

Lodges of Time and Space: the Stone Cairns of Red Wing

By

Michael Paul Bergervoet

Submitted to the graduate degree program in Geography and the Graduate Faculty of the University of Kansas in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

---

Chairperson Jay T. Johnson

---

Jack Hofman

---

Stephen Egbert

---

Edward Fleming

---

Daniel Hirmas

Date Defended: December 5<sup>th</sup>, 2017

The Dissertation Committee for Michael Paul Bergervoet  
certifies that this is the approved version of the following dissertation:

Lodges of Time and Space: the Stone Cairns of Red Wing

---

Chairperson Jay T. Johnson

Date approved: December 5<sup>th</sup>, 2017

## ABSTRACT

The stone cairns of Red Wing, Minnesota, USA, have been cloaked in mystery for centuries. Small in number, densely concentrated and originally built upon high, untimbered hilltops, the identity of the builders remains unknown to both researchers and Native people alike. Local Dakota people do not claim authorship but refer to these monuments as “hekti”, a “lodge of time and space”, and recognize them as places “where holy works were done.” Unfortunately all of the stone cairns have been dismantled since Euro-Americans first encountered them and the significance of their hollow architecture was never culturally examined. These unique stone features are presumed to be mortuary features and are therefore protected by Minnesota Statute 307.08 from any further molestation.

After collecting and generating both quantitative and qualitative information, and by utilizing a mixed-methods approach, it is contended the stone cairns of Red Wing were constructed by the Spring Creek Oneota between AD 1300 – 1400. Furthermore, the stone cairns are principal components of a larger ritual landscape and quite possibly demarcate a physical and spiritual sanctuary during a period of significant environmental and/or social change across the continent. Based upon current evidence, the construction of the stone cairns was most likely overseen by an elite class of ritual leaders blessed by Thunder. Moreover, both Thunderbird and Water Spirit clans exert increased socio-political influence in Siouan village life during the late pre-contact period. Archaeological evidence in close proximity to the stone cairns confirms their presence.

From an ethnographic perspective, the stone cairns of Red Wing function as sacred altars/conduits between the Above and Below worlds. This assertion is based upon Siouan

interpretations of their placement, architecture, and significance of materials used in their construction. These interpretations, in combination with the juxtaposition of their original architectural profile with contemporary Ioway cosmological belief, illumine the original purpose and function(s) of the stone cairns.

These results suggest the stone cairns of Red Wing stand as witness to the cultural crescendo of the Oneota tradition in this locality and/or they are an initial expression of Ioway ethnicity and tribalism in southeastern Minnesota.



## ACKNOWLEDGEMENTS

My research journey has been long, difficult, and completely worthwhile. There are many people to thank and I must tip my cap to those directly and indirectly involved in this process. First of all, I need to acknowledge my committee members: Jay Johnson, Ed Fleming, Steve Egbert, Dan Hirmas, Jack Hofman, and also Ron Schirmer for his auxiliary supervision and support. I sincerely appreciate the challenge, encouragement, and patience provided by each of you. As a whole, your deep and diverse expertise has made my work that much stronger. You will always have my respect. Furthermore, my gratitude is extended to the Department of Geography at the University of Kansas and especially Dr. Margaret Pearce for the opportunity to learn, teach, and grow as a researcher and person. My time in Kansas impacted my life in a very positive way and it will never be forgotten or taken for granted.

To my parents, Jerome and Marvel: Thank you for your encouragement and steady support of my scholastic pursuits through the years and for always being there during my struggles, too. I'm very lucky to have parents that emphasized the importance of reading, learning and thinking critically. I love you both. Dad: you've always liked reading other books about Native topics so hopefully you like mine, too! My siblings Shelley, Jane, Joann and Phil have been a steady source of encouragement, too. Thanks to all of you and many other close friends and family members who have extended their support and kept me motivated as well. My deep gratitude is also offered to Bronco and Elaine LeBeau for making me a part of your circle, for opening my eyes to the Lakota frame of mind, and for introducing me to myself. Your lives have positively affected mine in such a way that no price tag could ever be placed on the insight and instruction you've provided me over the years. For that, you're forever in my heart and

there's no escape. As you've graciously expressed to me, the "River" will always be home for me, too. *Pilamaya*.

I am also grateful to many other Native people for sharing your time, knowledge, life experience and perspectives with me, which have altered how I look at the world in a very good way. My work would not be possible without your cooperation and support. Namely, these people include past and present members of the Prairie Island Tribal Council (namely Audrey Bennett, Victoria Winfrey, Ron Johnson, Al Childs, Johnny Johnson, Shelley Buck, Lu Taylor, Ed Buck), Calvin Campbell, Mr. and Mrs. Frank Royal, Kevin Tacan, Leonard Wabasha, James "Bunny" Campbell, Tom Ross, Kyle Iron Lightning, Glen Drapeau, Richard Ross, Marlow LaBatte, Grace Goldtooth, Melissa Cerda, Jim Jones, Gwen Westerman, Yvonne Bird, Nick Western Boy, John Reynolds, Avery Jones and Arthur Lockwood. *Pidamaya* (and *Miigwech* to Jim). My deep gratitude is also extended to Lance Foster from the Iowa Tribe of Kansas/Nebraska for his support and involvement in this project. Hopefully you and the Ioway people feel this research honors your ancestors and their sacred places. *Wenawinnake*.

My gratitude is also extended to the Goodhue County Historical Society, my co-workers in the Cultural Resources Unit at the Minnesota Department of Transportation, and the Minnesota Office of the State Archaeologist. Your encouragement and thoughtful critiques really meant a lot to me. I want to specifically extend my sincere appreciation to Bruce Koenen, Craig Johnson, Dave Tovar and Cory Nowak for their interest and assistance. For the sake of brevity there are many individuals who offered me encouragement yet remain unnamed. You are not forgotten and thank you very much for supporting me. Moreover, my gratitude is also extended to the private landowners for allowing me access to the cairn sites and for their support of this research. Hopefully this research deepens and strengthens your fondness of the cairns as well as

your personal connection with the land, too. It's a truly remarkable place and the opportunity to study it has changed my life. My sincere thanks goes to all of you.

My deepest gratitude goes to the late Curtis Campbell, Sr. and the late Winfred Red Cloud. I recognized you both as authorities and your immediate acceptance of me will always be cherished and sets a fine example for me to follow. At first you both intimidated me but by the end of our time together I hoped to be just like you: wise, respectful, knowledgeable, balanced, eager to help, and humble. I'll never forget your smiles and the importance of laughter when life gets too serious. You embodied the principle of *Wico-we-chi-wazi* – Relatedness through Sharing, and your teachings have taken root in my mind and heart. As you taught me, the old ones stressed the importance of learning from other perspectives, to pursue wisdom, and to bravely and humbly endure life's obstacles along the way. The purpose of life in the Dakota/Lakota way is "be a good relative", which is identical to my tradition that says "love thy neighbor." Actions speak louder than words, and yours speak loudly and beautifully in the mind of this Dutch Catholic kid that simply wanted to glean some of your wisdom in his attempt to see the landscape from your point of view. *Pidamaya* for sharing your ancestors' knowledge with me, which I carry with humility and a deep sense of duty "to keep it straight" to this day.

Furthermore, in a small and indirect way, I feel my research experience parallels your description of the seventh Dakota ceremony from long ago: *Nagi Kagapi* – the making of a soul. As you instructed me, the sacred Red Road and the pursuit of the Creator is the most difficult path to walk but the pain, solitude and suffering leads to *woksape*, i.e. Wisdom – the greatest treasure of all. Regardless of status, you embodied the traits of an *ikce wicasta*, a common/humble man, and I hope to be just like you someday. I feel honored by the Creator to have known you both, to have learned from your example, and to have set new goals for myself

as a man. You were certainly placed on my path for a reason. May you be blessed forever for all of the good you did for me, which continues to impact my life in a very meaningful way. *Wopida Tanka. Wakan Tanka kici un.*

To Deksi Curtis: to this day I still reflect upon the Dakota prayer included in your memorial. A righteous man asks the Creator for strength not because he wishes to be superior to others, but in order to defeat his greatest enemy: himself. This prayer speaks directly to my mind and heart, as you did so many times during our visits. To live purposefully, honorably, humbly, and with compassion is the duty of a Dakota as well as for a Christian like myself. All good, humble and prayerful roads lead to a common Destination. Therefore, *Ake wacyankekte* – I will see you again. This work also fulfills my promise to you before your journey Home. I did my best and “*pidamaya*” for your support, even now. *Hechitu.*

As I reflect upon my own life and after 11 years of this research, I must conclude that Robert Frost was right: Choosing the road less traveled by has made all the difference. *Mitakuye Oyasin.*

## TABLE OF CONTENTS

<b>Chapter 1: Introduction</b>	<b>1</b>
<i>Research Catalyst</i>	1
<i>An Archaeological Mystery</i>	5
<i>Research Questions and Goals</i>	10
<i>Conclusion</i>	16
<b>Chapter 2: Past and Present Cairn Investigations</b>	<b>21</b>
<i>Introduction</i>	21
<i>A Mosaic of Monuments</i>	24
<i>Red Wing Physical Landscape</i>	34
<i>Red Wing Archaeology</i>	38
<i>Ethnohistoric Accounts</i>	45
<i>Conclusion</i>	54
<b>Chapter 3: Research Method(s)</b>	<b>57</b>
<i>Introduction</i>	57
<i>Step 1: Review of Historical, Archaeological and Ethnographic Documentation</i>	59
<i>Step 2 and 3: Field Surveys, Data Collection and Analysis</i>	61
<i>Step 4 and 5: Examining Archaeological and Ethnographic Traditions</i>	66
<i>Step 6: Distilling the Spatial, Archaeological and Ethnographic Evidence</i>	72
<i>Step 7: Assigning an Authoritative Cultural Name and Function</i>	73
<i>Conclusion</i>	73
<b>Chapter 4: Field Survey, Data Collection and Analysis</b>	<b>75</b>
<i>Introduction</i>	75
<i>Site Surveys and Data Collection</i>	77
<i>Spatial, Archaeological and Morphological Analysis</i>	82
<i>Stone Feature Taxonomy</i>	104
<i>Conclusion</i>	111
<b>Chapter 5: Red Wing Cairn Construction in Regional and Anthropological Context</b>	<b>115</b>
<i>Introduction</i>	115
<i>Oneota Life in the Upper Mississippi valley, ca. AD 1400</i>	116

<i>Oneota and Stone Ritual</i> _____	123
<i>Oneota Symbology and the Red Wing Stone Cairns</i> _____	127
<i>Tribal Emergence and Siouan Oral Traditions of the Pre-Contact Era</i> _____	136
<i>Conclusion</i> _____	143
<b>Chapter 6: Ethnographic Interpretations of the Cairns and Landscape</b> _____	<b>147</b>
<i>Introduction</i> _____	147
<i>Places of Power and Prayer</i> _____	149
<i>Social Significance of Red Wing Cairn Construction</i> _____	171
<i>A Lodge of Time and Space</i> _____	173
<i>Conclusion</i> _____	180
<b>Chapter 7: Conclusion and Future Research</b> _____	<b>184</b>
<i>Introduction</i> _____	184
<i>Data Collection, Analysis and Synthesized Results</i> _____	185
<i>Summary</i> _____	196
<i>Future Research</i> _____	198
<i>Conclusion</i> _____	210
<b>Bibliography</b> _____	<b>214</b>
<b>Appendix I: Chapter 2 Supplement</b> _____	<b>233</b>
<i>Cairns, Stone Vaults and Burial Mounds</i> _____	233
<i>Red Wing Earthworks and Cultural Traditions</i> _____	243
<i>Local Stone Features, Native Peoples, and Euro-American Explorations</i> _____	253
<i>Khemnican Dakota Oral Tradition and History of Prairie Island/Red Wing</i> _____	266
<b>Appendix II: Chapter 4 Supplement</b> _____	<b>272</b>
<i>Cairn/Stone Feature Survey Protocol</i> _____	272
<i>Volume Generation Formula for a Red Wing Stone Cairn</i> _____	279
<i>Cairn Survey Results, Graphs, Maps and Tables</i> _____	285
<i>Viewshed Raster Calculation and Digital Prospection Method</i> _____	293
<b>Appendix III: Chapter 6 Supplement</b> _____	<b>296</b>
<i>Preliminary Significance of Cairn Components/Materials</i> _____	296
<b>Appendix IV: University of Kansas HSCL Approval with Adult Informed Consent</b> ____	<b>303</b>
<b>Appendix V: Informants</b> _____	<b>304</b>
<b>Appendix VI: Cairn Site Locations and Data</b> _____	<b>305</b>

## LIST OF FIGURES, TABLES, and GRAPHS

Fig. 1-1: Regional Watersheds and Relative Location of Red Wing, MN	2
Fig. 1-2: A free-standing “beehive” cairn during the 20th century (GCHS)	5
Fig. 1-3: A free-standing “beehive” cairn built upon panoramic hilltop location (GCHS)	7
Fig. 1-4: A dismantled and partially reconstructed Red Wing cairn (Brower 1903)	12
Fig. 1-6: Dismantled Red Wing/hollow cairn (21GD0039); 2006 photo courtesy of MSU-Mankato.	13
Fig. 1-7: Dismantled Red Wing/hollow cairn (21GD0262); 2014 photo taken by the author.	13
Fig. 2-1: Brower (1903) Archaeological Chart of the Red Wing Area	23
Fig. 2-2: Colvill’s Profile/Cross-Section Description	28
Fig. 2-3: Link Vessel	42
Fig. 4-1: Jacob V. Brower (1903) archaeological chart of the Red Wing region.	83
Fig. 4-2: Stone cairn locations mapped by Jacob V. Brower (1903)	84
Fig. 4-3: Oblique view of the valley containing the densest cairn cluster and looking northwest.	84
Fig. 4-4: Cairn bluffs from a villager perspective.	85
Table 4-1: Selected Cairn Survey Attributes (measured and generated)	88
Fig. 4-5: Hollow/Beehive Cairn, Type 4.	90
Fig. 4-6: Spatial Mean Locations for both Stone Cairns and recorded Stone Mounds	91
Table 4-2: Cairn Intervisibility Matrix (cf. Bernardini and Peeples 2015:222)	92
Graph 4-1: % Cairns Visible vs. Viewshed Size (m <sup>2</sup> )	93
Table 4-3: Bi-variate Test Results and Statistical Significance	94
Fig. 4-7: Cairn intervisibility percentage from respective cairn sites	95
Fig. 4-8: Cairn Volume (m <sup>3</sup> )	96
Fig. 4-9: Venn diagram example/identifying an area of common overlap	98
Fig. 4-10: Cairn viewshed intersection (n=13).	99
Fig. 4-11: Reciprocal viewshed calculation – Identifying areas visible from 21GD54	101
Fig. 4-12: Type 3 stone feature (profile sketch by the author)	109
Fig. 4-13: Type 4 stone feature (profile sketch by the author)	110
Fig. 4-14: Plan view of Red Wing stone/soil mound.	110
Fig. 5-1: Approximate geographical range of the Oneota tradition.	116
Fig. 5-2: Oneota/Chiwere-Siouan homelands and historic placenames (Blaine 1995:2)	118
Table 5-1: Synthesized radiocarbon results from across southern Minnesota (Schirmer 2016).	121
Fig. 5-3: Burial mound cross-section with stone vault (Thomas 1894:107)	125
Fig. 5-4: Blue Earth Oneota vessel with thunderbird tail/chevron symbology.	129
Fig. 5-5: Social Organization of a Tribe (Staeck 1994:656)	132
Fig. 5-6: Above-earth description of a Ho-Chunk/Winnebago village (Staeck 1994:659)	132
Fig. 5-7: Thunderbird tail/chevron/Above world motif from 21GD258.	133
Fig. 5-8: Water/Below world motif from 21GD258.	133
Fig. 5-9: Central Siouan linguistic tree.	137
Fig. 5-10: Development of Ho-Chunk/Winnebago Social Structure and Identity (Staeck 1994:676)	139
Fig. 5-11: Relative Locations of Pre-Contact Oneota Tradition(s) and Tribal Locations ca. AD 1680.	141
Fig 6-1: Rattlesnake effigies in Minnesota (Lewis 1887)	162
Fig. 6-2: Clockwise and counter-clockwise placement of stones around an upright cedar staff.	176
Fig. 6-3: Juxtaposition of Red Wing stone cairn profile with Ioway cosmology/landscape of belief.	178
Fig. 7-1: Three-mile visibility and Stone Cairn Concentration (copyright MnDOT 2017)	188

Fig. 7-2: Cairn profile as described by Colvill (cf. Winchell and Upham 1888:58-60)	193
Fig. 7-3: Truss Bridge Concept and Application of Theoretical Loads	199
Fig. 7-4: Least Cost Path to 21GD0095 and 21GD0258	204
Fig. 7-5: LCP calculation flowchart (cf. Bellavia 2002)	205
Fig. 2A-1: Stone vault in Mound 2, Jefferson Site (21HU0005).	238
Fig. 2A-2: West Virginia “wellhole” cairn (Thomas 1894:408)	240
Fig. 2A-3: West Virginia “wellhole” cairn (Thomas 1894:408)	241
Fig. 2A-4: Cross Section of Stone Beehive in Massachusetts (Pohl 1964:74)	242
Fig. 2A-5: Front View of Stone Beehive in Massachusetts (Pohl 1964:75)	242
Fig. 2A-6: Wilford’s (1941) Pre-Contact Archaeological Aspects of Minnesota.	247
Fig. 2A-7: Wilford’s (1960) Early Pre-Contact Archaeological Aspects of Minnesota.	248
Fig. 2A-8: Wilford’s (1960) Pre-Contact Archaeological Aspects of Minnesota ca. A.D. 1100 – 1300.	249
Fig. 2A-9: Major population centers ca. AD 1000 – 1300 (IMA 1999).	250
Fig. 2A-10: Siouan Linguistic Tree (Wozniak 1978:103)	252
Fig. 2A-11: Boulder Effigy, <i>Wahkeipe Kagapi</i> , Hager City, Wis.	255
Fig. 2A-12: Original Outline – Boulder Effigy, Hager City, Wis. (Brower 1903)	256
Fig. 2A-13: Castle Rock or “Inyan Bosdata”, “Standing Rock”, in Dakota County, MN.	257
Fig. 2A-14: Chimney Rock or “Eyisha Panpanna”, Soft Red Stone, in Dakota County, MN.	258
Fig. 2A-15: A historic photo of the now-obliterated western face on Khemnican Paha/Barn Bluff.	259
Fig. 2A-16: “Inyan Tiyopa” or “Stone Door”, Frontenac State Park, MN.	260
Fig. 2A-17: Jeffers Petroglyphs site.	262
Fig. 2A-18: Thunderbird petroglyph, Jeffers Petroglyphs site.	263
Fig. 2A-19: Water Spirit petroglyph, Jeffers Petroglyphs site.	264
Fig. 2A-20: Fort Sweney, Plate XII (Brower 1903)	269
Table 4A-1: Recorded coordinate pairs along beehive/hollow cairn cross-section	280
Fig. 4A-1: Cairn Volume Generation – Cairn Outline and Best-Fit Equation	281
Graph 4A-1: Elevation (m) vs. Diameter (m). Note: weak correlation.	286
Graph 4A-2: Elevation (m) vs. Viewshed Size (m <sup>2</sup> ). Note: significant Correlation (p<0.05).	286
Graph 4A-3: Elevation (m) vs. % Cairns Visible. Note: significant correlation (p<0.05).	287
Graph 4A-4: Diameter (m) vs. Viewshed Size (m <sup>2</sup> ). Note: weak correlation.	287
Graph 4A-5: Diameter (m) vs. Adjacent Slope %. Note: weak correlation.	288
Table 4A-2: Distance to Unweighted Spatial Mean from each cairn site	288
Table 4A-3: 95% confidence radius from population spatial mean (n=19)	289
Table 4A-4: 95% confidence radius from population spatial mean (n=14)	289
Table 4A-5: 95% confidence radius from 21GD54 (n=13)	289
Table 4A-6: 95% confidence radius from spatial mean (n=13)	290
Fig. 4A-2: Stone cairn locations and corresponding ID numbers used in data tables.	290
Fig. 4A-3: Unweighted Spatial Mean Locations.	291
Fig. 4A-4: Viewshed Intersection Areas for Entire Cairn Population (n=14).	292
Fig. 4A-5: Viewshed Intersection Areas after excluding Cairn ID 2 (n = 13)	293
Fig. 4A-6: Neighborhood parameters for deriving a mean DEM from the 1-meter original	294
Fig. 4A-7: LiDAR Prospecion Results with Subtracted DEM as base layer	295
Fig. 6A-1: Cairn ID 1	307
Table 6A-1: Cairn ID 1	307
Fig. 6A-2: Cairn ID 2	308
Table 6A-2: Cairn ID 2	308
Fig. 6A-3: Cairn ID 3	309



Table 6A-3: Cairn ID 3	309
Fig. 6A-4: Cairn ID 4	310
Table 6A-4: Cairn ID 4	310
Fig. 6A-5: Cairn ID 5	311
Table 6A-5: Cairn ID 5	311
Fig. 6A-6: Cairn ID 6	312
Table 6A-6: Cairn ID 6	312
Fig. 6A-7: Cairn ID 7	313
Table 6A-7: Cairn ID 7	313
Fig. 6A-8: Cairn ID 8	314
Table 6A-8: Cairn ID 8	314
Fig. 6A-9: Cairn ID 9	315
Table 6A-9: Cairn ID 9	315
Fig. 6A-10: Cairn ID 10	316
Table 6A-10: Cairn ID 10	316
Fig. 6A-11: Cairn ID 11	317
Table 6A-11: Cairn ID 11	317
Fig. 6A-12: Cairn ID 12	318
Table 6A-12: Cairn ID 12	318
Fig. 6A-14: Cairn ID 14	319
Table 6A-14: Cairn ID 14	319
Fig. 6A-15: Cairn ID 15	320
Table 6A-15: Cairn ID 15	320

## Chapter 1: Introduction

### Research Catalyst

As Binford (1981) states, in order to understand the past we must understand places. Cairn construction spans the entire globe and stretches back to the dawn of human history. In general, cairns are piles of stones oftentimes used as landmarks, boundary markers, ritual altars, burial vaults, etc. (LaPierre 2007). Fundamentally, stone cairns can be viewed as one of the earliest forms of communication (Williams 2012:17). Although a stone cairn may possess many cognitive layers that are not readily transparent to an outsider, they still communicate a message that peoples have been here and imbued a particular place with meaning (Williams 2012:11).

Moreover, there may be multiple types of cairns and associated functions within a single culture. Like stone itself, its ritual use varies in size, shape and color across each continent. Stone is a ready-source construction material across the globe. From a strictly utilitarian perspective, stone is hard, impervious, weathered, and void of life/spirit. From the viewpoint of many Indigenous cultures including vast numbers of them in North America, stone is deemed alive and an ancient grandfather possessing great wisdom. Deliberately-constructed stone features contain the prayers of past peoples, and the stone cairns of Red Wing are no exception.

The construction of sacred landscapes vis-à-vis earthworks and various types of stone features has never ceased (Mallam 1975). In North America during the 19<sup>th</sup> century, stone cairns were generally viewed as “rude heaps of stone” (cf. Squier and Davis 1848). However, landscape studies in North America and elsewhere indicate simple piles of rock may possess the power to connect individuals and groups to the greater landscape and heavens (Carr et al. 1995; Hallendy 2000; Jacobson-Tepfer and Meacham 2010; Tilley 1994). Cultural landscapes are socially

produced, where individuals and groups reinforce their connection to the physical world and cosmos. Sometime in the distant past, an unidentified tribal group erected a small, concentrated number of large and highly complex stone cairns near the city of Red Wing, Minnesota. Who built them, when and why has never been answered.



Fig. 1-1: Regional Watersheds and Relative Location of Red Wing, MN

Due to their size, complexity, and conspicuous placement upon bare hilltops with open viewsheds, the stone cairns were the first archaeological structures investigated in the Red Wing area during the 1840s-1850s. This fascination is fostered by their tucked-away and concentrated locations, limited quantity (n=14), and extremely unique architecture (i.e. hollow or “beehive” form: see Figs. 1-1 and 1-2). Unfortunately, all cairns were dismantled by amateur investigators who were overall disappointed by the lack of items they encountered within the collapsed structures. Although poorly documented, in hindsight reports from these investigations provide invaluable detail on the original architecture, construction method, materials and observable landscape features such as burial mound groups that are now obscured or obliterated (cf. Aiton 1852; Brower 1903; Curtiss-Wedge 1909; Winchell 1911; Rasmussen 1935; Schmidt 1941).

Across the globe and spanning millennia, stone cairns are oftentimes used for burial. The aforementioned reports never confirmed the presence of human skeletal remains but nevertheless the Red Wing cairns are considered mortuary features, which legally protects them from further disturbance (cf. MS 307.08). Since no data from the original surveys is available and archaeological excavation is now prohibited, one must seek answers from the surrounding landscape. The stone cairns may function as solitary monuments and/or a connected network of structures with a common purpose and/or focal point.

Until now, elucidating the meaningfulness of the stone cairns of Red Wing has been dependent upon haphazard historical documentation and sparse ethnographic references. Tribal consultation is sorely needed in order to investigate these sites firsthand. These reasons include: to culturally interpret materials used to build the feature at the site, to recognize observed behaviors and convey the significance of them, to assess site placement/setting in relation to the surrounding landscape, gauge its intrinsic feeling, etc. Elements of setting, feeling, observed

behavior and feature association are just as important to consider as topographical and morphological attributes, size, materials, and placement (Dobbs 1996). Furthermore, with the aid of tribal authorities it may be possible to infer site function and/or assign an authoritative cultural name/site type (cf. Brace 2005:4; LeBeau 2005, 2009). It is imperative to avoid ethno-centric interpretation of the stone cairns by providing tribal informants an equal role throughout this study.

According to local oral testimony, even the Dakota people do not know the identity of the builders but recognize the cairns as sacred altars, or “hekti” – a lodge of time and space. Therefore, what was the original purpose and meaningfulness of the stone cairns of Red Wing? Although its true meaning may erode over time, from a Dakota perspective, the prayers ascribed to the stone will never perish (Bray and Bray 1976:270). Stone has existed since the dawn of time, and the imbued prayers also live on for eternity as well.

In order to address lingering questions such as who built the cairns, when, and why, a mixed-methods landscape archaeological approach is employed in order to compile all available historical, archaeological and ethnographic information with geo-statistical results from Geographic Information Systems (GIS) analyses. An in-depth consideration of Siouan religious beliefs and the physical and social climate of Red Wing over time may also offer strong clues. Finally, how do the stone cairns function both individually and/or communally, and in what capacity? Can it be discerned?

## *An Archaeological Mystery*

The purpose of the stone cairns of Red Wing remains a key archaeological question. The Red Wing region contains a vast array of earthworks of “considerable variety of size, shape and purpose in construction” (Curtiss-Wedge 1909:23). By comparison, the construction of a handful of stone cairns comprises a very rare event given approximately 3,000 earthen mounds were built in the locality during the pre-contact period. Past studies in this locality have only identified thirteen of these hollow/ “beehive” cairns; and none exactly like them have been found elsewhere in Minnesota or in North America based on available records.



Fig. 1-2: A free-standing “beehive” cairn during the 20th century (GCHS)

The stone cairns are limited in distribution and primarily concentrated between Spring Creek and Hay Creek, and roughly 2-3 miles upriver from the main Mississippi River channel (cf. Brower 1903; Curtiss-Wedge 1909; Winchell 1911):

Another interesting class of aboriginal remains in Goodhue County are the so-called "stone cairns" found, with few exceptions, on the bluffs between Hay creek and Spring creek. A baker's dozen of these have been located. They are conical piles of stones, now much mutilated, measuring up to twelve feet in diameter at the base. They are about as unique archaeological structures as any found in the state, because no others are found, if memory serves me right, nearer than in Illinois and Kansas. There is little reason to doubt that they are old stone graves, so old that all positive traces of human bodies buried in them have been obliterated. Therefore they are hundreds of years old, and may have been built by a tribe of Indians who lived here before the Sioux arrived. If they were built by the Sioux, then it is strange that the number of cairns is so small and confined to such a limited area. (Curtis-Wedge 1909:25)

In 1903, Jacob V. Brower published his famous archaeological chart of the region, which indicates where stone cairns were found during initial Euro-American explorations of the area (see Fig. 2-1). Brower's map is useful but also deserves special consideration since it only provides a generalized idea of where mounds and cairns were located within the Red Wing landscape (Yamada 2007:16).

Wooden shafts were noted by excavators and seem to be a principal component of them. Remnants of both decayed oak (*Quercus leucobalanus*) and Eastern Red Cedar (*Juniperus virginiana*) posts were found within respective structures (cf. Aiton 1852; Brower 1903; Winchell 1911:165-168; Winchell and Upham 1888:60). The cairns were in a state of precipitated decay even during the 19<sup>th</sup> century. In one of the earliest recorded surveys, Aiton (1852) found a red cedar staff within a collapsed pile of limestone that once stood upright and was nearly rotted through its base. A small shank bone was also found (cf. Winchell 1911:165-168).



Fig. 1-3: A free-standing “beehive” cairn built upon panoramic hilltop location (GCHS)

In 1869, local physician and amateur archaeologist Dr. W.M. Sweney investigated two separate cairns of varying size, which were located on sharp hill points and ranging from six feet to twelve feet in diameter (Brower 1903). Sweney noted the base of each structure was on bedrock, was conical in shape, and upwards of 8-10 feet high. Furthermore, each was constructed by adding subsequent levels of stones with decreasing diameter until forming an apex. The structures had caved in, which would indicate they were originally built hollow. Inside the cairns Sweney found a few handfuls of black mould, decomposing mussel shell, and remnants of two wooden staffs held upright by small piles of limestone roughly six feet apart in an east-west direction. Sweney noted dry-rotting of wood on one staff but determined it was blue oak or



swamp oak (*Quercus leucobalanus*) by a mere splinter of remaining wood at its heart. Sweney believed cairns were used for human burial although he found no bones or teeth. He also notes the vast number of earthen mounds in the valleys down below, and concluded cairns were not the common mode of sepulture. The surveyors also noted the strikingly beautiful valleys and panoramas from each cairn location (cf. Brower 1903; Winchell 1911:165-168).

Brower (1903:62) noted the stone cairns were occasionally located near earthen mounds containing shell-tempered pottery, which is locally indicative of the Silvernale and/or Oneota archaeological tradition. Nowadays, a few cairns are located near earthen mounds but the temporality and significance of this relationship remains unclear. Early investigations of the stone cairns found nothing conclusive to suggest they are burial structures but these studies were poorly documented:

These rock structures [stone cairns] appear to be peculiar to that portion of our county lying between Hay Creek and Cannon River, and distant but two or three miles from the Mississippi River. In no other portion of our county or state have I observed remains of a similar character. The earthen structures are always found where the soil is alluvial and loose, doubtless for the purpose of quickly absorbing the moisture from rains and melting snow, and consequently are mostly seen, when in numbers, in the valleys or on benches, considerably below the general level of the country, and in the vicinity of water. Occasionally one is found in situations almost corresponding with those of the cairns; and looking at these with reference to those in the valley beneath, the conclusion arrived at is that they were designed as shelters for outposts or sentinels whose duty it was to spy out danger and give warning to the inhabitants below. On breaking up land on which were many of these mounds, I exposed large quantities of broken pottery and mussel shells. The fragments of pottery appears to be a combination of tenacious clay and pulverized shells.

The actual age of the Red Wing stone cairns is unclear. Due to their small number, unique architecture and relatively dense concentration, it is plausible that the stone cairns were built during a single episode or in very close succession. Many Oneota sites are recorded in the

immediate vicinity of the cairns, which regionally date to AD 1150 – 1400 (Schirmer 2017). The Red Wing region is one of the richest archaeological areas in Minnesota. For many centuries during the pre-contact era, the Red Wing region hosted large, seasonal gatherings of peoples from across the upper Midwest. AD 1000 to 1400 was a period of unprecedented cultural changes in the Red Wing region, and perhaps the Eastern Woodlands and Plains as well (Fleming 2009). Located at the confluence of multiple river systems along the Mississippi River, peoples from all directions converged upon the locality for physical and spiritual sustenance as well as to sustain and build relationships amongst respective groups. Major villages were built along the Mississippi River and feasts were common (cf. Schirmer 2002). It remains undetermined if Red Wing stone cairn construction is directly related to this socially prolific period (Silvernale phase, AD 1150 – 1250), or they built within a separate anthropological context.

Unfortunately, there is “very little if any evidence indicating the identity of the builders, except environment” (Brower 1903:64). It has been surmised that “the cairns were erected by Iowa Indians or by their individual successors at Cannon Valley, the Dakotas” (Brower 1903:65). According to local Dakota, the cairns are very old and they do not know who built them. Earlier ethnographic accounts with resident Dakota corroborate with this statement (cf. Winchell and Upham 1888:60; Rasmussen 1935). The Dakota people were the primary residents of this region when the French first arrived in the seventeenth century (Gibbon and Dobbs 1991; Palmer 2008). However, the Dakota were able to recognize the ritual activity at the cairn sites and deemed them to be sacred places where “holy works were done” (personal communication, Curtis Campbell Sr., September 15<sup>th</sup>, 2007).

According to Campbell (2000), a Khemnican Dakota oral history from the local Prairie Island Indian Community, the Red Wing region was considered *Wakan*, or holy, for many reasons. Many geologic anomalies and stone formations are found on both sides of the Mississippi River and along its tributaries, which makes the region especially sacred (see also Appendix I/Chapter 2 Supplement). Another primary reason the Red Wing area is deemed holy was/is an abundance of specific medicinal plants used for both physical and spiritual purposes. The sacred plants were an integral part of the Siouan Medicine Dance/Lodge religion, which was prolific during the pre-contact period. Furthermore, ritual feasts were part of this custom and provided an effective way to reify connections amongst disparate groups of relatives and clans (Campbell 2000; Howard 1984; Oneroad and Skinner 2003; Radin 1991; Skinner 1919, 1920).

Khemnican Dakota oral tradition states the extensive number of burial mounds reflects the large numbers of people who incorporated the use of these medicinal plants and lived according to the spiritual ideals of the Siouan Medicine Dance/Lodge lifeway (*Wico-We-Chi-Wazi*, or Relatedness through Sharing) during the pre-contact era. Furthermore, every year disparate peoples would coalesce in the Red Wing area in order to inter bundled human remains in ancestral burial plots. Living peoples knew where each family was buried, and in which specific mounds (personal communication, Curtis Campbell Sr., July 12<sup>th</sup>, 2007). In sum, from Native perspectives, the Red Wing region was a sacred place in which to live, socially interact, and pray.

### **Research Questions and Goals**

The questions of “why” and “when” have been asked since the initial cairn surveys by Euro-American settlers and are not easily answered (cf. Aiton 1852; Winchell 1911). Also, how

were the stone cairns constructed? Although the cairns are now destroyed, based on the historical reports, there is observable variance in construction style, materials and/or morphology (cf. Brower 1903; Curtiss-Wedge 1909; Winchell 1911). Fundamentally, the “construction process, including planning the mound and preparing the land, acquiring various building materials, allocating labor, and actually constructing the earthwork, required a series of decisions each of which reflect cultural choices that encode information about the society, economy, politics, and culture of the builders” (Sherwood and Kidder 2011:69).

Also, why were stone cairns constructed in their respective locations? Why here? Is GIS analysis able to identify reasons why, or are there strong correlations between the cairns and other landscape features? To date, no in-depth geographic analysis has been conducted and is sorely lacking in Red Wing research. Furthermore, due to current site restrictions, GIS analysis becomes a necessary means to investigate the Red Wing cairn phenomena.

Is stone ritual in this area locally different in execution, and is there a determinable relationship between it and ancestral Siouan populations known to have lived near Red Wing during the pre-contact period? From an archaeological perspective, the primary residents were ancestors of the Oto, Ioway, and Missouriia people of the Chiwere-Siouan language group (Schirmer 2002). Ancestral populations of the Ho-Chunk, Assiniboine and Dakota also lived in the area (cf. Brower 1903; Campbell 2000; Winchell and Upham 1888:60; Winchell 1911). The Ioway people used cairns to inter their dead until recent times, and the Dakota and Assiniboine also constructed cairns namely for mortuary and/or spiritual functions (Blaine 1995; BLM 2005). For many centuries various groups of people congregated at Red Wing and relationships were very strong. These events are evidenced today by the sheer size and quantity of archeological sites in this region, evidence of intensified earthwork construction, and oral traditions detailing

this time period (cf. Campbell 2000). However, by the time the early French explorers arrived during the 17<sup>th</sup> century, the major villages at Red Wing had long been abandoned. It is important to assess why these prominent places were abandoned. Negative environmental and/or social conditions have been linked with intensified monument construction during the late pre-contact/proto-historic period in the upper Midwest (cf. Betts 2010).



Fig. 1-4: A dismantled and partially reconstructed Red Wing cairn (Brower 1903)



Fig. 1-5: A dismantled Red Wing cairn (Brower 1903)



Fig. 1-6: Dismantled Red Wing/hollow cairn (21GD0039); 2006 photo courtesy of MSU-Mankato.



