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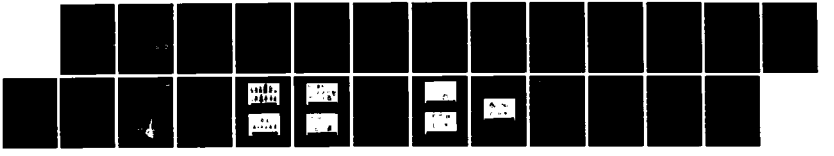

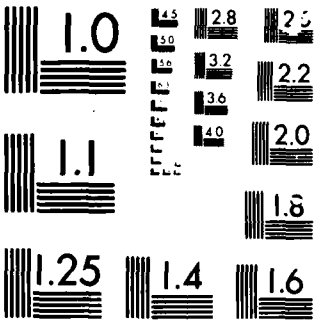
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# ADDITIONAL MATERIAL FROM AND NOTES ON THE HOG HOLLOW SITE, GRANT COUNTY, WISCONSIN

by

David C. Lowe

Preface by William Green



Prepared for the

Rock Island District, Corps of Engineers

by the

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State Historical Society of Wisconsin
816 State Street
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*ABSTRACT: Prehistoric artifacts collected from the Hog Hollow site, Grant County, Wisconsin are described and illustrated. All items were collected from the shoreline and near-shore underwater portions of Mississippi River Navigation Pool No. 11. Stone artifacts and pottery styles indicate Early, Middle, and Late Woodland occupations. Wave-induced erosion of the site is severe. Loss of substantial portions of the archeological deposit over the past 10 years is documented. Projected losses are calculated. Recommendations are offered for reducing or mitigating further erosional damage.*

# PREFACE

William Green

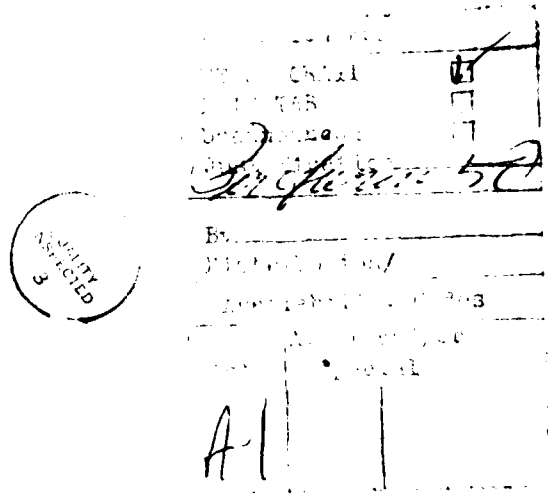
The Hog Hollow site (47-Gt-266) is located in southwestern Wisconsin, in section 10, T. 2 N., R. 3 W., Grant County. It is situated on a low terrace of the Mississippi River at the water's edge in Navigation Pool 11. The site originally overlooked an extensive backwater slough system at the mouth of the Grant River but inundation caused by Lock and Dam No. 11, about 10 miles downstream, masks the complex nature of the adjacent floodplain. (For locational maps, site maps, and other important data on Hog Hollow and its local archeological context, see Geier 1974, 1975, 1978, n.d.; Geier and Loftus 1975; and Overstreet 1984, 1985.)

The following report was prepared for the Rock Island District, Corps of Engineers, the agency that owns the Hog Hollow site. The author, David Lowe, a resident of Madison, Wisconsin, informed me in 1985 that his artifact collection included material from the Hog Hollow site. He mentioned that he had worked on the site as a student in 1974 and 1975 with University of Wisconsin-Platteville crews and recently had revisited the site. After I mentioned to Charles Smith of the Rock Island District that this collection existed, the Corps contracted with the State Historical Society of Wisconsin to prepare a report on this material. The State Historical Society hired Lowe as a part time archeological assistant, and he conducted a complete artifact analysis and the following report.

Hog Hollow is an extremely important site because of the information it contains on Woodland cultures of the Upper Mississippi Valley, and we trust this report will be of interest to archeologists working in the region. We believe it provides useful information on the Hog Hollow site and should complement previous studies and those in progress.

This report describes: 1) the artifact collection techniques, 2) the lithic artifacts, debitage, ceramics, and other collected materials, and 3) the effects that erosion have had on the site. I urge readers to note the recommended conservation measures and to support efforts to protect the remaining site area.

We thank Charles Smith and the Rock Island District, Corps of Engineers for their interest and support. We also thank Klaus Westphal, of the Geology Museum, University of Wisconsin-Madison, for identification of the ironstone nodules and Hulet Wood of McFarland, Wisconsin for his assistance.



# ADDITIONAL MATERIAL FROM AND NOTES ON THE HOG HOLLOW SITE, GRANT COUNTY, WISCONSIN

David C. Lowe

## BACKGROUND

I first visited the Hog Hollow site (47-Gt-266) in the fall of 1974 with the University of Wisconsin-Platteville Archeology Club. Work was done on the weekends and was directed by Clarence Geier under Federal Antiquities Permit No. 75-Wi-046. A grid system was set up following the natural longitudinal axis of the site. This axis is located along the summit of a long ridge-like rise. This sandy ridge rises 1-2 feet higher than the surrounding terrain and runs in a northwest-southeast direction. Five-foot squares were set up, and the first test squares were on the southern edge of the site. These test squares, on the edge of a slumping eroded bank, were within an area that was later identified as a Woodland house feature.

In the spring of 1975, more test squares were opened up immediately to the north and northwest of the house feature. At that time an archeological field school was set up, and Hog Hollow was extensively excavated from June to August, 1975 (see Geier 1978, n.d.). In the fall of 1975 Dr. Geier moved to Virginia and the Archeology Club disbanded. To my knowledge, there have been no further excavations at Hog Hollow, except for one stratigraphic test pit excavated in 1984 (Overstreet 1984).

I visited the site in the fall of 1975 and followed this up with water screening for cultural material. I repeated this in the fall of 1985 after a ten-year absence from the site. The 1985 visit included the collection of all debitage, whereas the 1975 visit only included the collection of lithic and ceramic artifacts.

## ARTIFACT COLLECTION METHODS

The artifacts and debitage listed in this report were recovered through water screening. An excavation sieve with 1/4 inch hardware cloth was placed in the water, and the eroded alluvium along the shoreline was passed through the screen. Debitage and pottery fragments smaller than 1/4 inch in size were not recovered.

The water depth throughout the entire site area is only 1.0 to 1.5 feet, and the bottom consists of a loose sand layer four to eight inches in depth. This sand layer is mixed with a large amount of waterlogged vegetal matter originating mainly from the eroded areas of the bank. This material consists of leaves, branches, tree trunks, and a water plant that has a large seed pod. The cultural material is found in this sand layer.

Approximate locations of artifact finds are indicated on Figure 1.

## LITHIC ARTIFACT SUMMARY

Three stone types are represented in the collection of lithic tools. The types are Galena Formation chert, Burlington Formation chert, and Hixton silicified sandstone. The entire artifact assemblage consists of Galena chert with the exceptions of one utilized flake and one blade flake knife of Burlington chert, and one large distal fragment and a Madison (Huffnagle Creek) point of Hixton silicified sandstone. The artifacts listed in this summary are made of unheated Galena chert unless otherwise indicated. Named artifact types are identified by common Midwestern terminology and, where applicable, by the varieties suggested by Geier (n.d.). Geier's variety names are placed in parentheses.

### *Cores*

Three exhausted and discarded cores were found. One shows battering on two edges for striking platform preparation, and one is pink and has a very glossy luster due to heating. Both of these cores show long narrow flake scars indicating

manufacture of blades.

*Utilized flakes*

Forty-five utilized flakes were observed showing slight to heavy modification. Five show signs of heating and of these, one is purple, two are pink, and one is purple and potlidded indicating thermal fracture due to uneven heating or cooling. The single Burlington chert flake shows a small crystalline quartz inclusion.

*Flake knives*

Six flake knives are represented. The Burlington chert blade knife is white and has a glossy luster indicating heating.

*Bifacial knives*

Five whole and 10 broken units were noted. Of the broken items, two are ovate in shape, one of them a large pink heated knife and the other a purple and heated knife.

*Hafted knife*

One hafted knife with a straight stem was discovered along the western shoreline. It is 6.3 cm in length (Fig. 2-d).

*Lanceolate knife*

One lanceolate knife was found. A small portion of the distal end was removed, leaving 5 cm remaining. This specimen is pink and shows heat alteration.

*End scraper*

Only one end scraper was found. It is of a tan-white color, 2.5 cm in length, and came out of the house feature area (see Geier 1978:159).

