



Stone, Water, People: Networks of Meaning in Illinois Rock Art

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SUMMARY

The attribution of spiritual meaning to special natural features such as stone alcoves or visually imposing bluffs on otherwise homogenous landscapes is a common practice across the globe. Petroglyphic imagery, which can also hold spiritual meaning, shares the characteristics of durability and longevity with such natural features. For millennia, alcoves and flat-topped bluffs appear to have held a special meaning for people living or passing through the Mississippi River floodplain of southern Illinois, USA. There, ancient roads, and river networks converge with striking natural features whose spiritual legacy is encoded in pecked, incised, and abraded rock art images. The age (3,000 or more years ago) of some of the older petroglyph images that are juxtaposed with more recent ones (500 to 1,000 years ago) raises questions regarding the persistence of such locations in social memory, as locales of spiritual power and significance. The complex networks of meanings attributed to such places and how they change over time is the focus of our current work. In this paper, we utilize site recordation and 3D modeling data to show how pre-contact (pre-1942 AD) Midwestern North American rock art sites changed over time and despite vandalism, how the images found at such sites served to link together earlier and later Native American societies within the ever-changing landscapes of Southern Illinois.

RIASSUNTO (PIETRA, ACQUA, POPOLO: RETI DI SIGNIFICATI NELL'ARTE RUPESTRE DELL'ILLINOIS)

L'attribuzione di particolari significati spirituali a elementi naturali che spiccano in paesaggi altrimenti omogenei è una pratica comune in tutto il mondo. L'arte rupestre può assumere, in termini di durata nel tempo, il medesimo impatto delle emergenze morfologiche naturali. Per millenni, alcove e scogliere piatte sembrano aver avuto un significato speciale per le persone che vivevano o passavano attraverso la pianura alluvionale del fiume Mississippi, nel sud dell'Illinois, negli Stati Uniti.

Le reti fluviali e le strade battute nel tempo presentano un andamento naturale che ben si adegua alla morfologia del territorio. Tali elementi e la loro eredità spirituale sono codificati nelle immagini di arte rupestre qui conservate. L'età (3.000 o più anni fa) di alcune delle incisioni più antiche, che sono giustapposte a quelle più recenti (da 500 a 1.000 anni fa), pone dei quesiti sulla persistenza di tali luoghi nella memoria sociale, come luoghi di potere e significato spirituale. Il complesso dei significati attribuiti a tali luoghi e il modo in cui cambiano nel tempo sono al centro del nostro lavoro. In questo studio utilizziamo la documentazione del luogo mediante dati di modellazione 3D per registrare e mostrare i siti di arte rupestre antecedenti al contatto (pre-1942 d.C.). I siti di arte rupestre del nord America del Midwest sono cambiati nel tempo: le immagini trovate in loco sulle rocce sono servite ad associare la società dei nativi americani, precedenti e successivi, ai paesaggi in continua evoluzione nel sud dell'Illinois.

INTRODUCTION

Isolated bluffs, natural alcoves, springs and exceptional rock formations are characteristic features of the Southern Illinoisan landscape. Such natural monuments represented focal points of spiritual power to ancient Native Americans throughout North America (BLAKESLEE 2010; SCHAFFSMA, TSOSIE 2009, pp. 15-31; TACON 1990, p. 13). Reinforced in some cases through the creation of rock art, such locales persisted in memory as loci of spiritual power in some cases for thousands of years. In Southern Illinois, for example, Mississippian period (AD 1000-1500) petroglyphs often were created adjacent to but not through earlier Archaic period (B.C. 3000-1000) designs, attesting to a recognition of the persistence of the perceived power of these earlier images over several thousand years. Perhaps most notably, the Jackson Bottoms landscape of southwestern Illinois appears to have held both

cultural and ritual significance for native peoples for over five millennia. Three striking natural formations: (1) Tower Rock, a mound-like bluff which juts out of the Mississippi River; (2) Fountain Bluff, an isolated 3.5 mile long anonymous stone outcrop on the Mississippi River floodplain; and (3) Devils Backbone, a rugged isolated ridge, form the natural centerpieces of this landscape. These features did not exist in isolation but comprised the core of spatially interrelated pre-contact Native American social and ritual networks as witnessed by the prevalence of rock art, mortuary sites, and habitation sites within this region.

