UNIVERSITY OF MINNESOTA

Crookston • Duluth • Morris • Rochester • Twin Cities　　**Center for Urban and Regional Affairs**　　*330 Hubert H. Humphrey Center*
301 - 19th Avenue South
Minneapolis, MN 55455

Phone: 612-625-1551
Email: cura@umn.edu
Web: www.cura.umn.edu

May 29, 2018

Minnesota Geospatial Advisory Council
c/o Dan Ross, Chief GIO
Minnesota Geospatial Information Office
658 Cedar St., Room 300
St. Paul, MN 55155

Dear Council Members:

It is my honor to nominate the University of Minnesota's John R. Borchert Map Library for a 2018 Governor's Geospatial Commendation. That library has done an exceptional job of preserving and providing access to historical aerial photography of the state. Its *Minnesota Historical Aerial Photographs Online* (MHAPO) website[1] continues to be a pioneer in the area of access to aerial photograph collections. The Map Library helps our state meet the Council goals of

- Sharing of geographic data, expertise and technology and
- Champion collaboration among geospatial practitioners and related stakeholders

MHAPO is a collection of 270 different sets of historical aerial photographs of Minnesota, covering the period 1923-1991. All 87 counties are represented. Each of the 121,000 photos has been scanned and geo-located.[2]

The MHAPO website facilitates easy discovery and access to these photos. Users see a map of the state with dots showing the location of all photos. They can focus their search by space or time. Users can zoom to a point of interest or type in a place name or an address. They can orient themselves with a range of basemaps, including street maps and current imagery. Time windows can be selected by choosing the decade or decades of interest. A group of potential photos are then portrayed as dots on the screen. Users can click a dot to view the photo, then save the photo or email it to a colleague.

MHAPO started in 2008 with 15,000 aerial photos available for viewing and downloading. User response was strong. The Map Library was encouraged and added more resources.

MHAPO now averages over 1,000 page views[3] a week, and over the past five and a half years has averaged nearly 800 page views a week. That rate is far above the number of in-person visits any library could handle manually. And the visitors get their needs filled as needed -- from any of the various collections and any time of day or night. Minnesotans are #1 users, but the site has had visitors from another 47 states and 32 countries.

---

[1] https://www.lib.umn.edu/apps/mhapo/

[2] The center of each photo is located by x-y coordinate. The photo appears in its original representation, without adjustments for ortho-rectification. While some of that work is done by the agencies submitting their photos, a significant portion is done by Borchert Library staff.

[3] These are separate visits to the website, not simply separate photos viewed.

The Map Library's collection of aerial photography is growing because outside organizations know it will both preserve and provide access to their collections. In 2012, the city of Minneapolis transferred its collection of historic photos to the library. Other donations have come from Hennepin County, Metro Council, DNR Forestry, MnDOT, and the Natural Resources Conservation Service.[4] MHAPO is both the de facto repository for the DNR photography and an independent access point into the DNR Landview[5] website for those photos.

The capabilities of the system have been growing too. Realizing that many users are interested in looking at changes over time, the Map Library has developed a separate Twin Cities Aerial Photo Mosaic application[6]. Photos for 1956 and 1966 have been rectified and stitched together into two images. Changes across years can visualized by loading and registering the two individual images on top of each other, then alternately showing old and new by moving a vertical slider back-and-forth across the screen revealing the older image to the left of the slider and the newer to the right.

This nomination includes seven letters of support from people in organizations across the state that have benefited from the MHAPO. Those organizations are doing work that benefits the people and environment of Minnesota. They are using these historic photos to better understand our present situation and make decisions that seek to improve our future.

Support letters are from the following organizations. A few have appreciated the Map Library's willingness to scan and archive their material, then make it accessible to the public. Many have used MHAPO resources to achieve the mission of their organization. All are appreciative of Map Librarian Ryan Mattke and his staff for the effort and enthusiasm they put into their work. The supporters include a mix of government, academic, non-profit, and private sector organizations, plus a private individual.

1. City of Minneapolis
2. DNR Forestry Resource Assessment Program
3. DNR Ecological and Water Resources
4. Metropolitan Council Environmental Services
5. University of Minnesota, Department of Geography, Environment, and Society
6. Science Museum of Minnesota
7. MetroGIS
8. Wabasha County Historical Society
9. EDR - Environmental Data Resources[7]
10. Paul Nylander, private individual

It would be impossible to know all the uses of these photos because state law, internet anonymity, and library ethics prevent access to user names. The American Library Association's Code of Ethics says, in part, "We protect each library user's right to privacy and confidentiality with respect to information sought or received…." For each of the letters included in this nomination, Ryan Mattke wrote a note to

---

[4] Contributions from other organizations have included newer photography, so MHAPO now provides access to some images as current as 2007.

[5] https://www.dnr.state.mn.us/maps/landview

[6] http://z.umn.edu/aerialswipe

[7] EDR is a national firm focused on environmental information services. Jared Schneekloth, their Content Data Manager, lives and works in Minnesota

users he knew, asking if they would be willing to be contacted about a letter of support. These are busy people, yet each responded with the enthusiasm you will see in their letters.