*Drills*

Five artifacts have blade shapes that indicate drilling or boring activities. One is a 3.9 cm long distal fragment. Another is a reworked Waubesa (Brewery Hollow) contracting stem point that shows extreme wear on a very blunt tip (Fig. 2-k). One drill (Fig. 2-l) appears hafted and is discussed in the next section. One drill 4.3 cm in length exhibits potlidding scars and is purple. The last drill appears to have been made on a 7.7 cm long flake which removed a bifacial edge from a large core or other artifact. This has produced a tool that is triangular in cross section, similar to a triangular shaped drill recovered in 1975 from the nearby Brogley Rock Shelter (47-Gt-156). The triangular cross section makes a three-edged drill bit instead of a usual two-sided drill. The sides of the triangle have the flake scars of edge preparation, and the bottom (ventral side) is one smooth flake surface. This smooth surface shows wear flakes on the distal end. This tool is pink, indicating heating. No "wingtip" or "T" shaped drills were found. Three of the five drills were straight sided and two were reworked projectile points.

*Late Archaic projectile points*

This category contains two artifacts. One purple basal fragment of a probable Durst stemmed point shows heating (Fig. 2-g). A shallow side notched Raddatz point also was found (Fig. 2-h), with the distal and part of the proximal ends removed.

*Early/Middle Woodland projectile points*

Fifteen points are represented in this category. Most points are illustrated in Figure 2 and are described in detail in Table 1. The attributes used in the descriptions in Table 1 are listed in Appendix I.

One artifact is a straight stemmed point mentioned above as a drill (Fig. 2-l). This artifact seems to be a reworked Kramer-like point that was possibly used as a hafted drill. Its distal end is rounded and polished from use. Two proximal point fragments which appear to be the same type of straight stemmed point also were recovered.

Two probable Waubesa contracting stem points are pink and heat treated. One is missing the proximal end but is still a fairly definite Waubesa point (Fig. 2-i), and the other is a stem fragment. Two other specimens, one of which was mentioned earlier, are Waubesa points (Brewery Hollow variety). They look like miniature Waubesa points and show good workmanship (Fig. 2-j,k).

Two points are classified as McCoy corner notched, and both show signs of heating. One is purple (Fig. 2-a) and the other is pink and is represented by a fragment of the base with part of the blade.

Three points are similar to Gibson and Steuben points (Grant River corner notched) (Fig. 2-b,e,f). One of these points (Fig. 2-f) is a reworked point with an unusual concave base. This contrasts with the convex bases on all other examples of this type.

One unclassified point is side notched and has a wide base (Fig. 2-c). The remaining specimens are a side notched fragment with both the distal and proximal ends removed, and an expanding stem fragment possibly from a Snyders corner notched point.

*Late Woodland projectile points*

This category is represented by 13 specimens. Figure 3-a is a corner notched point and Figure 3-b is a side notched triangular point.

Two points (Fig. 3-c,d) are arrowpoints on flake blades (Snake Hollow points). They have bases that are abruptly terminated by a snapping off of the flake. Most of the flaking is on the dorsal surface.

Four points are Madison arrowpoints, which are triangular with slightly convex bases (Huffnagle Creek). One is heated and has a reddish tint (Fig. 3-e). Another is of Hixton silicified sandsone (Fig. 3-f) and is identical in size, shape, and material to a point found during the excavation (Geier n.d.). The third is unbroken and the last is missing its tip and is made of porous Galena chert (Fig. 3-g).

A Madison (Osceola Bluff variety) triangular point is the only projectile point in this study that was not found in the water (Fig. 3-h). It was found on the southern bank just east of the house feature. Its exposure was caused by a heavy rain storm eroding and moving the point less than six inches from its apparent *in situ* placement. In all probability, this point's high stratigraphic location places it in the plow zone. Of the seven examples of this point variety represented at the site (Geier n.d.), none have been found in the water.

Of the large unnotched triangular points, one (Sinnippee Creek) has the distal end removed, as do two others (Zollicoffer Lake), one of which is pink and heated. The Zollicoffer Lake variety specimens resemble small blanks or ovate knives and are thicker than the other Late Woodland points.

The final item in this category is a large unclassified triangular point with the distal end removed.

*Unidentified projectile point fragments*

The remaining fragments could not be assigned a cultural affiliation. This category includes six distal ends and two blade fragments. Two of the distal tips are pink and heated, and one is 4.3 cm in length and is made of Hixton silicified sandstone with an area of red stain. The one blade fragment is thin and probably was a triangular projectile point. The final item is a thick burned fragment.

## DEBITAGE ANALYSIS

Sixty-three pounds of lithic debitage were recovered from the southern and western inundated areas of the site. Analysis of the debitage shows that at least six different lithic material types were used at the Hog Hollow site. Morrow and Behm (n.d.) is the major source for information on raw materials and is paraphrased in parts of this discussion.

***Barron silicified sandstone***

Also known as Barron County pipestone, this material is derived from Precambrian age Barron quartzite in eastern Barron, northwestern Rusk, and western Sawyer counties in Wisconsin. This material is completely opaque and has a maroon color. Experimental heating suggests no color change due to heat treatment (Palmer 1940). This category is represented by one thinning flake which shows no thermal fracture, so heating is uncertain. I have a corner notched point from Iowa County, Wisconsin with multiple potlid scars and a deeper maroon color than this flake. I am uncertain whether there is a slight color change due to heating or if there is just color variation within the rock formation.

***Burlington Formation chert***

This material is derived from the Mississippian age Burlington Formation in southeastern Iowa, west-central Illinois, and northeastern Missouri. Fifty-five Burlington flakes were recovered, 12 of which are heated with no potlidding in evidence. A few of the flakes are fossiliferous with the inclusions appearing as bright white "ghosts" in an off-white matrix. Most of the flakes are off-white to light grey. The heat-treated flakes show a color change to a very light pink and some also have a very glossy luster. Five of the flakes have areas of crystalline quartz with the individual crystal size up to 1 mm. Some of the flakes have areas of transparent material that looks like opalized quartz. One large flake has white cortex and an interior with light brown banding.

***Cobden/Dongola chert***

This material is derived from deposits of the Mississippian age St. Louis formation in Union County, southern Illinois. One Cobden/Dongola thinning flake was found. It is homogeneous in color (blue-grey), fine grained, and has a glossy luster.

***Hixton silicified sandstone***

Also known as Hixton quartzite and "sugar quartz," this material originates in a large but localized exposure of silicified Cambrian age sandstone known as Silver Mound in Jackson County, west-central Wisconsin. Three thinning flakes are classified as Hixton, pointing to an interestingly high artifact to debitage ratio for this material. The material may have been processed at the place of procurement (Silver Mound) and introduced to the site in a completed stage, or there may be a flaking station outside the collected area.

***Prairie du Chien chert***

This originates in the Lower Ordovician age Prairie du Chien group which outcrops in parts of northeastern Iowa, southeastern Minnesota, north-central Illinois, and south-central and southwestern Wisconsin. The chert is white to medium grey and is the only oolitic light colored chert found in Wisconsin. Heated flakes were observed to have a glossy luster and dark grey matrix with pink oolites. Eleven flakes were so classified. Two are grey secondary decortication flakes, one large and the other smaller with purple banding and an area of crystalline quartz. Six white to grey thinning or edging flakes and three heat altered flakes complete the inventory of Prairie du Chien chert debitage.

***Galena Formation chert***

This is a Middle Ordovician age chert which outcrops in the tri-state area of Illinois, Iowa, and Wisconsin. This chert type was the focus of lithic flaking activities at the Hog Hollow site due to its local points of procurement and easy availability. Galena chert colors range from light tan to brown and light purple-grey in its unheated state. Distinct worm borings, usually a lighter color than the surrounding matrix, are sometimes observed in the chert. Most of the fossils present are brachiopods, found mainly on the cortex. The variation of shades of color within a chert type sometimes seems to overlap into other types. The darker shades of Burlington chert and the lighter shades of Galena chert sometimes are very similar, making definite type identification difficult, especially in the pieces with few or no diagnostic fossils. Chemical analysis, which was beyond the scope of this study, probably can resolve such problems.

There were few indications of the crazing or crenation forms of thermal fracture on the Galena chert flakes or shatter. Some of the pieces of shatter appear to exhibit no heat alteration but do show potlid flake scars. This could be due to frost. One piece of shatter has a battered surface, showing a possible attempt at preparation of a striking platform. The burned pieces of shatter showed potlidding. Below are data on Galena chert shatter:

| | |
|---|---|
| Light grey | 91 |
| Heated dark purple | 6 |
| Purple burned | 7 |
| Heated pink | 6 |

For a detailed analysis of the flakes of Galena chert, flakes were separated by screening into those smaller than 1/2 inch and those larger than 1/2 inch. A total of 10,388 flakes were counted, 6908 under 1/2 inch and 3440 over 1/2 inch (Table 2). Of the total, 2620 flakes show some form of thermal alteration.

