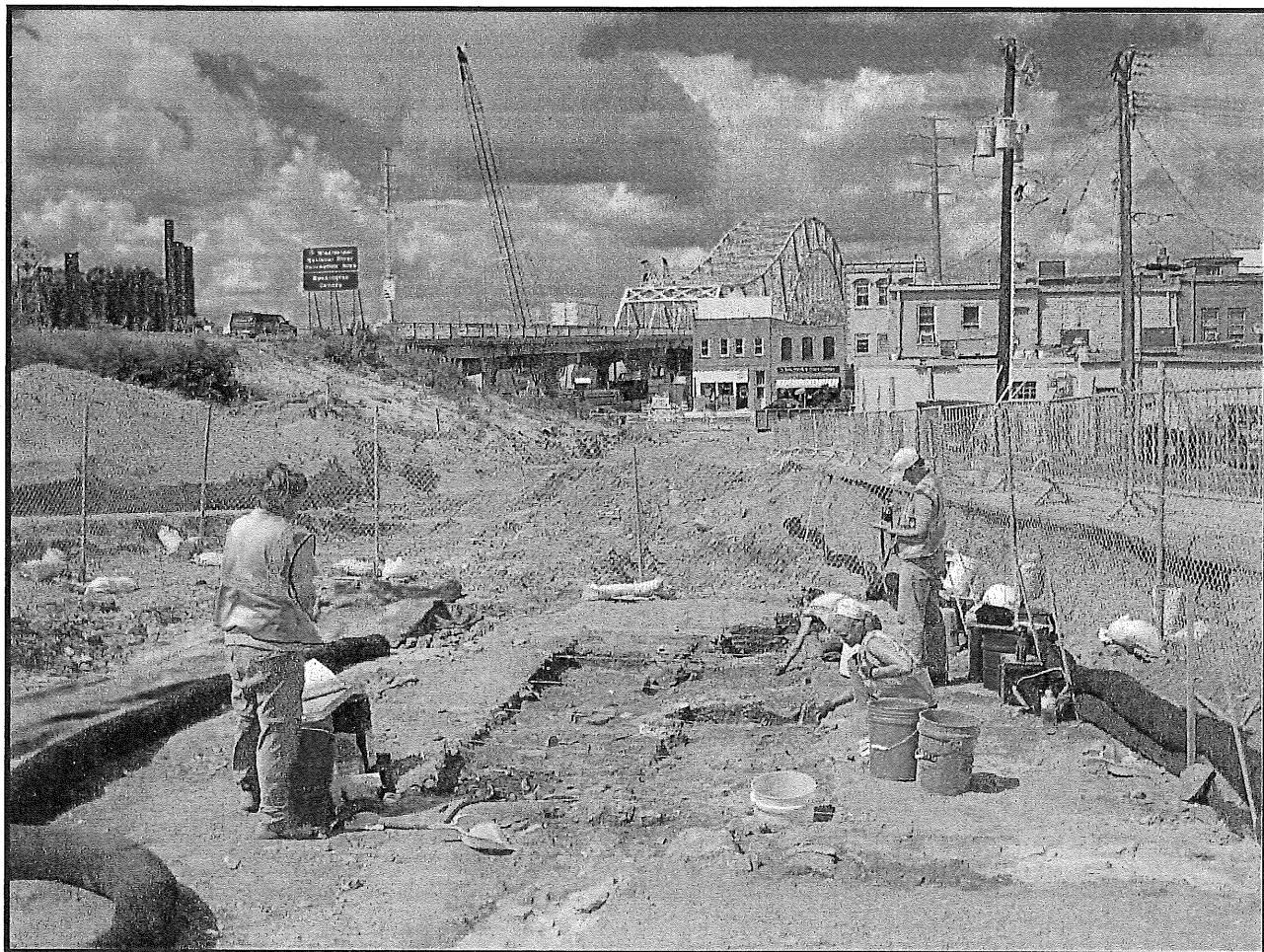


Archaeology in Minnesota

Annual Report of the State Archaeologist

Fiscal Year 2012



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.



Dedication

This annual report is dedicated to my mother, Patricia Roth Anfinson (1923 – 2012). She was a great inspiration, a source of constant support, and had a keen interest in all her children's lives both personal and professional.

Abstract

In fiscal year 2012, 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.

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

Chapter 2 summarizes OSA activities and other Minnesota archaeological activities in FY 2012 by program area. Major FY 2012 OSA accomplishments include: reviewing 321 site inventory forms, reviewing 38 development projects, doing field research on 19 major MS 308.08 burial cases, and helping to direct the *Statewide Survey of Historical and Archaeological Sites*.

Basic OSA Fiscal Year (FY) 2012 and Calendar Year (CY) 2012 statistics are:

	FY12	CY12
Licenses Approved:	84	85
Site Forms Reviewed:	321	285
Site Numbers Assigned:	280	248
Reports Added:	114	127
Projects Reviewed:	38	77
Major Burial Cases:	19	-
Burial Authentications:	11	-

Chapter 3 provides an assessment of the current state of Minnesota archaeology including a summary of projects funded by the Legacy Amendment *Arts and Cultural Heritage Fund* for the *Statewide Survey of Historical and Archaeological Sites* and a plan for OSA activities in FY 2013.

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

Acknowledgements

Laurie Beyer-Kropuenske of the Department of Administration Community Services Division provides supervisory direction and support to OSA. Her sound advice and attention to detail are greatly appreciated. Numerous other Department of Administration staff provide daily support to the OSA for financial, technical, and personnel matters. Special thanks go to Curt Yoacum, Ryan Church, and especially Commissioner Spencer Cronk.

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. It is a pleasure to work with Annamarie Hill and her very competent staff. Jim Jones is the long-serving point person for archaeology at MIAC and Jim's always ready assistance and deep knowledge are much appreciated.

The Minnesota Historical Society (MHS) is another important partner of OSA. Archaeology Department Head Pat Emerson and her staff provide day-to-day support. State Historic Preservation Office (SHPO) staff including Tom Cinadr and Kelly Gragg-Johnson provide much needed advice and records management assistance. The OSA leases office space at the Ft. Snelling History Center from the MHS where Tom Pfannenstiel, Brenda Williams, Paul Cusick, and Kurt Shimek provide 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 daily support and advice of my wife Pat makes my job much easier and more enjoyable.

Last, but certainly not least, Bruce Koenen has served as the very capable 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, secondary 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 and the rest of the Minnesota archaeological community.

Scott Anfinson
State Archaeologist
January 2013

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Cover Illustration: Archaeologists from Two Pines Resource Group doing salvage excavation of a historic archaeological site (21DK87) uncovered by construction on the new Highway 61 bridge in Hastings.

Chapter 1: Introduction

This report summarizes the activities of the Office of the State Archaeologist (OSA) for Minnesota State Fiscal Year (FY) 2012, the period from July 1, 2011 through June 30, 2012. It also includes some statistics and information for the 2012 Calendar Year (CY).

The State Archaeologist is a civil service employee of the Department of Administration and is considered a separate department within the Community Services Division. 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 of \$206,000 from the state legislature for salaries and operating expenses.

Minnesota Statutes (MS) 138.38 requires that the State Archaeologist complete annual reports. The reports must be sent to the Commissioner of Administration with copies to the Minnesota Historical Society (MHS) and the Minnesota Indian Affairs Council (MIAC). Copies are also sent to the Minnesota Legislative Reference Library, the Department of Transportation (MnDOT), the Department of Natural Resources (DNR), and to other organizations and individuals upon request. The current Annual Report and all previous OSA Annual Reports are available on the OSA website (<http://www.osa.admin.state.mn.us/>).

The Office of State Archaeologist – Historical Background

In 1939, the Minnesota Legislature enacted the Minnesota Antiquities Act (Minnesota Statutes 84.37 - .42) reserving for the state the right to license archaeological exploration at any site and claiming ownership of any artifacts recovered from such explorations. Any person who intended to excavate, explore, investigate, or survey an archaeological site in Minnesota on public or private land was required to obtain a license from the Commissioner of Conservation upon recommendation of a designated archaeologist in the Department of Anthropology at the University of Minnesota. Lloyd Wilford, the state's first professional archaeologist, was the designated archaeologist from 1939 until his retirement in 1959. Elden Johnson replaced Wilford at the University of Minnesota and became the next designated archaeologist.

The Field Archaeology Act (MS 138.31 - .42) officially established the position of State Archaeologist in 1963. Initially, 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 have been altered several times over the last 30 years with the position leaving the University in 1978 and officially homeless for almost 20 years. In 1996, the State Archaeologist became a state civil service employee at the Department of Administration and is now appointed by the Commissioner of Administration, but the four year term has been eliminated.

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. Christy Hohman-Caine, a student of Johnson's and initially a staff member of the Anthropology Department at Hamline University was appointed State Archaeologist in 1978 and served until her resignation in late 1992. Johnson and Hohman-Caine were not paid a salary for their service as State Archaeologist and it was thus necessary for them to maintain other employment. Hohman-Caine took a job with the Chippewa National Forest in northern Minnesota in 1980, so during most of her tenure the Minnesota State Archaeologist worked as a federal employee based outside of the Twin Cities area.

From December of 1992 through January of 1995, there was no State Archaeologist. Mainly due to issues relating to the Private Cemeteries Act (MS 307.08), lobbying by developers, state agencies, and archaeologists resulted in the Legislature appropriating funds for the State Archaeologist in FY 1995. Mark Dudzik was appointed State Archaeologist in February 1995 and became the first State Archaeologist to be paid a salary. Dudzik hired Bruce Koenen as the first full-time assistant to the State Archaeologist in June 1995.

Following Dudzik's resignation 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 1990 and prior to that in charge of the County-Municipal Highway Archaeological Survey at MHS. Koenen continues to serve as the assistant to the State Archaeologist.

Duties of the State Archaeologist

The principal duties of the State Archaeologist are assigned by two state laws, the Field Archaeology Act (MS 138.31-.42) and the Private Cemeteries Act (MS 307.08). The State Archaeologist is given some additional duties in rules implementing Minnesota Water Law (MS 103F) and the Minnesota Environmental Policy Act (MS 116D). The State Archaeologist is named in Coroner and Medical Examiner law (MS 390.25, Subd. 5). More recently, duties have been assigned under the Legacy Amendment Arts and Cultural Heritage Fund (MS 129D.17). The State Archaeologist also carries out traditional duties that have evolved since 1963. In all, the State Archaeologist has about 30 discrete duties under law and about 10 traditional duties.

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 archaeologist's qualifications for licensing 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 legally unrecorded historic or prehistoric cemeteries. This law has been amended eight times since 1976, most recently in 2007.

The State Archaeologist's duties under MS 307.08 are:

- authenticates all unrecorded burial sites over 50 years old
- grants permission for disturbances in unrecorded non-Indian cemeteries
- allows posting and approves signs for authenticated non-Indian cemeteries
- maintains unrecorded cemetery data
- provides burial sites data to MnGEO (formerly 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 that may impact unrecorded burials

Minnesota Water Law (MS 103F) - Rules 6120

The State Archaeologist has several duties specified in Minnesota Water Law Rules, which implement MS 103F pertaining to the development of shoreland. Water law rules apply to the use of shoreland as governed by state and local agencies. Agency reviews of shoreland development must consider impacts on *significant* historic sites. Significant historic sites include archaeological sites listed in or determined eligible to the state or national historic registers. Unrecorded cemeteries are automatically considered to be significant historic sites. No structure may be placed on a significant historic site in a manner that affects the values of the site unless adequate information about the site has been removed and documented in a public repository.

Under Rules 6120.2500, Subpart 15a, the State Archaeologist can determine if sites are eligible to the state or national historic registers, although under federal law formal eligibility for the National Register of Historic Places can only be determined by the Keeper of the National Register. Under 6120.3300, Subpart 3e, the State Archaeologist must approve any structure placed nearer than 50 feet from an unplatted cemetery.

Minnesota Environmental Policy Act (MS 116D) – Rules 4410.1500

Responsible Governmental Units (RGUs) for Environmental Assessment Worksheets (EAWs) are required to provide a copy of all EAWs to the State Archaeologist. The State Archaeologist has 30 days to comment on the EAW. RGUs make all the important decisions for EAWs including their adequacy and the need for a full Environmental Impact Statement (EIS). If the State Archaeologist recommends archaeological survey, testing, or mitigation for a project covered by an EAW or EIS, it is the RGU that makes the decision as to whether or not this is necessary.