Fig. 1-7: Dismantled Red Wing/hollow cairn (21GD0262); 2014 photo taken by the author.

Cairn site function, albeit difficult to immediately assign, is often described in solely utilitarian terms. A major contributing factor to the lack of understanding is the “failure of researchers to construct models explaining cultural function and process” (Mallam 1975:6). Although their true function remains locked in mystery, the first surveyors were able to recognize that the Red Wing stone cairns are physical evidence of highly-coordinated and deliberate behavior. At this point an effort must be made to interpret meaning and function in correlation with the perceptions of the original inhabitants/builders (Stanislawski 1973:376-377). From a Native perspective, there is no separation between the physical and spiritual worlds (cf. LeBeau 2005). Therefore, this begs a major question of the cairn builders: what was the purpose of their prayer?

Rather than initially focusing solely on when an event occurred, asking why is equally as important: “What happened here? Who was involved? What was it like? Why should it matter?” (Basso 1996:5). As Hall (1997) emphasizes, thoughtful analysis and application of cultural information is required as opposed to providing a mere anthology of ethnographic data. An ethnohistorian must be cognizant of their own inherent bias (Brace 2005:93; Wedel and DeMallie 1980:118). Since Red Wing-descendant tribes are all known, tribal informants from respective nations are asked to participate in this investigation in order to avoid ethno-centric pitfalls (Basso 1996; LeBeau 2005, 2009).

Monuments like cairns and burial mounds contain many clues pertaining to the perceptions and social interactions of their builders. Thus, to view these types of monuments as homogeneous features resulting from a monolithic Native population is erroneous and wrongly negates the fact that the archaeological record is derived from multitudes of peoples with unique identities (Sherwood and Kidder 2011:83). Also, multiple names have been used to record the



same type of feature near Red Wing: “cairns”, “mounds”, “piles” or “heaps” (e.g. Aiton 1852, Brower 1903, Curtis-Wedge 1909, Winchell 1911, Rasmussen 1935, etc.) These terms do not accentuate the meaningfulness of the monument from the vantage point of those who built them. Thus, clearly defined names for specific features (initial designations at least) are needed.

Providing an important theoretical example for this investigation, Chartkoff (1983) examined a rock feature complex in northwestern California and identified six different types of rock features placed throughout the landscape. Site attributes were minimal, but ethno-archeological information from multiple tribes as well as the spatial context of the stone feature provided an adequate level of information in order to assign a distinct cultural designation. This method, in conjunction with specific topographical and morphological attributes observed during 2013-2014 field surveys, is applied for the Red Wing region. Thus, an initial stone feature taxonomy as well as a cairn survey protocol is developed. Both the taxonomy and survey protocol consider topographical and morphological attributes in combination with National Register Bulletin 36 criteria for assessing archaeological site integrity and guidelines from a Lakota survey methodology and taxonomic system for classifying traditional cultural property sites (cf. Dobbs 1996; LeBeau 2005; see also Cairn Survey Protocol with Native Informants – Appendix II/Chapter 4 Supplement).

How were the stone cairns conceived by their original builders? The local Dakota called the stone cairns “*hekti*”, which is an old Mdewakanton word and its literal translation is “Lodge – What is Past” (LeBeau 2009). During an informal ethnographic visit, the essence of the word “*hekti*” was described to the author as a “lodge of time and space” (personal communication, C. Campbell Sr., January 25, 2008). This concept is dumbfounding unless the cosmological viewpoints and religious beliefs that provide its framework are thoughtfully considered. To



clarify from a Native point of view: the activities, prayers and feelings offered at a discrete location (regardless of “when?”) are still stored within the specific feature, place, et cetera (cf. Basso 1996). Grasping these philosophies and how sacred places and objects are created through ritual activities is fundamental to understanding prayer site function, and possibly how the cairn builders in Red Wing were cognitively altered by the physical presence of the cairns. A deeper philosophical discussion is initiated until a deeper and more thorough examination of “hekti” and surrounding cultural landscape is pursued beyond this dissertation.

These research goals will be addressed:

- a. To examine the geographical, archaeological and anthropological context of regional stone feature construction using a mixed-methods approach.
- b. To subsequently develop an initial stone feature taxonomy for the Red Wing area as well as indicate if the Red Wing hollow/beehive form is truly unique.
- c. To compile all existing and generated information in order to justifiably assert who built the Red Wing stone cairns, when, and why.
- d. To illumine the functionality of the stone cairns from a Native perspective as well as provide a philosophical springboard for future research in Red Wing.

## **Conclusion**

This research examines the cultural and spatial significance of the stone cairns of Red Wing. Until present day the most fundamental questions remain unanswered: Who built them? When? Why? In order to address these questions a mixed-methods research model is used to gather and distill information from historical records, Geographic Information Systems (GIS) spatial analysis, bi-variate statistical analyses of topographical and morphological attributes, archaeological data from proximal habitation sites, Siouan oral tradition, and direct consultation

with Native informants. Hopefully this approach is able to awaken dormant knowledge pertaining to the cairns and social activities within their proximity.

The stone cairns of Red Wing are indicative of a wider cultural landscape, which was created through the purposeful placement of ancient monuments within a larger physical setting (cf. Jacobson-Tepfer and Meacham 2010:18). The cairns may be figuratively reassembled through a mixed-methods approach but the original cultural event with the prayer, songs and blessings can never be fully reproduced in its entirety (Brace 2005:7). However, a preliminary explanatory framework may be produced if it links actions with intrinsic meaning and an appropriate spatio-cultural context (cf. Cash Cash 2008:25).

As Mack (2004:78) notes, research of this type is quite daunting because “reconstructing the activities and experiences of the different actors requires analysis of the different sources that inform on the past, as well as an understanding of the interactions between these sources.” To further complicate matters, cairn construction is observed throughout the globe and across time. Therefore, much research energy is spent examining other stone feature studies and their respective methodologies. Although the true function of these stone cairns is vague, they must be recognized as remnants of highly coordinated people with a clear purpose. This research hopes to identify their source of inspiration.

The following chapters are summarized thusly:

Chapter Two and its appendix provide historical details on past cairn studies in the area and include a brief overview of the region’s geomorphology, archaeology, ecology, and ethnohistoric records. Furthermore, a brief and localized ethnographic overview of the Red Wing region from a Khemnican Dakota perspective is put forward (cf. Campbell 2000). This overview

includes elements of oral history, the spiritual significance of the landscape and various features, Siouan Medicine Dance/Lodge lifeway, comments on monument construction, etc.

Chapter Three details the hybrid methodology employed in this study. The stone cairns are primarily examined using GIS but critical insight is gleaned from the regional archaeological record, historical documents, and ethnographic interpretations through Native consultation. A mixed-methods approach will presumably perform better than past standalone studies, which have not yielded conclusive answers pertaining to the fundamental anthropological questions still surrounding the cairns.

Chapter Four and its appendix provide detail on the field survey methods used, data collection, statistical tests, and quantitative results. These results identify correlations between independent variables and other landscape features associated with cairn construction. Ultimately, a statistically-significant relationship between the stone cairns and a specific archaeological tradition is evident based on the quantitative results (Spring Creek Oneota; cf. Schirmer 2016). This subsequently refines the list of descendant historic tribes whose ancestors actually built the cairns. Native interpretations of the cairns were solicited during on-site field surveys and subsequent analysis. This information is used to culturally interpret the significance of the cairn sites in Chapter 6. An initial stone feature taxonomy is also developed for the Red Wing region based on field survey results, ethnographic references, and existing methodologies for assessing archaeological site integrity and associated meaning (cf. Dobbs 1996; LeBeau 2005, 2009).

Based on the results presented in Chapter Four, Chapter Five examines cairn construction within a regional and temporal context – specifically the Oneota archaeological tradition ca. AD 1400. Changes in the physical and social climate are also discussed as it pertains to monument

construction near Red Wing and elsewhere until initial European arrival. Furthermore, based on excavated material and radiocarbon dates from a rare single-component Spring Creek Oneota village immediately outside the densest cluster of stone cairns (21GD0258), details of pan-Siouan life and social order through the lens of Ho-Chunk oral tradition is used to illumine village and ceremonial life adjacent to the stone cairns of Red Wing during the late pre-contact period (cf. Staeck 1994). Note: Ho-Chunk oral tradition also speaks of a deteriorating social climate and fission of the Great Siouan Confederacy (i.e. Oneota), which occurred long before the initial arrival of Europeans in the 17<sup>th</sup> century (Stanley 2004:34). Environmental and/or social strife may have provided an impetus for heightened ritual behavior such as cairn construction across the region (cf. Betts 2010).

Chapter Six provides perspectives on cairn elements and cosmologies, if available, from known Oneota descendants namely Chiwere-Siouan peoples: Ioway, Oto, Ho-Chunk and Missouriia. Furthermore, a Red Wing-specific Khemnican Dakota perspective is also used to grasp the meaningfulness assigned to specific materials, objects, and metaphysical beings within the Siouan cosmological sphere and Medicine Dance religion practiced during this period. Note: the Ho-Chunk, Ioway and Dakota all practiced the same type/version of the Medicine Dance (Skinner 1920:11). Siouan perspectives are used to interpret the overall significance of the stone cairns, their individual components, observed ritual behavior, site placement and the surrounding ritual landscape.

Chapter Seven distills the respective geographical, archaeological, and ethnographic information pertaining to the stone cairns of Red Wing. The synthesized results are used to generate hypotheses about who built the cairns, when, and why. Beyond this dissertation, the results from this investigation provide a theoretical springboard into a deeper anthropological

and metaphysical discussion of the purposefulness and meaningfulness of the Red Wing stone cairns, the cultural landscape in which they are embedded, and philosophies housed within a “lodge of time and space.” Future research goals are also offered, which includes a brief discussion on how the mixed-methods approach initially performed.

## Chapter 2: Past and Present Cairn Investigations

### Introduction

Red Wing was an aggregation and cultural center long before the arrival of Europeans. With its varied resources and topography, different groups came from near and far to live and share *en masse*. Peoples of various traditions sustained themselves physically through horticulture, hunting and gathering for many centuries. The uniqueness of the Red Wing landscape and the construction of sacred space (e.g. major villages with expansive mound groups, documented ritual activities, and stone feature construction) also played a significant role in their lives. Somewhere within this pooling of peoples, resources, and ceremonial life, the stone cairns emerged. So far it has been difficult to pinpoint their exact inspiration and period of construction. Therefore, the first step in my analysis was to familiarize myself with the Red Wing area, its histories, and available evidence.

Red Wing sits along the Mississippi River on the border between present-day Minnesota and Wisconsin and is approximately 40 miles downriver from Saint Paul, Minnesota. Many tributaries (e.g. Cannon River, Trimble River, Spring Creek, Hay Creek, Wind River, etc.) enter the Mississippi channel in this vicinity and undoubtedly served as natural thoroughfares for goods, peoples, and customs. In the Red Wing region, there were nine major pre-European contact villages as well as many smaller sites scattered across the region. The major villages were quite substantial in size and reflect an “unprecedented population density in the region” (Fleming 2009:12). Its cultural peak lasted from AD 1150 – 1250 during the Silvernale phase (Schirmer 2017). During this distinct phase, the Red Wing area was arguably the most densely occupied location along the upper Mississippi River (ibid). Also, immediately adjacent to these villages were massive burial mound groups. In total, an estimated 3,000 earthworks were

constructed in the Red Wing region. Notably, more mounds were concentrated in Red Wing than anywhere else outside of Cahokia (Fleming 2009:15). It was within this expansive ceremonial context that a very small, enigmatic subset of stone cairns was constructed.

There are observed links between cairns and the extensive number of mounds constructed roughly 1,000 years ago in this area. Mound and cairn remnants were mapped by T.H. Lewis and by Jacob V. Brower but these maps deserve special consideration since they provide a generalized understanding of mound and cairn placement within the landscape (Yamada 2007:16; see Fig. 2-1). Some freestanding cairns are located near earthen mounds but their temporal and historical relationship is still unclear. Early investigations of cairns were conducted by amateurs and provided no substantive proof of human remains, but in general these studies were poorly documented (cf. Aiton 1852).

Across North America, thousands of mounds (e.g. burial, effigy, ceremonial) once dotted the landscape. Made by past peoples for specific purposes, the construction of sacred landscapes vis-à-vis earthworks lasted well into the historic period. Cairns were oftentimes documented as “rude heaps of stone” (cf. Squier and Davis 1848) but landscape studies across North America and elsewhere indicate “simple” stone structures may possess the power to connect groups with the physical landscape, other landmarks and features, their ancestors and also the cosmos (BLM 2005; Carr et al. 1995; Chartkoff 1983; Hallendy 2000; Jacobson-Tepfer and Meacham 2010; Tilley 1994; Van Dyke et al. 2016). Therefore, a “rude heap of stone” to a layperson may actually be a highly complex ritual location to someone with trained eyes.

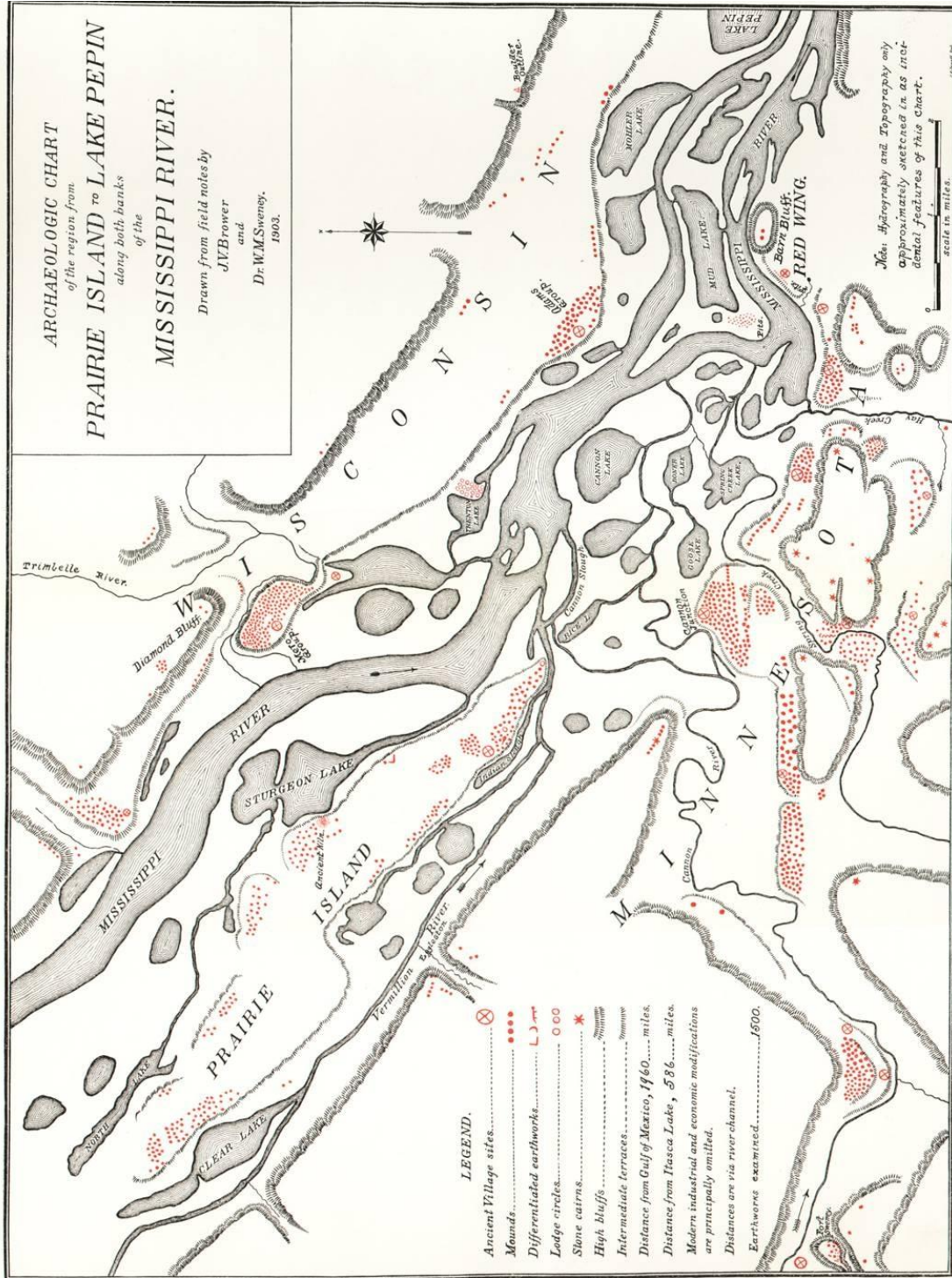


Fig. 2-1: Brower (1903) Archaeological Chart of the Red Wing Area



The role of stone in Native life and ritual is critical to our basic understanding of cairns and their construction. In parallel with regional archaeological evidence, local ethnographic information indicates many peoples resided in the Red Wing area prior to European contact (Campbell 2000; see Appendix I). Today, the Dakota people are the primary indigenous group in the region and possess an extremely deep relationship with stone and the larger landscape. However, the cultural and temporal context in which the cairns emerged remains a mystery even to the Dakota. Given the variance of peoples once living here and the many capacities in which stone can be used in ritual contexts (even amongst related peoples), a thorough examination of Siouan ethno-historic and ethnographic records becomes imperative.

For this investigation, my goal is to situate the Red Wing cairns within the region's physical and cultural landscape, contextually within the local archaeological record, and elucidate their possible meaning through the ethnohistories and ethnographies of Red Wing's descendant peoples. Because the cairns have all been dismantled and further disturbance is prohibited by Minnesota statute (MS 307.08), all available documentation is therefore highly valuable. Although past surveys were done haphazardly without proper methods and/or cultural sensitivity, cairn survey reports from the 19<sup>th</sup> century still offer clues about their original contents and provide observations on the physical setting and its surroundings. Archaeology and history mutually benefit each other by providing information unique to itself (Mack 2004:78). This is where my examination begins.

### ***A Mosaic of Monuments***

These rock structures appear to be peculiar to that portion of our county lying between Hay Creek and Cannon River, and distant but two or three miles from the

Mississippi River. In no other portion of our county or state have I observed remains of a similar character.....-W.M. Sweney (Brower 1903:62)

Situated upon conspicuous overlooks and bluff edges primarily between the Hay Creek and Spring Creek valleys, the stone cairns of Red Wing were meant to be seen (Koenen 2007). The cairns were placed on high, exposed, untimbered hills (Winchell 1911:405) although relatively recent tree growth has obscured what was normally seen years ago. From their relatively high vantage points, much of the immediate landscape as well as other cairn sites are visible. By the middle of the 19<sup>th</sup> century, a limited amount of internal evidence remained inside them except for some suspected ritual items. Of the approximately 13 stone/hollow cairns recorded, most of them were destroyed by early investigators and presently none of them are intact. In conjunction with little internal evidence, their clandestine and clustered locations add to this mystery:

Another interesting class of aboriginal remains in Goodhue County are the so-called 'stone cairns' found, with few exceptions, on the bluffs between Hay creek and Spring creek. A baker's dozen of these have been located. They are conical piles of stones, now much mutilated, measuring up to twelve feet in diameter at the base. They are about as unique archaeological structures as any found in the state, because no others are found, if memory serves me right, nearer than in Illinois and Kansas. There is little reason to doubt that they are old stone graves, so old that all positive traces of human bodies buried in them have been obliterated. Therefore they are hundreds of years old, and may have been built by a tribe of Indians who lived here before the Sioux arrived. If they were built by the Sioux, then it is strange that the number of cairns is so small and confined to such a limited area. (Curtiss-Wedge 1909:25)

Initial cairn investigators in the Red Wing area were J.F. Aiton, W.M. Sweney, Col. W.J. Colvill, and T.H. Lewis. Lewis surveyed the cairn sites as part of the later Northwestern Archaeological Survey (Nwas) of the 1880s. The stone cairns of Red Wing were of great size and unique architecture unlike anywhere else. Across Minnesota, rock/cairn features vary greatly

in size (up to 11 feet long and 7 feet wide) with no consistent shapes being reported (Arzigian and Stevenson 2003:165). Statewide, the elements found within these features include various uses of stone, wood, charcoal and red ocher. The arrangement of these elements seems intentional at times and others may have been accidental inclusions (ibid). The stone cairns near Red Wing incorporated the same essential elements, were of similar size and character, and were clearly of deliberate and complex construction.

Specifically in Red Wing, as documented in Winchell's *Aborigines of Minnesota* (1911:165-169), the stone cairns were noted by Lewis for their massive size and solitary placement. In a similar vein, lone earthen mounds often tend to be more massive than similar mounds within larger groups, and ethno-historic accounts state these types of structures and positions were primarily used for interring individuals of high social rank (Dobbs 1996). However, as of now there are no clear patterns or associations between most of Minnesota's defined cultural contexts and specific burial practices (Arzigian and Stevenson 2003:121).

Although their techniques were improper by today's scientific and social standards, we are able to use early survey accounts to help us reconstruct the original cairn architecture. In one of his communications, Aiton (Winchell 1911:165) documented an examination of a collapsed cairn 12 feet in diameter by 6 feet in height:

... I resolved to seek internal evidence. Prompted by the spirit of a first explorer, I soon ascended the heap; and the coldness of the day, and the proximity of my gun, tended to suppress my dread of rattlesnakes. The stones were such that I could lift, or roll them, and I soon reached a stick about two feet from the top of the heap. After descending about a foot farther I pulled the post out; and about the same place found a shank bone, about five inches long. The post was red cedar, half decayed, i.e. one side, and rotted to a point in the ground; hence I could not tell whether it grew there or not. The bone is similar to the two which you have. I left it and the post on the heap, hoping that someone better skilled in osteology might visit the heap. The stones of the heap are magnesium limestone, which forms the upper stratum of the hills about Red Wing.

Nowadays, the Red Wing cairn sites are identified by their original foundations and strewn stones. Also, sometimes a pit is found at their base most likely in anticipation of finding specific objects (Taylor 1882). Although Aiton and others sought to determine the age of the cairns with internal evidence, ritual items such as ceramics or projectile points do not necessarily indicate the age of construction because older styles of ceramics or projectile points could easily be used as mortuary items at a later time (Arzigian and Stevenson 2003:121). Brower (1903:60-67) further documents the 1869 cairn survey report of local physician and amateur archaeologist Dr. W.M. Sweney. On sharp hill-points in the vicinity of Spring Creek and the Cannon River, Sweney notes a number of stone mounds or cairns. Sweney investigated two cairns of various sizes, ranging from 6-12 feet in diameter. He notes the base of each was on bedrock, they were conical in shape and 8-10 feet high. Each subsequent layer of stones was inlapped together towards the middle until forming an apex. A majority of these structures had caved in, which indicated they were built hollow. The stone cairns were located on points of highest relative elevation and near shelly limestone outcrops (Brower 1903:60).

Sweney further documented his findings, i.e. a few handfuls of black mould, mussel shell nearly in powder, and remnants of two wooden staffs held upright by small piles of limestone roughly six feet apart in an east-west direction. Sweney believed them to be human burials although he only found small bits of unidentified bone and deteriorated mussel shell. Both Sweney and Aiton noted the vast number of tumuli in the valleys below and concluded cairns must not be the common mode of sepulture (Brower 1903:62-65; Winchell 1911:167). Aiton likewise investigated several “stone heaps” but “found no bones, nor did I see anything else

worthy of particular notice at present” (Winchell 1911:166). The stone cairns of Red Wing are generally thought to be burials (Curtiss-Wedge 1909:60) but this has never been confirmed.

The use of wooden staffs within the Red Wing cairns, i.e. red cedar (*Juniperus virginiana*) and Blue or Swamp Oak (*Quercus leucobalanus*) is a notable feature. Unfortunately, due to poor documentation and site destruction, it is close to impossible to determine at which site(s) Sweney encountered the Swamp Oak staffs. No reason is yet available as to why a different kind of wood was used at different sites without the aid of ethnographic interpretation. However, these survey records do tell us the stone cairns once contained wooden staffs (red cedar or oak, respectively), all were made of limestone, and they were placed upon elevated, conspicuous locations that overlooked earthworks in the valley(s) below.

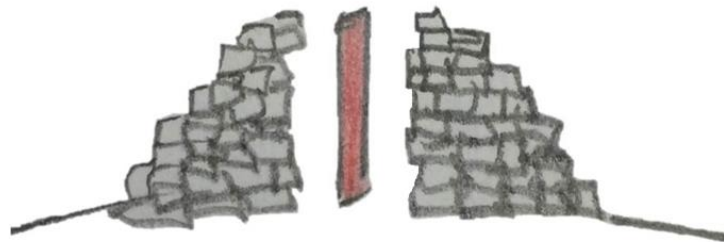


Fig. 2-2: Colvill’s Profile/Cross-Section Description (cf: Winchell 1888:60; sketch by the author)

During the mid-19<sup>th</sup> century, Col. W.J. Colvill also documented the internal structure of Red Wing cairns and spent time interviewing local Dakota men about their origins. Specifically:

The mounds on the bluffs are generally loose piles of stones, having a circular opening extending vertically from the apex to the base of the pile. It is large enough to allow a man to stand erect within. They remind one of watch towers or signal stations; with proper draft, easily provided for, they would send up from a small fire a "pillar of smoke." They are quite recent, as a cedar stake or post was taken from one of them in the year 1852. As the Sioux have no knowledge of them I suppose them to be Omaha mounds. Correspondence of Col. W.J. Colvill (Winchell and Upham 1888:60)

Jacob V. Brower (1903:64-65) surmised that the Iowa Indians were most likely responsible for their construction; or possibly the Dakota. The Dakota never claimed responsibility for their construction (cf. Winchell and Upham 1888:60; personal communication, Curtis Campbell Sr., Sept. 15th, 2007). However, all agreed the people(s) responsible for the complex design and construction must be lauded for their ingenious construction practices (Brower 1903:64).

Multiple types of stone features were constructed in the Red Wing area. Lloyd Wilford, a prominent University of Minnesota archaeologist during the mid-20<sup>th</sup> century, conducted excavations at numerous sites in the Red Wing region. According to his knowledge, the number of stone cairns concentrated in this area exceeded all other known locations (L. Wilford, interview by E. Hedin, June 10, 1976, transcript on file at Goodhue County Historical Society). In 1947, Wilford excavated two earthen mounds at the Spates Mound group (21GD0036). In Mound 36 he found a rough circle of stones near the mound base that was made up of 35 pieces of friable limestone. Rectangular pits in an east-west orientation were also found beneath the friable rock cairn but only a small amount of fragmentary human remains were found in rectangular pits below the mound base (Arzigian and Stevenson 2003:382). Finding small amounts of human bone is expected because scaffolding and bundle burials were common practice in this region and placed within mounds (L. Wilford, interview by E. Hedin, June 2,

1976, transcript on file at Goodhue County Historical Society). Acidic soils would also decompose bone rather quickly. During a subsequent interview on June 10, 1976, Wilford stated:

I have always assumed that most of [the stone cairns] were landmarks put up there in a certain period, but that [does not] make too good sense either, because they [did not] need cairns like that. We do find some stone cairns within mounds; that's one of the things you sometimes find. There was a big one like that up at the Marine Site; there was a big rock cairn within a mound. While working on that mound was when I discovered this Mississippi site at Marine, or near Marine. Entirely different people – and later.

A vast array of earthworks presents “considerable variety of size, shape and purpose in construction” (Curtiss-Wedge 1909:23). Based on Wilford’s findings and other accounts, we also observe great variability in the internal structure of a burial mound but it seems common to find a stone feature/cairn within them. Notably, in almost all cases those cairns within mounds lacked human remains (Arzigian and Stevenson 2003:164). It is plausible that ritual activities preceded the physical construction of the mound. In Red Wing, charcoal and burned, reddened earth was found at the base of earthen mounds (Brower 1903:63). It is certainly possible that site preparation and the associated ritual acts were dependent upon multiple conditions and varied in complexity. Stone circles were also found in connection with Wisconsin mound groups (West 1907:204).

Stone mounds and flatter dome-shaped earthworks comprised of both stone and soil were also built in the Red Wing area. Interestingly, these stone mounds are generally found in the same vicinity as the larger “beehive” or hollow cairns (Winchell 1911:159). Although the exterior architecture may be simple, the interior structure and ceremonial actions used to construct them remain unclear. The stone mounds are presumably burials. In many places slabs of stone were used for exterior mound coverings (Arzigian and Stevenson 2003:140). Also,

stone-lined burial pits were uncovered at the nearby Bryan Site (Wilford 1952). Limestone cists were also built in regions where stone was abundant and timber was scarce (Winchell 1911:405). However, archaeologists are uncertain how many of the earthen mounds in Minnesota actually served as burial sites (Arzigian and Stevenson 2003:1). Regardless, for Native peoples, human remains need not be present in order for the cairn to be a final resting place for spirits (BLM 2005). Mounds of all types are treated as internments per Minnesota Statute 307.08.

The terms “stone mound” and “cairn” are oftentimes used interchangeably in many regions, which leads to some confusion. In Wisconsin, a select number of mounds constructed with both stone and soil were called “cairns” (West 1907:204). Cyrus Thomas (1894:31) stated stone mounds found east of the Rockies are conical in shape although the term “cairn” is sometimes applied to smaller and more regular types. This mixture of terms will continue to generate confusion without the aid of an explicit site type definition and I will return to this topic in Chapters 7 and 8.

On a local level, Mallam’s (1975) study of effigy mounds in far northeastern Iowa indicated that based on effigy form and polar-grid statistical analyses the same groups would re-visit the same locations over time. He theorized this was done to renew social ties that would mitigate any resource and/or social stress. Mallam further argues “design specialists presumably existed within the group based on low variance in attributes at respective locations” (Mallam 1975:127). Fundamentally, the primary purpose of these effigy mounds was not to inter dead relatives but rather as “multi-purpose institutions whereby the social, religious, economic and political needs accruing to larger social groups were coordinated and integrated” (Mallam 1975:63). In short, they were used for larger kinship purposes. Due to their unique/similar



architecture and clandestine clustering, it is certainly plausible that the Red Wing cairns were constructed in like manner by the same group(s) and most likely during a short period of time.

It is possible that the Red Wing cairns were built as some form of effigy. Earthen effigy mounds were also built in the region including the Diamond Bluff “panther” at the Mero Site (47PI02). The panther effigy was constructed by Silvernale phase peoples along a bluff edge overlooking the Mississippi channel ca. AD 1000 – 1200 (Maxwell 1950; Rosebrough 2010:583). Rattlesnake effigies also containing Oneota pottery (now obliterated; 21GD37 and 21GD38) were constructed along Spring Creek and in close proximity to the stone cairns (Winchell 1911:163-164). Local Khemnican tradition states both the water panther/spirit (Unktehi) and rattlesnake (Wamnduska) were revered as part of Medicine Lodge/Dance practices (Campbell 2000; see Appendix I).

According to Mr. Campbell, effigies are landmarks which “preserve ideals and philosophies” that convey wisdom to future generations (personal communication, Curtis Campbell Sr., September 15, 2007). On cognitive levels, it is argued that mounds (and presumably effigies) play important roles in renewal ritual(s) and in re-creating the cosmology of their builders (Rosebrough 2010:393). A similar argument can be applied to the stone cairns of Red Wing because they cultural symbols of kind. Furthermore, cultural symbols are clear and explicit expressions of ethnicity and group identity (Fleming 2009:97). Individual cairn components and the entire architecture must be analyzed in order to provide some clarity on this matter (see Chapters 6 through 8).

Notably, the only boulder effigy constructed in the state of Wisconsin is located north of Barn Bluff/Red Wing on the opposite bank of the Mississippi River. Normally recognized as a bird effigy by archaeologists, the Dakota recognize it as “Wahkeipe Kagapi” or Arrowmaker

(Brower 1903; see Appendix I). It is a prominent feature in Dakota oral tradition as well as the cultural landscape of Red Wing (Campbell 2000). Local oral tradition states this stone feature was constructed to strengthen the already-positive relationship amongst Dakota peoples in the region (Campbell 2000; see Appendix I).

Effigy mounds, unlike in neighboring states Wisconsin and Iowa, are quite rare in Minnesota. Furthermore, they are mostly confined to those counties on the Mississippi, viz.: Dakota, Goodhue (which includes the Red Wing region), Wabasha, Winona, and Houston. The reasons for this concentrated geographic construction remain uncertain (Winchell 1911:406-407). Rosebrough (2010:583) argues in her detailed study of effigy mound construction that apparent conflicts between egalitarianism and constructing monumental structures were most likely resolved through effigy ceremonialism that invoked “masked ranking in a system where lineage/corporate/sodality tenure was established.” Mallam (1975:66) argues each of these individual and socially distinct groups would have “subordinated their autonomy to this greater superordinate institution.” Further, this resulted in a “higher level of sociocultural solidarity and cohesiveness” that resolved any cultural problems of diverse societies inhabiting the same geographical region. The end result was cultural unity and stability (ibid). The Silvernale phase in Red Wing (as described in a following section of this chapter) mimics this notion.

The true purpose of the stone cairns of Red Wing remains unclear at the present time. Larger cairns represent a considerable amount of expended energy and may possess more important roles (BLM 2005). Based on these historical accounts, it becomes imperative to examine how these structures influenced their onlookers from afar rather than examining site morphology alone (Van Dyke et al. 2016).

### *Red Wing Physical Landscape*

Primarily concentrated between Spring Creek and Hay Creek, the stone cairns of Red Wing were found concentrated on high, exposed spurs and hilltops that overlooked open valley(s) below. Earthworks are oftentimes found on bluffs or terraces that overlook waterways or adjacent to lakes but great variability in their physical setting is observed, which is directly linked to both environmental and cultural factors (Dobbs 1996). Bluffs ranging from 1000 to 1100 feet above sea level with ridges and knobs rise abruptly from the plains to an approximate height of 150 feet are commonplace along the Upper Mississippi River channel and its tributaries.

In this region, river and creek valleys are bounded by the bluffs and stretch out upon level plains of gravel (Winchell and Upham 1888:23). Native villages were generally located upon terraces just above the river channel. Nowadays, what is referred to as the Red Wing region encompasses both the Minnesota and Wisconsin sides of the Mississippi River channel, from Prairie Island down to the head of Lake Pepin. Major tributaries include the Cannon and Trimbelle Rivers as well as Spring Creek and Hay Creek. Lake Pepin, a natural widening of the Mississippi River, is formed by Chippewa River depositing sediment into the Mississippi River channel further south and the head of the lake once reached as far north as the mouth of the Cannon River around AD 1000 (Dobbs and Mooers 1991:68-69; Schirmer 2002:61). Many other small streams and creeks also flow into the Mississippi on the Minnesota and Wisconsin sides of the river. There is no question that the abundance of animals, plants, and transportation made the Red Wing region a preferred place for pre-contact peoples to establish communities (Fleming 2009:11). The tributary valleys are deeply incised and the water channels are relatively narrow (Schirmer 2002:62).

Across the Red Wing region, the bedrock is comprised of older sandstone and younger limestone above it (Ojakangas 2009). The shallow seas of the Ordovician period (~450 million years ago) covered all of Minnesota and its thickly-laid deposits form the major surface rocks in the southeastern portion of the state (Bray 1985:8-9). The Red Wing cairns were all built with limestone, which is found in the upper strata and near hilltops throughout the region. Other sedimentary rocks (i.e. sandstone and shale) are also present in the local geologic record. Sedimentary rock is normally deposited in horizontal sheets and the flat, planar surfaces are ideal for constructing cairns (Williams 2012:28).

The geomorphology and soils of the Red Wing region are due to numerous glacial and interglacial cycles (Wright 1972). The topography of Goodhue County was formed by multiple episodes of glacial activity and the Nebraskan ice sheet covered the entire area (Bray 1985:86). Glacial Lake Agassiz discharged its water via Glacial River Warren, which forms the present-day Minnesota River and Mississippi River channels, respectively. At present-day Red Wing, this ancient river drainage was approximately 5 miles in width and spanned the distance between the Minnesota and Wisconsin bluffs.

Most of the surface soils along the tributary valleys and adjacent uplands have finer textures and relatively high amounts of silt. Since the underlying deposits are glacial sands and gravels, the uplands and terraces are generally drained and very dry where the soil cap is thin (Poch 1976; Schirmer 2002:61). The Red Wing cairn sites are located on loess-capped hilltops with underlying glacial tills and limestone. Soil conditions and variations at nearby habitation sites are extremely important to consider because “consideration of the time factor and landscape stability are important in interpreting artifact associations and contexts, and cultural

chronologies” (Holliday 1992:104). Soils vary considerably with landscape position in this region. Generally, western areas have medium-textured prairie soils and eastern areas have finer forest and prairie soils formed in loess over bedrock (Arzigian and Stevenson 2003:246). The major valley supported floodplain forests as well, with “Big Woods forest more common near the Mississippi, prairie in the center of the region, and oak groves or barrens in the west” (ibid).

Springs and seeps form the headwaters of most flowing creeks, streams and rivers in Goodhue County (Winchell and Upham 1888:21). Locations where the groundwater table intersects the land surface (i.e. springs) are dependent upon aquifer stratigraphy and localized topography. The headwaters of both Spring Creek and Hay Creek are formed by springs (Alexander Jr. et al. 2003). Springs served as water sources and also have intrinsic spiritual significance as well (see Chapter 6). Medicine lodges were generally located near springs (personal communication, Curtis Campbell Sr., June 20, 2007).