It is clear that the Map Library has gone above and beyond their narrow mandate of being a repository of maps and photos for people to stop by and browse. It is collaborating with multiple government agencies to both preserve their photography and make it accessible to their staff. It is sharing those historic photographs with other agencies and the widest possible public by making them easy to discover and easy to access.

The John R. Borchert Map Library continues to pioneer increased access to collections. While a handful of other states have recently developed resources comparable to *Minnesota Historical Aerial Photographs Online*, it continues to serve as a model for the nation. Giving it a Governor's Geospatial Commendation will help other states see what is possible and valuable.

Please feel free to contact me if you have any questions.

Sincerely yours,

William J. Craig
Associate Director Emeritus and
MnGIS/LIS Lifetime Achievement Award Laureate

P.S. The Library was named after John R. Borchert, a Regents Professor of Geography at the University of Minnesota and a member of the National Academy of Sciences. More importantly for this nomination, he was the founder of GIS in Minnesota. The state supported his research and development of an early GIS system that was so successful that it was moved to state government in 1977, subsequently evolving into the Minnesota Geospatial Information Office. Borchert was the first recipient of the Minnesota GIS/LIS Lifetime Achievement Award in 1993. The Borchert Map Library is inspired by its namesake and continues to push the envelope in helping our state use geographic information to make better land use and environmental decisions.

10 attachments

Minneapolis
City of Lakes

Office of City Clerk
350 South Fifth St. - Room 304
Minneapolis, MN 55415
TEL: 612.673.2216
www.minneapolismn.gov

April 18, 2018

Dr. William Craig
Center for Urban & Regional Affairs
330 Humphrey Center
301 – 19th Avenue South
Minneapolis, MN 55455

Dear Dr. Craig:

On behalf of the City of Minneapolis, and specifically my colleagues copied below, we would like to express our whole-hearted support of your nomination of Ryan Mattke and the Borchert Map Library for a Governor's Geospatial Commendation Award recognizing its work over several years to accept ownership of 70 years' worth of aerial photographs from the City, and for curating and digitizing them, thereby making them available to the public for generations to come.

This collection of thousands of high resolution, large-format aerial photos —spanning the years from 1938 through 1983— provides a detailed, unique visual history of the City's growth and development over time. Lacking the requisite technical expertise or sufficient funds, the City was unable to care for these assets properly, nor was the City able to provide public access to these materials. When the opportunity arose to transfer them to the Borchert Map Library, an arrangement you helped broker, we jumped at the chance to give them to a trusted institution where we were confident they would be properly stored, curated, digitized, and published electronically. Not only did your intervention assure proper long-term preservation of these historical assets, it also opened up them to the entire world.

As you recall, it was no small matter to secure the required administrative approvals from various entities to effectuate this transfer, and it took Borchert many months to organize, digitize, and publish them. The City is extremely grateful to Mr. Mattke and the Borchert Map Library for accepting this enormous scope of work, which was completed at minimal cost to the City. Now available via the internet, these maps are not only available for history buffs, but are regularly used by City staff to assist with various planning work, as described by our Manager of Long Range Planning, Jack Byers:

> "Understanding the fabric and details of the city's past is crucial for planning the city's future and ensuring that, as public officials, we are being careful about what we are doing and how we are using resources. As planners, we use historic aerial photos of Minneapolis for a wide variety of research and decision making. Aerial photos help us to understand the broad view of how the city was organized and functioned in terms of land use, infrastructure, and economy – and how those systems grew and changed over the decades. Aerial photos of the city are also critical to us on an everyday basis because they are a key source of forensic information for investigation about particular sites. As we plan and work to bring forth the city of the future, it's essential to know details and specifics about the past such as what parcels and places were once rail yards, factories, or creek beds. The fact that these aerial maps are easily accessible to our staff and our customers means that we have a trailhead for further investigation and that trailhead is indispensable for the efficient use of public dollars in decision making."

As the custodian of the City's official records, I am personally grateful that this important historical visual archive has found a home where it will be permanently and properly cared for and shared with the world.

Regards,

Casey Joe Carl
City Clerk

Copy: Jack Byers, Ph.D., AICP, Community Planning and Economic Development
Jeff Schneider, City Coordinator's Office

Minnesota Department of Natural Resources
Forestry Resource Assessment Program
483 Peterson Rd
Grand Rapids, MN 55744

May 20, 2018

To whom it may concern,

I would like to express my support for the nomination of the Borchert Map Library for the Governor's Geospatial Commendation Award.

The Resource Assessment program has worked with the Borchert Map Library to digitize and preserve historical aerial photography for more than a decade. This effort has been of great value to both the DNR and to the state tax payer through the availability to locate, view, and download these photographs for business and personal use.