Minnesota Arts and Cultural Heritage Fund (MS 129D.17)

Originally established with the passage of the Clean Water, Land, and Legacy Amendment by Minnesota voters in 2008, in 2009 and again in 2011 the Legislature appropriated \$500,000 of the Arts and Cultural Heritage Fund for a *Statewide Survey of Historical and Archaeological Sites*. The Legislation stipulated that the survey be governed by an Oversight Board and that one of the members be a representative of the Office of the State Archaeologist. As a member of this Board, the State Archaeologist has responsibilities for writing requests for proposals (RFPs), helping to select contractors, monitoring contract progress, and reporting results to the Legislature, the public, and to agencies.

Coroner, Medical Examiner Law (MS 390.25, Subd. 5)

After a coroner or medical examiner has completed the investigation of an unidentified deceased person, the coroner or medical examiner must notify the State Archaeologist of all unidentified human remains found outside of platted, recorded, or identified cemeteries and in contexts which indicate antiquity of greater than 50 years.

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 archaeological 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 help develop Indian cemetery management procedures
- provides archaeological information and comments on private developments
- takes the lead in Legislative actions affecting archaeology

Summary of Duties

The State Archaeologist is the principal archaeologist for the State of Minnesota. On a day-to-day basis, this involves seven major task areas:

- 1) approving license applications in a careful yet timely manner and monitoring the activities of the licensees,
- 2) reviewing site forms, issuing official inventory numbers, maintaining the inventory of known and suspected sites, and reviewing submitted archaeological reports,

- 3) reviewing development plans submitted by government agencies and private entities to evaluate the potential for harm to archaeological sites in project areas,
- 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, consultation with experts, and doing fieldwork, and
- 7) guiding the *Statewide Survey of Historical and Archaeological Sites*.



State Archaeologist Scott Anfinson (on ladder) photographing rock feature with DNR State Parks archaeological team at site 21OT191 in Glendalough State Park in Otter Tail County.

Chapter 2: Summary of OSA Activities – FY 2012

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 technically “issues” the license under MS 138.36, the OSA is the entity that develops licensing procedures, reviews license applications, handles all correspondence with licensees and prospective licensees, and monitors the activities of the licensees.

Beginning in the 1960s, licenses were typically issued to qualified archaeologists on a project-by-project basis or as yearly licenses to large agency-specific survey programs such as the Minnesota Trunk Highway Archaeological Reconnaissance Survey (1968 – 1994). In response to public comments, newly appointed State Archaeologist Anfinson undertook a review of the licensing process in FY 2006. A revised licensing procedure was implemented in May 2006, which issued yearly (calendar) licenses to individuals for the purposes of reconnaissance (Phase I) and evaluative (Phase II) archaeological surveys on non-federal public property. Licensees were required to notify the OSA by email of each project to be surveyed under their license, to provide a separate report for each survey project, and to provide a brief yearly summary of all archaeological work conducted under their license. Separate licenses were required for intensive excavation projects (Phase III) on non-federal public land and for burial authentication work on non-federal public or private land.

In calendar year 2011, the State Archaeologist, after coordination with the Minnesota Historical Society, once again revised licensing procedures resulting in four types of licenses: 1) a yearly license for reconnaissance (Phase I) survey, 2) a site-specific license for site evaluations (Phase II), 3) a site-specific license for major excavations (Phase III), and 4) a site-specific license for burial authentications. The reasons for separating the yearly reconnaissance license from evaluation activities were: 1) the increase in applications from out-of-state contractors who are not familiar with Minnesota historic contexts and field procedures, 2) inappropriate evaluations by some prehistoric archaeologists of historic archaeological sites and some historical archaeologists of prehistoric sites, and 3) inappropriate evaluations by some archaeologists unfamiliar with a particular Minnesota region or specific historic contexts of some sites.

Revised Professional Qualifications Standards for each type of license were also issued in CY 2011. Archaeologists who have received the combined Phase I-II yearly license in the past are not necessarily qualified to receive an Evaluation License (Phase II) as receiving that license will be dependent on demonstration of appropriate personal qualifications for each site involved. This includes detailed familiarity with the historic contexts present at the site and the archaeological region where the site is located. The DNR divisional archaeological survey programs continue to receive the combined Phase I-II licenses as there is often a need to rapidly and efficiently deal with a great variety of projects throughout the state. The principal investigators for these programs are familiar with all Minnesota contexts and they have worked in all regions of the state.

The licensing totals for Fiscal Year (FY) 2012 and Calendar Year (CY) 2012 are:

License Type:	FY12	CY12
Phase 1/Reconnaissance Survey (yearly):	73	75
Phase 2/Evaluation Survey	7	7
Phase 3/Excavation:	3	3
Authentication:	<u>1</u>	<u>0</u>
Total:	84	85

Most licensed projects involve reconnaissance 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 surveys investigate the importance of individual sites located by reconnaissance surveys. Excavations involve intensive site investigations that usually require opening large units at specific sites and usually produce the most valuable information about Minnesota's archaeological past. Authentication projects help the State Archaeologist determine if burials exist at particular locations.

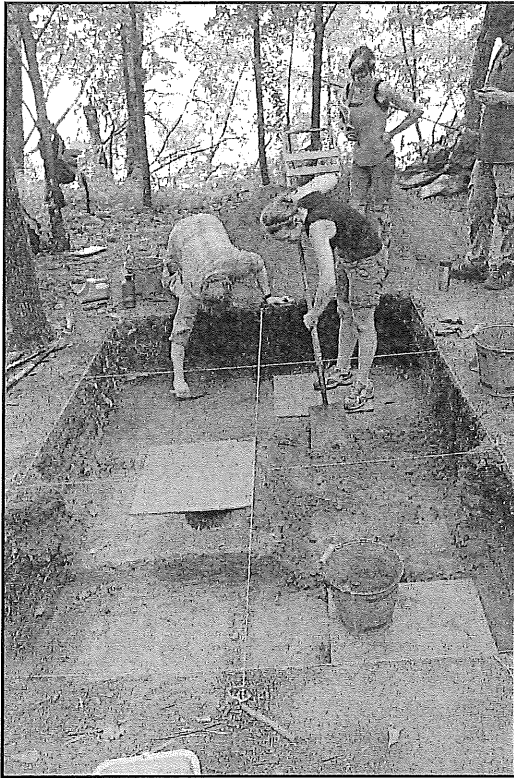
The majority of archaeological work done in Minnesota is not subject to state licensing, as work done on federal lands and private lands (non-burial sites) are excluded. The OSA is not required to receive reports on non-licensed archaeological activities. A few of the notable licensed projects carried out in FY 2012 are summarized below.

The Department of Natural Resources (DNR) continues to fund archaeological programs in several divisions and the archaeological personnel for these programs are provided through contracts with MHS. These four MHS-DNR archaeological programs do reconnaissance surveys (Phase 1), site evaluation testing (Phase 2) and occasional site mitigation (Phase 3) work. They each provide a yearly summary in an annual report.

Dave Radford runs the State Parks Archaeology program assisted by LeRoy Gonsior and Douglas George. This program has been doing intensive survey for trail development at Glendalough State Park in Otter Tail County, finding and evaluating numerous prehistoric sites. In August 2011, the State Archaeologist visited the State Parks archaeological team during the excavation of an interesting rock feature at site 21OT191. The State Parks archaeological crew also spent extensive time surveying the new Lake Vermilion State Park.

Tim Tumberg runs the Trails and Waterways program with the assistance of Jennifer Tworzyanski, Mathew Finneman, and Miranda Van Vleet. They finished an extensive reconnaissance survey along the Paul Bunyan Trail in Crow Wing County. Mike Magner assisted by Stacy Allan handle DNR Forestry and Wildlife and Fisheries cultural resource programs. Their efforts in FY2012 included archaeological investigations of logging camps, prehistoric villages, and CCC camps.

Maritime Heritage Minnesota run by Ann Merriman and Christopher Olson carried out underwater surveys of Lake Minnetonka and the lower Minnesota River in FY 2012. In FY 2013, they plan to survey Lake Waconia and White Bear Lake. These surveys are licensed because all lake and river bottomlands in Minnesota are state property.



University of Minnesota – Science Museum of Minnesota excavations at the Bremer Village site (21DK6) near Hastings

There were three extensive archaeological excavations issued OSA/MHS licenses in FY 2012. A license was issued to Ed Fleming (Science Museum of Minnesota) for a University of Minnesota field school at the Bremer Village site (21DK6) in Dakota County. The State Archaeologist visited this excavation on 8/1/12. A license was issued to Deb Gold of St. Cloud State University for her continuing excavation of the Shoemaker site (21SN164) on campus. The third public land excavation was at a historic site (21DK87) impacted by the construction of the new TH 61 bridge in Hastings. This project was managed by Michelle Terrell of Two Pines Resource Group. OSA assistant Bruce Koenen visited this excavation on 8/11/11.

There was one burial authentication license issued in FY2012. The license was issued to Mike Kolb for his work at 21HE17. All other burial authentications were undertaken internally by OSA staff.

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 submit information about them 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. By the late 1960s, the focus of site file use changed from research to cultural resource management (CRM) mainly due to several new

federal laws including the National Historic Preservation Act (1966), the Department of Transportation Act (1966), and the National Environmental Policy Act (1969).

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 and concurrently the State Archaeologist (Hohman-Caine) taking a job with the U.S. Forest Service in northern Minnesota. SAS personnel made photocopies of the State Archaeologist's site file cards and created a separate folder for each site, organizing the folders in file cabinets by county. Because so many new sites were recorded by the SAS-sponsored surveys, the SAS took over assigning the official state site numbers from 1979 through 1981. The SAS also developed a one-page site form that could be folded to fit in the State Archaeologist's 5"x7" card file.

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 most archaeologists as it had to be accessed through a main-frame computer. The MLMIS computerized data was not updated after 1981. With the demise of the SAS in late 1981, the assignment of official site numbers reverted to the State Archaeologist.

The first widely available computerization of the archaeological site file occurred in 1982 when the current State Archaeologist, then head of the MHS-based 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 and accurate list of archaeological sites that were recorded in basic archaeological sources so potential effects to "known" sites (many officially unnumbered) could immediately be considered during highway construction plan review. A major result of the project was 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). These word processor files were then converted into a database file combining the various tables and a few new data fields. Under the Site Number field, unnumbered and unconfirmed site were assigned "alpha" numbers (e.g., 21ANa). Over the next decade, additional fields were added to the database mainly to foster Elden Johnson's 1957 site file research goals.

When Anfinson became the SHPO 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 direction 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, added folders for each "alpha" (officially unnumbered) site, and drew site boundaries on a set of 7.5' USGS maps. 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 Mark Dudzik's 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).

Because SHPO staff also maintain extensive historic building records, there was often a significant time delay in updating the archaeological site database following the assignment of new site numbers. On January 1, 2007, the OSA took over updating the master electronic archaeological site database. This means that the database is now quickly updated following the OSA review of new site forms and the assignment of new site numbers. The OSA now provides copies of the database to SHPO and other appropriate government agencies.

The site database maintained by the OSA is not entirely accurate or consistent with respect to certain fields of information. There are four common sources of error: 1) the original data reported on the site form may be inaccurate, 2) the data reported on the site form may be a unique interpretation or have inconsistent interpretations by archaeological investigators, 3) correct data from a site form may have been incorrectly entered into the database, and 4) different data input personnel may have used inconsistent codes for the data. A great effort has been made by the OSA, the SHPO, and MnDOT to ensure that the locational data is as accurate as possible, but fields such as *Site Function* and *Cultural Context* still have significant accuracy and consistency problems.

Besides the site database, the OSA also maintains extensive paper site files. There are several major differences between OSA and SHPO paper files besides the presence of unique data in each entity's folders. The OSA does not have individual folders for the alpha sites, although an intern project began in 2007 seeks to make copies of the SHPO alpha files, which will be filed in a single OSA folder for each county. The SHPO does not have most of the data contained in the OSA burial site files and the OSA Burial Sites database is not shared with the SHPO, although this database does not include any burial sites not contained in the OSA 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. In 2007, the OSA began to produce a set of USGS maps with site locations depicted and now puts newly-recorded sites on a master set of USGS maps.

