

# Bioarchaeological Analysis of the Fenton Mounds (23SL1064)

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The Fenton or Gravois Bluff Mounds (23SL1064) consisted of two conical earthen mounds located near the southwestern border of the City of Fenton in southern St. Louis County, Missouri. The northernmost mound, known as the “Small Mound,” was approximately 15 m in diameter and 2 m in height. The southernmost mound, the “Large Mound,” was composed of two superimposed mounds and was about 2.5 m high, 20 m east to west, and 16 m north to south (Harl 1997). No radiocarbon assays were obtained, but diagnostic pottery sherds from the Large Mound fill indicate that the site dates from sometime between the Late Woodland Patrick phase (A.D. 600–750) and Mississippian times (A.D. 1050–1400) (Galloy 1999).

Due to pending commercial development of the property, an initial survey of the Fenton Mounds was conducted by SCI Engineering, Inc., in 1998, followed by archaeological excavation and complete removal of the mounds in 1999. During excavation of the Small Mound, only two grave boxes were distinguished (Galloy 1999). One box contained a few human bone fragments and shell beads, while the second had no human remains. In contrast to the Small Mound, 53 features and 43 burial areas (designated A to QQ) were identified at the Large Mound (Table 1, Figure 1). The graves consisted primarily of limestone boxes or pits with limestone caps holding articulated, partially articulated, or disarticulated skeletons. Two mass reinterments were also present in the Large Mound. Galloy (1999) states that one reinterment was a wood-constructed crypt positioned over a primary burial that was burned midway through mound construction.

Both mounds had suffered from bulldozer damage and looting prior to excavation (Harl 1997). The western part of the Small Mound and the southeastern parts of the Large Mound were previously destroyed by road construction. Looting was apparent by the presence of pits and trenches, the absence of skeletal material in some of the grave boxes, and modern artifacts (e.g., glass, aluminum, and rifle casings) mixed in grave fills.

## Laboratory Methods

The human skeletal remains recovered from the mounds were remanded to the State Historic Preservation Office of the Missouri Department of Natural Resources in 2001. In 2002, inventory and analysis of the remains were conducted in accordance with the Missouri Unmarked Human Burial

Table 1. Feature and Burial Locations, Types, and Demographic Data for Large Mound.

Feature	Burial	Test Unit	Type	MNI/Sex/Age <sup>a</sup>
1	A	8	Bundle	Indeterminate
2	B	10	Bundle/Box	1AduM
3	C	16	Bundle	1Inf, 1AduF
4	D	21	Cremation	1Adu
5	E	10	Bundle	1Ch
6	F	10	Bundle	Indeterminate
7	None	10	-	-
8	G	20	Bundle	1Inf
9	None	?	-	-
10	H	20	Bundle	1AduF
11	I	33	Bundle/Pit	1AduM
12	J	8	-	Indeterminate
13	K	38	Flexed	1Inf, 1Ado, 2AduM
14	L	54	-	1Ch
15	M	50	-	1Adu
16	N	28	Cremation	Indeterminate
17	O	46	-	1Ado, 1Adu
18	P	20	Bundle	1Inf, 1Ch, 1Ado, 4AduF, 1Adu M
19	Q	32	Cremation	1Adu
20	R	7	-	1Inf
21	S	52	-	1Ch
22	T	15	Extended	1AduF
23	None	?	-	-
24	U	57	-	1Ado
25	W	58, 21, 22	Cremation	10Adu
26	X	35	Looted	1Ch
27	V	45	-	Indeterminate
28	None	59	Box	-
29	None	28	-	-
30	Z	60	Flexed	2Inf
31	Y	60	-	1Inf
32	AA	59	Bundle	2Inf
33	None	61	-	-
34	None	61	-	-
35	BB	61	-	1Ch, 1AduM

Table 1 (continued).

