

EXPLORING AZTALAN AND ITS ROLE IN MISSISSIPPIAN SOCIETIES

by Lynne Goldstein, University of Wisconsin-Milwaukee

Aztalan, an archaeological site located in south-central Wisconsin, is considered the most northerly large Mississippian village (ca. AD 1000-1300). Its location has puzzled researchers for many years, and the relationship of Aztalan to other contemporaneous cultures has also been the focus of speculation. This article explores how Lynne Goldstein developed a research strategy to address the issues of Aztalan's location and the site's role in Mississippian society. Discussion focuses on how environmental variables, a multi-year archaeological survey, and limited excavations at Aztalan were used to address specific research questions about the nature of Aztalan.

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[h1] INTRODUCTION & RESEARCH QUESTIONS

Aztalan is the name of an archaeological site located on the west bank of the Crawfish River in Jefferson County, Wisconsin (Figure 1). Aztalan is probably the most famous archaeological site in Wisconsin, as well as a National Landmark; the site is now also a state park. Aztalan dates to the Mississippian time period, approximately AD 1000-1300. Mississippian cultures were among the most complex and geographically extensive ancient cultures in what is now the United States. Villages reflect that complexity with organization in the form of distinct house areas with the houses laid out in organized rows and groupings, flat-topped mounds (often called platform or temple mounds because many of the mounds were used for public buildings and ceremonies), plazas, and stockades. There were a number of different social statuses within Mississippian society, with a ruling elite at the top of the organizational structure. Mississippian economy was based on agriculture.

Aztalan can be classified as a Mississippian site on the basis of several criteria. Artifacts found at the site are those associated with Mississippian cultures, and a number of radiocarbon dates from the site indicate a Mississippian time period. The main part of the Aztalan site is about 21 acres in size, and this area was enclosed within a wooden stockade with bastions or watchtowers along its walls (see Figure 2). Archaeologists generally consider Aztalan to be the most northerly large

Mississippian village.

When I moved to Wisconsin, I decided to try and examine Aztalan more closely to see if I could provide a clearer view of the site and its role in the larger Mississippian cultural system. However, before I explain my research strategy, some additional background information is needed.

One may wonder how Aztalan got its name. The name sounds vaguely Aztec, and it has been reported that the Aztecs spoke of a land to the north called "Aztlán." Does this site represent that place, and if so, is it related to the Aztecs? The simple answer is no. Aztalan got its name in the mid-1800's when some local European settlers came across the site and wrote a description of it for a Milwaukee newspaper. Judge Nathaniel Hyer first tagged the site with the name "Aztalan," and it appears that he got this idea from the writings of a German naturalist and traveler named Baron Friedrich Heinrich Alexander von Humboldt (1769-1859).^[fnref1] Von Humboldt wrote about his travels in Middle America and the history of the Indians of the Valley of Mexico. Von Humboldt talked about the legend of the Aztecs coming from a place in the north called Aztalan. Judge Hyer, who first drew a map of the Aztalan site for publication, decided that this site must be the place the Aztecs mentioned.

There is no evidence for a relationship between the Aztecs and the people at Aztalan, and even though archaeologists have long discussed the possibility of interactions between Mississippian people and people in Mexico, those relationships were likely by indirect contact through trade with intermediary groups. No archaeologist today thinks that the people at Aztalan were related to the Aztecs.

The second piece of necessary background information relates to other groups that were around when Mississippian people were living at Aztalan. The group that came before the Mississippian people, but who were also in part contemporaneous with them, are called Late Woodland. There are a variety of different Late Woodland groups, but in general, Late Woodland society was less complex than Mississippian society. By less complex, I mean that these groups had smaller villages without the elite hierarchy and organization present at Mississippian sites. Artifacts were less elaborate, and they did not use temple mounds or have plazas within their villages. They rarely created walled villages. Nonetheless, these Late Woodland people lived in permanent or semi-permanent villages, made distinctive pottery and other artifacts, used the bow and arrow, built mounds, and some of them were gardeners and farmers, although none practiced agriculture to the extent of Mississippian people. The Mississippian period itself is commonly subdivided into Mississippian and Oneota, with the distinction representing time, geography, and organization. Like Late Woodland groups, Oneota people lived in villages and some of them farmed, but they farmed more intensively and had a more complex organization than Late Woodland peoples, though not as complex as Mississippian people. In Wisconsin, Oneota culture is found in several areas across the state.[fnref2] Mississippian sites, however, are rare in Wisconsin, and Aztalan is the clearest example of a Mississippian village in the state. Although Late Woodland began before Mississippian, and Oneota apparently continued after Mississippian, there appears to have been some contemporaneity among the groups for a period of time.

Archaeologists have considered Aztalan an unusual or puzzling Mississippian site

for the following reasons:

1. Aztalan is farther north than other Mississippian villages, and there do not seem to be other Mississippian villages between Aztalan and comparably sized villages in central and southern Illinois.
2. The banks of the Crawfish River seem like an odd location for the site, since the Crawfish is not a large river, does not have rich floodplains, and does not have direct links to the Mississippi or Illinois rivers, both famous rivers for Mississippian settlements.
3. In other areas, there is a consistent Mississippian settlement pattern, consisting of a settlement hierarchy with a large village and mound complex, a series of smaller sites around this center, then small farmsteads around the smaller sites. For Aztalan, however, we know of no other Mississippian sites in the immediate vicinity, and the site seems to have existed as a single entity.
4. As noted above, a lot of Mississippian pottery and artifacts have been found at Aztalan, but a lot of earlier Late Woodland period pottery has also been found. There has been considerable speculation as to whether the site was used by different peoples at different times, or by two different groups at the same time.

My first task in attempting to design a research strategy focusing on Aztalan and its unusual characteristics was to read all the literature I could find on the site and the area. The most famous research on Aztalan was conducted by Samuel A. Barrett of the Milwaukee Public Museum in the early 1900's, and a group of archaeologists in

the 1950's and 60s who were trying to help create interpretive exhibits at the site just after the site was made a state park[fnref3]. A variety of amateur and professional archaeologists had speculated about the site, but relatively few people had worked there or in the general area. Most significantly, it became clear that no one had ever systematically looked around Aztalan to see whether or not there were related sites. A number of sites had been reported for the general area, and no one had reported any Mississippian sites, but the argument that Aztalan was isolated seemed tenuous if no one had actually looked for associated sites.

