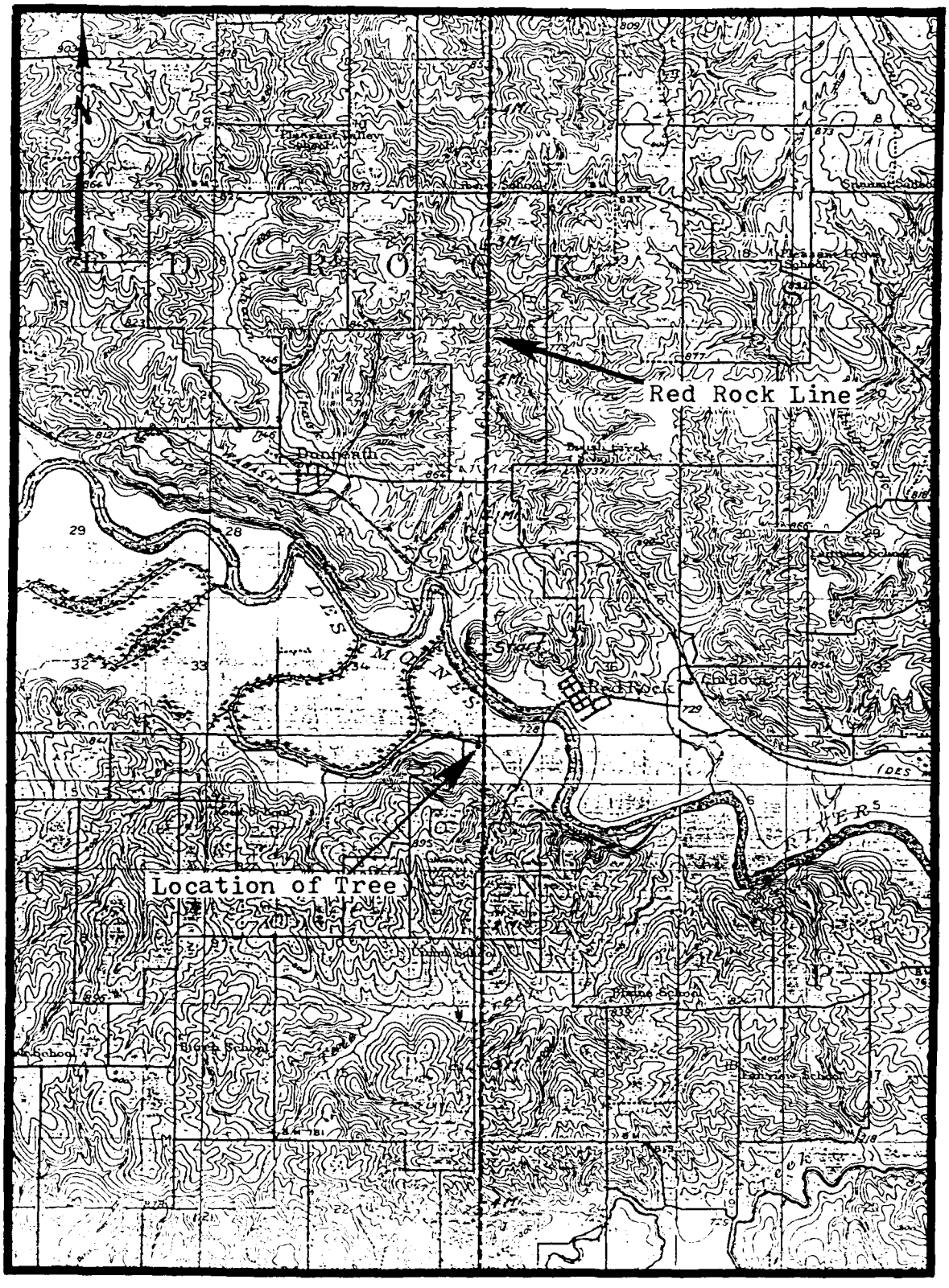


Figure 12. 1912 Topographic map showing placement of Red Rock line (from Johnson 1927).