The *SHPO Manual for Archaeological Projects in Minnesota* (Anfinson 2005), the *State Archaeologist's Manual for Archaeological Projects in Minnesota* (Anfinson 2011), 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 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 by professional archaeologists on non-federal public or private land. Most federal agencies, with the exception of the two National Forests, regularly submit site forms even if the sites are located on federal land.

During 2012, the OSA performed the following site file actions:

	FY12	CY12
New Forms Reviewed and Site Numbers Assigned:	280	248
Revised Forms Reviewed:	<u>41</u>	<u>37</u>
Total Forms Reviewed:	321	285

As of June 30, 2012 there were 18,265 archaeological sites listed in the archaeological site database. Of these, only 11,393 (62%) were assigned official state site numbers and thus have a hard-copy file at both the OSA and the SHPO. As of December 31, 2012 there were 18,393 total sites in the site database of which 11,520 (63%) were numbered. The majority of unnumbered sites (known as alpha sites as they are assigned alpha-numeric numbers) are federal land sites in Chippewa and Superior National Forests obtained by the



OSA Site files at Ft. Snelling.

SHPO in the 1990s. Some are also Post-Contact Period sites documented on early historic maps (e.g., Trygg, Andreas), but as of yet unconfirmed in the field by archaeologists. The site database is constantly being corrected so adding this year's figures from the table above to the previous year's totals does not always match current database totals.

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. The current end of CY2012 total of 18,393 sites represents a tripling of the database since 1990, some of which is due to the addition of some federal land inventories (many unnumbered). On average about 300 site forms are submitted to OSA each year. The county with the most sites is St. Louis with 1,945 (1,145 numbered) sites. The county with the fewest known confirmed sites used to be Red Lake with 24 (8 numbered) in 2011, but the recent Legacy-funded survey in that county has increased the total to 48 (30 numbered). The current county with the fewest is Mahnomen 23 (20 numbered), although Dodge County has only 15 numbered sites (along with 32 alpha sites for a total of 47).

It is conservatively estimated that less than 1% of the total prehistoric 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 currently numbered sites. 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 that are over 100 years old.

Intensively investigated sites include sites that have been the subject of university field school excavations or sites subjected to detailed archaeological work for CRM purposes,

including both Phase II (Evaluation) and Phase III (Data Recovery) projects. Intensive investigation means formal units (e.g. 1x1 m) were excavated or other forms of intensive examination (e.g., controlled surface collection) were used at the site. Total intensively investigated sites in 1963 were 170 (15% of the total numbered sites), 440 (14%) in 1983, 491 (8%) in 1990, and 1,618 (9%) at the end of CY2012 (422 Phase III; 1,196 Phase II only).

There are about 300 Minnesota archaeological sites listed in the National Register of Historic Places (NRHP). Individual site nominations account for 109 of these listings with perhaps another 200 sites included within 18 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 consensus determinations for the federal Section 106 process. Four (4) archaeological sites were added to the National Register in 2012: Three Island Park site (21BL289), Kasota Lake site (21KH46), Mayflower shipwreck (21SL__), and Andy Gibson shipwreck (21AK109).

Minnesota also has a State Register of Historic Places established by the passage of the Historic Sites Act (MS 138.661 - 669) in 1965. There are 28 archaeological sites individually listed in the State Register (MS 138.664) of which 25 have official state site numbers. There are also State Historic Sites (MS 138.662) that are owned or managed by the Minnesota Historical Society of which 17 are archaeological sites (all numbered). State Register sites and State Historic sites are both provided some protection by MS 138.665, which requires state and local agencies to "protect" these properties (and properties listed on the National Register of Historic Places) if they are threatened by undertakings on agency land or by undertakings that agencies fund or license. Because some listed places have multiple sites, there are 63 archeological sites subject to the Historic Sites Act due to listing in MS 138.

Burial Site File

State Archaeologist Christy Hohman-Caine started a separate OSA 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 the 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 alpha numbers.

The OSA makes the Burials Site Database partially available to local governmental agencies on a webpage maintained by the Minnesota Geospatial Information Office (MnGEO). 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, 2012, there were 2,936 burial sites listed in the OSA's Burial Sites Database. (The end of December 2012 total was 2,938.) This includes about 12,000 mounds in over 1,600 discrete sites. Over 350 of the non-mound burials post-date 1837, the beginning of intensive Euro-American settlement in Minnesota. There are 762 known or suspected burial sites that do not have an official site number, although a few of these may be duplicates of numbered sites.

In 2011, a Legacy Amendment funded initiative for the *Statewide Survey of Historical and Archaeological Sites* compiled a comprehensive list of historic-period cemeteries following an intensive literature search. This study (Vermeer and Terrell 2011) identified 5,876 cemeteries, of which about 2,500 appear to be officially unrecorded and are thus subject to some OSA management consistent with MS 307.08. Only 156 of these cemeteries are in the current OSA Burials database, of which only 111 have official state site numbers.

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 MS 138 licensed projects require SHPO review, the OSA and SHPO report files are far from identical, although there is significant overlap. Both the OSA and SHPO maintain databases of the reports they have on file.

In FY 2012, 114 reports were added to the OSA files. A total of 127 reports were added in CY 2012. As of the end of December 2012, the OSA had 5,498 reports listed in its files.

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 on the OSA website (<http://www.osa.admin.state.mn.us/research.html>).

Development Plan Review

Development plan review by the OSA is principally done under three Minnesota statutes:

- 1) Under MS 138.40, Subd. 3, *agencies* must submit plans to the State Archaeologist and the Minnesota Historical Society (MHS) for review of developments on their lands where archaeological sites are known or scientifically predicted to exist. The State Archaeologist and MHS have 30 days to comment on the plans. "Agency" refers to all units of government in Minnesota, not just *state* agencies. "Land" means land or water areas owned, leased or otherwise subject to "the paramount right of the

state, county, township, or municipality” where archaeological sites are or may be located.

2) MS 116d requires that an Environmental Assessment Worksheet (EAW) be prepared whenever there is a government action (e.g., building permit) 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 monitors EAW/EIS activities. Any citizen can comment as part of this process. Large area, multi-phased projects can be dealt with under an Alternative Urban Areawide Review (AUAR) rather than multiple EAWs. The OSA was added to the official EAW/AUAR/EIS contact list in FY 2007.

3) MS 307.08, Subd. 10, as revised in the Spring of 2007, requires that state agencies, local governments, and private developers submit development plans to the State Archaeologist when known or suspected human burials may be affected by developments on their lands. Plans must also be sent to the Minnesota Indian Affairs Council (MIAC) if the burials are thought to be Indian. OSA and MIAC have 30 days to review and comment on the plans.

The State Historic Preservation Office (SHPO) at the Minnesota Historical Society (MHS) acts as the principal environmental review agency for the state with regard to assessing the impacts of development projects on historic properties. Historic properties include both standing structures and archaeological sites. While the SHPO's focus is on federal undertakings as specified in Section 106 of the National Historic Preservation Act, the SHPO also acts for the MHS with regard to Minnesota Statutes 138.40, 138.665, and 116d. Because the SHPO has well-established systems and experienced staff dedicated to environmental review, the OSA has traditionally deferred to the SHPO for commenting on development projects under MS 138.40 and 116d. This allows the OSA to focus on MS 307.08 reviews and other duties.

Due to budget and staff cuts, in May 2004 the SHPO stopped reviewing EAWs submitted by local government RGUs. Thus in FY 2006, the State Archaeologist requested to be added to the EAW official comment list and this was implemented by the Environmental Quality Board (EQB) in January 2007.

The State Archaeologist also reviews plans and reports based on informal agency or developer requests, although no official OSA action is required if the development is on private land or does not threaten burial sites. Citizens often ask the State Archaeologist for information regarding potential impacts to archaeological resources by developments in their neighborhood. This information is provided as necessary. Some of the requests result in field

visits by the State Archaeologist. During FY 2012, the OSA completed substantial review of 38 development projects, all of which were part of the state EAW/AUAR/EIS process.

Because the State Archaeologist has many duties and is short-staffed, replies to EAW submittals are sent only if an archaeological survey is recommended or a known archaeological site or burial site should be avoided within the Area of Project Effect (APE). Furthermore, if the project will be reviewed under federal Section 106 or will otherwise be reviewed by the SHPO (e.g., State Agency RGU), the OSA defers review and comment to the SHPO unless unrecorded burials or sites on non-federal public property are involved. There are also times when the OSA is simply too busy with more critical duties so EAW reviews do not get completed within 30 days and no comment is issued. This is becoming more common mainly due to responsibilities associated with the *Statewide Survey of Historical and Archaeological Sites*. No archaeological surveys or site avoidance requests for EAWs were recommended by OSA in FY 2012, but many submitted projects were simply not reviewed and state RGU or federal projects were deferred for SHPO review. The state employee layoff in July 2011 also affected project review.



FY2012 Environmental Review submittals to the OSA. Many documents are provided as cds reducing the actual paper volume.

Lake Hanska County Park - The State Archaeologist was directly involved with a development project at Lake Hanska County Park in 2012. In November 2010, Brown County staff contacted the State Archaeologist regarding the proposed replacement of the caretaker's house at Lake Hanska. This building, a double-wide manufactured structure placed on concrete piers, was immediately adjacent to an archaeological site listed on the National Register of Historic Places – the Lake Hanska/Synsteby site (21BW1). This site contained burial mounds, prehistoric habitations, and a historic fort from the US- Dakota War. Lake Hanska County Park had been the subject of a particularly bitter dispute in the mid-1970s when initial park development had done significant damage to the archaeological site.

Although the proposed house replacement in 2011 was on the same footprint as the original house constructed in 1976, the State Archaeologist recommended an archaeological survey as there were probably relatively undisturbed areas between the piers. Following the removal of

the existing structure, this survey was carried out by the Archaeology Laboratory of Augustana College in late May 2011 (Adrien Hannus, principal investigator). The survey confirmed that archaeological materials still existed within the building footprint. Based on the survey the State Archaeologist recommended additional testing at the new pier locations prior to any new construction.

This testing was carried out by OSA staff on 8/3/11. Ten (10) shovel tests were excavated at 10 proposed pier locations. Some locations were heavily disturbed, but most yielded prehistoric artifacts including animal bone, ceramics, and lithics. Because construction disturbance was going to be limited to the pier locations, the project was allowed to proceed.

Agency Assistance

One of the principal duties of the State Archaeologist is to assist state agencies with cultural resource management issues. During FY 2012 these duties included meetings and site visits associated with DNR State Park developments and MnDOT highway projects.

OSA also assists local agencies. OSA staff spend considerable time on email and telephone correspondence aiding cities, counties, and other local agencies with development review. In FY2012, the State Archaeologist continued to assist Winona County and Cass County with implementation of their land use ordinances as it applies to archaeological sites and unrecorded cemeteries. The State Archaeologist serves on the Three Rivers Park District and Dakota County Parks advisory panels. The State Archaeologist serves on a City of Minneapolis advisory panel setting new design guidelines for the central Minneapolis riverfront.

Archaeological Research

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 maintained at the OSA. Along with the electronic database are paper copies of articles and laboratory reporting sheets for radiocarbon dates (also known as ¹⁴C dates) from Minnesota archaeological sites. Fifty-seven (57) dates from 17 sites were added in 2012. Three dates were from work in State Parks, 14 dates from site 21ML81 that was the subject of an earlier mitigation excavation, and 40 dates from the Legacy study of Brainerd prehistoric ceramics. The Brainerd study also produced 10 optically stimulated luminescence (OSL) dates.

The database currently contains 528 dates from 152 sites. The best-dated site in the state is the Late Prehistoric Bryan site (21GD4) at Red Wing with 26 dates. Other sites with reported dates in double digits are: Hannaford (21KC25) with 23, McKinstry (21KC2) with 21, Smith (21KC3) with 15, 21ML81 with 14, Donarski (21MA33) with 12, and Mooney (21NR29) and J Squared (21RW53) both with 10. Fifty-four (54) sites have only a single date. The oldest reasonably accurate date from a Minnesota archaeological site is 10,390 RCYBP ±

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).

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 from archaeological sites as part of the environmental review process or research-driven archaeology.

Institutional Field Research - Historically, colleges, universities, and museums have been principally responsible for archaeological research in Minnesota. This began to change in the 1970s with the rapid ascent of government-mandated cultural resource management (CRM) archaeology, which resulted in dramatic shifts in funding and employment from cultural institutions to government agencies and private contractors. Universities remain the principal training institutions for archaeologists and principal producers of research-oriented archaeology.

