
The State of Archaeology in Minnesota

Annual Report of the State Archaeologist

Fiscal Year 2006



Mission Statement

The mission of the State Archaeologist is to promote archaeological research, share archaeological knowledge, and protect archaeological resources for the benefit of all of the people of Minnesota.

Abstract

In fiscal year 2006, the Office of the State Archaeologist (OSA) was involved in a wide variety of activities in order to fulfill legal obligations, protect archaeological sites, and support the advancement of Minnesota archaeology. State Archaeologist Mark Dudzik resigned in July 2005 and was replaced by Scott Anfinson in January 2006. Anfinson also served as Acting State Archaeologist from August through December 2005.

Chapter 1 of the Annual Report outlines the history of the OSA and lists the principal duties and responsibilities of the State Archaeologist.

Chapter 2 summarizes OSA activities in FY 2006. Major accomplishments include revamping the archaeological licensing system, formalizing the MS 307.08 authentication process, improving relationships with the Minnesota Indian Affairs Council (MIAC) and other constituents, and establishing a research library. Basic OSA FY 2006 statistics are:

Licenses approved:	124
Site Forms Reviewed:	288
Site Numbers Assigned:	188
Reports Added:	116
Agency Projects Reviewed:	14
Major Burial Cases:	44
Burial Authentications:	11

Chapter 3 provides an overview of the current state of archaeology in Minnesota examining site protection, research, and education. This overview illustrates many deficiencies, but makes suggestions for possible remediation.

A glossary of common archaeological terms used in Minnesota is added at the end of the report.

Acknowledgements

The Office of the State Archaeologist (OSA) is a department within the Office of Geographic and Demographic Analysis (GDA) within the Minnesota Department of Administration. David Arbeit very effectively supervises the diverse GDA and consistently provides the OSA with needed guidance and sound advice. Other Administration staff provide daily support to the OSA for financial, internet, and personnel matters.

The Minnesota Indian Affairs Council (MIAC) is one of the most important partners of the OSA in protecting burial sites and maintaining essential communication with Minnesota's Indian communities. Jim Jones is the long-serving point person for archaeology at MIAC and Jim's assistance is much appreciated.

The Minnesota Historical Society (MHS) is another important partner of OSA. Deputy Director Michael Fox co-signs license applications, Archaeology Department Head Pat Emerson and her very competent staff provide day-to-day support at the Ft. Snelling History Center, and State Historic Preservation Office (SHPO) staff including Dennis Gimmestad, David Mather, Tom Cinadr, Susan Roth, Kelly Gragg-Johnson, and Michelle Decker provide much needed advice and records management assistance. The OSA leases office space at Ft. Snelling from the MHS and they have generously supported the development of the Joint Research Area. Brenda Williams and Kurt Shimek at Ft. Snelling provide much appreciated logistical assistance essential to the efficient operation of the OSA.

It would be impossible for the OSA to function effectively and efficiently without the assistance of the entire archaeological community in Minnesota. This includes agency archaeologists, private contract archaeologists, academic and museum archaeologists, and avocational archaeologists. The support of my family, especially my wife Pat, has made the transition to a new job much easier. Pat also helps me with graphic design issues.

Last, but certainly not least, Bruce Koenen has served as the assistant to the State Archaeologist since 1995. Bruce carries out many of the essential daily tasks at OSA including license application processing, site form review, records maintenance, financial accounting, school liaison, and avocational interaction. He serves as the institutional memory for the OSA and his wealth of knowledge and easy-going personality are absolutely essential to the State Archaeologist.

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Cover Illustration: Clovis projectile point from the Hruska site (21OL39) near Rochester (photograph provided by William Schmidt.) The point is 5.5 cm long and 2.6 cm wide. It is made out of heat-treated Cedar Valley chert.

Chapter 1: Introduction

This report summarizes the activities of the Office of the State Archaeologist (OSA) for Minnesota State Fiscal Year 2006, the period from July 1, 2005 through June 30, 2006. It also includes some statistics for the 2006 Calendar Year. Because a new State Archaeologist was appointed during the 2006 fiscal year, it seems appropriate for this annual report to not only summarize the year's activities, but to look backward and forward at the OSA and the state of archaeology in Minnesota.

Mark Dudzik, who had served as State Archaeologist since February of 1995, resigned effective July 31, 2005. The Commissioner of Administration, Dana Badgerow, appointed Scott Anfinson as Acting State Archaeologist effective 8/15/05. Anfinson also continued to serve as the archaeologist for the State Historic Preservation Office (SHPO) through the end of 2005. Anfinson was appointed full time as State Archaeologist effective 1/3/06 and at that time resigned from the SHPO. Bruce Koenen, the assistant to the State Archaeologist since June 1995, continued to serve in that function throughout FY 2006.

The State Archaeologist is a civil service employee of the Department of Administration and resides within the Division of Geographic and Demographic Analysis (GDA). The OSA has two staff members, the State Archaeologist and an assistant. The OSA leases office space from the Minnesota Historical Society (MHS) at the Ft. Snelling History Center. The OSA receives a biennial appropriation from the state legislature for salaries and operating expenses. The funding level has remained at \$196,000 annually since 2001.

Minnesota Statutes (MS) 138.38 requires that the State Archaeologist complete annual reports. The law states that the reports must be sent to the Commissioner of Administration with copies to the Minnesota Historical Society and the Minnesota Indian Affairs Council. This year copies will also be sent to the Minnesota Legislative Reference Library, the Council for Minnesota Archaeology, the Minnesota Archaeological Society, the Department of Transportation, the Department of Natural Resources, and to other organizations and individuals upon request. The annual report will also be made available on the OSA website (<http://www.admin.state.mn.us/osa/>).

The report begins with an overview of the history of the State Archaeologist and a summary of the duties the State Archaeologist performs. It then summarizes FY 2006 activities within the major duty categories. The report narrative ends with an assessment of Minnesota archaeology from the perspective of the current State Archaeologist. A glossary of Minnesota archaeological terms is provided as an appendix.

The Office of State Archaeologist – Historical Background

The Field Archaeology Act (MS 138.31 - .42) established the Office of the State Archaeologist (OSA) in 1963. Prior to this, the Minnesota Antiquities Act of 1939 reserved for the state the right to license archaeological exploration at any site and claimed state ownership of any artifacts recovered. The Commissioner of Conservation issued the license upon recommendation of a designated archaeologist in the Department of Anthropology at the University of Minnesota. Lloyd Wilford, Minnesota's first professional archaeologist, served as this designated archaeologist from 1939 to 1959.

With the passage of the new law in 1963, the Director of the Minnesota Historical Society (MHS) appointed the State Archaeologist for a four-year term and the State Archaeologist was required to be a staff member at the University of Minnesota. These requirements were altered several times over the next 30 years. In 1996, the State Archaeologist became a state civil service employee of the Department of Administration. The State Archaeologist did not receive a salary until 1995, although in 1984 the Legislature began to authorize some operating funds.

Elden Johnson, an archaeologist and professor of anthropology at the University of Minnesota, was appointed the first State Archaeologist in 1963 and served until his resignation in 1978. Johnson had replaced Wilford as the Antiquities Act "designated archaeologist" in 1959. Johnson's focus was on research activities, although near the end of his tenure the OSA was given additional duties concerning burial sites with the amendment of the Private Cemeteries Act (MS 307) in 1976. Johnson never officially "authenticated" a burial under this act, however.

Christy Hohman-Caine was appointed State Archaeologist in 1978 and served until her resignation in late 1992. Hohman-Caine was on the staff of the Anthropology Department of Hamline University at the time of her appointment, but took a federal job as the Chippewa National Forest Archaeologist in 1980. Hohman-Caine established a close working relationship with the Minnesota Indian Affairs Council (MIAC) and focused her efforts on burial site protection. Barbara O'Connell, a Hamline physical anthropology professor, assisted Hohman-Caine during much of her tenure.

From December of 1992 through January of 1995, there was no State Archaeologist. When Mark Dudzik was appointed in February 1995, he had been working as a survey archaeologist for the MHS and then for the Institute for Minnesota Archaeology (IMA). Dudzik attempted to balance OSA activities, focusing on maintaining high professional standards and burial site preservation. During his tenure, the OSA became the major facilitator of Minnesota Archaeology Week. Publication of an overview of Minnesota Indian burial sites (Arzigian and Stevenson 2003) was another major accomplishment. Dudzik hired Bruce Koenen as a full-time assistant in June 1995. Dudzik reigned in July 2005.

Scott Anfinson was appointed Acting State Archaeologist in mid-August 2005 and State Archaeologist in January 2006. Anfinson had been the archaeologist for the State Historic Preservation Office (SHPO) of the MHS since May of 1990.

Duties of the State Archaeologist

The State Archaeologist has duties assigned by two state laws (MS 138.31-.42; 307.08) and rules implementing another law (MS 103). The State Archaeologist also carries out traditional duties that have evolved since 1963.

Field Archaeology Act (MS 138.31 – 138.42)

While the Field Archaeology Act has been revised 10 times since 1963, the duties of the State Archaeologist specified in that law have not changed. These duties can be summarized as:

- acts as the agent of the state to administer and enforce the act
- sponsors, engages in, and directs fundamental archaeological research
- cooperates with agencies to preserve and interpret archaeological sites
- encourages protection of archaeological sites on private property
- retrieves and protects artifacts and data discovered on public property
- retrieves and protects archaeological remains disturbed by agency construction
- helps preserve artifacts and data recovered by archaeological work
- disseminates archaeological information through report publication
- approves the licensing of archaeologists to work on public property
- formulates licensing provisions for archaeological work on public property
- issues emergency licenses for archaeological work on public property
- revokes or suspends archaeological licenses due to good cause
- approves curation arrangements of artifacts and data from state sites
- repossesses artifacts from state sites that are not being properly curated
- consults with MHS and MIAC regarding significant field archaeology
- completes annual reports about OSA and licensees' activities
- reviews and comments on agency development plans that may affect state sites

Private Cemeteries Act (MS 307.08)

In 1976, the Private Cemeteries Act was amended and the State Archaeologist was given additional duties including the “authentication” of unmarked cemeteries. This law has been amended seven times since 1976. The State Archaeologist’s duties under this law are:

- grants permission to alter surface features in unrecorded cemeteries
- allows posting of authenticated non-Indian burial grounds
- authenticates all unrecorded burial sites over 50 years old
- provides cemetery data to Land Management Information Center (LMIC)
- determines the ethnic identity of burials over 50 years old
- helps determine tribal affiliation of Indian burials
- determines if osteological analysis should be done on recovered remains
- helps establish provisions for dealing with unaffiliated Indian remains
- reviews development plans on public property that may impact burials
- maintains records of unplatted burial sites

Minnesota Water Law (Rules 6120.250, Subp. 15a)

The State Archaeologist has one duty specified in Minnesota Water Law Rules, which implement MS 103. Under these rules the State Archaeologist:

- determines if sites are eligible to the state or national historic register

Traditional Duties

Besides performing the duties assigned by Minnesota law listed above, the State Archaeologist also carries out a number of “traditional” duties:

- designs archaeological site inventory forms and reviews completed forms
- assigns official state site numbers to archaeological sites
- maintains an archaeological site inventory
- maintains research and report files
- organizes the annual Minnesota Archaeology Week
- consults with Indian tribes and federal agencies about archaeological activities
- works closely with MIAC to develop Indian cemetery management procedures
- provides archaeological information and comments on private developments

With regard to the last item, citizens and developers often ask the OSA for information or comments regarding the potential effects to archaeological resources of proposed developments on private land. Many of these requests pertain to Environmental Assessment Worksheets (EAWs) as defined in MS 116d (Mn Rules 4410). In FY 2006, the State Archaeologist submitted a request to the Environmental Quality Board (EQB) to be included on the official EAW Distribution List. The EQB is expected to implement this request in FY 2007. This means that the OSA will receive all EAWs completed for state and local agencies and be allowed 30 days to comment.

Summary of Duties

The most important function of the State Archaeologist is to act as the principal archaeologist for the State of Minnesota. On a day-to-day basis, this involves six major task areas:

- 1) approving license applications in a careful yet timely manner and monitoring the activities of the licensees
- 2) editing site forms, issuing official inventory numbers, maintaining the inventory of known and suspected sites, and organizing submitted archaeological reports
- 3) reviewing development plans submitted by government agencies and private entities to evaluate the potential for harm to archaeological sites
- 4) promoting and undertaking research in Minnesota archaeology
- 5) providing public education and answering archaeological questions from the public
- 6) ensuring burial sites protection through careful record keeping, development plan review, interaction with MIAC, consulting with experts, and doing fieldwork

Chapter 2 of this report summarizes the FY 2006 activities and accomplishments in these six areas.

Chapter 2: Summary of OSA Activities - 2006

Licensing and Activities of Licensees

As specified in MS 138.36, the State Archaeologist approves the qualifications of an archaeologist applying for a license and forwards approved applications to the director of the Minnesota Historical Society (MHS). While the MHS actually issues the license, the OSA is the entity that develops licensing procedures, reviews license applications, and monitors the activities of the licensees.

Beginning in the 1960s, licenses have typically been issued to qualified archaeologists on a project-by-project basis. The only exceptions were large agency specific survey programs such as the Trunk Highway Archaeological Survey (1968 – 1994) that dealt with numerous projects each year so they were issued a single license and reported their activities in an annual report. Beginning in 1995, these large multi-project surveys were issued “multiple project licenses” that required an addendum license to be issued by the OSA for each specific undertaking. The addendums did not have to be co-signed by MHS.

In response to public comments, the new State Archaeologist undertook a review of the licensing process in the 3rd quarter of FY 2006. It had been suggested that licenses be issued to principal investigators on a yearly rather than project basis. North Dakota uses this approach. The yearly process would eliminate delays between license application and survey initiation, allow field investigators to respond quickly to plan changes, reduce the burden of preparing multiple applications, and reduce the review time spent by the OSA and MHS. It is also more consistent with the definition of *licensing* as opposed to *permitting*.

The major concern with the yearly license would be up-to-date accountability for what archaeological surveys are underway at any given time and what surveys are planned in the near future. This could be dealt with by requiring a pre-fieldwork notification submitted to the OSA for each project to be undertaken. In the case of the large, multi-project survey programs such as the DNR-MHS programs (Parks, Forestry, Trails and Waterways, Fish and Wildlife), monthly reports would be required. For all the yearly licenses, a brief annual summary would also be required listing all projects surveyed under the license. Detailed reports would still be required for each individual survey project as in the past.

A revised licensing procedure also had to consider the different types of archaeological fieldwork; surveys as opposed to intensive excavation of a particular site. There are two types of surveys: reconnaissance (Phase I) and evaluation (Phase II). Then there are projects (Phase III) that involve intensive excavation of a single site, often as mitigation for adverse effects from construction projects. Because research designs for Phase III projects (i.e., data recovery plans) need to be reviewed by the OSA before the initiation of intensive excavation, individual site-specific licenses would still be required for all Phase III investigations. Thus the yearly license would only be issued to a principal investigator for reconnaissance and evaluation survey work. In addition, the proposed licensing change would not affect a separate approval process required for all burial authentication and relocation work under MS 307.08.

Before implementing the new licensing process, the OSA consulted with the MIAC, the MHS, and the Council for Minnesota Archaeology (CMA). There was widespread support for the change and no objections. The new licensing process was implemented in May of 2006. Thus in FY 2006, there were licenses issued under the old system on a project by project basis and the new system under the yearly license (Table 1). Because the new system is based on the calendar year, statistics for both the 2006 fiscal and calendar years are included in Table 1.

Single Project (old form):	FY06	CY06
Phase I:	52	18
Phase I Addendums:	148	100
Phase II:	32	6
Phase III:	1	0
Total OSA Actions:	233	124
Total Licenses:	85	24
Yearly License (new form):		
Phase I-II:	37	48
Phase III:	2	5
Total Licenses:	39	53
Total Licenses all types:	124	77

Table 1: Licenses issued in 2006 by Fiscal Year (FY) and Calendar Year (CY).

Most licensed projects involve reconnaissance (Phase I) surveys of relatively small areas and most of these surveys do not locate archaeological sites, although a few of these surveys can involve large areas and locate multiple sites. Evaluation (Phase II) surveys and intensive site investigations (Phase III) focus fieldwork on specific sites and usually produce valuable information about Minnesota's past. It should also be stressed that the majority of archaeological work done in Minnesota is not subject to state licensing, as work done on federal lands and private lands is excluded. Thus the OSA is not required to receive reports on non-licensed archaeological activities. A few of the notable licensed projects carried out in FY 2006 are summarized below.

There were several extensive surveys for trunk highway projects completed in FY 2006. These projects are carried out by private contract archaeologists working for the Minnesota Department of Transportation (MnDOT). MnDOT procedures usually specify that both Phase I and Phase II activities be summarized in a single report.