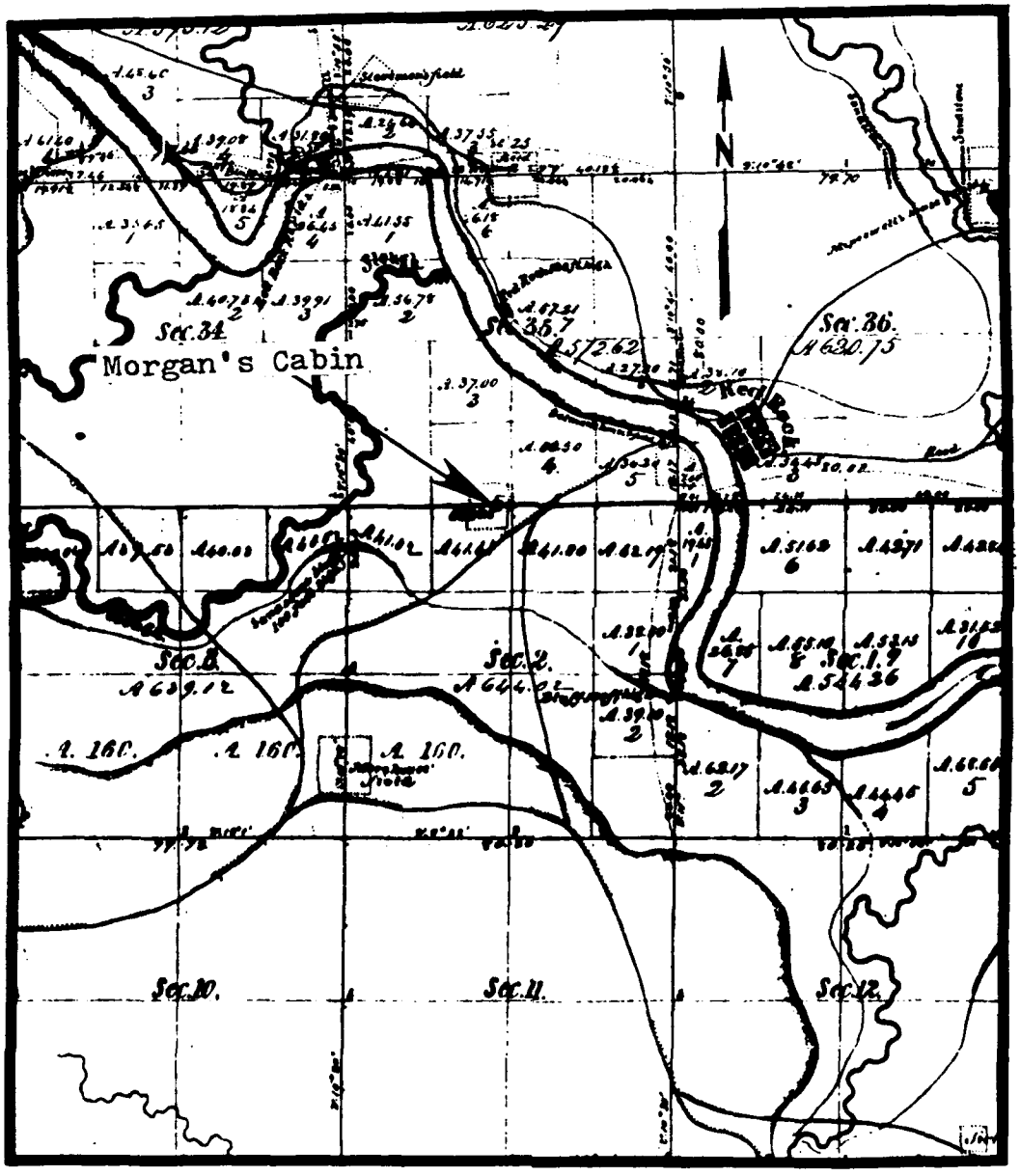


Figure 13. Original 1846–1848 General Land Office survey map of project area (from Office of the Secretary of State 1981.)