Feature	Burial	Test Unit	Type	MNI/Sex/Age <sup>a</sup>
36	CC	62	Extended	1Ch
37	DD	67	-	1Inf
38	None	21, 22, 28	Empty Cairn	-
39	II	58	Semi-flexed	1Ch
40	EE	62, 54	Semi-flexed	1AduF
41	FF	65	Semi-flexed	1AduM
42	GG	67	-	1Inf
43	JJ	68	Sitting	1Ch
44	HH	68	-	1Adu
45	KK	68	-	1AduM, 1AduF
46	PP	71, 33	-	1Inf
47	LL	58	-	1Inf
48	MM	71, 33	Extended	1Inf
49	NN	71, 22	-	1Inf
50	OO	71	Semi-flexed	1AduM, 1Adu
51	QQ	68	-	1Inf
52	None	58	-	-
53	None	68	-	-

<sup>a</sup>Inf = Infant; Ch = Child; Ado = Adolescent; Adu = Adult; AduM = Adult Male; AduF = Adult Female.

Law (RSMO 194.400 et seq.), following the protocol outlined in Buikstra and Ubelaker (1994). Analysis of the skeletons was hampered by incomplete archaeological information and by poor bone preservation. When possible, bones and bone fragments were identified and information pertaining to the sex, age, and health of each individual was collected. The data were used to establish the minimum number of individuals (MNI) for each burial designation. Age and sex estimations for adults were obtained using standard osteological indicators outlined in Bass (1995) and Buikstra and Ubelaker (1994). For infants (birth to approximately 3 years) and children (3–7 years), ages were estimated using dental development and eruption, long bone lengths, and bone development. Dental eruption, epiphyseal closure, and other indicators of development were used to estimate ages for older children or juveniles (7–12 years) and adolescents (puberty to maturity). It is not possible to estimate sex with accuracy in subadults (i.e., infants, children, juveniles, and adolescents).

In addition to the analysis of skeletal remains, features in the Large Mound were plotted and the plots were examined for patterns based on