Prime growing conditions in Red Wing and an abundance of flora brought many peoples here to satisfy their physical and spiritual diets. Goodhue County, Minnesota and Pierce County, Wisconsin have a great variety of trees, which is mostly deciduous but includes some coniferous varieties (cf. Winchell and Upham 1888:31). The wooded bluffs of the regions and its many large and small waterways provided an abundance of resources necessary for daily life. Native plants such as quinoa/goosefoot (*Chenopodium berlandieri ssp. nuttalliae*), wild rice (*Zizania palustris*), marsh elder (*Iva annua*), and many other species served as valuable food sources (cf. Schirmer 2002). Maize (*Zea mays*) was also a major food source. Other plants such as ginseng (*Panax quinquefolius*) and sweetflag (*Acorus americanus*) were sought for medicinal purposes (Campbell 2000).

The Neo-Atlantic period, also referred to as the Medieval Climatic Anomaly (MCA) was a warm/moist period lasting from approximately AD 1000 – 1250. This coincides with the Silvernale phase (AD 1150 – 1250), a period of intense mound building and social proliferation in the Red Wing region. The MCA provided prime growing conditions for both domesticated and wild plants. The advent of the Little Ice Age (a Neo-Boreal episode with cooler/drier conditions) follows the MCA and begins ca. AD 1250 and lasts for the next 500+ years (Perkl 1998:281; Wright 1989:532). During the advent of the Little Ice Age (ca. A.D. 1300), longstanding lifeways are seemingly abandoned in many areas (cf. Baerreis et al. 1976; Benson et al. 2009; deMenocal 2001; Schwindt et al. 2016). These climate effects were apparently felt much more strongly in other regions of the Midwest and North America, which may have had an indirect effect on Red Wing. The effects of the Little Ice Age on pre-contact Red Wing peoples will require more research energy in the future.

During the MCA, natural productivity cycles would have dominated during more wet conditions and caused a normal to slightly above normal abundance of plant life (Schirmer 2002:76). Drier periods would have limited resource availability in the locality although “no single area seems to have been prone to especially severe consequences for any disproportionate amount of time” (Schirmer 2002:75). Resource interruptions were relatively brief and staggered, and the flora presumably recovered quickly but this does not eliminate their potential impact on local indigenous groups (Anderson et al. 1995; Raab and Larson 1997; Schirmer 2002). The observed expansions and contractions in the archaeological record as well as the corresponding environmental data presents a compelling case that climate variations are an important factor in understanding pre-European social behavior in the Upper Mississippi valley (Benson et al. 2007; Benson et al. 2009; Cook et al. 2010; Mann et al. 2009; Schirmer 2015).

## **Red Wing Archaeology**

The Red Wing area has long been recognized as one of the richest archaeological regions in Minnesota (Gibbon 2012:160). In this locality significant archaeological traditions include: Late Woodland (AD 600 – 1100), Silvernale phase (AD 1150 – 1250), Red Wing Oneota (AD 1150 – 1300 in the main villages), Bartron phase Oneota (AD 1150 – 1300), and Spring Creek Oneota from AD 1300 – 1400 (Schirmer 2017). From ca. AD 1000 – 1400, the Red Wing region was site to unprecedented cultural change in the Upper Mississippi River valley (Fleming 2009:3). With its natural beauty, prominent landforms, and expansive burial mound groups combined with the natural beauty and prominent landforms, pre-contact Red Wing landscape was both “dramatic and decidedly social” (Fleming 2009:6). Many groups of people with a variety of material cultural traditions actively contributed to the construction of a living cultural landscape and ultimately to the formation of the archaeological record” (Fleming 2009:303).

Near the end of the Late Woodland period in the Red Wing region (ca. AD 1050), we see evidence of seasonal congregation *en masse* as well as more sedentary horticultural lifestyles. Improving climate conditions (warm/moist) and the spread of maize-based agriculture were major factors (Schirmer 2002:19). This transition to maize horticulture and increasing population density are directly linked (Dobbs 1996). Silvernale, and Oneota peoples successively dwelt in this region and it has been strongly argued Late Woodland peoples were their forefathers (Gibbon 2012:175). During the Late Woodland tradition, mound ceremonialism played a central role in creating and maintaining bonds between different social groups as well as marking and legitimizing territorial claims by creating sacred ground (Betts 2010:103-104).

The extremely-high concentration of earthwork construction near Red Wing is unparalleled in the upper Midwest region. Mound construction in the Midwest seemingly grows out of the complex ceremonial and mortuary activity in the Ohio River valley perhaps as early as 2,500 years ago (Dobbs 1996). The construction of mounds helped to seasonally bond aggregated populations through labor, ritual activity, and reinforced a shared social identity (Rosebrough 2010:515). Maintaining contact with extended family groups was arguably an important prerequisite in order to perpetuate a stable social environment (Mallam 1975:66). Furthermore, mound complexes and family plots may have functioned as territorial demarcators (Mallam 1975:131). Across Minnesota and in the absence of Oneota or other cultural affiliation, the majority of mounds are assigned to the Woodland period (Arzigian and Stevenson 2003:107). Secondary burials (i.e. bundle burials) took place over time in much older mounds as well (Winchell 1911:406). Native groups knew which mound(s) belonged to which specific families (Campbell 2000).

The cultural apex and densest occupation of the Red Wing region occurred between ca. AD 1050 – 1250, which is known as the Silvernale phase (Fleming 2009:12). The locality at this time should be conceived as a “complex system of inter-related villages that maintained varying relationships to external populations” (Fleming 2009:294). Interestingly, individual villages still maintained their own unique character in relationship to the larger social community (Fleming 2009:7). These villages also constructed sacred space with expansive mound groups that encircled them. The distinction between living space and burial space was sometimes blurry because living villagers and their buried ancestors were in very close proximity to one another. According to Ioway oral tradition, it was common practice for villagers to live near their interred loved ones (Foster 1996). As villages and populations expanded, the planned use of existing



burial space became much more important. Thus, distinctive burial patterns recognized beforehand such as potential family plots become harder to identify due to the sheer volume of earthworks that were constructed over time (cf. Yamada 2007).

The locality was site to a convergence of waterways and peoples from all directions. Plains Village groups from the west arrived via the Cannon River, Mille Lacs Aspect peoples arrived from the north along the Mississippi and Saint Croix Rivers, Cahokian influence came from the south, and the Late Woodland and Oneota groups were omnipresent throughout the region. Seasonal gathering included extended kin groups that typically occupied larger summer villages, while smaller, more immediate family groups made winter camps (Schirmer 2002:387).

Throughout the Silvernale phase, large villages and extensive mound groups were built on both the Minnesota and Wisconsin side of the Mississippi River. Primary subsistence patterns were plant-based and relied upon maize horticulture and other wild plants (Gibbon 2012:175; Schirmer 2002). Fleming (2009) found that pre-contact groups participating in the Silvernale complex maintained their own degree of autonomy especially in relation to the Mississippi River; i.e. groups from either side of the river maintained a closer bond with one another because it seems the Mississippi was both a physical and social barrier. Cultural influence from Cahokia, although clearly observed in Red Wing's archaeological materials, was minimal since Silvernale peoples maintained an egalitarian social network based on the lack of elite-type burials and structures found (Fleming 2009:297).

Betts (2010:103) states “the ubiquitous mound groups of the upper Mississippi valley homeland represented powerful material symbols of the continuity with the ancestors that was integral to social identity and served as a fundamental means of asserting territorial rights.” Monument construction fosters a sense of community and solidarity by forging a larger social

identity (Betts 2010:104). Social cohesion, ethnicity and tribalism are identifiable as processes reified in the material remains of past societies (Emerson 1999:10; Schirmer 2015). Silvernale ethnicity was expressed through common rituals, feasts, and mound building on an unprecedented scale that forged a unique regional identity specific to Red Wing (Dobbs and Schirmer 2003:6; Schirmer 2015). Thus, the fluid social environment of pre-contact Red Wing complicates any attempt of applying a cairn taxonomy derived from more stable environments elsewhere (Schirmer 2015). The stone cairns of Red Wing can be compared with monuments in other locales but we should fully anticipate localized variance in cairn architecture, materials, and possibly function.

Four major Red Wing villages were found to be predominantly associated with Silvernale phase: 1) Mero-Diamond Bluff (47PI02); 2) the Silvernale site (21GD0003); 3) Energy Park (21GD0158); and 4) the Bryan site (21GD0004). The Bryan site (21GD0004) was the most extensively excavated and examined Silvernale phase site in Red Wing (Gibbon 2012:162). Other major pre-contact villages in Red Wing have been studied and discussed in great detail (cf. Dobbs 1991; Fleming 2009; Gibbon and Anfinson 2008; Rodell 1991; Schirmer 2002, 2017). Other major villages (i.e. Bartron and Adams sites) are predominantly Oneota (Gibbon and Anfinson 2008).

The Link vessel (Link 1975) is an intermediate between Silvernale and Oneota expressions and was discovered locally at the Bryan site (21GD0004), which has been dated up to ca. AD 1300. Stortroen (1984:38) argued the Bryan Site itself was a transitional site between Cambria-Silvernale and Oneota traditions. The Link vessel/phase represents the transitional bridge between Silvernale and Oneota coeval with Cambria (Holley and Michlovic 2013:77).

Additionally, Benn (1989) has argued the falcon/thunderbird symbology unified the Oneota cultural tradition. Archaeologists recognize the social significance of the Link vessel based on its size and intricate designs. Four arcs or points are found on its lip, which divide it into quadrants. It is assumed these markings represent the four cardinal directions. Its design motifs includes a series of Thunderbirds, which is symbolically associated with the Upper World. The wavy line motif was once considered to be lightning bolts (cf. Holley 2005), but scientists now believe this motif symbolizes the Water Spirit, which is associated with the Under World (SMM 2016). Upper World and Lower World theology is common in Native belief systems.



Fig. 2-3: Link Vessel (image from: Science Museum of Minnesota, [http://www.sciencebuzz.org/museum/object/2002\\_07\\_link\\_vessel](http://www.sciencebuzz.org/museum/object/2002_07_link_vessel), Accessed April 10, 2016)

Furthermore, there are direct, cross-cultural links between Thunder and Serpents (Upper and Lower world beings), competitive gaming (i.e. Chunkey, see Appendix I), adoption ritual, and the spirit world. The expansive mound building, feasting, gaming, cultural motifs and symbolism found on Red Wing pottery (i.e. Link vessel) are seen as elements of a truly unique and localized expression of identity for these aggregating pre-contact groups (Schirmer 2015).

Cultural traditions eventually transition away from Silvernale phase towards Oneota settlement, which then became omnipresent in southern Minnesota and western Wisconsin. Radiocarbon results and presence of historic trade goods indicates this archaeological tradition appeared sometime around AD 1225 – 1250 in Minnesota and probably earlier in Wisconsin. Two distinct Oneota phases have been recognized in the Minnesota record: the Blue Earth phase from AD 1225/1250 – 1500 along the Blue Earth River in southern Minnesota; and protohistoric/early historic Orr phase from AD 1625 – 1700 in extreme southeastern Minnesota (Gibbon 2012:167). Red Wing Oneota dates from AD 1150 – 1400. Oneota participants lived in the major Red Wing villages along the Mississippi River from AD 1150-1300. Two regionally-unique Oneota expressions include the Bartron phase from AD 1150 – 1300, and the Spring Creek phase from AD 1300 – 1400 (Schirmer 2017).

At least some Oneota peoples inhabiting the Red Wing region moved southward to the La Crosse area of Wisconsin by AD 1300 (Gibbon 2012:177). The Little Ice Age (LIA) commences ca. AD 1300 (deMenocal 2001). A deteriorating climate attributed to the LIA may have caused the southward movement of Oneota people from Red Wing but a direct, single-factor solution is cautioned and remains underinvestigated in this region. Other possible reasons for this migration include: warfare, epidemic disease, excessive population growth brought on by maize

agriculture, westward-moving tribes, etc. Most likely one or more of these were factors in the emergence, spread, and dissolution of tribal lifeways in southern Minnesota during the late pre-contact period (Gibbon 2012:177).

Widespread cultural change begins ca. AD 1250 – 1300 across the American landscape. Regionally, the Silvernale, Bryan, Aztalan, Cambria, Great Oasis and other archaeological complexes disappear or are severely altered (Gibbon 1979:161). The pace of mound construction slows down in Minnesota after AD 1200 and relatively little new construction took place after perhaps 500 years ago. Although still obscure, the reasons are probably linked to “cultural and climatic changes that dominated the Minnesota landscape between roughly AD 1400 and 1650” (Arzigian and Stevenson 2003:110; Dobbs 1996). Importantly, Hall (1997:153) is mindful of the fact that “...the post-Mississippian decline in the northern Mississippi valley was not so much a cultural death as a transition to a mode of adaptation allowing settlement in new areas...” (Hall 1997:153)

In sum, the archaeological record offers insight on how past cultures interacted in their daily lives and negotiated periods of dynamic cultural change (Millhouse 2012). Ethnohistoric and ethnographic evidence can also prove useful in examining past people’s daily life and ritual behaviors (Arzigian and Stevenson 2003:116):

Each step of the construction process, including planning the [monument] and preparing the land, acquiring various building materials, allocating labor, and actually constructing the earthwork, required a series of decisions each of which reflect cultural choices that encode information about the society, economy, politics, and culture of the builders. (Sherwood and Kidder 2011:69)

Erecting cairn features of such magnitude undoubtedly involved a coordinated effort amongst a unified group of people with shared beliefs. The meaningfulness of individual cairn components also requires examination from an ethnographic perspective (see Chapter 6). These

clues may unveil the identity of the cairn builders as well as a general understanding of their motives.

### **Ethnohistoric Accounts**

Assigning cairn authorship to one single band or tribe is complicated because all Siouan groups with ancestral ties to Red Wing have a ritual relationship with stone, constructed mounds, and presumably shared similar religious views based on common linguistic and cultural ties (cf. Lowie 1910; Radin 1990; Skinner 1920). It is also common for monuments to be used by multiple, neighboring groups and oftentimes in sequential order (Wilson 2005:12). Without exact dates or observed relationships, it becomes increasingly difficult to conjoin ethnographic analogies to boulder monument sites (Brace 2005:153). For instance, Ioway people used cairns to inter their dead until recent times (Blaine 1995). In western North Dakota, the Assiniboine and Dakota have used cairns to inter their dead (BLM 2005). Thus, all Red Wing-descendant groups built cairns so this fact alone is not sufficient information for identifying their builders.

Based on their architecture, components, and placement, the local Dakota recognized the stone cairns of Red Wing as ancient altars where “holy works were done” by an unknown group (personal communication, Curtis Campbell Sr., July 12<sup>th</sup>, 2007). Therefore, who were these people? What was the purpose of the cairns and their construction? What makes their “sacredness” identifiable? By using ethnographic, philosophical and religious lenses, a vast amount of cultural information tied to the land at particular places will emerge (Whitridge 2004:219). In his archaeological and ethnographic analysis of Saskatchewan boulder monuments, Brace (2005:1) states these types of features were constructed for two distinct

purposes: 1) Commemorating an important life event of an individual or tribe; and/or 2) are remnants or reminders of a religious ceremony (Brace 2005:1). The Red Wing cairns (or “hekti” – literally translated as “lodge of what is past” in the Dakota language) memorialize the ritual activities and beliefs of an unknown people from long ago. From a Native perspective, the past “lies embedded in features of the earth” (Basso 1996:34). As West (1907:170) argued in his analysis of Wisconsin earthworks, a stronger knowledge of the “habits, religious ceremonies and superstitious beliefs of Siouan tribes will throw much light on the obscure subject of the mounds.” That same logic is applied to this study. Without the aid of ethnohistoric or ethnographic interpretation Native symbology is often misunderstood. For instance, the “elegance and apparent simplicity of the circle and axis motif understated the complexity of the underlying meanings and was taken as evidence of the ‘primitive’ character of Plains groups” (Wilson 2005:15). Reconstructing the events of the past requires a proper analysis of their actors, interactions and worldviews (Mack 2004:78).

My desire is to understand behaviors as well as the intrinsic qualities of the individual components that comprise both sites and the larger cultural landscape. A primary focus of my study is ethnoarchaeology; i.e. incorporating the testimony of contemporary Native peoples in order to understand and accurately interpret ethnic expressions exhibited in the archaeological record from a cultural perspective (cf. Bergervoet 2008; Chartkoff 1983). Proper interpretation requires an appropriate selection of analogies from the ethnographic literature as well as an awareness of the cultural biases a researcher possesses themselves (Fagan 2005:59-61). For instance, I have personally spent years learning about Dakota history and traditions from those I sincerely respect but a more objective and inclusive history must be gleaned from other descendant peoples of Red Wing.

From AD 1100 onward, Red Wing and the surrounding region were inhabited by Oneota peoples who are recognized as the direct ancestors of Chiwere-Siouan peoples, i.e. ancestral Iowa, Oto, Ho-Chunk, and Missouriia groups (Radin 1991:50, Springer and Witkowski 1982). Ioway oral tradition states the Winnebago, Missouriia, Omaha, and Ioway are directly related once comprised a solitary entity (Goodtracks 2009). Extensive cultural diffusion occurred from AD 1000 into historic times amongst the Chiwere-Winnebago Oneota speakers, and to a lesser extent the Dhegiha-Oneota speakers (i.e. Osage, Ponca, Kansa, Omaha, and Quapaw). This diffusion was the result of intermarriage, trade, ritual adoption, and religious proselytism (Springer and Witkowski 1982:78). Certainly a close linguistic association encouraged cultural osmosis to occur (cf. Wozniak 1978:103; see Appendix I).

Additionally, Dakota-Siouan peoples, i.e. ancestral Assiniboine and Dakota of the Mille Lacs Aspect, lived in the Red Wing region and/or in adjacent regions (cf. Brower 1903; Campbell 2000; Wilford 1960; Winchell and Upham 1888:60; Winchell 1911; see Appendix I). The Dakota are linked to the Woodland pattern of the Mille Lacs Aspect and not the authors of the Cambria-Silvernale manifestations that pre-dated the Oneota tradition in Red Wing (Stortroen 1984:38). The core of Oneota (whose materials are found throughout the Red Wing area) is Chiwere-Winnebago peoples meanwhile the Dakota are widely considered to be non-Oneota (Springer and Witkowski 1982:78). However, ancestral Dakota peoples were present in the Red Wing region during the Silvernale phase from AD 1150 – 1250. This assertion is based upon Oneota-like shell-tempered pottery found in the Mille Lacs area called Ogechie. Cultural diffusion took place amongst coalescing peoples from across the larger region. Therefore, ancestral Dakota peoples were part, albeit minor and peripheral, to the Oneota tradition (personal communication, Ronald C. Schirmer, January 4<sup>th</sup>, 2017).



From an anthropological perspective, cultural osmosis undoubtedly occurred between peoples in adjacent regions that are both blood- and linguistically-related. Essential core beliefs of the Chiwere- and Dakota-Siouan speakers known to have resided in the Red Wing region (either concurrently or in sequential order) mirror one another (cf. Denig 2000; Radin 1991; Skinner 1920). Red Wing archaeological research has been greatly aided by incorporating local Khemnican Dakota tradition since it possesses a high level of interpretive value (cf. Bergervoet 2008). Ultimately, it offers a noteworthy and detailed Siouan account of daily and ritual life near Red Wing/Prairie Island for many centuries. Note: all personal communications with Curtis Campbell Sr. (1935-2009) in this dissertation were initiated as part of an IRB-permitted Master's thesis and the written work was subsequently approved by Mr. Campbell before his death.

Indigenous peoples across all of Minnesota venerate stone and incorporate it into their religious life and have done so for millennia. In southern Minnesota, especially sacred locations include: Pipestone National Monument, an ancient and sacred stone quarry; and Jeffers Petroglyphs, an area of exposed Sioux Quartzite bedrock which has been continuously visited for up to 9,000 years. Ioway and Dakota peoples (both having ancestral ties to Red Wing) have an extremely strong affinity with these places (cf. Blaine 1995:18; Callahan 2001; Lothson 1976; see Appendix I).

French reports from the 1600s affirm a legendary relationship between the Ho-Chunk/Winnebago and the Ioway (Blaine 1995:17). Pierre-Charles Le Sueur documented the Ioway living in southern Minnesota near present-day Mankato ca. AD 1700 (Winchell 1911:69) and the Ho-Chunk were primarily in Wisconsin. Ho-Chunk people and their Dakota relations lived together in the Red Wing area, too (Campbell 2000). The Assiniboine also inhabited the Red Wing area for centuries prior to European contact (Winchell and Upham 1888:60). The

Jesuit Relations of 1640 placed the Dakota and Assiniboine “in the neighborhood of the [Ho-Chunk]” (Dorsey 1886:211). The Dakota are the primary inhabitants of the Red Wing region since the 17<sup>th</sup> century (Gibbon and Dobbs 1991; Palmer 2008).

In 1838, Joseph N. Nicollet documented Dakota/Eastern Sioux peoples building stone piles [cairns] and effigies on the Coteau des Prairies of southwestern Minnesota. Nicollet notes:

The Sioux take advantage of these loose materials to erect signals on the most elevated spots, or to designate the place by some conical structure, where some exhausted hunter has died on the prairies, and desires to be buried in a more prominent situation; or they amuse themselves in shaping them into fantastic figures. They give names to these localities, which thus serve as landmarks in a country where there are no other geographical beacons. (Bray and Bray 1976:69)

Also:

They [Dakota] see everything on earth perish except stone. They believe, therefore, that the oldest object merits their veneration, having a spirit. They name stone Tunkan, grandfather; in the style of their religion they invoke it to succeed in their enterprises; [by it] they make their oath[s]. (Bray and Bray 1976:270)

Cairn placement is primarily concentrated between the Cannon River, Spring Creek and Hay Creek valleys on major high points with wide viewsheds. According to Dakota belief, higher elevations are considered more holy or “Wakan” because high places, whether natural or constructed, have more intrinsic power (personal communication, Curtis Campbell Sr., n/d). In Dakota cosmology, the Red Road (i.e. the path of a righteous spirit) travels west. Ioway people hold this same belief. Additionally, the Ioway believe mounds and high places provide “an easy departure point for the spirit to begin its journey to the west and ultimately the spirit road to the heavens above” (Foster 1996). Again, it remains unknown if the Red Wing cairns were used for physical burial since nothing conclusive was ever documented. However, *it may still function as a place to orient spirits* (BLM 2005; italics added by the author).

All Red Wing stone cairns were made with limestone; which possesses a distinct spiritual quality or “medicine” (personal communication, Curtis Campbell Sr., July 12, 2007). The hollow cairns also incorporated one or more wooden staffs, specifically a single Eastern Red Cedar (*Juniperus virginiana*) post or either blue/swamp oak staffs (*Quercus leucobalanus*). The significance of these staffs is discussed further in Chapters 6, 7, and 8 (also see Appendix I).

From a structural perspective, similar beehive-type cairns were built elsewhere (cf. Pohl 1964; see Appendix I) but nothing exactly matches the combined architecture, placement, and materials of the Red Wing phenomena. Downriver from Red Wing in northeastern Iowa, stone vaults with similar architecture to the Red Wing cairns were constructed over folded individuals (Thomas 1894:107; see Appendix I). The burial of the dead in a folded (or sitting position) was a common practice of the Winnebago as well as of other Indian tribes who also had other methods of interment (West 1907:189). Radin (1990:92) documented two distinct methods of burial amongst the Winnebago – simple inhumation and platform burial. The “wellhole” cairns of West Virginia closely match Colvill’s cross-sectional description of the Red Wing cairns but lacked a wooden staff. These cairn features were much larger in diameter and used for burial as well (cf. Thomas 1894:408; Winchell 1911:166; see Appendix I). Along the Upper Mississippi channel, Dakota oral tradition states cave and mound burial alternated over time (personal communication, Curtis Campbell Sr., July 9<sup>th</sup>, 2007). Two forms of burial were practiced by the Santee or Eastern Dakota: 1) internment in the ground with a mound constructed over it (sometimes a small house was built over the grave, which was also practiced by the Ojibwa, Potawatomi, and Winnebago); and 2) scaffold or platform burial (Howard 1984:14). Burial practices and stone use amongst these related groups indeed varies across time and space.

According to local Khemnican Dakota tradition, the Red Wing region was considered “*Wakan*” or holy for many reasons. One reason was a plethora of medicinal plants used for doctoring and spiritual cleansing that grew abundantly in the area as well as many geologic anomalies and formations found along both sides of the Mississippi River and adjacent tributaries (personal communication, Curtis Campbell Sr., July 12, 2007). Some of these formations include: Barn Bluff or *Khemnican Paha*; The Root - Hill and/or Caske Cistinna (Small Firstborn), is a fundamental part of the Dakota origin legend which includes Bdote (the junction of the Mississippi and Minnesota Rivers) and Caske Tanka (Pilot Knob). According to Dakota belief, the Star People emerged as human beings at Bdote meanwhile Caske Tanka and Caske Cistinna were simultaneously created (cf. Westerman and White 2012:18-19); *Ey-i-sha Pan-pan-na*, a place to gather a ceremonial soft red stone; and *Inyan Tiyopa*, the sacred Stone Door. These and other geologic features played an integral role in the creation of a sacred landscape for all those inhabiting the region (see Appendix I).

During the mid-19<sup>th</sup> century, Col. William J. Colvill interviewed Dakota informants in Red Wing and they stated a linguistic link exists between the term “Hremnecha” and the Assiniboine, from whom the word originated (Winchell and Upham 1888:60). The Red Wing region has been known as “Hem-minne-cha (Hill, water, wood) from time immemorial and in 1694 French cartographer J.B.L. Franqueline mapped an Indian village at the junction of the Cannon River junction and Mississippi called “Remnica” (Curtiss-Wedge 1909:34). The Hemi-cha or Khemnican are now a sub-band of the Mdewakanton Dakota (Ruml 1996:19) but in earlier times the Khemnican were a separate group (Campbell 2000). Also, rather than using a literal translation of “hill-water-wood”, the name “Khemnican” should be translated as “The Root” (Campbell 2000).

The Assiniboine lived in the Red Wing area for centuries before white contact and are closely related to the Dakota people through language and archaeological materials (Lowie 1910; Taylor-Hollings 1999). Assiniboine Bluff in nearby Burnside also commemorates their former presence here (Upham 1969:211). The legend of Winona and many local place names were also attributed to the Assiniboine, who were said to predate the Iowa and Dakota (ibid). In particular, these Dakota informants stated the mound group located at the junction of Belle Creek and the Cannon River was constructed by the Assiniboine.

Social and ritual events are often the main activities at aggregation centers and must have a conscious purpose, or “be held together by a mechanism such as a shared religious cosmology” (Fleming 2009:81). Skinner (1920) documented that the Iowa, Ho-Chunk, Oto, and Dakota shared the same version of the Medicine Dance. Feasting was an essential component of their ceremonial life, particularly the Medicine Dance (cf. Goodtracks 2009; Howard 1984; Radin 1990; Ruml 2010; Skinner 1920). Among the Ho-Chunk and Dakota, the Medicine Dance was a strict ritual conducted only by those initiated into its sacred society (Pond 1986:93; Radin 1990:269).

According to local Khemnican Dakota oral tradition, a plethora of sacred medicine plants sustained both Dakota and non-Dakota peoples as part of the Tipi Hanska Wakan, or Medicine Lodge/Dance ceremonies (Campbell 2000). It is said these sacred medicine plants were the main reason why peoples from all directions congregated here during the pre-contact era and shared amongst one another. It was during this time these peoples upheld a common spiritual ideal called “Wico-We-Chi-Wazi”, or Relatedness through Sharing (personal communication, Curtis Campbell Sr., July 12, 2007). The position of specific stars during different times of the year would indicate where particular medicine plants could be found and/or the direction in which

they traveled (Campbell 2000). The Dakota were close observers of the stars and had given names to many singular stars and constellations (Pond 1986:85).

Past research indicates the Silvernale phase ends ca. AD 1250, and the Red Wing Oneota tradition is dwindling by ca. AD 1300. However, recent radiocarbon results indicate the Oneota tradition in Red Wing continues until ca. AD 1400 (Schirmer 2017). Pierre-Charles Le Sueur's account (ca. 1701) states the Ioway and Oto lived in southern Minnesota, particularly along the Minnesota River and Blue Earth River valleys, but had recently moved away to the Missouri River region to dwell amongst the Omaha. The historically recognized Cheyenne, Ioway, Omaha, and Oto tribes were early inhabitants of Minnesota (Winchell 1911:73). Black Tomahawk, a respected Mdewakanton Dakota traditionalist stated the Ioway were the primary inhabitants of southern Minnesota prior to their expulsion by the Dakota during the historic period (Pond 1872:144-145; Brower 1903:60; Winchell 1911:69). The arrival of Europeans negatively affected the relationship between the Ioway and Dakota, which had been strong before this time (Foster 1999). Native oral histories are filled with "descriptions of multi-ethnic villages, fissions, and factions.... there is no reason to suppose that fluidity was not also characteristic of pre-Contact societies" (Rosebrough 2010:563).

Additionally, a fierce quarrel between the Assiniboine and Dakota occurred on the lower bench between the Cannon River and Spring Creek just prior to European contact. After a series of battles, the Dakota eventually drove the Assiniboine as far as the falls of the Cannon River and their mutual animosity remained strong for centuries (Winchell 1911:70-71; Winchell and Upham 1888:59-60). Around 1701, the Assiniboine were living near Lake of the Woods and the Inhanktonwan, another Yanktonai Dakota band, dwelt in southwestern Minnesota near Pipestone (Winchell 1911:74). Additionally, Ioway tradition states around ca. AD 1600 the deity

Diseasemaker and warring nations from the east broke apart the “*Hunge*” or Oneota Nation. This external influence caused serious social unrest, which drove people westward and forced them to form new identities (Foster 1996). Furthermore, Ho-Chunk oral tradition states the great Siouan confederacy broke apart long before the arrival of Europeans and today we recognize these factions as the historic Siouan tribes (Stanley 2004:34). Local Khemnican tradition says some of the original families moved away from the Red Wing area centuries before whites were first seen in the region (Campbell 2000). Although this initial departure of peoples seems less dramatic, there was a serious breakdown of social order and spiritual ideals just prior to European contact (ibid; see Appendix I).

### **Conclusion**

This chapter attempts to convey the reasons why the Red Wing region is significant geographically, archaeologically, and ethnographically. It was an aggregation and cultural center long before the arrival of Europeans. Beginning in the Late Woodland period, we see evidence of seasonal congregation on a very large scale. Throughout the Silvernale phase, this is evidenced by large villages and extensive mound building on both the Minnesota and Wisconsin side of the Mississippi River. We also see Oneota and Mississippian influence emerge throughout the locality. Ultimately by AD 1250, this yearly gathering of peoples from all directions starts to fade and eventually becomes occupied by the Oneota and subsequently the Dakota.

The thousands of earthworks (i.e. approximately 3,000) built in this locality requires in-depth research attention. Cairn and earthen mounds are the result of a series of complex, actualized decisions requiring a great deal of planning and coordinated effort. It was “an art and a science requiring considerable knowledge, skill and planning, hard work, and impressive

aesthetic and symbolic expression” (Sherwood and Kidder 2011:84). All architecture has symbolic value and represents more than merely labor and materials (Sherwood and Kidder 2011:83). The cairns are much more than simple piles of rock. The philosophical and phenomenological foundations of “hekti”, lodges of time and space, require an equal amount of theoretical excavation (see Chapter 6 through 8).

Respective groups from all directions coalesced here for multiple reasons. From a topographical and strictly utilitarian perspective, the Red Wing region is at the confluence of multiple river valleys and has multiple biomes with rich resources. There is much evidence of feasting, seasonal sedentary villages, intensive mound building, and expansion of social/kinship networks. This is a fundamental shift from small groups of mobile Late Woodland hunter/gatherers to large, unified villages with agriculture being a major component of their economy. Archaeologists generally agree this is the foundation of Red Wing Oneota (AD 1100 – 1300 in the main villages; cf. Schirmer 2017). Its genesis remains a contentious topic and is beyond the scope of this work. However, the coalescence and blending of Oneota cultural traits is evident in the Red Wing region and beyond. Any recognizable Mississippian influence disappears after the Silvernale phase. Interestingly, no Oneota material post-dating AD 1400 has been found near Red Wing.

Any break with tradition (e.g. earthwork construction and/or dense seasonal gathering of distinct and separate populations) would most likely occur due to a “momentous event”; or possibly a series of them (Parker Pearson 1999:17). The decline of earthwork construction in conjunction with the post-AD 1400 dormancy in the Red Wing archaeological record is perplexing as other concurrent Oneota settlements had already been established at La Crosse, WI, in Washington County, MN (21WA0013), and along the Blue Earth River in southern



Minnesota (21FA0002). Griffin (1961) and Dobbs (1996) posited a link between climate and culture change in eastern North America roughly between AD 1400 and 1650.

Paleoenvironmental data collected since then moderately supports these assertions but stops short of direct causality. However, it has re-emerged as an important consideration (Benson et al. 2007; Benson et al. 2009; Cook et al. 2010; Mann et al. 2009; Schirmer 2015).

The archaeological and ethnographic records corroborate and demonstrate that seasonal hunting, gathering, and growing cycles in the Upper Mississippi River valley were part of a highly complex social mechanism and commonly-held belief system(s) (cf. Mallam 1975:170-171). The Red Wing archaeological, ethnographic, and environmental records paint the following picture: 1) Red Wing is a nexus of activity for groups from far and wide due to its unique physical and social geography; 2) major village activity and mound construction slows way down meanwhile groups of peoples begin to disperse ca. AD 1300 (Dobbs 1996); and on a grander scale 3) the environmental and social climate is changing across much of North America.

## Chapter 3: Research Method(s)

### Introduction

Based on the preceding literature review and since past cairn investigations employing a purely archaeological method have proven insufficient, the hybrid methodology presented here more adequately addresses the essential anthropological questions that still remain: who built the stone cairns, when, and why? Also, the nature of stone feature construction near Red Wing has not been fully examined, which includes appropriate site-type definitions for various unique forms. Thus, a mixed-methods approach is employed. This methodology compiles and distills gleaned information from historical records, topographical and morphological field data collection, subsequent GIS spatial analyses and bi-variate statistical tests, available archaeological data from proximal sites, Siouan oral traditions and ethnographic interpretations gleaned from descendant tribal authorities. Through this process, an improved understanding of the spatial, social, and temporal setting in which the stone cairns of Red Wing were built shall emerge.

Past cairn studies near Red Wing have yielded some piecemeal information but a holistic research approach has remained absent until now. Historical documentation of their excavations provides invaluable information pertaining to the original architecture of the stone cairns, their components, and observations of the surrounding landscape. Because the cairns are enigmatic plus the fact that all of them have been dismantled and are protected from further molestation by legal statute (i.e. MS 307.08), collecting locational data and GIS spatial analysis is the most viable starting point for this investigation. Archaeological data from proximal habitation sites

presumably provides a window into the daily and social activities of those dwelling amongst the stone cairns.

Additionally, a proper range of information includes oral tradition, ethnology, linguistic comparisons, and ethno-historic accounts (Henning 1993:256). At this juncture, a critical yet inclusive process that thoughtfully and defensibly combines all of the aforementioned sources is deemed necessary. The geographic aspect of this research is not only GIS-related but also discusses the stone cairns in terms of their physical and cultural setting. Also, a place-based approach offers a common ground for both Western and Indigenous narratives to meet (Johnson and Murton 2007). From this context the stone cairns of Red Wing are viewed as the result of human actions rather than mere artifacts.

Cairn construction undoubtedly affected the worldview and life experience of their builders and observers. Thus, Native involvement in field surveys, site and material interpretation, and the editing process ensures a culturally appropriate and accurate interpretation of both sites and the surrounding landscape (LeBeau 2005; 2009). This brand of research has been successfully conducted elsewhere and is used as a theoretical template for this study (cf. Brace 2005; Chartkoff 1983). Studying the physical and metaphysical significance of cairn components and their spatial setting is essential for understanding these monuments as a whole.

Thus, this study follows a step-by-step process to gather, process and synthesize various sources of information in order to address the aforementioned research questions:

- 1) Review pertinent historical, archaeological, and ethnographic documentation in order to provide an adequate research foundation (see Chapter 2).