In order to understand why someone would settle at Aztalan, we have to first understand what the landscape and setting looked like at the time. Even if Aztalan is an isolated outpost, one has to know more about the setting to understand why that location may have been desirable.

Finally, the confusing situation of pottery and artifacts found at Aztalan — the apparent concurrent association of both Mississippian and earlier Late Woodland groups — needs to be resolved.

How do these observations lead to a research design? The general and specific research questions which arise from these observations are fairly obvious, and include the following question sets:

1. What was the landscape and natural setting at the time of Aztalan's occupation?
What did the topography look like? What grew where? What could you eat?
What could you hunt? Where could you find water? Where could you plant?

2. What was the human occupation in the area surrounding Aztalan? Who lived where? Who was local, and who came here to settle from elsewhere?
3. How do we tease apart the temporal sequence of Aztalan's occupation? Was there an earlier Late Woodland occupation, followed by an independent Mississippian occupation? Were they concurrent? Overlapping? Or did one become the other?

The remainder of this paper will examine how we found the answers to these questions, and the conclusions that we reached about the nature of Aztalan.

[h1] THE LANDSCAPE AND SETTING: ANSWERING QUESTION SET 1

Answering question set 1 is a problem because the way things look today is obviously not the way they looked around AD 1000. In fact, with roads, houses, and farms, it is difficult to imagine the landscape before the arrival of European settlers.

In most places, and especially within the United States, there are a series of historic documents and other maps and data that can be used to determine what the landscape was like before it was so totally altered by modern settlement. In Wisconsin, one critical part of that information is provided by the General Land Office surveys that were conducted in the 1830's and 1840's. Wisconsin was located in what was called the Northwest Territories, and just before this land was open and sold to homesteaders and settlers, surveyors went over the land to lay out the land

description system that is still in use today. That system divided the land into "townships," which are six miles on a side. The individual 36 square-mile chunks within each township are called "sections." A section is a square mile, or 640 acres. However, people often didn't want to buy a whole section or wanted to describe a portion of a section, so the system divides sections into smaller pieces. Since sections are square, one of the simplest ways to divide them is into smaller squares. Thus, sections are divided into four smaller, equal-sized squares called quarter-sections (or $1/4$ -sections), and each of these $1/4$ -sections includes 160 acres ($640/4 = 160$). A $1/4$ -section is one-half mile on each side. Each of these $1/4$ -sections can be similarly divided into four equal-sized squares called $1/4$ - $1/4$ -sections, with each $1/4$ - $1/4$ -section including 40 acres of land ($160/4 = 40$). A $1/4$ - $1/4$ -section is $1/4$ mile on each side. By keeping the system consistent and in squares, it was easier to locate on the ground and map.

In implementing this system on the ground, the land surveyors relied on careful notes of what they did and what they saw. The surveyors tried to mark what they called "witness trees" at every section corner, to better flag and identify the corners and edges of the new land units. They noted the type of each witness tree, and they also noted the kinds of trees and terrain they traversed as they set in their lines and mapped out the land divisions. Since a surveyor would often conduct the survey for a large area, the individual notes are pretty consistent, and a researcher can get a good idea of problems and biases in the data by reading a surveyor's notes. Surveyors would even occasionally note mounds or other archaeological or historic Indian sites.

Botanists discovered that one could use the surveyors' notes to recreate the pre-

European settlement vegetation for an area. A variety of specific techniques to create such reconstructions have been developed by botanists and others, and botanists have suggested that these vegetation reconstructions for the Aztalan area are probably fair representations of what the area was like for the last 5000 years prior to European settlement. When these data are combined with information on soils and on topography, one can begin to get a more accurate idea of what the landscape may have looked like at that time. Figure 3 represents the vegetation reconstruction for the Aztalan area.

Once the vegetation information has been gathered, one can try to reconstruct what plants and animals might have been available to those who settled at Aztalan; knowing the vegetation and the distribution and natural history of animals allows one to deduce the resources that were likely present in each vegetation zone. Then, knowing how plants and animals were used by different Native American groups can help one to determine which zones were most productive, and in which seasons they might be most important. This information is then combined with information on topography, physiography, and water resources.

There is one problem with what we've done thus far: we have assumed that prehistoric people had no real impact on the landscape, and that what the surveyors found in the 1840's was a close approximation to the way things were for thousands of years before. Is this a reasonable assumption? Yes and no. Although aboriginal people clearly had an impact on the landscape, it is generally thought that that impact was not major at the scale at which we have created reconstructions. However, it has also been suggested that the landscape the surveyors saw was partially a result of burning by prehistoric peoples. Some botanists have suggested

that the way that early farmers (like the people at Aztalan) cleared land was to periodically burn off the trees and other vegetation. Obviously, if this were so, it would have a rather dramatic impact on the landscape; we know that this happened further west on the Plains. More recently, however, other botanists have demonstrated that lightning strikes could just as easily have been responsible for any patterns of large scale burning. For cultures prior to Aztalan, it might be important to work this out more carefully, but for this period and our purposes here, we just need to be reasonably certain that the pattern reconstructed from the surveyor's notes resembles the landscape that the Aztalan folks would have used. And we are reasonably certain that it does.

For Aztalan, the analysis of the site's setting yields a variety of important information. First, we know that Aztalan's location on the Crawfish River provided easy access to transportation and a variety of aquatic resources. Further, we discovered that the Crawfish River has a number of artesian springs feeding into it, and since these springs flow all year, the river does not freeze over for as long a period of time in the winter as do other rivers in the area. Aztalan itself is situated in an oak opening, a setting that would have allowed easy clearing for agriculture. In addition, the soils at this spot are especially good for farming. This is probably significant since other groups, who were not farmers, did not choose this location. Aztalan was also reasonably close to a number of major wetlands. These wetlands provided access to a variety of different resources, including trees for the stockade wall and houses, and deer and other animals who yarded in the marshes in the winter. A careful look at the map indicates that Aztalan's location would have afforded those who lived there easy access to every available vegetation zone in the region, meaning that all plant and animal resources were accessible. This was a

good place to live, especially as a farmer. Finally, Aztalan's setting gave the people who lived there a good view of the surrounding countryside, but was not so high or exposed that people would have been battered by winds and other elements.