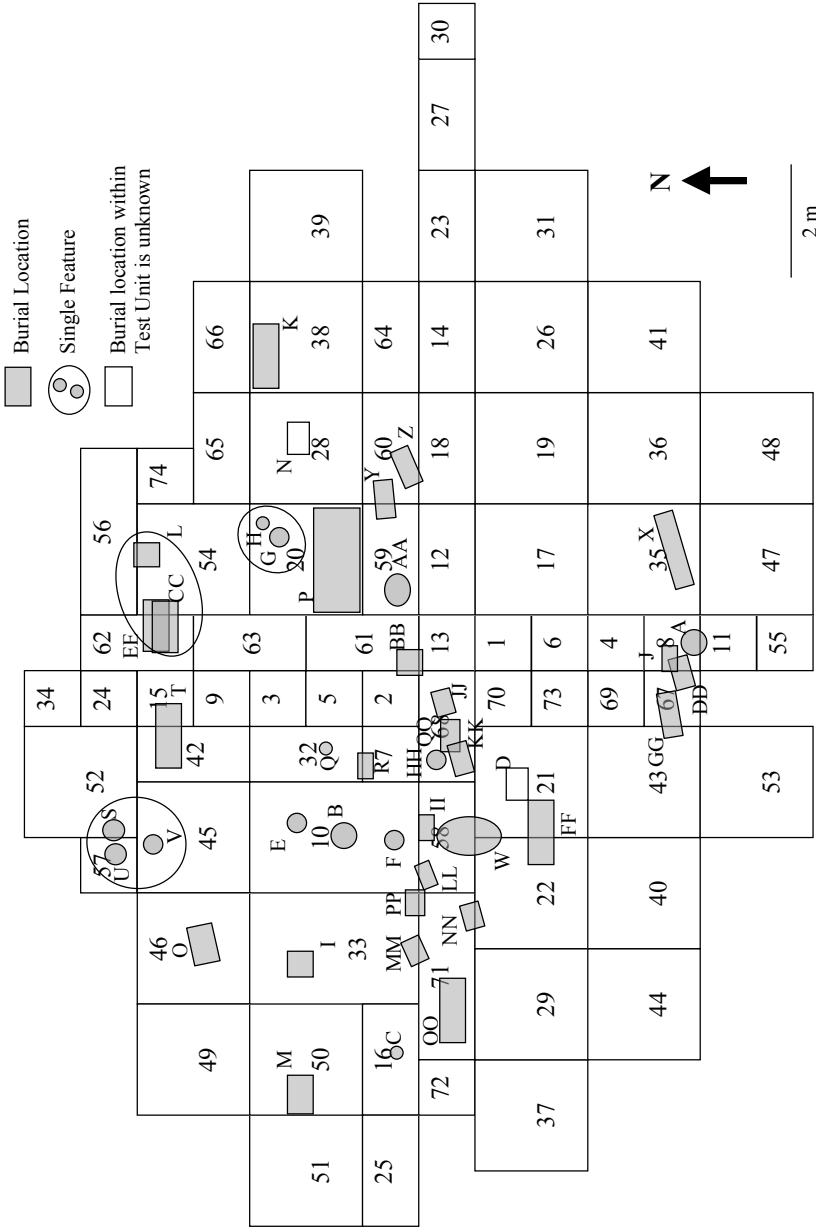


Figure 1. Large Mound excavation plan with test unit numbers and burial locations. Burial locations are approximate and grave sizes are not to scale.

age, sex, and burial type. No report of the archaeological investigation has yet been written, so archaeological provenience data were drawn from field excavation records and level sketches.

## Results and Interpretation

The cultural and temporal affiliation of the mounds cannot be determined conclusively because of the lack of diagnostic artifacts and the fragmentary nature of the bones. Associated funerary objects (i.e., pottery, bird bones, mussel shells, and a drilled bear canine) were discovered with only a few of the burials in the Large Mound (Galloy 1999) and none of them are culturally or temporally diagnostic. The lack of funerary objects may be due to burial practices or looting. Pottery sherds found in the fill of the Large Mound suggest the site was constructed between the Late Woodland and Early Mississippian periods, but like many Missouri burial mounds, the Large Mound was probably built over a long period and the interments placed therein may not represent a single group.

The fragmentary and incomplete nature of the human remains prevents comprehensive assessment of the paleodemography, behavior, or health of the people that once occupied this region. However, both archaeological and physical anthropological analyses of the mounds and their contents provide insights into behaviors associated with interment of the dead and the general health of prehistoric populations in eastern Missouri, adding to the growing body of knowledge about the lifeways of Late Woodland and Early Mississippian peoples.

## Demography

Results of the osteological analyses are summarized in Table 1. (See Wescott [2003] for a complete inventory and description of each burial.) Given the incomplete archaeological data and fragmentary nature of most of the skeletons, age- and sex-specific mortality profiles cannot be accurately determined. The primary purpose of the analysis was to inventory the human remains and establish a minimum number of individuals (MNI) for each burial designation. However, determining the MNI interred in the mounds is problematic. Based on the MNI from each archaeological feature, only two individuals appear to have been buried in the Small Mound, but approximately 68 individuals were buried in the Large Mound. However, the combined MNI of 70 likely underestimates the number of individuals originally buried there, since numerous skeletons were removed from the mounds by looters. On the other hand, given that many of the graves were disturbed, it is possible that bones of a single individual were dispersed

Table 2. Age and Sex of Skeletons from the Large Mound.

Age Group	Male	Undetermined	Female
Infant (birth to 3 years)	-	17	-
Child (3–12 years)	-	9	-
Adolescent (12 years to maturity)	-	4	-
Adult (mature skeleton)	9	16	9
Undetermined	-	4	-

into more than one feature, making the MNI of the Large Mound less than 68. For example, Burial L was probably an extension of Burial CC (Figure 1). Likewise, the field notes suggest that Burials S, U, and V represent a single looted grave. However, if S, U, and V did represent a single grave, it contained the remains of more than one individual.

The skeletal remains from the Large Mound represented both sexes and all age groups (Table 2). Of the 68 individuals identified for the Large Mound, half were adults. Many of the adult remains could not be accurately assessed for sex because diagnostic bones of the pelvis were missing or too fragmentary. Of the 18 adult individuals that could be sexed, there was an equal number of males and females. Not surprisingly, infants composed the largest segment of the subadult individuals (25% of the total number of individuals or 56.7% of the subadults), followed by children/juveniles (13.2% of the total number of individuals or 30.0% of the subadults), and adolescents (5.9% of the total number of individuals or 13.3% of the subadults). Sex and age could not be determined for 5.8% of the 68 individuals.