The Resource Assessment program has scanned and digitized well over three hundered thousand aerial photographs, of which, maybe three quarters came from nine inch by nine inch rolls of film and the rest from hard copy photographs. Both the film and physical photographs have been sent to the Borchert Map Library for preservation and safe keeping because the DNR does not have the space.

Lastly, the Borchert Map Library has scanned and made available digitally, those photographs we were not able to digitize ourselves, along with many other photographs sent for preservation. The Library has also created a very good website in which to locate and identify historic photographs for download and viewing purposes.

It is in my humble opinion that this program should be awarded the Governor's Geospatial Commendation and continue to flourish and provide outstanding products.

Sincerely,

Dennis Kepler

Forestry, Resource Assessment Supervisor

DEPARTMENT OF NATURAL RESOURCES

Ecological and Water Resources
500 Lafayette Rd
St. Paul, MN, 55155

May 7th, 2018

Minnesota Geospatial Advisory Council
c/o Dan Ross, Chief GIO
Minnesota Geospatial Information Office
658 Cedar St., Room 300
St. Paul, MN 55155

Support Letter for the Governor's Geospatial Commendation Award

Dear Council Members,

I would like to express my enthusiastic support of the Minnesota Historical Aerial Photographs Online project for the excellent information and service it provides to the Minnesota geospatial community and the Minnesota Department of Natural Resources (DNR).

The Minnesota DNR is charged with the conservation and management of the state's natural resources. The Minnesota Historical Aerial Photographs tool has proved to be an important resource management tool across many programs throughout the agency.

For example, wildlife specialists use the Historical Aerial Photographs tool to evaluate the impacts of ditches in peat bog landscapes and determine changes in vegetation. Using the same tool, hydrologists can determine if a stream has been changed to provide context around water quality concerns. Similarly, stream geomorphologists can inform historic stream conditions and guide appropriate restoration activities. Additionally, forest managers can approximate historic forest communities and evaluate the extent and impacts of past logging activities.

The efforts to compile such a robust resource and to make it accessible through a web application have resulted in a valuable resource that is easy to find and use. This image archive has resulted in better management decisions, which in turn, provides better resource stewardship benefiting Minnesota's current and future residents.

Sincerely,

Benjamin Gosack

Watershed Assessment Data and Technical Lead

May 2, 2018

Minnesota Geospatial Advisory Council
c/o Dan Ross, Chief GIO
Minnesota Geospatial Information Office
658 Cedar St., Room 300
St. Paul, MN 55155

Support Letter for Governor's Geospatial Commendation Award

Dear Governor's Geospatial Commendation Awards Committee:

Metropolitan Council Environmental Services (MCES) is pleased to support the nomination of the Minnesota Historical Aerial Photographs Online (MHAPO) web site for the Governor's Geospatial Commendation Award.
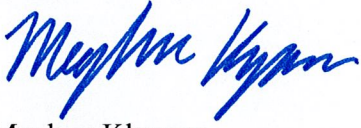
MHAPO was an especially useful tool during the creation of a recent MCES GIS project. Our project consisted of an online mapping application comparing historic and current aerial photographs of MCES wastewater treatment plants. In the case of our St. Croix Valley Plant, we were able to navigate MHAPO to easily locate an aerial photograph from 1964 to feature in our application. The image helped us to achieve the goals of our project to 1) provide historic context to staff members involved with the maintenance, operation, and planning surrounding each of our wastewater treatment plants, and 2) create an appealing visual education tool for plant tours, which helps us meet one of our agency mission-driven goals – that of improving our level of customer service by enhancing our communication. In turn, MHAPO helped MCES to further our vision to be a valued leader and partner in water sustainability.

MHAPO stands out as an exceptional tool with its ease of use, speed, and organization. The ability to toggle on and off located aerials by decade, makes it easy to narrow your search and find exactly what is needed. Having each of the archived photos geolocated and presented in map form maximizes efficiency when searching for a particular feature in a known area. Finally, the application runs smoothly and loads quickly. I applaud the time and effort taken to complete a tool with such great utility.

In addition to providing an excellent resource, the staff maintaining the photo library and tool are responsive to and helpful with inquiries. A quick email exchange with Ryan Mattke provided us with the necessary information needed to properly cite the photograph selected for our historic aerial application. This assistance was greatly appreciated.

In summary, Minnesota Historical Aerial Photographs Online is an excellent choice to receive the Governor's Geospatial Commendation Award for providing Minnesota with an intuitive and valuable GIS application.

METROPOLITAN
C O U N C I L

Sincerely,

Meghan Klapper
GIS Intern
Metropolitan Council Environmental Services

Steve Hack
GIS System Administrator
Metropolitan Council Environmental Services

Twin Cities Campus   *Department of Geography, Environment and Society*   *414 Social Sciences Building*
                                        College of Liberal Arts   *267, 19th Avenue South*
                                                                                                      Minneapolis, MN 55455
                                                                                                      612-625-6080

Minnesota Geospatial Advisory Council
c/o Dan Ross, Chief GIO
Minnesota Geospatial Information Office
658 Cedar St., Room 300
St. Paul, MN 55155

Dear Council Members:

It is my pleasure to support the nomination of the University of Minnesota's John R. Borchert Map Library for a 2018 Governor's Geospatial Commendation. I am a tenure-track Assistant Professor of Geography at the University of Minnesota, and I lead an environmental science research group comprised of graduate students and undergraduate students, many from the University Honors Program. My lab group website is: http://z.umn.edu/griffinlab.