This research on the early vegetation and setting provided most of the answers to the first set of research questions, and suggested that there were better and worse areas in which to live within the region. However, for the people who settled at Aztalan, they needed a place which also provided access to fertile and easily workable farm land.

In order to see whether other Mississippian people settled in the Aztalan area, we would have to look in landscape zones throughout the region. Why? Because even though we might be able to guess some of the best places to live, Mississippian people may have had a variety of different kinds of settlements, including special purpose settlements (like hunting camps). If we didn't look in every zone, we would never be able to make confident statements about where people did and did not settle.

[h1] THE SURVEY: ANSWERING QUESTION SET 2

[h2] Survey Design

The second set of questions are related to the first, but require field work rather than working with archival sources. How do you find out where people lived? You go

out and look. The technical term for going out and looking is archaeological survey. The region surrounding Aztalan, depending upon your ambition, is no less than 20 square miles, and could conceivably be 1200 square miles. Clearly, we can't walk or look at every square inch of even the smaller number. So, we use the same statistical technique that political pollsters use: the stratified random sample. The difference is that instead of stratifying a population of people based on such characteristics as income, party affiliation, etc., we stratify units of land area based on elevation and side of river. What we're trying to figure out is whether and how people may have used the land, so we have to sample the land. What land unit do we use? I chose the 1/4-1/4 section as a sampling unit (the 1/4-1/4 section was described in an earlier portion of this paper and corresponds to one voter in the political poll). This choice was made largely for practical reasons: as discussed earlier, modern farming land in the area is divided into sections and portions thereof; the political system in the rural portions of the Midwestern U.S. divides the land by section, 1/4-section, and 1/4-1/4 section, thus making it simple to sort the area into sample units and keep track of them; people often own parcels of land in 1/4-1/4 section chunks; and these units are easy to locate on the ground, on topographic maps, and on aerial photographs.

Figure 4 outlines the areas eventually encompassed by what I call the Crawfish-Rock Archaeological Project (the labeled areas on the map will be discussed below). This area was chosen because it included a major portion of the Rock and Crawfish rivers, and the region represents all of the major landform zones documented in Southeastern Wisconsin. A systematic survey here should provide a reasonable idea of which environmental settings were preferred by different groups. Based on what was known about Mississippian settlement patterns elsewhere, if Aztalan had

a typical Mississippian pattern, we should be able to find such sites within this region.

Only one systematic archaeological survey had ever been conducted in the Aztalan area, and this work was limited to a small area in the immediate vicinity of the site.^[fnref4] Because so little of the overall area was known, my other decision was to make the project multistage in design — the results of each phase were used to plan the next phase. Rather than design a strategy and be bound by it, I designed a series of steps which were by their nature open to modification. This approach meant that I could use what I had learned from the previous stage to refine the next stage of work — whatever I learned could be immediately put to use, and if I had made a major mistake in designing the survey, it could be fixed.

For each year of the survey, the majority of the survey work was done by the University of Wisconsin-Milwaukee Archaeology Field School. Students sign up for the field school as they would for any other course, but they spend their “class time” living in tents and working out in the field looking for and excavating archaeological sites. Specifically, student spent the first weeks of their field school surveying, then spent a week mapping and preparing to excavate, and finally spent the last four weeks of the field school excavating the site or sites chosen for that summer. While in the field, all students also participate in washing, labelling, and inventorying the materials they collect.

For all parts of the survey, both pedestrian survey and shovel probing techniques were employed. Pedestrian survey refers to the process of systematically walking plowed fields looking for artifacts, chipping debris, or other evidence of human

habitation. Shovel probing is a technique used when one cannot see the ground surface, as in a woods or pasture. A shovel is used to excavate a hole at specified intervals. The hole is approximately 30-40 cm in diameter, and is usually excavated to a depth of approximately 30-40 cm. The excavator carefully examines the soil to look for evidence of cultural occupation, and looks for evidence of artifacts or debris. Shovel probing is time consuming, but provides a systematic and simple way to carefully examine unplowed areas; it is often the only way that archaeologists can find undisturbed archaeological sites. Pedestrian survey was done in plowed and/or planted fields at intervals reaching a maximum of three meters (although generally 1-2 meter intervals were used), and shovel probing was done in areas of dense ground cover or woods at 10-meter intervals. When material was found, flags were placed in the ground to note the location (if possible). Site areas were paced off and estimated, then located on an aerial photo. All areas walked were mapped on air photos and United States Geological Survey topographic maps (these are standard maps that archaeologists and geologists, as well as hikers and backpackers, often use).

The survey took a total of eight years to complete. The survey's multi-phase design can be outlined as follows:

Phase 1. The primary purpose of this initial phase was to familiarize us with the general area. An east-west transect, approximately 3-1/2 miles long by 1-1/2 miles wide, was surveyed as intensively as possible. The transect was located at the northern end of the research area. In Figure 4, this transect is in the center portion of the area labeled "Transect III." Because nearly all physiographic zones in the region were represented in this relatively small area, I thought that this transect

would provide a good introduction to the potential environmental variability of the region. I was particularly interested in the extent to which different kinds of occupations were associated with certain landscape types. In addition to finding a number of sites, we learned that many of the distinctions we saw in the landscape analysis and thought were important, could be translated on the ground by examining differences in elevation; areas below 790 feet in elevation are generally wetlands, the area between 790-800 feet seems to be a distinct terrace that yields many sites, and the areas above 800 feet were upland zones.