- 2) Conduct field surveys of the cairn sites in order to collect topographical and morphological data as well as assess the physical setting with the aid of Native consultants. An initial Red Wing-specific stone feature taxonomy combining both physical and cultural characteristics is also developed during this phase (cf. Brace 2005; Chartkoff 1983; LeBeau 2005, 2009).
- 3) Perform subsequent GIS spatial analyses in relation to cairn site locations and the surrounding landscape. Also, due to the small data population (n=14), bi-variate tests are conducted in order to identify strong correlations amongst independent variables.
- 4) Based on the results of the quantitative analysis in Step 3, examine applicable and available archaeological data from associated habitation sites in the proximity of the cairns.
- 5) Solicit ethnographic information from descendant peoples in order to culturally interpret various cairn components, site placement, its architecture, observed behavior, purpose, etc.
- 6) Compile and distill the information gathered in previous steps in order to assert who built the stone cairns of Red Wing, when, and why.
- 7) If possible, assign an authoritative cultural name and function for the stone cairns of Red Wing (cf. Brace 2005:4)

### **Step 1: Review of Historical, Archaeological and Ethnographic Documentation**

Prior to examining the Red Wing cairns in depth, a broad understanding of stone use in ritual and/or utilitarian contexts from both near and far was sought (see Chapter 2 and Appendix

I/Chapter 2 Supplement). This was deemed necessary in order to gauge the uniqueness of the Red Wing cairn phenomena in comparison with stone structures erected elsewhere. The earliest known cairn surveys near Red Wing were documented by multiple amateur archaeologists (cf. Aiton 1852; Brower 1903; Curtiss-Wedge 1909; Winchell 1911; Winchell and Upham 1888). Early investigators did not conduct proper scientific surveys according to contemporary standards but they did document the contents found inside the cairns, or lack thereof. Nonetheless the recorded cairn cross-sections are useful for comparative analysis with surveyed structures elsewhere and for conducting ethno-historic and ethnographic research on component materials. Although they are a distinguishable and apparently unique type in the Upper Mississippi valley, they may be similar or identical to monuments elsewhere.

The Red Wing region was a cultural epicenter during the pre-contact era. Plant regime analysis (cf. Schirmer 2002) and social aggregation studies (cf. Fleming 2009) provide great insight into the environmental and social climate of Red Wing during periods of intense occupation, i.e. A.D. 1050 – 1300. As a whole the archaeological record helps researchers comprehend how groups of people interacted locally and regionally in normal day-to-day life as well as during times of dynamic cultural change (Millhouse 2012). For this study, it was also deemed necessary to familiarize oneself with the archaeological traditions known to have resided in the area, during which time periods, and their material remains.

At this stage it is difficult to determine the age and function of the Red Wing stone cairns. All documented cairns have been dismantled but a few intact structures were still standing during the mid-20<sup>th</sup> century. Thankfully some historical photos still exist for reference. To complicate the identification of their builders, many peoples lived concurrently or sequentially around Red Wing including ancestral Assiniboine, Ho-Chunk, Iowa, and Dakota peoples. Furthermore, all

used stone in utilitarian, ritual and/or burial contexts (Blaine 1995; BLM 2005; Bray and Bray 1976; Eastman 1915; Moore 2008; Radin 1990). Although the historic documents do not provide any conclusive information that states the stone cairns (specifically the “hollow/bee hive” form) were used for burial purposes, these structures are identified as mortuary features and must remain undisturbed. Essentially all available knowledge pertaining to the Red Wing cairns is still based on initial Euro/American explorations, which were non-systematic and therefore extremely insufficient understanding of their construction and purpose.

The surrounding geography may still hold clues to their original purpose, who constructed the stone cairns of Red Wing, and when. Much time was spent garnering a broad ethnographic understanding of stone cairns before conducting field surveys. This base knowledge helps identify site and morphological elements that may otherwise go unnoticed. Cultural sites serve as symbols of distant events and based on the material forms found in the landscape, researchers are able to extrapolate contexts for features associated with specific cultural traditions (Basso 1996; Stewart et al. 2004). Thus, it is possible to illumine stone cairn construction based on feature associations with specific landforms, village sites, other culturally-significant locations, etc. It is plausible that some associated features will remain unidentified.

### **Step 2 and 3: Field Surveys, Data Collection and Analysis**

The primary focus of this investigation are the hollow/bee hive stone features historically mapped as “stone cairns” near Red Wing (cf. Brower 1903; IMA 1999). Since they are too disturbed to provide meaningful physical evidence as well as protected by law, non-intrusive methods such as GIS spatial analysis are essential. Field surveys of cairns sites were conducted

from 2013-2014 in order to collect topographical and morphological data at each site as well as note the overall setting. Also, tribal consultants were asked to partake in on-site surveys. Similar methods have been employed elsewhere and provide a theoretical base for this study (cf. Artz and Goings 2006; BLM 2005; Brace 2005; Chartkoff 1983). According to LeBeau (2005), the feeling experienced at a site should also be noted since it may indicate the nature of the original ritual, e.g. altruistic vs. non-altruistic. Native informants were asked to participate in field surveys, excavation, and analysis in order to ensure the satisfactory conveyance and security of cultural information as well as to help identify and/or interpret sites (Johnson 2008; Toupal et al. 2001).

The maps depict only the essential information necessary for conveying statistical results from this investigation. Exact site coordinates are not provided since these sites are on private land or in ecologically sensitive areas. Newly recorded sites were reported to the Minnesota Office of the State Archaeologist. Native people consider archaeological sites as “places where ancestors and spirits still live and continue to have a profound influence in contemporary life” (Watkins 2003:277). Balancing research needs as well as ensuring site protection is accomplished by direct consultation with Native informants that participated in this study.

Additionally, Dobbs (1996) aptly states that focusing on the symbolic and geographic aspects of these sites may prove to be more powerful than examining actual artifacts. National Register Bulletin 36 criteria for assessing archaeological site integrity provide a suitable foundation for stone feature survey. In order to be eligible for the National Register of Historic Places based on its integrity, the following site characteristics must be addressed:

- Design: the combination of elements that create the form, plan, structure, space, and property style

- Setting: localized geography, i.e. topographic features, viewshed, landscape, vegetation, man-made features and possible relationships between them
- Materials: the physical elements combined or deposited during a particular time period and/or in a particular pattern or configuration in creating the property
- Workmanship: the evidence of labor and skill from those who built the feature and construction methods used
- Feeling: integrity of feeling is present if a site's features in combination with its setting convey a historic sense of the property
- Association: integrity of association is present if the location is the place where an event or activity occurred and is sufficiently intact to convey that relationship

Similarly, LeBeau's (2005) Lakota-based survey methodology, *Identification and Typing System for Traditional Cultural Property Sites: Applied Anthropology from a Lakota perspective*, requires the following variables be addressed: location on the landscape; physical setting; intrinsic nature; natural site features; manmade site features; and cultural references. Based on Dobbs (1996) and LeBeau (2005), this investigation employs a synthesized protocol for surveying cairn sites with Native informants (see Appendix II/Chapter 4 Supplement).

Using the collected field data and due to a small cairn population (n=14), bi-variate regression tests were deemed satisfactory in order to statistically determine the correlation strength between independent variables within a small geographical area (cf. Artz and Goings 2006). Strong statistical correlations identify which attributes were evidently key factors in cairn site placement and construction. Topographical and morphological attributes were compared using Microsoft Excel and respective correlation values ( $R^2$ ) between independent variables were also generated. These correlation values were then tested for probability significance. Also, ESRI ArcMap 10.1 was used to generate geographical attributes for analytical purposes. For this step, a LiDAR-derived digital elevation models (DEM) at 1-meter resolution was downloaded from



the Minnesota Department of Natural Resources. These attributes include: viewshed rasters from each cairn location, percentage of cairn intervisibility as determined from the aforementioned viewshed rasters, and spatial mean(s).

Archaeological applications of GIS often depend upon viewsheds and cost surfaces to open up these landscape discussions (Mack 2004:68). Viewshed analyses identify “which areas are visible to observers standing at an assigned position, as well as whether that position is visible from any given location” (Mack 2004:68). Based on the viewshed results, a site intervisibility matrix was created to record which cairn sites were visible from each individual location. Site inter-visibility is an important variable to consider in order to assess if a “sight community” was constructed, i.e. features geographically and/or functionally linked through line-of-sight bonds (Bernardini and Peebles 2015). The percentage of intervisibility is also compared to respective viewshed size. Presumably, locations with the highest intervisibility are nearest the heart of activity. These GIS-generated attributes were also included in bi-variate analyses.

Strong geo-statistical correlations between these results and known archaeological traditions offers a defensible base point for refining the search for who built the stone cairns as well as refining the list of descendant groups with authoritative information. The spatial distribution of stone features from the respective spatial means was also statistically analyzed with Microsoft Excel in order to identify areas of concentration for future test surveys based upon 95% confidence testing.

A local stone feature taxonomy for the Red Wing region is also developed based upon topographic position, historical research, GIS analysis, spatial statistics, site morphology, construction materials, and consultation with Native informants. Brace (2005:7-8) has

demonstrated that boulder monuments “can be subdivided (reclassified) into classes to describe them better and ultimately to propose better explanations of their functions and uses.” Further enhancing those classifications with Native analogies and accounts may yield “different, viable hypotheses of possible boulder monument use/meaning” (ibid). Chartkoff (1983) was also used as a theoretical base for combing field survey data and Native consultation in order to develop an initial stone feature taxonomy. For this dissertation, rather than determining a monument’s specific function(s) or purpose, the observed behaviors at the site will sufficiently distinguish one site type from another (personal communication, Sebastian LeBeau II, July 2<sup>nd</sup>, 2015). Furthermore, monuments and features may possess multiple, linked meanings (Wilson 2005:10).

In sum, landscape archaeology requires that greater attention be given to place-based approaches and methodological linkages between social theory, material remains, and anthropological knowledge (McCoy and Ladefoged 2009:281). Geographic approaches to theoretical and empirical questions attempt to understand how and why phenomena are possibly related (Walford 1995:151). Due to the small number of recorded cairn sites (n=14), this study rejects predictive modeling and focuses primarily upon techniques that enhance the spatial and anthropological understanding of the Red Wing cairn sites and the larger landscape.

Quantitatively speaking, the stone features of Red Wing are initially assumed to have no relationship to one another. Through field survey, GIS and statistical analysis, correlations amongst attributes and/or features will presumably emerge. For future studies across the region, GIS-based prospection is “surely one of the most promising tasks among interdisciplinary geoarchaeological research” (Siart et al. 2008:2925). Other potential sites may be identified using advanced DEM processing techniques (see Appendix II/Chapter 4 Supplement).

#### *Step 4 and 5: Examining Archaeological and Ethnographic Traditions*

Since the Red Wing cairn sites are dismantled and no further site disturbance is allowed, significant geo-statistical associations between the stone cairns and specific archaeological traditions provide a reasonable and defensible starting point for further anthropological investigation. Although the identity of the cairn builders is currently unknown, there is a plethora of Red Wing archaeological and ethnohistoric literature on its descendant peoples, i.e. Chiwere- and Dakota-Siouan peoples.

Mallam (1975) studied effigy mound construction in northeastern Iowa and analyzed the phenomena within its localized archaeological and social context. In the Red Wing region, the isolated nature of the cairn sites, dense concentration, small population size and unique hollow architecture offer a great opportunity to elucidate their overall significance within a localized context as well. Based on the aforementioned point, the Red Wing cairn sites were presumably constructed during a single episode. Thus, their original purpose is fixed in time. In this region the stone cairns are recognized as sacred altars by the resident Dakota, who admittedly did not build them (Winchell and Upham 1888:60; personal communication, Curtis Campbell Sr., July 12<sup>th</sup>, 2007). Additional interpretive assistance from other tribal historians will hopefully reveal the original purpose of building the Red Wing cairns in conjunction with field evidence, statistical results, and available literature.

Based on the quantitative and geo-statistical results, archaeological traditions that are strongly associated with Red Wing cairn construction are subsequently researched more closely. Furthermore, historically recognized tribes can be traced back to specific archaeological traditions. These associations also provide a springboard for ethnographic analysis and

solicitation from a refined group of descendant peoples. A researcher can successfully employ both scientific method and oral accounts as long as they are prudent and patient in their approach (Mason 2000:240). Locally, excavation data from nearby habitation sites (21GD0204, 21GD0258) also helps researchers garner a better understanding of the daily lives and social interactions of those living near the stone cairns (Millhouse 2012). Regional archaeological evidence suggests the primary residents of the Red Wing region during the pre-contact era were ancestors of the Ho-chunk, Oto, Ioway, and Missouriia people of the Chiwere-Siouan language group.

Furthermore, Mason (2006:249) asserts the use of oral traditions in support of an archaeological research thesis requires sufficient foundation for doing so. An ethno-historian must: (1) critically edit and present historical documents relating to Indigenous cultures, and (2) properly interpret data gleaned from them (Brace 2005:93; Wedel and DeMallie 1980:18). Establishing bridges between historic and pre-contact peoples is a valid aim, but ethnographically-derived models must be sensitive to their goals (Schirmer 2002:355-56). Ethnohistorians have long realized that oral traditions possess consistently reported information with rigorous internal standards of verifiability and truthfulness (Whiteley 2002:412). Admittedly, a major hurdle to overcome is the difficulty in assigning specific dates to features, which inhibits the ability to identify the specific cultural group responsible for cairn construction in Red Wing (Brace 2005:153). Since the Red Wing cairns are protected from further molestation, assessing when the cairns were constructed (or suggesting when) is only possible through proxy methods if available and defensible (e.g. radiocarbon dates from statistically associated features, habitation sites, etc.)

Robertson (2009:158) contends that site-based approaches, around particular locales, can successfully merge oral history and archaeology. The ethnographic process is iterative and one generally follows the path of highest potential (Basso 1996: xvi). By remaining persistent, the meticulous use of oral traditions shifts the research focus from one dependent upon the material record to one that better illuminates the social structure of pre-contact groups (Watkins 2003:282). Furthermore, understanding the visual dimensions of past landscapes requires the subjective, on-the-ground perspective afforded by phenomenology in combination with regional-scale GIS analysis (Van Dyke et al. 2016:206).

As Trigger (1991) states, archaeologists must become more open to using non-archeological forms of data to study the past. Native belief systems and oral traditions from associated historic tribes provide a cognitive key for interpreting sites (cf. Wagner et al. 2004:45-46). How Native people interpret and remember events inform us of former customs as well as how culture has changed (Howard 1984:36). Cultural landscapes analysis is also crucial to understanding individual group identity and self-understanding (Skandfer 2009:91). A cairn is a sum of its parts, which includes its enmeshment within a surrounding landscape. Traditional archeology ascribes meaning and significance to material culture (i.e. artifacts) and limits the emphasis placed upon culture itself (Watkins 2003). Therefore, the incorporation of oral traditions and Native perspectives has the ability to breathe life into archaeological analysis, i.e. “it gives archaeology a soul” (personal communication, Larry Heady, June 23<sup>rd</sup>, 2015).

The archaeological and oral records from the Red Wing region indicate that peoples congregated here *en masse* for centuries, namely Siouan peoples. Cultural diffusion undoubtedly occurred to some extent amongst clans and tribes. Contemporary perspectives from tribal authorities (as they pertain to cosmologies, stone ritual, local archaeology and oral tradition)

provide an ontological doorway into the distant past. Admittedly, different cultural groups will inhabit and interpret the landscape in unique ways. Informants are narrowed down to Siouan tribal historians possessing traditional knowledge, archaeological experience, and a willingness to cooperate on a research basis. Common interpretations and corroborating histories amongst all of them are deemed most relevant and applicable for this study.

Nicholas (2006:370) asserts the use of Indigenous traditional knowledge proves especially useful in reconstructing past cultural landscapes. There is a growing sentiment within archaeology that Native symbolism and belief structures should be taken into account when studying ideologically-charged sites such as effigies (Rosebrough 2010:177). Also, incorporating traditional knowledge helps prevent ethnocentric premises and hypotheses (Stanislawski 1973:378). A primary goal of this study is to determine who is responsible for constructing the Red Wing cairns but it is equally important to understand how these sites are experienced and venerated even today.

Local Khemnican Dakota oral history provides invaluable insight into the activities and religious beliefs of pre-contact Siouan peoples dwelling in the Red Wing area (cf. Campbell 2000). Although the Dakota recognize the Red Wing cairns as extremely old, from an Indigenous viewpoint the age or antiquity is not nearly as important as the event itself (Basso 1996). Cyclical (rather than linear) conceptions of time bring the distant past into the present (Cajete 2000). In sum, lessons and knowledge are stored within the physical landscape and do not diminish over time (Basso 1996). At a minimum, oral traditions provide a doorway into the past and explain “why things are a certain way” (Schirmer 2002:401).

Prior to soliciting ethnohistories, ethnographies, and perspectives from the region’s descendant groups, the necessary permission was granted by the University of Kansas Human

Subjects Committee in Lawrence (HSCL #20803). Perspectives were solicited in regards to monument construction, observed behaviors, cultural landscapes and their respective significance. Informants also received all draft materials to ensure the accuracy of the transcriptions, to inspect the results from the geographical and archaeological portions of this investigation, to visually inspect how their ethnographic information is applied, and to provide further input and/or edits during the entire process. Details from these conversations are used analytically and in full cooperation with the informant. All draft materials were shared with them to ensure proper interpretation/application of their ancestors' knowledge. This promotes a positive relationship between all parties as well as respect for the information being garnered from the informant. This type of collaboration is a methodological luxury that many Native consultants were not given in the past – it builds trust and satisfaction in the work being done (Steltenkamp 1997).

If possible, it is also important to have Native informants on-site to help identify and/or interpret the location and the surrounding landscape from their individual perspective (LeBeau 2005, 2009; Toupal et al. 2001). Furthermore, all those wishing to remain anonymous are not identified per the HSCL agreement. Also, rather than conducting formal/structured interviews, informal visits without the aid of recording equipment are best for open dialogue and creating a more relaxed atmosphere (Beck and Somerville 2005; Brayboy and Deyhle 2000; Hermes 1998; Johnson 2008; LeBeau 2009).

The stone cairns of Red Wing may have functioned in multiple ways. Although this may seem problematic on the surface, ethnohistoric accounts and contemporary consultation help researchers grasp some Indigenous ways of seeing and interpreting the cairns (Dean 2010:177). Starting with basic, open-ended questions is a necessity. These include: 1) What could cairns be?

2) Why is stone special? 3) Why is this location special? and 4) How do you personally interpret this site? The consultant is then given the freedom to direct the conversation with their responses. With a show of respect and by providing informants the opportunity to guide the discussion, successful and meaningful collaborations will result:

...there are the old ones of this nation who are true wise ones and who love to share the fruits of their long experience with strangers as they do with the young men of their tribe. They do not keep silent about the errors which their love of the marvelous caused them to commit in their own youth, but they free themselves from such errors as experience reveals the folly of them. They become, in the end, the faithful depositors of healthy traditions that survive through the generations and that they transmit with religious devotion, without mystery and without restriction. It is enough only to take the trouble to listen to them – to know how to listen to them and to control the conversation without offending their feelings and the order and twists and turns of their ideas; they become mute as soon as we try to make them speak and think as we do. –Joseph Nicollet during his 1838-39 Survey Expedition through Minnesota (Bray and Bray 1976:76)

Details from these conversations were recorded in a journal after the visit had concluded. This method allowed the author to improve his listening and retention skills, identify major and minor topics discussed during the visit, to observe personal bias in how the information was being processed, and to properly reflect upon the information being gathered. Formulated questions/ideas were subsequently discussed with informants during later visits. The appropriate application of oral traditions to local landscapes serves as a means to identify useful fragments of community memories (Hrobat 2007:47). The critical application of both Western and Indigenous methods will elucidate the significance of the Red Wing cairns in a mutually beneficial way. Oral tradition offers previously unknown details of culture and history, and scientific evidence is useful in providing information where traditional knowledge is silent or safely ambiguous (Mason 2000:248).



## *Step 6: Distilling the Spatial, Archaeological and Ethnographic Evidence*

A hybrid methodology gathers and generates a substantial amount of information requiring thoughtful analysis and synthesis. The process in doing so requires a prudent and defensible approach from the scientific community, but also from the Native communities whose ancestral knowledge must be handled with care. Admittedly, the methodology implemented in this dissertation is the result of a long, iterative process. The process starts with a familiarity with the local and regional histories from European and Native peoples, both documented and undocumented. Also, an understanding of the physical landscape, local archaeological record and ethnohistoric records is also important.

Familiarity with land surveying techniques and GPS data collection is essential. Adequately recording morphological and topographical attributes is necessary for proper GIS analysis. An attempt is made to remove quantitative bias by generating spatial mean locations, viewsheds, calculating site inter-visibility percentages, and statistical correlation analysis. It is important to consider the scale at which we view the data because not all patterns will appear at the same scale, extent, viewpoint, etc. These considerations must be tabled for future study.

Based on all of the gathered information, a defensible case is laid out as to who built the stone cairns of Red Wing, when, and why. The author will discuss the evidence leads to this supposition and what evidence still needs to be gathered in order to confirm or refute the final hypothesis beyond this dissertation. In all, several scenarios pertaining to cairn function and why they were built will also be offered. Hopefully this discussion leads to subsequent cairn study in Red Wing in order to piece together this archaeological and anthropological puzzle.

### **Step 7: Assigning an Authoritative Cultural Name and Function**

Siouan relationships with stone are explored in order to identify common threads amongst various tribes. Site-based approaches, around particular locales, can successfully merge oral history and archaeology (Robertson 2009:158). Instead of generalizing the nature of earthwork construction, it is imperative to conduct analyses in respect to the local landscape in which they were placed (cf. Mallam 1975). Cultural perspectives are gathered on the components used in cairn construction, their possible function, and the greater landscape, because:

Material culture comprises the continuum in the artifact–feature–site–landscape complex that has so often been viewed as mere residuals of human behaviour. But artifacts possess symbolic content and contexts that can be studied from a semiotic perspective as media of communication, as stimulants and reinforcements of cultural values and behaviour, and as signs of ethnicity. (Wilson 2005:7)

Once the potential builders have been defensibly identified, inclusion of descendant peoples in the final interpretation of the cairns in order to understand them within their respective cultural context (cf. Hallendy 2000:22-23). At the end of this process, and in order to most accurately classify the Red Wing cairns going forward, authoritative and interpretive power is given to the indigenous group most closely associated with the actual site (Brace 2005:4).

### **Conclusion**

Due to significant data deficiencies and remaining anthropological questions until present day, answers are sought using a mixed-methods approach that incorporates Geographic Information Systems (GIS) spatial analysis, bi-variate statistical tests, archaeological data from proximal habitation sites, historical references, Siouan oral traditions and ethnographic interpretations (cf. Artz and Goings 2006; BLM 2005; Bernardini and Peebles 2015; Brace 2005;

Chartkoff 1983; Van Dyke et al. 2016). This study enhances previous cairn investigations in Red Wing through a more-detailed geographical analysis and participation of Red Wing's descendant peoples. GIS is an invaluable tool for identifying and establishing quantitative relationships between respective sites.

As a base, substantial research time was spent gathering available archaeological literature and examining existing ethnographies but also variances in stone ritual around the region and across North America. Assessing the qualitative aspects of these relationships requires deeper anthropological consideration as opposed to an anthology of ethnographic information (Hall 1997:171). Hopefully this work provides a useful example of how to thoughtfully and critically apply ethnographic information in combination with scientifically-based techniques. Any and all hypotheses can be verified, modified, or rejected in the future.

To conclude, a fuller and culturally-appropriate interpretation of the Red Wing cairns and the surrounding landscape is the ultimate research goal of this study as well as defensible assertions as to who built them, when and why. In order to scientifically and culturally analyze these features, aspects of geography, archaeology, phenomenology, topography, and ethnography are deemed necessary (Van Dyke et al. 2016). The next step beyond this dissertation is further exploring the philosophy associated with "Lodges of Time and Space" as well as the cultural landscape within the stone cairns of Red Wing are embedded.

## Chapter 4: Field Survey, Data Collection and Analysis

### Introduction

Due to ubiquitous cairn dismantlement and legal protection prohibiting any further disturbance (Minnesota Statute 307.08), this analysis depends heavily upon geographical site location, i.e. “presence only” data (cf. Howey et al. 2016). The combination of new technologies/techniques such GIS analysis alongside detailed ethnographic sources provide a promising avenue to awaken long-silent monuments (cf. Dobbs 1996). The differences in distribution amongst earthwork or stone feature types, forms, and density is not coincidental. Thus, as Howey et al. (2016) suggest, careful analysis of patterns within and between groups of features has tremendous potential to provide insight into the ethnicity, beliefs, and social structure of those who built them as well as the shifting social and ecological factors that inspired their construction. Furthermore, collaborative analysis with tribal authorities from Red Wing-descendant peoples also helps to prevent ethnocentric interpretations of both cairn sites and the surrounding landscape.

The main emphasis of this study are stone features originally identified and mapped in Red Wing as “hollow”, “beehive”, and/or “stone cairns” (cf. Brower 1903), or those called “hekti - lodge of time and space” by the local Dakota (personal communication, C. Campbell Sr., January 25<sup>th</sup>, 2008). Who built them, when and why remain unanswered. Therefore, the field survey/data analysis goals of this chapter are: 1) record the topographical and morphological attributes at each site; 2) to include Native informants during field surveys and subsequent analysis in order to culturally interpret the feature, the observed behavior, its placement, and potential function(s); 3) to develop an initial stone feature taxonomy specifically for the Red

Wing region; 4) to conduct exploratory bi-variate tests in order to identify statistically-significant relationships between independent variables; and 5) to use geo-spatial techniques in order to identify locations and/or features associated with cairn construction.

The quantitative portion of this investigation relies upon GIS analysis, excavation data from proximal archaeological sites, current field survey data and historical references in order to examine the geographical and archaeological context in which the cairns were erected. Multiple types of stone features have been historically referenced and/or mapped in Red Wing. Historical records and morphological measurements from each respective site are used to examine the original architecture of various Red Wing stone features in order to develop an initial stone feature taxonomy for this locality. Also, an attempt is made to clarify some existing terms that can induce a deeper discussion beyond this dissertation. Admittedly there are many data deficiencies. The initial cairn population is small (n=14) and unique morphological traits are lost to ubiquitous site destruction. Thus, exploratory bi-variate tests are used to identify strongly-correlated geographical and/or morphological variables. Since the cairn sites are protected by federal and state law and no further site disturbance is allowed, any assertions pertaining to their derivation/age must be done by proxy. Thus, excavation data from nearby habitation sites offer invaluable anthropological information about the peoples once dwelling in the vicinity of the cairns.

During this process, cultural perspectives are sought on-site and during subsequent consultation with tribal authorities in order to elucidate and classify various features based on form, function/observed behavior, and religious perspectives (cf. LeBeau 2005; 2009). One must pursue an interpretation of archaeological sites and the surrounding landscape that is closely linked with the original inhabitants and their social criteria (Stanislawski 1973:376-77).

Additionally, discussions of space, place, and phenomenology are necessary for linking social theory, ethnographic perceptions, and material remains (McCoy and Ladefoged 2009:281). Multiple studies have successfully combined elements of geography, archaeology, phenomenology and/or ethnography (cf. Artz and Goings 2006; Bernardini and Peeples 2015; BLM 2005; Brace 2005; Chartkoff 1983; Ellenberger 2012; Mathews 2006; Staeck 1994; Van Dyke et al. 2016; Wagner et al. 2004; Waldron and Abrams 1999). Ultimately, insights gained from this portion of the study serve as a springboard into a deeper anthropological discussion in subsequent chapters.

Note: all cairn sites, although dismantled, are still protected under federal NAGPRA rules and Minnesota Statute 307.08, which recognizes stone cairns as funerary structures and prohibits any further disturbance. Out of respect for these cultural areas, tribal beliefs, and current landowner wishes, only essential and/or generalized location information is provided. Specific site information must be sought directly from the Minnesota Office of the State Archaeologist.

### **Site Surveys and Data Collection**

Variation in morphology and spatial position were observed during archaeological survey of identifiable cairn locations. Common field conditions at each site include the following: the cairn sites are now in wooded locations with leafy understories, no intact structures exist, and pits from earlier amateur investigations are clearly visible at specific locations (cf. Taylor 1882). The limestone originally used to build the cairns now in general lays strewn.

Various types of earthwork and stone features have been identified in the Red Wing area, including: cairns, petroglyphs, stone rings, stone mounds, a boulder effigy, and and

approximately 3,000 earthen mounds (cf. Brower 1903; Curtiss-Wedge 1909; Winchell 1911). Brower's (1903) archaeological chart of the Red Wing area is invaluable for historical and comparative analysis (see Fig. 2-1). Admittedly the map is impressionistic but it still provides a generalized sense of where features (e.g. cairns, stone circles, burial mounds) were once placed near present-day Red Wing. The stone cairns were primarily placed upon elevated ridgetops and/or overlooks between Spring Creek and Hay Creek, respectively. Today, recorded Oneota habitations (21GD0095, 21GD0204, 21GD0258) immediately outside the perimeter of the densest cluster of cairns.

The cairns were originally placed upon bare, untimbered hilltops but in general these locations have become wooded over time. Until recent times, annual fires would clear the understory and provide wide open viewsheds and lines of sight between adjacent bluffs. Hilltop soils were formed in loess and in residuum derived from limestone bedrock. Valley soils are generally well-drained loamy sands and/or silt loams, which are ideal for agriculture and habitation.

Cairn sites are distinguishable by their form, location, and materials used. However, frost heave and other natural weathering processes must be also considered while surveying a cairn site (Williams 2012:36). Near Red Wing, all cairns are generally made with limestone of uniform size and geologic type, and piled conspicuously in one specific location at higher relative elevation. The hollow cairns were built with flat, tabular pieces of limestone upon bedrock (IMA 1999). These traits are sufficient to distinguish a human-made feature from a natural rock pile (cf. Chartkoff 1983:752). Henceforth, three new cairn sites were found during this investigation (i.e. Cairn ID 8, 14, and 15). Base stones appear to be deeply embedded into the soil matrix, which may be attributed to the old age of the cairns and/or soil accumulation along the hilltops

(cf. Brace 2005:5). Even though larger, irregular pieces of stone were used in order to form a base (i.e. Cairn ID 1), limestone of relatively uniform size was used. Although unverified, limestone outcrops near the adjacent hilltops are a likely source of this material. It is also possible that stones were brought to the site from elsewhere as a means of prayerful supplication (see Chapter 6).

Archaeologists generally find it difficult to interpret stone features due to the paucity of formal attributes. However, for this study, archaeology provides the best preliminary avenue to investigate cairns as material expressions of ritual behavior, which inherently possess pre-contact concepts of identity, social space and landscape (cf. Mathews 2006:239). On the other hand, ethnographic consultation provides the means to culturally interpret the site, its symbols and behavior, and to determine its true function(s) (cf. Brace 2005; Chartkoff 1983; LeBeau 2005, 2009). Tribal participation is strongly encouraged in order to assess phenomenological variables such as feeling and association. Based on this survey experience, these parameters are synthesized as part of a Cairn Survey Protocol with Native Informants (see Appendix II/Chapter 4 Supplement).

If a specific function can be assigned, this knowledge is of major anthropological value. Also, the purely symbolic nature of the stone feature will remain vague without cultural input. Authoritative determinations such as name, function, and cultural significance will be given to the cultural group most closely associated based on evidence from this investigation (cf. Brace 2005:4).

In order to assess archaeological site integrity, National Register Bulletin 36 requires the following variables be addressed: design, setting, materials, workmanship, feeling, and association (Dobbs 1996). Furthermore, from an anthropological perspective, important themes



to consider include: 1) feature placement on the landscape; 2) spatial patterning; 3) monumentality; and 4) feature visibility (cf. Mathews 2008). For instance, field observations in Red Wing suggest preference for specific types of materials and methods of cairn construction. Also, the stone cairns were placed along points with similar topography.

Consistent cairn construction themes in the Red Wing literature include the use of limestone and wooden staff(s), placement upon bare hilltop locations, and hollow architecture. All structures were made out of limestone. Limestone outcrops abound along the bluffs of Red Wing and provide plentiful construction material. One cairn (Cairn ID 1) was constructed with very large, extremely heavy base stones that gradually decreased in size and were eventually capped with smaller stones. Aiton (1852; Winchell 1911:165) documented this monument as a collapsed conical pile of limestone around a staff of Eastern Red Cedar (*Juniperus virginiana*), which was almost rotted through at its base. Aiton could not determine if the staff was placed there intentionally or grew naturally. Wood can last for centuries if properly sheltered, especially Eastern Red Cedar which is highly resistant to rot. Culturally speaking, Eastern Red Cedar was known to have ritual associations with Mississippian peoples whose influence is evident in the Red Wing archaeological record during the Silvernale phase (cf. Wagner et al. 2004:42). Red Cedar also possess spiritual significance for local Siouan peoples. Its inclusion was undoubtedly deliberate.

Wood is a principal component in two distinct hollow cairn types in the Red Wing literature: 1) a single Eastern Red Cedar staff (*Juniperus virginiana*); and 2) two blue oak (or swamp oak) staffs oriented in east-west direction (cf. Brower 1903; Winchell 1911). During this field investigation the local flora at each site was also noted (e.g. cedar, particular flowers/medicine plants). Nowadays Eastern Red Cedar is often found growing in the cairn

rubble or surrounding its location. Wood lilies (*Lilium philadelphicum*) were also found growing in abundance at specific sites. During a prior study, both red cedar and the lilies were interpreted to have spiritual significance to the site (personal communication, Curtis Campbell Sr., July 19<sup>th</sup>, 2007; cf. Bergervoet 2008).

Due to their complex construction style and upright wooden staffs, each hollow cairn was undoubtedly built during a single event. Their anomalous similarity in architectural form and spatial clustering also strongly suggests a single construction episode. It is perplexing why this landscape was presumably reserved or left unaltered until this episode occurred.

From a Native perspective, larger cairns are found in woodlands since they need to be more visible. Conversely, even a small structure on a bare hilltop can be seen from a long distance on prairie landscapes. Regardless, in order to establish a viewshed on prairies, or in woodlands, you do so by landmarks; e.g. trailheads, hills, bodies of water (personal communication, Sebastian LeBeau II, December 15<sup>th</sup>, 2015). Also, different altar types are distinguishable based solely upon observed behavior at the site, which does not knowledge of its specific function (personal communication, Sebastian LeBeau II, July 2<sup>nd</sup>, 2015). Therefore, field survey observations are used in order to generate an initial stone feature taxonomy offered later in this chapter. Determination of specific function(s) will hopefully result from further ethnographic consultation.

As part of this investigation, a Dakota traditionalist with archaeological knowledge of the region visited three cairn sites with the author in July 2014. Preceding the field survey, dialogues included the original components and dimensions of the cairns, historical documentation and findings, existing cultural knowledge, and site placement. Based on these discussions, the informant stated that limestone enhances the quality of prayers and the red cedar shaft was

possibly used as a “spiritual plug” between the Above and Below worlds. While on site, the informant asked if the cairns were burial sites. The author responded that it was never confirmed due to poor survey documentation during amateur excavations in the 19<sup>th</sup> century. Although a specific function was not offered at that time, the informant stated the cairns are certainly important landmarks and the sites have positive energy (personal communication, Native Informant #1, July 22<sup>nd</sup>, 2014). In all, the on-site survey with a tribal authority offered additional insight on three main components of the Red Wing stone cairns: 1) limestone; 2) red cedar staff; and 3) sense of place. This cultural interpretation is most useful and will be applied in order to elucidate the placement and components of the Red Wing cairns in subsequent chapters.

### **Spatial, Archaeological and Morphological Analysis**

Finnegan (1983) states stone features are the end product of a chain of human decisions. Furthermore, these decisions will be reflected in and inferred from both the morphology of features as well as their distribution on the landscape (cf. Artz and Goings 2006:3). Within the measurable and quantifiable morphological attributes of stone features, combined with their placement on the landscape, presents an opportunity to find socially meaningful patterns (Mathews 2008). Although cairn function is oftentimes difficult to determine, the relatively isolated and clustered location of the Red Wing cairns provides a foundation for functional and processual interpretation (cf. Mallam 1975:8-9).

In an effort to identify who built the stone cairns, it is logical to begin with those peoples living in close proximity and to examine the archaeological tradition(s) in which they

participated. Recorded habitation sites and lithic scatters abound on fertile, well-drained valleys throughout this region. A majority of the sites adjacent to the cairns belong to the Oneota tradition. Earthen mounds were constructed all across the Red Wing region but, interestingly, only a small number of stone cairns are primarily concentrated between Hay and Spring Creek (see Figs. 4-3 and 4-4). The stone cairns are located away from residential areas on adjacent hilltops and most likely served non-residential functions (cf. Artz and Goings 2006:14).

Since GIS is the primary investigative tool used in this study, its three main applications in archaeology are spatial analysis, visualization and modeling (Alexakis et al. 2011:89). Topographical attributes such as elevation, slope, aspect, local relief, relative elevation, distance from large streams and distance from bluff edges are typical variables to consider (Artz and Goings 2006:3). Spatial means were also generated using ArcGIS for both stone cairns as well as recorded stone mound locations.



Fig. 4-1: Jacob V. Brower (1903) archaeological chart of the Red Wing region.