Trunk Highway 14, Nicollet County

Two Pines Resource Group with Michelle Terrell acting as the licensed principal investigator completed Phase I and Phase II archaeological survey of Trunk Highway 14 between New Ulm and North Mankato. The survey included a geomorphological study undertaken by Michael Kolb of Strata Morph Geoexploration to assess the potential for deeply buried sites.

The project involves several new alignments along the north side of the Minnesota River east of New Ulm and several new alignments south of Swan Lake.

Twelve (12) previously recorded and three (3) newly recorded archaeological sites were found to be within the Area of Potential Effect (APE) for TH 14, as well as a previously unknown deeply buried component in one of the known sites. Three sites were subjected to Phase II evaluative testing. At the Altman site (21NL58), the site with the deeply buried component, a backhoe removed over 1 meter of soil in two 6 x 8 m blocks and then a 2 x 2 m excavation unit was laid out in each block. Lithics and faunal material were recovered. Six radiocarbon dates suggest that the buried component is a Middle Archaic bison processing camp dating to about 4000 BC located on a small alluvial fan. The site was recommended as Eligible to the National Register of Historic Places (NRHP).

The New Ulm Conglomerate site (21NL59) is a Precontact artifact scatter near an outcrop of Sioux Quartzite. Ten (10) square meters of Phase II excavation were completed. Although there were no diagnostic artifacts, no datable features, and a relatively low density of artifacts, the consultant suggested that the site is Eligible for the NRHP due to the association with the rare bedrock feature.

The Dinger site (21NL134) is a Post-Contact, mid-19th century habitation site associated with the dugout of a German immigrant family. Five 1x1 m units were excavated to assess the site's research potential. The lack of sub-surface integrity and the paucity of a robust artifact assemblage led to a Not Eligible recommendation.

Trunk Highway 55, Hennepin and Wright Counties

Foth and Van Dyke with Patricia Trocki acting as the licensed principal investigator completed Phase I and Phase II archaeological survey of Trunk Highway 55 between Plymouth and Annandale. Sixteen (16) previously unrecorded archaeological sites were located and one previously recorded site was within the APE. The 16 Precontact sites included two lithic find spots, nine lithic scatters, and five artifact scatters. The one Post-Contact site was the location of a rural school.

Phase II evaluations were conducted on four of the Precontact sites. Four 1x1 m units were excavated at 21HE357, which was determined to be a Late Woodland site yielding only lithics. Four 1x1 m units were excavated at 21WR148, which was determined to be a Late Archaic/Early Woodland site yielding lithics and animal bone. Three 1x1 meter units were excavated at 21WR153, which was determined to be a Late Archaic/Early Woodland site yielding only lithics. Three 1x1 m units were excavated at 21WR155, which was determined to be a Woodland site yielding lithics and ceramics. All four of the sites were recommended to be Not Eligible to the NRHP.

Trunk Highway 65, Isanti County

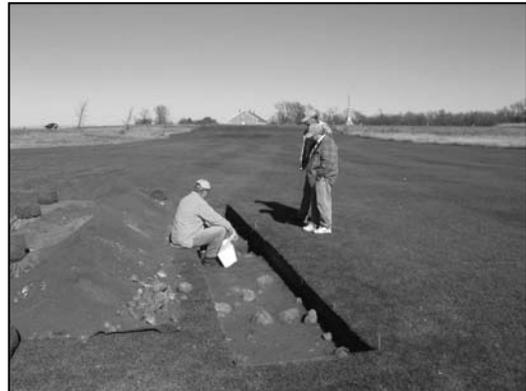
Florin Cultural Resource Services with Frank Florin acting as the licensed principal investigator completed Phase I and Phase II archaeological survey of Trunk Highway 65 between Braham and Cambridge. Fifteen (15) Precontact sites were located by the Phase I

survey and all 15 sites were subjected to Phase II evaluation. The surveys involved 1,663 shovel tests and 24 1x1m test units. Geomorphological work was also completed by Michael Kolb of Strata Morph Geoexploration to assess the potential for deeply buried sites below peat in wetland basins; no such sites were found. Due to a lack of research potential, all 15 sites were recommended to be Not Eligible.

A number of non-highway projects subject to archaeological licensing also involved intensive archaeological examination of archaeological sites during FY 2006. These include:

Fort Ridgely State Park, Nicollet County

The DNR State Parks Archaeology Program under the direction of David Radford (Minnesota Historical Society) has been conducting intensive archaeological testing at Fort Ridgely State Park (21NL8) over the last several years. This testing is in response to a proposal to upgrade the golf course. The archaeological work has found extensive new information regarding the layout of the historic fort as well as significant data pertaining to the battle that was fought there in 1862. There is also a rich Precontact component at Fort Ridgely first examined during 1930s WPA excavations at the site.



MHS-DNR archaeologists excavating at Fort Ridgely.

East Grand Forks Flood Control Project, Polk County

Great Lakes Archaeological Research Center (GLARC) under the direction of Jennifer Harvey conducted data recovery excavations at 21PL83 as mitigation for adverse effects of a proposed outlet corridor for a flood control project. Shovel tests and 100 square meters of formal test units were employed. Animal bones were the principal artifact recovered, along with lithics and ceramics. Three soil features, one a possible hearth, were also encountered. The site is interpreted to be a Late Woodland (Sandy Lake?) habitation/bison processing site.

Mill Ruins Park, Hennepin County

In 1998, the Minneapolis Park and Recreation Board (MPRB) began excavations for the development of Mill Ruins Park on the west side of the Minneapolis Milling District. The downstream portion of this park has been completed and the MPRB has begun explorations for a possible upper portion north of Portland Avenue. This area was where some of the earliest mills in the district were built. The MPRB hired Amanda Gronhvd and Kent Bakken to conduct a public archaeology project in 2006 at the site of the Cataract Mill. School groups and volunteers participated in the work.

Wave Development, Hennepin County

A developer has proposed a high-rise housing complex on land owned by the MPRB on the site of what was formerly Fuji-Ya restaurant on the Minneapolis riverfront. The site contains the ruins of two flour mills (Columbia, Occidental) and a sawmill (Bassett's). The developer hired The 106 Group with Anne Ketz as principal investigator to determine the extent,

condition, and significance of the archaeological remains. The archaeologists uncovered extensive remains of the two flour mills and were surprised to also find an *in situ* railroad scale. The remains of all four sites (21HE363-366) are considered significant and should be taken into account prior to any development. The developer has been required by the city to complete an EAW, which will include a discussion of the archaeological remains, potential effects, and mitigative measures.

Walker Community Center, Cass County

The Leech Lake Heritage Sites Program under the direction of Thor Olmanson conducted evaluation and mitigation excavations at site 21CA668 for the proposed Walker Community Center. The project is being financed with federal funds so the Section 106 process is involved. Initial testing of the site suggested that it was a Post-Contact homestead as there was an apparent building depression present. Intensive testing determined that this depression was not significant, but a possible deep Precontact horizon was discovered. Extensive excavation of the Precontact horizon did not yield any diagnostic materials, but crude lithics appeared to be contained within a Late Glacial horizon (ca. 12,000 B.C.).

Lake Shetek Sewer and Water, Murray County

In 2003 the Lake Shetek Area Water and Sewer Commission (SAWSC) proposed to construct sewer and water lines around Lake Shetek to provide utility hookups for lakeshore residents. Although the project was locally funded, public lands were going to be impacted so a reconnaissance survey was conducted in 2004 and 2005 by Summit Envirosolutions. The survey located 20 previously unrecorded and five previously known Precontact sites. Most of these sites were avoided by the construction in 2006, although some archaeological excavations were undertaken at four sites to better evaluate their importance. One of the tested sites was 21MU83, a multi-component habitation on private property. The State Archaeologist wrote a letter to the SAWSC asking them to preserve the site or consider data recovery (i.e., excavation) if the site was to be destroyed. Adverse effects to the site were largely avoided through boring a pipeline below the cultural horizon.

Records Maintenance

Archaeological Site File

Elden Johnson started a state archaeological site file at the University of Minnesota Department of Anthropology in 1957. Johnson began the file “to facilitate future problem-oriented research” (Johnson 1957:14). The file was kept on 5” x 8” cards organized by county and containing basic locational, descriptive, and reference information. Site numbers were assigned using the Smithsonian Institution’s trinomial system with a numerical prefix based on state alphabetical position (Minnesota was 21 in 1957), then a two letter county abbreviation (e.g., AN for Anoka), and finally a one-up unique number for each site in a county. The initial compilation of sites was based on the field notes of archaeologist Lloyd Wilford and the T.H. Lewis-surveyed mound sites contained in Newton Winchell’s *The Aborigines of Minnesota* (1911). Archaeologists who found previously unrecorded sites were asked to fill out a standard form and submit it to the University’s Archaeology Lab

The University of Minnesota's file became the official state site file with the appointment of Johnson as the first State Archaeologist in 1963. The Minnesota Historical Society's (MHS) Archaeology Department made a copy of this card file in the early 1970s. The official site file resided at the University until Johnson's resignation as State Archaeologist in 1978. A copy of the University's file was then made for new State Archaeologist Christy Hohman-Caine at Hamline University. The Hamline file then became the official state site file. Hohman-Caine also began a folder-format State Burial Site file that was kept separate from the Archaeological Site File. She kept information of burial site activity primarily in the Burial Site File even if an official state archaeological site number had been assigned.

A major change in site file record keeping occurred in the late 1970s with the initiation of the Statewide Archaeological Survey (SAS) by the Minnesota State Historic Preservation Office (SHPO) at MHS. The SAS made photocopies of the site file cards maintained by the Archaeology Department at MHS and created a separate folder for each site, organizing the folders in file cabinets by county. Each county also included a County Miscellaneous folder and a Wilford Notes folder. Because so many new sites were recorded by the SAS-sponsored surveys, the SAS took over assigning the official state site numbers in 1978. In 1981, the Minnesota Land Management Information System (MLMIS) at the State Planning Agency created a computerized version of SAS site file, although this "data bank" was never utilized for state planning purposes and was not available to archaeologists as it had to be accessed through a main frame computer. This data bank was not maintained after 1981.

With the demise of the SAS in late 1981, the assignment of official site numbers reverted to the State Archaeologist. The SAS site files followed the SHPO when their offices were moved from the Hill House to the Ft. Snelling History Center in 1983. At Ft. Snelling, the MHS Archaeology Department site files were then merged with the SHPO files.

In 1980, State Archaeologist Hohman-Caine accepted a job with Chippewa National Forest and moved to northern Minnesota, but she continued to serve as State Archaeologist and the official State Archaeologist's files remained at Hamline University in St. Paul. In 1988, the "Program's Office" of the State Archaeologist was moved to the University of Minnesota-Duluth, while the "Laboratory" remained at Hamline. The Programs Office housed the master state site file (card format) and burial file (folder format), although duplicates were maintained at Hamline. With the resignation of Hohman-Caine in 1992, the OSA Program's Office (Duluth) files were moved to the Ft. Snelling History Center for storage until a new State Archaeologist could be appointed.

When the SHPO moved to the new MHS History Center near downtown St. Paul in 1992, the MHS Archaeology Department stayed at Ft. Snelling. The SHPO made a photocopy of the folder format Ft. Snelling site files to take with them. Thus by 1992, there were five paper copies of the Archaeological Site file: OSA-Hamline, OSA-Ft. Snelling storage, University of Minnesota Anthropology Department, MHS-Archaeology Department, and MHS-SHPO.

With the appointment of Mark Dudzik as State Archaeologist in 1995 and the establishment of the OSA office at Ft. Snelling, the OSA files in storage at Ft. Snelling were moved to the OSA work area. These files consisted of the card-format general site files, the folder-format

burial files, and general correspondence and research files. The MHS Archaeology Site File (folder-format) was also housed in the OSA work area and it became the official state site file. Hohman-Caine's Burial Site files from Duluth were placed in separate filing cabinets in the Ft. Snelling OSA office. The Hamline Archaeological Site file copy (card-format) was eventually given to the OSA at Ft. Snelling, although some Burial Site records apparently remained at Hamline. There are also burial site records maintained at MIAC, of which some are probably not duplicated in the current OSA file.

The U of M Anthropology Department site files (card-format) came to Ft. Snelling in 2000. The OSA-Duluth, OSA-Hamline, and MHS-Archaeology Department card-format files are stored in the current OSA work area at Ft. Snelling. The U of M card-format site file is archived by the MHS at Ft. Snelling in the lower level with other U of M records.

Thus by 2000, only two paper copies of the site files were still maintained (both folder format), one by the OSA at Ft. Snelling and the other by at the SHPO at the MHS History Center in St. Paul. These files are not mirror images because each has added unique data to the folders since the separation of the files in 1992. Both files are made available to MHS staff as well as other members of the professional archaeological community. The Archaeological Site File and the Burial Site File are not open to the general public due to the sensitive nature of the locational data, especially with regard to burial sites.

The first widely available computerization of the archaeological site file occurred in 1982 when Scott Anfinson, then head of the MHS Municipal - County Highway Archaeological Survey, undertook an extensive literature search and review of the archaeological site file. The purpose of the project was to compile a more comprehensive list of archaeological sites that were "recorded" in the literature so potential effects to "known" sites could immediately be considered during highway construction plan review. The results of the project were word processor files that included five major tables: Numbered Sites, Numbered Sites Corrections, Unnumbered Sites, Unconfirmed Sites, and Find Spots. The tables were compiled in a report that was submitted to the State Archaeologist in early 1983 (Anfinson 1983). Anfinson's word processor files were then converted into a database file combining the various tables and a few new data fields were added. Under the Site Number field, unnumbered and unconfirmed site were assigned "alpha" numbers (e.g., 21ANa). Over the next 10 years, additional fields were added mainly to foster Elden Johnson's 1957 site file research goals.

When Anfinson moved to the SHPO as their archaeologist in May of 1990, his computerized database became the SHPO's official archaeological site database. In 1994, MnDOT provided the SHPO with a grant to refine and augment the computerized site file. Under the leadership of Homer Hruby, the SHPO completed the project in 1996. The project not only expanded and made corrections to the electronic site database, it cleaned-up and added materials to the SHPO's hard copy folders and added folders for each alpha site. Universal Transverse Mercator (UTM) locational fields using approximate site centers were added to the database to facilitate Geographic Information System (GIS) applications like MnDOT's MnModel project that began in 1995 (www.mnmodel.dot.state.mn.us/).

A new database procedure was also implemented during the Dudzik tenure as State Archaeologist. Field archaeologists submitted newly completed state site forms to the OSA. The OSA carefully reviewed the forms, assigned an official site number, and sent copies of the numbered forms to the SHPO. SHPO staff added the information to the master archaeological site database and filed the paper copy in their site file. The SHPO then provided a copy of the electronic database to the OSA. The database was also made available to appropriate state and federal agencies (e.g., MnDOT, DNR, NRCS).

As of January 1, 2007, the OSA will take over updating the master electronic archaeological site database. This means that the database will be instantly updated following the review of new site forms and the assignment of new site numbers. The OSA will also attempt to provide on-line access to the database both for data input and output.

There are several major differences between the OSA and SHPO paper files besides the presence of unique data in each folder. The OSA does not have folders for the alpha sites and the SHPO does not have most of the data contained in the OSA burial site files. The OSA also maintains a Burial Sites database that is not shared with the SHPO, but this database as of yet does not include any burial sites not contained in the SHPO archaeological site database. The SHPO also depicts both numbered and unnumbered sites on a set of 7.5' USGS maps, while the OSA depicts numbered site locations on a set of county maps.

The *SHPO Manual for Archaeological Projects in Minnesota* (Anfinson 2005) and OSA/MHS licensing requirements specify that professional archaeologists must submit site forms when previously unrecorded sites are located or significant new information is obtained for previously recorded sites. OSA Research Assistant Bruce Koenen takes primary responsibility for the review of submitted site forms and assignment of official state site numbers. Site forms are required when sites are found on public or private land.

During FY 2006, the OSA performed the following site file actions:

New Forms Reviewed and Site Numbers Assigned:	188
Revised Forms Reviewed:	<u>100</u>
Total Forms Reviewed:	<u>288</u>

As of June 30, 2006 there were 16,772 archaeological sites listed in the archaeological site database. Of these, only 9,930 (59%) are assigned official state site numbers. The majority of unnumbered sites (alpha sites) are federal land sites in Chippewa and Superior National Forests and Post-contact sites documented on early historic maps (e.g., Trygg, Andreas), but as of yet unconfirmed in the field by archaeologists.

If we compare current site totals to previous years, in 1964 there were 1,160 archaeological sites (all numbered, all prehistoric) in the OSA files and in 1983 there were 3,208 (2,999 numbered, some historic). The SHPO files in 1990 had 5,871 sites of which 3,838 were numbered. At the end of the SHPO – MnDOT inventory project in 1996, there were 10,509 archaeological sites in the Archaeological Site database, many of them unnumbered sites in the Superior and Chippewa National Forests.