I would like to draw particular attention to the Minnesota Historical Aerial Photos Online resource (https://www.lib.umn.edu/apps/mhapo/). To cut right to the chase, as an environmental scientist interested in historical land use processes, old growth forests, and land use land cover change, this tool is simply invaluable.

During the Spring 2018 semester, two undergraduates in my lab group used this tool to conduct time series analysis of historical aerial photos and land cover changes. One was focused on the Cedar Creek Ecosystem Science Reserve, a University of Minnesota research station and Long Term Ecological Research Site that has been cited as the birthplace of ecosystem ecology. The Cedar Creek property is home to several long term ecological experiments, including the a totally unique controlled burn experiment that has been continuously underway for over 50 years, longer than all but one other in the world. As part of her undergraduate honors thesis in geography, Madison Sherwood analyzed forest and savanna patterns on the aerial photography going back to 1938, with a specific focus on locating old growth oak trees for environmental analysis. She presented her analysis in poster form at a national conference in New Orleans in April, and I have attached it here.

Another student conducted a similar analysis for a large city park in Bloomington MN, where we have now mapped over 40 acres of old growth bur oak. The aerial photo analysis clearly documents the presence of large oak trees in 1938 that remain today, and tree-ring sampling of 35 trees at the site prove that many of these trees are over 150 years old and a subset of these trees are approaching 300 years. Historical aerial photo analysis is a powerful pairing with tree-

ring research, however the MHAPO resource is fundamentally unique, relative to other areas in which I've been working.

Over twenty years ago as an undergraduate student, I drafted a proposal to use historical aerial photos to document and inventory old growth forests. It was a good idea that simply was not feasible. At the time, I would have had to travel to the USGS aerial photo archive in Iowa, search for, pay for, and scan in the images to a GIS. The MHAPO resource has fundamentally changed the game for historical land cover analysis in Minnesota, and I am confident that the value of the resource will only become more appreciated and used as the word gets out.

I believe this resource, as a landmark achievement of the Borchert Map Library and its head librarian Ryan Mattke, stands out as exemplary and is worthy of recognition by your council. I would be happy to provide further argument and advocation, if asked.

Sincerely,

—
Daniel Griffin
Assistant Professor of Geography
University of Minnesota - Twin Cities
267 19th Ave S.
414 Social Science Bldg.,
Minneapolis, MN 55455-0405
Office: (+1) 612-625-2562
Cell: (+1) 870-476-9508
Fax: (+1) 612-624-1044
web: http://z.umn.edu/dg
email: griffin9@umn.edu

1 Attachment

Minnesota old growth oak savanna mapping with time series aerial photo analysis

Madison Sherwood*†‡, Tanner Johnson*†§, Ryan Matzke*||, Daniel Griffin*†‡

*University of Minnesota, Twin Cities, †Center for Dendrochronology, ‡Department of Geography, Environment & Society, §Department of Civil, Environmental & Geo-Engineering, || Borchert Map Library
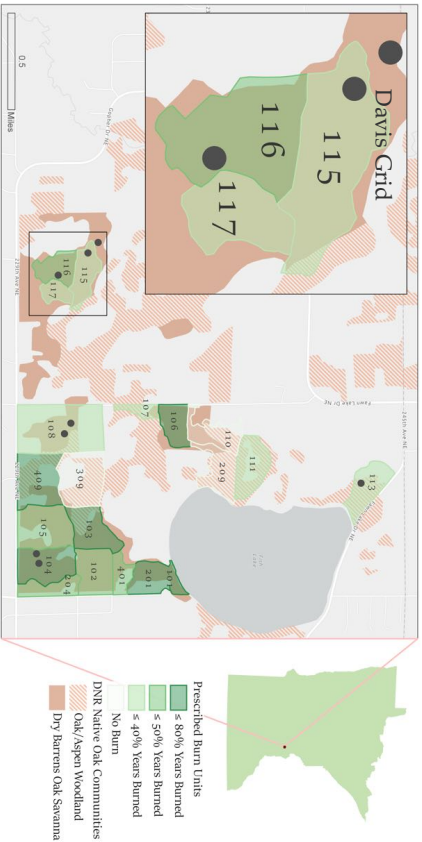
Figure 1: The "Davis Grid" controlled burn regime was implemented throughout 1990 to complement the original CCESR burn experiment, which dates back to 1964. Unit 115 has burned 8 times since 1992. Unit 116 has burned 13 times since 1987. The control plot northwest of Unit 115 has not burned since at least 1964. Data Source: Cedar Creek Ecosystem Science Reserve & MN Department of Natural Resources

