

## **Phase II Investigations at 47 LC 480, The Skemp Site**

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### **ABSTRACT**

47 LC 480, the Skemp Site is located in eastern La Crosse County, Wisconsin. Based on surface artifacts found, its primary cultural association is with the Agate Basin period of the Late Paleoindian tradition (ca. 10,500 – 10,000 RCYBP). Fieldwork was conducted at the site in order to determine if cultural materials remained intact below the plowzone. Analysis of surface collected material was also conducted to aid in the interpretation of the site. The results of the field testing, and analysis of surface collected artifacts are presented here.

### **INTRODUCTION**

In the fall of 2000 fieldwork was conducted at 47LC480, the Skemp site. The site is located in a plowed field to the west of Broadhead Rd, and lies 300 meters from the confluence of Mormon Creek and St. John's Coulee. The site lies south the confluence, approximately 100 meters east of Mormon Creek, along a high terrace associated with a former bank of Mormon Creek. The Skemp site has a primary component associated with the Agate Basin period of the Late Paleoindian stage, and is based off of diagnostic projectile points recovered from the surface. This places an approximate age of the site at ca. 10,500 – 10,000 RCYBP.

First reported in the 1980's by David Jackson, LC 480 is listed as a Late Archaic site, and Jackson reports finding the stem of a Durst point from the field. The site has been collected by Sam Skemp Jr. who recovered large amounts of lithic debitage, in addition to thirteen points identified as Agate Basin. This dates the Late Paleoindian component to the site, which appears to be the primary cultural occupation rather than the Late Archaic component identified by Jackson. Sam Skemp has kept material collected from the field separate from other collected material, which enables analysis of surface material from the site to be conducted.

The primary purpose of this project is to determine if any intact cultural material lies below the plowzone. Locating a site with an intact Paleoindian component in western Wisconsin would prove invaluable to our understanding of this cultural tradition. A secondary goal of the project was to analyze the surface collected material. Sam has conducted yearly surface collections at the site, and kept every flake he came across. This large collection of assorted debitage only serves to enhance our knowledge of activities conducted at the site.

## METHODOLOGY

Fieldwork consisted of excavating two 1 X 2 meter test units, and establishing a soil probe transect across the site to help determine stratigraphy. The site datum was established at the SE corner of the intersection at CTY YY and Broadhead Rd. This was placed at the base of a stop sign located at the intersection. Unit 1 was placed along the upper terrace at the site within the area identified as having the highest concentration of surface collected artifacts. Unit 2 was placed along a second, lower terrace in an area that displayed the highest potential of having enough PSA (post-settlement alluvium) to cap the cultural material, and protect it from disturbance by plowing. The units were skim shoveled, and all soil was either screened using 1/4" mesh in the field, or brought back to the lab as matrix. The soil probe transect was extended eastward from the NE corner of Unit 2 with probes taken every 5 meters up to 50 meters away from the unit.

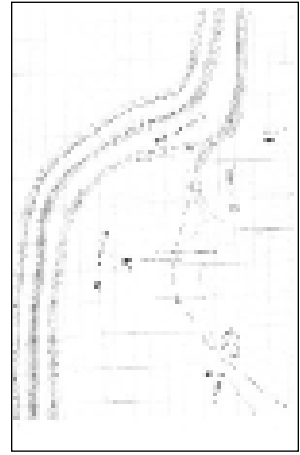
Laboratory work consisted of processing the matrix taken from Unit 2. This matrix was taken in an effort to determine if micro-debitage associated with tool reworking was present at the site, and to speed up excavation of the unit due to difficulty screening the soil in the field. Matrix was dried in the lab, and then water screened using 1/16" mesh with baking soda added to help break up clay and silt aggregates. Recovered lithic debitage, along with surface collected material from Sam's collection was catalogued and analyzed.

### Region and Environment

The site is located in eastern La Crosse County, and lies within the drainage of Mormon Creek, a small tributary to the Mississippi River. 47 LC 480 lies approximately 7 kilometers east of the Mississippi River, and falls within an important transition zone between the uplands of western Wisconsin, and the floodplain of the Mississippi River. The site is immediately located along the base of an eroding sandstone bluff, and is located within the confines of a secondary stream valley. Remnants of Pleistocene age bogs have been identified within the portion of the valley that the site is located (Hansen 1993).