The data indicate that primary lithic reduction was not carried out at the site. This activity probably was performed at the chert sources. Although many secondary decortication flakes were found, indicating secondary reduction activities, the main flaking activity was the removal of thinning and edging flakes.

Most of the potlid flakes were too small to be recovered but 11 were large enough to be found. Seven of these were unheated, two are heated and pink, and two are burned. These flakes are either natural or only indirectly the result of human activity and thus are not included in Table 2.

At this and any multicomponent site, debitage analysis must recognize that stone flaking technology and activities may have differed among the various groups which lived at the site. Thus, the interpretations offered here may apply to the different groups with varying degrees of confidence, though the general impression of late-stage processing probably is accurate for all components.

## CERAMIC ANALYSIS

The pottery fragments recovered through water screening were on the whole in a good state of preservation. The artifacts do not lie out in the open exposed to the elements for a long period of time. When lateral erosion exposes them they soon fall into the water and are covered with sand up to eight inches deep. The only direct wear observed on pottery fragments was in a narrow zone along the shoreline where wave action washes the beach. Water contact softens the potsherds, and if exposed to this wave washed zone the sherds become more "sanded" and rounded. The location of this zone moves according to Pool No. 11 water fluctuations.

While it is easy to identify a smooth vessel surface on a well preserved sherd, it is difficult to tell whether a worn sherd was smooth or if it is a cordmarked fragment recently smoothed by movement in the sand.

A few sherds have small holes indicating limestone temper, the dissolution of which may have been accelerated by contact with the water. Some pottery fragments are split and delaminated, separating the interior from the exterior.

### *Rim sherds*

Of the 506 potsherds recovered and included in this study, 17 are rim fragments. Most are illustrated in Figure 4 (exteriors) and Figure 5 (interiors), and rim profiles are shown in Figure 6. Specimens are referred to by letters which match those used in figures 4, 5, and 6. Table 3 provides data on temper type for each rim.

Specimens *a* and *b* are rims with vertical cordmarking and small, narrow notching on the interior and exterior lip. Both have bosses and specimen *a* shows two horizontal rows of bosses and one row of fingernail impressions. These probably represent Early Woodland vessels, and match Prairie ware as described by Boszhardt (1982) and Geier's (1978) Osceola Bluff cordmarked variety.

Specimen *c* exhibits bossing as well as diagonal dentate stamp impressions on the exterior lip and vertical dentate stamps on the interior rim. This is a Middle Woodland sherd, too thin to be Havana ware but possibly classifiable as Levsen stamped *var.* dentate, a variety of Linn ware.

Specimens *d* through *f* are smooth or smoothed-over cordmarked on the exterior and exhibit slightly everted lips. Rim *d* has short horizontal cord impressions on the interior, rim *e* has large vertical notches on the inner lip, and rim *f* is plain. Specimen *g* shows vertical exterior cordmarking and shallow, diagonal notches on the exterior lip. These four

rims (*d* through *g*) may be classifiable as Spring Hollow plain or cordmarked but their small size makes certain classification difficult.

Specimens *h* through *o* exhibit horizontal single cord impressions over cordmarked exterior surfaces, supplemented by vertical cord impressions on rims *h*, *i*, *l*, *n*, and *o* and by interior cord impressions on rims *i* and *k*. All represent Late Woodland Madison cord-impressed vessels.

Two other rims were found but not photographed. One shows light cord marking on a flattened rim (Fig. 6-*p*) and the other exhibits diagonal cords or knotted cords over vertical cordmarking (Fig. 6-*q*).

### *Body sherds*

The 489 body sherds are tabulated in Table 4. Some of the more diagnostic body sherds are illustrated in figures 7, 8, and 9. Figure 7 shows four fingernail impressed and incised over cordmarked sherds representative of Early Woodland Prairie ware. Figure 8 shows two sherds with bosses (Fig. 8-a,b), both of which appear to be limestone tempered and may be Middle Woodland. Other Middle Woodland sherds include a Neteler stamped *var.* plain Havana ware sherd (Fig. 8-d) and two Levsen stamped *var.* dentate Linn ware sherds (Fig. 8-c,e). Miscellaneous sherds in Figure 9 include punctated Linn ware or Late Woodland sherds (Fig. 9-a,c,e) and a possible Early Woodland sherd (Fig. 9-b).

A possible ceramic bead is illustrated in Figure 9-d.

## OTHER COLLECTED MATERIAL

### *Galena*

Three pieces of galena were recovered, 1.4 cm, 1.5 cm, and 2.5 cm in maximum length.

### *Hematite*

One piece of hematite 1.7 cm in length was found. It is reddish-black. One side is glossy and the other has a dull luster that scratches easily with the fingernail, leaving a powdery maroon stain.

### *Agates*

Eighteen water-worn agates or opalized pieces were collected, mostly from the western shoreline area. Most of them are multicolored, the colors ranging from orange to red, greyish-white, and brown. Some of the agates show banding. The largest piece is orange with oolitic nodes.

I am not certain of the agates' point of origin, but it may be possible that they are Lake Superior agates. The Mississippi River at several times drained glacial Lake Superior (Clayton 1982). I am uncertain whether the agates are natural inclusions in the alluvium from this period or were introduced by human activities. Underwater testing outside the archeological site area and detailed analysis of the agates themselves could help explain the occurrence of agates here.

### *Ironstone nodules*

Two hollow, water-worn nodule fragments 1 cm and 2.2. cm in length were found. The smaller piece is glossy and black, and the larger is semi-glossy and reddish-black. Both are angular, in contrast to the concentric nodules I have found on other Woodland sites.

### *Burned limestone*

The burned limestone was not collected or counted, but numerous pieces of various sizes were represented. The larger pieces indicate possible use in a campfire, and the smaller pieces perhaps are fragments of campfire stones or result from accidental fire contact.

***Burned bone***

Six small burned bone fragments were recovered along the western bank. This finding seems consistent with the *in situ* scattered burned bone fragments uncovered during excavation in the hearth areas, indicating animal remains in cooking areas.

***Additional artifactual data***

The following artifacts were recovered in the 1970s but were not included in the Hog Hollow reports (Geier 1978, n.d.). Four small copper needles were found *in situ* within the area of the house structure. A large copper awl was found 15-20 feet due north of the house structure. This awl is square in cross section and is seven inches long. It is the same type of awl that was recovered from the nearby Osceola site during the 1940s excavations (Ritzenthaler 1946). While no copper has been recovered in water screening at Hog Hollow, there is a good chance that copper artifacts could be encountered in additional investigations.

I found a pottery pipe fragment with part of the bowl and stem while water screening off the western shoreline during the 1975 excavation. Another pipe was represented by fragments found *in situ* 20-25 feet due west of the house structure.

A full-grooved axe was recovered by the person who I believe first informed the University of Wisconsin-Platteville of the site location. I think the axe was recovered from the water. To my knowledge, no hammerstones or additional axes were found at the site.

## EROSIONAL IMPACTS AT HOG HOLLOW

In the 12 years since I first visited the site, I have observed considerable destruction of the southern and western edges of the site due to lateral erosion. This erosion is caused by the action of the waters of Mississippi River navigation pool 11. The Hog Hollow site lies on the tip of a portion of a large, low terrace that forms a peninsula in the waters of pool 11. The river forms the western and southern edges of the site's non-inundated area, and the backwaters of a slough lie to the east. There is little erosion on the eastern edge of the peninsula. This area is protected on three sides and is open only to the south. The worst erosional losses occur on the southern and western edges. The peninsula is host to one of the last areas of wooded habitat left on this terrace, as the major portion of the terrace is under cultivation.

The southern end of the site is bring eroded most rapidly. This area is covered with grasses, sumac, and a few trees. There is little established root network in this area, leaving an unstable soil. This area is very sensitive to lateral and horizontal erosion. The western edge is wooded and has a well established root network. This root network is good protection against horizontal erosion, but while it slows lateral erosion it does not eliminate it. The wave action undercuts the soil around the tree roots and the unstable trees eventually topple over, tearing out large sections of the unexcavated cultural deposit and damaging wildlife habitat as well.

There is a diversity of flora actively being destroyed by erosion at this time. I have observed areas being destroyed by lateral erosion that hosted stands of American elm (*Ulmus americana*), river birch (*Betula nigra*), black oak (*Quercus velutina*), honeylocust (*Gleditsia triacanthos*), as well as wild grape, sumac, and other grasses, trees, and shrubs.