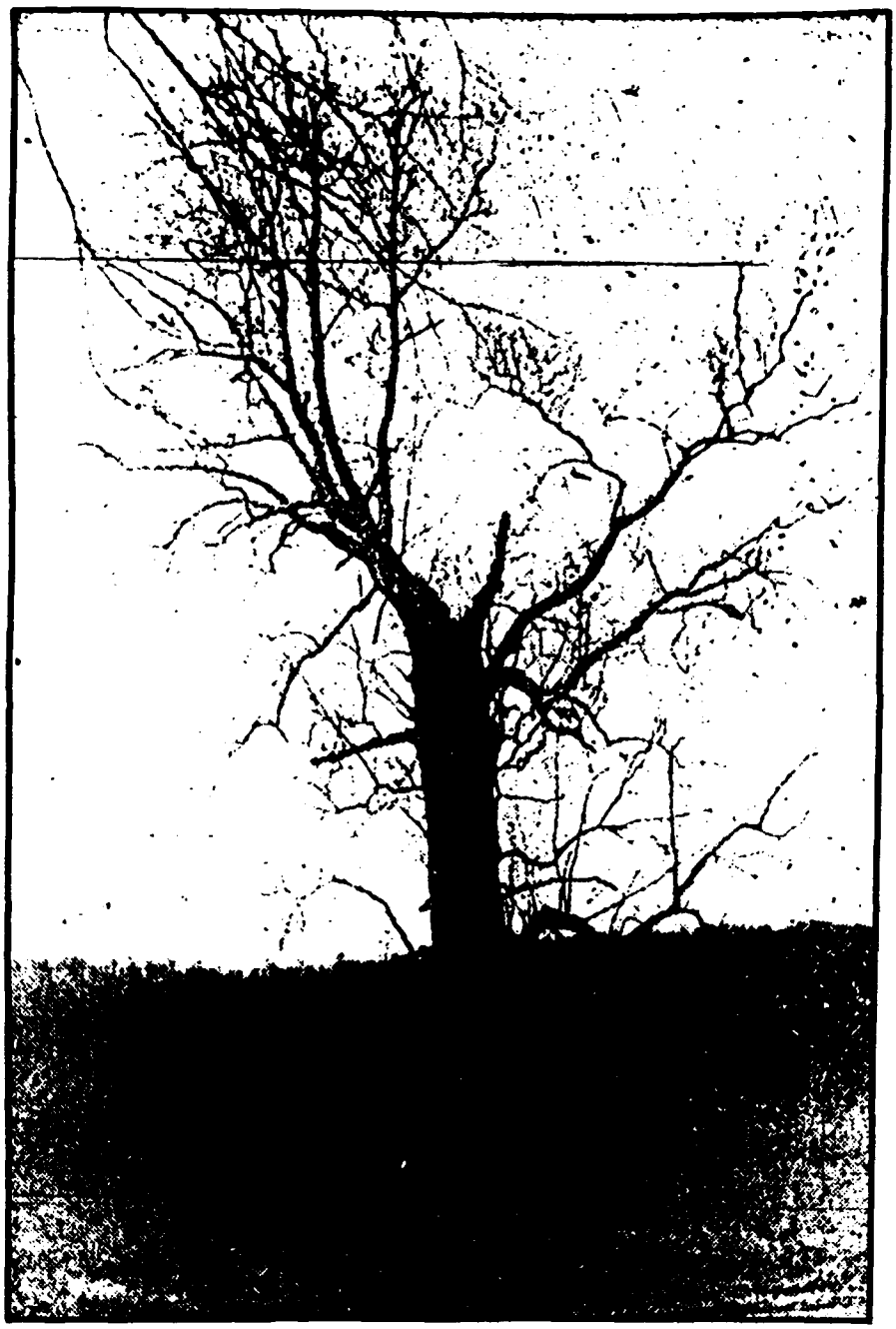
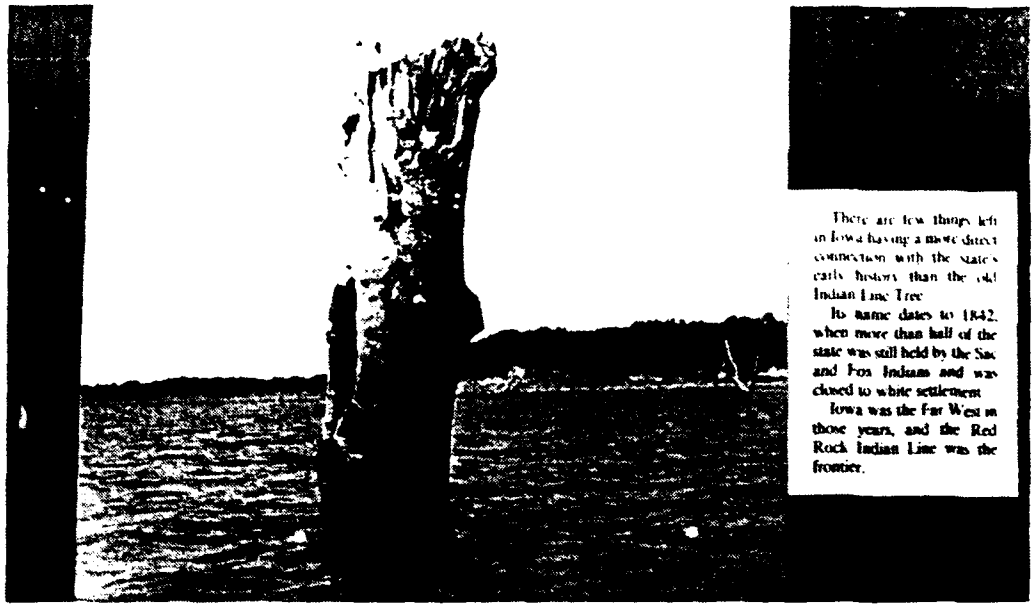