It is conservatively estimated that less than 1% of the total archaeological sites in the state are known and contained in the site database. This estimate is obtained by multiplying 10 groups of people making 10 unique sites per year by 10,000 years, which equals 1,000,000 sites divided by the 10,000 numbered sites for prehistoric sites alone. If we add potential historical archaeological sites that are currently unnumbered, we could include 200,000 farmsteads and hundreds of thousands of house lots in cities.

Total intensively investigated sites in 1963 were 170 (15% of the total sites), 440 (14%) in 1983, 491 (8%) in 1990, and 950 (6%) in 2006. Intensively investigated sites include sites that have been subject to university field school excavations and those subject to intensive investigations for CRM purposes, mainly what are called Phase III or Data Recovery projects.

There are about 300 Minnesota archaeological sites listed on the National Register of Historic Places (NRHP). Individual site nominations account for 104 of these listings with perhaps another 200 sites included within 17 archaeological districts. Archaeological sites account for only about 6% of the total NRHP listed historic properties in Minnesota. Perhaps 10 times as many archaeological sites have been considered eligible to the NRHP through the federal Section 106 process. There are 63 archaeological sites listed on the State Register of Historic Places (MS 138.57).

Burial Site File

As discussed earlier, State Archaeologist Christy Hohman-Caine started a separate burial site file in the early 1980s. This file now contains detailed information on burial sites examined by or subject to inquiries by State Archaeologists Hohman-Caine, Dudzik, and Anfinson. It includes both numbered and unnumbered sites. The file also contains some information on unconfirmed burial sites that have been reported to the State Archaeologist over the last 30 years. These unconfirmed sites have either not been field checked by an archaeologist or field checked but not found. The Burial Site File is not open to the general public as the data are considered *security information* (see MS 13.37) as specified in MS 307.08, Subd. 11.

In the late-1990s, the OSA parsed burial site information from the master archaeological site database and created a separate Burials Site Database. This database does not contain information on all of the unconfirmed sites in the OSA's paper burial site files, only those sites that have OSA-assigned official state site numbers or SHPO-assigned alpha numbers.

The OSA makes the Burials Site Database partially available to local governmental agencies on a webpage maintained by the Land Management Information Center (LMIC). This webpage went on-line in September 2003. At that time, a letter was sent to all county governments and assigned them a password to access the site. The site provides a graphic interface allowing local governments to determine if a burial site exists within a specific quarter-quarter section of land (40 acres). If a site does exist within the quarter-quarter, the agency can contact the OSA to get more specific information about a particular burial.

As of June 30, 2006, there were 2,252 burial sites listed in the OSA's Burial Sites Database. This includes 12,442 mounds in 1,628 discrete sites and 624 non-mound burial sites. About

350 of the non-mound burials date to post-1837, the beginning of intensive White settlement. There are 580 known or suspected burial sites that do not have an official site number, although a few of these may be duplicates of numbered sites. A compilation of post-White settlement burials in Minnesota by Pope and Fee (1998) lists about 6,000 cemeteries, the majority of which are not contained in the OSA burials database. Many of these cemeteries are officially recorded and managed by active cemetery associations and thus are not under the jurisdiction of the State Archaeologist per MS 307.08.

Archaeological Report Files

The OSA maintains a file of archaeological reports. Archaeologists conforming to the requirements of state licensing have submitted most of these reports. The SHPO also maintains an archaeological reports file that mainly includes reports that have been submitted as part of the federal Section 106 process. As not all SHPO-reviewed projects require state archaeological licensing and not all licensed projects require SHPO review, the OSA and SHPO report files are far from identical, although there is some overlap. Both the OSA and SHPO maintain databases of the reports they have on file.

Since 1998, the OSA has published yearly (calendar) compilations of abstracts of reports submitted to the OSA. They are produced by Bruce Koenen, the OSA research assistant. They can be found at the OSA website (<http://www.admin.state.mn.us/osa/research.html>). As of the end of June 2006, the OSA had 3,646 reports listed in its files. There were 116 reports submitted to the OSA in FY 2006.

Development Plan Review

Under MS 138.40, Subd. 3, agencies must submit plans to the State Archaeologist for developments on their lands where archaeological sites are known or predicted to exist. The State Archaeologist has 30 days to comment on the plans. The State Archaeologist also reviews plans and reports based on agency or individual requests, although no official OSA action is required if the development is on private land or does not threaten burial sites.

MS 116d requires that an Environmental Assessment Worksheet (EAW) be prepared whenever there is a government action that could result in significant environmental effects. If the EAW determines that there is good potential for significant effects, a more detailed Environmental Impact Statement (EIS) is prepared. The state or local agency controlling the action is designated the Responsible Governmental Unit (RGU). The RGU determines if an EAW or EIS is necessary and what actions should be carried out based on an analysis of the documents. Rules (Mn Rules 4410) for implementing the EAW/EIS process are developed by the Environmental Quality Board (EQB) and the EQB also monitors EAW/EIS activities. Any citizen can comment as part of this process. The State Archaeologist, while not included on the official EAW or EIS Distribution List in FY 2006, is often asked by citizens or developers for information or comments regarding potential impacts to archaeological resources for EAW/EIS purposes.

During FY 2006, the OSA completed substantial review on 14 development projects:

<u>Project</u>	<u>Agency</u>	<u>County</u>	<u>Authority</u>	<u>Recommend</u>
Blue Heron Bay	County	Otter Tail	EAW	Survey
Mille Lacs Sewer	Local	Mille Lacs	138	Monitor
White Earth Housing	THPO	Mahnomen	request	Report OK
Sleepy Eye Trail	City	Brown	138	Survey
Halsted Bay	Public	Hennepin	request	Survey
Ft. Ridgely Golf	DNR	Nicollet	138	Work OK
Phelps Housing	Public	Otter Tail	request	Survey
TH 14	MnDOT	Nicolett	138	Monitor
TH 12	MnDOT	Wright	138	No Effect
Little Coyote Lake	Public	St. Louis	request	Report OK
Lake Shetek Sewer	Public	Murray	138	Mitigate
Whitney Hotel	Private	Hennepin	request	Survey
Wave/Fuji-Ya	City	Hennepin	EAW	Survey/Avoid
Anoka County Harness	Private	Anoka	request	Survey/Excav.
Murphy's Landing	County	Scott	138	Survey

The State Archaeologist was appointed to the Dakota County Parks Technical Advisory Committee (TAC) in 2006. This committee is charged with helping to plan for the expansion, maintenance, and focus of the Dakota County park system. A number of parks are known to contain significant archaeological sites. Intensive meetings of the TAC will begin in early FY 2007.

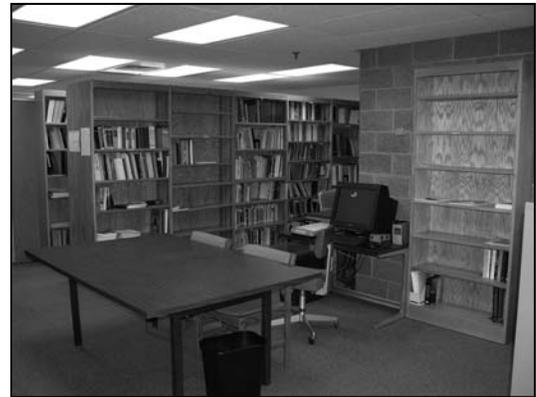
Archaeological Research

OSA - MHS Joint Research Area – When Elden Johnson, the first State Archaeologist, retired from his job at the University of Minnesota in 1987, he became Executive Director of the Institute for Minnesota Archaeology (IMA), a private research institution. Johnson donated his substantial library of archaeology and anthropology books to the IMA. The IMA library was augmented by the donation of the Minnesota Archaeological Society (MAS) library and materials from IMA's previously existing library. When the IMA went out of business in 2003, the IMA library was donated to the MHS with the contingency that it remain with the MHS Archaeology Department at Ft. Snelling. When Scott Anfinson became State Archaeologist in January 2006, this collection of books, journals, and manuscripts was stored in 53 boxes in the basement of the Ft. Snelling History Center.

In order to get the IMA library into a more stable and accessible location, the new State Archaeologist proposed that a joint OSA - MHS research area be established in the vicinity of the OSA offices at Ft. Snelling. If MHS would donate the space, OSA would provide the shelving. Both entities would also contribute existing maps, written materials, and furniture. MHS agreed to this arrangement and the Joint Research Area became a reality in FY 2006.

The Joint Research Area is now made up of the Johnson/MAS/IMA collection, as well as copies of Minnesota theses and dissertations, and journals to which the OSA subscribes (adjacent state's and province's archaeological journals as well as several national and international archaeological journals). A number of file cabinets house manuscript collections that are organized by author or topic (e.g., Historical Archaeology). The research area also has an OSA-provided computer with image scanning and mass storage capabilities. The computer's hard drives contain several historic property inventory databases, as well as electronic images of archaeological sites and artifacts.

The research area is open to use by the archaeological community, although only professional archaeologists are granted access to site database files stored in the computer. All materials must be used on-site as this is not a lending library, although facilities exist for limited scanning and photocopying of materials. It is hoped that other archaeologist's will donate written materials and images to the research area and the facility will become a principal research resource for Minnesota archaeologists.



OSA – MHS Joint Research Area at the Fort Snelling History Center.

Radiocarbon Dates File and Database – When the current State Archaeologist was the SHPO

Archaeologist, he developed and maintained a database of Minnesota radiometric dates. This database is now housed and maintained at the OSA. Along with the electronic database are paper copies of articles and laboratory reporting sheets for radiocarbon dates (also known as C14 dates) from Minnesota archaeological sites.

Radiocarbon dating was developed at the University of Chicago in 1950. Elden Johnson obtained the first archaeological radiocarbon dates in Minnesota in 1963, consisting of 18 dates from 15 separate sites. Great advancements in radiocarbon dating have been made over the past two decades with Accelerator Mass Spectrometry (AMS) dates allowing for smaller samples and greater accuracy and calibration research allowing for corrections due to atmospheric variations through time. Dates are reported in Radiocarbon Years Before Present (RCYBP), which need to be calibrated prior to determining relatively accurate absolute dates.

The database currently contains 419 dates from 123 sites. The best-dated site in the state is the Bryan site (21GD4) with 26 dates. Other sites with reported dates in double digits are: Hannaford (21KC25) with 23, McKinstry (21KC2) with 21, Smith (21KC3) with 15, Donarski (21MA33) with 12, and Mooney (21NR29) and J Squared (21RW53) both with 10. Forty-two (42) sites have only a single date. The oldest reasonably accurate date from a Minnesota archaeological site is 10,390 RCYBP \pm 120 from the J Squared site (21RW53), followed by 9220 RCYBP \pm 75 from Bradbury Brook (21ML42) and 9049 RCYBP \pm 82 from Browns Valley (21TR5).

In FY 2006, 27 new radiocarbon dates from eight sites were included in reports received by the OSA. The Lewis Berger Group obtained two dates from an Archaic component at 21CR141 for the Trunk Highway 41 project. Summit Envirosolutions obtained three Woodland Period dates from the Lincoln Mounds (21HE7) project in Bloomington. Two Pines Resource Group obtained six dates from a deeply buried Archaic component at 21NL58 for the Trunk Highway 14 project. Commonwealth Cultural Resources obtained 12 dates from four sites (21SH47, 21AN8, 21NL63, 21NR65) as part of MnDOT's Deep Test Protocol Project. Patrick McLoughlin of the Natural Resource Conservation Service (NRCS) obtained four dates from an Archaic component at site 21HU176.

The OSA encourages archaeologists who have obtained radiocarbon dates to submit their laboratory reporting sheets to the OSA so all researchers can share in this critical information. Laboratory sheets for radiocarbon dates should always be included in final reports when contractors or agencies obtain dates as part of the environmental review process or research-driven archaeology.

Deep Site Testing - The State Archaeologist served on MnDOT's Deep Site Testing Protocol Steering Committee. This project has been under development over the past two years. Its goal was to develop a set of standards that MnDOT can use when performing archaeological reconnaissance and evaluation in soil settings that could contain deeply buried sites, especially bridge replacements in well developed river valleys. "Deeply buried" is defined as greater than 1 meter below the present ground surface, essentially beyond the reach of effective hand shovel testing.



Mechanical coring rig used for MnDOT's deep testing project.

MnDOT contracted with Commonwealth Cultural Resources Group from Michigan to undertake the study. In January 2006, the State Archaeologist finished reviewing the draft of the final report and forwarded comments to MnDOT. The final report was completed in March 2006. The report evaluates three primary methods used to discover deeply buried sites: 1) electronic remote sensing, 2) coring/augering, and 3) backhoe trenching. While all three techniques have positive and negative aspects, the report concludes that backhoe trenching is the most effective and efficient method. The report also advocates the use of a multi-disciplinary approach to deep site testing utilizing both earth scientists and archaeologists. Seventeen (17) radiocarbon dates were obtained, 12 from archaeological sites. The final report is on-line at: www.mnmodel.dot.state.mn.us/pages/archaeology.html

Rochester Paleoindian Site— In December of 2004, an artifact collector from the Rochester area called the SHPO to report that an early archaeological site on private land was being threatened by a city sewer project. Scott Anfinson, then the SHPO Archaeologist, recommended that the City of Rochester conduct an archaeological survey. The city hired an archaeological contracting firm (The 106 Group) who completed the survey and confirmed the site's location within the proposed path of the sewer. The city then realigned the sewer to miss the site.

Artifacts found on the surface by the private collector suggest that this site, now known as the Hruska site (21OL39), is one of the earliest known in Minnesota. Included in the finds were several fluted projectile points resembling Paleoindian Clovis points (see cover photo) indicating that the site may be over 12,000 years old. The site appears to be a single component Early Prehistoric site based on the consistency of lithic raw materials and lack of later artifacts. The location is interesting as it is relatively distant from any source of water.

The major question concerning the value of the site is whether or not it retains any sub-surface integrity after being plowed for many years. In May 2005, Anfinson excavated a 50 cm square stratigraphy pit near the north edge of the site to assess the stratigraphy. The few undiagnostic lithic artifacts that were recovered were from between 20 – 30 cm deep near the base of the plowzone. The pit was excavated to 50 cm where numerous cobbles made deeper excavation difficult.

The landowners originally agreed to keep artifact collectors off the site until professional testing could be completed, but when State Archaeologist Anfinson returned to site in July of 2006, the original private collector was digging trenches in the site. He had the permission of the landowner who apparently was impatient to find out more about the site.

The State Archaeologist also received landowner permission for some limited excavation to better assess the site's research potential. On 8/3/06 Scott Anfinson and Bruce Koenen conducted archaeological testing at 21OL39 assisted by archaeologist Pat McLoughlin of the Natural Resource Conservation Service (NRCS). The NRCS also provided the assistance of several soil scientists from the Rochester area office led by John Beck. While the archaeologists excavated a 1x1 meter test unit at the southeastern edge of the site, the NRCS soil scientists removed a number of soil cores to assess the site's geomorphology.

Based on the archaeological testing and soil coring, the site stratigraphy consists of a 20 cm topsoil horizon (Ap) followed by about 40 cm of sub-soil (Bk, Bt) and underlain by a waterworn cobble layer at about 60 cm deep. The cobbles may sit atop an eroded shale bedrock, although the cobble layer was difficult to penetrate. This cobble layer may be the remnant of a glacial outwash terrace known as a "strath terrace." This terrace appears to be pre-Illinoian in age, dating it to perhaps 200,000 years ago.

Very few artifacts were recovered in the test unit, but they appear to be concentrated at the interface of the A and B soil horizons. This is also near the base of the plow zone. Because of the paucity of artifacts from the test units and lack of obvious cultural features, it is still unclear as to whether or not any of the original cultural horizon extends below the plow zone and retains integrity.

No additional testing is planned at the site, although the State Archaeologist will maintain contact with the landowners and encourage them to try to preserve the site. It is likely the area will be impacted by housing sprawl in the near future. The State Archaeologist is also consulting with Dr. Howard Hobbs of the Minnesota Geological Survey to get his assessment of the site's geology.

Evaluating Farmsteads – One of the most common yet problematic archaeological site types in the state is the farmstead. With the initiation of intensive White settlement in the 1830s, farmsteads gradually expanded to all areas of the state, even the cutover areas of the northeast. By 1900, there were about 150,000 farmsteads and by 1935, the peak year, there were 204,000 active farmsteads in Minnesota. Since then, the number has declined and there are now only about 80,000 active farms in the state.

As cities expand and roads are developed, the remnants of farmsteads are constantly being destroyed. While most of these farmsteads have little potential to add significant knowledge through archaeological investigation, there are some farmsteads that are worthy of archaeological study. Trying to determine which farmstead sites are worth preserving or archaeologically investigating is a major research problem in this state and most other states.

The evaluation of farmsteads has been greatly advanced by recent projects initiated by MnDOT on a statewide basis and the Minnesota National Guard at Camp Ripley. The State Archaeologist served as an advisor to both of these projects.