The region around the site is made up of several distinct landform zones that provide a diverse range of environments able to be utilized by Paleoindian people. Mormon Creek actually enters the Mississippi on the southern end of a system of Pleistocene terraces occupied by the city of La Crosse (Martin 1965:156-168). In addition to the Pleistocene terrace systems there are major river valleys, particularly the Mississippi River, which provide an array of riparian flora and fauna. Outside the major river valleys the land is highly dissected, and is defined as the Western Upland province of Wisconsin by Martin (1965).

One of the chief resources of Paleoindian people in the Plains, the bison, extended its range into this area (Jackson 1961:427-432). Extinct forms of fauna have also been found, remains of *Bison occidentalis* and Mammoth have been recovered in the northern portion of the Driftless Area, and Mastodon remains have been identified from the central and southern portions (Boszhardt et al. 1993). Delcourt and Delcourt (1983) display the area at 10,000 BP as having largely a Jack Pine/Spruce environment, though by 9,000 BP the area had moved



**Figure 1.** Site Map for 47 LC 480

to a mixed forest/deciduous forest (Overpeck et al. 1992). Regardless of what the specific vegetation was during the period, the environment was steadily changing throughout the Late Paleoindian period. Pollen cores at Devils Lake (Maher 1982), Lake Mendota (Winkler et al. 1986), and Blue Mounds Creek (Davis 1977) all display a dramatic switch from a *Picea* (Spruce) dominated environment to one of greater diversity around 10,700 B.P. (Winkler et al. 1986), but largely with *Pinus* (Pine) and *Quercus* (Oak) dominant, along with a number of grass species.

### Late Paleoindian

As noted before, the site is primarily associated with the Agate Basin portion of the Late Paleoindian stage, and is based on diagnostic artifacts recovered from the surface. The Paleoindian tradition marks the earliest human occupation of North America, and is generally divided into Early (ca. 12,500 – 10,500 RCYBP) and Late (10,500 – 8,000 RCYBP) Paleoindian stages. Agate Basin is part of the larger Plano complex, which forms the earliest technological complex associated with Late Paleoindian. Plano includes Agate Basin, Milnesand, Plainview, and Hell Gap all of which are characterized by bison hunting for the majority of the year (Hofman and Graham 1998:103).

Agate Basin points were defined from the assemblage at the Agate Basin site in Wyoming excavated by Frison and Stanford (1982). Radiocarbon dates generally place Agate Basin at 10,500 – 10,000 BP, though a date of 9,300 was recovered at the Brewster site (Florin 1996:29). This makes Agate Basin the earliest Late Paleoindian point style, and its easily recognizable form has led to it being widely classified east of the Mississippi. There may be several cultural groups utilizing the Agate Basin form in different areas, and Frison and Stanford (1982) suggest points east of the Mississippi date later than on the Plains. Several Late Archaic point forms such as Karnak Unstemmed, Nebo Hill, and Sedalia all resemble Agate Basin though they lack basal grinding (Justice 1987:141-142), and suggest that the form has functional advantages, possibly for big game hunting, which results in its reoccurrence during this later period.



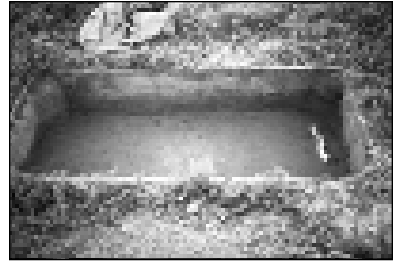
### Results and Analysis

Unit 1 was located at 125m south and 27m west of the site datum. Oriented east/west, it was excavated to a depth of 40 cmbgs in four 10 cm arbitrary levels. Fourteen pieces of chert flakes and shatter, one historic pottery sherd, and one square nail were recovered from excavation. All of the artifacts were recovered in the first two levels of the unit, and the unit became sterile once the base of the plowzone was reached. Two soil horizons were identified in the wall profile, and are separated by a clearly defined, abrupt boundary. This boundary is also consistent with the base of the plow zone.

Unit 1 was placed in an area of high surface artifact density. The placement of the unit was done to determine site stratigraphy, and if the cultural material extended past the plowzone. Artifacts in the unit were observed to have stopped once the base of the Ap was reached. This signifies that in the area where surface concentrations of artifacts were the greatest the entire site lies disturbed by the plowzone. Similarly the lighter color of the Ap horizon, and the very abrupt boundary of the horizon at a depth consistent with the plowzone suggest that the plow was extending into the B horizon, and mixing soil from both.