Figure 14. 1968 photograph of Sycamore tree (from Knauth 1968).

Figure 15. Undated historic photographs of Sycamore tree (from Photocopies at Visitors Center, Lake Red Rock).



a

b

Figure 16. A: Photograph of tree taken in 1970s. View to north-northwest (from Visitors Center, Lake Red Rock). B: Photograph of tree taken in 1992, view to north-northwest. Field date: May 21, 1992.

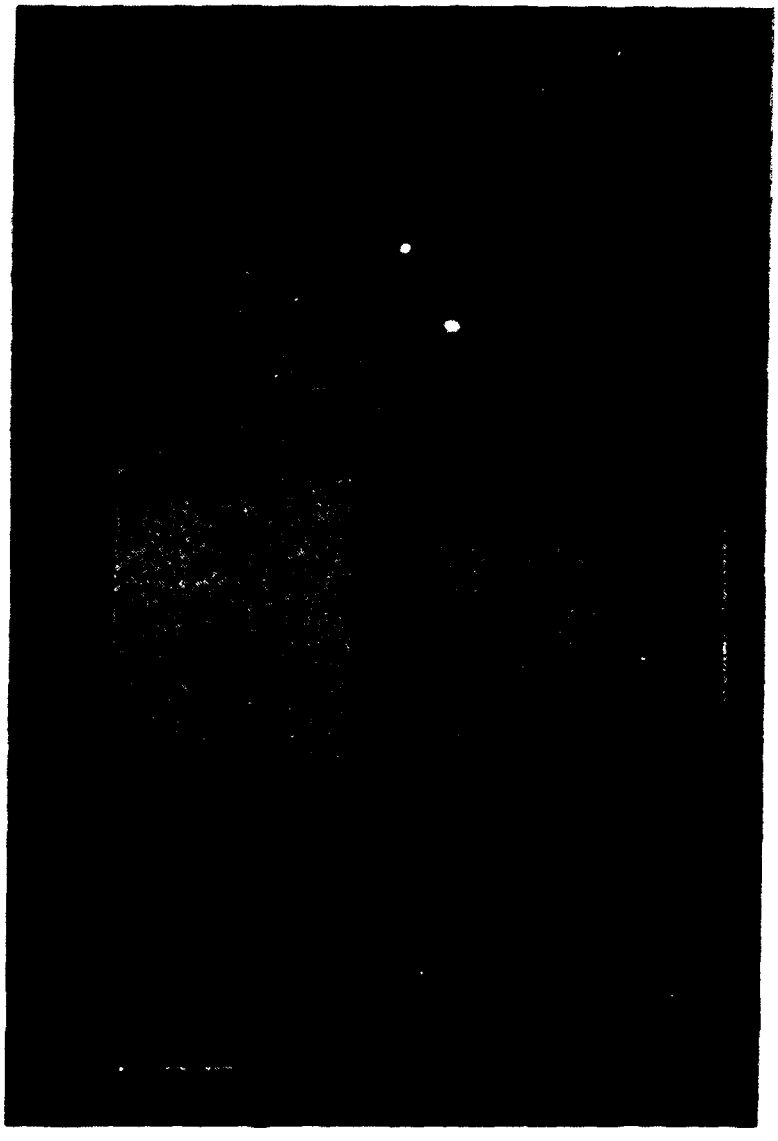


Figure 17. 1957 painting of Sycamore tree by Z. M. Prunty of Knoxville, Iowa (from Marion County Museum, Knoxville, Iowa).

a

This Sycamore tree was part of the 'Red Rock Line.'

b

Figure 18. A: Photograph of Mrs. Dorothy Templeton and son at base of Sycamore tree in the 1960s (from Harriet Huesinkveld, Pella, Iowa). B: Historic photograph of Sycamore tree (print made from slide donated by Harriet Huesinkveld, Pella Iowa).