Following the production of a draft report, the State Archaeologist met with the Camp Ripley Farmstead study group in February 2006. The team consisted of representatives of Two Pines Resource Group and Camp Ripley staff. Key questions discussed included the format of the final presentation, the antiquity and nature of the Camp Ripley farmsteads, and which sites were worthy of preservation. White settlement began in the mid-1850s, but in 1929 all occupants within the 53,000 acres of Camp Ripley were bought out for the purposes of establishing the military reservation.

The final report for the Camp Ripley project was issued in February 2006. The report provides an overview of farming in Morrison County, which is essentially a local historical context within which to evaluate farmstead site importance. A literature search suggested as many as 149 farmsteads once existing in the camp, but initial archaeological survey could only locate 80. The report recommends that only 10 of these hold good research potential.

The MnDOT Cultural Resources Unit has been intensively examining farmsteads since 1998. The first phase of the project ended in 2000 with most attention focused on non-archaeological aspects of farmstead evaluation. A new phase began in 2004 and included a discrete archaeological component, which relied heavily on an overview of historic farmsteads completed by Gemini Research in 2005. Two Pines Resource group was hired to complete the archaeological work on farmsteads.

The final report for the MnDOT farmstead archaeological context project was issued in June 2006. It first focuses on a review of farmstead archaeology done in Minnesota and other states. It then looks at how the archaeology of farmsteads can contribute to our knowledge about Minnesota farming and essentially proposes an industrial archaeology perspective. Finally, it assesses research potential by dividing the state into eight time periods and nine farming regions. An appendix examines methods for the archaeological identification and evaluation of farmstead sites

Other Research - A significant amount of archaeology is done in Minnesota each year that is not reviewed by the OSA, licensed by the OSA, or sponsored by the OSA. Most of these projects are carried out by federal agencies or otherwise reviewed by federal agencies and the SHPO under Section 106 of the National Historic Preservation Act due to federal licenses, land, or funding. The OSA occasionally receives complementary reports on these projects or is asked for advice on the projects.

Federally sponsored projects for FY 2006 included the excavation of the Sand Lake site (21LA51) in Superior National Forest and Moss Lake (21CA285) in Chippewa National Forest as part of the Passport in Time (PIT) program. Major archaeological projects reviewed by the SHPO under Section 106 in FY 2006 included extensive excavation at 21AN159 for the proposed Anoka County Harness Track, which was subject to an Army Corps of Engineers wetland permit.

A number of private development entities also sponsor archaeological research at the request of local governments, the SHPO, or the OSA. In FY 2006, the 106 Group undertook work at the Whitney Hotel expansion on the Minneapolis riverfront. This development adversely affected the ruins of the Dakota and Model Mills. The State Archaeologist made a field visit to these excavations and reviewed the data recovery plan.

Educational institutions also sponsor archaeological work for the purposes of student training and academic research. University of Minnesota – Minneapolis Graduate Student Kent Bakken has been leading a volunteer effort to excavate several house lots in the Elliot Park neighborhood of Minneapolis for the last three years. The University of Minnesota – Duluth field school under the direction of Jennifer Jones and Susan Mulholland undertook survey in the Flat Horn Lake area of Superior National Forest and excavations at the Susan Melissa site (21SL___) in the Boundary Waters Canoe Area.

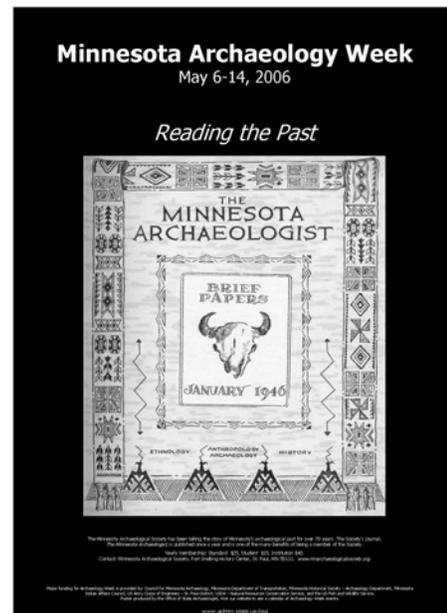
An archaeological field school from Minnesota State University – Mankato under the direction of Ron Shirmer continued work in the Red Wing area. This year's work focused on survey rather than excavations at the Silvernale site (21GD3) where Dr. Shirmer has been working for the last several years. St. Cloud State University's field school under the direction of Debra Gold continued excavation at the Post-Contact Period Shoemaker site (21SN164), which is located on the university's campus.

Public Education

Archaeology Week - The OSA has served as the major sponsor of Minnesota Archaeology Week since 1998. The first Archaeology Week was held in 1995. Major financial assistance is provided by the Minnesota Archaeological Society and the Council for Minnesota Archaeology as well as a number of state and federal agencies including the Minnesota Department of Transportation, the Minnesota Historical Society – Archaeology Department, the Minnesota Indian Affairs Council, the US Army Corps of Engineers – St. Paul District, the USDA Natural Resource Conservation Service, and the US Fish and Wildlife Service.

Archaeology Week 2006 was held May 6 – 14. There was no overall theme this year, although the poster featured a cover of *The Minnesota Archaeologist* from January 1946 and was titled “Reading the Past.” This was in keeping with several of the OSA’s public presentations during 2006 that discussed the progress made by Minnesota archaeologists over the last 50 years and what key research questions are of interest today.

There were 26 officially sponsored events in 20 counties for Archaeology Week in 2006. An estimated 2,800 people attended the events. Featured events included a tour of Grand Portage National Monument led by archaeologists Douglas Birk and Dave Cooper, an open house displaying archaeological collections at the Winnebago Area Museum, an Archaeology Fair at Ft. Snelling, an “archaeology for kids” day at the Gibbs Farm Museum, and an “archaeology festival” at the Glensheen Mansion in Duluth. OSA staff directly participated in five of the events. James Stoltman, an emeritus professor from the University of Wisconsin – Madison, delivered this year’s Elden Johnson lecture. It was entitled “Reconsidering the Context of Hopewell Interaction in the Upper Mississippi Valley.”



OSA Public Lectures and Presentations – The State Archaeologist made a presentation to the Council for Minnesota Archaeology on 2/18/06 in St. Cloud. The presentation provided an overview of current duties, problems, and goals of the OSA. The State Archaeologist gave a lecture entitled “The State of Archaeology in Minnesota” to the Minnesota Archaeological Society on 2/21/06 at the Ft. Snelling History Center. The State Archaeologist participated in a panel discussion on Cultural Heritage Regulations at the Cooperative Stewardship Workshop at Prairie Island on 2/25/06. The State Archaeologist taught a Midwestern Archaeology course within the Department of Anthropology at the University of Minnesota during spring semester 2006. The State Archaeologist made a presentation on historic preservation laws to a class at the University of Minnesota Law School on 3/31/06. The State Archaeologist made a presentation on Cultural Resource Management to an Introduction to Archaeology class at the University of Minnesota on 4/27/06. The State Archaeologist gave an illustrated lecture to the American Institute of Archaeology at the Science Museum of Minnesota on 5/4/06; the lecture was entitled “What Wilford Didn’t Know” and discussed archaeological progress in Minnesota over the last 50 years. The State Archaeologist gave an illustrated talk on the archaeology of Pope County to the Pope County Historical Society in Glenwood on 5/7/06 as part of Archaeology Week.

The assistant to the State Archaeologist, Bruce Koenen, presented a lecture to anthropology students at Minnesota State University – Mankato on 11/8/05; the lecture was entitled “Archaeology Outside of Academia.” He gave flint knapping seminars to students at Normandale Community College on 4/13/06 and 4/14/06. He made a presentation to the

Minnesota State University – Mankato archaeological field school on 5/30/06. Mr. Koenen also set up the OSA display booth at the Cooperative Stewardship Workshop at Prairie Island on 2/25/06, at the Lake Superior Basin Workshop in Pine City on 3/18/06, and at the Archaeology Fair at Ft. Snelling on 5/13/06.

OSA Archaeology in the Schools – Bruce Koenen takes the lead in this initiative and has assembled a teaching kit of artifacts that he takes with him on school visits. In FY 2006 he made presentations at Eden Prairie Elementary on 10/18/05 and at Kimball Elementary on 4/28/06. In previous years, more numbers of school presentations have been made, but due to the lack of a full-time State Archaeologist for almost half of FY 2006, there were fewer this year.

Cooperative Stewardship Workshop – The Office of the State Archaeologist co-sponsored the Cooperative Stewardship Workshop held February 24-26, 2006 at Treasure Island Resort on Prairie Island. The workshop was a follow-up of a workshop held at Lake Mille Lacs in February of 2005 where members of Minnesota’s archaeological and Indian communities met together to discuss common problems and common goals. The current State Archaeologist served on the planning committee for the 2006 workshop.

The theme of the 2006 Prairie Island workshop was “Different Ways of Knowing.” The banquet speaker on Friday evening was Joe Williams, an elder of the Sisseton-Wahpeton tribe who had recently participated in an archaeological project in eastern South Dakota. On Saturday, opening remarks by Joe Day the executive director of MIAC and Dana Badgerow the Minnesota Commissioner of Administration were followed by a talk by Don Gurnoe, a former executive director of MIAC. There were several panel discussions concerning Cultural Resource Management regulations and collaborative efforts. The Saturday luncheon talk was by Dorothy Lippert of the Smithsonian Institution’s Repatriation Office. Saturday afternoon featured roundtable discussions centered on the morning panel presentations. On Sunday morning, a small group of attendees met to begin planning a 2007 workshop.

The Cooperative Stewardship Workshops have provided Minnesota archaeologists with an opportunity to better understand tribal perspectives and provided tribal communities an opportunity to better understand archaeological objectives and methods.

Internships – One OSA internship was initiated in FY 2006. Jeremy Nienow, a PhD candidate in the Anthropology Department at the University of Minnesota, undertook research on unrecorded non-Indian cemeteries in southeastern Minnesota. The OSA hopes to add such sites to the master site database in the near future.

Media Exposure - The State Archaeologist typically receives a certain amount of media exposure every year not only due to the controversial nature of some of the duties, but because the public has an intensive interest in archaeology and history. Thus most media contacts with the State Archaeologist are either media reaction to a news worthy situation or are generated by the media due to a perceived public interest.

Reactive media contacts in FY 2006 included stories concerning Chaska city festival impacts to mounds in the city square (*Minneapolis Star Tribune, Chaska Herald*), the accidental disturbance of a burial mound near Wahkon (*Mille Lacs Messenger*), and the discovery of archaeological sites impacted by the proposed Anoka County Harness Track (*St. Paul Pioneer Press, Forest Lake Times*). Proactive media contacts in FY 2006 included a visit to an abandoned pioneer cemetery near Homer (*Winona Daily News*) and comments on a township plan to protect a burial mound site near Pillager (*Minnesota Public Radio*).

Burial Sites Protection

A major aspect of the day-to-day work of the OSA is spent dealing with the duties assigned to the State Archaeologist by the Private Cemeteries Act (MS 307.08). These duties principally involve maintaining a file of unrecorded burial site locations, answering public and agency inquiries about known or suspected burial sites, coordination with the Minnesota Indian Affairs Council (MIAC) when Indian burials are threatened, formally determining the presence or absence of burial grounds in particular areas (authentication), reviewing development plans submitted by agencies and developers, and advising landowners on management requirements of burial grounds.

In 1985, State Archaeologist Hohman-Caine and MIAC developed formal burial ground management procedures. These procedures were revised several times, but were not revised after a major change in the MS 307 legislation occurred in 1993. That change involved only the addition of one word, “grounds”, in 308.07, Subd. 2, but it has had major implications for authentication, management, and enforcement. It is now a felony to willfully disturb a “burial ground” not just a burial. This requires that the State Archaeologist define burial ground limits during the authentication process, that all land within those limits be properly treated, and that human remains do not have to be directly disturbed to represent a violation of the law. The OSA in cooperation with MIAC will attempt to complete a revision of the written burial site procedures in FY2007.

In FY 2006, the OSA dealt with 44 major burial cases. “Major” is defined as a case where substantial OSA review is required as indicated by the need for fieldwork, extensive research, and/or official correspondence. The OSA typically averages several email or telephone inquiries every day relating to possible burial cases, but most of these are dealt with expeditiously and individually do not cause a major expenditure of OSA time or resources.

Of the 44 major burial cases, 27 involved fieldwork and 11 of these resulted in formal authentication. Authentication involves four steps: 1) determining if the site is indeed a burial ground, 2) defining the limits of the burial ground, 3) attempting to determine ethnic identity, and 4) sending official correspondence with an authentication conclusion to the landowner as well as the zoning authority and/or county recorder. All FY 2006 authentications are discussed below.

Formal Burial Authentications

21CW8 - Garrison Township Land Sale, Crow Wing County:

In February of 2006, a realtor from Brainerd called the OSA about mounds on a property he was listing for sale. The mounds in question were at the Seguchie Creek site (21CW8) near the west side of Lake Mille Lacs. This site had originally been reported by Jacob Brower in 1898, although he did not map the site. An MHS Statewide Archaeological Survey (SAS) crew mapped the mound group in 1978, noting 21 mounds and also a habitation area. In 1995 a Trunk Highway survey crew visited the mounds and updated the site form. In 2000, an archaeological survey crew investigating the proposed reconstruction of TH 169, re-mapped the 21CW8 mounds, noting a 22nd mound not mapped by the SAS in 1978. This crew returned to the site in 2001 to do some testing of the habitation area. The landowners were not informed of the mound presence by the 1978, 1995, or 2000/2001 investigators.

On 2/9/06, the State Archaeologist wrote a letter to the Brainerd realtor informing him of the 21CW8 mound group, the legal requirements of MS 307.08, and suggesting a 50' no-disturbance buffer around the mound group. The clients of the realtor owned only the very northernmost portion of the mound group, which included one complete mound and portions of two others.



Landowners of 21CW8 mound group discuss the site with Mille Lacs Ojibwe official Elisse Aune during OSA Authentication.

Ten days later, the SHPO archaeologist informed the OSA that he had noticed a new snowmobile trail had been established through the mound group just south of the land that was for sale. The State Archaeologist called the president of the Garrison Snowmobile Club and asked his group to stop using the trail through the mound group. This was followed up with a letter to the individual and the Brainerd DNR Trails office on 3/1/06. The southern landowner was also copied on the letter and she immediately called the State Archaeologist for a clarification as this was the first she knew of burial mounds on her property.

On 4/12/06, OSA staff visited the site accompanied by the landowners and re-located all of the mounds that had been previously mapped. It was agreed that a 20-foot buffer for the burial ground should be established beyond the bases of the outermost mounds in the group. This boundary was confirmed by an OSA letter on 5/3/06 sent to the landowners and copied to the MIAC and the Garrison Township Board.

St. Gregory's Cemetery - Trunk Highway 12 Project, Hennepin County: A MnDOT project archaeologist called the Acting State Archaeologist in August 2005 to ask for an official OSA determination regarding possible construction impacts to a Catholic cemetery in Long Lake due to the new Trunk Highway 12 bypass. Ground penetrating radar (GPR) had suggested unmarked graves were located in a peripheral area of the cemetery where a

temporary retaining wall was to be built. An OSA review of the GPR diagrams and a visit to the location strongly suggested that graves would indeed be impacted, although no graves were plotted on records at St. Gregory's Catholic Church. The State Archaeologist suggested that sheet piling be utilized to protect the suspected graves. MnDOT and the construction company implemented this suggestion. A later field check confirmed that the unmarked graves area had indeed been avoided by construction.

21HE65 - Landowner Request for Garage Construction, Hennepin County:

In July of 2005, a landowner in Mound had contacted the MIAC asking about requirements concerning garage reconstruction adjacent to a burial mound. The MIAC forwarded the request to the OSA. The site in question was the Bartlett Mounds (21HE65). Bruce Koenen visited the site in late July and met with the landowner. The project was put on hold as the State Archaeologist (Dudzik) had just resigned.

In October 2005, OSA staff visited the site and confirmed that the existing garage indeed abutted a burial mound. There were originally 18 mounds mapped at 21HE65 in 1883, but the area has been subjected to intensive residential development over the last 120 years. Four mounds were originally present on the lot in question, but only the mound (Mound 1) adjacent to the existing garage was still visible in 2005. Two other mounds (Mounds 6-7) were apparent just to the west on another lot, but no attempt was made to map other possible surviving mounds even further to the west. The landowner was informed by an OSA letter on 10/11/05 that disturbance of the mound was prohibited under MS 307.08. MIAC and the City of Mound were copied on the letter.



Existing garage built into side of mound at 21HE65.