We used a combination of geospatial, archaeological and photogrammetric techniques to preserve the natural and cultural contexts of the Jackson Bottoms landscape which has been heavily vandalized over time. Using these lines of data, we suggest that the process of ritualization of the Jackson Bottoms landscape be-

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gan by the Middle Archaic period (5000-3000 B.C.), and persisted through the Mississippian period (AD 1000-1500). The placement of well-crafted burial offerings and the creation of increasingly complex imagery attributed to the Mississippian era (1000-1500 CE) are suggestive of the intersecting meanings once attributed to Fountain Bluff rock art sites in particular.

GEOGRAPHY AT THE INTERSECTION OF SECULAR AND RELIGIOUS MEANING

The study area covers an approximate 48,000 hectares of the floodplain and adjacent uplands in southwestern Illinois (Fig. 1). The centerpiece of the Jackson Bottoms landscape - Fountain Bluff - is a large isolated sandstone ridge segment that reaches skyward out of the surrounding floodplain. It is bounded on the east by the Ste. Genevieve Fault Zone, which extends eastward across the Mississippi River floodplain into the adjacent uplands and is represented on the surface by several other uplifted Devonian limestone strata - Tower Rock, Devil's Backbone, Devil's Bake Oven, and Walker's Hill (WAGNER *et al.* 1990, pp. 12-13). All of the above features are contained within the Mississippi River Floodplain between the confluences of the Missouri and Ohio Rivers (WAGNER *et al.* 2018).

Before the historic period engineering of the Middle Mississippi River into a single deep channel for inland navigation, the river had a shallower, island-bar channel form comprised of large islands and many side channels. Like the floods on the banks of the Mississippi River today, the Upper and Middle Mississippi River Valleys have experienced several major flood events over the past 5000 years (KNOX 2003; MUNOZ *et al.* 2015; VAN NEST 2015).

This notwithstanding, archaeological survey has revealed that the Jackson Bottoms landscape was occupied throughout all phases of pre-contact period cultural development. Site types include camps (small habitation sites), villages (large habitation sites), mortuary, rock shelter, and rock art locations. Spatial statistical analysis identified both "hot" and "cold" spots on the landscape during the Archaic (7000-1000 BC), Middle Woodland (300 BC- 300 AD), and Mississippian (AD 1000-1500) periods based on the presence or absence of sites. Clustering was not evident during the Archaic period ($n = 51$) with sites from this time period having a relatively even distribution. This may reflect Archaic period utilization of forest-based resources that would have been widely available within the broader southern Illinois region rather than in one locale.

The Jackson Bottoms settlement pattern changed during the Woodland period with sites ($n = 263$) becoming more abundant and diverse. Small sites of many types become interspersed with larger mortuary mound centers, a significant change from the preceding period. During Middle Woodland ($n = 82$) times a non-random distribution of sites was observed. This spatial clustering of sites around Fountain Bluff suggests that both cultural and environmental factors were at play in shaping Middle Woodland settlement patterns.

Given that the lakes in the floodplain formed during this period, people may have begun moving into the Jackson Bottoms in larger numbers to gain access to previously unavailable aquatic resources as well as bottomland for cultivation.

The number of sites decreased during the Mississippian period with sites becoming generally more evenly distributed across the landscape. The decrease in overall site number may reflect the concentration of Mississippian peoples into a few larger settlements (e.g., towns) rather than indicating a decrease in population. We conducted a viewshed analysis to determine the extent of contiguous floodplain visibility from the top of Fountain Bluff. This analysis used the elevation value of individual cells (e.g., bluff top archaeological sites) extracted from digital elevation model (DEM) and original site location records for assessment. The unobstructed viewshed extends northward for 20 km to where the floodplain begins to constrict, encompassing virtually all archaeological sites. Sites on the bluff tops in the Jackson Bottoms were strategically situated overlooking the entire floodplain to the north. Visibility to the south has been affected by modern levee construction but appears to have once extended several kilometers.