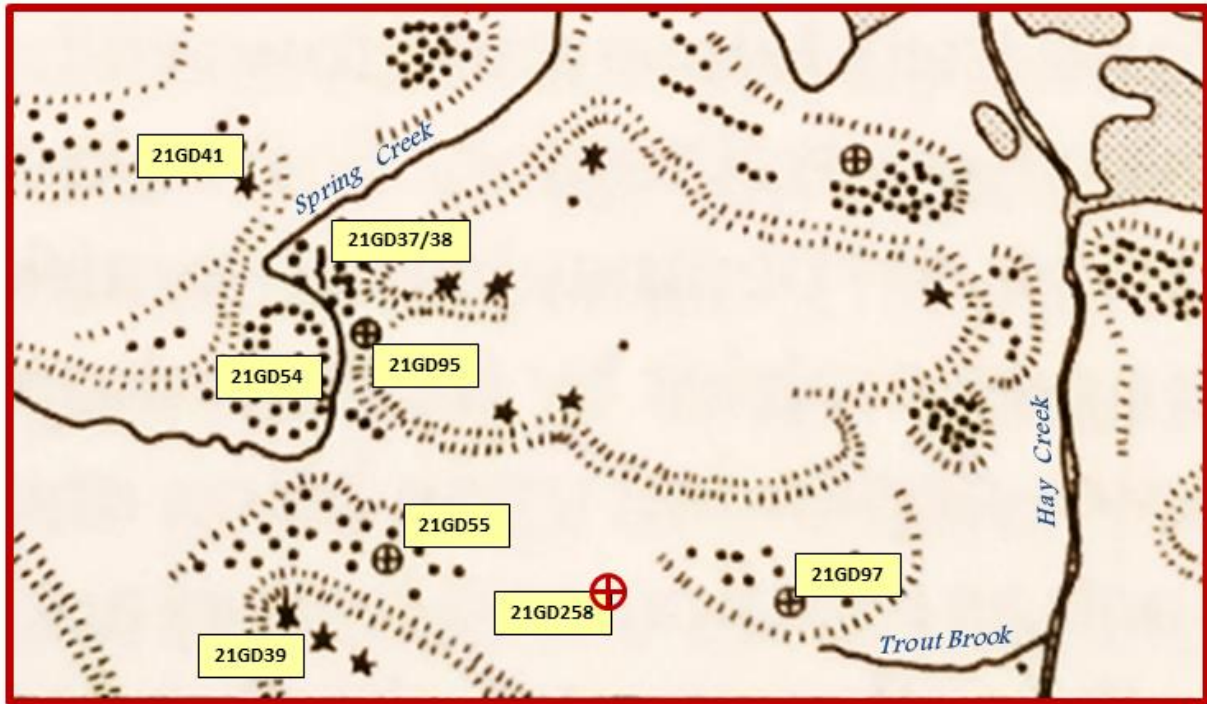


Fig. 4-2: Stone cairn locations mapped by Jacob V. Brower (1903) and currently recorded sites (cf. Johnson 1988:22).



Fig. 4-3: Oblique view of the valley containing the densest cairn cluster and looking northwest. 21GD258 is located in the foreground (image courtesy of Google Earth).





Fig. 4-4: Cairn bluffs from a villager perspective.  
Photo location is 300 meters northwest of 21GD258 and looking north.

Additionally, it is necessary to analyze how monuments are oriented within the landscape and how they direct one's attention (Jacobson-Tepfer and Meacham 2010:xiii). The Red Wing stone cairns were obviously meant to be seen, but who was their intended audience and what message did they convey? Presumably, ritual specialists coordinated the construction of the cairns meanwhile the entire community well aware of this activity and its meaningfulness. Thus, cairn construction was a communal activity if only a selected number of people took part in physically building them. Ultimately, an essential question must be answered: why build them?

The conspicuous placement of the Red Wing cairns would certainly have a cognitive effect on those observing them (cf. Wagner et al. 2004:63). The establishment of line-of-sight bonds between sites/features and creation of "sight communities" is dependent upon local topography (Bernardini and Peeples 2015:226). Monuments generate a greater sociological

impact if they are placed upon prominent locations with a wide viewership (Bernardini and Peeples 2015:219). The Red Wing stone cairns were built upon bare hilltops and the natural lay of the land once made them clearly visible. Reciprocally, the prominence of the bare hilltops was amplified due to monument placement on top of them (cf. Tilley 1994:142). Thus, GIS viewshed analysis is a powerful tool for exploring past [social] landscapes (Lloberas 2007:66). Viewshed analysis is a critical component of this investigation.

In addition to viewshed, intervisibility analysis identifies reciprocal relationships between various landforms, features, and other observation points through line-of-sight bonds. Other studies from across the United States indicate pre-contact peoples were fixated with monument intervisibility (cf. Bernardini and Peeples 2015; Ellenberger 2012; Van Dyke et al. 2016; Waldron and Abrams 1999).

Of course, not all patterns or feature associations will appear at the same scale nor will all anthropological variables be considered due to enigmatic nature of the Red Wing cairns. For this initial investigation, an overhead Cartesian (x-y) perspective is employed. Celestial observations were not considered at this time or were destroyed as well. It is possible that other features associated with cairn construction remain unidentified. For the time being, GIS and bi-variate comparisons of both geographic and morphological variables must suffice.

Project mapping and spatial analyses were conducted with ESRI ArcGIS 10.1. All GIS data were projected onto the Universal Transverse Mercator (UTM) coordinate system, Zone 15, NAD83, GRS 1980 ellipsoid, in meters. Coordinates of all located cairns were collected using a handheld Garmin GPS unit and then adjusted according to LiDAR and remotely-sensed imagery. All statistical results generated in Microsoft Excel were verified with an online social statistics calculator (cf. Stangroom 2015). The spatial and archaeological context of the Red Wing cairns

was examined using digitized archaeology site polygons from hardcopy records at the Minnesota Office of the State Archaeologist.

Selected variables used in the subsequent bi-variate tests are shown in Table 4-1. These attributes incorporate both topographical and morphological traits recorded during field survey(s). A battery of tests were performed, which also included generated attributes such as volume and intervisibility percentage. Recorded cairn attributes included the mean base diameter, elevation, observable features from each respective location, and size and type of stone or other materials used. The flora, if applicable, may also be noted. Limestone was used to construct all cairns. As mentioned previously, the builders presumably used tabular limestone that most likely came from nearby outcrops located along the adjacent hilltops. X-ray fluorescence tests may be conducted in the future to confirm the material source location.

Unfortunately, architectural variability is lost to history. Therefore it is difficult to determine the true original size/volume of each monument as well as record any unique, original morphological traits. In order to generate an original volume for quantitative analysis, all surveyed cairns were assumed to be hollow/bee-hive type. Based on Figure 4-6, the original volume of a hollow/bee-hive cairn is calculated based solely on the average base diameter (“d”) of each feature (see Appendix II/Chapter 4 Supplement for derivation of the following equations):

$$\text{Height of Hollow/Beehive Cairn} = 0.70 * d$$

$$\text{Estimated Original Volume} = 0.36 * d^3$$



ID	X coord	Y coord	Elev (m)	Avg. Diam (d) meters	Orig Height	Calc. Orig Vol (m3)	Viewshed area (m2)	% Cairns Visible	Dist from 21GD54 (m)	Dist to Bluff Edge (m)	Adj Slope %	Aspect
1	5E+05	5E+06	292.61	3.12	2.18	10.858	43848956	46%	1003.50	30	29	63
2	5E+05	5E+06	319.13	2.1	1.47	3.311	63625998	15%	5003.80	17	29	288
3	5E+05	5E+06	300.84	3	2.10	9.653	22457526	77%	868.05	16	22	234
4	5E+05	5E+06	308.15	2.5	1.75	5.586	19695277	92%	1199.41	33	40	345
5	5E+05	5E+06	300.23	2	1.40	2.860	7479654	85%	1260.53	8	34	270
6	5E+05	5E+06	304.19	1.55	1.09	1.331	8973470	77%	1552.28	6	33	282
7	5E+05	5E+06	296.57	2.6	1.82	6.283	5430848	69%	1643.43	11	37	234
8	5E+05	5E+06	305.71	2.44	1.71	5.193	36571956	77%	1421.43	15	29	285
9	5E+05	5E+06	296.27	2.75	1.93	7.435	16437324	92%	993.47	10	34	4
10	5E+05	5E+06	295.05	2.43	1.70	5.130	11787595	85%	1358.25	46	40	282
11	5E+05	5E+06	295.35	2.74	1.92	7.354	11787595	85%	1388.35	60	33	203
12	5E+05	5E+06	293.52	1.524	1.07	1.265	9062693	85%	1023.70	28	29	108
14	5E+05	5E+06	291.08	2	1.40	2.860	12878968	85%	1087.53	24	44	100
15	5E+05	5E+06	291.69	3.375	2.36	13.744	12878968	85%	1090.74	30	24	292
21GD95/204	5E+05	5E+06	240.27				1164696	87%	611.79			
21GD258	5E+05	5E+06	252.53				1311005	40%	2001.84			
21GD54	5E+05	5E+06	244.81				2296146	93%	0			

Table 4-1: Selected Cairn Survey Attributes (measured and generated)

Note: a large scatter of stones was observed at Cairn ID 15. Therefore, its generated volume (13.744 m<sup>3</sup>) is dubious in comparison with the rest of the population. All graphs and raw data tables are provided in Appendix II.

Based on National Register Bulletin 36 criteria, field surveys confirmed the archaeological integrity of all stone cairns is unfortunately lost to history. However, upon close examination of an available historical photo of an intact, freestanding hollow/bee-hive cairns (i.e. Fig 4-6), the cairns builders followed an architectural template by first placing a wedge stone at the base of the cairn and subsequently spiraled tabular limestone blocks in a clockwise direction. Interestingly, at the midpoint of its height, the builders then switched directions and placed stones in a counterclockwise manner until its apex (electronic correspondence, David Tovar, October 5<sup>th</sup>, 2016).

For construction purposes, the upright red cedar staff as noted in the historical literature would serve as a central datum point in all three dimensions as the monument was constructed. This observed behavior is clearly ritualistic. This construction method distinguishes it from other cairns and stone piles elsewhere. Thus, this observed behavior is included in the subsequent stone feature taxonomy and its ritual significance, in combination with placement at higher relative elevation and materials such as red cedar and limestone, is ethnographically examined in Chapter 6.



Fig. 4-5: Hollow/Beehive Cairn, Type 4.

See Stone Feature Taxonomy section: Spiraled stone placement in both clockwise and counter-clockwise directions for lower half and upper half, respectively.

Once the field survey data was organized and volume generation was completed, the statistical analysis began with generating bi-variate graphs between independent variables using Microsoft Excel. Linear trend lines and Pearson's  $r^2$  values were subsequently added to the graphs. The Pearson coefficients were then used to generate probability (p) values indicating whether the sample is randomly distributed ( $p > 0.05$ ), or statistically significant ( $p < 0.05$ ). All results are presented in this chapter and/or the Appendix II/Chapter 4 Supplement.

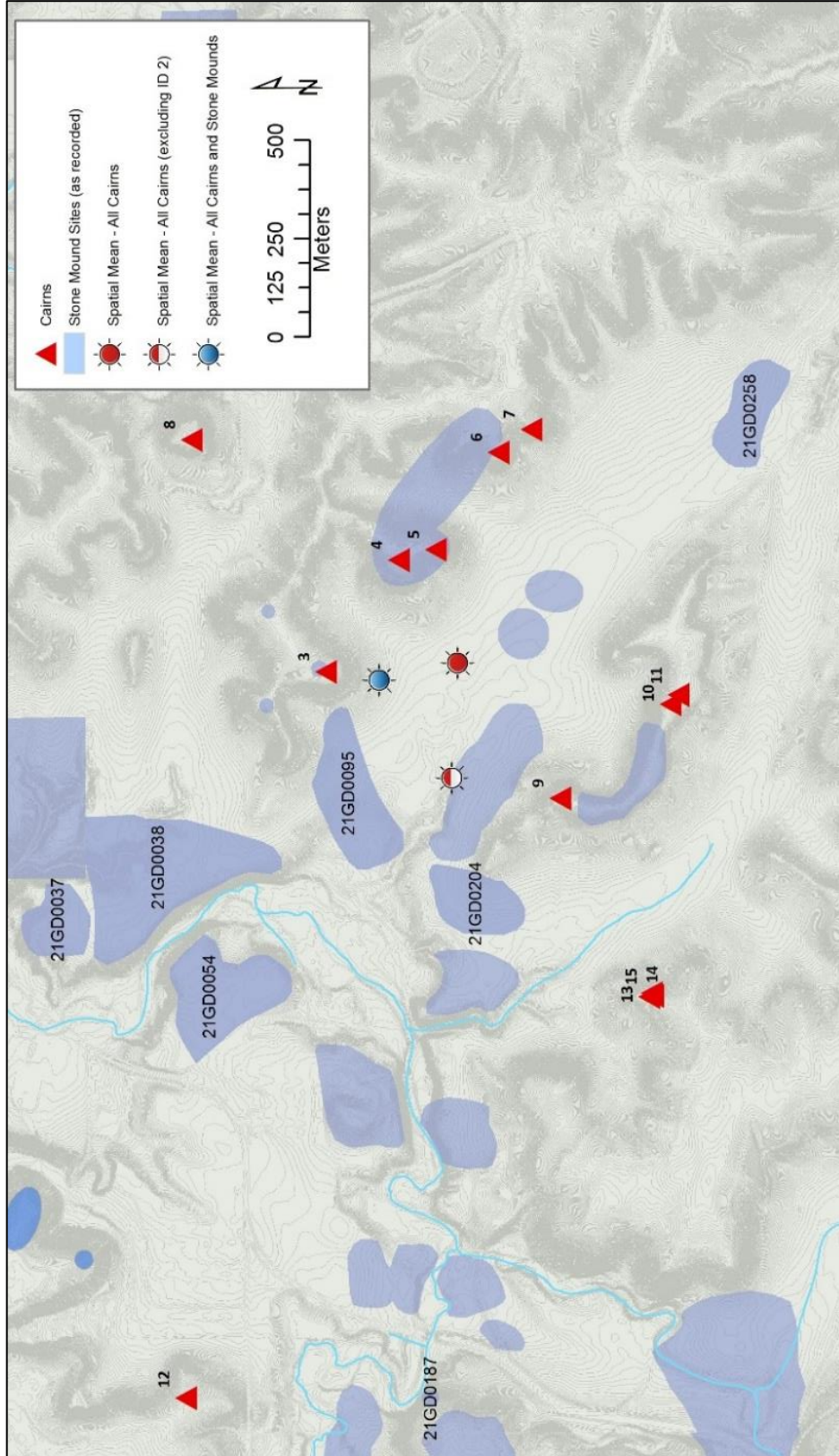
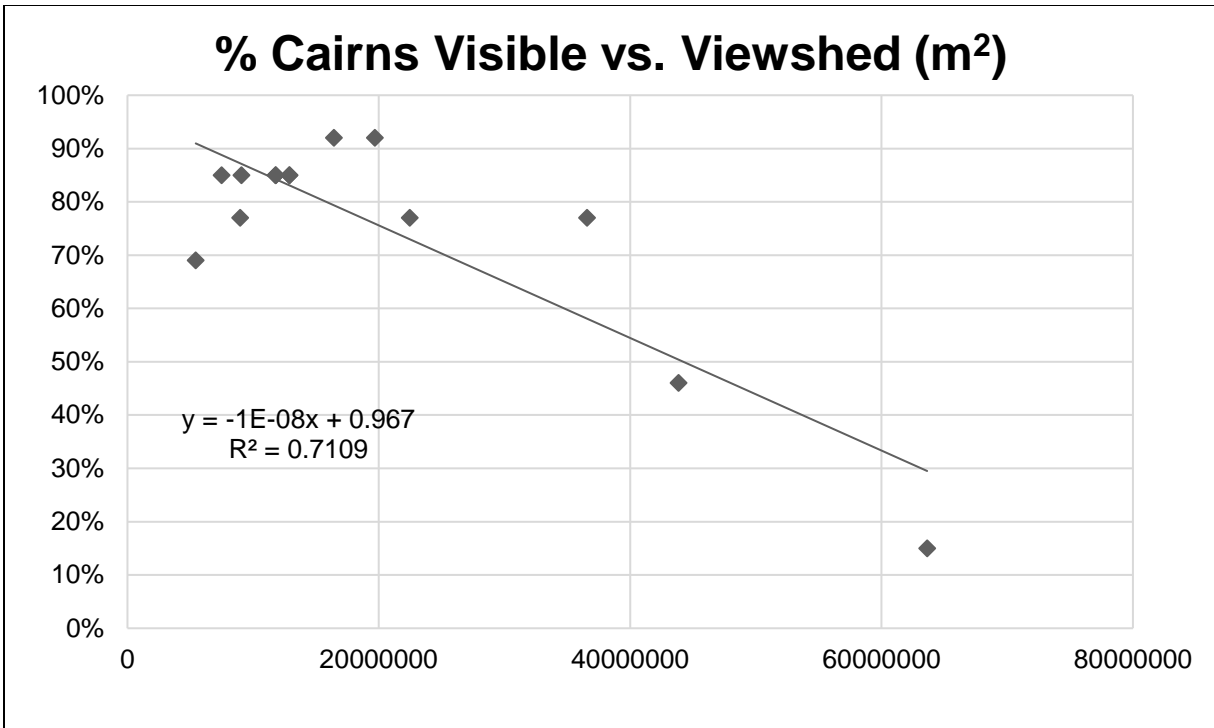


Fig. 4-6: Spatial Mean Locations for both Stone Cairns and recorded Stone Mounds

	ID 1	ID 2	ID 3	ID 4	ID 5	ID 6	ID 7	ID 8	ID 9	ID 10	ID 11	ID 12	ID 14	ID 15	TOTAL	%
ID 1			1	1				1	1	1	1				6	46%
ID 2	1							1							2	15%
ID 3	1			1	1			1	1	1	1	1	1	1	10	77%
ID 4	1		1		1	1	1	1	1	1	1	1	1	1	12	92%
ID 5	1		1	1		1	1		1	1	1	1	1	1	11	85%
ID 6				1	1		1	1	1	1	1	1	1	1	10	77%
ID 7				1	1	1			1	1	1	1	1	1	9	69%
ID 8	1	1	1	1	1	1			1			1	1	1	10	77%
ID 9	1		1	1	1	1	1	1		1	1	1	1	1	12	92%
ID 10	1		1	1	1	1	1		1		1	1	1	1	11	85%
ID 11	1		1	1	1	1	1		1		1	1	1	1	11	85%
ID 12			1	1	1	1	1	1	1	1	1		1	1	11	85%
ID 14	1		1	1	1	1	1	1	1	1	1			1	11	85%
ID 15	1		1	1	1	1	1	1	1	1	1		1		11	85%
21GD95	1		1	1	1	1	1		1	1	1	1	1	1	12	86%
21GD258	1		1	1	1	1	1								6	43%
21GD54	1		1	1	1	1	1	1	1	1	1	1	1	1	13	93%

Table 4-2: Cairn Intervisibility Matrix (cf. Bernardini and Peeples 2015:222)



Graph 4-1: % Cairns Visible vs. Viewshed Size (m<sup>2</sup>)

Note: Extremely significant correlation ( $p < 0.01$ ). The point clustering indicates an activity center along ridgetops encircling the valley in Fig. 4-3. Site intervisibility was a paramount placement factor.

Comparisons between morphological and geographical attributes do not indicate any strong correlations other than cairn elevation and its computed viewshed size ( $R^2 = 0.3781$ ,  $p < 0.05$ ). This makes logical sense because monuments located at higher elevations would offer larger views of the surrounding landscape. The largest cairn viewsheds are found at locations closest to the main Mississippi River channel. Cairn elevation vs. % Cairns Visible (i.e. intervisibility) is moderately correlated ( $R^2 = 0.2907$ ,  $p > 0.05$ ), but is not significant.

Furthermore, cairn elevation vs. diameter has no statistical significance ( $R^2 = 0.0746$ ,  $p > 0.05$ ), thus the cairn builders did not build the largest monuments upon the highest promontories. The percentage of intervisibility was calculated using a visibility matrix (cf. Bernardini and Peeples 2015). The highest percentage of intervisibility is located near unweighted spatial mean

for all recorded cairn sites. Cairn volume, as generated from the aforementioned formula using the mean base diameter, varies across the landscape. Cairn intervisibility is highest near the unweighted spatial mean and 21GD0095.

A notable inverse relationship is observed: Cairns with the smallest viewshed areas also have the highest intervisibility percentages. This fact indicates the primary activity center located in this vicinity, which is also consistent with the calculated spatial mean location(s). Notably, Red Wing Oneota sites abound in this vicinity. Both 21GD0095 and 21GD0204 are confirmed Oneota villages, which are immediately adjacent to the spatial mean.

<b>Bi-Variate Test</b>	<b>R<sup>2</sup></b>	<b>R</b>	<b>N</b>	<b>P-val</b>	<b>Result (p&lt;0.05)</b>
% Cairns Visible vs. Viewshed Size (m2)	0.7109	-	14	0.000152	SIGNIFICANT
Elev (m) vs. Viewshed Size (m2)	0.3781	0.6149	14	0.019	SIGNIFICANT
Elev (m) vs. % Cairns Visible	0.2907	-	14	0.0466	SIGNIFICANT
Elev (m) vs. Diameter (m)	0.0746	-	14	0.3448	NOT SIGNIFICANT
Diameter (m) vs. % Adj Slope	0.1319	-	14	0.2018	NOT SIGNIFICANT
Diameter (m) vs. Viewshed Size (m2)	0.0243	0.1559	14	0.5949	NOT SIGNIFICANT
Diameter (m) vs. Aspect	0.0028	-0.053	14	0.857	NOT SIGNIFICANT

Table 4-3: Bi-variate Test Results and Statistical Significance



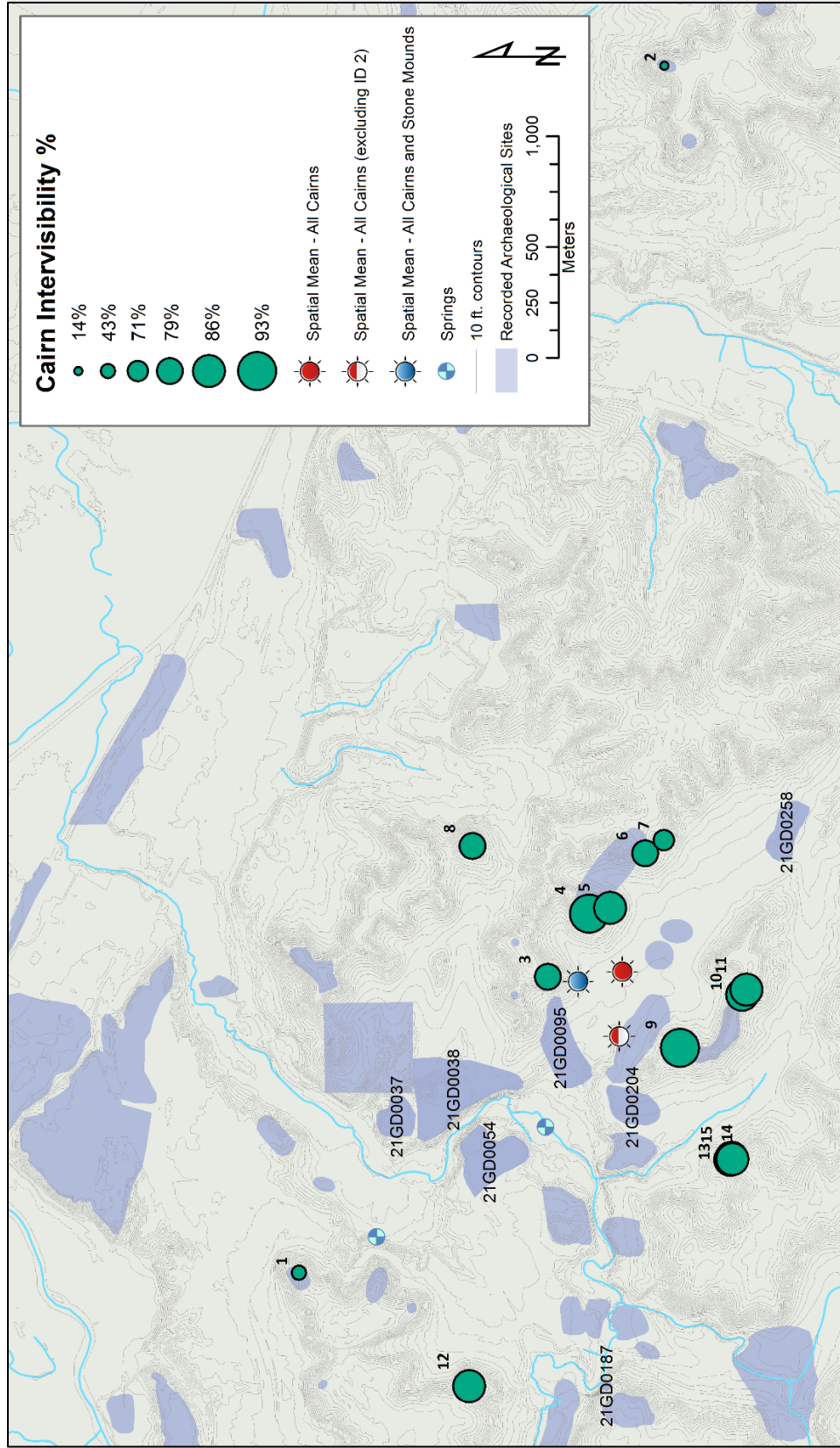


Fig. 4-7: Cairn intervisibility percentage from respective cairn sites



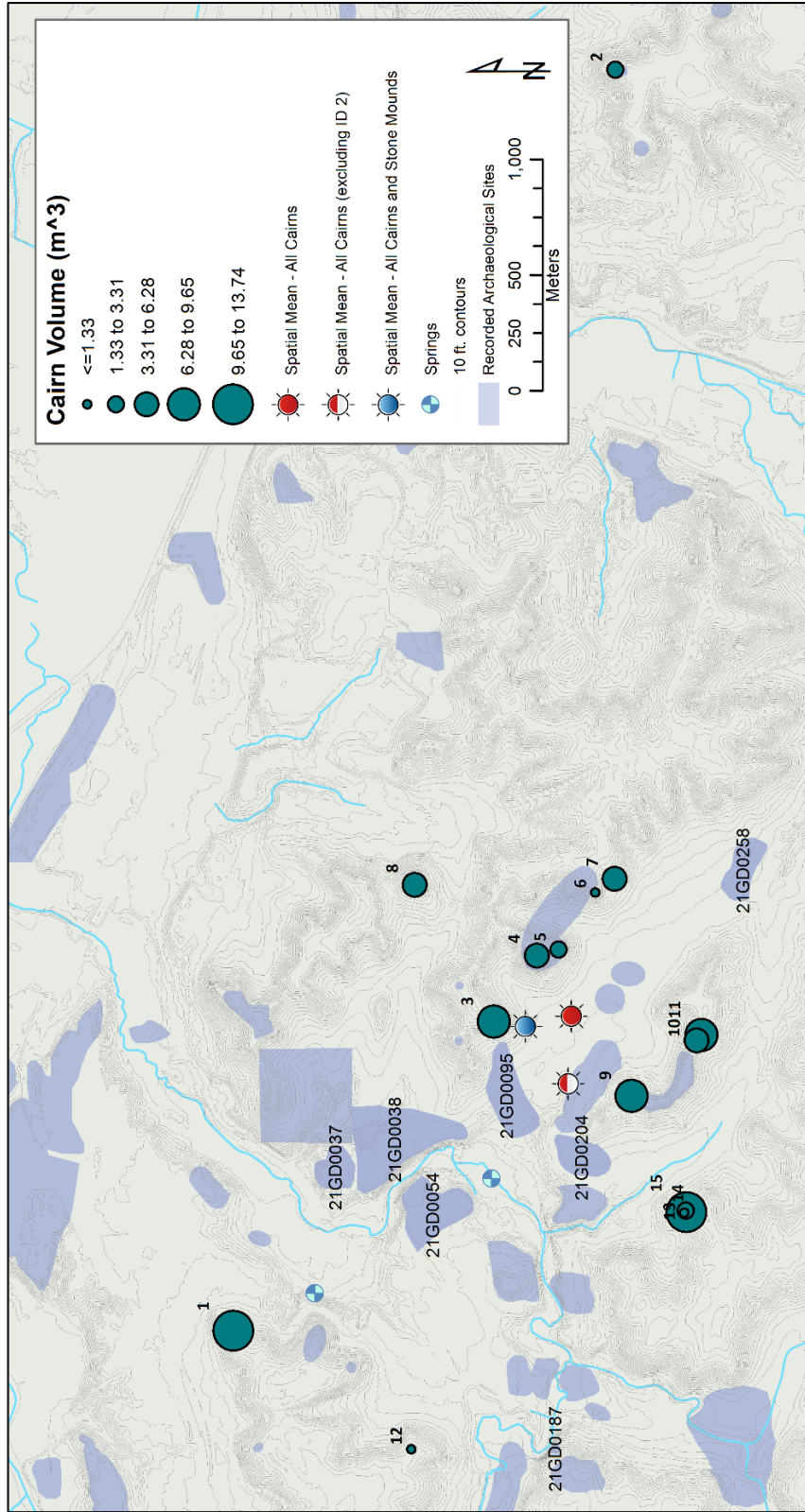


Fig. 4-8: Cairn Volume (m<sup>3</sup>)

Viewsheds and cost surfaces reconstruct how people may have visually interacted with regional landscapes (Mack 2004:68). In order to generate each viewshed a 1-meter resolution LiDAR-derived digital elevation model (DEM) from the Minnesota Department of Natural Resources was used. Next, a mean elevation surface was generated using a 10-meter by 10-meter neighborhood and the Focal Statistics tool in ArcGIS. This was done in order to smooth the original DEM and the conditioned raster produced viewshed results consistent with field observations and provides a more accurate representation of a smoothed earth surface.

Parameters for the viewshed analysis itself included: OFFSETA = 1.3 (observer's eye level in meters); RADIUS2 = 15000 (m), no z-correction was applied since the elevation values were in metric, and the default refractivity coefficient of 0.13 was used. Since the cairns were documented as being placed on bare hilltops (Winchell 1911:405), no DEM corrections were considered for vegetation. The viewshed OFFSETA value (i.e. height of eye level = 1.3 meters) is based upon the local Dakota account of Curtis Campbell, Sr., who as a boy visited a cairn site with his grandfather on the summer solstice. While waiting for the sun to rise, his grandfather said: "This is a place where holy works were done" (personal communication, Curtis Campbell Sr., July 19<sup>th</sup>, 2007).

The primary goal of the viewshed analysis was necessary to quantitatively identify where the respective viewshed layers overlap for all or selected parts of the cairn population. To clarify: areas of common overlap are visible focal points from respective cairn locations, and the cairns are reciprocally visible from these focal points/areas. This method applies the same logic as a Venn diagram (see. Fig. 4-9):

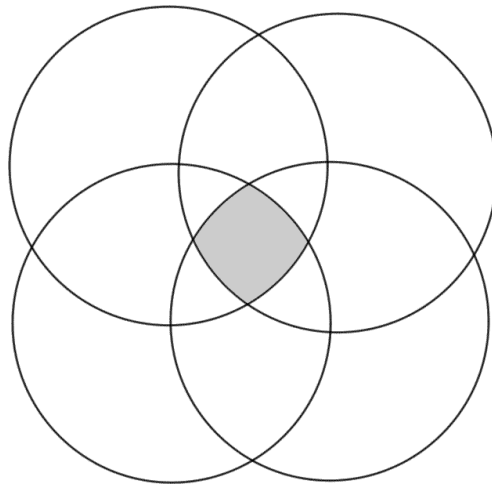


Fig. 4-9: Venn diagram example/identifying an area of common overlap

Identifying areas of common overlap was accomplished by reclassifying each viewshed raster as visible (i.e. 1) and non-visible (i.e. 0), and then multiplying them together with ESRI's Spatial Analyst Raster Calculator tool. Any common intersecting areas have a cell value of 1.

Multiple tests were conducted:

1. Viewshed intersection for all recorded cairns (n=14). Result: Only a small outlying area is commonly visible and nowhere near the observed cairn activity.
2. Viewshed intersection excluding Cairn ID 2, a spatial and statistical outlier (n=13).  
Result: The commonly visible area is extremely small and is concentrated directly in the middle of 21GD0054, a Red Wing Oneota burial mound group.
3. Viewshed intersection excluding Cairn ID 2 and Cairn ID 8 (neither of these is visible from the unweighted spatial mean location for the entire cairn population). Result: An extremely small area is commonly visible, which includes both villages 21GD0095 and 21GD0204, and also the burial mound group at 21GD0054.

Remarkably, after excluding Cairn ID 2 (a spatial and statistical outlier), all viewsheds intersect in the center of 21GD0054, a recorded Woodland/Oneota burial mound group. Thus, 21GD0054 is the common focal point of all recorded hollow/beehive cairns (n=13). 21GD0054 is a comparatively small site. Interestingly, it is clearly of the late pre-Silvernale or early post-Silvernale type (AD 1150 – 1250) where there is a small number of mounds in a rough circle around a flat area overlooking a bend in Spring Creek. It may include it has a Woodland component, or linear mound building may have persisted through and after the Silvernale phase (personal communication, Ronald C. Schirmer, March 13<sup>th</sup>, 2015).

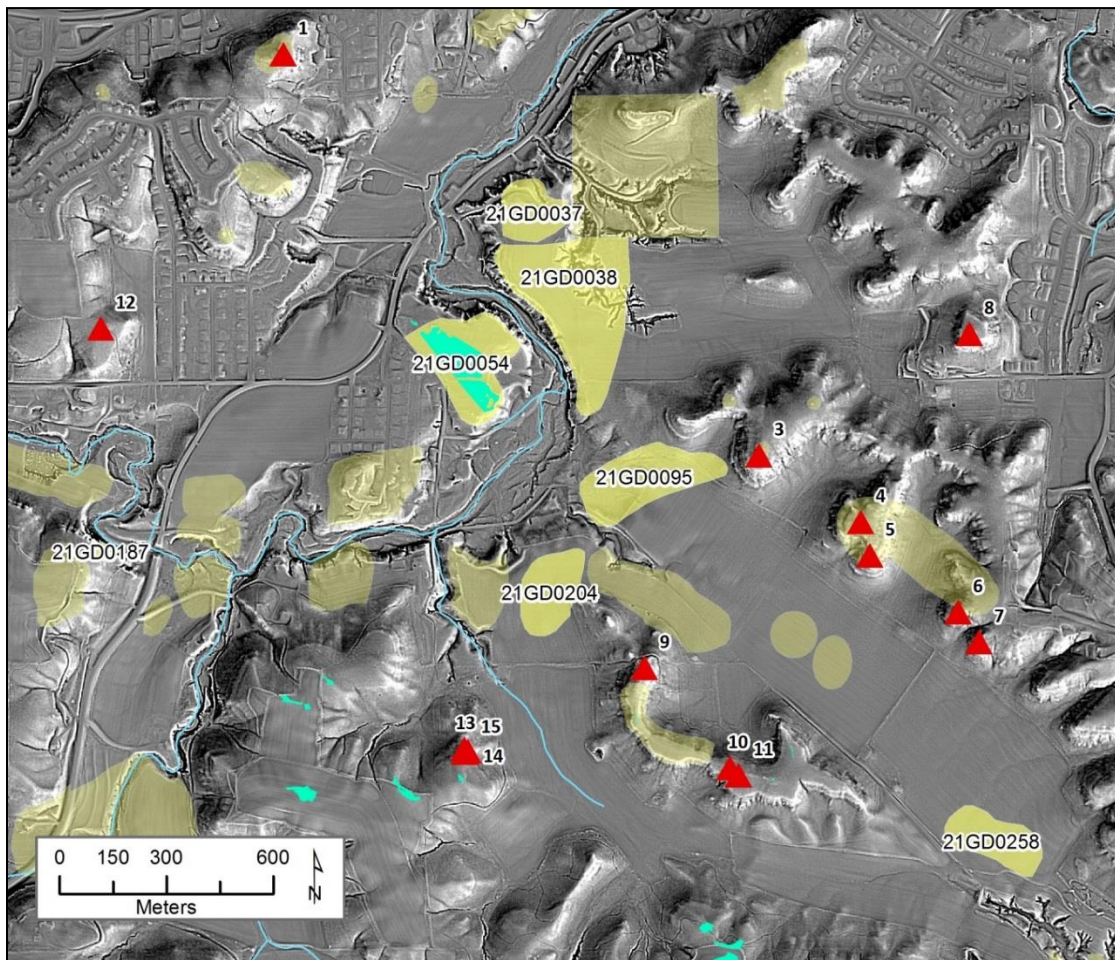


Fig. 4-10: Cairn viewshed intersection (n=13).

All viewsheds from each hollow cairn site intersect in the heart of 21GD54, an Oneota burial mound group. Other Oneota/Oneota-related sites discussed in the manuscript are also labeled.

Twelve out of 14 cairn locations are visible from recorded Oneota villages at 21GD0095/21GD0204, which is the geo-statistical epicenter of cairn activity. Six out of 14 cairns are visible from 21GD0258, a single-component/occupation village just beyond the eastern/southeastern perimeter of the densest cairn concentration on the opposite end of the valley. To reiterate: 13 out of 14 recorded cairns are visible from 21GD0054 and all cairns are reciprocally visible from 21GD0054 if Cairn ID 2 (a confirmed spatial and statistical outlier) is eliminated from the analysis.