Since the fall of 1975 I have observed the southern edge of the site recede almost 20 feet and the western edge about 15 feet (see Fig. 1). While lateral erosion is claiming areas previously excavated, over 90% of the eroding areas are undisturbed cultural strata. I estimate the erosional losses of cultural deposit at 4800-6800 $ft^2$ from the fall of 1974 to the fall of 1985. The southern edge has 160 feet of shoreline and accounts for 2400-3200 $ft^2$ of eroded site area, and the western edge has 240 feet of shoreline and accounts for 2400-3600 $ft^2$ of lost archeological deposit. The western edge may have higher losses because I have not identified the upriver border of the site. These losses are only estimates. Reestablishment of the grid system would allow mapping of site boundaries in the northwest area and provide more accuracy in the estimation of erosional losses.

It is unclear whether the Hog Hollow site was affected by erosion prior to the development of pool 11. If there was erosion prior to this time, it came only during periods of high water when the waters of the Mississippi and Grant rivers overflowed their banks and, joining as one river, temporarily inundated the floodplain. This flooding would look much like the present day pool levels. This level would cause an erosional situation, but one of short duration.

The completion of the lock and dam at Dubuque in the 1940s raised the river level several feet. With the rising waters caused by the filling of pool 11 in 1944 or early 1945, both Hog Hollow and the nearby Osceola site were subjected to constant lateral erosion. The most rapid erosion at Hog Hollow occurs during periods of elevated pool levels two or more feet over normal levels, with high winds coming out of the south or west. The Mississippi at this point is an open expanse two miles in width, and high winds from those directions moving across this open expanse create whitecaps with an attained wave height up to two feet. These waves do the most damage during periods of high water levels, but can still cause a lesser degree of lateral damage at normal pool levels. This area is subjected to continual wave erosion any time the wind velocity is high. I would assume this type of erosion stops with the freezing of the river during the winter months.

When screening alluvial material near the shoreline in this area, a very hard clay-sand layer was encountered below the loose sand layer containing the cultural material. This hard layer acts as a false bedrock preventing the penetration of alluvium and cultural material. Many mollusks are found throughout the area, and most of them are to be found at this zone of contact between the loose sand layer and the orange-brown hard packed layer. Over 95% of the mollusks I found were dead. Their demise may be partly due to silting of the water due to localized lateral erosion. Bank stabilization may help lead to a recovery in the numbers of mollusks in the shallows surrounding the site.

## EROSION PROJECTIONS

The major remaining portion of the Hog Hollow site is an unexcavated cultural deposit. The areas excavated in the 1970s represent only 10% to 15% of the remaining site area. I estimate the remaining cultural deposit to be between 25,000 and 30,000 $ft^2$. I believe this area is large enough to warrant site preservation measures. If site conservation techniques are not employed, I estimate that not only the Hog Hollow site but the entire peninsula of land on which the site is situated will be destroyed by lateral erosion in 50 to 75 years. The rate of destruction will depend mainly on water level fluctuations in pool 11, and on wind direction and velocity.

## RECOMMENDATIONS

The importance of the Hog Hollow site should be realized and its chances for preservation improved by positive conservation oriented management. The site should be determined eligible for or nominated to the National Register of Historic Places. The remaining portion of the site is in a good state of preservation, with 8 to 16 inches of sand sealing most of the cultural deposits. The site has a rich and diverse pottery assemblage. It is likely to contain the remains of additional house structures, based on data from another Middle Woodland site in Grant County — the Millville site, in a similar setting on a terrace at the mouth of a tributary — which had several prehistoric structures (Freeman 1969).

For these reasons — good site preservation, large remaining cultural deposit, site significance for regional studies of prehistory, and maintenance of the local floral and faunal ecosystem — I strongly recommend quick action in the preservation of Hog Hollow and the adjacent shoreline.

### *Additional work: water screening*

Witnessing the site in a rapid erosional situation, I am convinced that there is less than a five foot horizontal movement of cultural material during the time of initial erosional disturbance. While the material does not remain *in situ*, its spatial importance still can be realized. Through a more thorough water screening investigation, much lost information can be reclaimed from the inundated parts of the site. The inundated southern and western perimeters of the site have never been established, and I believe that establishing the location of these boundaries will show the site area to be much larger than is currently believed. Further water screening may help explain the presence of copper artifacts and Late Archaic points found at both the Hog Hollow and Osceola sites. Investigations could help determine whether there was a Late Archaic occupation at the site or if the Archaic artifacts were just carry-ons as Geier (n.d.) suggests. I have located several concentrations of artifacts in my off-shore testing (Fig. 1), and I believe that with further testing a map can be made identifying different activity areas in the inundated zones. The inundated areas also may retain evidence of additional structures, though any underwater work of course is a poor substitute for work on undisturbed site areas. The water screening is recommended in order to answer questions about parts of the site already lost to erosion; it should not be viewed as a substitute or alternative to archeological and preservation work on the undisturbed site areas.

***Additional work: site protection***

The following steps should be taken to ensure the protection of the Hog Hollow site from lateral erosion. A grid system should be reestablished as close as possible to the location of the original grid system used during the excavation. This would provide a more precise estimate of erosional losses and give a horizontal control framework for core sampling. Small-diameter coring, which has never been conducted at the site, will help identify features and other activity areas, and will indicate high priority areas for bank stabilization. This should be followed by a cutting back or terracing of the eroding banks along the entire southern and western edges of the site. Due to the undercut nature of the bank, the soil needs to be cut back before stabilization can begin. This terracing of the bank would ready the site for preservation treatment and also would provide a long profile doubtlessly rich in archeological data. After the bank is cut back about five feet, rip-rap or an equally effective breakwater should be placed on the terraced cut. The breakwater at the Osceola site has halted lateral erosion damage there.

I strongly believe that only such action will stabilize the bank areas. This area needs quick protection as each year of neglect adds to the loss of valuable archeological data.

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Table 1. Projectile point descriptions (see Geier n.d. for attribute descriptions).
Note the following differences from Geier (n.d.) tables:

1. Omit Geier's categories T, V, and Z.
2. Add to category B: 27 — Edges recurvate to a point, side notched
   28 — Ovate, corners removed, incurvate base
   29 — Ovate, base excurvate, side notched
3. Add to category D: 11 — Base of notch
4. Add to category G: 12 — Base of notch
5. Substitute for attributes in category AA:
   1 — Dark grey Galena chert
   2 — Light grey Galena chert
   3 — Purple Galena chert
   4 — Pink-grey Galena chert
   5 — Red Galena chert
   6 — Hixton silicified sandstone