The visibility of Fountain Bluff to people living on the floodplain would have been impressive, with the mesa-like Fountain Bluff dominating the surrounding bottomlands. The imposing natural monument would have never been out of the site of the people who lived in its shadow, and for some, it would have been only a short walk from the village to the entry point of a mysterious twilight world of echoing steep-sided ravines, and impressive rock formations where rituals hidden from view could have taken place.

The presence of rock art in strategically positioned loci on the north and west sides of Fountain Bluff suggests that the landform was the central core of a significant religious and secular landscape (Fig. 2). It is characterized by two impressive rock art sites, Whetstone Shelter and the Fountain Bluff site, that contain Archaic, Middle Woodland, and Mississippian period imagery. The ritualization of the landscape began during the Archaic period with the interment of deceased individuals in rock shelters and on the bluff crest, a pattern that continued on into the Woodland and Mississippian periods in the form of interments, burial mounds, and cemeteries on the bluff top.

The culmination of the prehistoric power of the bluff during the last pre-contact Mississippian phase is reinforced by the presence of rock art motifs bearing cross-in-circle cosmogram prominent in Mississippian cosmology (WAGNER, MCCORVIE 2007). The juncture of the secular and spiritual realms was marked by the presence of the expansive Middle Woodland through Mississippian period Twenhafel habitation site only three kilometers to the north (Fig. 3). Fountain Bluff thus appears to mark the intersection of secular and ritual worlds which endured for millennia in the Jackson Bottoms of Southern Illinois.

THE ARCHAEOLOGY OF A CHANGING RITUAL LANDSCAPE

People can be said to have been conducting rock art research in Illinois ever since 1673, when the French explorers Pere Marquette and Louis Joliet first observed a large painting of a supernatural being on the bluffs above present-day Alton, Illinois. Late seventeenth century illustrations of this prehistoric image show a feline-like body with antlered head and serpentine tail. Later depictions of this painting, however, which include the addition of wings, vary dramatically in detail from the earlier French images. These differences may be attributable to weather conditions that affected the visibility of parts of the painting at different times; the early post-contact period modification of the image by later Native American peoples unconnected to its creation; or by changes made by European artists who added details such as wings that may or may not have been part of the original image. Although we believe the seventeenth century French images to be the most accurate, the destruction of the Alton Piasa painting by quarrying in the 1850s makes it now impossible to confirm this assumption.

Native American religious practices in the Midcontinent are believed to extend back in time to at least the Archaic period (BROWN 1997, pp. 465-485; CLAASSEN 2010; JEFFRIES 2008, pp. 278-282). Claassen (2015, p. 23) suggests that Archaic period ritual landscapes included the marking of spiritually significant natural landforms with rock art as well as the interment of “the dead in natural knolls, ridge tops, and bluff tops” and rock shelters. All of these intersectional elements are characteristic of the Archaic Period Jackson Bottoms landscape. The intentional burial of a cache of Dalton horizon projectile points (10,500-9900 BP) represents the earliest evidence of ritual activities in the area (KOLDHEOFF, WALTHALL 2004, p. 54). The recovery a fragmentary mastodon tibia dated to 12490±100 14C B.P. (2000 years earlier than earliest human occupation), located near a Dalton Cluster projectile point recovered from a rock shelter 7.5 km away from Fountain Bluff suggests that the areas earliest inhabitants (FOWLER 1959; WAGNER, BUTLER 2000; WALTHALL 1998, pp. 223-238) may have collected and deposited the remains of extinct mega-fauna for ritual purposes (CLAASSEN 2015, p. 16; WAGNER 2016a). Further archaeological evidence of early ritual activity is provided by Archaic period burials from three rock shelters—Fountain Bluff (Fig. 7.3b), Peter’s Cave, and Chalk Bluff—among which were three child burials that had been ritually marked by sprinkling red ochre fragments over their remains (PEITHMANN, BARTON 1938; REYMAN 1971, pp. 23-31).