Prescribed Burn Units
- ≤ 80% Years Burned
- No Burn
- ≤ 50% Years Burned
- ≤ 40% Years Burned

- DNR Native Oak Communities
- Oak/Aspen Woodland
- Dry Barrens Oak Savanna

Old growth trees contribute immense ecological value to their landscapes through their annual growth rings that reflect their climate and ecological histories. Due to logging, agriculture, and urban development, relatively few natural areas with native plant communities remain in Minnesota. It is imperative to track old growth communities to promptly restore and protect these natural areas. Qualitative analysis of historical aerial photos facilitates efficient detection and mapping of potential natural areas while working remotely.
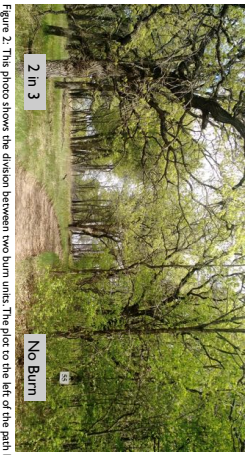

Figure 2: This photo shows the division between two burn units. The plot to the right since at least 1964 and fire intolerant species have recruited into that canopy, overtopping the bur oaks that once dominated the landscape. The plot to the left of the path burns twice in three years' time. Fire has been excluded from the plot since at least 1964 (Figure 2).

The Cedar Creek Ecosystem Science Reserve (CCESR) represents a microcosm of Minnesota's native plant communities, including wetlands, prairies, and a wide range of forest and savanna systems. The long-term ecological research site is home to a 50+ year prescribed burn experiment situated within an oak savanna, with some plots burned as frequently as two in three years, and others unburned since at least 1964 (Figure 2). Here, we summarize old-growth tree mapping based on recently digitized historical aerial photography. This undergraduate research project is related to a larger NSF funded project: "Fire, climate, and vegetation change in an oak savanna ecosystem from annual to millennial time scales" (NSF DEB Award Number: 1655144).
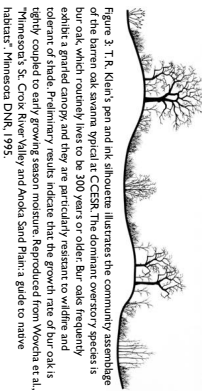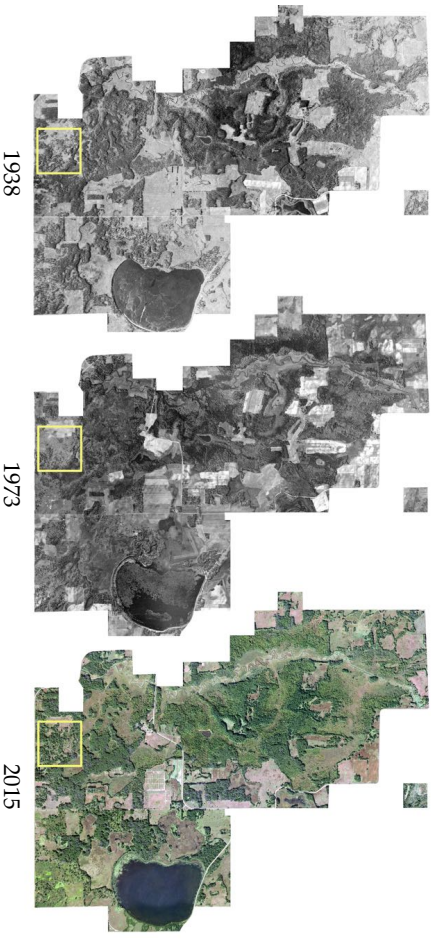

Figure 3: T. R. Klein's pen and ink silhouette illustrates the community assemblage of the barren oak savanna typical at CCESR. The dominant overstory species is bur oak, which routinely lives to be 300 years or older. Bur oaks frequently exhibit a gnarled canopy, and they are particularly resistant to wildfire and tolerant of shade. Preliminary results indicate that the growth rate of bur oak is tightly coupled to early growing season moisture. Reproduced from Wovcha et al., "Minnesota's St. Croix River Valley and Anoka Sand Plain: a guide to native habitat." Minnesota DNR, 1995.

Figure 4: This photo was taken at CCESR in March of 2018 while collecting tree-ring data. The landscape accurately reflects the barren oak savanna illustration in Figure 3 (above).