21HE88 – Hayden Road Reconstruction, Hennepin County:

In April of 2005, the City of Champlin contacted the OSA about a planned upgrade of Hayden Road. This was in the vicinity of Mound 23 of the Trussel mound group (21HE88) originally mapped by Theodore Lewis in 1883. In 2003, the OSA had investigated a proposed residential development in the area of Mounds 15, 17, 18, and 19 of this group; the investigation could find no trace of those mounds, but did relocate Mounds 11, 14, and 16.

The Mississippi Valley Archaeology Center (MVAC) was hired by the City to carry out an authentication survey for Mound 23 of 21HE88. The survey was completed by MVAC and OSA staff in July 2006 at the end of Mark Dudzik's tenure as State Archaeologist. Shovel testing, hand trenching, and hand shovel skimming of the mound area proved negative. As no State Archaeologist was in-place by the end of the authentication survey, no official OSA letter was sent to the City and MIAC in FY 2006 approving the construction project. The project has not been completed and the OSA will issue a clearance letter in FY 2007.

21KH137 - TH 104 Project, Kandiyohi County: A member of the public called in August 2005 to report that a possible burial mound was threatened by the reconstruction of Trunk Highway 104 south of Sunburg. No mound was officially recorded at the reported location, although a reference to a possible mound was found in the OSA burial site files. The Acting State Archaeologist examined the location and confirmed the presence of the mound (now designated 21KH137). Highway survey stakes for a backslope cut had been placed in the mound. The State Archaeologist immediately contacted the Kandiyohi County Highway Engineer, alerted him to the presence of the mound, and asked that the backslope cut be adjusted to avoid the mound by at least 40 feet. The MIAC was also contacted. After a review of the plans, the County Engineer requested that they be allowed to come within 20 feet of the mound in order to decrease the angle of the slope and avoid a catastrophic backslope failure. The OSA agreed to this adjustment. A field check in early 2006 confirmed that the mound had not been disturbed by the highway construction.

21ML128 - Wahkon Cabin Development, Mille Lacs County: In early June 2006, a large burial mound near the south shore of Lake Mille Lacs in Wahkon was extensively disturbed by a landowner grading his lot for cabin construction. Fill from this mound was deposited at four off-site locations and at one of these locations human remains were noticed in the fill. Law enforcement personnel assisted by forensic anthropologists from Hamline University determined that the remains were of Indian affiliation and were over 50 years old. Many of remains were from children.

OSA and MIAC staff examined the mound and fill locations on 6/6/06. The OSA informed the landowner by letter on 6/7/06 that the mound was a burial ground and that further disturbance was not permitted. The mound was assigned the official site number of 21ML128. Based on an MIAC suggestion, the burial ground limits were set at the former basal perimeter of the mound. It was recommended that the mound be restored to its original configuration and the excavated human remains be re-interred in the mound.



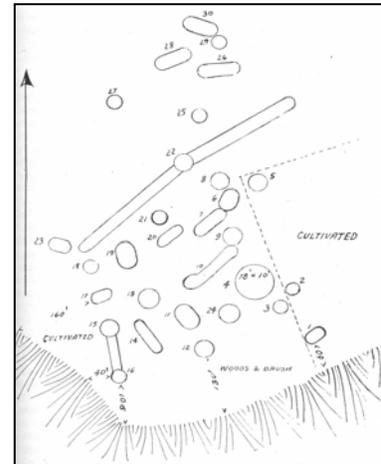
Bruce Koenen of OSA and Jim Jones of MIAC inspect fill removed from Wahkon mound.

The mound's previous extent was known because an OSA representative had mapped the mound in 1990, but the OSA did not assign a site number to the mound at that time. There is no correspondence in the OSA files documenting official notification of the landowner or the city of the 1990 OSA survey results.

21PO1 – Nordic Heights Lot Development, Pope County: In April 2006, the State Archaeologist was contacted by a bank in Glenwood regarding the sale of Lot 3, Block 1, Nordic Heights within the Bartke mound site (21PO1). This mound group had originally

been surveyed by Theodore Lewis in 1886, when 30 mounds were recorded. A University of Minnesota archaeological field school had excavated four of the mounds in 1939. The SHPO Archaeologist (now the State Archaeologist) had examined the location in 1995 after a local resident reported a possible housing development (Nordic Heights) at the site. The SHPO Archaeologist confirmed the site had been damaged by road grading and reported it to the State Archaeologist. The State Archaeologist made a detailed map of the site in 1996 and informed the landowner that no additional disturbance was permitted.

The new State Archaeologist met the Glenwood banker and the prospective landowner of Lot 3 at the site on 5/6/06. It appeared as if there would be sufficient room for the construction of a residence on Lot 3, while maintaining a 20 foot buffer from the mound group. The State Archaeologist recommended that a detailed survey of site be made by a land surveyor using the mound centers marked by the OSA in 1996 and the original Lewis survey notes. The survey was completed in late May 2006 and a map sent to the OSA. The State Archaeologist informed the landowners and MIAC by letter on 6/5/06 that the 21PO1 burial site boundary was officially established at 20 feet from the bases of the outermost mounds in the group and no disturbance was permitted within the boundary.



Lewis map of 21PO1 as redrawn by Winchell (1911).

21RC14 - Dundas Residential Development, Rice County: In October 2005, an attorney contacted the State Archaeologist regarding a proposed development near Dundas where a burial mound group had previously been reported. The site in question, 21RC14, had originally been recorded in the early 1900s by Edward Schmidt, a history professor at St. Olaf College. Schmidt had taken University of Minnesota archaeologist Lloyd Wilford to the site in 1939, but Wilford had been non-committal as to the origin of the mounds. In May of 1985, a local avocational archaeologist, Ken Wedding, reported that the mounds had been “destroyed by tiling (tilling?).” A Carleton College geology professor, Connie Sansome, who had examined the possible mounds just prior to this, thought they were of natural rather than cultural origin.

The State Archaeologist visited the site on 10/21/05 and walked the harvested agricultural fields where the mounds had been reported. No mounds were evident. In a letter to the attorney and MIAC dated 10/24/05, the State Archaeologist declined to authenticate the location as a cemetery.

Schmidt had recorded hundreds of mounds in southern Dakota County and northern Rice County in the early 20th century, but none of his mounds have ever been confirmed as burial sites. Schmidt himself dug into almost a hundred of these mounds and did not find any artifacts or human remains. They were reported in Winchell’s *Aborigines of Minnesota* (1911), however, and the locations were therefore given site numbers by the first State Archaeologist in the early 1960s. All of Schmidt’s mounds appear to natural features known as “mima mounds.”

21SC94 - Savage Lofts Project, Scott County: The director of the Scott County Historical Society called the Acting State Archaeologist in September 2005 to report a possible burial mound threatened by a construction project in Savage near Eagle Creek. No mound was officially recorded at the reported location. The State Archaeologist immediately examined the location the same day of the report and located a mound at the eastern edge of the Savage Lofts construction project. The mound at that time was east of a silt fence, which demarcated the construction limits. The day after the OSA visit, the State Archaeologist received a second call from the Scott County Historical Society director noting that the silt fence had been moved to the east and the mound was now directly threatened. The State Archaeologist returned to the site and confirmed that the silt fence had indeed been moved and now bisected the mound. A large oak tree growing on the mound had been trimmed and some grading had impacted the western surface of the mound. No artifacts or bones were apparent on the surface.



Mound (beneath tree) protected by fence within construction area at Savage Lofts project.

The State Archaeologist immediately had the construction manager fence off the mound location to prevent any additional damage. Top-soil fill was first placed on the western side of the mound to restore its pre-construction appearance. An on-site survey crew tied the mound into the official land survey of the area. OSA letters were then sent to the developer and the city requiring that all direct impacts to the mound be avoided. Subsequent visits to the site in the fall of 2005 and spring of 2006 confirmed that the mound had suffered no further impacts from the building construction. During the field visits, several other mounds were noticed on DNR land adjacent to the building location. In the spring of 2006, the OSA completed a detailed survey of the area, mapping three mounds now designated 21SC94.

21WB1 – Eaglewood Estates Housing Development, Wabasha County: In February 2006, the City Planner for Lake City sent plans for the Eaglewood Estates residential development to the State Archaeologist. The city was aware that this development was within a previously designated burial mound site known as the Brostrom site (21WB1). The Brostrom site had originally been mapped by Theodore Lewis in 1885 where he recorded 10 mounds.

In 1955, Lloyd Wilford of the University of Minnesota excavated mounds 3 and 10. In 1984, State Archaeologist Christy Hohman-Caine had been contacted by a real estate developer and had recommended that a 50 foot buffer be maintained around the site. Les Peterson, an archaeologist for the Trunk Highway Survey, had mapped the group in 1988 and had suggested that an 11th mound existed just north of the previously mapped extent. State

Archaeologist Mark Dudzik had visited the site in 2003 to confer with the city about the preliminary plat of Eaglewood Estates, but he did not confirm that the 11th mound mapped in 1988 was actually a burial mound.

On 4/7/06, the current State Archaeologist visited the site to meet with the developer and city officials and review the proposed final plat. The field review confirmed the mounds would be placed in an outlot that would be excluded from development. The city may become the owner of this outlot and use it as green space. The State Archaeologist approved the plat in a 4/7/06 email to the city, the landowner, and MIAC. It requested that the city maintain a 50 foot no-disturbance buffer around the mound group and that any future management decisions be coordinated with OSA, MIAC, and the Prairie Island Dakota Community. The 11th mound first mapped in 1988 was included within the burial ground boundary.

21WB35 – J B Pallet Company Industrial Expansion, Wabasha County: In June 2006, the Zoning Administrator for Lake City contacted the State Archaeologist regarding plans by J B Pallet Company to expand their plant into a possible burial mound area. The mound site was 21WB35, which had originally been recorded by Theodore Lewis in 1884 who mapped 57 mounds. A 1979 highway archaeology survey could find no trace of the mounds, but recommended avoidance of the entire area. In 1984, a borrow pit was placed in the east edge of the mapped area.

In 1997, the landowner proposed developing the site area and had archaeologist Christina Harrison survey the proposed development. Harrison could find no surficial trace of the mounds. Later that year, the OSA had the Mississippi Valley Archaeological Center (MVAC) conduct a formal burial authentication survey of the area, which included the machine excavation of a series of trenches. Only one possible feature – a shallow pit - was recorded and the State Archaeologist (Dudzik) sent a letter to the landowner on 5/19/99 requesting that the pit area be avoided by construction. The landowner died soon after and his heirs sold the property to J B Pallet.

The current State Archaeologist visited the site on 6/14/06 and documented that a road had been recently been graded through the site destroying the pit area documented in 1997. In a letter dated 6/29/06, the State Archaeologist informed the city and MIAC that site 21WB35 has probably been totally destroyed, but that it would be prudent for an archaeologist to monitor any construction outside of the new roadway.

Chapter 3: The State of Minnesota Archaeology

The first archaeology in Minnesota was done 150 years ago as White settlers became intrigued with ancient evidences of human occupation. It took 50 years before these evidences were confirmed as being of Indian origin. With the initiation of archaeological field schools in the early 1930s by the University of Minnesota, archaeology became a profession in Minnesota and “scientific” archaeology displaced avocational endeavors as the principal method of researching the state’s archaeological past. At the same time, avocational archaeologists organized the Minnesota Archaeological Society and began to publish *The Minnesota Archaeologist*.

By the second half of the twentieth century, archaeological research and education was being pursued at multiple institutions in Minnesota. With the passage of state and federal environmental legislation in the 1960s, archaeology changed again and was soon dominated by “cultural resource management” (CRM) concerns. CRM archaeology has significantly increased the number of archaeologists in Minnesota and the amount of money spent doing archaeology, but this has been a mixed blessing as CRM rarely has the opportunity to focus on broad research questions or make important results widely available to other professionals and the public.

This final chapter of the 2006 annual report will describe the current status of Minnesota archaeology, identify some essential needs, and present some suggestions for fulfilling these needs.

The Status of Minnesota Archaeology in 2006

The MORRC Report of 1964

Shortly after the passage of the Field Archaeology Act, the state of Minnesota formally recognized that archaeological sites were “important natural resources” and that such resources were not only inherently valuable, but played an important role in recreation and tourism. In 1964, the State Legislature’s Minnesota Outdoor Recreation Resources Commission (MORRC) issued a series of reports concerning historic and archaeological resources in the state. One of the reports was entitled *An Archaeological Program for Minnesota* with State Archaeologist Elden Johnson listed as the principal author. The report outlined a 10-year archaeological program and included agency responsibilities, a budget, statistics regarding known sites, and priorities for excavation and survey. It suggested that a Council for Minnesota Archaeology be established. The State Archaeologist based at the University of Minnesota was given responsibility for prehistoric sites and the Minnesota Historical Society given responsibility for historic sites.

The 1964 MORRC archaeology report noted that archeological sites were disappearing at an “alarming rate” and that the rate of destruction was accelerating due to “highway construction, the mushrooming of lakeshore cabins, and the spread of cities and towns...” The report listed 1,160 known prehistoric sites of which only 170 had been subjected to detailed archaeological investigation. A table was included listing numbers of prehistoric

sites by county and a map depicted 10 major areas of interest. The report provided a chart of archaeological cultures divided into the four traditional categories – Paleoindian, Archaic, Woodland, and Mississippian. These “traditions” were subdivided into a number of sub-cultures for Woodland and Mississippian.

The 10-year prehistoric archaeology research program outlined by Johnson was to begin in 1965 and was to include excavation of key sites and also surveys of state land. Two major excavations were anticipated each summer and university field schools were to play a key role. Surveys were to be conducted by two person crews each summer. The first key area identified for excavation was at multiple sites in the newly established Mille Lacs Kathio State Park. Of second importance was the Orwell Farm in Otter Tail County in order to assess the site’s potential for state purchase. The third identified site was the Grand Mound on the Rainy River. The cost for 10 years of research was estimated at \$290,000. No broad research questions were identified in the report.



Elden Johnson and Lloyd Wilford excavating in Kathio State Park in 1967.

Over the next 10 years, Johnson received funding from the state legislature and carried out most of the MORRC plan, focusing his personal efforts at Kathio State Park utilizing University of Minnesota field schools and graduate students. Johnson also tested the Orwell site (21OT7) in 1965, but the site was never purchased by the state and Johnson never wrote the report on his excavations. The Grand Mound site (21KC3) was excavated by one of Johnson’s graduate students, James Stoltman, in 1970. The MHS built a visitor’s center at the site in 1976.

Post-MORCC Archaeological Planning in Minnesota

Since the MORCC report, archaeology has moved from being an institution-based vocation focused on education and research to a business or government vocation focused on cultural resource management (CRM). While CRM archaeology has greatly increased the number of archaeologists working in Minnesota and has accomplished significant research, the majority of that research is not necessarily focused on the key archaeological research needs of Minnesota. Archaeological fieldwork done to review the environmental impacts of development projects has to be done where the development projects are, not where the best sites are that have the best chance of answering important archaeological questions. Furthermore, government agencies and private businesses have made limited attempts to provide archaeological education and produce professional publications.

Because planning is essential to CRM, the federal government in the late 1970s required states to develop comprehensive preservation plans. Critical to this process was the development of *historic contexts*. Historic contexts are organizational constructs that group

related property types (e.g., *prehistoric village sites*) together based on a similar culture, geographical distribution, and time period. Historic contexts not only help us identify the important cultural manifestations of the past, they help focus research on worthy topics.

Historic contexts were originally called “study units.” Each study unit needed an explanatory narrative, a temporal period, and a map of geographic limits. In September of 1981, the Minnesota State Historic Preservation Office (SHPO) established 15 study units. The study units were not divided into formal periods and there was no discussion of an eventually accepted tier system. There were four prehistoric study units – *Paleo-Indian*, *Archaic*, *Woodland*, and *Mississippian*, two Indian ethnographic units – *Dakota* and *Ojibway*, three exploration/fur trade era units – *French*, *British*, and *American*, and six post-White settlement units – *St. Croix Triangle Logging*, *Early Agriculture and River Settlement*, *Railroad Construction and Agricultural Development*, *Northern Minnesota Logging*, *Iron Mining*, and *Northern Minnesota Resort Industry*.

By 1985, the study units had been re-defined as “historic contexts.” The SHPO had MHS archaeologist Bob Clouse write an overview of the prehistoric contexts. Clouse expanded the original four study units into sixteen contexts. There was one *Paleo-Indian* context, two Archaic contexts (*Archaic*, *Old Copper*), 11 Woodland contexts, an Upper Mississippian context (*Oneota*), and a *Southwestern Minnesota Plains Village* context. Clouse provided a brief narrative overview of each context, a list of expected property types, and a shaded state map showing distribution.

By 1987, the SHPO had developed a three tier system of contexts: 1) Broad Statewide Contexts divided into three periods – *Prehistoric*, *Contact*, and *Post-Contact*, 2) Thematic Contexts, and 3) Local Contexts. In 1987, the SHPO contracted with the Institute for Minnesota Archaeology (IMA) to produce draft Prehistoric Period and Contact Period statewide contexts to deal with the contexts whose property types were principally or exclusively archaeological in nature.