The Middle Woodland period (300 B.C. - 300 A.D. - exhibits both continuity and change from the preceding Early Woodland and Archaic periods. During this time a major habitation and mound center - the Twen-

hafel site - that played a critical role in the distribution of locally available high quality cherts developed 3.0 km north of Fountain Bluff. This now virtually invisible site once consisted of dozens (between 29-100) of “conical mounds and at least one village area...which may have served as a cultural center for the dissemination of [Hopewellian] cultural traits...within the river bottom area bounded by Fountain, Horseshoe, and Chalk Bluffs” (MAXWELL 1951, p. 190; see also STRUEVER, HOUART 1972; HOFMAN 1979). The Middle Woodland ritual landscape also included the continued use of Archaic period rock art sites in the uplands to the east as well as the creation of images at new locations (WAGNER *et al.* 2018, p. 286). During the Mississippian period (A.D. 1000-1500), major changes transpired. Villages were built on earlier Middle Woodland sites which correlates with the consolidation of religious belief systems and ritual meanings observed in artistic motifs, and depicted in pottery, metal and rock art imagery.

PHOTOGRAMMETRIC STUDIES

Fountain Bluff is home to two of the major rock art sites of southern Illinois: Whetstone Shelter (11J17) and the lower bluff-base Fountain Bluff shelter (11J41). In 2016, our team began documenting rock art sites photogrammetrically¹ to generate 3D models for analysis. Our initial aim was to explore changes, such as reuse or vandalism, that had occurred over time using reconstructed models of rock art sites. Such reconstructions were possible as rock art sites in the Jackson Bottoms have been documented and studied intensively over the past two decades by co-author Mark Wagner. A key difference is methodology. Original rock art site recording was carried out using conventional hand-recording methods of photography, image tracing on acetate, or mapping on graph paper (see WAGNER 2002). Whetstone shelter which awaits photogrammetric modeling is an isolated rock shelter located 60 m up the vertical face of Fountain Bluff. The site contains over 100 carved and painted images. The natural isolation of the Whetstone shelter, in combination with the numerous rock art images suggests that it was in use for over two millennia by a select group of visitors. A few motifs have Mississippian-era (A.D. 1000-1500) cross-in-circles ground and pecked over them, confirming that they pre-date this time period and that its significance persisted over time (Fig. 4). Restricted access to the shelter located 60 m above ground level on an inaccessible locations suggests that it may have been used as a shrine or as a shelter for pilgrims and religious practitioners while conducting rituals at the site (see also ALT 2018).

The bluff-base site, is located only 3 km south of the Middle Woodland to Mississippian period Twenhafel site. The site contains several very large petroglyphs

1 Photogrammetry is the science of making measurements from photographs. The fundamental principal behind it is triangulation. By taking photographs from two different locations, we can develop 3-dimensional models from the mathematical intersection. This is the same principal behind the use of theodolites for measuring geographical coordinates. (<http://www.geodetic.com/v-stars/what-is-photogrammetry.aspx>)

including a double-headed falcon similar to those seen on Mississippian-era copper plates associated with the Red Horn narrative (Fig. 5; see BROWN 2004, p. 115). Such depictions relate to Upper World elements of the three-tiered Mississippian cosmos which are abundant at the site (Fig. 6). Combined, original drawings made it possible to confirm the metric accuracy of the new 3D models, and to record changes that are the result of erosion or vandalism that occurred in recent decades (Fig. 7-9). Given the fragile state of the rock art and its vulnerability, site visits are discouraged to these sites. 3D models permit sharing of the artwork along with its social and ritual context without potential damage due to site visitation (Fig. 10).

DISCUSSION AND FINAL REMARKS

Material aspects of ritual within landscapes may take the form of structures, rock art sites, mounds, and artifact caches (EMERSON *et al.* 2008, pp. 216-226; SABO 2008, pp. 279-296). In regard to the Jackson Bottoms, the process of ritualization began during the Archaic period as witnessed by the marking of striking natural geological features with rock art, the interment of the dead in rock shelter and bluff top settings, and the interment of ritual items with the dead.