Figure 5: US Department of Agriculture, Soil Conservation Service via Minnesota Historical Aerial Photos Online

1938

The search for old growth in CCESR began by obtaining a series of historical aerial photos that spanned over the study area. Images were obtained from the Minnesota Historical Aerial Photographs Online (https://www.lib.umn.edu/apps/mhapo/). This series includes photos from 1938, 1954, 1973, 1991, and 2015. After creating stitched panoramas of the photos using the PTGui software package, images were orthorectified with ESRI GIS software. From here, polygon feature classes were created over areas with at least 30% canopy cover that were also located within the DNR oak woodland or dry barrens oak savanna native plant communities. These polygons were edited at each time step of the photo series to reflect the tree stands that are present in each photo. We used these to generally direct the mapping process. Nested radial plots were placed in the CCESR oak savanna within a variety of burn units to document the age structure across the varying controlled burn frequency gradient. Sample cores from bur oaks (*Quercus macrocarpa*) and northern pin oak (*Q. ellipsoidalis*) were taken from all trees within the radial plot, along with a supplemental sample of 5 - 15 trees from each burn unit. After processing the cores in the lab, these samples will be dated and measured to construct age profiles for the savanna communities and then used to analyze the relationships between fire, climate, and growth.
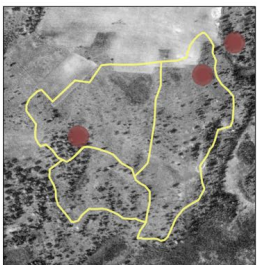
Figure 6: National Agriculture Imagery Program (NAP) via USGS Earth Explorer
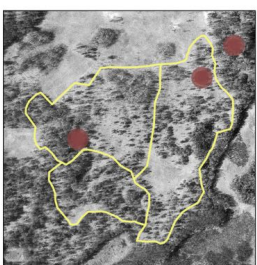
1973

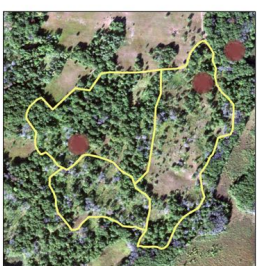Figure 7: Metropolitan Council via USGS Earth Explorer

2015

Figure 8: One of hundreds of tree cores collected from old bur oaks at CCESR. Note the extreme suppression of growth during the mid-19th century, typical to bur oaks from the region.

Minnesota Geospatial Advisory Council
c/o Dan Ross, Chief GIO
Minnesota Geospatial Information Office
658 Cedar St., Room 300
St. Paul, MN 55155

Dear Council Members:

It is my honor to support the nomination of the University of Minnesota's John R. Borchert Map Library for a 2018 Governor's Geospatial Commendation. I am an Archaeology Research Assistant and Project GIS Coordinator in the Department of Anthropology at the Science Museum of Minnesota in St. Paul, Minnesota. I conduct research for various archaeological projects from the precontact era in the upper Midwest. Public outreach with the museum is a key role part of my job and I share information about the research that we are currently working on.

The Science Museum of Minnesota is an institution of learning, exploration and inspiration where nature, humanity, and scientific phenomena are both discovered and exposed. Exhibits at SMM are created with an innovative blend of scientific research, collections and interpretive displays with interactive exhibits and hands-on learning experiences. SMM is a nationally recognized leader in the care and curation of natural history and anthropological collections from around the world, and actively supports their study and growth by employing a Science Division made up of both scientific and collections staff at its world-class facilities in downtown St. Paul and the St. Croix Watershed Research Station in nearby Washington County, both of which have state-of-the-art research labs and collections storage facilities.

The Borchert Map Library has been a key resource for the Anthropology Department of the SMM, for nearly every research project conducted. Images provided from the Library help us understand land use changes over time. What once might have been an agriculture field could now be a housing development, industrial park, etc. We've valued the collections beyond the human element of land use changes, but also the environment as well. A recent example was a past prairie grass area now altered with more tree coverage. Knowing the environment of sites around the state where we research are critically important for accurate interpretation.

Land use and land cover change is important to know and understand because it drives both our targeting of certain areas for survey and ultimately the interpretation of sites discovered in an archaeological excavation. When doing an archaeological survey, historic glass, ceramics and metal can be found with no physical evidence of a historic settlement or precontact sites present. The historic aerial photos from the Library has helped answer those question.

Agricultural fields change the landscape, and at times these fields are not consistently farmed throughout the generations. The Library's archive provides a unique and extremely valuable source of facts.

The photos are not only useful for research, they are important to the land use history of the state of Minnesota. These photos are important historic documentations that can be used for many uses outside of research. The residents of Minnesota are fortunate to be able to have such a key resource available free to the public. Younger generations will benefit from these photos and we hope for continued partnership in exploring and sharing our state's history.

It is with out a doubt that the Borchert Map Library deserves to receive this award. The staff and the library resources are extremely valuable and they are worthy of receiving this recognition from the council.

Sincerely,

Jasmine Koncur

Jasmine C. Koncur
Archaeology Research Assistant
Department of Anthropology
Science Museum of Minnesota
Lab # (651) 221-9354
120 W Kellogg Blvd
St Paul, MN 55102

Science
Museum
of Minnesota®

120 West Kellogg Boulevard
Saint Paul, MN 55102
(651) 221-9444 | smm.org

April 20, 2018

390 Robert Street North
Saint Paul, Minnesota 55101

Will Craig, Ph. D., GISP
Center for Urban and Regional Affairs
University of Minnesota
301 19th Avenue South, Suite 330

Greetings Will,

This is a letter of support for the nomination of the Borchert Map Library to receive the Governor's Commendation Award in 2018.