In May 1988, the IMA sponsored a workshop at the Spring Hill Conference Center in Wayzata to discuss the contexts. Sixteen (16) Minnesota archaeologists attended with Hester Davis of the Arkansas Archaeological Survey serving as moderator. IMA then wrote draft narratives and delivered the drafts of the Prehistoric and Contact period contexts to the SHPO several months later. Clark Dobbs of the IMA is listed on the title page as the sole author of the context study, although Doug Birk, another IMA archaeologist, made substantial contributions to the fur trade related Contact Period contexts and Elden Johnson, a former Minnesota State Archaeologist and University of Minnesota professor then serving as executive director of IMA, wrote the *Kathio* and *Malmo* narratives.

The 1988 IMA Prehistoric Period document had a total of 29 statewide historic contexts, along with 3 “special” contexts - *Pipestone*, *Rock Art*, *Prehistoric Quarries*. The statewide contexts were placed in six stages or periods: *Pre-projectile Point* (1), *Fluted Point* (2), *Lanceolate Point* (2), *Archaic* (4), *Ceramic/Mound* (11), and *Late Prehistoric* (9). The Contact Period document had eight historic contexts; five Native American and three Euro-American.

In anticipation of the completion of the first comprehensive preservation plan for Minnesota, SHPO staff in 1989 revised the outlines of the Post-Contact Statewide Contexts. Each context included a brief narrative overview, a shaded distribution map, a list of property types, a list of examples drawn from National Register properties, and a bibliography. Two additional Post-Contact contexts were added to the original six – *Indian Communities and Reservations* and *Urban Centers*. The statewide Post-Contact contexts did not include archaeological considerations in the narratives, although the property type lists did include a few site types (e.g., trading posts, sunken steamboats) that could be considered archaeological. The word “archaeology” was not mentioned in the Post-Contact context document.

In August of 1989, the SHPO sent out the IMA’s 1988 Prehistoric and Contact period draft contexts to the Minnesota archaeological community asking for comments. Also in 1989, the IMA applied for a Legislative Commission on Minnesota Resources (LCMR) grant entitled “Pilot Implementation of the Statewide Archaeology Plan.” The grant was awarded, but the MHS was the recipient in order to have a well-established entity administer the funds. Using the LCMR funds, the SHPO contracted with IMA to revise the Prehistoric and Contact period contexts. Scott Anfinson, the new SHPO archaeologist, assisted Clark Dobbs with the revision. Anfinson also changed *Prehistoric* to *Precontact* as the initial period name.

In July of 1990, IMA submitted revised contexts for the Paleoindian and Archaic periods along with a revised Table of Contents, Introduction, and Bibliography. The Introduction included comments by Dobbs anticipating future revisions. The 23 Precontact (prehistoric) contexts were placed in five traditions: *Paleoindian*, *Archaic*, *Woodland*, *Plains Village*, and *Mississippian*. The IMA context documents also provided a list of broad archaeological research questions as well an overview narrative for each context that included context specific research questions. The 1990 IMA submittals along with the 1988 contexts that had not been revised were added to three-ring binders at the SHPO and became the official historic contexts. They were never published or distributed externally.

In the early 1990s, Anfinson worked on revisions of the early prehistoric contexts and the later prehistoric contexts from southwestern Minnesota. He also produced two thematic prehistoric contexts – *Lithic Scatters* and *Native American Quarries and Mines* and one Post-Contact Context – *Indian Communities and Reservations*. IMA completed additional Minnesota historic context work for the Department of Defense (DOD) in the late 1990s as part of the Central and Northern Plains Archaeological Overview, but this was not submitted to the SHPO by IMA as proposed context revision. The SHPO’s Post-Contact context outlines have not been significantly altered or augmented since 1990 with the exception of the *Indian Communities and Reservations* context.

In 1991, the Minnesota SHPO issued its first statewide comprehensive preservation plan. Revised comprehensive plans were issued in 1995, 2000, and 2006. These plans provide very limited discussion of archaeological needs and do not list the historic contexts. One of the few archaeological goals in the 2006 plan is to increase the number of archaeological sites on the NRHP. No attempt has been made by the SHPO to comprehensively revise the contexts since 1990.

The Decline of Institutional Based Archaeology

It remains the function of institutions to train the next generation of archaeologists and to focus research on questions determined by scientific interest not project location or agency management needs. Minnesota has a strong university system and several prominent museums that together once formed the backbone of archaeological research and education in the state. This is no longer the case, however, as summer field schools are now relatively small and few in Minnesota, the number of full-time Midwestern archaeologists at universities has declined, and non-university institutional support for research archaeology is almost non-existent.

Thirty years ago when CRM archaeology was beginning to hit its stride, the University of Minnesota-Minneapolis was still the acknowledged leader in archaeological research and education with three full-time Midwestern archaeologists and multiple well-attended summer field schools. The University of Minnesota-Duluth also had full-time staff engaged in Minnesota archaeology. There were robust archaeological programs that included field schools in the state university system at Moorhead, Bemidji, Mankato, and St. Cloud. Hamline University employed multiple archaeologists doing Minnesota fieldwork. The Minnesota Historical Society had an Archaeology Department with 12 archaeologists who were engaged in research-focused activities concerning early white settlement and the fur trade as well as CRM activities involving highway and state park surveys. The Science Museum of Minnesota had two full time archaeologists engaged in researching Minnesota's prehistoric past.

Today, the University of Minnesota-Minneapolis Anthropology Department has only one North American archaeologist and has not sponsored a Minnesota summer field school since 1991. The U of M's Interdisciplinary Archaeological Studies (IAS) program ceased operation in 2002. This program began as the Center for Ancient Studies (CAS) in 1973 and produced many noteworthy graduates. With the retirement of Rip Rapp in 2002, the University of Minnesota-Duluth closed its archaeometry lab and no longer has any Minnesota archaeologists on full time staff.

Bemidji State University eliminated its archaeological program with the retirement of its one archaeologist in 2006. The state universities at Moorhead, St. Cloud, and Mankato remain strong in undergraduate archaeology, but they have limited abilities to provide comprehensive advanced degree programs; only Mankato had an advanced degree program in FY 2006. The Science Museum of Minnesota no longer has an active Minnesota archaeology research program. The Minnesota Historical Society provides only minimal internal support for archaeology and its Archaeology Department is basically a DNR contract service. The SHPO based at the MHS employs a qualified archaeologist, but this archaeologist is completely funded with federal money and is necessarily focused on CRM duties rather than research and education. The SHPO dedicates very little of its annual federal Historic Preservation Fund (HPF) money for archaeological initiatives.

External non-CRM sources of local funding for archaeological research have also largely dried up. The late 20th century archaeological research programs at both the University of Minnesota and the Minnesota Historical Society were largely funded by the state legislature,

first through the Minnesota Outdoor Recreation Resources Commission (MORRC) and then its successor, the Legislative Commission on Minnesota Resources (LCMR). LCMR-funded archaeology included the *Statewide Archaeological Survey* (1977-81), *Bringing Archaeology to the Public* (1990-92), and the *Minnesota Shipwreck Initiative* (1990s). Recently, however, the LCMR changed their funding criteria to basically exclude cultural resources initiatives.

Another sad loss to archaeological research in Minnesota was the demise of the Institute for Minnesota Archaeology (IMA) in 2002. Founded in 1982 by Clark Dobbs, Doug Birk, Ted Lofstrom, and Tom Trow, the mission of the IMA was to promote archaeological research, education, and preservation. The research interests of Dobbs (Late Prehistoric of the Red Wing area) and Birk (the fur trade) originally dominated IMA activities, although other research and public educational initiatives soon proved fruitful. As the organization grew, economic pressures forced the IMA to expand into contract archaeology in 1992. This expansion ultimately became divisive and contributed to the demise of the organization 20 years after its founding. The loss of IMA has significantly decreased archaeological research and public education in Minnesota.

The Rise of Cultural Resource Management Archaeology

Minnesota has basically two levels of review regarding the assessment of development impacts to archaeological sites. The federal level is grounded in Section 106 of the National Historic Preservation Act, which requires federal agencies to consider the impact of their undertakings on cultural resources and consult with knowledgeable entities regarding those impacts. Undertakings include developments on federal land, projects receiving federal funding, or projects subject to certain types of federal permits. There are other federal “umbrella” laws like the National Environmental Policy Act (NEPA) and agency specific laws like Section 4f of the Department of Transportation Act that also have cultural resource review criteria.

In response to the federal laws, most large funding, permitting, or land management federal agencies have Minnesota based staff charged with fulfilling their CRM obligations. A list of these agencies has been presented in the section on Minnesota Archaeologists below. These agencies are required to consult with the State Historic Preservation Office (SHPO) and Tribal Historic Preservation Offices (THPOs). Minnesota currently has four federally recognized THPOs (Mille Lacs, Leech Lake, Bois Forte, and White Earth). The principal funding supporting both the SHPO and the THPOs is federal as their duties are related to the National Historic Preservation Act.

At the state level, the most important CRM law is the Field Archaeology Act (MS 138.31 - .42), which requires state and local agencies to submit plans to the OSA and the MHS when developments on their property could harm archaeological sites. Unlike the federal system, it is the agency undertaking the work that is responsible rather than the agency funding or permitting the work. The Department of Natural Resources (DNR) and the Office of the State Archaeologist (OSA) are the only two state agencies that have hired archaeological staff in direct response to the Field Archaeology Act. MnDOT employs five archaeologists in their Cultural Resources Unit, but they are primarily funded with federal money and focus their review on federally funded projects.

Another important state environmental law is the Minnesota Environmental Policy Act (MS 116d) requiring Environmental Assessment Worksheets (EAWs) for certain local government actions even when those actions pertain to private land. As noted in Chapter 1 of this report, however, there is no requirement that impacts to archaeological sites be avoided. Provisions of Minnesota's Critical Areas Act (MS 116g), Minnesota Water Law (MS 103f), and the Outdoor Recreation Act (MS 82a) also require consideration of archaeological impacts in certain situations, although no agency monitors compliance.

Minnesota Professional Archaeologists in 2006

There are currently about 60 supervisory level archaeologists working full-time in Minnesota doing Minnesota archaeology. Most of these archaeologists are considered "qualified" under state and federal statutes to be licensed to serve as principal investigators on government-sponsored or regulated archaeological fieldwork. They are qualified by having an advanced degree in a field directly related to archaeology and an appropriate level of experience. These 60 archaeologists do not include archaeologists who almost exclusively do fieldwork outside of Minnesota (e.g., Old World archaeologists), archaeologists who reside outside of Minnesota, people who have advanced qualifications but don't do archaeology full-time, or people that work full-time doing archaeology but do not have advanced qualifications.

Besides the 60 principal investigator level archaeologists in Minnesota, there are perhaps an equal number of archaeologists who do not have advanced degrees, but still have full-time employment doing archaeology. They work as field assistants, analytical specialists, or office personnel. There are also seasonally employed archaeologists whose numbers vary greatly from year to year, with most doing archaeological field work during the warm season.

The great majority of the archaeologists in Minnesota make their living doing CRM archaeology either as government employees or as employees of privately owned CRM firms. With regard to "qualified archaeologists," the government archaeologists include 12 federal, 11 state, and 4 Tribal archaeologists. Federal agencies with full-time archaeologists in Minnesota include the Forest Service, the National Park Service, the Army Corps of Engineers, the Natural Resource Conservation Service, the Federal Highway Administration, and the Bureau of Indian Affairs. State entities with qualified archeologists include the Department of Transportation, the Department of Natural Resources, the Minnesota Historical Society, and the Office of the State Archaeologist. As for archaeologists associated with Indian governments, Bois Forte, Leech Lake, and the 1854 Authority all employ qualified archaeologists, with Red Lake and White Earth also having archaeological staff.

There are about 15 Minnesota-based consulting firms that regularly do archaeology in Minnesota. They employ perhaps 25 qualified archaeologists and perhaps an equal number of lower level archaeologists. There are also a number of archaeological firms that are based outside of Minnesota that do some contract archaeology in Minnesota. The SHPO maintains a list of about 45 firms (http://www.mnhs.org/shpo/review/contract_arch.pdf) who have expressed an interest in doing archaeology in Minnesota. About two thirds of these are based outside of Minnesota and about half of these non-state firms have not worked in Minnesota.

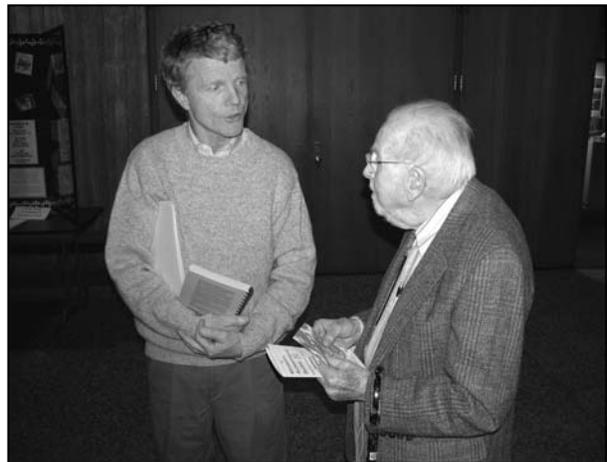
The remainder of professional archaeologists in Minnesota work for museums or institutions of higher education. The University of Minnesota-Minneapolis has a number of full-time archaeologists in the Anthropology Department, but only one specializes in Minnesota archaeology; several graduate students with Master's Degrees occasionally act as supervisory archaeologists. The University of Minnesota-Duluth does some Minnesota archaeology, but does not have a full-time Midwestern archaeologist on staff. Minnesota State University-Moorhead has three archaeologists who work in Minnesota, St. Cloud State University two, and Minnesota State-Mankato one. Hamline University is the only private school in Minnesota with archaeologists who work in Minnesota and it has two. The Science Museum of Minnesota has one archaeologist acting as a curator, although he does little fieldwork.

The Society for American Archaeology (SAA) is the principal professional organization for archaeologists in North America. Its membership is somewhat reflective of professional activity in a state. There are currently 59 SAA members residing in Minnesota. Of these, 29 (49%) are located at institutions (primarily universities), 16 (27%) at private consulting firms, and 4 (7%) at federal or state agencies. There are 10 (17%) other SAA members in Minnesota with no apparent institutional, business, or agency affiliation. It is disappointing that only one federal archaeologist and only three state agency archaeologists in Minnesota are SAA members.

The Council for Minnesota Archaeology (CMA) represents professional archaeologists in Minnesota (<http://mnarchaeology.org/>). The CMA was founded in 1971 as a non-profit organization dedicated to promoting archaeological research and interpretation. There were 13 founding members who basically represented all of the professional archaeologists in Minnesota at that time as well as the president of the Minnesota Archaeological Society. CMA has quarterly meetings, sponsors an annual research symposium, and provides an occasional newsletter.

Avocational Archaeologists

The Minnesota Archaeological Society (MAS) started in 1929 when several Indian artifact collectors began meeting to discuss their finds. The first publication of their journal, *The Minnesota Archaeologist*, was in 1935, the same year the organization opened a gallery at the Walker Art Museum. The MAS formally incorporated in 1936 and gradually gained the support of the small professional community. Today, the MAS is dedicated to the preservation and study of archaeological resources and includes both avocational and professional archaeologists among its members. It still publishes *The Minnesota Archaeologist* and holds quarterly membership meetings. More information can be found at their website (<http://www.mnarchaeologicalsociety.org/index.html>).



State Archaeologist Scott Anfinson chats with MAS founder Monroe Killy at an MAS meeting.

There are also a number of local archaeological organizations (e.g. Kandiyohi County) and statewide organizations specializing in sharing information about artifacts among avocationalists. The Gopher State Archaeological Society is a member of the Central States Archaeological Societies (CSAS) that publishes the *Central States Archaeological Journal* begun in 1999.

Addressing Archaeological Needs

Minnesota has many archaeological needs involving site protection, research, and education. Each of these needs is multi-faceted and inter-connected. The needs can be addressed by focusing institutional priorities, promoting statutory authority and clarity, and making individual commitments. Failure to explicitly address these needs leads to deficiencies in funding, regulatory authority, and professional leadership, which in turn lead to site destruction, educational inadequacies, and limited research.

Site Protection

Statutory Considerations

Deficiencies: Both the Private Cemeteries Act (MS 307) and the Field Archaeology Act (MS 138.31 - .42) are in need of amendment. Most of the necessary changes have to do with clarification rather than substantial alterations of what the laws require. For instance, the Private Cemeteries Act lacks a definition section so critical concepts such as “authentication” and “burial ground” have no clear legal meaning. The act is murky as to who has management responsibilities in certain cases and what state funding obligations are. It also could use some internal reorganization to make it more consistent and logical.