Phase 2. This phase included sampling three transects cross-cutting the Crawfish River (labeled Transects I, II, III in Figure 4). The northernmost transect (III) was an expansion of the Phase 1 transect to include more of the associated upland areas, and a greater portion of the Crawfish Valley width. The center transect (II) represented the southern edge of the region's major swamps and marshes and the point where a major secondary stream (Rock Creek) enters the Crawfish. The southern transect (I) was near the confluence of the Crawfish and Rock Rivers. The three transects represent the north, south, and center of the research area. Based on knowledge gained from Phase 1, each transect was stratified in two ways: First, by side of river, and secondly, by three strata based on elevation, topography, vegetation, and soils. The three strata included the following: lowlands — areas that are relatively flat, subject to flooding, and adjacent to rivers, lakes, and wetlands; terraces — a visually distinct, relatively flat and wide segment of land often adjacent to lowlands, but above flood stage; and uplands — land that is higher in elevation than the lowlands and terraces, not necessarily flat, and generally at some distance from rivers, wetlands, and lakes.

Phase 3. Prior to the third season, the similarity in the kinds of sites and settings we were finding suggested that my strategy should probably change: 1) focus should shift to the Rock River as well as the Crawfish for comparative purposes, and 2) a broader area must be surveyed. The problem was that the area I had originally defined was not large enough to include all of the diversity in the region, and I thought there were enough differences between the Rock and Crawfish rivers that we should be able to compare the two. The Phase 3 survey represents the southern portion of the research area, from below the major swamps and marshes on the Crawfish to just south of the Crawfish and Rock River confluence. The east-west boundaries were drawn to approximate the major drainage limits.

Phase 4. During the next two summers, work focused on finishing the Phase 3 sample, and beginning a 15% stratified proportional sample of the Rock Lake area, to the west of Aztalan. As in Phases 2 and 3, the Rock Lake area was stratified geographically (into a North and South quad — see Fig. 4), as well as physiographically. The Rock Lake area is physiographically somewhat different from the river valleys, but the three strata used previously have analogs in this area. Vegetation and topographic differences in this area were expected to have had an impact on prehistoric site location; in general, fewer types of resources would be accessible, and we thought that we would find fewer archaeological sites.

[h2] Survey Results

A 15% stratified random sample of a 70 square mile area meant that we had to

survey a total of 170 sample units (that is, 170 40-acre plots of land). Multiplying this out, we might have had to cover 6800 acres of land. Of course, 100% of each unit was not surveyable. In fact, only 84%, or 5711 acres, could theoretically be surveyed, due to a variety of obstacles, and we actually surveyed 4398 acres, or 77% of what could be theoretically surveyed, or 65% of the ideal total. We had set a requirement that we had to cover at least 50% of what was theoretically coverable, and the acres not surveyed were skipped because of ground cover conditions or lack of permission. In addition, however, even though we surveyed 4398 acres, we have actually “accounted for” 5487 acres, or 96% of the amount surveyable. To explain, these additional acres were primarily wetlands, and were treated as part of a special “survey strategy.”

These wetlands can be counted as part of the surveyed area because, early in the project, we carefully and systematically surveyed a variety of wetland units. Some had been drained, some were still wet. In each case, we found nothing, and concluded that if there was something there, it was buried too deeply to locate with standard survey techniques. We therefore developed a strategy for such wetland units, and we employed the strategy throughout the survey. Any unit with wetlands was examined for low rises; these rises would then be surveyed. While many rises can be determined from USGS topographic maps, others can only be seen from an on-site inspection. Since these low rises often had archaeological sites on them, we inspected each wetland unit in the sample for such rises. If there was doubt about a rise, we surveyed it.

Tables 1 and 2 provide a general survey summary; the strata listed (lowland, terrace, upland — see earlier description of these categories) were delineated and sampled

within each of the broad survey blocks or quads outlined in Figure 4. It must be noted that sometimes we surveyed areas that were not selected as part of our sampling procedure; this was done for a variety of reasons, ranging from curiosity to a specific invitation from a landowner. These non-sample units are called "out of sample." Figure 5 shows the units surveyed, differentiating between those surveyed in and out of sample. In conducting certain kinds of statistical analysis, we cannot include the results of surveys in out-of-sample units when making generalizations about the whole area. We don't ignore what we found, but since the areas weren't selected as part of the sampling scheme, we can't use these units to make reliable generalizations about the distribution or density of sites in the region. We can, however, use the data for other kinds of analysis.

Table 1. Survey Summary

	<u>In sample</u>	<u>Out of sample</u>	<u>TOTALS</u>
# of units surveyed	170	107	277
Acres surveyed (See text above for explanation)	4398 (5487)	1134	5532 (6621)
# of sites discovered	261	140	401

Table 2. Survey Summary by Strata

	<u>Lowland</u>	<u>Terrace</u>	<u>Upland</u>	<u>TOTALS</u>
# of units/stratum	34	32	104	170
# of sites/stratum	32	55	174	261
# of units with sites/stratum	17	25	80	122
Ratio: Units with sites to Units/stratum	0.50	0.78	0.77	0.72

The tables indicate the density of archaeological sites in the region — 401 sites were recorded in 277 units, an average of 1.45 sites per unit. Table 2 suggests that the sites are differentially distributed within the region — the relative proportions of units with sites are highest in the terrace and upland strata. Overall, 72% of the sample units yielded at least one archaeological site.

The survey, along with what we had already learned from the landscape analysis, told us a variety of things about sites in the region. Not surprisingly, sites are not randomly distributed throughout the region, but instead are clustered. Site clusters tend to occur in seasonally high productivity areas which are located at the juncture of prime resource zones and wetlands. Similarly, units which yield no prehistoric sites are generally found in “extreme” conditions: very wet (e.g., the middle of a swamp), very dry, at a great distance from water, or in an area with highly irregular land surfaces. While people don’t like living *in* swamps or marshes, they certainly prefer to be near them; many sites in the sample are located on “high” ground very near or in major wetlands.

Large dense sites tend to be within the terrace stratum, especially along the Crawfish and near major wetlands. Many are at or near stream junctures or confluences, or at the juncture of a stream with an intermittent stream. These sites are all within prime resource zones. Another characteristic of large dense sites is that pottery is found almost exclusively in these locations. Sites with pottery are always within prime resource zones and usually occur on the river bank or terrace. These sites tend to be on the east side of the Crawfish on interior river bends, near major

wetlands.

Although sites of all time periods were found, there were very few sites specifically dating to the Mississippian period, and those sites with Mississippian components had a very sparse Mississippian presence.