| Point No. | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | U | W | X | Y | AA | BB | CC | Figure No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5 | 26 | 1.8 | 8 | — | 0.9 | 1 | 9 | — | 1.8 | 5 | 0.9 | 1 | 0.8 | — | 4 | 1 | 0.5 | 0.1 | 8 | 4 | 1 | 2 | 1 | 3 | 2 | 2-H |
| 2 | 1 | 7 | 1.8 | 5 | 3.8 | 0.7 | 1 | 2 | 2.8 | 1.8 | 1 | 0.7 | 4 | 1.1 | 1.5 | 4 | 11 | n.e. | n.e. | 1 | 5 | 3 | 13 | 2 | 2 | 1 | 2-L |
| 3 | 1 | 24 | 2.2 | 5 | 3.7 | 0.8 | 1 | 2 | 2.4 | 2.2 | 1 | 0.9 | 1 | 1.2 | 1.8 | 4 | 15 | 0.7 | .4/.5 | 3 | 4 | 1 | 2 | 3 | 1 | 1 | 2-A |
| 4 | 3 | 8 | -- | 5 | -- | -- | 5 | 8 | — | -- | 5 | -- | 1 | 1.8 | 1.9 | 4 | 15 | 0.8 | 0.5 | 3 | 4 | 1 | 2 | 4 | 1 | 1 | |
| 5 | 3 | 27 | 2.3 | 11 | — | 0.7 | 12 | 8 | — | 1.9 | 1 | 0.8 | 1 | 1.8 | 2.3 | 4 | 1 | 0.7 | 0.3 | 3 | 4 | 1 | 2 | 2 | 2 | ? | 2-C |
| 6 | 1 | 23 | 2.7 | 5 | 4.7 | 1.2 | 1 | 3 | 3.4 | 2.7 | 1 | 1.2 | 1 | 1.4 | 2.4 | 4 | 5 | .8/.7 | .4/.3 | 3 | 5 | 1 | 13 | 1 | 3 | 1 | 2-E |
| 7 | 1 | 28 | 2.2 | 1 | 2.8 | 0.6 | 8 | 2 | 1.8 | 2 | 1 | 0.8 | 1 | 1 | 2.2 | 4 | 5 | 0.4 | .5/.3 | 10 | 4 | 1 | 13 | 5 | 1 | ? | 2-F |
| 8 | 4 | 17 | 2.4 | ? | — | 0.7 | 5 | 3 | 4.8 | 2.4 | 1 | 0.7 | -- | -- | — | -- | -- | — | — | -- | 4 | 1 | — | 4 | 1 | 1 | 2-I |
| 9 | 1 | 12 | 2.3 | 5 | 4.5 | 1 | 9 | 2 | 3 | 2.3 | 1 | 1 | 2 | 1.4 | 1.5 | 5 | 10 | n.e. | n.e. | 12 | 4 | 1 | 2 | 1 | 2 | 1 | 2-J |
| 10 | 1 | 12 | 2.1 | 5 | 4 | 0.8 | 8 | 11 | 2.3 | 2.1 | 1 | 0.8 | 2 | 1.6 | 1.5 | 6 | 10 | n.e. | n.e. | 14 | 5 | 2 | 2 | 2 | 2 | 1 | 2-K |
| 11 | 1 | 29 | 2 | 5 | 4.8 | 0.7 | 8 | 1 | 3 | 2 | 1 | 0.7 | 1 | 1.1 | 1.5 | 4 | 1 | .7/.6 | .4/.3 | 3 | 5 | 1 | 13 | 3 | 3 | 4 | 2-B |
| 12 | 4 | 21 | -- | -- | — | 0.4 | 11 | 2 | 2.7 | 2 | 1 | 0.4 | 1 | -- | — | -- | 9 | — | 0.3 | 8 | 4 | 1 | — | 1 | 2 | 14 | 3-A |
| 13 | 1 | 3 | 1.7 | 2 | 2.7 | 0.4 | 1 | 1 | 2 | 1.4 | 1 | 0.4 | 1 | 0.7 | 1.6 | 4 | 1 | 0.5 | 0.1 | 3 | 4 | 1 | 2 | 2 | 4 | 18 | 3-B |
| 14 | 1 | 4 | 1.8 | 2 | 2.3 | 0.3 | 8 | 2 | 2.3 | 1.6 | 2 | 0.3 | 3 | n.e. | n.e. | n.e. | n.e. | n.e. | n.e. | 4 | 3 | 1 | 3 | 2 | 2 | 13 | 3-C |
| 15 | 1 | 4 | 0.9 | 1 | 1.6 | 0.2 | 4 | 2 | 1.6 | 0.9 | 1 | 0.2 | 3 | n.e. | n.e. | n.e. | n.e. | n.e. | n.e. | 13 | 3 | 1 | 3 | 2 | 2 | 13 | 3-D |
| 16 | 1 | 5 | 1.5 | 1 | 2.3 | 0.3 | 9 | 2 | 2.3 | 1.5 | 1 | 0.3 | 3 | n.e. | n.e. | n.e. | n.e. | n.e. | n.e. | 1 | 4 | 1 | 2 | 4 | 1 | 4 | 3-E |
| 17 | 1 | 2 | 1.6 | 1 | 1.9 | 0.4 | 1 | 1 | 1.9 | 1.6 | 1 | 0.4 | 3 | n.e. | n.e. | n.e. | n.e. | n.e. | n.e. | 3 | 4 | 1 | 2 | 6 | 2 | 4 | 3-F |
| 18 | 1 | 2 | 1.5 | 1 | 2.6 | 0.3 | 4 | 2 | 2.8 | 1.5 | 1 | 0.3 | 3 | n.e. | n.e. | n.e. | n.e. | n.e. | n.e. | 3 | 4 | 1 | 2 | 2 | 2 | 3 | 3-G |
| 19 | 1 | 1 | 1.7 | 1 | 3.3 | 0.3 | 2 | 1 | 3.3 | 1.7 | 1 | 0.3 | 3 | n.e. | n.e. | n.e. | n.e. | n.e. | n.e. | 1 | 12 | 1 | 2 | 4 | 1 | 13 | 3-H |

Table 2. Chert debitage classification.

| | (SMALLER THAN 1/2") | | | | |
|---|---|---|---|---|---|
| | Grey | Purple Heated | Purple Burned | Pink Heated | TOTAL |
| Primary Decortication | 76 | 17 | 8 | 13 | 114 |
| Secondary Decortication | 893 | 138 | 83 | 132 | 1,026 |
| Thinning or Edging | 4,221 | 491 | 487 | 589 | 5,788 |
| | (LARGER THAN 1/2") | | | | |
| | Grey | Purple Heated | Purple Burned | Pink Heated | TOTAL |
| Primary Decortication | 98 | 9 | 28 | 14 | 149 |
| Secondary Decortication | 1,005 | 58 | 89 | 121 | 1,251 |
| Thinning or Edging | 1,675 | 72 | 83 | 250 | 2,080 |
| TOTAL | 7,768 | 783 | 718 | 1,119 | 10,388 |

Table 3. Rim temper data.

| SAND | LARGE GRIT | SMALL GRIT | SAND & GRIT |
|---|---|---|---|
| 4-A, 4-D, 4-F & 1st unphotographed rim | 4-B, 4-E, 4-H, 4-J through 4-M | 4-C, 4-G, 4-I, 4-N & second unphotographed rim | 4-O |

Table 4. Ceramic body sherd temper and surface treatment.

| TEMPER | SMOOTH | CORDMARKED | DENTATE | BOSS + DENTATE | PUNCTATE | CORD + PUNCTATE | CORD + FINGERNAIL | BOSSES | CRESCENT STAMP | INCISED OVER CORD | INCISED OVER CORD + FINGERNAIL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAND | 103 | 55 | 1 | 1 | 0 | 0 | 4 | 7 | 0 | 0 | 2 | 173 |
| SMALL GRIT | 102 | 74 | 1 | 2 | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 183 |
| LARGE GRIT | 48 | 28 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 79 |
| SMALL CHERT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| LARGE CHERT | 3 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 |
| SMALL CHERT & SAND | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| SMALL CHERT & GRIT | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| SMALL GRIT & SAND | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| LIMESTONE | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 13 |
| LIMESTONE & SAND | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| LIMESTONE & SMALL CHERT | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| LIMESTONE & SMALL GRIT | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| UNCERTAIN | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 8 |
| TOTAL | 290 | 171 | 2 | 3 | 1 | 1 | 6 | 11 | 1 | 1 | 2 | 489 |

