

CONTINUED EXCAVATIONS AT GOLDEN EAGLE (11C120)

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SITE HISTORY

The Golden Eagle site (11C120), Calhoun County, IL, includes the only known enclosure—an earthen embankment and ditch—in the Illinois River Valley. Originally identified by William McAdams in the late nineteenth century, this mound and enclosure site is located on the edge of the Deer Plain Terrace, eight kilometers upstream from the confluence of the Mississippi and Illinois Rivers (fig. 1). Golden Eagle is typically considered a Middle Woodland (ca 50 cal BC - cal AD 400) landscape due to the presence of several apparent mounds and the enclosure, although artifacts found at the site are from the Terminal Archaic, Middle and Late Woodland, and Mississippian periods. In 2013, archeologists from the Center for American Archeology (CAA) conducted multi-sensor geophysical surveys of the site, including a ground-penetrating radar survey of the embankment in order to better understand the site's organization (Herrmann et al. 2014, King et al. 2015). CAA archeologists and Arizona State University Field School (ASUFS) students excavated five test units across the embankment and ditch in 2014, providing the first systematic view of the enclosures' internal structure (King et al., 2015). King and colleagues observed alternating deposits of light, yellowish-brown soil and darker, reddish-brown soil (Bt horizons) that feathered out to the north of their excavation limits and were interpreted to be the primary component of the embankment. During the summer of 2015, the CAA's High School, Adult, ASU, and NSF-REU field schools excavated a series of 1 x 2 meter test units across the embankment and ditch at the northern portion of the site to further document the embankment's structure (fig. 2).

Figure 3: Sketched profiles and photographs of embankment stratigraphy:
1. Plow zone 4. B horizon (original ground surface)
2. Upper fill 5. Deer Plain Terrace
3. B horizon with Bt horizons 6. Highly weathered B horizon

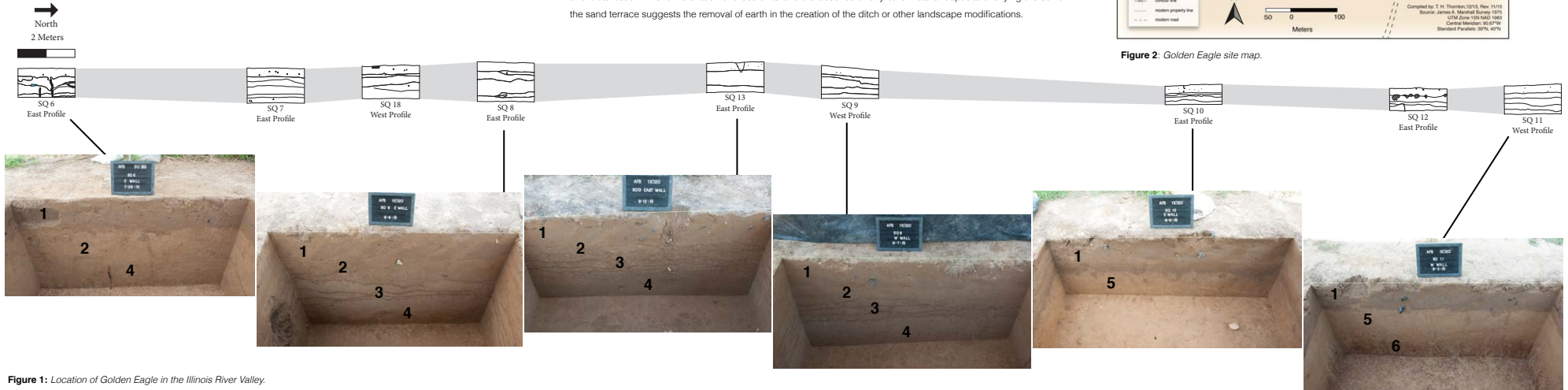
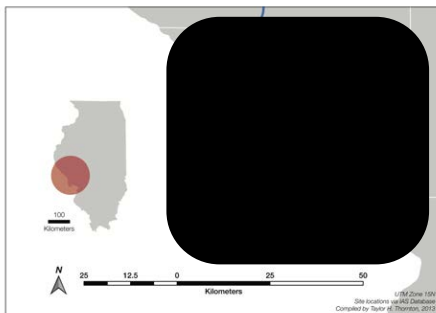


Figure 1: Location of Golden Eagle in the Illinois River Valley.