Ritual use increased dramatically over time, following the stabilization of course of the Mississippi River at around 1050-450 B.C. Wetter conditions led to the formation of large shallow lakes within the old meander scars north of Fountain Bluff resulting in what one late 1800s observer described as a "hunter's paradise" (WAGNER *et al.* 1990, p. 23). The changing number, types, and distribution of bottomland sites increased as wetland resources including fish, birds and aquatic plants led to population expansion within the floodplain and the exploitation of previously unavailable resources. With consistent water supply and abundant food resources, the Jackson Bottoms began to take on new meaning over time.

Whetstone Shelter dates from the Archaic to Mississippian periods. The most notable Mississippian image at the site consists of a petroglyph of two stick-figure anthropomorphs holding ceremonial maces. The art is reminiscent of that on a copper plate recovered from a bluff-top burial mound that similarly depicts human figures with broken maces in their hands (PENNY 1985, pp. 157, 161) and the acknowledgement of elements of the Mississippian Red Horn mythological cycle. The types of rituals conducted at this location are unknown due to the destruction of the shelter floor by artifact collectors, but the presence of human burials in this inaccessible location suggests that at least some of the rock art was associated with the burial of high-status individuals such as lineage heads or ritual specialists that used the shelter. While funerary evidence shows that Mississippians reused Archaic and Woodland pe-

riod burial sites (HARGRAVE 1993; WAGNER *et al.* 1990), local Fountain Bluff elites would have validated their status through the reception of ritual items from the well-known Mississippian center at Cahokia (WAGNER *et al.* 2018, p. 288).

Although the large lakes located north of Fountain Bluff provided the food resource base necessary to support the populations engaged in such ritual activities, the critical natural landforms within this landscape were the high-elevation isolated ridge that dominated the surrounding landscape. Viewshed analysis revealed that virtually all of the floodplain surrounding Fountain Bluff is visible from its crest. At the same time this landform would never have been out sight to people who lived in the floodplain villages around its base, linking these two landscape elements - floodplain and ridges - into a unified whole. In fact, significance of elevated landforms such as Fountain Bluff, Devil's Backbone, and Tower Rock would have been emphasized during major flood events. Only at Fountain Bluff, however, the added component of rock art in two distinctive locations suggest its deeper meaningful associations.

Ritual activities found their greatest expression during the Mississippian period when people linked themselves to the landscape through the interment of their dead within more ancient burial mounds, the importation of high-status ritual items, and the presence of rock art images expressing belief in the three-tiered cosmos of the late pre-contact period. The number and types of motifs contained at rock art sites in the Jackson Bottoms region significantly increased over time, with three of the most complex rock art sites found in the area. Largely absent from the art at Fountain Bluff are creatures from the Underworld which further suggests its Upper World associations. The large size of the images, together with an adjacent cross-in-circle motif and other avian imagery in easily accessible locations suggests that the site was used for both public as well as private rituals that may have been orchestrated to legitimize living, or symbolically living, local elites from communities like Twenhafel.

Complex networks of meaning are found in the variety of images pecked, scored and abraded and painted, suggesting ongoing ritual meaning of the regional landscape. Rock sites and their significance has transformed dramatically over time, with contemporary vandalism an ongoing and repeated threat. Using contemporary 3D modeling techniques, it has been possible to capture and preserve them despite ongoing transformations due vandalism. For millennia, people in the Jackson Bottoms lived in dynamic landscapes at the confluence of natural and human-made worlds memorialized and modified through rock art representations that for the moment, have withstood the test of time.