## Health and Disease

Few clear indicators of disease or traumatic injury were observed. Dental hypoplasias were apparent on the teeth of two individuals (Burials K and W), and carious lesions were observed in three (Burials P, T, and FF). A few individuals had multiple dental problems. Burial FF, a young to middle-aged adult male, had a buccal abscess at the apex of the mandibular left premolars, a labial abscess around the apex of the maxillary left canine, a labial abscess at the maxillary left central incisor root, and a carious lesion on the mesial (interproximal) surface of the maxillary second premolar at the cemento-enamel junction. A young female from Burial T also had a single occlusal carious lesion on the left mandibular first molar and impacted mandibular third molars. The dentition of an older male (Individual D) from Burial P exhibits extreme dental attrition asymmetry due to malocclusion of the jaw (Figure 2). The teeth are more heavily worn on the right

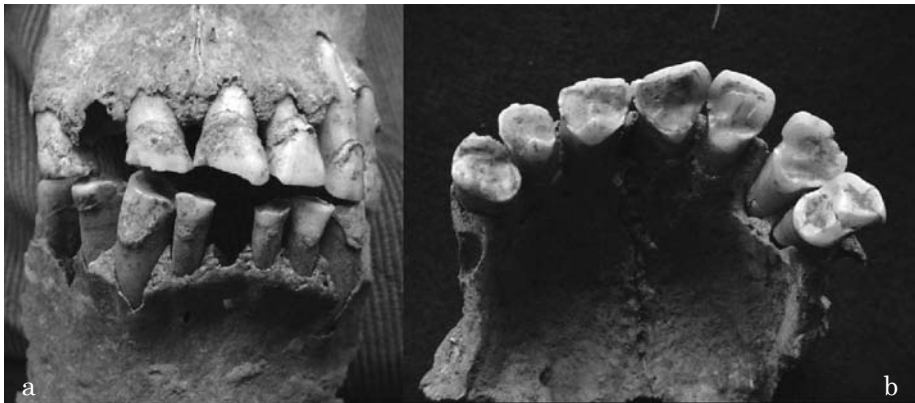


Figure 2. (a) Anterior and (b) occlusal views of Burial P-Skull D dentition, illustrating asymmetry in attrition.

side compared to the left, with an edge-to-edge bite on the right side, but an overbite on the left.

The only other notable pathological conditions among individuals in the Large Mound are a possible perimortem fracture on the right parietal and frontal bones of Individual D from Burial P that crosses the coronal suture, and a cluster of three possible healing lytic (bone destruction) lesions on the left parietal of a young (15–20 year old) female from Burial T. Each lesion on the young female appears as a circular cavity in the outer table and diploe of the parietal (Figure 3). Two of the lesions have well-defined, smooth, and beveled walls with numerous pits on the floor of the cavity, while the third lesion has irregular and poorly defined walls. The smooth walls on the two well-defined lesions appear to be due to reactive bone formation at the margins. A number of infectious diseases can result in such lesions on the skull and, therefore, the cause of these lesions cannot be determined with the available materials. Furthermore, while these depressions are most likely the result of disease, postmortem destruction cannot be ruled out. Postmortem processes can result in destruction of the bone that resembles an infectious process. However, postmortem damage usually results in a destructive focus with linear and jagged edges, while smooth edges and evidence of osteoblastic repair are indicative of premortem injury (Ortner 2003).

### Mortuary Behavior

One of the goals of conducting investigations of burial mounds is to gain information regarding mortuary behavior. The Fenton Mounds appear to be similar to many of the Late Woodland and Early Mississippian

burial mounds in the region. It is a bluff-top cemetery; limestone boxes or tumuli were constructed for placement of the dead; there is a wide range of variation in burial types; and individuals were treated similarly regardless of age or sex (Hoard 1995; Wood and Brock 1984, 2000). There is no discernible pattern to the placement of burials in the Large Mound by age (Figure 4), sex (Figure 5), or burial type (Figure 6). Inhumation types in the Large Mound include ossuary (multiple secondary) burials, bundle burials, cremations, and primary inhumations in extended, flexed, semi-flexed, and sitting positions.

The difference between the two mass interments (P and W) is interesting. Burial P contained the remains of infants, children, adolescents, and adults, while Burial W contained only adult and adolescent skeletal remains. Furthermore, most of the cranial and postcranial elements were represented in Burial P. This is in contrast to Burial W, which consisted primarily of skull and long bone fragments. Very few vertebrae, rib, hand, or foot bones were present, and the femur, tibia, and humerus were the most abundant of the long bones. There were very few radii, ulnae, or fibulae.