RESULTS

A number of distinct stratigraphic sequences are identifiable in the 2015 test units. Our interpretation of this segment of the enclosure hinges on distinctions between those deposits that are anthropogenic and those that represent natural processes. The soils of Golden Eagle are predominately sandy loam or loamy sand with more clay rich deposits at the base of our excavations in most units. A sharply defined plow zone in all units reflects the intensive agricultural use of the site for the past several decades. The variegated B horizons (3 in fig. 3) present in differing degrees in SQs 8, 13, and 9 seem to be evidence of embankment construction. This interpretation is informed by the distinct appearance and horizontal distribution of this feature, which is faint to the north and south of our excavation limits and most dense at what would be the apex of the embankment according to topography and geophysical data. Thin reddish lines reflecting the accumulation of clay particles and minerals weathering out from overlying deposits and collecting along existing lines of soil structure, Bt horizons according to Vogel (2002), distinguish embankment fill from the non-variegated B horizon below. This second B horizon, grayish in color, is the original ground surface on which the embankment was constructed. Strong Bt horizons visible in SQ 8 (fig. 3) mark the southern extent of the embankment in our units; the dissipation of Bt horizons from south to north in the west wall profile of SQ 9 and the absence of these horizons in SQ 10 indicates the embankment terminates somewhere in the intervening 10 meters. SQs 6, 7, and 18 are within the enclosure and contain only very faint Bt horizons, possibly reflecting deflation of the earthwork over time or natural processes. Layers of non-mottled soil (2 in fig. 3) capping the Bt horizons in most embankment units may represent secondary or eroded fill. Outside of the embankment, in SQs 10, 11, and 12, the stratigraphic sequence is strikingly different. The yellowish sandy loam beneath the plow zone is likely the natural soil of the Deer Plain Terrace. The B horizon underlying it is densely mottled, showing effects of redoximorphic processes and bioturbation. The low elevation of these units and the absence of any other natural deposits overlying the soil of the sand terrace suggests the removal of earth in the creation of the ditch or other landscape modifications.

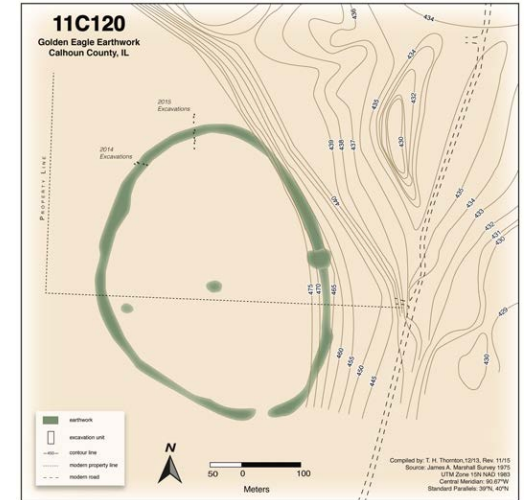


Figure 2: Golden Eagle site map.

CONCLUSIONS AND FUTURE RESEARCH

The results of the 2015 excavations corroborate conclusions drawn from the 2014 excavations and 2013 geophysical survey (King et al. 2015). The observed morphology of the embankment soils corresponds with that noted during excavations of the northwestern embankment in 2014, and presumably represents the same processes. Pending future geomorphological investigation, we posit that the sequence of Bt horizons noted in the primary embankment deposits are the product of redoximorphic process acting on differentially compacted, sequentially deposited soil layers, possibly reflecting intentional variation on the part of the constructors of the embankment or different building episodes. We have drawn other conclusions based on the stratigraphy noted in the excavation unit profiles. Layers of loamy sand above the deposits containing Bt horizons indicate that embankment construction may have comprised different strategies. Also, the abrupt interface of the plow zone and embankment deposits signal that the uppermost portion of the embankment was destroyed by modern agricultural activity. The absence of an A horizon underlying the embankment suggests that the topsoil may have been removed prior to embankment construction. Our understanding of this singular earthwork would be enriched by the discovery of temporally diagnostic cultural material as well as a formal analysis of the geomorphology of Golden Eagle. The absence of a significant debris scatter at Golden Eagle suggests that material culture may be rare at the site. Geoarchaeological fieldwork is being planned for 2016.

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