The Borchert Map Library is fast becoming the 'destination of choice' as the repository of the metropolitan region's ever-growing body of archival digital geospatial data as well as important analog cartographic resources. As city, county, regional and state agencies continue to produce, update and archive their digital data and to collect an ever-growing body of aerial imagery, they wish to have it freely and openly available in a centralized place. The Borchert Map Library's continual adoption of new technological innovations to deliver on its mission speak to their commitment in delivering an efficient and complete library experience.

In support of the Library's nomination, I offer the following two examples of their professionalism and service which exemplify their deserving status for recognition for the Governor's Commendation Award.

In 2015, the Metropolitan Council wished to transfer its significant holdings of analog aerial imagery of the entire metro region from the 1950s and 1960s to be part of the permanent collection at the Borchert Map Library. The desire was for this body of materials to be property curated and publicly available. Due diligence performed on these materials unearthed several questions of ownership and holder of copyright. The staff of the Borchert Map Library, led by Ryan Mattke, provided knowledge was vital in the long process of getting these materials sorted out physically, technically and legally. Due to the patience, experience and professionalism of Mr. Mattke and his skilled library staff, I am proud to say these materials are now properly archived and curated while their digital versions are freely available for public use.

In 2016, Metropolitan Council unearthed in its holdings a large archive of the original maps prepared in the mid-1960s. This series of maps was originally created by the firm of Wallace, McHarg, Roberts and Todd of Philadelphia, Pennsylvania and were employed as part of the foundational justification for the establishment of the Metropolitan Council as a regional government to coordinate waste water, transit, water supply and regional parks and trails in the Minneapolis-St. Paul metropolitan region. Again, the Library was adept at resolving issues both legal and technical and working toward these materials being curated and fully available for public use.

The examples above are just two of the many ways the Library provides value and service to the professional, academic and public-sector geospatial community of Minnesota.

We are enormously fortunate to have the Borchert Map Library resources and its talented and dedicated staff as resources so readily and easily available to our professional community. The Borchert Map Library is richly deserving of the recognition of a for its amply-demonstrated efficiency and competence in delivering on its mission to the benefit of all.

I recommend the nomination of the Borchert Map Library for a Governor's Commendation Award without reservation. Please contact me if you have further questions about this letter of support.

Sincerely,

Geoffrey Maas, GISP
MetroGIS Program Coordinator, Metropolitan Council
Lecturer, GIS and Data Visualization, Humphrey School of Public Affairs, University of Minnesota
Chair, Standards Committee, Minnesota Geospatial Advisory Council
651.602.1638 - 763.772.4287 - *geoffrey.maas@metc.state.mn.us* - *maas0021@umn.edu*
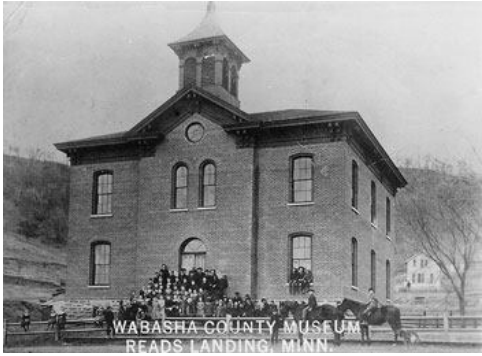
Wabasha County Historical Society

April 25, 2018

Dear Will:

Thank you for giving me the opportunity to comment regarding my experiences with the Borchert Photo Lab at the University of Minnesota. First, let me give you a little background about myself. I graduated from the U in 1969 with a BS degree in Forestry. My career path started with DNR on 6/11/69 and I was assigned my first station in Lake City on 3/20/70. I spent my entire career at Lake City.

My duties included managing and acquiring land for the Richard J Dorer Memorial Hardwood Forest and assisting private woodland owners with management of their woodlands. Working with private woodland owners necessitated a close working relationship with SCS and ASCS. On one of my early visits to the ASCS office, they were packing up their 1938 24x24 aerial photos of Wabasha County for disposal. They had just received their 1971 set. Recognizing their historical value I asked if I could have them and was granted my wish. I hauled them to Lake City and we stored them in our basement where I and my colleagues used them frequently.

As the years went I recognized what a valuable resource they were and broached the subject of finding a more appropriate home for them than the basement of our office which is in a flood plain and does not have perfect humidity control. There was no interest among office staff to do this due to the inconvenience of going someplace else to retrieve them so the photos stayed in Lake City. I retired on 4/1/2012 with the photos still residing in Lake City.

One of my retirement activities is volunteering with the Wabasha County Historical Society. This past winter we were looking for photos of the ghost town of Jacksonville. I went to the DNR office to find a photo of Jacksonville and was told the photos were picked up by someone but no one knew who. After a little detective work I determined who it was and found out the photos were delivered to the Borchert Photo Lab which was the first I ever knew about this agency.