Like other Woodland mounds in Missouri, the majority of interments were secondary burials with single bundles being the most common (O'Brien and Wood 1998). Pre-burial treatment of the remains, including burning and dismemberment, appears to have been a common part of the burial ritual. Four of the burials in the Large Mound were recorded by SCI Engineering archaeologists as cremations, and several other features contained at least some burned bones. Burial O (Feature 17), for example, contained hundreds of small bone fragments representing at least one adult and one adolescent. Some of the bone fragments were burned while others exhibit no signs of burning. In all cases, the burned bones were black or dark brown, indicat-

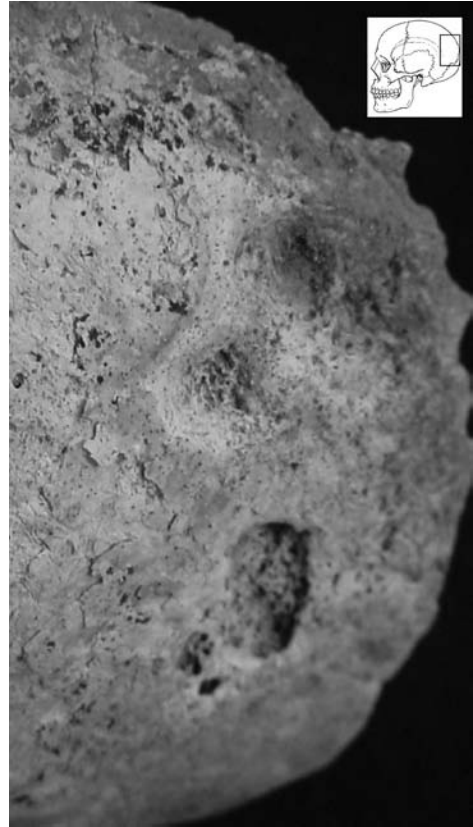


Figure 3. Lytic lesions on left parietal of young adult female from Burial T.

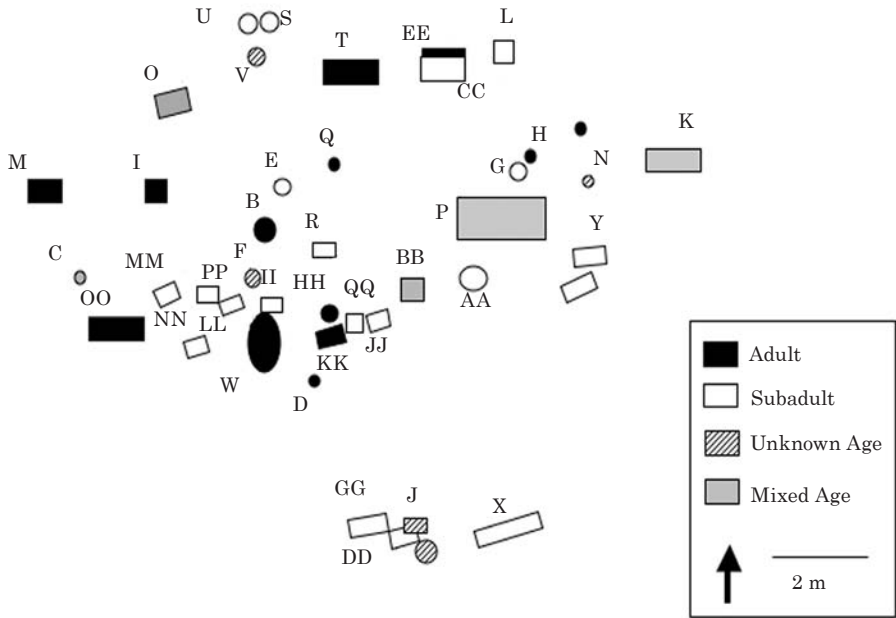


Figure 4. Distribution by age of burials in the Large Mound.