In sum, a tight-knit network of intervisible monuments were communally anchored at 21GD0054, an Oneota burial mound group, through a reciprocal line-of-sight connection to/from each individual hollow cairn site. The cairns presumably had multiple functions; both as individual sites and as principal components of a larger sight community (cf. Bernardini and Peeples 2015; Van Dyke et al. 2016:224). The results of this analysis suggest the most important construction factor was establishing a line-of-sight connection with 21GD0054, the visual anchor for all hollow stone features/cairns. Secondly, site intervisibility was also a primary factor in cairn placement.

Oneota habitation sites 21GD95 and 21GD204 are in close proximity with the spatial mean(s). With the valley bookended by Red Wing Oneota villages (21GD0095, 21GD0204 and 21GD0258), their relationship with the cairns is highly suggestive both statistically and logically. 21GD0258 is a single-component (single occupation) Oneota village on the far southeastern opening of the cairn-enclosed valley. Notably, most Oneota habitations are multi-component (Dobbs 1982:100).



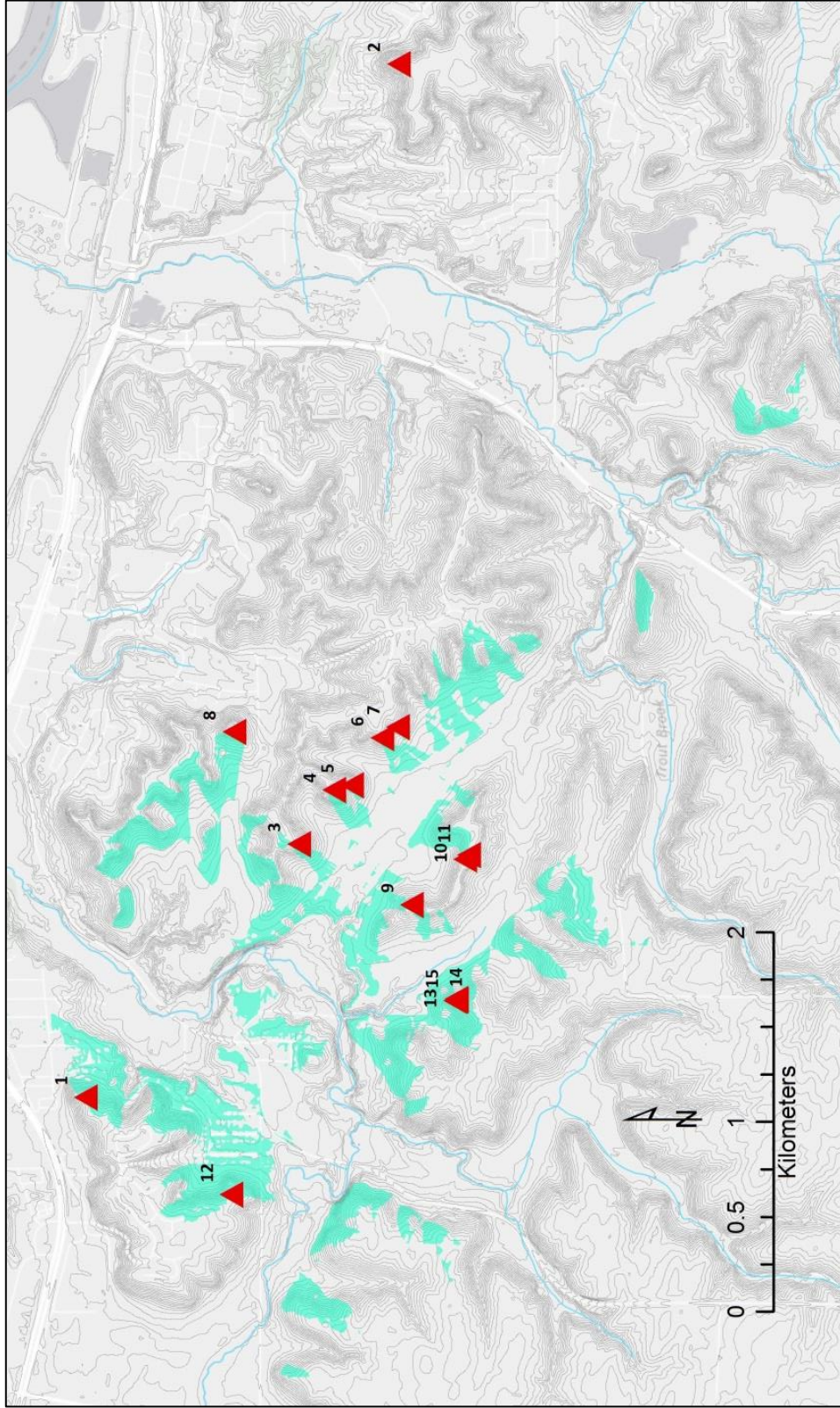


Fig. 4-11: Reciprocal watershed calculation – Identifying areas visible from 21GD54

Intensive excavation occurred at 21GD0258 this site in 2010 and 2015, respectively (cf. Koncur 2015). Geophysical survey was used to identify underground features prior to June 2015 excavations. Radiocarbon dates from this site indicate it was inhabited ca. AD 1400 (cf. Schirmer 2016; Schirmer 2017). It is plausible the 21GD258 habitation is part of a newly-evident expression of the Red Wing Oneota tradition: the Spring Creek Oneota (ibid). The Oneota villages immediately outside the perimeter of the primary cairn cluster are presumed to be temporally associated with cairn construction (cf. Clouse 2004:124).

Therefore, for the time being, radiocarbon dates from 21GD0258 provide a suitable proxy estimate as to when the cairns were built (ca. AD 1350 – 1400). This is defensible due to the immediate proximity of the site and the densest cairn cluster. Based on geo-statistical results presented in this chapter, cairn construction is most strongly tied to Spring Creek Oneota habitation sites at 21GD0095 and 21GD0204, respectively. Spring Creek Oneota lasts from AD 1300 – 1400 (Schirmer 2017). Thus, eventual radiocarbon dates from these sites would provide more statistically-defensible dates due to their immediate proximity to the calculated spatial mean(s) and common focal point of the cairns located at 21GD0054.

Furthermore, 21GD258 is contemporaneous with other regional sites, notably Vosburg (21FA0002) – a Blue Earth Oneota village in southern Minnesota; and Sheffield (21WA0013), an Oneota village along the Saint Croix River (cf. Fleming and Koncur 2014; Schirmer 2016). At the conclusion of regional social intercourse at the major villages in Red Wing along the Mississippi River ca. AD 1300, the regional locus of Oneota activity shifts downriver and is concentrated near La Crosse, Wisconsin until initial French contact, ca. AD 1650.

As Stanislawski (1973:376) notes, archaeological sites are particular cases of patterned behavior and singular sites are composed of areas or foci of different aspects of such behavior.

Immediately adjacent to 21GD0054 and 21GD0095 are recorded serpentine effigy mound sites at 21GD0037/21GD0038. Although destroyed, the serpentine mounds reportedly contained Oneota ceramics (personal communication, Ronald Schirmer, June 17<sup>th</sup>, 2015). Little to no excavation material is currently available from these sites (Arzigian and Stevenson 2003:383). Also, a thunderbird petroglyph site (21GD0187) is approximately 1.8 kilometers due west from the calculated spatial mean and western opening of the cairn-encircled valley. Both thunderbird and rattlesnake/serpent symbology are prevalent in Oneota/Siouan religious life (see subsequent chapters). The archaeological significance of this site cluster is further discussed in later chapters. The significance of spatial relationship and thunderbird symbology as it pertains cairn construction is further discussed in later chapters. Petroglyphs are found in all areas once occupied by Oneota peoples and a relationship between them and petroglyph sites found in the upper Mississippi basin has been posited (cf. Lothson 1976:39).

In retrospect, the Red Wing cairns are not placed in close proximity to water and therefore this seems to be an irrelevant placement factor. However, a natural spring is located precisely between 21GD0054 and 21GD0095 along Spring Creek, the main focal point of stone cairn construction (cf. Alexander et al. 2003). Springs obviously provide fresh water for domestic needs but according to Native people, springs are holy places since water directly from the earth is considered pure and therefore sacred (Westerman and White 2012:19). Therefore, it can be surmised that the spring location made the area surrounding both 21GD0054 and 21GD0095 one of both physical and metaphysical importance.

In sum, both viewshed and intervisibility analyses proved to be most useful in this investigation. Also, in conjunction with the aforementioned viewshed and intervisibility analyses, the bi-variate graphs provide a huge clue in this investigation. The most significant test



was % Cairns Visible vs. Viewshed Size. The densest sight community was constructed nearest the calculated spatial mean in close proximity to 21GD0095. Furthermore, the viewshed analysis shows that establishing a visual anchor with 21GD0054 was the prevailing factor in cairn site selection and placement. Establishing a common focal point and placing cairns in intervisible locations was of paramount concern rather than any specific topographical and/or morphological criteria (cf. Bernardini and Peeples 2015; Van Dyke et al. 2016). A very strong relationship between the hollow/bee-hive cairn sites and the Oneota tradition also emerges.

### **Stone Feature Taxonomy**

This stone feature taxonomy is a classification system strictly for the Red Wing area. It is based upon historical references and current field conditions. Since the cairn sites are completely disturbed it is very difficult to develop a complete taxonomy at this time. Therefore, this is an initial attempt to identify specific types of stone features within the locality and to clarify existing nomenclature. Further discussion pertaining to this topic is beyond the scope of this dissertation.

Developing a classification system strictly for Red Wing is a more manageable task due to decreased site variability. Across expansive areas, classification systems work better in the “aggregate” since anomalous features will be encountered (Squier and Davis 1998:41). The stone feature taxonomy presented here is fundamentally dependent upon three primary variables: 1) function/observed behavior; 2) architectural design; 3) materials; and 4) topographic placement.

Additionally, a surveyor should note the specific type and size of materials and other observable features/landmarks from each location. The external attributes of cairns are possible signifiers of social identity; and the style, material choice, size, and placement of cairns may provide significant interpretive potential for identifying socially meaningful patterns (Mathews 2008).

Stone cairns of Red Wing are generally thought to be funerary structures. Based on the lack of skeletal remains found during their original surveys, it is very unlikely they were used strictly for interment. However, as we incorporate cultural perspectives, one must not be limited by the Western notion that physical remains must be present in order for a monument to function as a burial place, or a dwelling place of spirits. From a Siouan perspective, cairns provide the means to orient a soul towards its spiritual resting place. Therefore, a cairn void of skeletal remains may still performs a death/spirit related function although no human remains are present. Therefore, a physically-empty structure may be deemed as equally sacred as one containing human skeletal remains (BLM 2005:118). Function(s) are difficult to assess without the aid of Native informants but noting the observed behavior/activity at the site is sufficient to distinguish specific types (personal communication, Sebastian C. LeBeau II, July 2<sup>nd</sup>, 2015). Based on the very strong Red Wing/Spring Oneota association with stone cairn construction, one must defer to Chiwere-Siouan descendants (Ioway, Oto, Missouriia and/or Ho-Chunk tribal authorities) for a final determination of function(s) and cultural name(s) (cf. Brace 2005:123). Note: A single site may have multiple functions.

Variability in stone feature construction was observed during the course of this study as well as in the Red Wing literature. Specific types of stone features can be gleaned from the historic literature alone. For instance, in 1947 friable limestone stacks were found at the base of

Mound 36 within the local Spates mound group at 21GD0022 (Arzigian and Stevenson 2003:382). These small stacks were placed at the base of Silvernale-era mounds presumably to ritually prepare the site (cf. Arzigian and Stevenson 2003:382). Thus, these features are assigned as Type 1: Burial Mound Stone Altar.

Another type: Cairn ID 2, initially presumed to be a hollow cairn but based on the fact it is a spatial and statistical outlier as compared with the rest of the cairn population, in addition to its form, size, and close proximity to a recorded burial mound most likely functioned as an offering site in relation to the mound (personal communication, Sebastian C. LeBeau II, n/d). Furthermore, according to Brower's (1903) archaeological chart of the Red Wing region, no hollow-type cairns were constructed east of Hay Creek. Thus, Cairn ID 2 is not of the characteristic Red Wing hollow cairn type and requires its own category: Type 2 – Cairn (general). In essence, the term “cairn” should be applied to features such as a conical stone pile.

The hollow/bee hive features are their own unique type as well. Based on historic accounts, the 13 hollow features recorded as “stone cairns” were primarily concentrated between Spring and Hay Creeks. Based on their dense concentration and small population size, variation in form and function is most likely limited or non-existent. Types 3 (Enclosed/Elliptical Dome with Two Wooden Staffs) and Type 4 (Hollow/Open-Topped Dome with Single Wooden Staff) exhibit a more complex exterior architecture and the monument was presumably built during a single event and most likely by a group of select individuals (see subsequent chapter). Furthermore, based on their observable spatial clustering around formation of a ring around the hilltop ridgelines between 21GD0095 and 21GD0258, the hollow cairns with a single cedar staff (Type 4) may have collectively functioned as physical territorial demarcators and/or delineated sacred space in the valley below (cf. Mallam 1975:131). Note: No Type 3 (double wooden staff)

features as documented by Sweney (cf. Brower 1903; Winchell 1911) were observed during current field investigations.

The dome-shaped “stone mounds” found throughout the area are generally composed of a stone/soil admixture, which is not unique to Red Wing (cf. Winchell 1911:143-166). Near Red Wing, a term "cairn" is synonymous with the unique hollow form but this term and “stone mound” are sometimes used interchangeably:

These [cairns], as well as those made partly of stone and partly of earth [stone mounds], are closely related in manner of distribution, as well as in their forms and sizes, with the common tumulus, and are referable to the same general agency and date, and probably to the same purpose. The observations of Dr. Sweney satisfactorily demonstrate that sepulture was their main intention (Winchell 1911:167).

Therefore, this taxonomy presented here locally defines stone mounds (Type 5) as a stone/soil admixture oftentimes with a classic dome-shaped architecture and are presumably burials, or possibly landmarks that accumulated over time. Most of them apparently contain stones of uniform size but this cannot be confirmed due to legal protection (MS 307.08). Its shape is predominantly circular/oval. Although the exterior appears simplistic, the rituals performed prior to their construction may have been quite complex. One should anticipate finding monuments made of a stone/soil admixture elsewhere due to its common exterior architecture and ubiquitous availability of construction materials.

Past and present ethnographic consultation has provided three additional types of stone features that are still observable and/or should be anticipated: Type 6 – Stone Burial; Type 7 – Stone Effigy; and Type 8 – Stone Ring. Stone burials should be anticipated since these mortuary features were sometimes lined with limestone (personal communication, Native Informant #1,

May 16<sup>th</sup>, 2014). Furthermore, as Blaine (1995:14) documents amongst Orr Focus Oneota people who once lived in the region near present-day La Crosse, Wisconsin, burials were “placed on ridges near villages above rivers and streams and were sometimes lined with stone slabs” with “no consistent directional orientation of the bodies as in later periods.” Interestingly, much like the aforementioned Type 4 hollow stone feature with the single wooden staff, there is evidence of Orr Oneota people using a red cedar staff in a ritual/spiritual/funerary context: “One burial was of an individual, perhaps of high social or ceremonial rank, in a seated position with a remnant of a cedar staff nearby” (ibid). Other stone features include include the Bow and Arrow effigy, which remains intact and observable to this day in the Red Wing region (see Figs. 2A-13 and 2A-14). Another stone feature used by local Native people are stone rings, which could have a utilitarian and/or spiritual purpose (personal communication, Curtis Campbell Sr., January 28<sup>th</sup>, 2008).

Thus, the following stone feature taxonomy for the Red Wing region is based on historical references, present field conditions, and input from other researchers (cf. e-mail correspondence, David Tovar, October 15<sup>th</sup>, 2016). The taxonomy includes both confirmed and anticipated forms:

**Type 1: Burial Mound Stone Altar** – A small cairn or stack of stone originally placed on level ground and covered with an earthen mound; e.g. a pile of friable limestone within Mound 36 at 21GD22 – Spates Mound Group (cf. Wilford’s 1947 excavations; Arzigian and Stevenson 2003:382). Function: according to Native consultation it is a prayer altar used to ritually prepare the site prior to mound construction. Placement: dependent upon earthen mound location.

**Type 2: Cairn (general)** – An agglomeration of stones, the sum of which forms a conical pile or heap when viewed laterally (email communication, David Tovar, October 15<sup>th</sup>, 2016). It may be large or relatively small, located by itself or keyed

to another feature. Function: landmark and/or offering site (e.g. Cairn ID 2 and a proximal burial mound). Placement: relatively-elevated locations in general.

**Type 3: Enclosed/Elliptical Dome with Two Wooden Staffs** – As documented by Sweney (cf. Brower 1903, Winchell 1911), this is an enclosed, hollow, strategically planned and placed stone feature centered around two “blue” or “swamp” oak staffs (*Quercus leucobalanus*). The wooden staffs stood upright and 6 feet apart in an east-west direction. This structure was made entirely of limestone. The ritual meaning associated with the staffs and the feature as a whole requires clarification from Chiwere-Siouan informants (i.e. Red Wing Oneota descendants). From a construction standpoint, the two staffs were used as foci for erecting the monument. No features of this type were found during recent field surveys and its inclusion in this taxonomy is based solely on the existing literature. General dimensions (presumably an oval-shaped cairn): upwards of 12 ft. in lengthwise direction; 6-8 ft. height. Function: prayer/ritual association. Placement: relatively-elevated location(s).

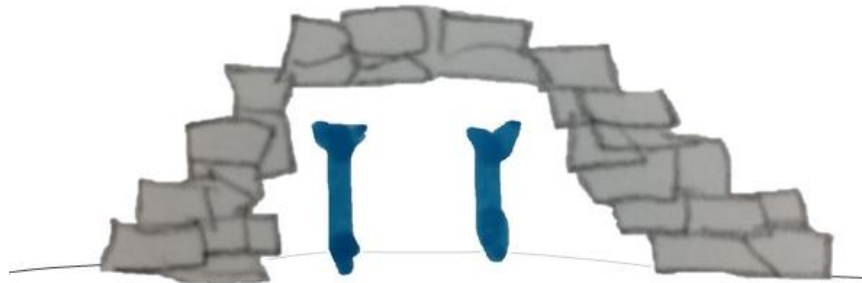


Fig. 4-12: Type 3 stone feature (profile sketch by the author)

**Type 4: Hollow/Open-Topped Dome with Single Wooden Staff** – Previously referenced as beehive or hollow “stone cairns” in the literature (cf. Brower 1903, Curtiss-Wedge 1909, Winchell 1911, Winchell and Upham 1888), or hekti – “lodge of time and space” by the local Dakota. Made entirely of limestone, this is a strategically planned and placed stone feature that was constructed around an in-place, upright Eastern Red Cedar (*Juniperus virginiana*) staff, which possesses spiritual significance amongst many Siouan peoples with roots in the Red Wing area. Further clarification of the structure from Chiwere-Siouan informants (i.e. Red Wing Oneota descendants) is necessary. Also, using the red cedar staff as a datum in X-Y-Z directions and starting at its base, the builders spiraled the stones in a clockwise fashion until the midpoint of its height and then spiraled stones in a counter-clockwise fashion until reaching its apex. No intact features of this type were found during field surveys. General dimensions: 8-10 ft. diameter; 6-8 ft.

height. Function: prayer/ritual association. Placement: relatively-elevated location(s).

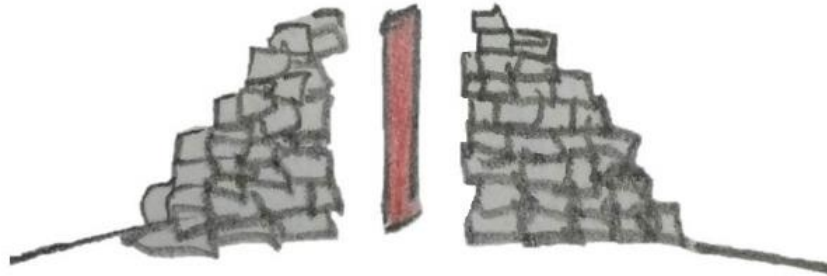


Fig. 4-13: Type 4 stone feature (profile sketch by the author)

**Type 5: Stone Mound** – Stone/soil admixture with classic dome-shaped exterior. Internally it may be composed of many elements. General dimensions: 2-3 meters diameter; up to 1 meter in height. Function: presumably mortuary or undetermined ritual association. Placement: in general, relatively-elevated locations.

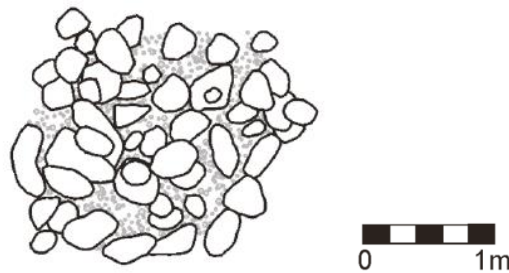


Fig. 4-14: Plan view of Red Wing stone/soil mound.

Original graphic from Mathews (2008).

**Type 6: Stone Burial** – oblong, body-sized feature covered or lined with stones (cf. Arzigian and Stevenson 2003:139). Features of this type were not encountered during Red Wing field survey but possibly exist in the landscape. Limestone was sometimes used to line the perimeter of a burial (personal communication, Native Informant #1, May 16<sup>th</sup>, 2014). Function: Mortuary. Placement: varies.

**Type 7: Stone Effigy** – a stone feature constructed in a culturally recognizable form; e.g. “Wahkeipe Kagapi” or Arrowmaker near Hager City, Wisconsin (cf. Campbell 2000). From a local Dakota perspective, effigies are built in order to preserve cultural ideals and philosophies (personal communication, Curtis Campbell Sr., September 15, 2007). Function: pedagogical, spiritual and/or social unification. Placement: culturally-determined location(s).

**Type 8: Stone Ring (general)** – A stone ring may be built for various purposes and vary in size (e.g. vision quest location, lodge circle, fire pit). Locally, stone rings are called “ohomni” by the Dakota. Specifically, a sweatlodge would be placed in the center of a stone ring for doctoring purposes (personal communication, Curtis Campbell Sr., January 28<sup>th</sup>, 2008). Function: varies. Placement: varies.

## **Conclusion**

Because the entire cairn population is only 14 recorded sites, this limits the amount of applicable statistical tests to be performed. Bi-variate analyses proved sufficient for this initial study. Locations of hollow stone features (Types 4 and 5) mapped in this study are consistent with the “stone cairns” previously mapped by Brower (1903). Future surveys may confirm the location of other unrecorded sites. GIS techniques such as the DEM subtraction method in Appendix II may be used to remotely identify potential sites.

Spatial/statistical clustering was graphically identifiable after initially generating an intervisibility matrix, calculating the percentage of total cairns visible from each site, and then conducting a simple bi-variate test to compare the aforementioned percentages with respective viewshed sizes. Also, identifying areas of common intersect amongst all respective viewshed rasters produced dramatic results by merely excluding a spatial and statistical outlier (i.e. Cairn ID 2). As a whole, results from the quantitative analysis alone are quite striking: 1) the highest percentage of cairn intervisibility is nearest the cairn spatial mean for the entire population; 2)



cairn sites with the highest intervisibility percentages also have the smallest viewshed sizes, which firmly suggest this was the heart of social activity; 3) lines of sight from all hollow cairn sites (Type 4) converge at 21GD0054, a Silvernale/Oneota burial mound complex; 4) and the unweighted spatial mean for the entire hollow cairn population is located closest to 21GD0095, a Red Wing Oneota village, which necessitates further study of this habitation site. Note: generally speaking, cairn construction activity in relatively elevated areas is of a distinctly different character and in stark contrast to domestic activities within the immediately adjacent valleys (cf. Carr et al. 2005:158).

Upon closer examination, it has been shown the cairn builders were participating in one specific archaeological tradition, i.e. Spring Creek Oneota (cf. Schirmer 2016). According to all presently available evidence, the Red Wing hollow type (Type 4) are unique architectural forms and concentrated in a relatively small area long the Spring Creek valley. Stone mounds have been found in many areas and are not unique to Red Wing. Also, the Red Wing cairns were not being used for primary burial, which is unlike other Oneota sites in Minnesota during the late pre-contact period (see Appendix I and Chapter 5). The Red Wing hollow cairns were built using an architectural template in conjunction with placement upon relatively elevated locations within view of other cairn sites.

Furthermore, it is highly probable that the stone cairns of Red Wing were built during a single construction episode. Spatial uniformity in architectural style, small population size, and spatial clustering adequately suggest a cohesive group united through shared traditions, bloodlines, and spiritual beliefs were responsible (cf. Rosebrough 2010:327-328). This was undoubtedly an organized, communal effort. Also, the valley where the cairns are concentrated may have been recognized as a significant place prior to monument construction. The stone

cairns are principal components of a larger cultural landscape – a canvas upon which these peoples enmeshed meaningfulness through the use of symbols and rituals.

As stated, the stone cairns are strongly associated with the Oneota archaeological tradition and, in particular, the Spring Creek Oneota. Stanislawski (1973) iterates the importance of viewing archaeological sites as foci and/or possible evidence of patterned social behavior across larger areas. Immediately north of 21GD0095 and east of 21GD0054, both confirmed Oneota sites along Spring Creek, are serpentine effigy mounds with Oneota ceramics at 21GD0037/21GD0038; a natural spring is located immediately between 21GD0095 and 21GD0054 along Spring Creek; and sacred markings/petroglyphs at 21GD0187. Furthermore, Lothson (1976:39) posits a possible relationship between “the occurrence of petroglyphs and the distribution of the Oneota culture in the Upper Mississippi basin.” Notably, the thunderbird petroglyphs are etched along a limestone face 1.8 kilometers due west from the calculated spatial mean of cairn activity at 21GD0187. Admittedly, it is difficult to date features such as petroglyphs. However, as a whole, the significance of these spatial associations as well as symbolic meanings from Oneota/Siouan perspective(s) are discussed in later chapters as well as in relation to the construction of hollow/beehive stone features (Types 4 and 5) near Red Wing.

Statistical tests show neither cairn volume nor highest relative elevation are important factors in Red Wing cairn construction. Rather, the most important placement factor was the establishment of an intervisible community of stone features with a common focal point or “visual anchor” at 21GD0054 (cf. Bernardini and Peoples 2015; Van Dyke et al. 2016). Furthermore, the Red Wing cairns were meant *to be seen* by villagers, and from the vantage point of the cairns an individual was reciprocally able *to see* the village(s), other cairn sites, and

21GD0054 (ibid). Thus, the stone cairns are principal components of a larger cultural landscape connected together through line-of-sight bonds.

Thus, the geostatistical results firmly suggest those dwelling at 21GD0095, a Red Wing Oneota village along Spring Creek, were primary participants in Red Wing cairn construction. Eventual radiocarbon results from this site would confirm if it is also a rare single-component village and contemporaneous with radiocarbon dates from 21GD0258, which are currently used as a proxy date for hollow stone feature construction circa AD 1350 – 1400.

Since the Red Wing cairns are clustered amongst a number of known Oneota sites, which lends credence to Brower's (1903) opinion that the Ioway Indians or a closely-related group were responsible. GIS analyses are able to identify spatial and line-of-sight relationships between locations, and ethnographies are able to help elucidate their meanings (Van Dyke et al. 2016:206). At this stage, the Chiwere Siouan peoples we recognize today become the main ethnographic focus (i.e. Ioway, Oto, Ho-Chunk, Missouriia) but local oral tradition also offers culturally relevant information for the purposes of elucidating ritual behavior amongst pre-contact Siouan peoples (cf. Campbell 2000).

In sum, given the combined results of the geospatial analysis and present archaeological evidence, the Red Wing stone cairns were built by Oneota people living along Spring Creek in between AD 1300 – 1400. The fate of the cairn builders themselves and Oneota people near Red Wing requires further investigation.

## **Chapter 5: Red Wing Cairn Construction in Regional and Anthropological Context**

### **Introduction**

Based on evidence presented in the previous chapter and an initial stone feature taxonomy, the Red Wing stone cairns (i.e. Type 4: hollow) were built by Oneota people along Spring Creek ca. AD 1300 – 1400. This assertion is based on strong geostatistical associations between the cairn locations and recorded Red Wing Oneota sites (i.e. 21GD0054, 21GD0095) plus initial radiocarbon results from a single-component Oneota village immediately outside the observed stone cairn cluster (i.e. 21GD0258; see Table 5-1). Why or how the Red Wing cairn phenomena manifested requires a fuller regional understanding of the time and place in which the stone cairns were constructed. There is extensive literature on Oneota origins, peoples, and activities that is well beyond the scope of this dissertation. Instead, this chapter situates cairn construction in Red Wing ca. AD 1300 – 1400 based on archaeological evidence, anthropological/linguistic analysis, and Siouan accounts of events during the pre-contact era.

At this time the Red Wing cairn phenomena appears to be unique both in form and function even though the Oneota dwelled across the upper Midwest for many centuries and used stone in various ritual contexts. These contexts are briefly discussed as well as in Appendix I. The underlying assumption presented here is the construction of monuments and/or earthworks by a sodality requires the negotiation and acceptance of established rules; e.g. power roles within the larger community, resources and territory, and maintenance of existing social bonds (cf. Betts 2010; Mallam 1975; Rosebrough 2010). Thus, the social context of Red Wing cairn construction is of paramount interest as well as the symbolism employed in Oneota domestic and religious life within the vicinity of the stone cairns.

The Oneota tradition includes multiple descendant groups. Specifically, Chiwere-Siouan tribes are the descendants of the Red Wing Oneota tradition, i.e. Ho-Chunk, Ioway, Oto and Missouri (Dobbs 1996). Chiwere-Siouan oral traditions pertaining to social and religious activities during the pre-contact era are presented later in this chapter. Furthermore, site-based approaches in specific locales can successfully merge oral history and archaeology (Robertson 2009:158). Thus, applicable elements of local Khemnican Dakota oral history specific to Red Wing/Prairie Island are also considered (cf. Campbell 2000). As a whole, this discussion segues into a deeper ethnographic interpretation of Red Wing cairn sites/components in Chapter 6.

**Oneota Life in the Upper Mississippi valley, ca. AD 1400**

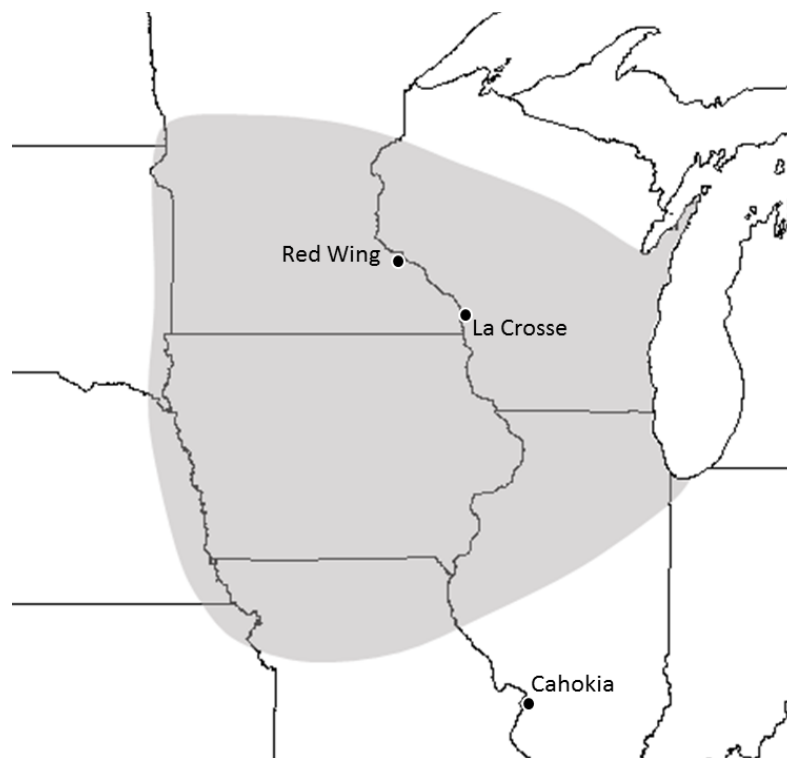


Fig. 5-1: Approximate geographical range of the Oneota tradition.  
See Gibbon and Anfinson (2008).

Expansive literature on the Oneota currently exists (cf. Benn 1989, 1995; Boszhardt 1998; Dobbs 1984; Dobbs and Schirmer 2003; Gibbon 1972; Gibbon 1982; Green 1995; Henning 1995; Wilford and Brink 1974). In the Upper Mississippi River valley, Oneota sites are concentrated in two localities: 1) from Lake Pepin/Red Wing upstream to the confluence of the St. Croix River, and 2) near La Crosse, Wisconsin and the Root River/Upper Iowa River drainage (Orr Oneota). Oneota sites are also concentrated along the Blue Earth River in southern Minnesota (Blue Earth Oneota). The Oneota were semi-sedentary people who grew various plants such as maize, squash, tobacco, hunted bison and other game, fished and also gathered a plethora of wild plants. They were well-adapted at utilizing both woodland and prairie environments. Regional Oneota variants include the following (cf. Dobbs 1996; Schirmer 2017; Staeck 1994:645; Wilford 1955:138-142):

Silvernale phase; AD 1150 – 1250

Red Wing Oneota; AD 1150 – 1400

Blue Earth Oneota; AD 1200 – 1450

Orr Oneota; AD 1200 – 1650

The Silvernale phase in Red Wing is mostly interpreted as a focus of trade and interaction with Mississippian influence but possessed its own distinctive character (Dobbs 1984:214; cf. Fleming 2009). Regionally, Blue Earth and Orr Oneota groups also emerge as distinct entities by the twelfth or thirteenth centuries (Dobbs 1984:219). Blue Earth Oneota initially developed in southern Minnesota and their materials are clearly present in the Red Wing region, which are contemporaneous with the Silvernale phase (Gibbon 2012:169).

During the Silvernale/Red Wing Oneota phase from AD 1000 to 1250/1300, Red Wing was a thriving, seasonal aggregation center for peoples from all directions. Social intercourse included marriages and funerals, negotiations and settlement of disputes, and communal

religious ceremonies (Fleming 2009:224). However, around AD 1300 the major Silvernale/Oneota villages along the Mississippi River in the Red Wing region are abandoned and subsequently regional Oneota peoples congregate *en masse* near La Crosse, Wisconsin until initial European contact ca. AD 1650.

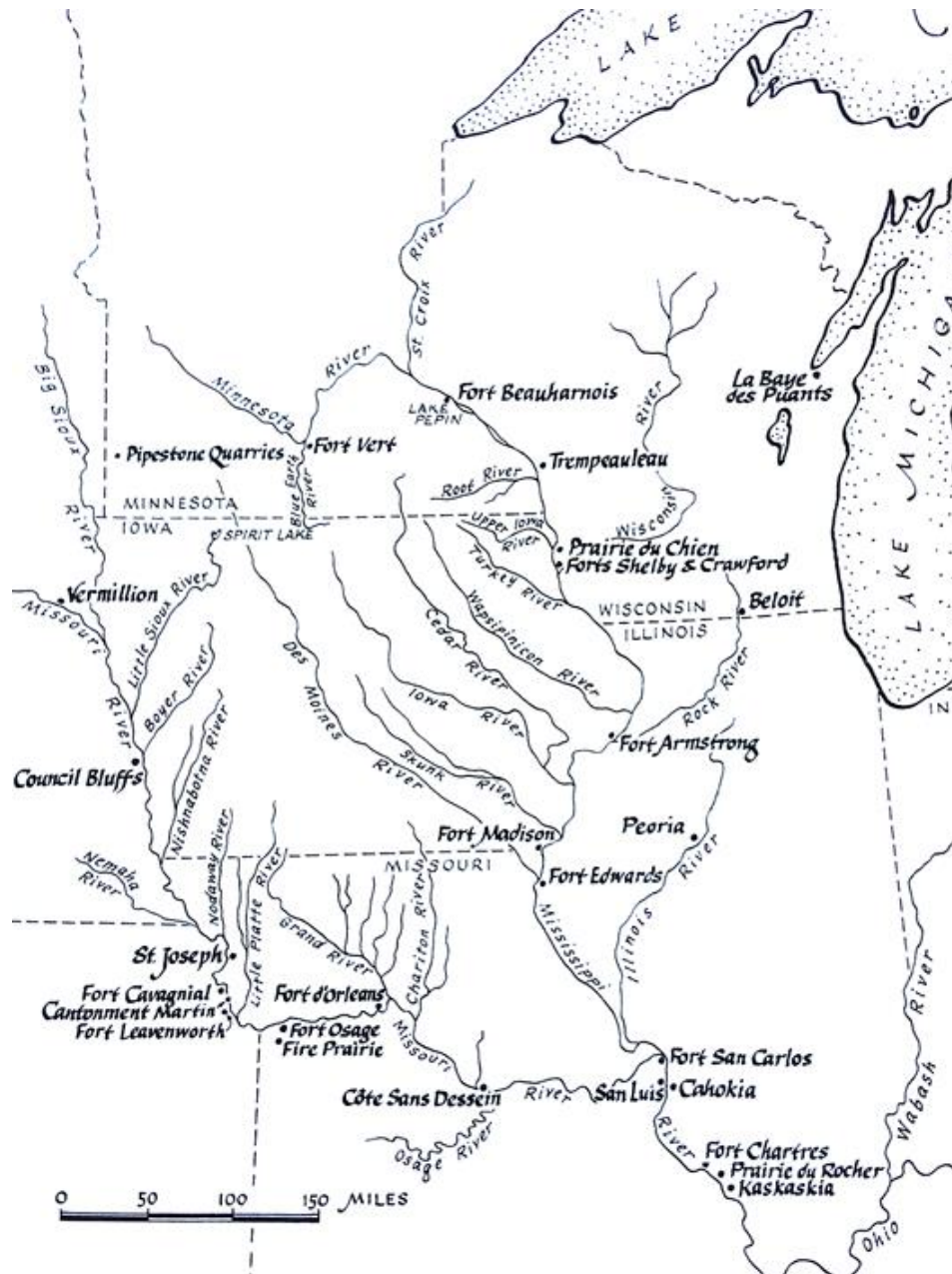


Fig. 5-2: Oneota/Chiwere-Siouan homelands and historic placenames (Blaine 1995:2)

As Dobbs (1984:192) states, population density and distribution are determined in large degree by the availability of natural resources. Other influencing factors include trade, political organization, and religion. Warfare or social strife is another major determinant in areas where groups possess a strong sense of territory and develop buffer zones (ibid). After the abandonment of its major villages along the Mississippi River channel around AD 1300, the Red Wing region has little more than transient occupation until the Santee Dakota become the primary inhabitants of the region in the seventeenth century (Gibbon and Dobbs 1991).