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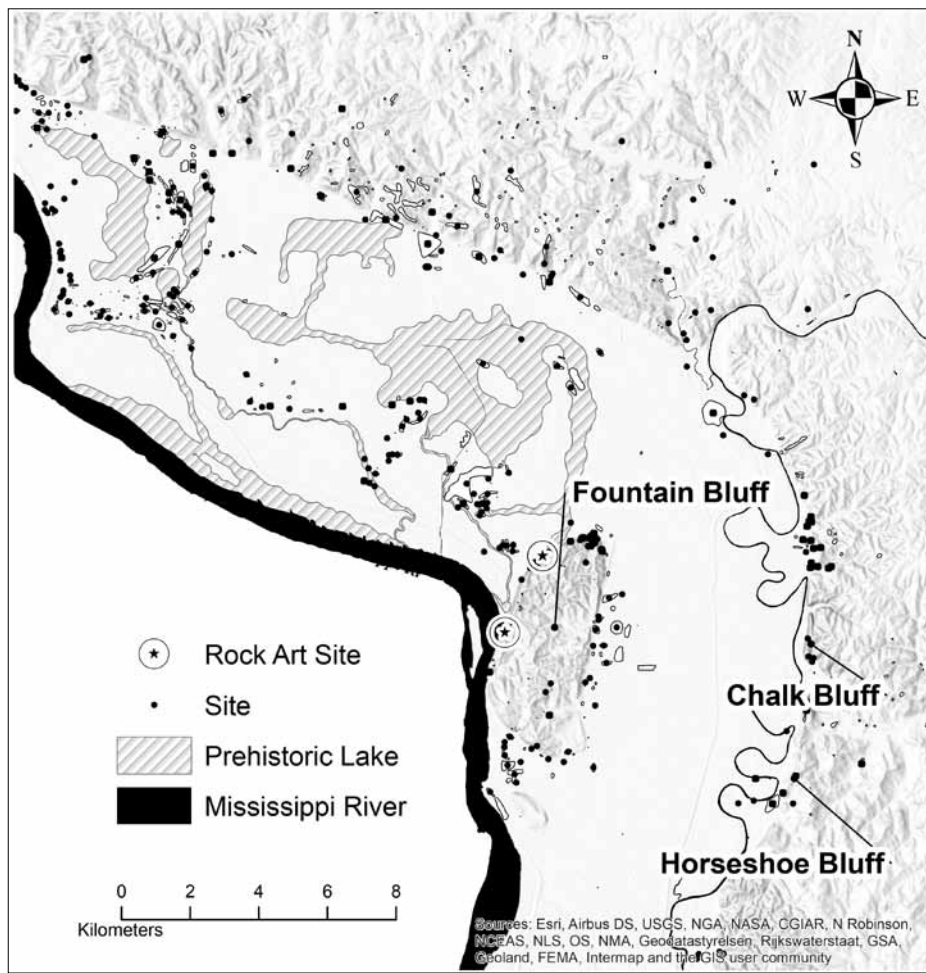


Fig. 1 - Study area map.