Landscape choices are often made because of the presence of particular plant and/or animal resources. As mentioned earlier in this paper, we analyzed the different vegetation zones in the region, and found that wetlands were potentially the most productive zone in the region. Wetlands provide a source for food year-round, but especially in the winter when food elsewhere may be more difficult to find.

However, since it was also clear that people generally would not choose to live in a wetland, we had to determine a method to examine whether or not this kind of selection was in operation. For each site, we inspected a 0.5 km (0.31 mile) circle around that site, as a way to measure the site environment. Using vegetation reconstructions for the area, we then recorded both the primary and secondary vegetation types in that circle. Our results demonstrated that oak forest, oak openings, and marsh are the preferred zones, and the co-occurrence of marsh and oak openings is particularly strong. Oak forests may co-occur with either oak openings or marsh. By a series of other tests, we determined that this pattern is not merely a reflection of the natural landscape, so we assume that these co-occurrences had cultural significance.

For people in all time periods, proximity to marsh is critical — with a few notable exceptions, over 50% of the sites assignable to time period have marsh as a primary or secondary vegetation type within 0.5 km of the site. However, examining those

sites that do not fit this pattern, we find sites with Mississippian components. In the case of categories with Mississippian components, nearly all the sites are in oak forests/oak openings — placement near marshes seems not to be as critical. Because it is easier to clear a oak opening for agriculture, is possible that this shift is due to the importance of agriculture in Mississippian times.

What do these observations tell us about Aztalan? After completing the survey, I concluded that many of the conclusions drawn by previous archaeologists were true: Aztalan is an isolated outpost that does not have a settlement system immediately associated with it. More significantly, there are almost no Mississippian sites of any type in the region, suggesting that this area was not attractive to Mississippian or Oneota groups. The significance of these observations will be discussed later, but completion of the survey allowed us to move to the third question set and focus on the Aztalan site itself.

Before moving on, however, I'd like to address a question that many readers might be asking: weren't you embarrassed after you spent eight years proving that earlier archaeologists were right in their guesses about the almost non-existent Mississippian occupation in the area? The short answer is no, because those speculations were just that, and were based on no data. We not only can demonstrate that the Mississippian occupation was minimal, we can do so with a high degree of certainty. Further, we found out a lot about the occupation of the region that no one else had ever known, including the fact that there were at least a few small, scattered Mississippian sites. Providing evidence that an earlier hypothesis or speculation is probably right does not show that we did more work than was necessary — it demonstrates that earlier archaeologists made a lucky guess.

In other parts of the state, similar guesses have proved to be wrong.

[h1] THE OCCUPATION(S?) OF AZTALAN: ANSWERING QUESTION SET 3

To address the third question set, which asks about the nature and number of occupations at Aztalan, it was necessary to work at the site. Looking over maps and notes from Barrett's excavations in the early 1900's, and some later excavations in the 1950's and 1960's, it was apparent that pottery and other diagnostic artifacts dating to both Late Woodland and Mississippian cultures had been found at the site. The only way to determine the relationship between the two cultures was to find an area of the site which both had used, and where their "garbage" might be found in relationship to each other; that is, with the older stuff on the bottom and the more recent stuff above.

The notions of superposition and stratigraphic relationship are important ones in archaeology. An example is probably the best way to explain the ideas. Let us say that every day when you came home you took off the clothes you were wearing and dumped them in a corner of your room. By the end of the week, assuming nothing had happened which would cause you to disturb your pile, the clothes you had worn earlier in the week would be lower in the pile than the clothes you wore more recently. This notion represents the principle of superposition: the older stuff is below, or deeper, than the more recent stuff. This same idea applies to soils and archaeological sites. If someone lives in an area, they deposit garbage and go about other tasks in their daily lives. At the same time, winds blow, floods happen, and other events cause the evidence of this activity to gradually be covered over by a

layer of soil. We can see evidence of this happening today (think about windstorms, floods, or even dust), but it is particularly apparent when a place is abandoned. Over a long period of time, enough soil can build up that you can't even tell that other people were there. Another culture comes along later, also likes the same spot, settles there, produces their own garbage, builds their houses, and so on. When an archaeologist comes along at a later time, he or she will find the most recent culture first (it's going to be closer to the ground surface), then finds other cultures in order below it. If there is not much soil development, these different occupations can be right on top of each other, and it can be quite difficult to figure out which is which since each may have inadvertently dug into an earlier occupation in building houses and hearths. The principle of ordering is superposition; the actual strata, layers, or ordered culture sequences are known as the stratigraphy.

One of the best places to find a stratigraphic sequence or segment is in a garbage dump, or what archaeologists call a midden. Middens are especially good places to find stratigraphy because they are places where people dump garbage and where they are unlikely to later return and dig things up.

At Aztalan, Barrett had excavated what he called a midden along the river bank. The different strata had been clear and distinct, and although he excavated a portion of the midden, we thought that much of it should still be left. Excavating in the midden would allow us to examine a stratigraphic sequence to determine the superposition of cultures, and it would also allow us to compare what we found with what Barrett had found earlier; we might be better able to apply some of what we learned to what Barrett had discovered 50 years before.

Excavations in the midden were important for another reason too: there has been some debate among archaeologists as to whether the midden deposit actually reflects a dump, or if it is the result of sheet erosion or slope wash from the upslope or higher areas of the site. When archaeologists excavated at Aztalan in the 1960's, they discovered that in the plaza area of the site, pits and other features were very shallow, while those found under a mound were quite deep. The archaeologist directing the project thought that the plaza area features might be shallow because of erosion caused by all of the farming that had been done in this area of the site. The answer to this question is quite critical for site interpretation: if the dump is the result of erosion, then the so-called plaza area of the site (see Figure 6) may actually be nothing more than an eroded surface, and the midden may be the result of living debris washed downhill from the "plaza." In other words, the high degree of structure described for the site may be nothing more than an artifact of nature. Given the significance of resolving this question, we proposed putting test pits in both the river bank and "plaza" areas of the site.

Our fieldwork at Aztalan demonstrated several important factors concerning the nature of the site. First, midden area excavations suggest a stratigraphic separation between Late Woodland and Mississippian ceramic types. This means that there was at least some time difference between the two cultures, at least in terms of their occupation of the site. Further, the Late Woodland ceramics (as well as the Mississippian ceramics) were generally different from those found elsewhere in the general region, suggesting that Aztalan might represent a location settled by people from outside the region at two separate times.