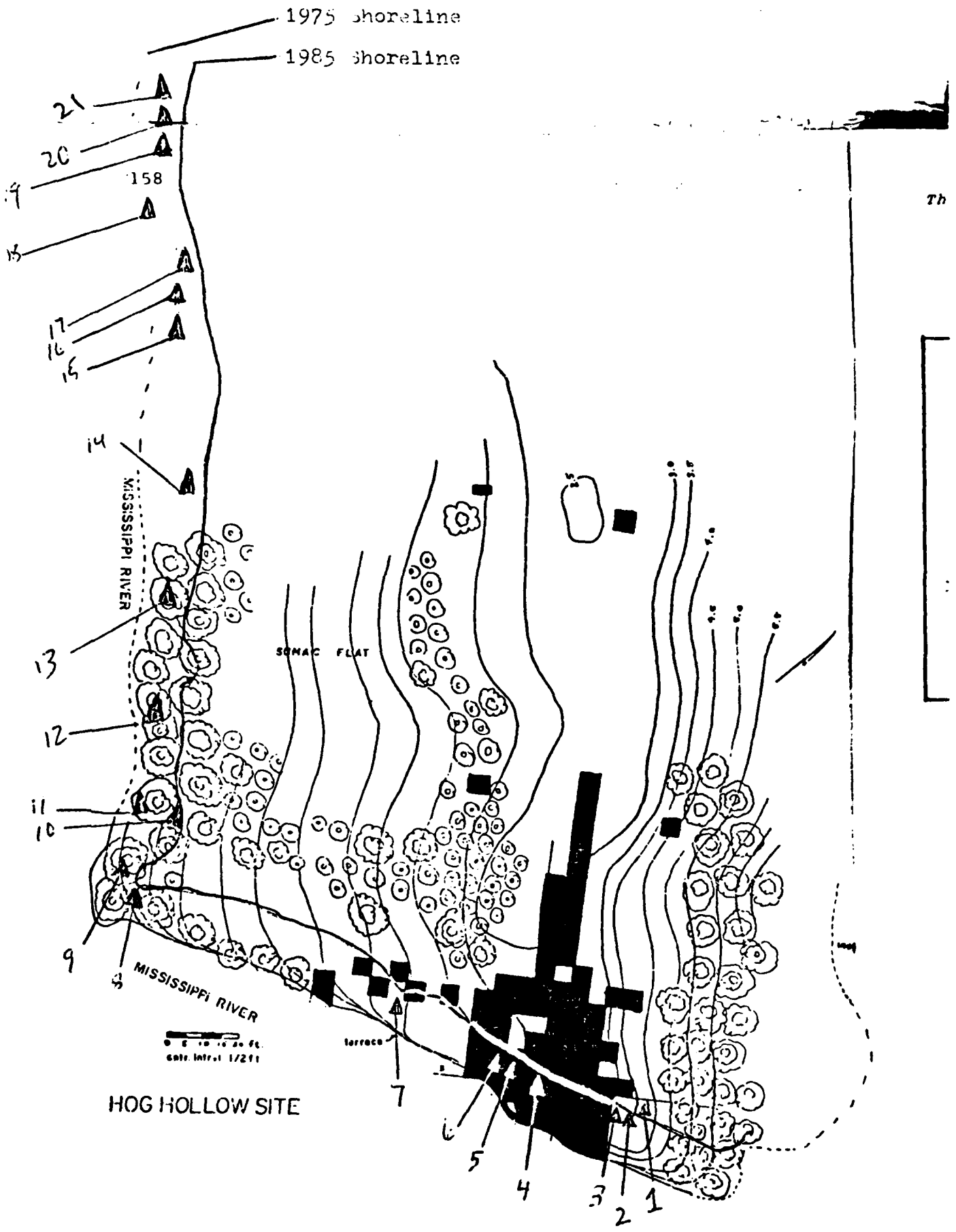



**FIGURE 1: Map of Hog Hollow site, from Geier (1978). Shoreline changes indicated. Triangles indicate locations of water screened artifact finds; see key for explanation.**

Key to Figure 1:

1: Madison triangular point (Osceola Bluff variety). Fig. 3-h.

2: Steuben-like point (Grant River corner-notched variety). Fig. 2-e.

3: Point tip of Hixton silicified sandstone.

4: End scraper.

5: Incised over cordmarked Early Woodland pottery. Fig. 7-b.

6: Drill with triangular cross-section.

7: Neteler stamped *var.* plain Middle Woodland pottery. Fig. 8-d.

8: Wide base point. Fig. 2-c.

9: Waubesa contracting stem point. Fig. 2-i.

10: Distal end of drill.

11: Arrowpoint on a flake blade (Snake Hollow point). Fig. 2-d.

12: Madison triangular point (Huffnagle Creek variety). Fig. 3-e.

13: Lanceolate knife.

14. Drill with potlid flake scar.

15: Durst stemmed point fragment. Fig. 2-g.

16: McCoy corner-notched point. Fig. 2-a.

17: Raddatz side notched point. Fig. 2-h.

18: Late Woodland corner notched point. Fig. 3-a.

19: Late Woodland side notched point. Fig. 3-b.

20: Kramer-like straight stemmed point. Fig. 2-l.

21: McCoy corner notched point fragment.

*: Two test screening areas about 60 feet from the bank where debitage and pottery fragments were found.

Note: The western shoreline has been shown to be an area with very thin cordmarked body sherds, as little as 2 mm in thickness.

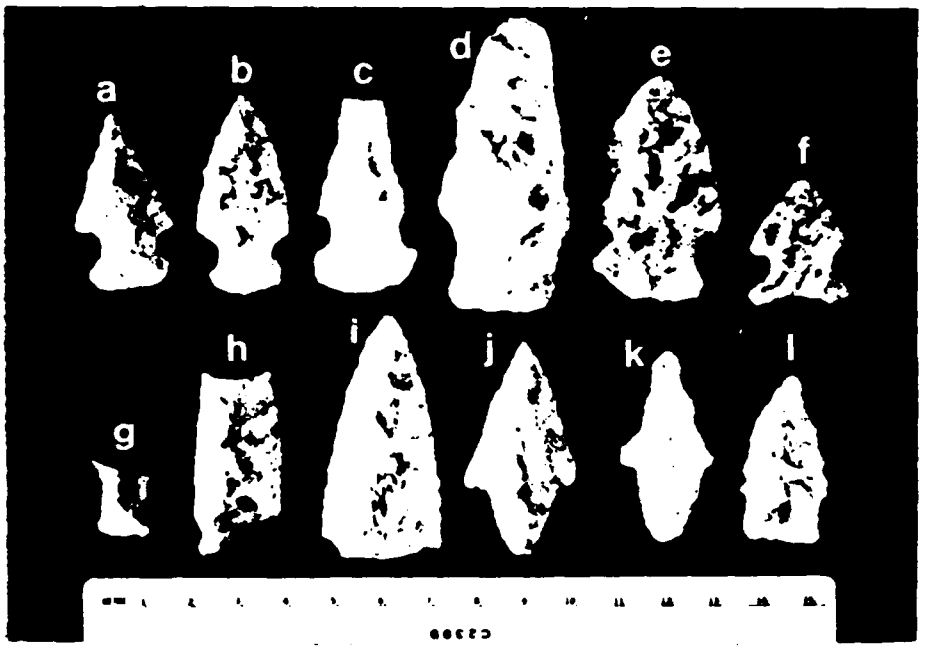



FIGURE 2: Late Archaic, Early Woodland, and Middle Woodland points. a: McCoy corner notched. b: Gibson (Grant River variety). c: wide base point. d: hafted knife. e,f: Steuben/Gibson points (Grant River variety). g: Durst stemmed point base. h: Raddatz side notched. i: Waubesa contracting stem. j: Waubesa contracting stem (Brewery Hollow variety). k: Waubesa (Brewery Hollow variety) drill. l: Kramer-like straight stemmed point/drill.

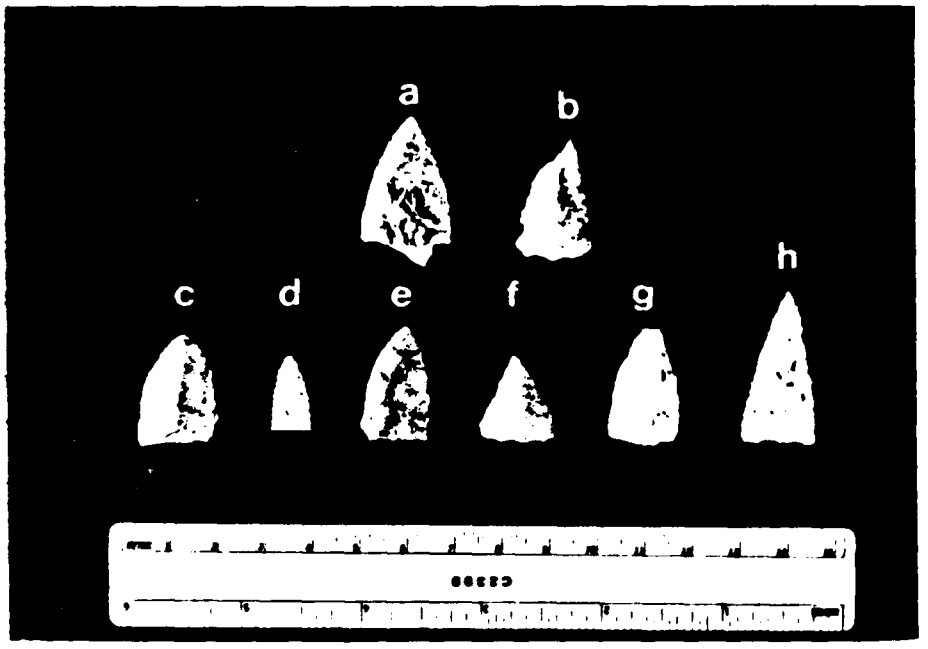



FIGURE 3: Late Woodland points. a: corner notched. b: side notched. c,d: arrowpoints on flake blades (Snake Hollow). e-g: Madison triangular (Huffnagle Creek variety) points (f is of Hixton silicified sandstone). h: Madison triangular (Osceola Bluff variety).