On the surface an abrupt change in soil coloring is also observed. Extending across the

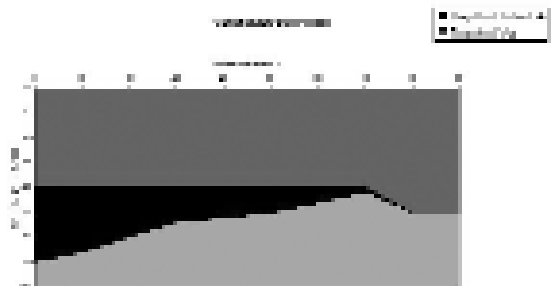
slope of the upper terrace, where Unit 1 was located, the soil color changes from a 10YR 5/3 to a 10YR 3/1. This color change marks the point where the A horizon begins to be thicker than the depth of the plowzone, and mixing of the A and B stops occurring. A soil probe transect was run to test the depth of the A horizon, and compared to the consistent depth of the plowzone observed in Unit 1. The transect started at the NE corner of Unit 2, and ran east at an interval of 5 meters for a total distance of 50 meters. This brought the transect across the line where the surface color change is occurs. A steady thinning of the A horizon is observed moving eastward which correlates with a gradual slope on the surface. This also displays that the darker surface coloring also occurs in the area where the A horizon is thicker than the plowzone.



**Figure 2.** Photo of Unit 1: South Wall Profile

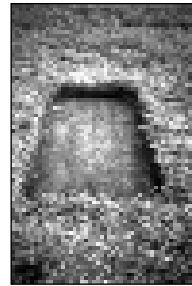
	<u>meter</u>	<u>depth of A</u>	<u>depth of intact A</u>	<u>Notes</u>
soil sample A	5	35	15	10YR 3/1 very dark gray (dry)
	10	33	13	
	15	30	10	
	20	27	7	
soil sample B	25	26	6	(27-30cm is a reddish brown zone)
	30	25	5	10YR 4/2 dark grayish brown (dry)
	35	23	3	
	40	21	1	
	45	25	-	(Likely a mixed Ap/B)
soil sample C	50	25	-	(Likely a mixed Ap/B) 10YR 5/2

Unit 2 was located 226 m south and 127 m west of the site datum. The unit was placed to test an area that had an A horizon thicker than the plowzone, and no observed surface artifacts. This was done to determine if the artifacts were capped by enough PSA (post-settlement alluvium) to protect the unit from plow disturbance. The unit was excavated in two 10 cm arbitrary levels, and a 2 cm natural level terminating at the base of the plowzone. The unit was then excavated in 5 cm arbitrary levels followed by a 2 cm level terminating at the beginning of the B horizon, and a final 5 cm arbitrary level into the B horizon. Seven levels total were excavated to a depth of 40 cmbgs.



**Figure 3.** Generalized Soil Profile from West to East

Two pieces of lithic debitage were recovered during excavation. A flake of Prairie du Chien (PdC) chert was recovered from level 2, and a piece of PdC shatter was recovered from level 4. The artifact from level 2 is contained within the plowzone, however, the piece of shatter from level 4 suggests recovery from an undisturbed context. However, its occurrence potentially could be in a plow scar extending into the intact A. The lack of a soil color change between the Ap and the A makes it nearly impossible to determine the existence of plow scars. Soil matrix was brought to the lab from each of the levels below the plowzone. Water screening portions of the matrix produced three pieces of micro-debitage.



**Figure 4.** Photo of Unit 2 : Floor and West Wall

There is approximately 11 cm of intact A horizon extending below the base of the plowzone, which is marked by a noticeable texture change. The B horizon is characterized by glenization as a result of anaerobic conditions that led to significant graying and iron mottling of the horizon (Birkeland 1984:146-147). This was likely caused by saturation of the ground by water, either through fluctuations of the water table from Mormon Creek, or as a result of Pleistocene bogs located in the area.

In addition to fieldwork, the surface material collected over the years by Sam Skemp was analyzed to aid in interpretation of site function. Interpretation of the site is restricted to analysis of the Agate Basin component. While other later components exist, and an unknown percentage of the surface material is from those components, certain general trends may be inferred from the assemblage. Artifacts consisted of solely lithic material, and were placed into twenty-nine categories based on function, and or stage of manufacture. These categories can be summarized into three larger groupings; formal tools, informal tools, and waste debitage.