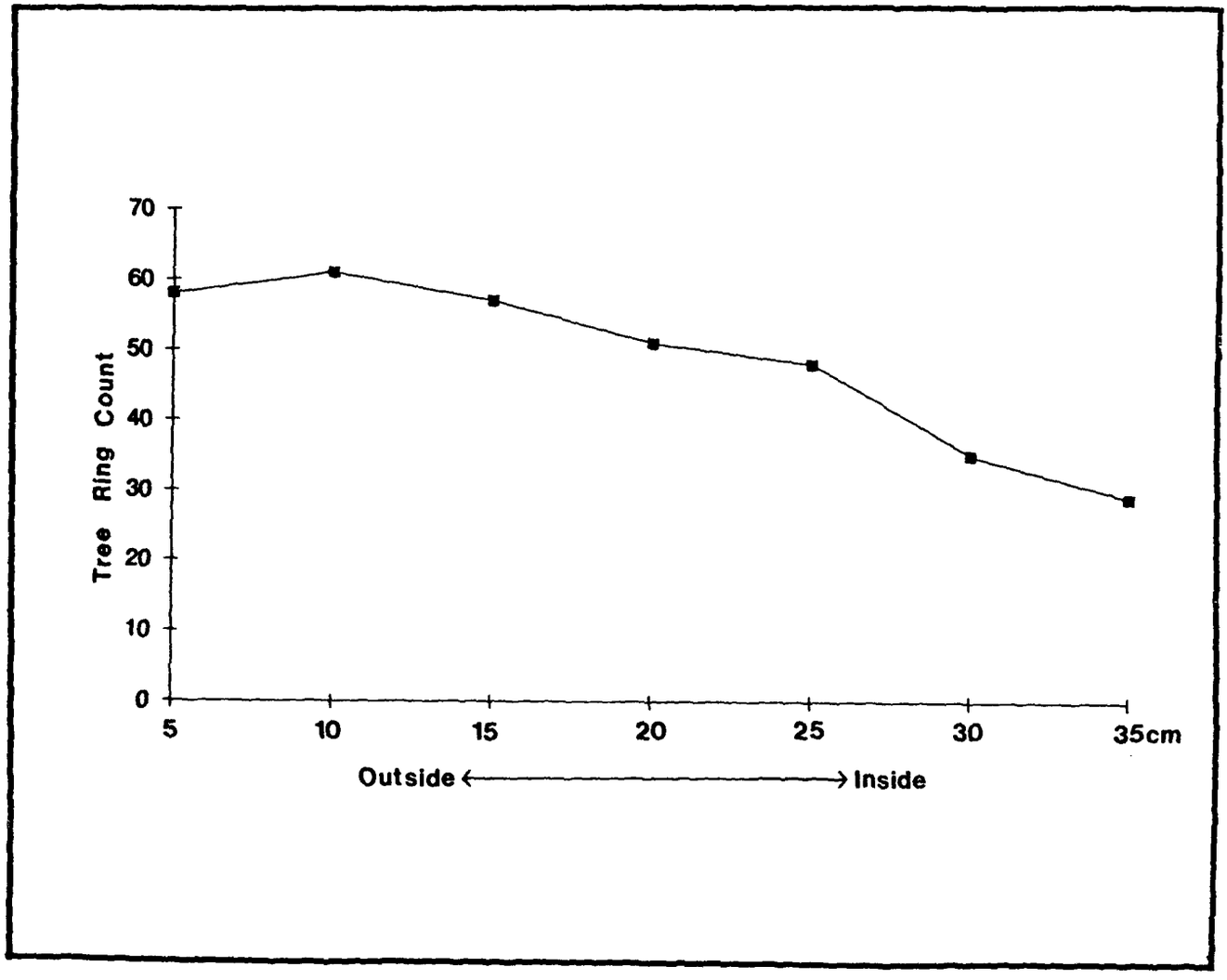


Figure 19. Tree ring count from core sample plotted by 5 cm increments.

Appendix A

Scope of Work

SCOPE OF WORK ON THE ASSESSMENT OF THE OLD RED ROCK INDIAN LINE TREE LOCATED AT THE UPPER END OF RED ROCK RESERVOIR

1. Objective

1.1 Assess the historical record, myth, and oral history of a sycamore known as the "old Red Rock Indian Line Tree" and test the accuracy of tradition that an extant, large dead, sycamore tree, located south of the old frontier town of Red Rock, Iowa and near the 1842 Red Rock Indian line, is this original aforementioned, well-known landmark and boundary line marker.

2. Research

2.1 Research will include collecting, comparing, and contrasting historic photographs, paintings, maps, and descriptions of the location of the original and traditional trees providing a visual chronology of growth and documenting any apparent discrepancies in location. This research will include the map of the Red Rock Line in 1843 by U.S. Surveyor George W. Harrison. A copy of photographs of the sycamore tree located at the Red Rock Visitors Center should be copied and used within the report.

3. Field Work

3.1 The field work will include taking contemporary photographs of the tree attributed to be the "old Red Rock Indian Line Tree" and obtaining a dendrochronology sample. The wood sample can be either indirectly, directly, or radiocarbon 14 dated. The sample will be preserved and curated.

3.2 Field work will be coordinated with Department of Natural Resources, State Wildlife Red Rock Unit Manager Rick Trine, R.R. #2, Box 157, Pleasantville, IA. 50225. Mr. Trine also knows the location of the dead sycamore tree in question and can be reached by telephone at (515) 848-3108. Field work will also be coordinated with U.S. Army Corps of Engineers, Rock Island District Archeologist Ron Deiss by telephone at (309) 788-6361, Ext. 6185.

4. Report

4.1 A referenced and scholarly report shall be written chronicling the history of "old Red Rock Indian Line Tree" using photographs, paintings, and maps used in research. The report will also include methods and results of the field work and a summary of the investigations. The report shall also include a summary which will discuss the objective of this Scope of Work and further recommendations.

5. **Schedule**

5.1 The draft report will be due on June 1, 1992 and reviewed by the Corps. The Corps shall provide the comments and suggestions to the Contractor within 30 days after receipt of the draft report. The Contractor shall address the Corps comments and suggestions within the final report which will be provided to the Corps by July 15, 1992. Original photographs shall be used in the final report and all film negatives shall be given to the Corps with the final report.

6. Scope of Work (end) Pg2 Li14 Co38