Currently, there are five university-based archaeological programs in Minnesota affiliated with majors in Anthropology. These are at the University of Minnesota – Minneapolis, Hamline University, Minnesota State University - Moorhead, St. Cloud State University, and Minnesota State University - Mankato. The University of Minnesota-Duluth has no full-time archaeological faculty, but occasionally offers field schools in association with Superior National Forest or private contractors. Normandale Community College and Inver Hills Community College also offer courses in archaeology with some fieldwork. The University of Minnesota, St. Cloud, and Mankato offer graduate programs in archaeology, with only the University of Minnesota-Minneapolis offering a PhD track in archaeology.

In FY 2012, the following university-based field research was undertaken in Minnesota:

University of Minnesota – Minneapolis

- Kat Hayes field school at Reaume's Trading Post site (21WD15)
- Ed Fleming (SMM) field school at Bremer Village site (21DK6)

Minnesota State University - Moorhead (Mike Michlovic, George Holley, Ranita Dalan)

- field school in conjunction with Plains Village study; Browns Valley (21TR5) testing

St. Cloud State University (Mark Muniz, Deb Gold)

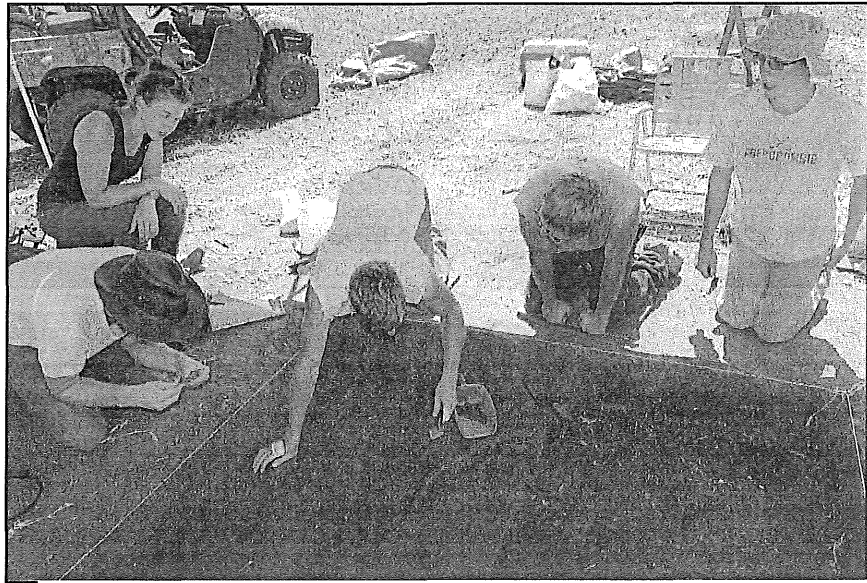
- field school in Nebraska (Muniz)
- field school at the Shoemaker site (21SN164) (Gold)

Minnesota State University – Mankato (Ron Schirmer)

- field school at Mosquito Terrace (21GD260) and 21GD51
- graduate student research excavations at the Vosburg site (21FA2)

Hamline University
(Brian Hoffman)
- field school at
Roosevelt Lake
(21CA184), shoreline
survey Lake Traverse,
and survey work at the
Jeffers Petroglyph site in
Cottonwood County

University of Minnesota
- Duluth (Susan
Mulholland)
- field school at Duluth
sites and in Superior
National Forest



Minnesota State University – Mankato excavation at the Vosburg site (21FA2) in Faribault County.

The State Archaeologist visited the University of Minnesota excavations at the Bremer site and Minnesota State - Mankato excavations at the Vosburg site. Bruce Koenen visited the Bremer site and Minnesota State - Mankato excavations at 21GD51 and 21GD260.

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 copies of reports on these projects or is asked for advice on the projects. The OSA is not aware of any major Minnesota excavations on federal land in FY 2012, although the examination of the Knife Lake quarries in Superior National Forest continues by a number of institutions.

David Mather, the SHPO archaeologist, and Jim Cummings, an archaeologist/naturalist for Kathio State Park, continued their research at the Petaga Point site (21ML11). In FY2012, they excavated another 1x1 meter unit.

Public Education

Archaeology Week - The OSA has served as the organizer and major sponsor of Minnesota Archaeology Week since 1998. The first Archaeology Week was held in 1995. Archaeology Week had always been held in the spring of the year, but in 2012 it was decided to hold the Minnesota Archaeology Week in the Fall rather than the Spring as it seemed more compatible with both secondary and post-secondary school seasons. Thus there was no Archaeology Week in FY 2012. A summary of the Fall 2012 Archaeology Week will appear in the FY 2013 report.

Presentations and Meetings – During FY 2012, the State Archaeologist made the following formal presentations: Talk on St. Anthony Falls history and archaeology to Augsburg College Environmental History Class in Minneapolis on 9/13/11; presentation on OSA activities to MnDOT Tribes and Transportation Conference at Prairie Island on 10/25/11; presentation on shipwrecks at Science Museum of Minnesota in St. Paul on 2/9/12. The State Archaeologist attended the following meetings in FY 2012: the Gales of November shipwreck meetings in Duluth 11/4-6/11 and the SHPO Review and Compliance seminar on 5/15/12.

OSA assistant Bruce Koenen attended Archaeology Day at Kathio State Park on 11/1/11, the Gopher State Artifact Show in Lakeville on 10/2/11, the CMA quarterly meeting at Ft. Snelling on 10/29/11, the SHPO Review and Compliance seminar on 5/15/12, and the Pine City Knap-In on 6/29-30/12.

OSA Archaeology in the Schools – Assistant to the State Archaeologist 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 2012, he put on four flint-knapping workshops at Normandale Community College and gave St. Cloud State University cultural resource management students and Inver Hills Community College archaeology students tours of the OSA office.

The State Archaeologist continues to serve as an Instructor in the University of Minnesota Department of Anthropology. In FY 2012, he taught one course in Heritage Management. He also serves on a number of graduate student committees both in the Anthropology Department and the Architecture Department at the University of Minnesota.

Internships – The OSA sponsors internships to not only train students of archaeology in practical skills, but to accomplish needed work within the office. In FY 2012, the OSA had one intern, Andrew Kurth of St. Cloud State University.

Boards and Committees – The State Archaeologist serves on a number of boards and committees. In FY2012, he served on the University of Minnesota Heritage Education Collaborative, the Minneapolis Riverfront Design Committee, the Three Rivers Park District Advisory Committee, and MnDOT's MnModel 4 Advisory Committee As specified in Minnesota Statutes 129D.17, the State Archaeologist is on the Oversight Board for the Legacy Amendment-funded *Statewide Survey of Historical and Archaeological Sites*.

Bruce Koenen serves on an advisory board for the Cultural Resource Management Master's Degree program at St. Cloud State University.

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. Most media contacts with the State Archaeologist are either media reaction to a newsworthy situation or are generated by the media due to a perceived or real public interest. In many cases, the State

Archaeologist simply provides background information, but in some cases he is interviewed and becomes part of the story.

Major media exposure for the State Archaeologist in FY2012 included an interview for *Capitol Report* published on 9/14/11, an interview for the *St. Paul Pioneer Press* on 11/23/11 on burial mounds and trail development in Dakota County, an interview on Minnesota Public Radio regarding an archaeological site in Bemidji, and an interview for the *Minneapolis Star Tribune* regarding shipwrecks on 4/14/12.

Professional Development – Due to a state agency freeze on out-of-state travel, the State Archaeologist has limited access to major professional conferences. In FY 2012, the State Archaeologist attended the Geological Society of America Conference in Minneapolis October 9-12, 2011. He also paid his own way to the Midwest Archaeological Conference in La Crosse October 13-15, 2011. The State Archaeologist attended US Army Corps of Engineers training on Tribal Consultation in St. Paul on 9/14/11. Bruce Koenen also paid his own way to several out-of-state conference in FY 2012 including the Iowa Lithic Symposium in Iowa City 2/24-25/11 and the Midwest Archaeological Conference in La Crosse.

The State Archaeologist continues to serve as an editorial advisor to the *Midcontinental Journal of Archaeology*. He is a member of the National Association of State Archaeologists (NASA), the Plains Anthropology Conference, the Midwest Archaeological Conference, the Minnesota Archaeological Society, and the Society for American Archaeology.

Awards and Recognition – On 2/25/12, the State Archaeologist received the *Special Acknowledgement Award* from the Great Lakes Shipwrecks Preservation Society (GLSPS).

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 through field work in particular areas (authentication), reviewing development plans submitted by agencies and developers, and advising agencies and landowners on legal and management requirements for unrecorded burial grounds.

In 1985, State Archaeologist Hohman-Caine and MIAC developed formal burial ground management procedures for Indian burials. These procedures were revised several times, but had not been 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 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 within the grounds do not have to be directly disturbed to represent a violation of the law.

In FY 2008, after careful agency consultation, the OSA issued new burial site procedures that addressed all recent revisions of MS 307.08, including the 2007 revisions (Anfinson 2008). The major difference between the new procedures and the ones developed by State Archaeologist Hohman-Caine in the 1980s is that the new procedures apply only to the OSA and not to other "appropriate authorities" including MIAC. This is consistent with the MS 307.08 revisions signed into law in 2007, which further separated the duties of the State Archaeologist and the MIAC and gave the MIAC the principal responsibility for managing Indian cemeteries once the State Archaeologist had authenticated them. The procedures are available on the OSA webpage.

MS 307.08 FY 2012 Activities - The OSA dealt with 19 major burial cases in FY 2012. "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. Not all major cases result in formal authentication as defined in MS 307.08. Formal authentication involves either proving to a reasonable degree there is a burial in a particular location or proving to a reasonable degree there is not. When a burial ground or portion of a burial ground is found, mapped, and an affiliation determined, it is considered to be "authenticated." There is no standard term for a negative authentication finding.

The OSA typically receives several emails or telephone inquiries every week relating to possible burial cases, but most of these can be dealt with quickly and without the need for fieldwork. "Minor" cases do not individually cause a significant expenditure of OSA time or resources, although as a whole and with the addition of the major cases, burial site protection accounts for perhaps half of the workload of the OSA.

Of the 19 major burial cases in FY 2012, all involved some OSA fieldwork and 11 of these resulted in formal authentication (9 positive and 2 negative). 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 appropriate local officials and MIAC in the case of Indian burials. All FY 2012 major cases are discussed below. Two (2) of the cases resulted in the discovery of previously unrecorded burial sites. Ten (10) of the sites involve Indian burials, five (5) involve non-Indian burials, and the remainder were not human burials or ethnicity was indeterminate.

The State Archaeologist also makes an effort to re-check known burial sites or look for reported but unthreatened burial sites when it is convenient (i.e., if they are in the vicinity of other projects being field reviewed). The known sites can be either sites that were originally documented in the distant past or sites that have been involved with recent authentication or reviewed development projects. In FY 2012, the State Archaeologist field examined 31 sites that did not require immediate OSA action. These sites were 21AK102, 21CP64, 21FL (Choice), 21GD3, 21GD4, 21GD26, 21GD42, 21HE3, 21HE59, 21HE60, 21HE86, 21HE (Lone Lake), 21ME1, 21ME2, 21ME35, 21NR1, 21PL4, 21PL47, 21PO1, 21SC3, 21SC18,

21SC19, 21SC20, 21SC51, 21SC94, 21SL393, 21WB33, 21WN3, 21WN4, 21WN45, and 21WR16. All of these sites were photo-documented.

MS 307.08 Major OSA Actions – FY 2012

21CH4 – Burial Authentication for Trail Project, City of Lindstrom, Chisago County

In April 2011, a project manager for SEH Inc. contacted the State Archaeologist regarding a trail project in the City of Lindstrom on the north side of Trunk Highway 8. This project was in the immediate vicinity of a recorded mound group, 21CH4. The site had been originally recorded by T.H. Lewis on 11/16/1885 who mapped 5 elongate mounds. A site visit by MHS- SAS personnel in the Fall of 1978 noted that the mounds had all “been destroyed by housing.” A MTHARS survey in 1990 noted that the south end of Mound 5 was still intact. A MnDOT survey by archaeologist Mike Justin of URS/BRW in 2003 also noted the south end of Mound 5 as being intact. In the spring of 2003, OSA personnel visited the site, recording the possible Mound 5 remnant south of the highway.