The Field Archaeology Act has a number of problem areas: 1) the *Legislative Intent* section emphasizes regulation of archaeology rather than preservation of sites; 2) the *Definition* section lacks several key concepts such as *agency*, *paramount right of the state*, *significant site*, and *undertaking*, as well needing revision of certain words (e.g., *object* should eliminate “skeleton” and add “artifact” and *state site* should only refer to sites on non-federal public land and should eliminate the 1875 bottle/ceramic exclusion); 3) the MHS role in licensing should be eliminated as it is redundant with the OSA role and inappropriate because MHS is not a state agency; 4) environmental review sections should be more consistent with federal legislation (e.g., review of *all* state *sponsored* undertakings that could harm significant sites); 5) it should be coordinated with and refer to other pertinent statutes such as 307 and environmental laws that involve archaeological matters and the State Archaeologist; and 6) the roles of various agencies should be clarified and expanded (e.g., agencies should submit development plans to MHS-SHPO, OSA, and when appropriate to MIAC).

Possible Remediation: The OSA intends to undertake a legislative initiative in 2007 for changes to MS 307, which will attempt to clarify and streamline the law. This will be done with careful consultation with all major stakeholders including the MIAC, MnDOT, DNR, MHS, and the Council for Minnesota Archaeology. In 2008, a legislative initiative may be undertaken for the Field Archaeology Act.

Development Plan Review

Deficiencies: Because the agency plan review duties of the State Archaeologist listed in MS 138.40, Subd. 3 are shared with the Minnesota Historical Society (MHS), the State Archaeologist in the past has deferred to the MHS to take principal responsibility for plan review. The State Historic Preservation Office (SHPO) based at the MHS has a staff section (Review and Compliance) dedicated to environmental review due to federal requirements. While the Minnesota SHPO is widely recognized as one of the most competent in the nation, this deference to the SHPO for non-federal plan review has led to some deficiencies in the state mandated review process.

As a practical matter due to limited staff and funding, the SHPO has interpreted MS 138.40 “agency” to mean only state agencies, although it is more accurately interpreted as meaning all non-federal public agencies in Minnesota including county and city governments. Because most agencies do not have the internal resources to determine if archaeological sites may be impacted by projects, they must necessarily rely on the OSA or the SHPO for “expert” advice. Yet most agencies currently do not submit all their plans to either the OSA or SHPO. For instance, counties and cities rarely submit non-federal highway projects for review, although such projects represent the majority of local highway development activity in the state.

If agencies were to send in all their development plans for review, the OSA and the SHPO would be overwhelmed based on current staffing and they would not be able to respond. Yet the failure to submit such plans is technically a breach of state law and countless archaeological sites are destroyed each year by unreviewed projects.

The Environmental Assessment Worksheet (EAW) process required under MS 116d (Mn Rules 4410) is the major environmental review process in the state that considers all major development actions that have potential to have significant environmental effects. Developments include privately funded projects and projects on private property. Environmental effects include effects to significant historical and archaeological resources (EAW Question 25a).

In May 2004, the SHPO, the only cultural resources review agency that is on the current EAW Distribution List, stopped reviewing EAWs submitted by local governments due to funding and staff cuts. Although the OSA is occasionally asked by citizens or developers for information or comments regarding potential impacts of EAW-related projects to archaeological resources, these requests are haphazard and involve very few of the total EAWs undertaken in Minnesota. There is little doubt that unreviewed projects subject to EAWs are destroying numerous archaeological sites, including burial grounds.

Possible Remediation: The OSA will work with state and local agencies to make them more aware of impacts to archaeological sites by various types of projects. If agencies were provided even limited access to the site database, they may be able to consider impacts to known sites early in the planning process. It would be beneficial if agencies had access to predictive models (such as MnDOT’s MnModel) so effects to currently unrecorded sites

could also be considered. The OSA may pursue additional funding to add a staff archaeologist whose primary duty would be development plan review. This would require a significant OSA budget increase.

As noted earlier, the State Archaeologist has submitted a request to the Environmental Quality Board (EQB) for the OSA to be included on the official EAW Distribution List. The OSA will not respond to every submittal, only those that potentially threaten known or suspected site areas.

Information Management

Deficiencies: Because effective agency plan review and response to calls from the public requesting information rely on accurate and easily accessible knowledge of site distribution, the site databases maintained by the OSA and the SHPO are essential. Yet the current databases are neither comprehensive nor widely accessible.

The *Site and Report* databases do not include boundaries of sites and survey areas. The *Burial Site Database* maintained by the OSA does not include many reported or suspected burial sites contained in OSA paper files if these sites have not been confirmed by professional archaeologists or are not listed in the *Archaeological Site* database. In addition, a compilation of historic era burials by Pope and Fee (1998) lists about 6,000 cemeteries, some unplatted and the majority of which are not contained in the OSA burials database.



Winona County Historical Society Director Mark Peterson inspects an early grave at the Homer Ridge Cemetery.

Regarding accessibility, the OSA and the SHPO each have copies of the *Archaeological Site Database* on their internal computer systems. Agency or public inquiries about the presence or absence of sites in a particular location can be efficiently answered by the OSA and the SHPO if the land parcels involved are discrete or the daily numbers of inquiries low. A few state and federal agencies are also given electronic copies of this database, although these copies are not necessarily updated at regular intervals. A limited version of the OSA's *Burials Site Database* is available over the Internet to local governments who have obtained a password, but few local governments take advantage of this service.

Most agencies and all contract archaeologists in Minnesota do not have direct access to the site databases. To obtain complete site information they must visit the SHPO or OSA offices. Both these offices have limited ability to handle large numbers of visitors, requests for extensive photocopies, or complicated database searches.

Possible Remediation: *Burials Site Database*- As all confirmed burial sites subject to State Archaeologist review are defined as archaeological sites under both state and federal law, an effort will be made in FY 2007 to assign official state site numbers to any confirmed but

unnumbered sites. Alpha numbers may be assigned to burial sites that are unconfirmed, but are based on relatively reliable information. All such sites will be added to the database.

Archaeological Site Database - As of January 1, 2007, the OSA will take over updating the master archaeological site database that is shared with the SHPO. The OSA is working with the Minnesota Land Management Information Center (LMIC) to attempt to provide access to the site database on-line both for data input and output. This on-line access should be available to appropriate agencies and contract archaeologists. Iowa, South Dakota, and Wisconsin already have access to their site databases on-line. The OSA will also attempt to add site boundaries in GIS format by re-designing the site inventory form.

Archaeological Survey Manual

Deficiencies: Agencies and contract archaeologists in Minnesota must follow various guidelines to insure their fieldwork and reporting is completed in a comprehensive and professional manner. Some of these guidelines are agency specific, while others apply to all projects reviewed under federal and state authorities. The current State Archaeologist, while at the SHPO, wrote the guidelines used in Minnesota for projects reviewed by the OSA and the SHPO (Anfinson 2005). Due to information that has been obtained from the MnDOT-sponsored Deep Testing and Farmstead projects as well other insights and advances over the last five years, the SHPO Manual is in need of an update.

Possible Remediation: The current SHPO Archaeologist has agreed to co-author and jointly issue a revised version of the manual with the State Archaeologist. The revised version will contain information that has been obtained from the MnDOT Deep Testing and Farmstead projects as well other insights and advances over the last five years

Research

Deficiencies: The state's major scientific and historical institutions have dramatically decreased their commitment to promoting research in Minnesota archaeology. The Science Museum of Minnesota began an active archaeological field research and publication program in the 1950s under the direction of Elden Johnson. This research continued into the 1990s under Tim Fiske, Joe Hudak, Tim Ready, and Orrin Shane, but it effectively ended with Shane's departure in 2001.

The Minnesota Historical Society (MHS) was the first institution in the state to pursue archaeological research beginning with its Committee on Archaeology in the 1860s. It encouraged the work of the Hill-Lewis and Brower surveys in the late 19th century and the supported the publication of the results of those surveys in Newton Winchell's pivotal *Aborigines of Minnesota* (1911). Warren Upham and Willoughby Babcock acted as the MHS chief archaeologists in the early 20th century. MHS-led WPA excavations of historic and prehistoric sites during the Depression provided important information and training. The MHS began excavations at Fort Snelling in the 1950s and continued those excavations for the next 40 years. Some of the first underwater archaeology in the nation was done by MHS archaeologists as part of the Superior-Quetico project in the 1960s and 1970s.

The MHS formed an Archaeology Department in 1969 after undertaking a highway survey initiative. The department, under the direction of Alan Woolworth, also pursued research at Grand Portage, the Pine River Fur Post, the Upper Sioux Agency, Jeffers Petroglyphs, and Grand Mound as well as regional archaeological surveys. Also in 1969 the MHS Press began a publication series in both historical and prehistoric archaeology that would eventually include 17 volumes. In 1975, a second highway survey program was added for local governments with MHS paying 20% of the cost. In 1977, the MHS received a major LCMR grant to undertake a Statewide Archaeological Survey (SAS) supervised by the SHPO. The SAS reorganized the site files, examined hundreds of known sites, found hundreds of new sites, and developed the first sophisticated model for predicting prehistoric site locations.

With the ending of funding for the SAS and a state budget crisis in 1981, the MHS decided to virtually eliminate its archaeological endeavors except for internal historic site development and the MnDOT-funded highway surveys. MHS archaeological publication slowed to one volume (a reprint) in the 1980s and eventually ended in 1997. The last MHS main museum exhibit with a major archaeological component was a fur trade exhibit in the early 1980s. When the new Minnesota History Center was built in the early 1990s, key equipment was removed from the archaeological laboratory at Ft. Snelling and placed in conservation labs at the new facility. The MHS closed their Grand Mound site interpretive center in 2003, the only historic site facility exclusively focused on an archaeological manifestation.

Curation of archaeological materials has also become more difficult and expensive. Prior to the last few years, the MHS accepted archaeological materials from both public and private entities at no charge, but a new policy has been recently implemented by the MHS that makes archaeological curation there both expensive and complicated. The University of Minnesota – Minneapolis Anthropology Department transferred their archaeological collections to the MHS in 1999 and no longer maintains a permanent curation facility for Minnesota artifacts. The joint UMD – Superior National Forest curation facility at Duluth closed in 2002. Curation of general archaeological materials from Minnesota is not done by the Science Museum of Minnesota (SMM). There are no institutions in the state concerned with Minnesota archaeology that meet federal curation standards other than MHS and SMM, although several universities do meet state standards.

Directed research on Minnesota archaeology at the state's public and private universities has also declined over the last 30 years due to loss of staff, reduction in the number of field schools, and a political environment that has encouraged academic archaeologists to pursue archaeological work outside the state. Graduate programs in Anthropology at the University of Minnesota and Minnesota State Mankato have continued to produce advanced level archaeologists, but few of these archaeologists have remained in a position to consistently pursue research on Minnesota archaeology.

It can be argued that the majority of professional archaeologists employed in CRM activities have been distracted from fully participating in archaeological research that goes beyond the needs of their contractual obligations. The best reflection of this is the lack of publications about Minnesota archaeology in professional journals. While the number of Minnesota

archaeologists has increased ten-fold over the last 40 years, this has not been reflected by professional publications. With regard to national journals, only two articles about Minnesota archaeology have appeared in *American Antiquity* in the last 40 years and only four articles in *Historical Archaeology*. Minnesota presence in regional journals fares little better with only two articles about Minnesota in *Midcontinental Journal of Archaeology* in the last 25 years and only eight articles in *The Plains Anthropologist* during this time. There is an attendant lack of mention of Minnesota sites in standard archaeological textbooks.

Important archaeological research has been undertaken by MnDOT over the last decade through the use of federal funds, which only require a 20% state match. MnDOT is to be commended for the innovative MnModel, Deep Testing, Farmstead, and soon to be completed Woodland Historic Contexts project. MnDOT has even put the reports of the MnModel and Deep Testing projects on line (<http://www.mnmodel.dot.state.mn.us/>). MnModel is not easily accessible by non-MnDOT staff, however, and the Deep Testing protocols are not always appropriate for non-MnDOT projects.

Possible Remediation: Minnesota critically needs more research in a number of areas. With regard to the major prehistoric traditions, the Paleoindian Period is almost unknown in Minnesota with few known intact sites and no excavated sites yielding extinct fauna or fluted points. The Archaic Period is also poorly known, although it lasted for perhaps 7,000 years or half the prehistoric period. Woodland research questions include the timing of the appearance of the first ceramics and of intensive wild rice use. Regarding the Late Prehistoric, we need to get a better understanding of the rapid rise and fall of certain horticultural complexes and the great changes just prior to White intrusion. We especially need more radiocarbon dates for all of these prehistoric periods.

Historical archaeology in Minnesota is still in its infancy and we need a better understanding of what sites are really worthy of study and preservation. Once focused exclusively on the fur trade and frontier forts, historical archaeology is now looking at industrial processes, logging, farmsteads, shipwrecks, and urban neighborhoods. Curation is a major issue for historical archaeology with huge numbers of artifacts and expensive stabilization costs for materials such as ferrous metals and organics.

As for curation of archaeological materials in general, the requirements of state law are less stringent than those of federal law. MS 138.37, Subd. 1 requires that artifacts from state sites (i.e., public land) be “properly cared for” and “conveniently available for study by students of archaeology.” The State Archaeologist will develop state curation standards in FY 2007 that will encourage more institutions to develop adequate curatorial facilities.

Commitment by the state’s major educational institutions is still the key to maintaining strong research archaeology. North American prehistoric archaeology is in danger of becoming obsolete at many Midwestern universities as departments increasingly focus on the archaeology of other countries and the archaeology of the non-Indian North American past. University field schools not only train the next generation of archaeologists, they help answer this generation’s research questions. The University of Minnesota needs to re-establish annual summer field schools. This could be facilitated by cooperative ventures with other

institutions and the use of adjunct faculty. The Minnesota Historical Society and the Science Museum of Minnesota need to re-engage in promoting, conducting, publishing, and exhibiting Minnesota archaeology.

Professional archaeologists employed in CRM activities have ethical obligations to promote research and to make the results of their endeavors publicly accessible. All Minnesota archaeologists need to submit articles to local, regional, and national journals. We desperately need a book-length overview of Minnesota archaeology, a need that will hopefully be fulfilled in the near future. Professionals should also join local, regional, and national societies to support archaeological publications and keep abreast of current research.

Agencies and companies engaged in CRM should make a greater effort to promote and report archaeological research. For example, paid staff time should include attending professional conferences and writing professional articles. MnDOT should explore venues to make MnModel more accessible to other agencies and archaeologists.

As for funding, the LCMR needs to once again consider cultural resource initiatives. The LCMR and its predecessor MORCC have provided critical funding to archaeology since the mid-1960s, but beginning in the late 1990s, LCMR changed funding priorities to virtually eliminate consideration of cultural resources. MS 116b.02, Subd. 4 states that "Natural resources shall include ... historical sites." MS 86A.02, Subd. 1 states: "The legislature finds that the unique natural, cultural, and historical resources of Minnesota provide abundant opportunities for outdoor recreation and education, and finds that these opportunities should be made available to all citizens of Minnesota now and in the future." Cultural resources are therefore natural resources as far as the state is concerned and have a valuable role to play in recreation and education. It is high time LCMR began to recognize this again.

Some of the pressing archaeological issues that could be funded by LCMR include:

- What is the status and condition of Minnesota recorded but unmarked burial sites including over 12,500 Indian burial mounds and hundreds of pioneer cemeteries?
- Where are the different types of archaeological sites located in different regions of Minnesota and at what rate are they being destroyed?

Education

Deficiencies: Anthropological archaeological programs are active at five public universities and one private university in Minnesota. There are two graduate programs in Anthropological archaeology, one at the University of Minnesota and one at Minnesota State – Mankato. While the University of Minnesota – Minneapolis Anthropology Department no longer offers a Minnesota summer field school, it does have six staff archaeologists, active graduate students, and a modern archaeological laboratory. It has also begun a Masters Degree program in CRM utilizing several experienced adjunct faculty.

The most robust undergraduate program for Minnesota archaeology is at Minnesota State – Moorhead where there are three active Midwestern archaeologists and a well-attended summer field school, although in recent years the field schools have been held at sites in

North Dakota. Archaeology undergraduate programs at St. Cloud, Mankato, and Hamline are also strong, although they are hampered by limited numbers of staff specializing in Midwestern archaeology.

Public education in archaeology was severely impacted by the loss of the Institute for Minnesota Archaeology (IMA) in 2003. The Archaeology Department of MHS has picked up some of the slack mainly due to the initiative of department head Pat Emerson. The department maintains comparative collections of faunal remains, lithic raw materials, and common artifacts, as well as sponsoring regular volunteer nights and other initiatives.

Minnesota Archaeology Week provides multiple public education experiences once a year in the spring. The Passport in Time program at Chippewa and Superior National Forests provides one of the few opportunities for untrained members of the public to actually get involved in site excavation.