Comparatively, the Medieval Climatic Anomaly (MCA) was contemporaneous with the Silvernale phase and is recorded as a period of warmth and moisture, which boosted agricultural and gathering economies across the globe. In the Upper Mississippi valley, this period of social proliferation lasts until the dawn of the Little Ice Age (LIA), which commences ca. AD 1300. Foster (2012:118) documents dramatic, negative effects of the LIA were felt across the globe and particularly in North America. Across the American South during the 13<sup>th</sup> – 15<sup>th</sup> centuries, the Little Ice Age negatively impacted economies due to a shortage of agrarian resources which caused subsequent conflict and social strife.

In general, at this time peoples broke away from their larger parent civilizations in order to protect available resources and ensure group survival by living in smaller groups or moving to adjacent areas with decreased environmental and social stress. The pervasive insecurity brought about by economic stress during the Little Ice Age was especially strong amongst the Mississippian populations, particularly at Cahokia, and ushered in a level of violence not seen previously (ibid). Social distress stemming from Cahokia would also negatively impact Middle-Mississippian communities upriver towards Red Wing. Cahokian influence had waned completely by AD 1400 (Dobbs 1984:216).



Penman (1988) also attributes the abandonment of the major villages and southward movement of Oneota peoples from Red Wing/Lake Pepin to the La Crosse area to neo-boreal climatic deterioration, i.e. LIA. Oneota villages near Red Wing/Lake Pepin date from AD 1010 to 1440; and near La Crosse, dates range from AD 1030 to 1520. The Little Ice Age had a negative impact on maize production in the northern portion of the Mississippi River basin beginning around AD 1300. Agriculture in the La Crosse area was also negatively affected by the LIA and collapsed ca. AD 1550. Regionally, climatic conditions did not stabilize until after AD 1750 at which time maize production could properly resume. It is also possible that arable land was in demand due to rapid population growth stemming from increased maize production and led to conflict or group displacement but this remains conjecture (Dobbs 1984:215).

Additionally, a major behavioral shift is observed when comparing earlier Red Wing Oneota villages with La Crosse Oneota villages of the proto-historic era: 1) unlike Red Wing, major mound groups are not constructed adjacent to villages in La Crosse (Penman and Sullivan 1995:130); and 2) unlike Red Wing, La Crosse villagers begin building palisades (personal communication, Ronald C. Schirmer, January 12<sup>th</sup>, 2017). The absence of adjacent mound groups is particularly strange because burials are characteristically found adjacent to Oneota habitation areas because living peoples maintained a very close relationship their deceased ancestors (Alex 2010:206; Foster 1996). Thus, this strongly suggests a period of contention and their primary concern was the protection of available resources and peoples. This defensive behavioral shift is also contemporaneous with stone cairn construction in Red Wing in between AD 1300 – 1400.

Moreover, approximately around this time a larger fundamental shift in monument style is observed across the entire region. Breaking away from a long-held tradition such as mound

building would require a “momentous event”, or possibly a series of them (Parker Pearson 1999:17). Dobbs (1996) summarizes this behavioral shift and its probable causes thusly:

The character and pace of the construction of earthworks and mounds may change markedly after ca. 800 years ago. Non-mound earthworks seem to become more common and the pace of mound construction seems to slow. In fact, while some mounds were re-used for additional interments (cf. Anfinson 1984:27), relatively little new mound construction actually took place in the Midwest after perhaps 500 years ago. The reasons for these changes remain obscure, but are most probably linked to the cultural and climatic changes that dominated the Minnesota landscape between roughly A.D. 1400 and 1650.

Based on the observed archaeological evidence, around AD 1250 Oneota people living at the Bartron site on Prairie Island abandoned the main Mississippi River channel and moved subsequently upstream into the Spring Creek valley. Interestingly, Bartron Oneota people (AD 1150 – 1300) dwelled contemporaneously and/or sequentially at both 21GD159 and 21GD258 sites during the mid to late fourteenth century.

Site	Feature	Depth	Quarter	Species	Pottery Phase	Int. Date
21BE68	2	?	all	Zea mays	Blue Earth	1355
21FA02	1	50-55	NW	Zea mays	Blue Earth	1350
21FA02	5	65-70	NW	Zea mays	Blue Earth	1355
21FA02	66	48-58	?	Zea mays	Blue Earth	1410
21GD03	2	30-40	?	Zea mays	Link	1220
21GD03	2	70-80	NW	Zea mays	Link	1250
21GD03	5	130-135	SW	Zea mays	Bartron	1280
21GD03	21	55	Sec 6	Zea mays	Bartron	1280
21GD03	22	65-70	NW	Zea mays	Silvernale	1250
21GD03	23	50-55	NE	Zea mays	Bartron	1165
21GD04	337	L2	SE	Zea mays	Bartron	1265
21GD04	401	all	all	Zea mays	Bartron	1250
21GD159	3	30-35	SW	Zea mays	Bartron	1305
21GD159	6	Zone B	NE	Zea mays	Bartron	1340
21GD258	2	35-40	SE	Zea mays	Bartron	1415
21GD258	4	50-55	SW	Zea mays	Bartron	1400

Table 5-1: Synthesized radiocarbon results from across southern Minnesota (Schirmer 2016).  
See also Beta Analytic Incorporated (2015).

This movement away from the Bartron site and into the Spring Creek valley suggests a purposeful cultural separation or fission. Also, Oneota sites tend to be multi-component (Dobbs 1982:100). Therefore, the single-component/occupation Oneota habitation at 21GD258 is anomalous and it is very possible a direct correlation exists between Red Wing hollow cairn construction and this village based upon its brief occupation as well as its proximal location. Furthermore, if the cairns were constructed during a single-component/occupation this would help explain why they have remained so enigmatic since any direct knowledge of them would be limited to the specific time, place, and those responsible for building them.

Oneota activity continued to thrive along the Blue Earth River and elsewhere until ca. AD 1450, and also near La Crosse until ca. AD 1650 and initial European contact. Notably, all regions except Red Wing have Oneota expressions after AD 1400 (email correspondence, Edward P. Fleming, June 9<sup>th</sup>, 2015). Like the Spring Creek Oneota sites associated with the Red Wing stone cairns, later Orr phase sites in southeastern Minnesota/northeastern Iowa are generally secluded and placed away from the main Mississippi channel. This is presumably for defensive purposes (cf. Alex 2010:206).

According to Schirmer (2016), recent ceramic and radiocarbon results support the creation of a new archaeological taxon in Red Wing coined Spring Creek Oneota phase (AD 1300 – 1400). The general Oneota occupation sequence in Red Wing is Bryan and Silvernale (ca. AD 1200 – 1250/1300), 21GD159 (ca. AD 1300 – 1350), and finally 21GD258 (ca. AD 1350 – 1400). Notably, the late Red Wing/Spring Creek Oneota villages proximally associated with stone cairns construction are contemporaneous with Oneota villages along the Blue Earth River in southern Minnesota and near La Crosse, Wisconsin (see Table DD).

To conclude, the advent of the Little Ice Age most likely had great influence on the Red Wing region and along the Upper Mississippi River channel. Therefore, people would live and function elsewhere instead of congregating *en masse* as in the past. Elsewhere during the Little Ice Age, peoples at Chaco Canyon constructed stone circles up to three feet in height as a means of line-of-sight communication that served a socially integrating function (Foster 2012:67). Furthermore, at nearby Casa Grandes, the same stone circles unified the larger area into a more cohesive political entity during a time of regional strife (Foster 2012:70). The stone cairns of Red Wing may be direct evidence of the same types of behavior and in all likelihood worsening social and/or environmental conditions provided a major catalyst for Red Wing stone cairn construction. If the effects of the Little Ice Age were directly felt in Red Wing, the lessened amount of available resources in the Red Wing region would limit the number of groups it could support simultaneously. Those people living in the area would protect their resource supply from internal threats or those entering the region from afar, e.g. Mississippians coming north during/after the fall of Cahokia.

### **Oneota and Stone Ritual**

Oneota sites are easily identified by their material culture and settlement patterns. However, in spite of their wide geographical distribution, loose stone constructions of specific morphological type appear to be single events at Oneota sites which is rather puzzling (e-mail correspondence, David Tovar, September 21<sup>nd</sup>, 2016). To further complicate this issue, variability in stone feature form and function are observed in Red Wing and at other locations with confirmed Oneota components. Detailed information pertaining to various cairn types, stone

use, and burial contexts from multiple localities is provided in Appendix I/Chapter 2 Supplement.

Near La Crosse, Wisconsin, stone was a principal component in Orr Oneota burials but nothing architecturally resembles the Red Wing stone cairns. Orr phase burials were often lined with stone slabs and placed on ridges near villages above rivers and streams. The use of rock slabs in burial is a characteristic trait of the Orr Focus in Minnesota (Arzigian and Stevenson 2003:111). It was common practice to place rock slabs over, alongside, or under skeletons (Wilford and Brink 1974:59). In later periods there is a consistent directional orientation of the body with the head generally towards the west (cf. Wilford and Brinks 1974:28). Like the Red Wing cairn phenomena, an Orr phase individual was interred along the Upper Iowa River in a seated position but notably with a remnant of a red cedar staff (Blaine 1995:14). Red cedar staffs are principal components in the Red Wing hollow cairns. In Siouan religion, red cedar (*Juniperus virginiana*) is considered a protection item (personal communication, Native Informant #1, March 27, 2014). Cedar is also used to spiritually purify and attract good spirits/energy (Rundle and Rundle 2008). The color red is a sign of life or spiritual vitality in Ioway belief (Blaine 1995:186).

The aforementioned grave is reminiscent of a folded/seated burial in Allamakee County, Iowa (see Fig. 5-3). The burial of the dead in a folded or seated position is known to have been a common practice of the Ho-Chunk/Winnebago as well as other Indian tribes, who also followed other methods of internment (West 1907:189). According to the Ho-Chunk, chiefs were often buried in stone vaults (Radin 1990:55). Chambers or vaults are apparently used for burial in all cases. Lewis Henry Morgan observed Ioway mortuary practices at Nemaha Agency ca. 1860

which were either hollowed-out graves or burial cairns with associated grave goods (Blaine 1995:256). Morgan also observed an upright, wooden grave post near the grave that had been painted vermillion.

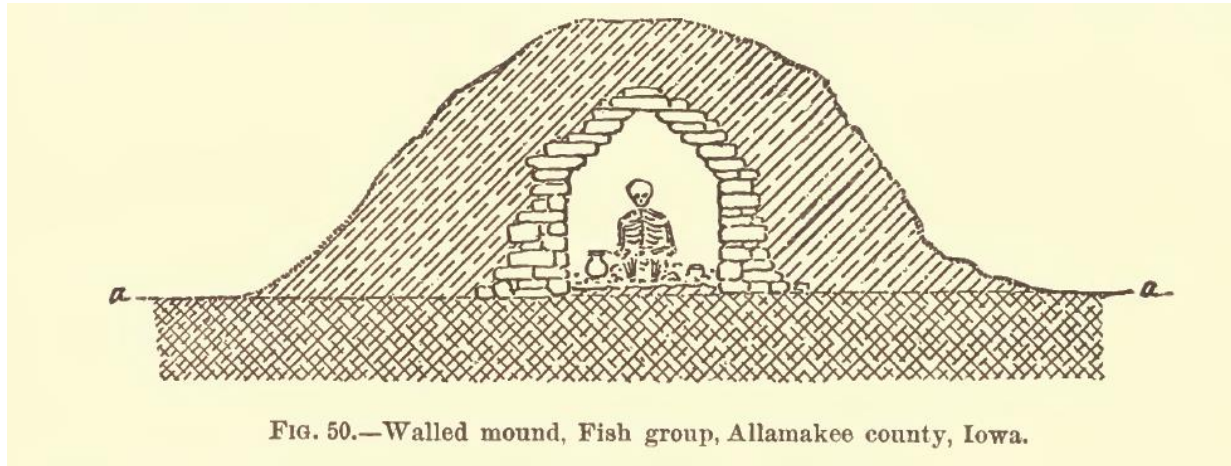


Fig. 5-3: Burial mound cross-section with stone vault (Thomas 1894:107)

Outside of the hollow cairn phenomena in Red Wing, stone is primarily used locally in burial contexts, in effigy construction, or to line burial pits (cf. Wilford 1952). However, at Gladly Mound in Fillmore County in southeastern Minnesota, groups of limestone slabs with no human remains were found (Arzigian and Stevenson 2003:164). This is also similar to the Red Wing phenomena.

Within Mound 12 at the Sheffield Mounds site (21WA13) along the St. Croix River, Wilford found a group of bundle/secondary burials within the original mound, a thick deposit of red ochre at its base, and a rock cairn composed of granite and sandstone in the northeast corner associated with the Late Woodland tradition (Arzigian and Stevenson 2003:517; Wilford 1961). Multiple episodes of internment were also observed (Arzigian and Stevenson 2003:518).

Excavations uncovered an earlier Woodland component with Kathio ceramics that are associated with ancestral Dakota, ca AD 800 to 1200; as well as Blue Earth Oneota ceramics at the Sheffield village that was occupied ca. AD 1300 (Arzigian and Stevenson 2003:517). According to recent radiocarbon results, Oneota occupation at Sheffield lasted into the early 15<sup>th</sup> century (Fleming and Koncur 2014; cf. Schirmer 2016). Dakota people also used stone slabs for burial cist construction, which have been identified in Houston, Goodhue, and Ramsey counties. This is typical in regions where stone is abundant and timber is scarce (Winchell 1911:405).

At Hogback (21HU0001) in southeastern Minnesota, an Orr phase Oneota burial site directly linked with the Ioway, both pipestone/catlinite and red ochre were present. Red ochre is common in burials throughout Minnesota (Arzigian and Stevenson 2003:121). Its use is included in Paleoindian, Archaic, Woodland, Mississippian, Plains Village, Historic Ojibwe, and Historic Dakota burials (Arzigian and Stevenson 2003:75). In specific instances, red ochre use in log tombs as well as including lumps of lead ore and hammer sheet copper are contemporaneous with the Hopewellian period in Minnesota (Arzigian and Stevenson 2003:85). This phenomenon was observed at Indian Mounds Park (21RA0010). Log tombs were historically used by the Otoe and Missouri, members of the Chiwere-Siouan family and close relatives of the Ioway and Ho-Chunk:

H.C. Yarrow has reported the observations of Dr. Boteler as to the burial methods of the Otoe, on a reservation in Gage County, Nebraska, where the body was buried in a vault shaped like an inverted funnel, the top of which was covered with stout logs for protection. The Missouri buried in the same way. These tribes were of Dakota stock, and formerly of a more northern habitat, the Otoe having once occupied southern Minnesota. They were offshoots from the Winnebago. (Winchell 1911:513)

In sum, the use of stone is commonplace in Oneota burials and various forms of cairns were built by descendant groups. However, the Red Wing hollow form is architecturally unique and not used for physical burial, which is perplexing. As a next step, new insight on the inherent symbolism within the cairns or expressed by its architectural form is sought. In order to do so, an analysis of Oneota symbology in both daily and ritual life is required. Also, employing ethnographic information is an excellent way to interpret sites (Stanley 2004:37-38). Therefore, due to its immediate proximity to the observed cairn cluster, symbologies expressed by villagers at 21GD258 are briefly discussed in the light of Oneota/pan-Siouan village life and culture ca. AD 1400 (cf. Staeck 1994).

### **Oneota Symbology and the Red Wing Stone Cairns**

An analysis of Oneota symbology and associated cultural meanings plus the religious perspectives of Oneota-descendant/Siouan peoples are absolutely vital in order to elucidate the Red Wing stone cairns, their ritual components, and surrounding landscape ca. AD 1300 – 1400. Up to ca. AD 1500, Proto-Chiwere-Winnebago peoples (i.e. Ho-Chunk, Ioway, Oto, and Missouriia) were part of the same pan-Siouan family (cf. Springer and Witkowski 1982; Staeck 1994:649). Thus, Staeck's (1994) interpretive analysis of archaeological village sites using Ho-Chunk oral tradition is applied to the interpretation of Oneota/pan-Siouan village life and symbology at 21GD258. Ethnographic insight from Ioway, Oto, and Missouriia peoples (if available) is also applicable because cultural diffusion was commonplace during the pre-contact era and especially amongst close relatives (cf. Springer and Witkowski 1982:78).



Blaine (1995:7) states that village communities sharing similar material traits and cultural behavior probably shared the same religious beliefs. Oneota descendants used many of the same symbols over a large diaspora. Henning (1993:254) found religious traditions, venerated deities and histories were shared amongst Dhegiha-Oneota descendants living in separate regions. This further suggests Siouan peoples not only shared a common ancestry but also a common worldview and cosmological outlook, which is indeed the case (cf. Campbell 2000; Denig 2000; Foster 1996; Goodtracks 2009; Lowie 1910; Radin 1990; Skinner 1920).

Sullivan (1982:225-226) emphasizes that religious worldviews possess the greatest interpretive value for understanding indigenous peoples because each is embraced by the whole of its society. All descendant tribes of Red Wing have roots in the same pre-contact, pan-Siouan belief system known as the Medicine Dance (cf. Campbell 2000; Skinner 1920; Radin 1991; Wallis 1947). Furthermore, Skinner (1920:11) specifically states the Wahpeton Dakota, Ioway, Ho-Chunk and Oto all practiced the Dakotan version of the Medicine Dance. Thus, descendants from the aforementioned groups provide a useful resource to culturally interpret Oneota symbology as well as cairn components, location, etc. Locally, Above and Below World symbology would be a hallmark of the Medicine Dance/Lodge religious practice of pre-contact Siouan peoples in Red Wing (cf. Campbell 2000).

Observed on ceramics from 21GD0258, chevron motifs are symbolically linked with the tail of the thunderbird (Holley 2005). Oneota symbology often incorporates raptor or thunderbird images (Arzigian and Stevenson 2003:110). Furthermore, as mentioned in Chapter 4, a thunderbird petroglyphs site (21GD0187) is located 1.8 kilometers due west of the geostatistical center of cairn activity in Red Wing. Lothson (1976:39) posits a connection between the occurrence of petroglyphs and the distribution of Oneota people in the Upper Mississippi basin.

It is unknown if the thunderbird petroglyphs at 21GD0187 are temporally associated with cairn construction, or if Oneota people made them, but proxy dating of petroglyphs and cultural associations with specific cultural groups has been successfully attempted elsewhere (cf. Wagner et al. 2004:42-43). Nevertheless, the westerly position of 21GD0187 in relation to the geostatistical center is noteworthy for multiple reasons: (1) the affinity of Oneota peoples with Thunderbird deities; (2) the Thunderbird is considered an ally to the Creator by Siouan peoples who dwells in the western skyworld (Foster 1996; Radin 1990); and (3) Siouan peoples believe sacred markings evoke the spiritual powers pertaining to the carved form (BLM 2005:114).

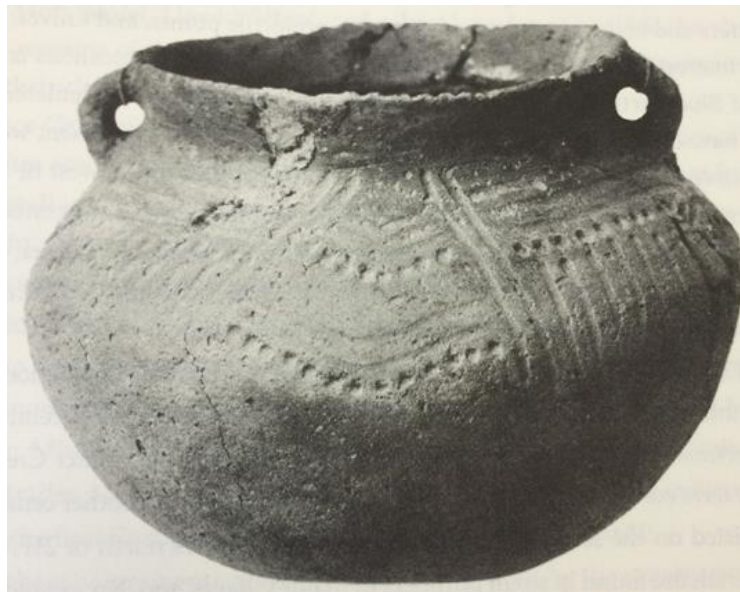


Fig. 5-4: Blue Earth Oneota vessel with thunderbird tail/chevron symbology.  
See also Gibbon (2012:169) and Winchell (1911:743).

Furthermore, Benn (1989) has argued falcon/raptor symbolism was the unifying social identity of the Oneota cultural tradition. In support of this claim and based on Ho-Chunk oral traditions, Staeck (1994) asserts that pan-Siouan peoples were hierarchically organized around an emerging elite trained or blessed by Thunderer spirits. During this time an increased emphasis was placed on the rights and privileges of women meanwhile they transitioned away from an

egalitarian society towards a highly stratified, centralized chiefdom and new ethnic identity. Staeck further argues this was in response to increased population levels and competition for resources, i.e. they organized themselves under a recognized authority in order to ensure the survival of the group.

There are three stratified classes in Ioway society: chiefs, spiritual medicine people/nobility, and commoners (cf. Blaine 1995:106; Rundle and Rundle 2008). Oto society was stratified in the same manner as the Ioway (cf. Blaine 1995:105; Dobbs 1984:194). Amongst the Ioway, ritual leaders/medicine people comprised the highest social class outside of chiefs (Blaine 1995:105; Rundle and Rundle 2008). Oto chiefs had special obligations did not possess absolute authority over the entire group (Dobbs 1984:195).

Furthermore, each clan had four leaders and commoners were able to rise in rank/social status. Amongst the Oto, the most important social unit was the family but a hierarchical distinction was made between families according to their status (Dobbs 1984:184). Amongst the historic Ho-Chunk, the Thunderbird clan were referred to as “chiefs” and from their ranks the village chief was selected. It was his duty to always be benevolent, brave, conscientious towards social needs, and to ward off all evils (Radin 1990:272). It seems most probable that the construction of the Red Wing stone cairns was organized and overseen by a select, high-ranking group of ritual leaders closely allied with one or more local chiefs.

Oneota societies were managed by important clan, civil and/or ritual leaders (Alex 2010:207). Moreover, both the Thunderbird and Water Spirit clans may have possessed increased social, political and economic influence over the emerging proto-Ho-Chunk/Winnebago populations (Staeck 1994:630-632). At 21GD258, both Thunderer and Water Spirit symbology are observed on ceramic vessels but from separate areas of the village, i.e.

northern vs. southern portions of the site, respectively. This is most likely evidence of separate moieties (i.e. Thunderbird clan and Water Spirit clans, respectively) living in close proximity (email correspondence, Ronald C. Schirmer, November 17th, 2016).

As described in Chapter 3, the Link vessel from the Bryan Site (21GD04), a local and major Silvernale/Red Wing Oneota-era village, combines both Thunderbird and Water Spirit symbology (personal communication, Curtis Campbell Sr., April 5<sup>th</sup>, 2008). Ritual elements of the Medicine Dance included stone, sacred medicinal plants, and at times the position of stars (personal communication, Curtis Campbell Sr., July 12<sup>th</sup>, 2007). Specific stones with recognized medicinal power were also at times brought into these ceremonies (personal communication, Curtis Campbell Sr., October 6<sup>th</sup>, 2007).

Within a specific village, its layout is strongly influenced by the nature of family and kinship organization (Dobbs 1984:192). After including oral tradition and ethnographic information, one observes that clans were positioned within Ho-Chunk/Winnebago villages according to established social rules and the cosmos. Oftentimes Native peoples reproduce the cosmos within the landscape, i.e. what is above must be reflected below (Deloria and Wildcat 2001:25). This behavior maintains the metaphysical balance and relatedness between the above, below, and all four cardinal directions:

[This holistic perspective] reflects a fundamental cosmological orientation that forms the basis of how human beings should think, act and interact with the cosmos. All aspects of religious life reflect the relational perspective; ceremonies are directed towards actualizing the principles inherent in [them]. (Ruml 2009:522)

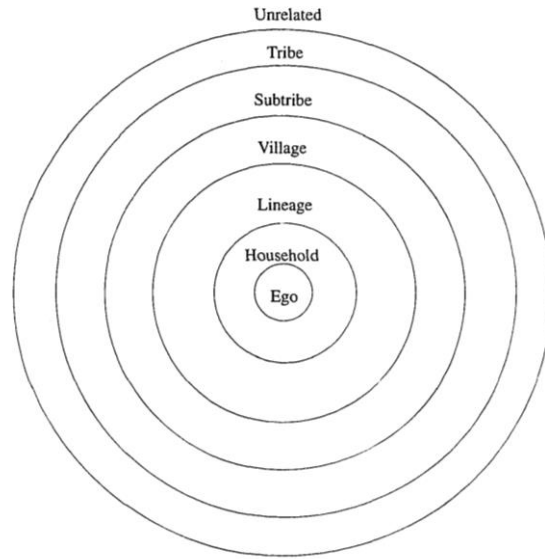


Fig. 5-5: Social Organization of a Tribe (Staeck 1994:656)

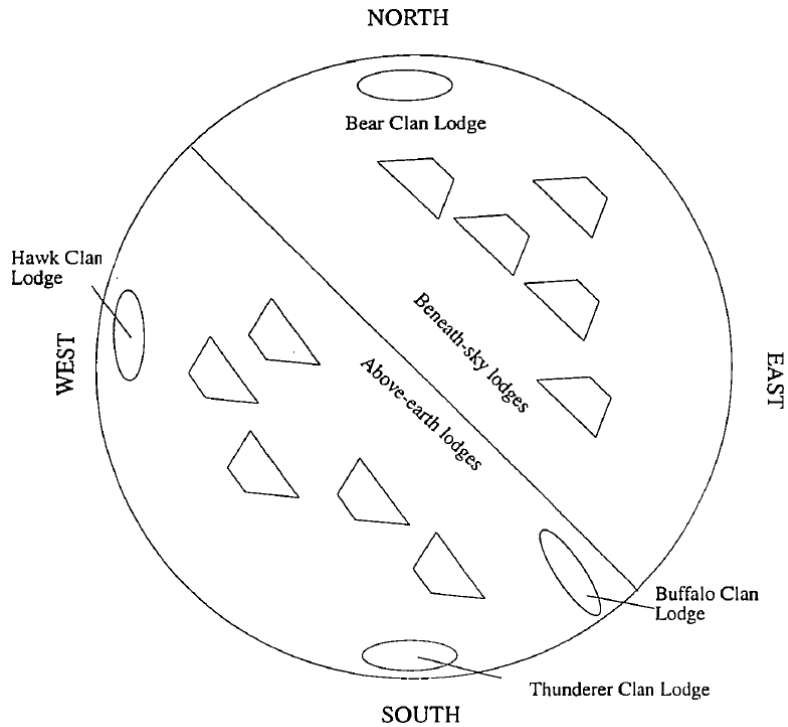


Fig. 5-6: Above-earth description of a Ho-Chunk/Winnebago village (Staeck 1994:659)



Fig. 5-7: Thunderbird tail/chevron/Above world motif from 21GD258. Vessel fragment found during 2010 excavation (graphic by C. Nowak)

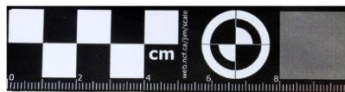


Fig. 5-8: Water/Below world motif from 21GD258. Vessel fragment found during 2015 excavation (graphic by C. Nowak)

Very large pit features were excavated at 21GD258 in 2010, which is typical of Oneota sites. Their diet was composed of various grown and gathered plants as well as fish and other game (Konkur 2015). Respectively, in both 2010 and 2015, and in separate areas of the village, a single human occipital fragment was found in a household pit feature. Osteological analysis revealed the occipital found in 2010 had cut marks and the occipital found in 2015 had a peremortem projectile wound (i.e. arrow hole). Pit burials in habitation areas are found at multiple Oneota sites, and namely at Bryan Site (21GD04) in Red Wing (Gibbon 1979:9-10). However, the status of an Ioway woman was enhanced if a relative participated in a war party (Blaine 1995:188). This may explain why skull fragments with obvious trauma were found within household areas at 21GD258. The main interest of Ioway men was war (Blaine 1995:188). Warfare does not appear to have been a major part of Oto life and they were largely organized for peace but would erect a ceremonial boasting pole for warriors at certain times (Dobbs 1984:197).

Additionally, the rattlesnake is considered a benevolent creature and ally to the Creator as part of the beneath-sky/Below World realm. Second, in local Khemnican Dakota belief, the rattlesnake is revered for its ability to detect “bad medicine.” Third, rattlesnakes and Eastern Red Cedar (a principal component of the hollow cairns) are associated with the Thunderbeings, an altruistic force living in the skyworld/Above World. Lastly, ceremonial prayer staffs used during the Medicine Dance would be fashioned by wrapping a rattlesnake skin around a red cedar post (personal communication, Curtis Campbell Sr., July 19<sup>th</sup>, 2007; Bergervoet 2008:62-64). Also, gourd rattles used in prayer and during the Medicine Dance imitate the sound of a rattlesnake tail and signal the Creator of incoming prayers from human allies (personal communication, Curtis Campbell Sr., July 9<sup>th</sup>, 2007). The Ioway also used gourd rattles as part of the Medicine Dance

(Goodtracks 2009:107). Ho-Chunk people also revered the rattlesnake and held ceremonial activities in which the participants, following a leader, would move in sinuous curves that simulated the movement of a snake (Densmore 1947:76). As a whole these symbols possess great cultural meaning for all Siouan descendants and each tribe offers an ethnographic lens through which to view the stone cairns of Red Wing, the surrounding cultural landscape and its symbols. These topics are further discussed in Chapter 6. Also, rattlesnake effigies at 21GD37/21GD38 are immediately adjacent to 21GD54; i.e. the common focal point from all hollow cairn sites and an Oneota burial mound group.

As stated in Chapter 4, these rattlesnake effigies (albeit destroyed and therefore an exact construction date will remain unknown) contained Oneota ceramics. Also, the effigies are immediately adjacent and downriver along Spring Creek from 21GD95, an Oneota village. Thus, any travelers coming up Spring Creek from the main Mississippi channel would pass by the rattlesnake effigies prior to reaching the village at 21GD95 and the western entrance of the cairn-encircled valley. Both the Ho-Chunk and Ioway had a Snake clan and according to the Ioway, the Snake clan is extinct but were known to mark the perimeters of villages (Goodtracks 2009).

Ethnographic information offers archaeologists the opportunity to redefine or assign culturally-relevant meanings to symbols. For example, sometimes Oneota ceramics include a concentric circle motif which presumably represents the sun (Dobbs 1984:277). In the author's opinion and based on the aforementioned importance that pan-Siouan peoples placed on positioning their camps according to various cosmological and sociological variables, it is also possible the concentric circle motif represents the relationship and position of an individual/household with the larger community and cosmos (cf. Spaeth 1994:656; see Fig. YY).



Regardless, any symbolic interpretation should always be verified by descendant tribal authorities in order to limit ethnocentric bias as much as possible.

### **Tribal Emergence and Siouan Oral Traditions of the Pre-Contact Era**

Henning (1993:262) states oral legends, linguistic, ethnohistoric and historic formation must be considered in concert with archaeological remains in order to properly interpret them. Chiwere-Siouan tribes, namely the Ioway and Oto, are ethnohistorically and linguistically associated with the Oneota archaeological tradition (Arzigian and Stevenson 2003:110-111). Prominent Red Wing archaeologist, Lloyd Wilford, stated the Red Wing Oneota “came up through the Iowa Indians, almost without a doubt” (L. Wilford, interview by E. Hedin, July 2, 1976, transcript on file at Goodhue County Historical Society). Orr phase Oneota along the Root River and Upper Iowa River are the ancestors of the Ioway (Arzigian and Stevenson 2003:116). Orr phase Oneota has been linked with the historic Ioway (Mott 1938; Wilford and Brinks 1974), and the Oto are the only group which may be logically associated with Blue Earth Oneota (Dobbs 1984:220). Based on current evidence, ancestral Ho-Chunk seem to have the greatest influence in La Crosse and on the east/Wisconsin side of the Mississippi River (personal communication, Ronald C. Schirmer, June 3<sup>rd</sup>, 2016).

Archaeological, linguistic, and osteological evidence suggest the Ioway, Ho-Chunk, and Oto separated between 500 – 700 years ago, which is contemporaneous with Oneota dispersal in the state of Iowa (Alex 2010:214). These groups still maintained close contact and familial relationships into the seventeenth century (cf. Blaine 1995:17; Hall 1997:150). The Ioway referred to the Ho-Chunk/Winnebago as their “fathers” and Oto as “brothers” (Alex 2010:214). According to Ioway oral tradition, the Omaha, Ho-Chunk/Winnebago, Ioway and Missouriia

were originally one group (Goodtracks 2009). Dorsey (1886:212) also documents the Oto, Missouri, Ponca and Omaha as former members of the Ho-Chunk Nation.

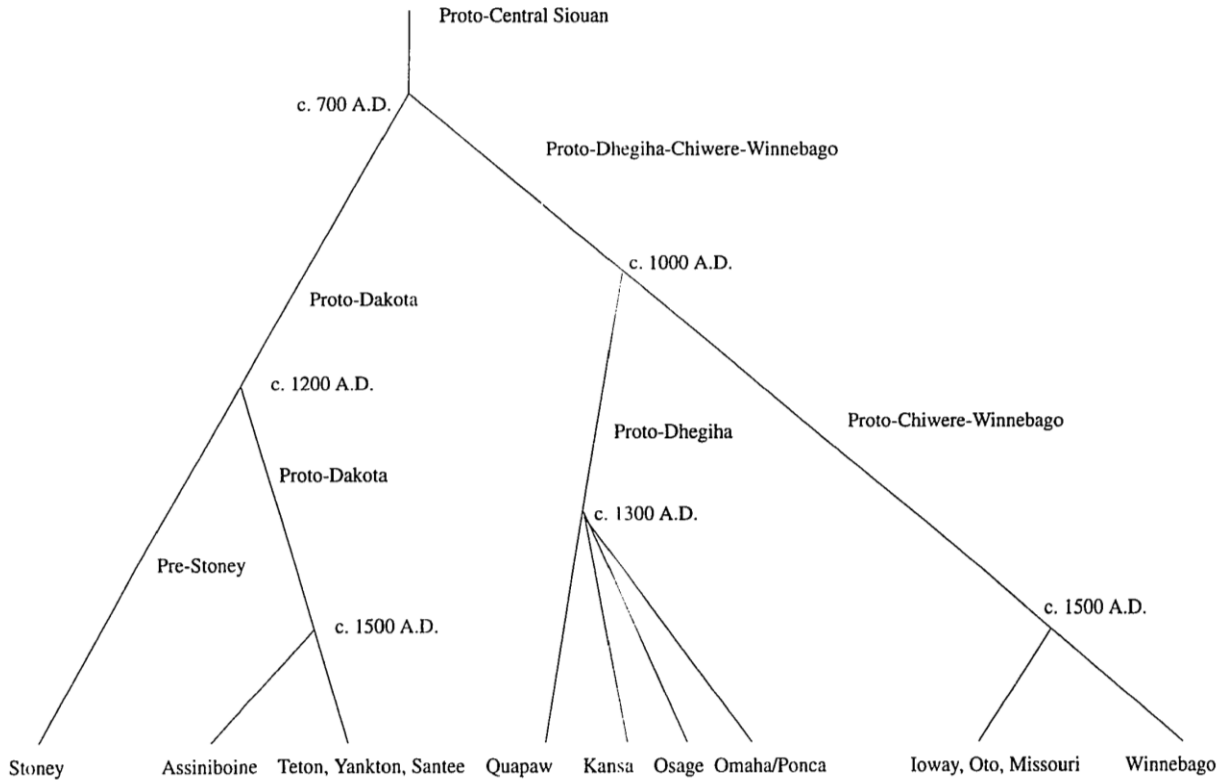


Fig. 5-9: Central Siouan linguistic tree.  
See Springer and Witkowski (1982) and Staeck (1994:649).