In August 2007 the State Archaeologist visited the site in conjunction with MnDOT plans to upgrade TH 8 through Lindstrom. What may be a remnant of Mound 5 was noted south of the highway, but there were no surficial remnants of the other four mounds north of the highway. They had apparently been destroyed or obscured by highway construction and school construction. Because the proposed trail would be located along the northern edge of TH8 and would traverse the area once occupied by Mound 1-4, in April 2011, the State Archaeologist recommended that MnDOT hire a geomorphological consultant to core the area to look for remnants of mound fill and burial pits. MnDOT hired Michael Kolb of Strata Morph to do the geomorphology and he completed his field work in the summer of 2011. A verbal report from the MnDOT project archaeologist (Teresa Martin) on 9/26/11 said that coring indicated the entire area had been severely disturbed with most of the natural soils truncated. There were no signs of mound fill or burial pits. The OSA has not issued an official authentication for 21CH4 as of yet as we have not received a copy of the final geomorphology report.

Bremer Mounds (21DK5) – Authentication for Trail Project, Dakota County

In November of 2011, Dakota County requested a formal authentication of the Bremer Mound site (21DK5) in the Spring Lake Park Reserve. The mounds were adjacent to the planned route for the Mississippi River Regional Trail (MRRT). The two Bremer mounds were first mapped by archaeologists from the St. Paul Science Museum in 1955. Mound 1 was an ovoid-shaped mound and Mound 2 was linear. The Science Museum excavated portions of both mounds in 1955 and 1956, but the mounds were not tied into a datum that allowed accurate placement on modern maps.

On May 22, 2012, OSA personnel relocated the mounds in a wooded area. Pin flags were placed in the mound centers, at the mound edges, and at a 20-foot buffer around the mounds. GPS readings were also taken where over-story vegetation would allow. The OSA requested that the county plot on project maps the mounds and buffers as marked. No updated plans showing the mounds have been received from the county as of yet.

21FL14 – Possible Development Threat to Burial Mounds, Fillmore County

On 8/22/11, an anonymous member of the public left a voice message for the State Archaeologist reporting a possible development threat to burial mounds near Lanesboro. The message was somewhat garbled, but appear to refer to site 21FL14. This site had first been reported by Newton Winchell in 1911, but no map appeared in Winchell's publication. Winchell simply noted that local citizens had reported up to 40 mounds three miles northeast of Lanesboro and some of the mounds had been disturbed by plowing uncovering human bones and artifacts. The State Archaeologist visited the location on 8/23/11, but could see no obvious mounds, For Sale signs, or evidence for recent disturbance. The area was in pasture and was photographed. The State Archaeologist also examined a nearby habitation site (21FL38), where several residences had been built in the last 20 years, but there was no evidence for recent disturbance. This area too was photographed.

21GD25 – Monitoring Construction, City of Red Wing, Goodhue County

In September 2011, the City of Red Wing contacted archaeologists Ron Schirmer about their plans to undertake road construction in the vicinity of mound site 21GD25. This site had first been mapped by T.H. Lewis in 1885 when it consisted of a group of five burial mounds. Schirmer requested the involvement and assistance of the State Archaeologist with examining possible impacts of the construction. OSA assistant Bruce Koenen accompanied Schirmer on September 13, 2011 to monitor the initial grading. The construction corridor appeared to pass through a wide gap in the mound group as mapped by Lewis, although the mounds are no longer visible due to cultivation. No mound fill, features, human remains, or prehistoric artifacts were encountered by the road construction.

Belle Creek Mounds (21GD72) – DNR Timber Sale Review, Goodhue County

In August 2011, the State Archaeologist was asked to assist the DNR Forestry Heritage Resources Program with assessing possible impacts to the Belle Creek Mounds (21GD72) near Welch in Goodhue County. The Belle Creek Mounds had been mapped by T. H. Lewis in 1885 and consisted of 67 mounds above the Cannon River. The timber sale was thought to be immediately north of the mound group. While a few of the mounds had been subjected to amateur excavations in the early 20th century and the mounds had been visited by various archaeologists since 1885, no detailed mapping had been done since Lewis. OSA's Bruce Koenen accompanied Mike Magner (DNR Forestry Archaeologist) on a visit to the site on 8/17/11. Numerous mounds were located and photographed, but no detailed mapping was done as the timber sale project was clearly north of the mounds. The survey is reported in more detail in the 2011 annual report of the DNR Forestry Heritage Resources Program.

21GD213 – Land Sale and House Construction, Red Wing, Goodhue County

In November 2011, a bank in Red Wing contacted the State Archaeologist about the sale of a lot in Red Wing that contained a burial mound. The site in question is designated 21GD213 and had been first mapped by archaeologist Douglas Birk in 1996. In 1999, the State Archaeologist (Dudzick) authenticated the mound as a burial ground and established a 10-foot set-back perimeter around the mound. In 2003, Dudzik expanded the recommended buffer to 20 feet. The current State Archaeologist (Anfinson) examined the location on 12/14/11. He contacted the prospective buyer stating the need for at least a 20-foot setback from the

mound and coordination with the Minnesota Indian Affairs Council (MIAC). After coordination with MIAC, in April 2012 the landowner was allowed to remove dead or damaged trees from the mound area and then cleared the entire lot area outside the 20-foot buffer. The State Archaeologist continued to monitor construction activities at the site. A house had not been constructed on the site as of the end of May 2012.

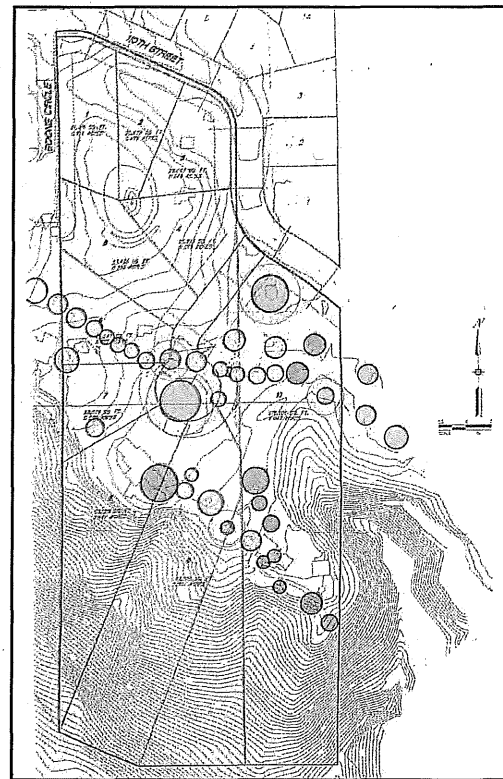
Bloomington Ferry Mounds (21HE17) – Authentication Request, Bloomington, Hennepin County

In January 2012, the State Archaeologist received an authentication request from a realtor representing a landowner in Bloomington. The landowner was considering selling some of his property that was within a large mound group known as the Bloomington Ferry Mounds (21HE17). In October 1882, surveyor Theodore Lewis had mapped 95 mounds that extended along the bluff from what is now Highway 169 east to Bloomington Ferry Road, a distance of about 3,150 feet. When the State Archaeologist had been Municipal – County Highway Archaeologist, he had examined this mound group in 1977 for the proposed replacement of the Bloomington Ferry Bridge and the re-alignment of the approach road, which was called County Road 18 at that time and is now Trunk Highway 169. In 1981, he re-mapped these mounds and was able to document remnants of over 30 surviving mounds.

In the 1980s, this area was platted for housing development and the State Archaeologist (Hohman-Caine) worked closely with the City of Bloomington to develop management strategies to preserve areas where mounds were apparent or probably had surviving burial features. The four lots subject to the 2012 authentication request were not included in these management plans. This was indeed the last portion of the 21HE17 mound group that had not been authenticated. It is within the Westwind Bluffs addition in the City of Bloomington. The property appeared to include up to 37 of the 95 mounds mapped by Lewis in 1882, including Mound 26, and Mounds 28 – 62.

The Office of the State Archaeologist completed a preliminary field assessment of the property on 4/24/12. There appeared to be seven mounds that were still intact or partially intact (34, 39, 40, 44, 45, 58, 62). Mound 58 was the most apparent as a small hill feature in a grassy field. Some areas within the parcel had been completely disturbed, while other areas had no visible mounds, but mound features could have survived below the current ground surface.

In a letter dated 5/1/12, the State Archeologist provided the landowner with a map (on right) showing the approximate locations of the mounds mapped by Lewis with the still visible mounds (pink), mounds that had probably been



completely destroyed (yellow), and areas where sub-surface mound features may remain (green). Red circles were drawn around the visible mounds, which represented a 20-foot setback for the actual burial ground boundary. The letter required avoidance of all the visible and unknown areas and recommended that the landowner hire a qualified archaeologist or geomorphologist to examine the entire area for the presence of mound fill and burial pits.

The landowner complied with the additional work request and hired geoarchaeologist Michael Kolb of Strata Morph, Inc. in June 2012. Kolb completed his work in late June, but had not completed a final report by the end of FY 2012. The results of his work will be discussed in the 2013 Annual Report of the State Archaeologist.

21HE393 - Authentication Request for Hermitage Shores, Hennepin County

In March of 2006, the City of Minnetrista contacted the OSA regarding the Hermitage Shores Development and the possible presence of early historic settlers' graves within the development. Several neighbors also contacted OSA about the development. Based on historical research, George and Frank Halsted were supposedly buried near their cabin on Lake Minnetonka and this spot was supposedly marked with a flagpole in front of a late 20th century residence. The State Archaeologist visited the site in May 2006, located the flagpole, and photographed the vicinity. There was no obvious surface evidence for a gravesite or any marker denoting one, although a large boulder was present just south of the flagpole.

The State Archaeologist recommended that an archaeological survey be done of the entire development parcel because it was located on Lake Minnetonka, although such a survey was not mandatory as it was a private development on private land. Archaeological Research Services (ARS) completed this survey in July of 2007, but no archaeological materials were recovered. ARS sub-surface testing was just beyond a 20-foot buffer of the flagpole, but no features or artifacts were noted. In 2007 the State Archaeologist recommended that a 20-foot no-development setback be maintained from the flagpole in case there were indeed burials there.

In late May 2011, the new Hermitage Shores developer requested an official authentication of the Halsted graves so the property could be fully developed. OSA personnel met with representatives of the developer on-site on June 2, 2011. Since the initial OSA visit in 2006, the adjacent house had been removed, but the flagpole was still in place. OSA personnel excavated a 25-foot trench north of the flagpole, a six-foot trench south of the flagpole to the boulder, and a 12-foot long trench south of the boulder. The trenches were about 25 cm wide and 40 cm deep. OSA staff also excavated a trench around the boulder examining the soil for any features and the boulder for any markings or plaques. The soil was not screened. Although numerous late 19th century/early 20th century historical artifacts were found in the excavated soil, the only evidence of a grave-like soil feature was between 13 to 16 feet north of the flagpole. This feature was marked with pin flags and the trench was backfilled. The developer was asked to avoid the pin-flagged area and that any disturbances in the immediate vicinity should be monitored by a qualified archaeologist.

On 10/5/11, OSA personnel monitored the construction of a storm water culvert immediately adjacent to the suspect location of the Halsted graves. This was a deep excavation about 10 feet wide. No features or artifacts were noted during this excavation. The State Archaeologist will continue to monitor the location during the residential construction phase.

21HB46 – Authentication Request, City of Hubbard, Hubbard County

In August 2011, a prospective landowner contacted the State Archaeologist about a parcel of land in the City of Hubbard. He wanted to buy the parcel and develop it, but had been told by local residents that burial mounds might be present. The parcel in question was in the immediate vicinity of 21HB46. Mounds had first been noted here by amateur archaeologist Jacob Brower in 1899 who noted a group of mounds near the north end of main street, but did not provide a map or exact description of the mounds. In 1997, archaeologist Christy Caine accompanied by soil scientist Grant Goltz mapped a group of nine mounds in the City of Hubbard in conjunction with their survey of a county road construction project. Eight of the mounds were between Main Street and Lake Street (CSAH 6) with a single partial mound just west of Lake Street. It is assumed that the mounds noted by Brower are the same as those mapped by Caine and Goltz. The mound group was assigned the official inventory of 21HB46 in 1997.

The State Archaeologist visited the location on 8/9/2011. The area had a few residences, but was mostly covered with woods. The understory vegetation was quite dense and included thick patches of poison ivy. Although several mounds were noted, the dense vegetation made detailed mapping difficult so it was decided to return in late fall when after most of the leaves had dropped. After this field visit, the potential buyer was asked to contact the owners of the land and have them send an official authentication request to the State Archaeologist. This request was received on September 15, 2011.