Second, although large portions of the river bank midden are clearly the result of erosion and slope wash from higher elevations, purposeful aboriginal activity is responsible for a significant degree of midden accumulation. Features encountered during midden excavations suggest aboriginal dumping of kitchen garbage, hearth cleanings and broken pottery. We were actually able to separate different episodes of dumping.

Third, archaeological deposits in the river bank area exhibit a high degree of stratigraphic integrity. In fact, this area of the site may constitute the only remaining undisturbed deposits within the site proper.

Finally, plaza area excavations demonstrated that remnants of subsurface features do exist in this part of the site, and the structures found were Late Woodland in origin. Although integrity of plaza deposits has been seriously compromised by agricultural practices in the first half of the twentieth century, a substantial amount of information is probably still recoverable. Identification of the nature and extent of these remains could significantly alter current notions of the formation and structure of Aztalan. It appears as though the plaza area of the site may have been used as a plaza in Mississippian times, but as a living area during the earlier Late Woodland occupation.

Radiocarbon dating of a site such as Aztalan is an ongoing process. We were able to have an additional five radiocarbon samples processed from our excavations at the site. From these samples, we can conclude that the Late Woodland materials found in the plaza area represent an earlier occupation, and the midden seems to represent a fairly tightly grouped set of occupations, ranging from Late Woodland to

Mississippian times. Although there are some strata in which both Late Woodland and Mississippian ceramics occur, there are earlier strata with only Late Woodland ceramics and more recent strata with only Mississippian ceramics.

The answer to the important questions about Aztalan's site structure is thus "all of the above" — the plaza area served as both a living area and a plaza, slope wash did add to a midden that had been created as a result of aboriginal dumping of garbage, and there were apparently two separate occupations of the site.

[h1] WHAT HAVE WE LEARNED? HAVE WE ANSWERED OUR QUESTIONS?

In this section, I will try to take the answers to the different question sets and pull them together to create a general story about Aztalan and its place in southeastern Wisconsin's past. In so doing, I will also try to address various methodological issues which were important in what we did.

Examination of the landscape made it clear that the Crawfish-Rock Valley region was an area which would have provided a rich variety of food and other resources to people who settled here over the last 5000 years. However, what the analysis also demonstrated that was not obvious when we began the project was the importance of wetlands in landscape use. Biologists and ecologists have recently rediscovered the importance of wetlands in maintaining our ecosystem, but this was something that people long ago already knew. Wetlands provide resources regularly, they provide storable resources, and they provide resources at times of year when other locations are less reliable. You can get food in a wetland in the winter, and it will be

the last place to dry up in a drought. The extensive pattern of wetlands across southeastern Wisconsin is unusual, and makes this area attractive for settlement.

Combining the information on landscapes with the data from our survey, it is not surprising that we found that the region is rich in archaeological sites. However, what was surprising is that we found few sites that can be classified as Mississippian, or as the type of Late Woodland found at Aztalan. What is also surprising is that Aztalan is not in the same kind of location as other sites in the region; people can access all of the different resources in the area, but the site is not adjacent to wetlands as so many other aboriginal villages are.

Because we conducted a stratified random sample, we can make statements about the relative distribution of different kinds of site in the region with some certainty. We can use the survey data as evidence that the two occupations at Aztalan — the Late Woodland and the Mississippian — apparently represent people coming from outside the region. We have found few, if any, other sites that have the same characteristic artifacts or structure. Where do we find other sites with similar artifacts? There are a number of such sites in northern and central Illinois, and it seems likely that Aztalan was settled by two groups who moved to this part of Wisconsin from northern Illinois at different times. This information may help explain why Aztalan is located where it is.

If Aztalan represents a Mississippian occupation populated at least in part from points south, then it might be in the position of competition from surrounding Late Woodland and Oneota groups. The village would not be set up in a location which was clearly claimed by another group (say, the Oneota around Lake Koshkonong to

the south), nor one which would directly interfere with another group's activities. Location on the Crawfish makes sense since the oak openings allow easy farming, and aquatic resources are still readily available. From Aztalan's location, the extensive marshes are exploitable. Indeed, Aztalan's more riverine-oriented location would be most similar to environments further south. The few Mississippian sites found in the survey may represent seasonal camps for those living at Aztalan.

The earlier Late Woodland pottery found at Aztalan represents an earlier occupation, one whose presence elsewhere in the region is minimal. Such pottery is, however, found at other locations in Wisconsin, and is also found in portions of northern and central Illinois. These Late Woodland groups are more focused on farming than are the local Late Woodland groups, and it seems likely that they also moved to this region from the south.[fnref5] This portion of the Crawfish River is similar to locations in northern Illinois, and this location may have been selected because it "looked like home." When Mississippian people later moved into these same areas of Illinois, they might have been told about a similar location "up north" in Wisconsin. Speculation about this aspect of our discoveries is beyond the scope of this paper, but the idea of two separate occupations at Aztalan raises a number of questions for future research. Another topic for future research is the question of why people expanded their settlements into new territories.

While the question of why people decided to build the Aztalan site in Southeastern Wisconsin may be beyond the scope of this paper, we have been able to address a number of issues which help us to understand Aztalan's location within Southeastern Wisconsin. We can address the question of why Aztalan is located on

the Crawfish River, and why Aztalan is at that specific location along the Crawfish. As mentioned at the beginning of this paper, archaeologists have viewed Aztalan's location as unusual; it is farther north than any other Mississippian site, and the Crawfish River does not appear to be a likely location for a Mississippian outpost. In fact, however, the location is quite reasonable in view of the ecological and cultural context. The Crawfish River can be used as a means of transportation to locations further north and west, as well as further south and west, and the specific location of the site allows relatively easy access to all vegetation and resource zones present in the region.