Currently, there are no major archaeological exhibits at either the Minnesota History Center or the Science Museum of Minnesota, the two principal museums of Minnesota history. The MHS does have archaeological components featured at their Ft. Snelling, Jeffers Petroglyphs, Birch Coulee, Ft. Ridgely, Northwest Company Fur Post, Lower Sioux, and Sibley House sites. The federal government has two National Monuments in Minnesota – Pipestone and Grand Portage – both of which are essentially archaeological in nature and feature archaeological materials on display.

There are few other places where the public can go to view interpreted archaeological sites in Minnesota. Mill Ruins Park and First Bridge Park along the central Minneapolis riverfront are two historical archaeological exceptions. Mille Lacs Kathio State Park is a prehistoric site exception. A number of other state parks have limited archaeological interpretation including Itasca, Lake Carlos, McCarthy Beach, Helmer Myre, and Rice Lake.

Possible Remediation: The most important improvement that needs to be made is for the University of Minnesota Anthropology Department to once again sponsor summer field schools in Minnesota. These field schools need to be accompanied by rigorous laboratory training focused on critical analytical techniques. As mentioned above, the use of cooperative ventures and adjunct faculty may make these field schools a reality. CRM archaeology needs to become an explicit part of university archaeological education at both the graduate and undergraduate levels. The University of Minnesota has initiated such a program with programs also beginning at Mankato and St. Cloud.

We also need more public education. The public has a hunger for archaeological knowledge and experiences that Archaeology Week alone cannot satisfy. Both the Minnesota History Center and the Science Museum of Minnesota should consider including major archaeological exhibits featuring Minnesota materials. CRM archaeology, both agencies and businesses, needs to be more fully engaged in public education. Attractive and comprehensive archaeological curriculum materials should be made readily available for grade schools and secondary schools in Minnesota. The Internet has made public education initiatives both easily affordable and widely accessible.

Summary – The State of Archaeology in Minnesota in 2006

It has been over 40 years since Elden Johnson, the first State Archaeologist, outlined a plan for Minnesota archaeology in the 1964 MORRC report. Johnson's objectives were basically accomplished within his 10-year period, although the results of most of these endeavors were never published. At the end of this 10-year planning period, the future looked bright for Minnesota archaeology.

The mid-1970s in many ways represent a high point for archaeology in Minnesota, certainly with respect to education and research. The University of Minnesota - Minneapolis had three full-time staff archaeologists doing archaeology in Minnesota, including conducting multiple summer field schools. A Center for Ancient Studies was established at the University in 1973 and there was a robust paleoecological program under the leadership of Herb Wright that provided detailed environmental reconstructions for the prehistoric period. George (Rip) Rapp, a geology professor at the Minneapolis campus who had been active in classical archaeology, transferred to the Duluth campus in 1975 and soon established an archaeometry laboratory there. Four of the state universities - Mankato, Moorhead, Bemidji, and St. Cloud - as well as at least two private schools - Hamline University and Normandale College - had active Minnesota archaeology programs that included summer field schools.

The Minnesota Historical Society in the mid-1970s had about 20 staff archaeologists involved in Ft. Snelling research, the Statewide Archaeological Survey, historic sites archaeology, underwater archaeology, fur trade archaeology, state and local highway surveys, state park surveys, and general contract surveys. The MHS Press was publishing books on both prehistoric and historical archaeology. The Science Museum of Minnesota was doing fieldwork in southwestern Minnesota under the direction of two staff archaeologists and also produced archaeological publications.

As for CRM archaeology, it was still in its infancy in the mid-1970s in Minnesota. Only one federal agency (Army Corps of Engineers) had a staff archaeologist and no state agencies had staff archaeologists. The first privately-based CRM firm in Minnesota (Terra) was established in 1977 and by the end of the 1970s it was joined by several more.

In 1976, consideration of Indian burials was added to the Private Cemeteries Act, expanding the duties of the State Archaeologist and building a much needed bridge between the Indian and archaeological communities. Archaeologist's positive interactions with Indians also increased due to Elden Johnson's 1973 editorial in *American Antiquity* and his chapter in the nationally formative 1976 Arlie House report.

In 1971, the Council for Minnesota Archaeology (CMA) was established as recommended by the 1964 MORCC report. Throughout the 1970s, professional membership in CMA was almost universal and meetings were congenial and productive. This situation quickly deteriorated in the 1980s when many professionals dropped out of CMA as the meetings became more concerned with internal politics than archaeological research or site protection. The Minnesota Archaeological Society (MAS) also thrived in 1970s with good membership

numbers and regular publication of both *The Minnesota Archaeologist* and an occasional series that included nine publications.

Thirty years later in 2006, the archaeological state of affairs is very different in Minnesota. Cultural Resource Management now dominates archaeology and has greatly increased the number of archaeologists working in the state, particularly the number of archaeologists with advanced degrees. Unfortunately, this increase in archaeologists has not led to a parallel increase in archaeological research. There are fewer field schools and fewer Minnesota research initiatives at the state's major institutions. The number of professional publications has actually decreased.

The loss in the last few years of the Institute for Minnesota Archaeology, UMD's Archaeometry Lab, and the University of Minnesota's Interdisciplinary Archaeological Studies department has also adversely affected archaeological research and education in Minnesota. The opportunities for public involvement in Minnesota archaeology are few and membership in the Minnesota Archaeological Society has decreased.

There are a number of positive developments, however, when we compare Minnesota archaeology today to that of 30 years ago. The Office of the State Archaeologist is now funded. The relationship between archaeologists and Indians has continued to improve, in large part due to the Cooperative Stewardship Workshops held during the last two years. Archaeological classroom education remains strong at the University of Minnesota, three state universities, and at Hamline University. Both DNR and MnDOT have strong internal commitments to the consideration of archaeological impacts of their projects. Multiple federal agencies have archaeological staff. Private consulting firms employ significant numbers of archaeologists and make significant contributions to archaeological research.

Technological advances have also made substantial contributions over the last 30 years. While mainframe computers were occasionally used for statistical analysis in the 1970s, today computer use is universal in Minnesota archaeology for word processing, data management, and research applications. The widespread availability of desktop computers in the mid-1980s and the Internet in the 1990s made this possible. Computer based geographic information systems (GIS) are now essential for data access and site locational modeling. Global positioning systems (GPS), a variety of electronic remote sensing techniques (e.g., ground penetrating radar), and advances in radiocarbon dating have also been essential to modern archaeology.

Thus the state of Minnesota Archaeology gets a mixed review in 2006. Education in North American archaeology has decreased and may be in danger of further decreases in the near future with the retirement of key staff at several institutions, but the addition of talented young staff at a number of institutions provides some long term stability. Research is static; there is greatly increased funding for archaeological work, but less focus on important research questions due to the emphasis on business and management concerns. More agencies and archaeologists are engaged in site protection, but the rapid acceleration of urban sprawl and lakeshore development has increased the numbers of sites that are destroyed.

We have made many improvements over the last 30 years, but we have many missed opportunities and are far behind many other states. In order to improve archaeology in Minnesota we need strong commitments from not only archaeologists, but from public institutions. Archaeology remains a topic of intense public interest, but archaeological sites are increasingly vulnerable and are being rapidly destroyed.

In the end, it is the public that will decide if Minnesota archaeological sites are worth preserving and if Minnesota's past is worthy of archaeological study because neither preservation nor research can occur without public funding and public laws. But these decisions will rely on the availability of information or the lack of it provided by archaeologists. If archaeologists choose to just run successful businesses or to just make appropriate management choices, then we ultimately will be responsible for public decisions that may harm our profession and contribute to the destruction of the rich archaeological legacy of our state.

In conclusion, these steps should be taken to improve the state of archaeology in Minnesota:

Funding Initiatives

- LCMR funds need to be restored to archaeological projects such as re-instituting the statewide archaeological survey and a comprehensive survey of burial sites.
- The legislature needs to provide additional funding to the SHPO and the OSA to increasing staffing to comprehensively review agency development plans.

Institutional Initiatives

- Educational institutions need to provide more Minnesota archaeological field schools, more Midwestern archaeology staff, and more CRM- focused classes.
- Museum institutions need to hire archaeological research staff, produce archaeological publications, and provide Minnesota archaeology exhibits.
- The SHPO needs to revise the historic contexts, designate more federal HPF funds for archaeology, and increase archaeological NRHP nominations.
- The OSA needs to make site inventory databases more available to contract archaeologists, development agencies, and local governments and promote the revision of state legislation to better protect sites.
- State agencies need to promote the publication of significant CRM results from projects they sponsor and more comprehensively review agency-funded developments for effects to archaeological sites.

Individual Initiatives

- Professional archaeologists need to submit more articles to national, regional, and local journals, publish more books on Minnesota archaeology, become more engaged in research beyond contract and management requirements, and engage more with the general public to promote archaeology.

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Glossary of Minnesota Archaeological Terms

Agency – any agency, department, board, office or other instrumentality of the state, any political subdivision of the state, any public corporation, any municipality, and any other local unit of government (MS 114c.02).

Archaic Tradition – The post-Paleoindian cultural tradition characterized by the disappearance of lanceolate projectile points and the appearance of stemmed and notched points beginning about 8000 B.C. Other Archaic developments include ground stone tools, domestic dogs, cemeteries, copper tools, and diverse hunting-gathering economies. The Archaic lasts until about 500 B.C.

Archaeological Site – a discrete location containing evidence of past human activity that holds significance for archaeologists.

Area of Potential Effect (APE) – the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of archaeological sites.

Archaeology - the scientific study of important physical remnants of the cultural past.

Artifacts - natural or artificial articles, objects, tools, or other items manufactured, modified, or used by humans that are of archaeological interest.

Authenticate - to establish the presence of or high potential of human burials or human skeletal remains being located in a discrete area, to delimit the boundaries of human burial grounds or graves, and to attempt to determine the ethnic, cultural, or religious affiliation of individuals interred.

BP – Before Present; this is an expression of age measured by radiocarbon dating with “present” set at 1950, the first year radiocarbon dating became available. It is more correctly stated as “radiocarbon years before present” or RCYBP. It does not mean the same as “years ago” because raw radiocarbon dates need to be corrected for several inherent errors in order to be converted to actual calendar years.

Burial - the organic remnants of the human body that were intentionally interred as part of a mortuary process.

Burial Ground - a discrete location that is known to contain or has high potential to contain human remains based on physical evidence, historical records, or reliable informant accounts.

Cemetery - a discrete location that is known to contain or intended to be used for the interment of human remains.

Complex - a group of sites or phases linked by trade or behavioral similarities, but not necessarily of the same ethnic, linguistic, or cultural grouping (e.g., Hopewell)

Component - a discrete cultural entity at a particular site; one site can have multiple components (e.g., prehistoric and historic, multiple prehistoric)

Contact Period – the initial period of intensive Euroamerican and Indian interaction prior to the signing of any major treaties (1650 – 1837)

Context – the relationship between artifacts and where they are found, such as depth from surface, association with soil or cultural features, or cultural component assignment. Not the same as *historic context*.

Cultural Resource Management (CRM) – the identification, evaluation, treatment, and management of archaeological sites, historic structures, and other types of cultural heritage properties; synonymous with Historic Preservation and Heritage Management.

Disturb - any activity that significantly harms the physical integrity or setting of an archaeological site or human burial ground.

Feature – non-artifactual evidence of human activity at an archaeological site usually expressed as noticeable soil disturbances such as pits and hearths. It can also refer to masonry walls and other structures at historical archaeological sites.

Field Archaeology - the study of the traces of human culture at any land or water site by means of surveying, digging, sampling, excavating, or removing objects, or going on a site with that intent (MS 138.31).

Geomorphology – the study of the earth’s surface and how it has evolved generally with regard to soils and sediments.

Historic Context – an organizational construct that groups related property types (e.g., *archaeological sites*) together based on a similar culture, geographical distribution, and time period. The Minnesota SHPO has developed a number of statewide historic contexts for the Precontact, Contact, and Post-Contact periods. An example of a Precontact context is Clovis. Not the same as *context* used in a purely archaeological sense.

Historic Period – synonymous with the *Contact* and *Post-Contact* periods when artifacts of Euroamerican manufacture are present or written records available; begins about 1650 in the Upper Midwest.

Horizon - a technological or behavioral attribute with broad geographical distribution, but not necessarily at the same time (e.g., fluted point horizon); also a particular layer within an archaeological site.

Human Remains - the calcified portion of the human body, not including isolated teeth, or cremated remains deposited in a container or discrete feature.

Lithic – made of stone; lithic artifacts are generally manufactured by either chipping or flaking high quality materials (e.g., chert, chalcedony) to produce tools such as knives, scrapers, and projectile points or by grinding or pecking granular rocks (e.g., sandstone, granite) to produce tools such as mauls, hammerstones, or axes.

Lithic Scatter – an archaeological site evidenced almost exclusively by the presence of stone tools or stone tool manufacture.

Mississippian Tradition – A Late Prehistoric cultural tradition associated with developments originating at the Cahokia site on the Mississippi River across from St. Louis. Characteristics include the use of shell-tempered pottery, intensive corn horticulture, settled village life, and small triangular arrowheads. Mainly found in southern Minnesota, it lasts from about A.D. 1000 to A.D. 1650.

Qualified Professional Archaeologist - an archaeologist who meets the United States Secretary of the Interior's professional qualification standards in Code of Federal Regulations, title 36, part 61, appendix A, or subsequent revisions. These standards require that the archaeologist has a graduate degree in archaeology or a closely related field, has at least one year's full-time experience doing archaeology at the supervisory level, and has a demonstrated ability to carry research to completion. There are specific additional standards for prehistoric, historic, and underwater archaeologists.

Paleoindian Tradition – The earliest major cultural tradition in the New World characterized by the use of well-made lanceolate projectile points and the hunting of now extinct animals such as mammoth and giant bison. It is dated to 12,000 B.C. – 8000 B.C.

Period - a temporal span often associated with a particular cultural tradition (e.g., Woodland)

Petroglyph - a design inscribed into a rock face by grinding, pecking or incising; examples can be seen at the Jeffers site in Cottonwood County and Pipestone National Monument.

Phase - a geographically discrete taxonomic unit represented by a group of sites with cultural and temporal similarity (e.g., *Fox Lake* in southwestern Minnesota)

Phase I Survey – synonymous with a reconnaissance survey; a survey whose objective is to find archaeological sites, map the horizontal limits of the sites, and define the basic historic periods present.

Phase II Survey – synonymous with an evaluation survey; intensive fieldwork whose objective is to determine the significance of an archaeological site by assessing the site's research potential as demonstrated by the robustness of the identifiable historic contexts present and the integrity of artifacts and features associated with those contexts. Significance is generally equated with eligibility to the National Register of Historic Places.

Phase III Project – synonymous with a treatment activity or site excavation; very intensive fieldwork generally done to mitigate the adverse effects of development upon a significant

archaeological site through data recovery utilizing numerous formal excavation units or other intensive investigative methods.

Pictograph – a design painted or drawn on a rock face.

Plains Village Tradition - A Late Prehistoric cultural tradition associated with the establishment of settled village life along major river valleys in the Great Plains. Characteristics include the use of globular pots that are smooth surfaced and grit tempered as well as intensive corn horticulture and fortifications. Found in western Minnesota, the tradition lasts from about A.D. 1000 to A.D. 1500.

Post-Contact Period – the period of Euroamerican as opposed to Indian dominance in Minnesota beginning with the first major land cession treaties in 1837.

Precontact Period –the time period dating from the earliest human occupation up to the significant incursion of European culture usually dated to about 1650 in the Upper Midwest; synonymous with *Prehistoric Period*.

Prehistoric Period – synonymous with the *Precontact Period* (see above); sometimes divided into Early (12,000 – 5000 B.C.), Middle (5000 B.C. – A.D. 1000), and Late (A.D. 1000 – 1650).

Recorded Cemetery - a cemetery that has a surveyed plat filed in a county recorder's office.

Section 106 – refers to Section 106 of the National Historic Preservation Act of 1966, which states that federal agencies must *consider* the impacts their undertaking have on significant historic properties and *consult* with knowledgeable entities (e.g., SHPO) about these impacts.

State site or state archaeological site - a land or water area, owned or leased by or subject to the paramount right of the state, county, township, or municipality where there are objects or other evidence of archaeological interest. This term includes all aboriginal mounds and earthworks, ancient burial grounds, prehistoric ruins, historical remains, and other archaeological features on state land or on land subject to the paramount rights of the state (MS 138.31).

Tradition - a prehistoric culture based on lasting artifact types or archaeological features (e.g., *Paleoindian*)

Woodland Tradition – The post-*Archaic* cultural tradition first identified in the Eastern Woodlands of the United States. It is characterized by the appearance of pottery and burial mounds. Wild rice use becomes intensive in northern Minnesota with limited corn horticulture eventually appearing in the southern part of the state. Woodland begins about 500 B.C. and lasts until A.D. 1650 in northern Minnesota, but is replaced by Plains Village and Mississippian cultures in southern Minnesota about A.D. 1000.