On November 1, 2011, OSA personnel returned to the site and made a detailed survey of the mounds. The distribution of features conformed to the map made by Caine and Goltz in 1997. OSA personnel hand cored all eight mounds on the parcel in question and the soil profiles indicated they were indeed artificial constructions of some antiquity. In a letter dated 11/2/11, the State Archaeologist informed the landowners that burial mounds were present on their property. A 20-foot buffer was established around the entire group by connecting the arcs of 20' circles around the perimeter mounds. A map showing the official cemetery boundaries accompanied the letter. MIAC was copied on the letter and the landowners were informed that MIAC now had the principal management authority over the mound site.

21LA__ - Request to Confirm Abandoned Cemetery near Toimi, St. Louis County

In June 2009, the State Archaeologist got a phone call from a member of the public to check an abandoned cemetery near the town of Toimi in Lake County. The State Archaeologist visited the location on 11/4/11. The cemetery was several miles south of the historic Toimi School and was marked on the county road with a signed reading "Toimi Settlers Childrens Cemetery." A dirt path led back into a small clearing in a spruce forest. A typed sign on a post indicated that the cemetery had been used between 1905 and 1919. It had then been abandoned until 1991 when a local resident cleared the underbrush. At least 5 children had been buried in the cemetery, but there are no headstones only small depressions marking

some grave locations. The cemetery is clearly being maintained by a local group and is not threatened.

21MA74 – Burial Disturbance in City of Warren, Marshall County

On 8/18/09, an agent with the BCA in Bemidji called the State Archaeologist to report human remains being encountered by a residential development on the north side of Warren. An almost complete human skeleton had been exposed, as well as recent historic artifacts. MIAC's Jim Jones visited the location and it was agreed to allow removal of the skeleton for forensic examination. The remains were removed and sent to Dr. Phoebe Stubblefield at the University of North Dakota. After a brief analysis, Dr. Stubblefield provided the State Archaeologist with a verbal report stating that it was an adult of about 40 years of age and possibly of Indian origin. The remains were then given to MIAC for reburial. The MIAC has not informed the State Archaeologist as to the current disposition of the remains and has provided no written information about the site.

On 8/24/11, the State Archaeologist visited the location. A house had been constructed on the lot and the yard had recently been finish-graded so the top soil was exposed. The State Archaeologist walked over the area where the burial had been uncovered, but no artifacts or bone was visible on the surface. The area was photographed. An updated site form was then completed.

Tietje Cemetery – Public Report of Disturbance, Martin County

In May 2008, a local resident called the OSA to report the disturbance of a small pioneer cemetery near Wilbert in Martin County. The cemetery was near the edge of a farm field and the farmer reportedly took down headstones and then plowed and planted the area as part of the surrounding field. The State Archaeologist called the county sheriff and determined that the cemetery was still owned by a German Evangelical Church. A church had been built in 1895 adjacent to the cemetery, but had been moved to nearby Ceylon in 1905. The building was destroyed by a tornado in 1936 and most church records were lost. The church retained ownership of the cemetery. Because it can be considered an “abandoned” cemetery under MS 306 the County Boards has some jurisdiction. The sheriff said the landowner claimed to have permission from one relative to move a headstone and had



Historic marker in front of Tietje Cemetery, Martin County.

previous permission from the church board to plow to the edge of the graves. The landowner did not have permission to remove all the headstones or plow the entire area. At least three headstones and perhaps eight occupied graves remained in place until May 2008. The Martin County Board had the area resurveyed in 2008 and determined that the area in question had an earlier survey error and that the farmer actually owned the cemetery area. The Martin County Attorney was working to resolve the situation.

The State Archaeologist visited the location on 8/10/11. The cemetery was covered with prairie grasses and flowers. It was at the west edge of a cornfield with cultivated boundaries on the north, east, and south. Four newly-placed posts mark the four corners. At least one headstone is clearly visible in the prairie vegetation. A metal marker on the west side provides a history of the cemetery and notes the known burials. The cemetery is no longer threatened with disturbance.

21ME35 – Request to Authenticate Possible Mound in Meeker County

In September 2011, a local landowner asked the State Archaeologist to authenticate a possible mound west of Big Swan Lake in Meeker County. The landowner was putting the parcel up for sale and wanted to determine if there were any restrictions on the parcel's development. The location was in the immediate vicinity of site 21ME35, a prehistoric habitation site reported by a local artifact collector in 2003. The State Archaeologist examined the location on 11/15/11 and could find no evidence for a burial mound. The area was within a grove that contained an abandoned farmstead. The landowners were informed by letter on 12/12/2011 that no burials could be authenticated on their property.

21NL8 – Possible Mound Disturbance at Ft. Ridgely Cemetery, Nicollet County

In 1887, T.H. Lewis mapped four mounds just east of the ruins of Ft. Ridgely, just south of the fort's cemetery established in 1850s. A private cemetery was also established at Ft. Ridgely in the early 1900s and this too was just south of the historic cemetery. Ft. Ridgely State Park was established in 1911, but the private cemetery remained as an inholding and is still actively used. Three of the mounds mapped by Lewis were within the limits of the private cemetery with the fourth mound just east of the cemetery on State Park land. The mound (Lewis Mound 4) on State Park land was excavated by archaeologists working for the WPA in 1935. These archaeologists mapped the area showing one mound (Lewis Mound 2) within the cemetery and noted recent grave digging had uncovered bone and pottery in the vicinity of Lewis Mound 1, the mound farthest to the northwest. The WPA excavations in Mound 4 had encountered a human burial. The entire area of Ft. Ridgely was given the official state site number of 21NL8.

In May 2006, DNR State Parks archaeology staff informed the State Archaeologist that privately-owned maintenance vehicles had been driving over a known burial mound (Lewis Mound 2) in the private cemetery within Ft. Ridgely State Park. The State Archaeologist first examined the location on 6/1/06 noting fresh tire tracks across the mound. An attempt to contact cemetery management was prevented by the lack of a contact person and address.

In early May 2011, DNR State Parks personnel once again contacted the State Archaeologist about the possible disturbance of Mound 2 by the placement of a recent grave. The State

Archaeologist visited the location on 5/13/11 noting that the mound had indeed been disturbed by a grave excavated in May 2011 near the western edge of the mound. A list of cemetery officials was obtained from DNR, and in a letter dated 5/18/11, the State Archaeologist asked that no more graves be placed within the mound area and that a plat map be sent to the State Archaeologist so a "no disturbance area" could be exactly defined. The cemetery officials replied by letter on 5/30/11 and included a plot map, but the map did not have a scale or a reference datum. A map with a scale and datum was then requested by the State Archaeologist.

The State Archaeologist visited the location on 9/20/11. Mound 2 and the new grave were mapped. Pin flags were then placed in the mound center and around the mound establishing a 20-foot "no disturbance" buffer around the mound. A second smaller mound (Lewis Mound 3) was noted at the east edge of the cemetery and Mound 4 was noted just southeast of the cemetery on State Park land. The cemetery association was informed of this in a letter dated 9/22/11. A detailed map was once again requested by the State Archaeologist and the cemetery association was asked to mark the southeastern corner of their property so a detailed sketch map could be made showing the mounds in relation to recent graves. This marking had not been done by the end of FY2012. As soon as the datum is established, the State Archaeologist will make a detailed map of the surviving mounds in relation to plotted graves and officially authenticate the mounds within the cemetery.

Dundas Episcopal Churchyard – Authentication Request in Dundas, Rice County

In November 2010, the director of the Dundas Historical Society contacted the State Archaeologist about a proposed addition to the Church of the Holy Cross in Dundas. The original Episcopal church had been constructed in 1868 on land donated by the prominent Archibald flour milling family. The church was built by William Cleland using funds provided by the Archibalds. Cleland then built a house for his family northeast of the church. In 1874, a cemetery was established for the Archibald family just north of the church. William Cleland's family was not allowed to use this cemetery so another small cemetery was established just east of the church. The last burials in both churchyards were in the late 19th century. In 1900 a vestry was added to the southeast corner of the church. In 1964 a parish hall was added to the south of the vestry. The Church of the Holy Cross and its churchyards were added to the National Register of Historic Places in 1982.

In 2009 the Church of the Holy Cross was closed by the Episcopal Church and soon after the building and land were sold to the Rejoice Church of Northfield. In late 2010 Rejoice Church planned to construct a major addition to the northeast side of the church and build an extensive parking lot east of the church. The State Archaeologist was contacted in November 2010 due to concerns the parking lot would disturb the Cleland graves.

The State Archaeologist determined that neither cemetery has been officially recorded with Rice County so OSA had some management jurisdiction under MS 307.08. The State Archaeologist then contacted the architect for the church addition in early December 2010. The architect stated that they indeed planned to remove the Cleland graves because the slope east of the church would require a significant retaining wall if the graves were allowed to remain. The Rejoice Church proposed to reinter the removed remains in the Archibald

cemetery north of the old church. The State Archaeologist noted the MS 307 concerns and also suggested that an Environmental Assessment Worksheet (EAW) may be required due to the effects on a National Register listed historic property.

After conferring with the Rejoice Church, the City of Dundas, the Dundas Historical Society, former members of the Church of the Holy Cross, and descendants of the Cleland family, the State Archaeologist determined on 12/22/10 that it was unnecessary to remove the Cleland graves and inappropriate to reinter them in the Archibald Family cemetery. This decision was based both on historical integrity concerns and concerns voiced by the Cleland family. A 20' no-disturbance boundary was established by the State Archaeologist beyond the fence surrounding the Cleland cemetery. The Rejoice Church subsequently re-designed the parking lot to avoid direct impacts to the Cleland Cemetery. The City then determined that an EAW was unnecessary because the effects to the historic property were not adverse.

The State Archaeologist visited the Dundas church several times during the new construction in 2011 and early 2012 to insure that the setback from the Cleland Cemetery was maintained. The cemetery was not harmed by the construction and the 20-foot no disturbance boundary was maintained.

21SC22 – Electric Line Relocation, Scott County

In June 2010, Three Rivers Park District contacted the State Archaeologist regarding a new electric overhead service line proposed by the City of Shakopee originating in Shakopee Memorial Park and going through the westernmost parcel of The Landings Park (formerly Murphy's Landing). This power line would replace an existing overhead line. The power line passed through a known mound group, 21SC22.

The mound group known as 21SC22 was originally surveyed by Theodore Lewis on October 13, 1882. The group consisted of 28 mounds and is also known as the Pond Mound Group, after the missionary Samuel Pond who lived in the immediate vicinity. A historic Dakota village site (Chief Shakopee's) was also recorded in the immediate vicinity of the mounds and this habitation site was given the number 21SC2. Lloyd Wilford of the University of Minnesota excavated at the village site in 1940. In 1975, Doug Birk and Doug George of the MHS mapped the mound group, documenting about half the mounds as still intact. In 1976 the City of Shakopee



Representatives of OSA, MIAC, the Shakopee Dakota, the City of Shakopee, and the Three Rivers Park District meet at 21SC22 to discuss electric line options near burial mounds.

disturbed Mounds 23 and 24 in 21SC22 when they were landscaping for Veterans Memorial Park improvements. MHS archaeologists noticed the disturbance and found artifacts and human remains scattered on the surface of the freshly graded area. Various surveys over the last 30 years have recorded about 10 clearly visible mounds. In 1998, the city removed a flagpole and veteran's marker from Mound 21 and turned over management of the eastern (visible) mounds to the Shakopee Dakota Community. On 6/13/11, the State Archaeologist examined the area and took photographs.

On 9/15/11, the State Archaeologist met on-site with representatives of the City, Three Rivers Park District, MIAC, and the Shakopee Dakota. All parties agreed that the power line relocation would not impact the mound group if it was kept north and east of the mapped mounds.

Possible Mounds on Fish Lake – Request to Confirm, St. Louis County

In October 2011, the State Archaeologist received a phone call from a member of the public reporting possible burial mounds near Fish Lake in St. Louis County on a parcel that was being sold for possible development. There was no previously recorded site in the immediate vicinity. The State Archaeologist examined the location on November 4. It was a lightly wooded parcel that contained numerous low earthen features that may have been due to tree falls. There were no features that resembled burial mounds. The St. Louis County Land Manager was contacted on 11/7/11 and he was informed that no burial sites could be identified on the property.