Although the Rock River is a larger river than the Crawfish, the wetland resources available from Aztalan's position on the Crawfish are significantly richer than those available from a comparable position along the Rock. Further, soils along the west bank of the Crawfish are better drained than those east of the river, and are thus more suitable for maize agriculture. In addition, the west bank of the Crawfish is characterized by oak openings or savannahs which are easier to clear for farming. Indeed, these oak openings do not occur along the east bank of the Crawfish or along the Rock. Finally, the Crawfish River, although smaller than the Rock River, is apparently not as susceptible to long freezes in the winter because of concentrations of springs; both the river and its resources would be accessible for greater portions of the year.

With a difference in emphasis or degree of dependence upon agricultural food resources between Mississippian and Oneota people, it is possible that Mississippian would prefer the river bank location with its easier exploitation of the oak openings

for intensive agriculture. Given that Lake Koshkonong (to the southwest of the Crawfish-Rock area) was probably occupied by Oneota people at the time of Aztalan's development, that occupation is perhaps one more reason to settle at the Aztalan locality.

This paper has outlined a multi-stage research program, designed to focus on the nature of ancient landuse in general, and the choices and adaptations made by the people at one location in specific. How we went about finding the answers to our research questions resulted in a number of new questions, but also allowed us to learn something new about Aztalan itself and larger Mississippian cultural system.

[h1] NOTES:

[fn1] Robert L. Hall, "Upper Mississippi and Middle Mississippi Relationships," *Wisconsin Archeologist* 67(1986):365-369.

[fn2] Guy Gibbon, "The Mississippian Tradition: Oneota Culture," *Wisconsin Archeologist* 67(1986):314-338.

[fn3] Samuel A. Barrett, "Ancient Aztalan," *Bulletin of the Public Museum of the City of Milwaukee*, Vol. XIII (1933).

David A. Baerreis, ed., "Aztalan," *Wisconsin Archeologist*[special issue] 39 (1958).

[fn4] Fred K. Steube, "Site Survey and Test Excavations in the Aztalan Area," *Wisconsin Archeologist* 57(1976):198-259.

[fn5] Philip H. Salkin, "The Late Woodland Stage in Southeastern Wisconsin," *Wisconsin Academy Review* 33(1987):75-79.

[h1] SUGGESTED READINGS

Emerson, Thomas E. and Barry L. Lewis, eds. *Cahokia and the Hinterlands: Middle Mississippian Cultures of the Midwest*. (Urbana, IL: University of Illinois Press, 1991).

The series of articles in this book document a series of Mississippian sites that have been investigated in the Midwest.

Goldstein, Lynne, "The Mysteries of Aztalan," *Wisconsin Academy Review*, Summer 1991, pp. 28-34. An outline of Aztalan and its structure, written for the interested public.

Green, William A., Alice B. Kehoe and James B. Stoltman, eds. *An Introduction to Wisconsin Archaeology: Background for Cultural Resource Planning*. Special issue of the *Wisconsin Archeologist*, Vol. 67(1986). This special issue provides individual articles on each of the major time periods in Wisconsin.

Ritzenthaler, Robert (third revised edition by Lynne Goldstein), *Prehistoric Indians of Wisconsin* (Milwaukee, WI: Milwaukee Public Museum, 1985). This book is an outline of Wisconsin's prehistoric past, written for a general audience.

Stoltman, James B., ed. *New Perspectives on Cahokia: Views from the Periphery*. (Madison, WI: Prehistory Press, 1991), Monographs in World Archaeology, No. 2.

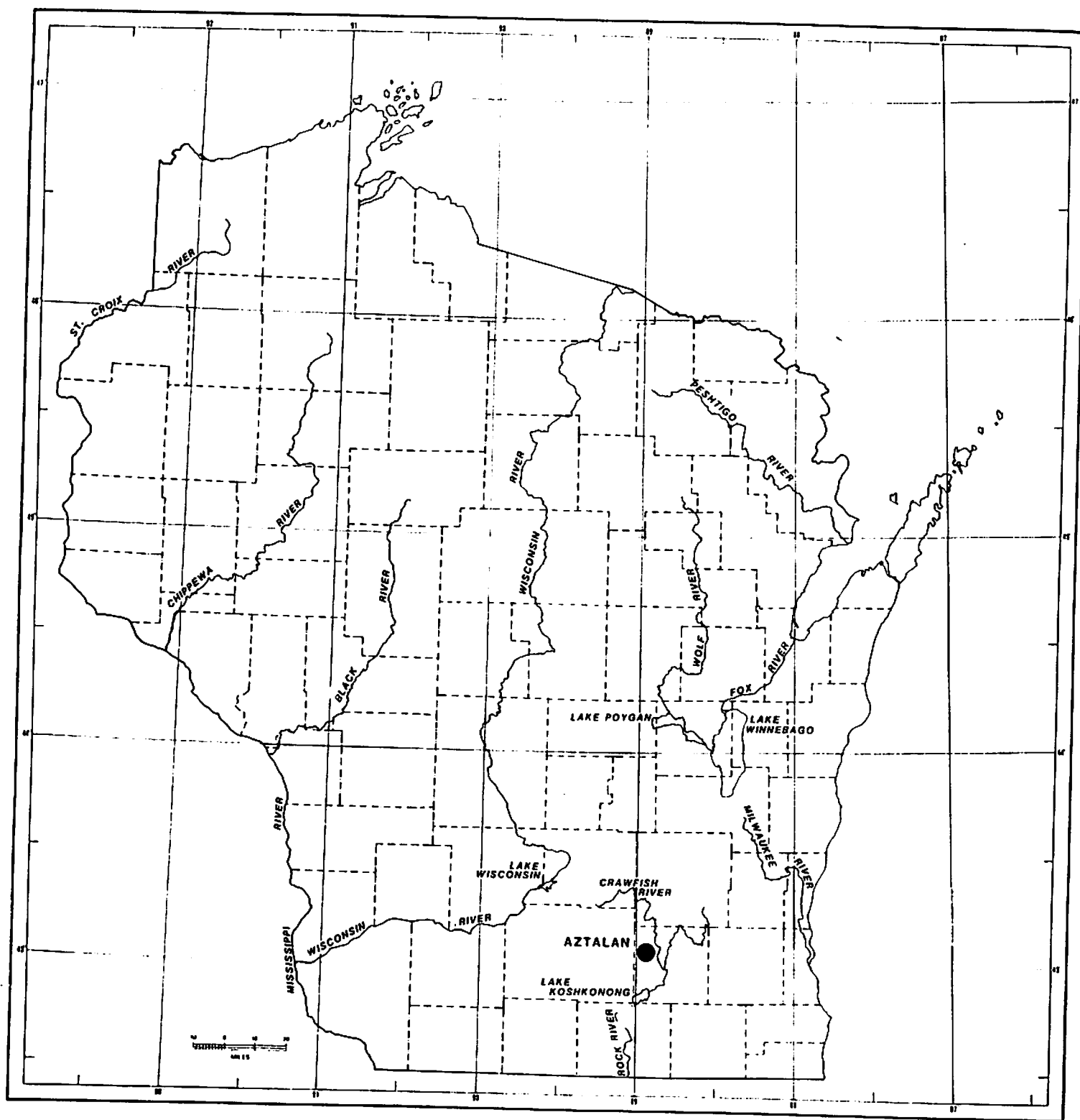
The articles in this book provide a view of Cahokia, an important Mississippian site near present-day St. Louis, as seen from sites at a considerable distance — the idea is that we may better understand Cahokia if we look at it from sites like Aztalan.