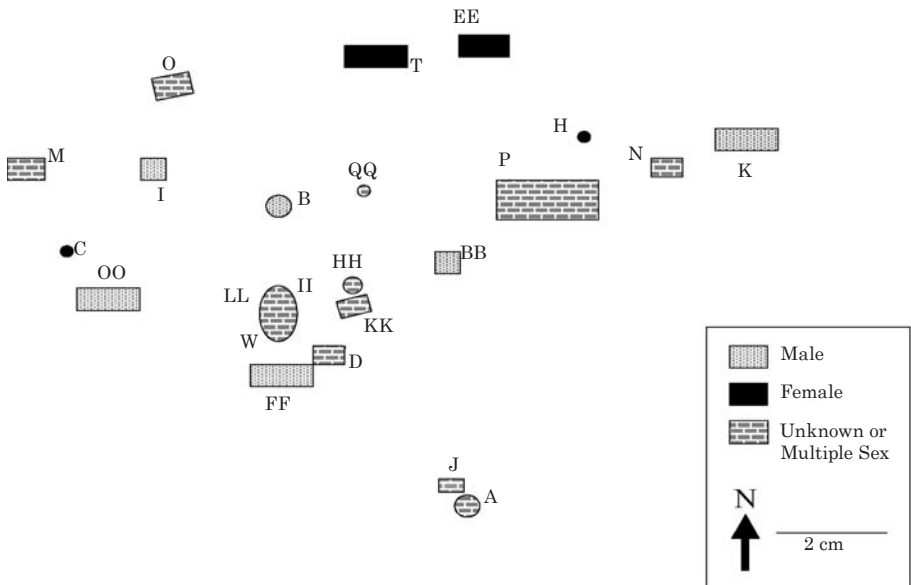


Figure 5. Distribution by sex of burials in the Large Mound.

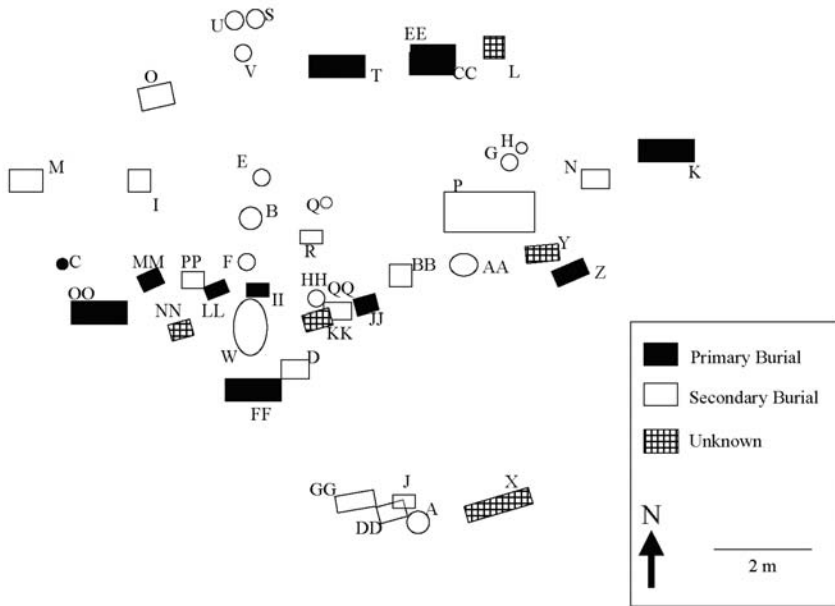


Figure 6. Distribution by burial type of burials in the Large Mound.

ing they were not exposed to significant temperatures or were burned for a short period of time. It is not clear if the burning occurred in the mound itself or at another location. Cremations within mounds are rare in Missouri during the Late Woodland to Early Mississippian time span (O'Brien and Wood 1998:263), but field notes indicate that some burned soil and clay was present in a few of the burial pits containing burned bone (e.g., Burial B). There were no indications of cut marks associated with dismemberment of the bodies prior to burial. While dismemberment could have occurred without resulting in cut marks, the lack of them suggests that decomposition of the remains took place in another location, with secondary interment of the bones in the mound.

## Conclusions

Few earthen mounds containing numerous burials have been excavated in eastern Missouri. As a result, the Fenton Mounds are important to the growing body of data on the health, diet, demography, and burial rituals of the Late Woodland and Early Mississippian peoples of this region. The people buried their dead in a wide variety of positions with no apparent preferential treatment of the deceased based on age or sex. There is little indication of disease affecting the skeleton or dentition, although this could be due to the

fragmentary nature of the bones. Further work needs to be done to extract more cultural and biological information offered by the excavation of the Fenton Mounds. A detailed archaeological report, radiocarbon dating, and more complete analysis of the skeletal remains (e.g., isotopic, radiographic, histological, and DNA) are needed to obtain more of the information available from this important site.

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