21WW2 –Possible Mound Site Disturbance, Watonwan County

In August 2011, a member of the public reported a possible burial mound disturbance in Watonwan County. The location was in the vicinity of 21 WW2, a possible prehistoric mound site first reported by a local resident, but a survey by MHS archaeologists in 1978 could find no evidence for the site. Because of the reported location was in a lowland, they concluded it must have been a natural feature. The State Archaeologist examined the location of the possible disturbance on 8/17/11 and found a contractor removing a grove of trees south of Long Lake. A mound-like feature was noted at the east edge of the grove just north of the county road. This feature was cored with a hand-held soil corer and revealed what appeared to be relatively recent fill with almost no topsoil present. No trees in the vicinity were over 30-40 years of age. The feature may be a spoil pile associated with earlier road construction. The location is about one-quarter mile northwest of the originally reported location for 21WW2.

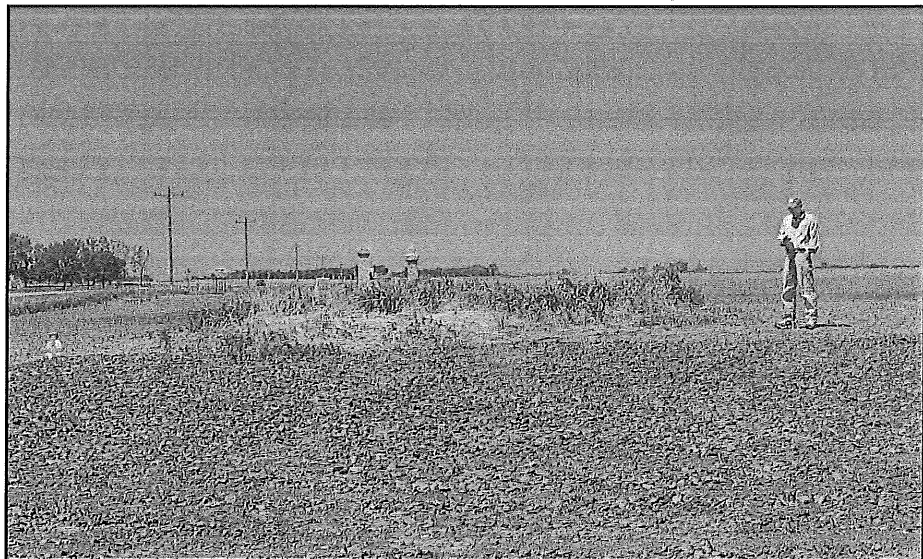
Stony Run Cemetery (21YM__) – Authentication Request for Pioneer Cemetery, Yellow Medicine County

On 11/7/11, the County Attorney of Yellow Medicine County called the State Archaeologist about an abandoned cemetery that was being impacted by cultivation. The State Archaeologist first visited the location on 11/10/11 to examine the situation and take photographs. There was a small grassy area within a cultivated field containing several marked graves. An official authentication request by letter from the County Attorney was dated 11/30/11. The State Archaeologist replied by letter to the County Attorney on 12/5/11 asking that land ownership be determined because authentication requests had to come from

the landowner. The County Attorney replied by letter on 12/21/11 that the cemetery had been owned by Stony Run and Lisbon Norwegian Evangelical Church, but that church no longer existed. The county as the principal zoning authority and *defacto* owner of the abandoned parcel thus requested official authentication. There was a deed for the property in the church's name dated December 11, 1897 filed at the County Recorder's office, but the land had not been officially recorded as a cemetery. The County Attorney also identified the adjacent property owner and the farmer leasing the land who had been gradually plowing closer to the headstones.

On 5/16/12, OSA personnel returned to the site to make a detailed map and establish formal boundaries. The cemetery contained at least six headstones evidencing burials from the 1890s and early 1900s. The text on the headstones was written in Norwegian. Some headstones were still in place, but at least one had fallen over. It was clear from the recent planting of the corn rows that the farmer was utilizing large machinery that barely fit between a utility pole at the edge of the county road ditch to the south and the southernmost headstones in the cemetery. In order to allow the farmer adequate passage for the large machinery, the State Archaeologist decided to not establish a wide buffer around the cemetery, but insure that no graves were impacted by providing at least 5 feet of clearance between the cultivation and any headstone on the south as well as a 15-foot buffer on the other three sides of the cemetery.

In an email dated 5/23/12, the State Archaeologist suggested the above buffer to the County Attorney. The letter also requested that the area be fenced to prevent unauthorized intrusion into the cemetery. The County Attorney replied by email on 6/15/12 suggesting that posts rather than a fence be used to demarcate the cemetery boundary as the fence may create a snow trap that could affect the adjacent county road. The State Archaeologist agreed to the post option by email on 6/19/12 if six posts were used – one at each of the four corners and middle posts in the middle longer east-west perimeters on the north and south sides. The County Attorney agreed to this plan and was going to forward it to the County Board and the landowner. No final decision has been made as of yet and final authentication is awaiting official word from Yellow Medicine County. The State Archaeologist will continue to monitor the situation.



OSA assistant Bruce Koenen takes a GPS reading at a corner of the Stony Run Cemetery in Yellow Medicine County.

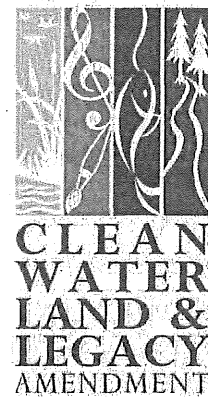
Chapter 3: Minnesota Archaeology in 2012

In the 2006, 2007, 2008, 2009, 2010, and 2011 OSA Annual Reports, the State Archaeologist discussed in detail the status of Minnesota archaeology highlighting recent developments and current problems and suggesting courses of action that could improve Minnesota archaeology. The FY 2012 status of archaeology in Minnesota has not changed greatly with regard to the numbers of archaeologists working in the state, the programs at the State Universities, laws, and cultural resource management activities. However, substantial funding through the 2008 Legacy Amendment continues to have major positive implications for Minnesota archaeology with regard to both research and management.

Statewide Survey of Historical and Archaeological Sites

In November 2008, the voters of Minnesota approved a constitutional amendment that increased the state sales tax by three-eighths of one percent for 25 years with the revenue dedicated to four funds whose primary purpose is to preserve the natural and cultural legacy of the state. The amendment is commonly referred to as the Legacy Amendment. One of the four funds is the *Arts and Cultural Heritage Fund*, which receives 19.75% of this sales tax revenue and is dedicated to the preservation of the state's arts and cultural heritage. Following intensive lobbying by the State Archaeologist and MHS in May 2009, the Minnesota Legislature allocated \$500,000 from the biennial budget of 2010 - 2011 Arts and Cultural Heritage Fund for a *Statewide Survey of Historical and Archaeological Sites*.

This survey was to be accomplished by competitive bid contracts to conduct a statewide survey of Minnesota's sites of historical, archaeological, and cultural significance. The law specified that the Office of the State Archaeologist, the Minnesota Historical Society, and the Minnesota Indian Affairs Council each appoint a representative to an Oversight Board that would select contractors and direct the conduct of the survey. The funds were allocated to the Minnesota Historical Society for contracting purposes.



The Minnesota Historical Society appointed the head of their Archaeology Department, Patricia Emerson, to the Oversight Board. The other two members were Scott Anfinson, the State Archaeologist, and Jim Jones from Minnesota Indian Affairs. At their initial meeting, the Oversight Board determined that archaeological resources rather than standing structures should receive the principal survey emphasis because archaeological resources are much less well known, are largely invisible on the surface, and are not taken into account by most local planning agencies thus they are more vulnerable. Furthermore, substantial separate funding from the Arts and Cultural Heritage Fund had been provided to the MHS for grants that realistically would be focused on non-archaeological aspects of the state's cultural heritage because most grants would go to local historical societies unfamiliar with archaeological resources and needs. The Board also determined that the general survey strategy to be employed should: 1) examine poorly known areas of the state, 2) examine poorly known

statewide historic contexts, and 3) undertake projects that would assist both state and local agencies with protecting and managing cultural resources.

Following consultation with the Minnesota Department of Transportation (MnDOT), the Minnesota Department of Natural Resources (DNR), the Council for Minnesota Archaeology (CMA), and the general public at an open meeting at Ft. Snelling on 9/9/09, the State Archaeologist wrote a series of descriptions of possible Requests for Proposals (RFPs). Consultation with MnDOT and DNR continued as specified in the legislation.

A total of eight competitive bid contracts were implemented in the FY 2010-11 biennium to address the strategy adopted by the Oversight Board. These contracts are titled: *Survey to Assess the Status of Burial Mound Sites in Scott and Crow Wing Counties*, *Survey to Identify and Evaluate Indian Sacred Sites and Traditional Cultural Properties in the Twin Cities Metropolitan Area*, *An Archaeological Survey of Swift County*, *An Archaeological Survey of Olmsted County*, *An Archaeological Survey of the Lake Superior Region*, *A Survey to Find Minnesota's Earliest Archaeological Sites*, *Investigating Unrecorded Historic Cemeteries in Minnesota*, and *The Age of Brainerd Ceramics*. The first three contracts were completed by the end of December 2010 and an additional four were completed by the end of December 2011. These projects were all summarized in the 2011 Annual Report. The final contract (Brainerd Ceramics) was completed in early 2012 and is summarized below.

Final reports for all the completed contracts can be found on the State Archaeologist's webpage, although exact locational information for sites has been removed from the on-line reports in order to protect landowner's rights, reduce site vandalism, and comply with state law regarding security data. Exact site locational information will be given to appropriate state and local agencies for planning and management purposes or to professional archaeologists for research and management purposes. This information is also available to site landowners.

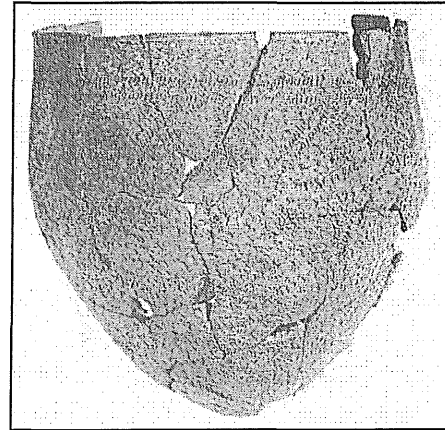
The Age of Brainerd Ceramics

Purpose: To determine if Brainerd ceramics appear as early and survive as late as some researchers have proposed (1500 BC – AD 700), if contamination with old carbon plays a significant role in dates on food residues from Minnesota prehistoric ceramics, and if the contamination is dependent on region of origin of the ceramics, the natural food sources of the charred material, or pre-treatment methods. Better understanding these ceramics and associated culture(s) will allow management agencies to better assess site significance and allow more economical management practices.

Contractor: Soils Consulting (Christy Hohman-Caine and Leigh Syms)

Results: The contractors obtained 40 new radiocarbon dates and 10 optically stimulated luminescence (OSL) dates from 13 previously excavated archaeological sites. The radiocarbon dates included 16 from ceramic residues, 14 from charcoal, and 10 from bone or burned bone. The contractors used these dates and 32 previously obtained Brainerd dates to examine the chronological range of Brainerd ceramics and possible causes of dating error. They also examined the ceramic and lithic technology associated with Brainerd.

Recommendations/Conclusions: Prior to this study, the age of Brainerd ceramics was suggested to begin as early as 2450 BC and last as long as AD 650 (4400 – 1300 Before Present). Based on this study, the new range is suggested to be 800 BC to AD 250. The radiocarbon dates did demonstrate some impact from the freshwater reservoir effect most noticeable on the ceramic residue dates, especially dates with $13\text{C}/12\text{C}$ ratios greater than -30; 14 of 39 ceramic residue dates appear to be too old. Most charcoal dates (17 of 21) do not appear to be from Brainerd contexts suggesting pronounced stratigraphic mixing at the sites. The authors also suggest dividing Brainerd ceramics into two distinct wares – *Brainerd Net Impressed* and *La Salle Creek*. Projectile points associated with these ceramics have a considerable variation, but all appear to be dart points and not arrow points. Based on the results of this study, additional research should be focused on the problems with ceramic residue radiocarbon dates.