EXPLORING AZTALAN AND ITS ROLE IN MISSISSIPPIAN SOCIETIES

by Lynne Goldstein, University of Wisconsin-Milwaukee

Figure list & captions

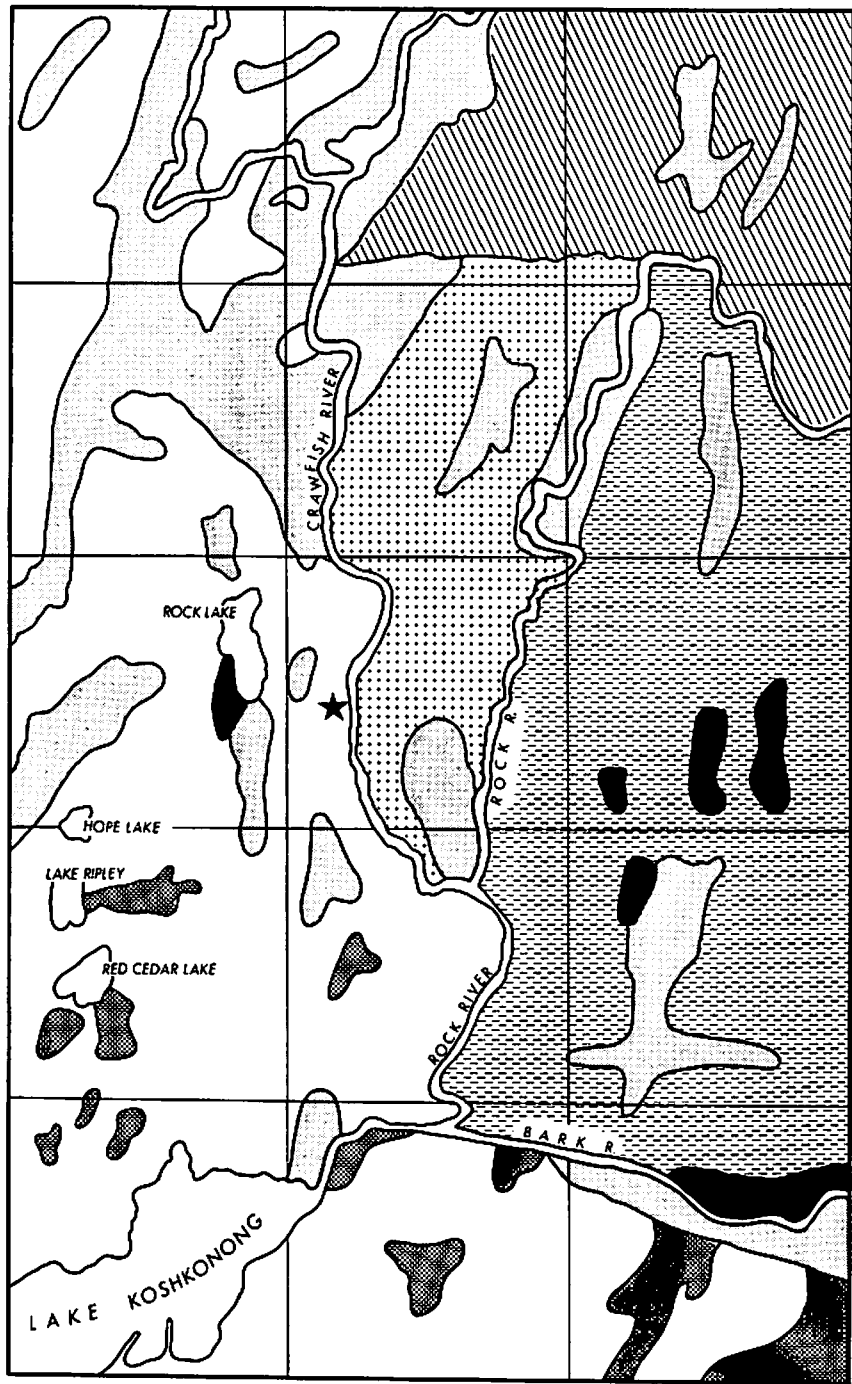
1. Location of the Aztalan site within the state of Wisconsin.
2. Artist's reconstruction of what the Aztalan site might have looked like when occupied. Note that inner and outer stockade walls were used.
3. Reconstruction of the nineteenth century vegetation in the Aztalan area. The star notes the location of the Aztalan site.
4. The Aztalan area survey region, with the broad survey blocks and transects outlined.
5. The Aztalan survey region, with individual sample units indicated.
6. Map of the Aztalan site, with locations of major site features noted.



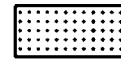
THE SITE OF AZTALAN



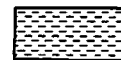
PRE-SETTLEMENT VEGETATION



FORESTS



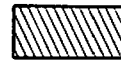
OAK



MAPLE-BASSWOOD



BUR OAK OPENINGS



OAK-MAPLE-BASSWOOD

OTHERS



SWAMPS



WETLANDS



WET PRAIRIE
SEDGE MEADOW



Figure 4 is
missing -
must be redone.

AZTALAN