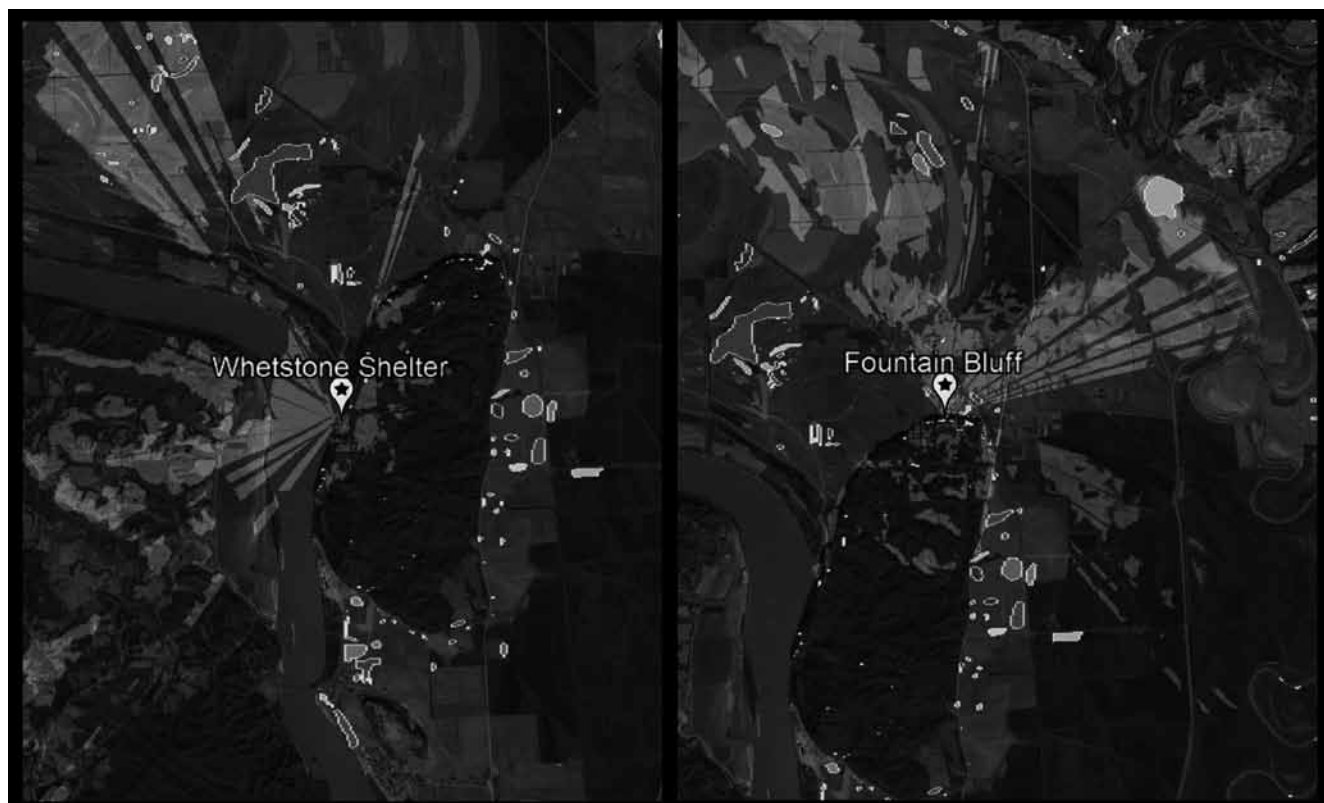


Fig. 2 - Viewshed analysis showing west and north visibility.

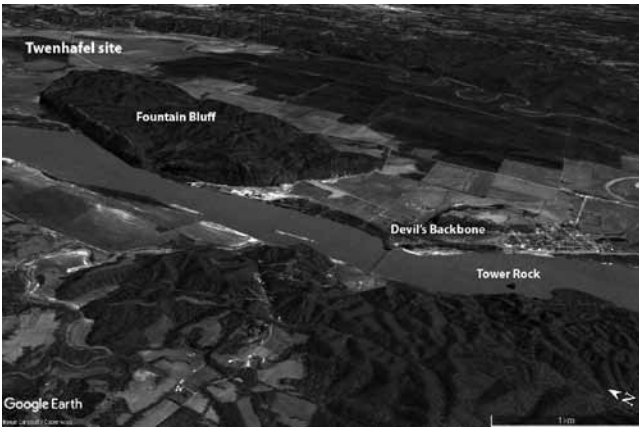


Fig. 3 - Isometric view of the Jackson Bottoms with prominent landforms and former Twenhafel site location indicated.



Fig. 4 - Mississippian cross-and-circle at Whetstone Shelter



Fig. 5 - Fountain Bluff bluff-base site panel with bird elements associated with Mississippian hero.



Fig. 6 - Fountain Bluff bluff-base site panel with additional avian elements.



Fig. 7 - Damaged motifs, pock-marked from pellets from a shotgun.



Fig. 8 - Historic period vandalism in the form of "AΦΩ" fraternity symbol.



Fig. 9 - Modern names carved into stone with prehistoric Mississippian iconography.



Fig. 10 - 3D model of Fountain Bluff bluff-base site used for analysis and for educational purposes.