The State Archaeologist and the Minnesota Historical Society requested additional funding for the Statewide Survey for the 2012-13 biennium. The Legislature granted another \$500,000 and this funding has resulted in eight new projects. These projects are: *Archaeological Survey of Red Lake County*, *Archaeological Survey of Steele County*, *Archaeological Survey of McLeod County*, *LiDAR Analysis of Burial Mounds in 16 Counties*, *Study of Minnesota Plains Village Complexes*, *Study of Woodland Period Complexes in West Central Minnesota*, *Study of Masonry Ruins*, and *Study of Historic Dams*. These projects will be discussed in the 2013 Annual Report.

Current Status of Minnesota Archaeology

Archaeologists

There are currently perhaps 100 North American archaeologists living and working in Minnesota. More than 60 of these archaeologists have advanced degrees and practice archaeology full-time in the state. Over 50 of the advanced degree archaeologists work in cultural resource management (CRM) with 12 at Federal agencies, 10 at State agencies, 3 at Indian reservations, and about 30 at private contracting firms based in Minnesota. A number of out-of-state contracting firms also occasionally do archaeological work in Minnesota. Advanced degree archaeologists generally meet federal and state standards required to be a principal investigator on a public archaeological project and to obtain a state license.

There are perhaps an equal number of Bachelor's Degree-level archaeologists living in Minnesota who work on CRM field crews and do much of the analysis and record keeping for CRM contracting firms and agencies. Some of these jobs are seasonal.

There are 11 full-time academic archaeologists in Minnesota who have advanced degrees and practice North American Archaeology. The University of Minnesota – Minneapolis has six full-time staff archaeologists in the Anthropology Department, but only one specializes in North American archaeology (Katherine Hayes). There are three North American archaeologists at Minnesota State University - Moorhead (Mike Michlovic, George Holley, Rinita Dalan), two at St. Cloud State (Mark Muniz, Debra Gold), two at Hamline University (Skip Messenger, Brian Hoffman), and one at Minnesota State – Mankato (Ron Schirmer). There is also one North American archaeologist at the Science Museum of Minnesota (Ed Fleming). Jeremy Nienow has recently been hired to teach archaeology and anthropology at Inver Hills Community College. Several recent graduates of advanced degree archaeology programs also reside in the state and do not have full-time employment as archaeologists, although they have intermittent teaching and contract archaeology jobs.

Post-secondary Archaeological Education

The University of Minnesota Department of Anthropology is once again offering *local* summer field schools in archaeology. Professor Katherine Hayes provided direction for a historical archaeological field school at the Reaume Trading Post site (21WD15) in 2012. Dr. Hayes also directs the Heritage Management graduate program at the University of Minnesota. University of Minnesota archaeologist Gillian Mornier and Science Museum of Minnesota archaeologist Ed Fleming co-directed a University of Minnesota field school at the Bremer Village site (21DK6) in Dakota County.

Archaeological programs at the state universities at Moorhead, St. Cloud, and Mankato continue to have robust archaeological programs and the addition of new faculty members in recent years at several of these institutions bodes well for the future of archaeological research and education in Minnesota. This is also true at Hamline University. The availability of Legacy Amendment funds for archaeological projects is a major new incentive to pursue research in the state.

Public Archaeological Education

The state continues to lack formal archaeological publications, archaeological museum exhibits, and archaeological fieldwork opportunities for the general public. University field schools are open only to students and usually to students that are enrolled full-time at the respective universities. The National Forest Service continues to offer occasional short-term public excavation opportunities known as *Passport in Time* (PIT) projects, but these are limited to the two national forests in northern Minnesota and do not occur every year.

The publication void will be partially filled by the release of Guy Gibbon's book entitled *Archaeology of Minnesota* by the University of Minnesota Press in late 2012. Placing reports from the *Statewide Survey of Historical and Archaeological Sites* on the OSA webpage also provides easy access to important recent archaeological information about Minnesota. The journal *The Minnesota Archaeologist* continues to be published by the Minnesota Archaeological Society.

A Plan for 2013

Legislation

Next year will be the 50th anniversary of the Field Archaeology Act. The Field Archaeology Act (FAA) and the Historic Sites Act (HSA) both contained in Minnesota Statutes 138 have a number of areas that could benefit from revision including:

- 1) the *Legislative Intent* section of the FAA should emphasize preservation of sites rather than regulation of archaeologists;
- 2) the *Definition* section of the FAA lacks several key concepts such as *agency*, *paramount right of the state*, *significant site*, and *undertaking*, as well as needing revision of certain definitions (e.g., *object* should eliminate “skeleton” as an example 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 FAA licensing process should be streamlined to increase efficiency and reduce redundancy by having the State Archaeologist issue the license rather than MHS;
- 4) the environmental review sections of both laws should be more consistent with federal legislation (e.g., review of *all state sponsored* undertakings that could harm *significant sites*);
- 5) improved coordination with and references to other pertinent statutes such as MS 307 and environmental laws that involve archaeological matters and the State Archaeologist;
- 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); and
- 7) the State Register of Historic Places in the HSA should be revised to include an eligibility provision for environmental review purposes and a non-Legislative process to improve ease of listing.

The Department of Administration (the parent agency of OSA) will not present revised MS 138 legislation to the 2013 Legislature unless there is prior agreement with MHS on major changes and key stakeholders have been carefully consulted prior to presentation. Key stakeholders include MIAC, MnDOT, DNR, the Council for Minnesota Archaeology (CMA), city governments, and county governments.

The Statewide Survey of Historical and Archaeological Sites

The State Archaeologist and the Minnesota Historical Society will return to the Legislature during the 2013 session to ask for additional funding for the *Statewide Survey of Historical and Archaeological Sites*. The eight completed projects for the 2010-11 Biennium and the eight current projects for the 2012-13 Biennium clearly demonstrate the value of the survey both to cultural resource management and research. The survey will continue its three-part focus: 1) examining poorly known areas of Minnesota through county surveys, 2) examining poorly known historic contexts, and 3) examining poorly known property types. Examinations of all three of these foci benefit cultural resources management by providing

information on where archaeological and historic sites are located and for determining which resources are significant (i.e., worthy of preservation).

If funding for the 2014-15 biennium can be secured, future projects in each of three foci could include:

- Poorly Known Areas: Surveys of Lake of the Woods, Pope, and Wadena counties
- Poorly Known Contexts: Archaic Period, SE Minnesota Woodland Period
- Poorly Known Property Types: Ojibwe TCPs, CCC Camps, more LiDAR-Mound

Development Plan Review

The OSA began officially reviewing Environmental Assessment Worksheets (EAWs) in 2007, but there is still a major deficiency in the environmental review process with respect to archaeological sites on public property. MS 138.40, Subd. 3 requires all public agencies, not just state agencies, to submit their development plans to OSA and MHS if known or scientifically predicted archaeological sites may be affected on lands they control. The majority of local governments do not conform to this requirement unless the project is required to have historic impact review under federal law (e.g., Section 106, NEPA) or under the Minnesota Environmental Policy Act (MS 116d). 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.

Even the relatively few projects that are submitted for archaeological review rarely get detailed review. The State Archaeologist has many duties and is short-staffed so OSA written replies to EAW submittals are sent only if an archaeological survey is recommended or a known archaeological site or burial site should be avoided within the Area of Project Effect (APE). Furthermore, if the project will be reviewed under federal Section 106 or will otherwise be reviewed by the SHPO (e.g., State Agency RGU), the OSA defers review and comment to the SHPO unless unrecorded burials or sites on non-federal public property are involved.

There are also times when the OSA is simply too busy with more critical duties so EAW reviews do not get completed within 30 days and thus no comment is issued. This is becoming more common mainly due to responsibilities associated with the *Statewide Survey of Historical and Archaeological Sites*. Numerous EAW projects were not reviewed by the OSA in FY2012 due to lack of staff time.

The OSA will try work more closely with state and local agencies to make them more aware of impacts to archaeological sites by various types of projects and will attempt to help agencies efficiently and effectively fulfill their review obligations. The most effective way to accomplish a basic archaeological project review is to provide secure access to the archaeological site database and to accurate predictive models for unrecorded sites. The OSA may pursue a Legacy grant to help implement this.

MnDOT has an electronic archaeological predictive model called MnModel initially developed in the mid-1990s. MnModel began a significant upgrade in FY2012 known as

MnModel 4. If a simplified version of this revised model could be made easily accessible to local governments they would have a reasonable way to assess initial site probability. OSA will work with MnDOT to try accomplish this. If MnModel model cannot be made widely accessible in a secure and effective manner, OSA will continue to try provide local governments with narrative predictive models. Some of these models are being produced by the county surveys done for the *Statewide Survey of Historical and Archaeological Sites*.

Because effective agency plan review, response to calls from the public requesting information, and even many aspects of research rely on accurate and easily accessible knowledge of site distribution and site type, the site databases maintained by the OSA 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* 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. The data from the Historic Burials Sites project completed with Legacy funds in FY 2011 has not yet been added to the OSA Burials Database. The MnModel 4 project will plot survey locations and site boundaries and then put this information into GIS format.

Even if comprehensive data is available in OSA database, most local agencies in Minnesota do not have direct access to these databases. To obtain up-to-date site information they must visit the OSA offices or call OSA staff, but OSA has limited ability to handle large numbers of visitors, requests for information, or complicated database searches. In FY 2012, the OSA worked with the MnGEO Division of the Department of Administration to try make the OSA databases available on-line by the end of FY 2012. During this attempt, it was discovered that the GIS software developed by DNR in the early 1990s that maps sites by quarter section would not work due to a flaw in its inability to deal with meandered land. This discovery has temporarily halted OSA work on making a comprehensive site database available on line. It will be further investigated in FY2013.

Archaeological Research

Critical research needs include radiocarbon dates for certain sites and complexes, a mounds status survey, site locational surveys and site excavations in poorly known regions to establish the basic cultural sequence and fine-tune predictive models, and investigations of the Early Prehistoric Period including finding and excavating well-preserved Paleoindian sites. University-based research will still have to take the lead in some of these investigations, especially those involving major excavations, but state level initiatives are essential to fulfilling others. The OSA will contribute staff time and other resources to further these research goals. Many of these initiatives may be funded through the *Statewide Survey of Historical and Archaeological Sites* noted above.

Radiocarbon Dating Needs - The need to better date the Brainerd ceramic complex as discussed in the 2009 Annual Report was accomplished by the Brainerd Dating Study discussed on page 35 of this report. Initiatives to address absolute dating of other prehistoric

cultural complexes are being considered with Legacy funding made available in the 2012-13 biennium for western Minnesota Woodland and Plains Village complexes. If additional funding is secured for the 2014-15 Biennium, a major Archaic Period dating initiative may be undertaken.

Mound Status Survey - Another key Minnesota research need is a Mound Status Survey. Theodore Lewis and Jacob Brower first mapped most of Minnesota's 12,500 known burial mounds in the late 19th century. Some of these mound sites have not been visited by an archaeologist in over 100 years. The actual current condition of most mound sites is not known and very few have been officially authenticated by the State Archaeologist. While it is against the law to willfully disturb a burial ground, most land owners are unaware that mounds were mapped on their property and thus they do not know what to avoid disturbing.

A major effort to assess the status of mound sites in Minnesota began with the 2010 Legacy-funded LiDAR mound survey in Scott and Crow Wing counties discussed in the 2010 Annual Report. The State of Minnesota also provided Legacy funding to complete statewide coverage for LiDAR to be completed in FY2012. Using this new LiDAR information, a *Statewide Survey* initiative to be completed in FY 2013 should help us better assess the current condition of many of Minnesota's burial mounds.



Minnesota Department of Administration officials visit the burial mound authentication at 21HE17 in Bloomington. From left to right are Adam Giorgi, Curt Yoakum, Commissioner Spencer Cronk, Matt Bailey, Ryan Church, Scott Anfinson, and geoarchaeologist Mike Kolb.

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Appendix A: 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.

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 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, protection, and interpretation of archaeological sites, historic structures, and other elements of cultural heritage through survey, evaluation, and treatment strategies.

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.

Grave Goods – objects or artifacts directly associated with human burials or human burial grounds that were placed as part of a mortuary ritual at the time of internment.

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.

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 Euro-American 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 (ca. 12,000 BC) up to the significant incursion of European culture (ca. 1650); 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).

RCYBP – Radiocarbon Years Before Present means the measured aged of a radiocarbon sample with Present set at 1950, the first year of extensive radiocarbon dating. Because all dates are subject to inherent errors, the actual age of any sample needs to be corrected. The error can be thousands of years for dates over 10,000 RCYBP.

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.