And leads me to my commendation of it.

I contacted the lab by e mail and received a friendly reply from Ryan who sent me a copy of the section I was looking for and invited me up to continue my search for the Jacksonville photo.

A colleague from WCHS and I went up for a visit and were amazed by the facility. Both the staff and Ryan were extremely helpful. Ryan took us to the file cabinets containing the 1938 Wabasha County Photos. To my amazement, they were 9x9 photos and not the 24x24 set I rescued. When I asked Ryan about this he said if that set were a recent acquisition, they probably were not cataloged yet.

The key that was available for finding the correct photo was a little cumbersome as it was a county road map and not flight lines as I was used to. There was a flight line key included with the Lake City set and perhaps when they are cataloged it can be included with the file cabinet set which are in much better condition than the Lake City set.

In addition to making copies for us as we were leaving, Ryan took time to show us other collections the lab has available. The collections of old maps available are amazing and I will be stopping to further research them on future trips to the cities. I mentioned I was interested in old stage coach routes in Wabasha County and within a day of two of our visit Ryan sent me information on stagecoach routes. Way above and beyond the call of duty.

I have shared information about the Borchert Lab with my former colleagues and encouraged them to take advantage if its facilities.

This is a top quality facility managed by a top quality staff who's public service is second to none I have ever been involved with in 43 years of State service. Borchert Lab and its staff are worthy of any recognition that can be given them.

/s/ Terry Helbig
DNR Area Forest Supervisor (retired)

Jared Schneekloth
Content Strategy Manager
6 Armstrong Road – 4th Floor
Shelton, CT 06484
5/11/2018

Dear Minnesota Geospatial Advisory Council:

Environmental Data Resources promotes the environmental consulting industry and provides data that has supported more than six million environmental due diligence investigations nationwide. Historical air photos enable environmental professionals to determine past property uses, locations of old buildings, roads and equipment, past conditions of vegetation, and other features that could be key indicators of recognized environmental conditions on a site.

The creation of MHAPO a launched a positive change in EDR's air photo research workflow. Prior to MHAPO, EDR researchers received a client order with a latitude and longitude and identified the Minnesota county that the target property was located in. Researchers accessed the large county air photo index books and manually identified air photo frame IDs that best covered the site for each year of available coverage. Finally, the hard copy air photos were pulled from the corresponding storage boxes at Borchert Map Library and digitized on a flatbed scanner. MHAPO provided Minnesota air photos in a user interface that greatly reduced manual research, reduced EDR product turnaround time from 3-5 days to 1-2 days, and allowed EDR's clients to experience more years of coverage with higher image quality.

Most other states do not have any historical air photos available in digital format and even fewer have air photos available with efficient geospatial search ability and access. Without a MHAPO alternative, high quality digital historical air photos are simply not available for time-constrained environmental research in other states.

In addition to simply making MHAPO and its data available, Borchert staff shared their experience and knowledge related to its development. These conversations and willingness to collaborate helped expand EDR's Content Department. The air photo digitization, center point creation, and search ability that drive MHAPO prompted EDR to digitize and geographically catalog additional air photos throughout the United States. These efficiencies have expanded our customer base, increased revenue, and decreased our turnaround time.

The Borchert Map Library is a valuable partner to EDR and I strongly recommend its MHAPO tool for a 2018 Governor's Geospatial Commendation.

Sincerely –

Jared Schneekloth – Content Strategy Manager, EDR

Paul Nylander
3333 Colfax Ave S
Minneapolis, MN 55408

May 29, 2018

Minnesota Geospatial Advisory Council
c/o Dan Ross, Chief GIO
Minnesota Geospatial Information Office
658 Cedar St., Room 300
St. Paul, MN 55155

Dear Council Members:

I must confess: I'm not familiar with the intricacies of the various governmental departments, and the complex paths that form the funding streams of these organizations. However, this ignorance of how it works, in a way, is part of its success: as a resident and taxpayer I benefit from the work done on my behalf only when I *do not* have to struggle and fight to find and use the information that I've paid to collect.

The U of M's John R. Borchert Map Library is exactly such an organization. By providing easy, intuitive access to decades of aerial photography I was able to examine the history of my 1890 South Minneapolis home, the evolution of the northern suburbs where I was raised, and even see the Brooklyn Center neighborhood where my great grandfather built a home for my grand parents. I could see the evolving landscape that my father grew up in, the emergence of the freeway system, and the evolution of the city I have always called home.

But this understanding, and resultant enthusiasm, extends well beyond my own personal satisfaction. It extends to the information I've shared with family and friends, and the stories I get to hear from them about their memories. This is because an accessible map library is more than just a collection of facts: it is the starting point of a discussion about the history of our state, and its basis for the future.

For this reason, it is my pleasure to support the nomination of the University of Minnesota's John R. Borchert Map Library for a 2018 Governor's Geospatial Commendation.

Sincerely,

Paul Nylander