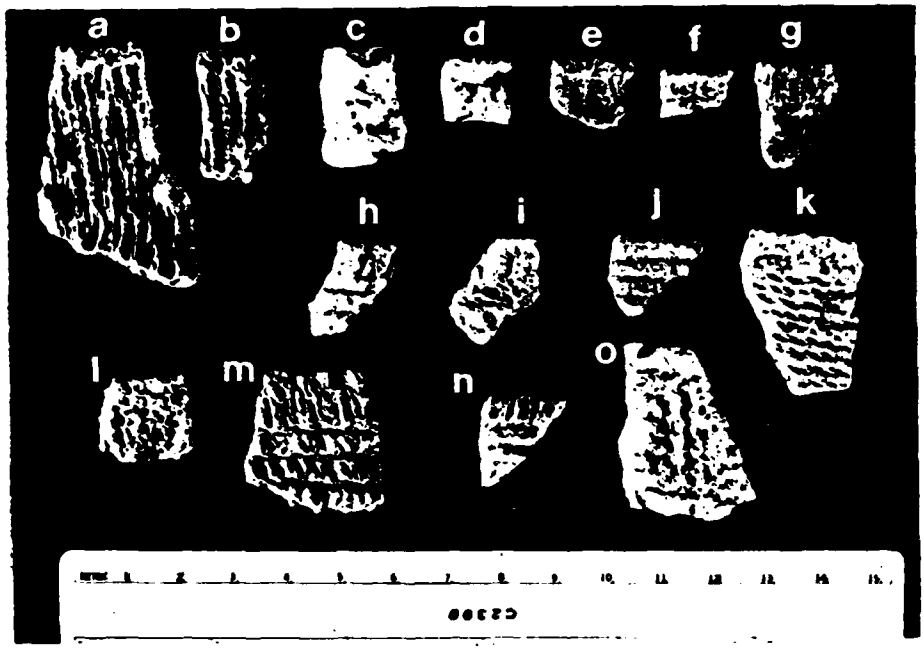



FIGURE 4: Rim sherds (exterior). Top row: Early and Middle Woodland. Center and bottom rows: Late Woodland single cord-impressed.

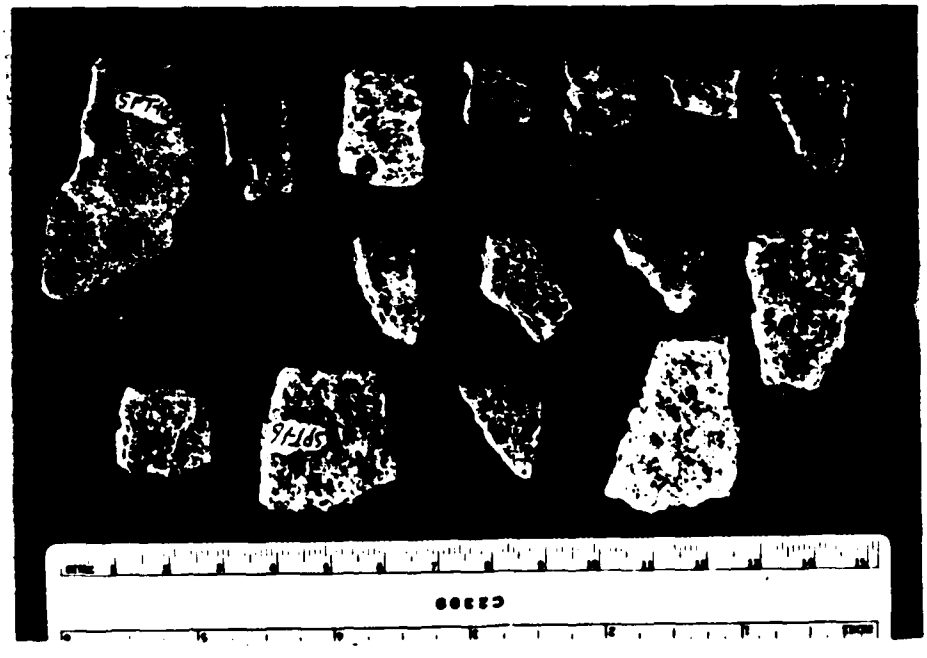
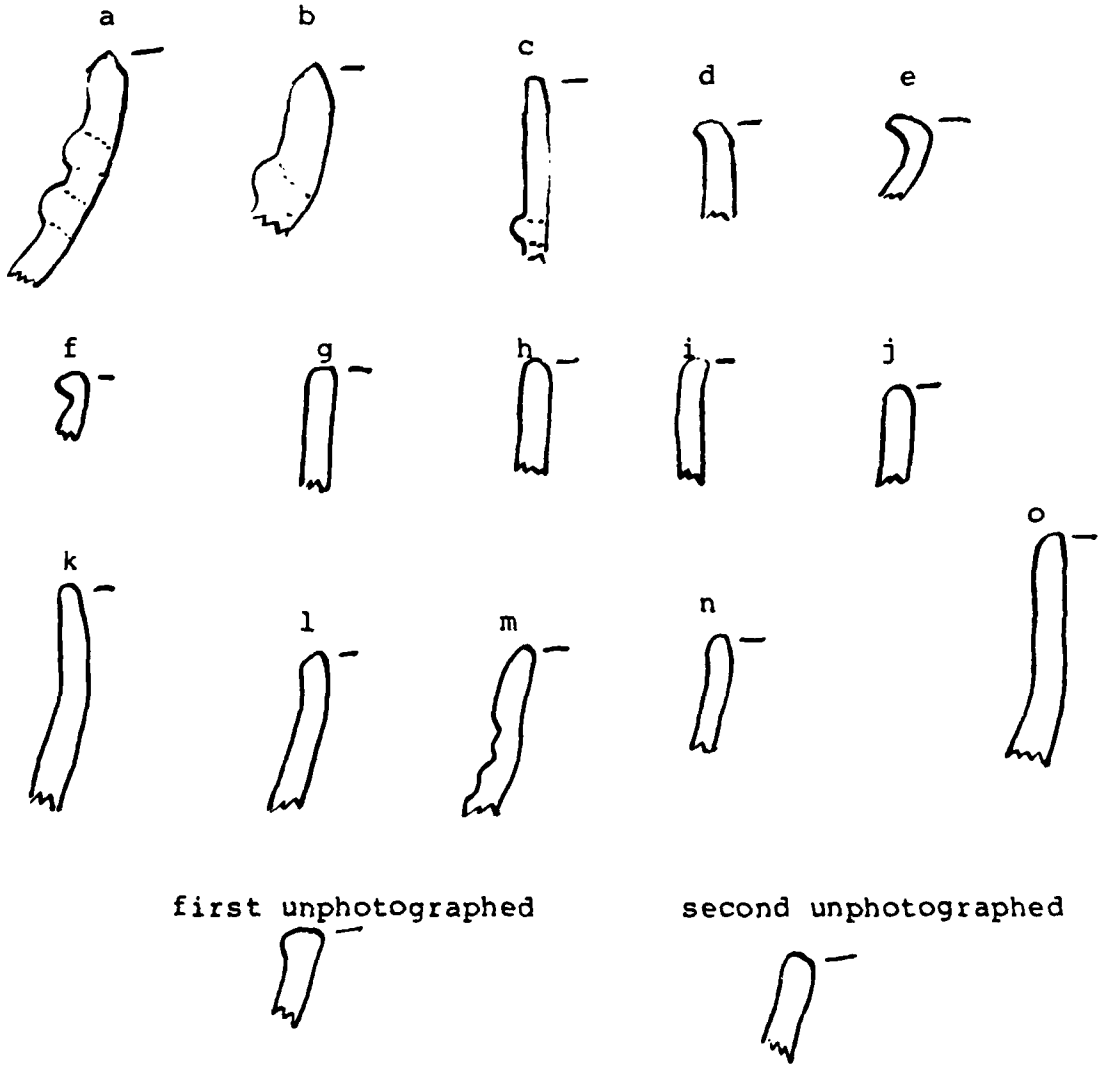


FIGURE 5: Rim sherds (interior). Same arrangement as Fig. 4.

FIGURE 6: Rim profiles. Vessel interior to right. Letters refer to sherds illustrated in figures 4 and 5.



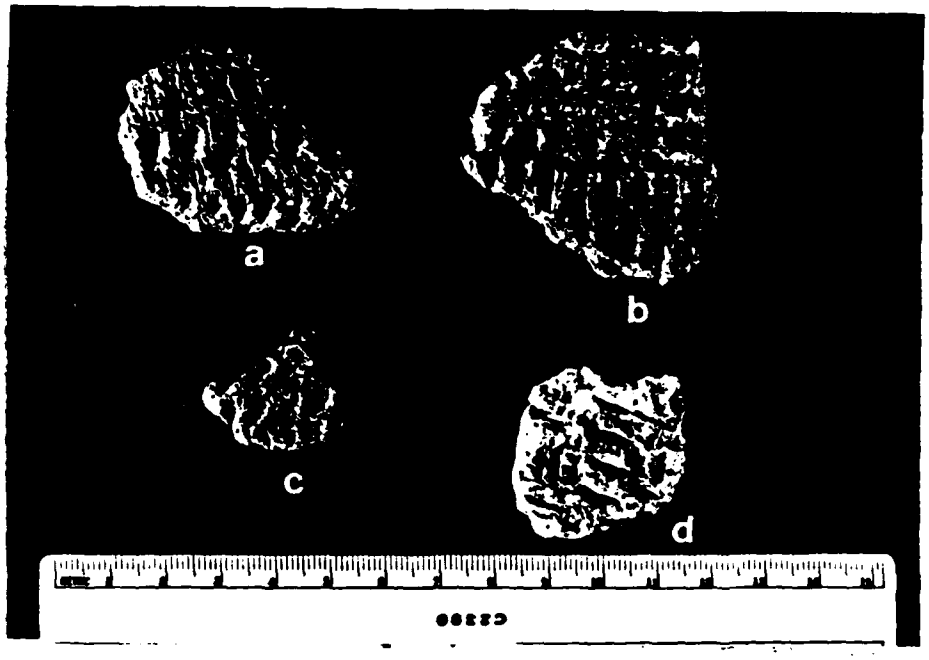



FIGURE 7: Body sherds. Early Woodland incised and fingernail impressed over cordmarked.