<p>41 <b><u>Formal Tools</u></b>                  15 Points                  3 Knives                  2 Misc. Biface Frag.                  4 Stage IV bifaces                  1 Stage III bifaces                  2 Stage II bifaces                  2 Blades                  1 End Scrapper                  2 Spurred End Scrapper                  3 Side Scrapper                  2 Drills                  4 Gravers</p>	<p>100 <b><u>Informal Tools</u></b>                  1 Utilized Heat Spall                  1 Chopper                  50 Utilized Flakes                  48 Retouched Flakes</p>	<p>872 <b><u>Waste Debitage</u></b>                  7 Platform Cores                  16 Bipolar Cores                  3 Biface thinning flakes                  1 Bipolar flake                  3 Initial Flakes                  24 Primary Flakes                  110 Secondary Flakes                  555 Tertiary Flakes                  151 Chunk                  2 Heat spalls</p>
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**CONCLUSIONS**

The primary focus of this study is to determine if any cultural material remained undisturbed below the plowzone. Excavation of Unit 1 clearly displays that the cultural material located in the area of highest surface density at 47 LC 480 lies completely within the plowzone. The site within this area lies within a disturbed context. There was some possibility that

material off the higher terrace, closer to Mormon Creek, would have been capped by a layer of PSA that protected the material from disturbance by plowing. The depth of this alluvial A horizon was determined, and Unit 2 was excavated in an area that provided a high possibility of containing an undisturbed A horizon below the plowzone.

Unfortunately an extremely low artifact density was encountered, and only 1 piece of PdC shatter and three probable micro debitage fragments were recovered from any undisturbed context. While in some areas material at 47 LC 480 remains in undisturbed soil located below the plowzone, artifact density suggests that no concentrations of cultural material will be evident. Thus only the occasional wayward flake may show up in undisturbed soil, however, the main portion of the site lies within the confines of the upper terrace, where the effects of modern plowing has resulted in a mixing of the entire assemblage at 47 LC 480.

This disturbance by modern plowing means that the some of the best data available will come from the surface collected archaeological materials. Analysis of the artifacts collected on the surface by Sam Skemp formed the secondary goal of this study. The sheer number of artifacts collected on the surface, combined with the relatively limited area described by Sam suggest that the majority of cultural material at 47 LC 480 have been already collected. This is based off of comparisons to the number of artifacts recovered from excavation. While it is impossible to determine the exact percentage of the total materials at the site, it is safe to assume that Sam's collection represents a majority sample of archaeological materials found at the site.

Analysis of the surface material has produced several observations that suggest possible uses of the site by prehistoric people. First is the high occurrence of the basal portions of broken Agate Basin points. Second is the high occurrence of hammerstones at the site. This is compared to the relatively low occurrence of other tool types at the site. Lastly is the use of Prairie du Chien chert among Agate Basin points.

Of the thirteen Agate Basin points recovered from the site ten of them were only basal portions. This is coupled with the fact that no tips of points were ever recovered from the site. With only basal portions of points at the site this suggests that the broken points were brought to the site still attached to the haft, and it was at this location where they were cut free from the haft and discarded. This was likely part of a general retooling strategy. Biface blanks were either modified into finished point forms and attached to the available hafts, or the site was used as preparation for accessing raw material sources in the area to manufacture new points.

Seven hammerstones were recovered from the field along with 555 tertiary flakes associated with final stages of tool manufacture. This suggests that some finishing of tools occurred at the site. There is a lack of large density of waste debitage that is observed at lithic workshop sites within the area where tools were being produce. The Dunnam complex is a Prairie du Chien chert workshop located in a nearby drainage (Boszhardt 1998), and would have been available for use by Paleoindians.

Prairie du Chien chert was the raw material used in the manufacture of nearly 70% of the Agate Basin points. Hixton Silicified Sandstone comprised the remaining 30% of the points. It is commonly held that Paleoindian people were utilizing specific high-grade lithic sources within a large region, and exhibited high mobility to access them (Florin 1996:3-4). Hixton Silicified Sandstone would be one such high quality source. Recent patterning of raw material utilization within the area has displayed that Late Paleoindian people were utilizing the locally available stone instead of any preference for a specific source (Carr 2001). This sug-

gests that 47 LC 480 was being utilized as a temporary campsite primarily for use to access locally available Prairie du Chien chert resources. This was done in order to retool broken projectile points. The site likely represents a limited, short-term occupation in order to access an unknown, but locally available, chert source.

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