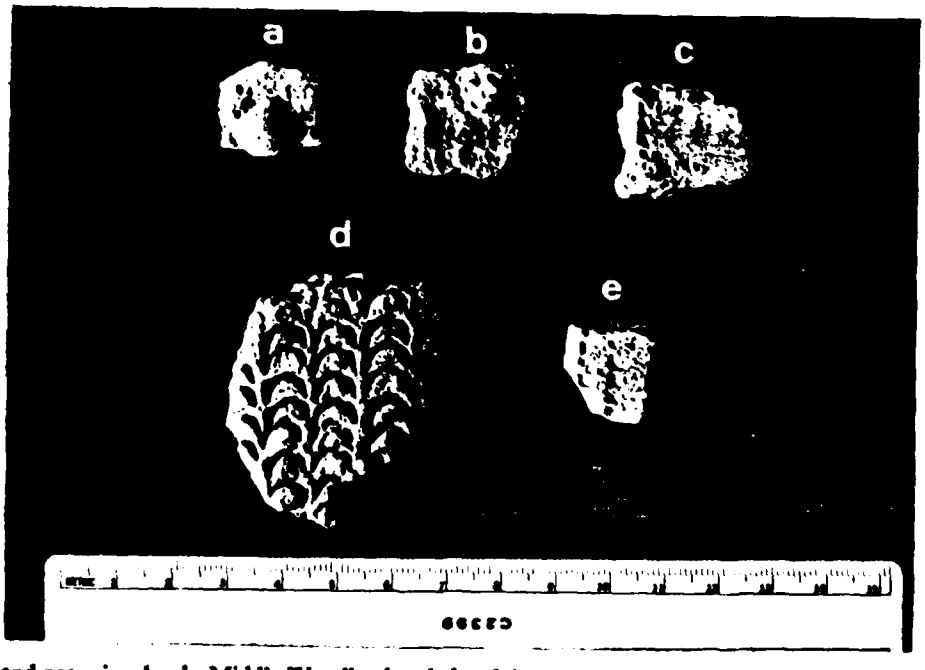



FIGURE 8: Body and near-rim sherds. Middle Woodland noded and dentate stamped sherds. Noded sherds at upper left appear to be limestone tempered.

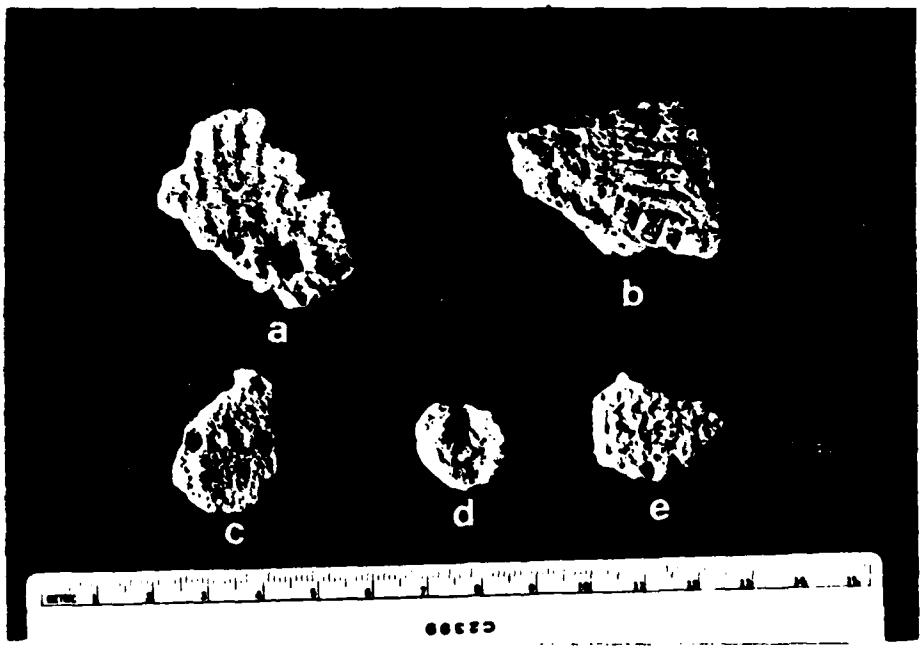



FIGURE 9: Body sherds. a,c,e: punctated, possibly Late Woodland sherds. b: possible Early Woodland sherd. d: pottery bead.

THE STATE HISTORICAL SOCIETY OF WISCONSIN
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1846

HISTORIC PRESERVATION DIVISION

March 31, 1986

Mr. Charles Smith
Rock Island District, Corps of Engineers
Clock Tower Building
Rock Island, Illinois 61201

Dear Chip:

Enclosed please find the original and two copies of a report entitled "Additional Material from and Notes on the Hog Hollow Site, Grant County, Wisconsin." This report was prepared under the terms of Requisition/Purchase Request No. NCRPD-4983 and Contract/Purchase Order No. DACW25-86-M-0301. Also enclosed is a letter to you from David Lowe, principal author of the report.

Bill Green, our former staff archeologist, apologizes for the lateness of this report but hopes it will nevertheless be useful to you and your office in planning and management efforts at Hog Hollow. He and Mr. Lowe urge quick action to protect the remaining portion of the Hog Hollow site.

We would appreciate it if you could send copies of this report to the persons on your archeological mailing list. At the very least, we ask that you send copies to Clarence Geier, David Overstreet, James Stoltman, Robert Boszhardt, and Elizabeth Benchley.

Thank you for your support and encouragement in this project. If you have any questions, please contact me (608/262-2970). Mr. Green asks that you direct any questions you may have for him to his home (5706 Forsythia Pl., Madison, WI 53705; 608/233-7100).

Sincerely,

Robert A. Birmingham
Staff Archeologist

RAB:WG/s

5222 Turner Ave.
Madison WI
53716
February 15, 1986

Mr. Charles Smith
U.S. Corps of Engineers
Rock Island District
Clock Tower Bldg.
Rock Island, IL

Mr. Smith

In observing snowfall amounts and icing conditions of the upper Mississippi Valley this winter I am concerned with the erosional situation possible this spring at Hog Hollow Site (47-Gt-266). If there is a rapid thaw through warm temperatures and/or a large rainfall amount of a short duration this spring, I am convinced of an erosional situation at the site that may be more severe than the normal springtime losses.

I advise prompt action of site preservation measures this year to hold erosional losses at a minimum. I would like you to seriously consider the soil conservation techniques I have discussed in my report. I realize with the recent budget cutbacks it is dificult to decide the feasibility of different areas of financial allotment, but I believe that preservation of this site locale is well worth the time and money spent.

I believe there is a route that can be taken to give access to the site to deliver rip-rap or other breakwater in the event of conservation actions. This route lies 100-150 yards to the northwest of the site through a small cornfield. A path through 150 feet of small trees and brush would provide access if trimmed prior to breakwater delivery. This is the only access route available as the only other route is by water. If a decision is made to implement conservation techniques and/or core sampling of Hog Hollow Site, I am available and would like to be considered to help implement any survey or conservation actions.

In my water screening activities of the past it was unknown to myself that a Federal Antiquities Permit from the Corps of Engineers was required. I did not know the offshore research was under the same jurisdiction as the in situ cultural areas until this was pointed out to me by William Green during his technical assistance of my Hog Hollow study. In lieu of this information, I would like to apply for a permit for offshore research at both Hog Hollow and Osceola sites as there is a large amount of data that can be reclaimed from these inundated areas as I have discussed in my report. If a

permit is issued, it will be understood that the cultural material will be recorded and data would be made available to the Corps upon request, or any other supplemental research done on this locale.

In the past I have encountered a large amount of broken glass fragments and some rubbish while screening and surveying at Hog Hollow. I have made it a point to carry out and dispose of all refuse encountered and would continue to do so in the future. I feel it is important to leave this area cleaner and safer than it is at this time.

I hope that my study has helped provide a better understanding of the losses occuring to the ecosystem and the archeological record of Hog Hollow Site. Please contact me if there is any way I can help in the future actions carried out at the site. Thank You for your cooperation.

Respectfully Yours,

David C. Lowe

David C. Lowe

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