Based on Springer and Witkowski (1982), Staeck’s (1994:676) model for Ho-Chunk/Winnebago emergence graphically depicts how Chiwere-Siouan groups fissioned into separate cultural entities from a common, pan-Siouan core. In Minnesota, the Assiniboine separate from their Dakota relatives around this time as well. The Red Wing cairns were built ca. AD 1300 – 1400, which is concurrent with a major social transition from a shared pan-Siouan identity into distinct tribes from AD 1300 to 1500 (see Fig. TT). Therefore, if one considers Staeck’s model, the Red Wing stone cairns may represent multiple things: 1) A cultural

crescendo and expression of remnant Oneota peoples prior to dispersal from the Red Wing area and/or fading away; 2) A shared expression of pan-Siouan/Bartron Oneota peoples dwelling in the Spring Creek valley; or 3) are an early expression of a unique ethnic identity stemming from a common pan-Siouan core.

Based on the geographical location of their emergence prior to European contact in southeastern Minnesota and in combination with their confirmed Oneota ancestry, historic Ioway interpretations offer the most authoritative link between the pre-contact Spring Creek Oneota and the Red Wing stone cairns (cf. Brace 2005:4). This is further supported by the fact that the relative position of historic Siouan languages just prior to European contact is the same as during the pre-contact period (Springer and Witkowski 1982:12-15).

Robertson (2009:158) states that site-based approaches in specific locales can successfully merge oral history and archaeology. In Red Wing, local Khemnican Dakota oral history has been used to elucidate pre-contact behavior and earthwork construction (cf. Bergervoet 2008). Also, the term “Khemnican” is an Assiniboine word from long ago (Winchell and Upham 1888:60). Regionally, Winchell (1911:70) documents a transition from Assiniboine to Ioway occupancy during the proto-historic period. Notably, the Khemnican Dakota of earlier times were simply known as “The Root” (Campbell 2000:15). Regardless of any debate pertaining to the temporal sequence of occupancy historically recognized tribes, ancestral Dakota peoples were part of the Red Wing social scene during the pre-contact era (email correspondence, Ronald C. Schirmer, January 12<sup>th</sup>, 2017).

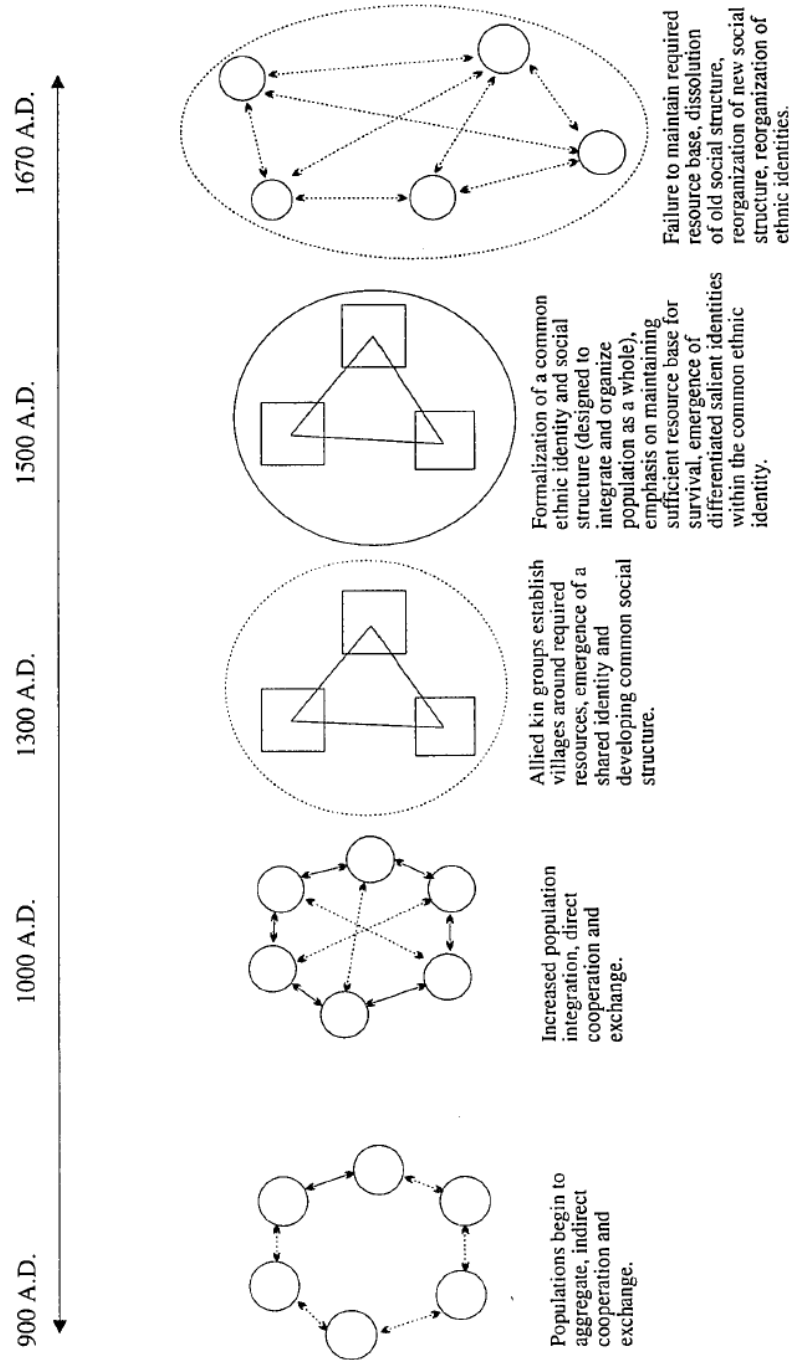


Fig. 5-10: Development of Ho-Chunk/Winnebago Social Structure and Identity (Staeck 1994:676)

During the pre-contact era, Campbell (2000) states a plethora of sacred medicine plants grew in the Red Wing region which attracted Dakota and non-Dakota peoples from all directions. Furthermore, these sacred plants were a fundamental component of the Tipi Hanska

Wakan or Medicine Lodge/Dance religious practice (see also Sersha 1973). Furthermore, a peak period of social and religious proliferation is evidenced by the expansive mound groups adjacent to Silvernale/Oneota-era villages (personal communication, Curtis Campbell Sr., July 12th, 2007). During this abundant period, peoples upheld a common spiritual ideal called “Wico-We-Chi-Wazi” – Relatedness through Sharing.

Ultimately this harmonious lifeway near Red Wing/Prairie Island was disrupted by an ominous Medicine Lodge prophecy which foretold of imminent change. Campbell (2000:21) states this prophecy was first received many generations prior to initial European arrival in the Mississippi River valley. Local peoples consequently became afraid after learning of the prophecy, began hoarding the sacred plants, and fought internally. This behavior was deemed abusive by traditionalist families who subsequently put away the sacred plants for safekeeping until a future time. The traditionalist families moved away from the Red Wing area and did not return. These traditionalist families were the Khemnican Dakota and two non-Dakota Star Society peoples, i.e. *Wicanhpi Wanyaka Nazin Okodakiciyapi* - Standing Star Lookers Society; and *Apiya Wicanhpi Yawa Oyate* - Readjust Star Readers People (Campbell 2000:26).

From a cultural perspective, scenes of social conflict are infused with bad memories and groups would hesitate or avoid them altogether (personal communication, Sebastian C. LeBeau II, February 25, 2014). Identically, Ho-Chunk oral tradition states the great Siouan confederacy (Oneota nation) broke apart long before European arrival due to internal conflict (Stanley 2004:34). Nowadays its remnants are recognized by the descendant Siouan tribes. Oral accounts state the Ho-Chunk came under attack and the caretaker of seven sacred stones buried them for safekeeping until a future time when the stones were to be unearthed once again (ibid).

According to Foster (1996), the *Hunge* (or Oneota Nation) fissioned around AD 1600 with the appearance of a deity from the east called Diseasemaker as well as an influx of other nations and conflict. By this point many groups of people had already begun to form new identities and move away in different directions. The archaeological record corroborates with this Ioway oral tradition as well: the primary reason for groups to leave the La Crosse locality was repeated episodes of disease acquired via the Great Lakes trade route in addition to a sense of vulnerability that encouraged them to reunite with their close relatives, the Otoe, in northwestern Iowa near Blood Run (Gibbon 2012:173).

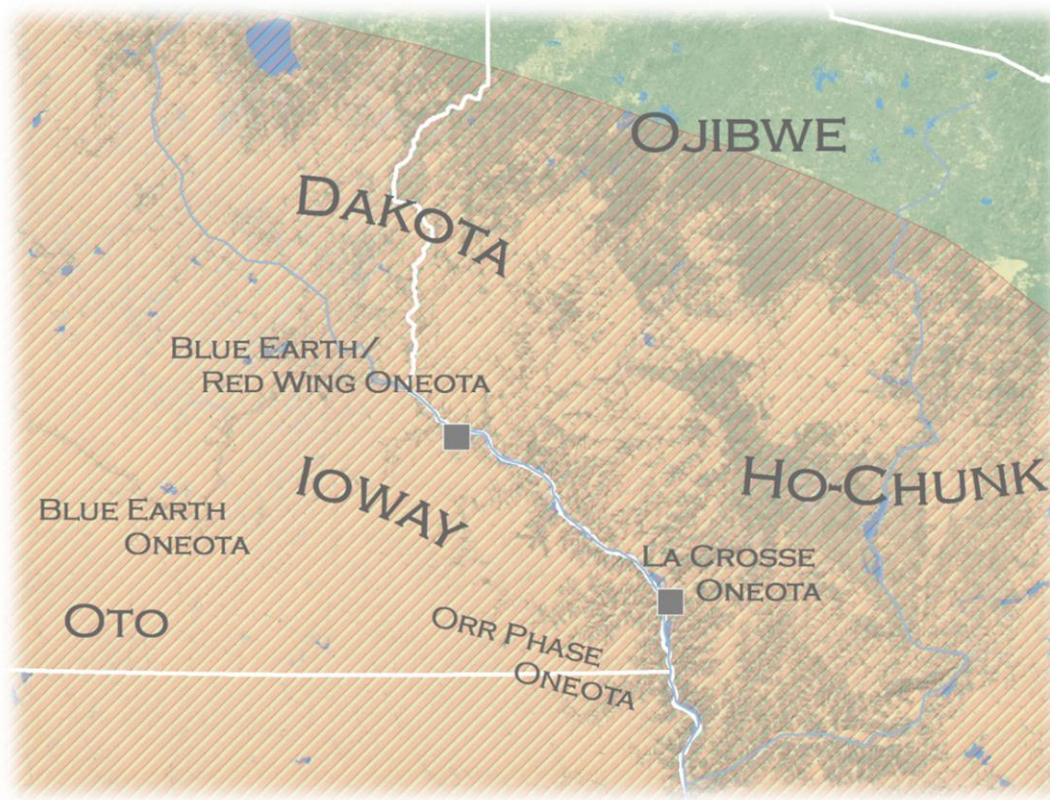


Fig. 5-11: Relative Locations of Pre-Contact Oneota Tradition(s) and Tribal Locations ca. AD 1680. See Dobbs (1984:224), Springer and Witkowski (1982), Staeck (1994:673) and Winchell (1911:68).

By 1700, Iberville documented the Otos and Ioways living amongst the Omaha between the Missouri and Mississippi rivers (Dorsey 1886:214). By the early 18<sup>th</sup> century, the Ioway had predominantly left Minnesota and continued to adapt to Plains living (Wilford and Brink 1974:68). The Dakota and Ioway had amicable relations until hostilities erupted due to European contact (Alex 2010:219).

Betts (2010) states a resurgence in ceremonial mound construction at Blood Run in far northwestern Iowa from AD 1640 – 1690 was done in reaction to turmoil and the social ripple effect caused by initial European contact. Participants at Blood Run included recently migrated Ioway from the La Crosse region, Oto, and the Omaha who had already established themselves in that locality. Betts (2010:204) argues a renewal/resurgence of ceremonial mound construction “fostered a sense of community and solidarity as means of forging a larger social identity... the resulting tumuli were powerful material representations of the more ephemeral social bonds that their construction had evoked.”

The Blood Run phenomena is far more intriguing and consequential due to confirmed Ioway involvement because they had all but abandoned the custom of mound building by the contact period (Alex 2010:221). Blaine (1995:256) also states the Ioway used cairns to inter their dead until recent times. In comparison, earthen mounds are generally associated with burial practices but mound construction was also very prominent in World Renewal ceremonies (Hall 1997:146). In sum, a social decision was made to resume a traditional ceremonial custom in order to unify peoples during a time of strife at Blood Run. Historically, Foster (1999) states Blood Run was a large ceremonial site and many tribes dwelt there including the Omaha, Ponca, Oto, Arikara, and Dakota. Furthermore, it was there the Arikara introduced the Pipe Dance, i.e. an intertribal adoption ceremony. In direct comparison, around AD 1400 the environmental

and/or social climate was in negative flux across the Upper Mississippi valley. Therefore, like Blood Run, one may hypothesize that the Red Wing stone cairns were not constructed as physical interments per usual but as a means to unify remaining Oneota peoples in the Spring Creek valley during a similar time of strife.

### **Conclusion**

The unique stone cairn phenomena at Red Wing, proximally dated between AD 1300 – 1400, was erected during a period of sweeping change in the Upper Mississippi valley. From AD 1050 – 1250/1300, the Silvernale/Red Wing Oneota era is contemporaneous with the Medieval Climatic Anomaly and prime growing conditions. Thus, a horticultural and social bloom occurs in Red Wing region. Siouan peoples seasonally converged upon this locality from all directions, facilitated trade and held religious ceremonies, built earthen mounds adjacent to major villages along the Mississippi River, maintained social order and blended customs. However, this prolonged period of social coalescence and proliferation disappears and the area is generally abandoned sometime between ca. AD 1300 – 1400. Red Wing stops being the regional nexus of Oneota activity which shifts downriver to La Crosse, Wisconsin until initial European contact in the seventeenth century.

From an archaeological standpoint, the sudden stoppage of regional social intercourse at Red Wing is perplexing but any break with tradition would presumably require a momentous event or situation (cf. Parker Pearson 1999:17). Possible reasons include the Little Ice Age, depleted resources, social discord, or a proactive group decision for other reasons. From a cultural standpoint, both Ho-Chunk and Khemnican Dakota oral tradition speak of internal social



disorder amongst Siouan people and resultant fissions long before the arrival of Europeans (cf. Campbell 2000:21; Stanley 2004:34). Locally, Campbell (2000) states pre-contact Native peoples converged upon Red Wing due to a plethora of sacred medicine plants used for spiritual doctoring and to participate in Medicine Dance/Lodge ceremonies. Congregating peoples during that era practiced an ideal called “Wico-We-Chi-Wazi”, or Relatedness through Sharing, and this lifeway was disrupted and ended due to foreboding Medicine Dance/Lodge prophecies that spoke of looming change.

Thus, based on the combination of environmental and archaeological data and applicable Siouan oral traditions, one or more of the following suppositions may apply to Red Wing ca. AD 1300 – 1400: 1) a general social decision to abandon the existing Silvernale/Oneota lifeway; 2) a population bloom and general depletion of resources required their dispersal; 3) the negative impact of the Little Ice Age on plant resources for both domestic and spiritual use; 4) social pressures stemming from further downriver and the collapse of Cahokia; and/or 5) foreboding Medicine Dance prophecies and subsequent social disorder amongst its religious adherents.

Conclusively the Red Wing cairn phenomena represent some kind of cultural crescendo or tipping point for the local Oneota. Cairn construction in Red Wing occurs roughly a century after the abandonment of the major villages along the Mississippi channel. Based on recent archaeological evidence, the localized Bartron Oneota moved away from Prairie Island during the 13<sup>th</sup> century and subsequently moved upstream into the Spring Creek valley and lived there throughout the 14<sup>th</sup> century. This movement away from the main Mississippi River channel is presumably evidence of some type of social fission (Schirmer 2016). Therefore, it is hypothesized the Red Wing stone cairns were constructed ca. AD 1400 in order to unify Oneota

people in the Spring Creek valley during a significant period of environmental and/or social flux (cf. Betts 2010).

Because of their secluded nature, archaeologists have suggested Orr Oneota sites were placed in clandestine locations away from the Mississippi River channel for defensive purposes (Gibbon 2012:172). Based on confirmed evidence of a dramatic behavioral shift across the Upper Mississippi valley region around AD 1400, Spring Creek Oneota people most likely sought sanctuary for similar reasons because their long-term group survival would be dependent upon the ability to attract and maintain cohesion amongst a viable core of individuals, pool their resources and defend themselves (Rosebrough 2010:575). Geostatistical results presented in Chapter 4 necessitate future archaeological excavation at 21GD0095 in order to further illuminate the spatial, environmental and cultural context in which the Red Wing cairn builders dwelled. Within this timeframe Oneota peoples generally abandoned their old custom of building earthen mounds and instead opted for new, non-earthen monument styles across the whole region (Dobbs 1996).

Notably, as discussed in Chapter 4, the common focal point of the Red Wing cairns is an Oneota burial mound group recorded as 21GD0054. Conclusively, Spring Creek Oneota people sought to establish direct line-of-sight bonds with their ancestors from each cairn site. Also, immediately adjacent to the observable stone cairn cluster are rattlesnake effigy mounds built by Oneota peoples (21GD0037/GD0038) and thunderbird petroglyphs directly to the west of the cairn spatial mean (21GD0187). Both thunderbirds and rattlesnakes possessed deep spiritual meaning for Oneota peoples and Medicine Dance practitioners. Thus, Oneota people in the Spring Creek valley built the stone cairns as principal components of a larger spiritually-charged landscape.

Staeck's (1994) model of pan-Siouan village life provides a useful means to elucidate village activity and social organization at 21GD258, a single-component Oneota village in the immediate vicinity of the observed stone cairn cluster. As Staeck (1994) had found amongst ancestral Ho-Chunk populations it is quite possible at 21GD0258 an esteemed class of pan-Siouan ritual leaders, blessed by Thunder, had emerged and both Thunderbird and Water Spirit clans exerted increased levels of sociopolitical control in villages. Both clans were present at 21GD0258 and in separate areas of the village based on excavation data. Furthermore, it seems most logical that revered ritual leaders would supervise the construction of the Red Wing cairns according to a specific architectural/spiritual template for both prayerful purposes as well as social unification.

Chiwere Siouan peoples, whose ancestors once lived in the region and were primary participants in the Oneota archaeological tradition, offer the most authoritative interpretation of the stone cairns of Red Wing (cf. Brace 2005:4). Since linguistically-related peoples like the Chiwere- and Dakotan- Siouan peoples will oftentimes share similar ontological perspectives, interpretations of the stone cairns from Dakotan perspectives are also applicable and valuable (cf. McGee and Warms 2013:748-748; Springer and Witkowski 1982). This is especially true since ancestral Ho-Chunk, Ioway, Oto and Wahpeton Dakota peoples all practiced the same Dakotan version of the Medicine Dance religion, which was especially prevalent prior to European contact (Skinner 1920:11; cf. Campbell 2000). Place-based approaches are able to successfully merge oral history and archaeology (Robertson 2009:158). Therefore, Native traditions such as Campbell's (2000) oral history of the Prairie Island/Red Wing region provide invaluable cultural insight into the significance of the landscape and offer a means to illumine the features and symbols observed in the archaeological record.

## Chapter 6: Ethnographic Interpretations of the Cairns and Landscape

### Introduction

Unlike the Western mindset, Siouan peoples consider the physical and spiritual worlds as symbiotic and inseparable. Hence, the stone cairns of Red Wing are both material manifestations and places imbued with spirit. Therefore, they must be approached from both rational and irrational angles according to Native beliefs. After careful analysis of published ethnographic materials on Chiwere- and Dakota-Siouan peoples, and soliciting direct input from Native historians and traditionalists, a general understanding of the stone cairns of Red Wing from a pan-Siouan perspective is proffered in this chapter. Subsequent studies will hopefully offer further insights and details from culturally-affiliated Oneota descendants based on findings presented in Chapter 5. A deeper philosophical understanding of the Dakota term “lodge of time and space” requires further exploration and Native voices. For the time being and based on the author’s research experience, an elementary understanding is put forward in this chapter.

A philosophical pursuit of the stone cairns was initiated in 2006 after the author visited a handful of stone cairns during an archaeological survey conducted by Dr. Ron Schirmer through Minnesota State University – Mankato. After experiencing a strong sense of place even as a non-Native and wishing to find answers as to the cairns’ origin, the author was granted the opportunity to learn from a local Dakota elder, the late Curtis Campbell Sr., during a series of informal, in-home visits with a local Dakota elder, the late Curtis Campbell Sr. (cf. Bergervoet 2008). This experience ultimately served as the springboard and inspiration for this investigation, which was to garner a fuller understanding of *hekti* – “a lodge of time and space.” Not only was it deemed important to find out who built the stone cairns of Red Wing, when and why, it was

deemed essential to seek out why specific places were chosen and why they are important to Native peoples. All of these things, including observable ritual behaviors, possess significance and purpose. In sum, the significance of the stone cairns could only be explained by Native peoples alone.

Identifying those who knew of the cairns, and more importantly, who could explain them proved to be difficult. However, based on the strong geo-statistical association between the stone cairns and Spring Creek Oneota peoples described in Chapter 4, and further analysis of the Oneota archaeological tradition and identification of Oneota-descendant peoples described in Chapter 5, the primary source of authoritative ethnographic information is published materials and consultation with both Chiwere Siouan peoples such as the Ho-Chunk, Ioway, Oto, Missouriia; and secondly Dakota-Siouan peoples, i.e. Dakota, Assiniboine, and Lakota. Many publications were analyzed in order to gain insight into Siouan religious life, society, and the spiritual significance of stone (See also Appendix I and III; e.g. Blaine 1995; BLM 2005; Brace 2005; Campbell 2000; Denig 2000; Dobbs 1984; Dooling 2000; Eastman 2004; Foster 1996, 1999; Goodman 1992; GoodTracks 2009; Howard 1984; LeBeau 2005, 2009; Nicollet 1976; Pond 1872, 1986; Radin 1990; Skinner 1915, 1920; Springer and Witkowski 1982; Winchell 1911; Winchell and Upham 1888).

Many Siouan people, both male and female, were contacted and asked to participate in this investigation. Those informants agreeing to participate in this study are listed in Appendix V (see also Appendix IV for IRB/HSCL approval). For those conducting this type of research, it is essential to remain respectful of other belief systems because people based their entire lives on them (personal communication, Curtis Campbell, Sr., November 16<sup>th</sup>, 2008). Also, in addition to reviewing all of the generated data and draft documentation, informants were also invited to visit

the stone cairns in order to interpret the sites firsthand (cf. LeBeau 2005). Fortunately, during the course of this initial investigation, one informant was able to culturally interpret a handful of stone cairns (Cairn ID 9, 10, and 11). Additional insight was garnered during subsequent communications with study participants.

The overall goal was to illumine the meaningfulness of the stone cairns and surrounding landscape through direct collaboration with Native informants. Ultimately, Siouan interpretations were proved critical to this investigation and offered the cognitive key to unlocking the mystery of the stone cairns of Red Wing.

### **Places of Power and Prayer**

Oftentimes Native stone features are wrongfully viewed as “primitive” because the complexities and underlying meanings are not easily apparent for an outsider (Wilson 2005:15). The materials used to build the cairns were selectively chosen and certainly possess some degree of cultural significance (cf. Sherwood and Kidder 2011:72). The available historic literature from the 19<sup>th</sup> century provides little yet invaluable detail on the objects and overall setting (see Chapter 2). Each step of building the cairns, including the planning and preparation of the land, acquisition of building materials, coordinating and overseeing the labor, required a “series of decisions each of which reflect cultural choices that encode information about the society, economy, politics, and culture of the builders” (Sherwood and Kidder 2011:69). The symbolic meaning of a monument is inherent in the materials used, site selection, its sense of place, and connection with proximal cultural features (personal communication, Sebastian C. LeBeau II,

July 2<sup>nd</sup>, 2015). The architecture also has symbolic value, which must be considered as well (Sherwood and Kidder 2011:83).

The ethnographic record is a rich source of information that can be used for interpreting stone feature sites (Stanley 2004:27-38; cf. Brace 2005; Chartkoff 1983). Near Red Wing, respective bands and tribes cross-culturally acknowledged the meanings associated with specific earthworks even though many creation stories exist amongst Indian peoples (personal communication, Curtis Campbell Sr., September 15<sup>th</sup>, 2007). According to local Dakota tradition, this is because neighboring groups incorporated the customs of others deemed powerful or *Wakan (holy)* into their own ceremonies (personal communication, Curtis Campbell Sr., January 25, 2008). Thus, a clearer understanding of Red Wing cairn construction and placement is able to be derived from pooled Siouan knowledges and perspectives.

Although ancient symbols are difficult to decode they may still survive amongst the traditions of the descendants of their creators (Clouse 2004:125). Also, ethnographically analyzing the meaningfulness of stone features, their component parts and associated features yields more cultural information than excavating them (cf. BLM 2005:114). In sum, one must be able to “see the prayer” at the site (personal communication, Sebastian C. LeBeau II, July 2<sup>nd</sup>, 2015).

To wit:

...when the tribal cultural representatives are asked to evaluate sites, they look first where the site is on the landscape. They discuss the landscape in general and phrase their responses and evaluations in terms of both physical and spiritual characteristics of both the landscape and the material culture (features, lithics, etc.) used by archaeologists to define sites... The tribal cultural representatives describe and evaluate these sites in terms of both spiritual and physical reasons why stone feature sites are in particular locations. They recognize the same sort of physical variables as those recorded by archaeologists, such as distance to water, availability

of plants, panoramic views of the area and so on. Additionally, site location/distribution patterns are read as physical representations of traditional beliefs. For the Yanktonai, for example, the location of ring sites relative to drainage patterns follow and mirror the spiritual pathways described in their creation stories. (BLM 2005:120)

From the outset of this study, no other information on the hollow cairns was available other than the previous testimony of the late Curtis Campbell Sr., Prairie Island Mdewakanton Dakota. While working as tribal historic preservation officer (THPO) for the Prairie Island Indian Community from 2013-14, the author reached out to Dakota, Ho-Chunk and Ioway historians with possible knowledge on the Red Wing cairns. Although no definitive cultural link had been made between the cairns and one specific tribal group, it was assumed that pertinent cultural information could be gleaned from the pooled responses (cf. LeBeau 2005, 2009).

A series of discussions ensued with a selected number of Siouan informants willing to participate in this study. This also included a field visit to a selected number of cairn sites with a Dakota informant in July 2014. A tribal spiritual leader or elder must visit the site for the purposes of identifying the feature, providing its name and/or elucidating its cultural significance (LeBeau 2009:224). Also, authoritative determinations are provided to the group shown to be most closely associated with their construction (Brace 2005:4).

The Mdewakanton Dakota word “hekti” (which is derived from the original dialect of the Dakota people) is their cultural term for stone cairns (personal communication, Curtis Campbell Sr., June 20<sup>th</sup>, 2007). Literally translated, this word means “Lodge-What is Past” (LeBeau 2009:93). Additionally, the essence of the word “hekti” may also be translated as a “lodge of time and space” (personal communication, Curtis Campbell Sr., January 25<sup>th</sup>, 2008). For the supplicant, paying homage at a cairn site is a means of connecting with the past and one’s



ancestors; to orient oneself within the present moment in relation to all seven directions; and to assess the best direction/path to follow into the future (Mails 1979; personal communication, Sebastian C. LeBeau II, July 2<sup>nd</sup>, 2015).

As Hallendy (2000:44) states, stone features like the stone cairns of Red Wing attach individuals to a specific place and their ancestors. For Native Americans, place and being are intimately linked (Thornton 1997:222). Their cosmologies are derived from lived experiences within particular landscapes in relation to the larger cosmos, which provides unique meaning and direction for respective social groups (Tuan 1971:24). Places of cultural significance such as the stone cairns of Red Wing act as triggers that remind an individual of a ceremony that took place there, it invokes memories of the past, and it reinforces ethnicity and identity (personal communication, Sebastian C. LeBeau II, January 18<sup>th</sup>, 2006).

Although the local Dakota do not claim authorship of the stone cairns, they are able to acknowledge and experience the significance of these places all the same. Stone cairns are considered *Wakan*, holy/sacred, which is oftentimes described by Dakota peoples as possessing “medicine” (Eastman 2003:19-20). For Native peoples there is no division between the natural and supernatural realms, the physical and the spiritual – they are intertwined (Eastman 2003:2-3; cf. Mathews 2009:7). Both benevolent and nefarious forces exist, and either kind of spirit power is said to reside in specific locations (Mathews 2009:7). Although the Red Wing cairn sites are dismantled, the intrinsic nature of the site remains positive (personal communication, Native Informant #1, July 22<sup>nd</sup>, 2014). Spiritual powers are interwoven throughout Native societies and manifested within culture and through the creation of places of cultural significance (Goodman 1992:2).

Furthermore, like living peoples who re-visit places of cultural significance time and time again, stone cairns function as beacons for the return of spirits. For instance, if an individual should die while away from their homeland, a cairn ensures its return home (BLM 2005:118). Therefore, those markers without human remains are no less sacred than those that are associated with human remains (ibid). In sum, stone cairns are places where living individuals are able to commune and reconnect with their sacred past.

### **Spatial and Spiritual Context of the Red Wing Stone Cairns**

Notably, the stone cairns are clustered in and around a quiet, clandestine valley along Spring Creek and approximately five kilometers away from the main Mississippi River channel. It is unknown why this location was specifically chosen. Reasons include: 1) localized topography; 2) pre-existing recognition as sacred space; 3) defensive purposes; 4) ceremonial purposes; 5) privacy; and/or 6) vision-based or chosen by ritual specialists, etc. This area was undoubtedly recognized as special, holy, and/or sacred by the Spring Creek Oneota especially after its consecration vis-à-vis cairn construction. The following is an attempt to elucidate the activities of the cairn builders within the social continuum of the region as well as the landscape within the stone cairns of Red Wing are embedded.

### **Wellsprings of Spirit**

The Red Wing region is a spiritually-charged landscape; a collection of places and landmarks imbued with power directly from the Creator and the prayers of supplicants over millennia. Additionally, the stone cairns of Red Wing are wellsprings of holy energy and

waymarkers within the physical landscape for those seeking direction along one's spiritual journey through life. The sacred power of the cairns is to be felt and experienced by all supplicants, not just those who descended from their original builders. Furthermore, their construction is meant to be seen and experienced by many (cf. Brennan 2008:386). The meaningfulness of the stone cairns is symbolically communicated by the landscape and elements of the feature itself. The private vision which inspired these monuments to be built was also shared publicly for the benefit of all who looked upon them:

A vision, then, is more than a way of looking at the world; it is also a way of being-in-the-world. For a vision, in addition to expressing a people's worldview, also defines one's responsibility within that world. Albers and Parker observe: 'From the vantage point of the individual, the vision may be regarded as a mechanism for identity formation, serving to legitimate his actions and status in the community, providing motivation and initiative to channel his behavior in socially approved directions [e.g., being a warrior or medicine man], and raising his confidence sufficiently for the assumption of valued social positions.' At the root of the vision, though, is humility. It is not a matter of gaining power for its own sake, but of needing power and using it responsibly because one is ultimately powerless. (Martinez 2004:97)

The stone cairns of Red Wing are principal components of a sacred landscape and derive their power from their location (i.e. hilltops), convey the character of the place, and maintain social and cosmic order (cf. Wilson 2005:12). Monuments and effigies often mark these areas and/or the spirit realm can be more easily contacted in specific types of locations (BLM 2005:118). Also, the sacred landscape of the stone cairns possesses a definable "heritage footprint", which communicates both the presence of past peoples as well as their cultural identity (Wilson 2005:7). Hence, the stone cairns of Red Wing possess multiple but linked meanings (cf. Wilson 2005:10).

Furthermore, for Native people, where an event took place (e.g. constructing a cairn) is more important than when (Basso 1996:31). Cyclical concepts of time also reinforce and maintain the connection between monuments, the landscape, and one's ancestors (cf. Fabian 1983). From this standpoint, monument construction is a means to integrate both time and space in order to establish an omnipotent union between the Creator, the landscape and its peoples through the medium of monument construction (Wilson 2005:13). The sacred may manifest itself naturally in certain types of topographic features.

### *A Community of Cairns*

Near Red Wing, each hollow cairn acts as an individual landmark within a larger inter-visible community of monuments. Locally, this “sight community” is notable for many reasons, particularly their concentrated positions amongst a clandestine valley along Spring Creek in addition to their unique architecture (cf. Bernardini and Peeples 2015). For many peoples, “highly visible landmarks represent histories, memories, events, deities, ancestors, or *axis mundi*” (Van Dyke et al. 2016:206; italics from original citation). Moreover, each monument is connected with others of the same type through line-of-sight bonds. Thus, a single community of monuments was created and woven into the physical and cultural fabric in their vicinity.

Certain topographic features play an important role in cairn site determination (cf. Tilley 1994:94). A small cluster of cairns placed on bare, conspicuous hilltops near Red Wing is particularly interesting because the clandestine valley is not visible in relation to the larger regional landscape, i.e. it is completely hidden. Therefore, the Red Wing stone cairn locations were not chosen for maximum visibility but were instead meant to be seen, or approached, from

certain directions for a select group of people (ibid). This landscape was culturally defined and chosen based on its physicality (Mack 2004:65). Once the cairns were built, they became the domain of all community members who beheld these monuments (cf. Wagner et al. 2004:62-63). The stone cairns also direct one's attention to other landmarks within the local landscape, e.g. 21GD54, an ancestral Oneota burial ground and common focal point from each cairn location (cf. Jacobson-Tepfer and Meacham 2010:32). In sequential order, the stone cairns were most visible to Oneota villagers at 21GD95, 21GD204 and 21GD258.

Direct knowledge of visual anchors and sight communities, unless held strong, is generally lost during subsequent migrations away from the area of intensified cultural activity (Bernardini and Peeples 2015:230). Thankfully, based on the discovery of significant visual connections amongst the stone cairns of Red Wing with various Oneota-related features using GIS, deeper questioning and a fuller understanding of the meaningfulness of the cairns, their placement and the cognitive impact of these visual connections can be further explored during future studies (cf. Van Dyke et al. 2016:206).

### ***Establishing a Common Focal Point***

Based on the results of GIS viewshed analysis presented in Chapter 4, the Spring Creek Oneota placed the stone cairns of Red Wing upon locations that ensured a line-of-sight bond with 21GD54, a documented Silvernale/Oneota burial mound group. Peoples with common visual anchors, such as the stone cairns, also share “important aspects of their cosmologies such as boundary points, cardinal direction markers, and sacred locations” (Bernardini and Peeples 2015:215-216). This single yet mutual line-of-sight bond further strengthened their familial and

spiritual connection with their immediate ancestors interred at 21GD54 by constructing an intervisible community of cairns with a common focal point/visual anchor (cf. Van Dyke et al. 2016). Archaeological and environmental evidence strongly suggests a period of social uncertainty circa AD 1400 across the Upper Midwest region. Therefore, it is hypothesized the Spring Creek Oneota, by making an ancestral burial ground the common focal point of cairn construction, were establishing a connection with their sacred past in order to assess in which direction to move physically, socially and spiritually into the future.

Furthermore, coordinated ritual activities such as cairn construction promote social cohesion through unified prayer as well as ease tensions due to internal or external circumstances (cf. Betts 2010; Mallam 1975). Notably, 21GD95, the Oneota village immediately adjacent to the burial mound group on the opposite side of Spring Creek, is nearest the calculated spatial mean for cairn construction activity (i.e. geo-statistical heart of activity). Based on this fact, the villagers at 21GD95 are presumed to be the primary group responsible for cairn construction. Further archaeological analysis at this village site must be conducted in the future. According to Foster (1996), Oneota villages were generally placed near the graves of ancestors. They did not fear their dead relatives because the bond of family members remains unbroken between the earthly and spiritual realms (ibid).

### ***“Valley of the Seven Springs”***

A freshwater spring is located along Spring Creek precisely between 21GD54 (Oneota burial mound group) and 21GD95 (Oneota village), which are immediately adjacent to each other and on opposite sides of the creek. This is also very close to the statistical epicenter of

cairn construction activity. It is perfectly logical to find a habitation site (21GD95) near a source of freshwater. From a Siouan perspective, the spring also possesses spiritual significance and is considered a holy site. Water emanating from the earth is considered pure and therefore deemed *wakan* or sacred (Westerman and White 2012:19). Also, ceremonial lodges used for Medicine Dance practices were located near springs (personal communication, Curtis Campbell Sr., July 19<sup>th</sup>, 2017). Although these religious practices were prevalent amongst Siouan peoples when the stone cairns were most likely built (AD 1300 – 1400), it remains conjecture if a ceremonial lodge was in fact built within the vicinity of 21GD54 and 21GD95. However, it certainly deserves mention.

Also, in Siouan belief, free-flowing springs are special places inhabited by spirit beings. These are places imbued with positive power and visited specifically for such spiritual purposes as: to communicate with spirits, receive visions, set out thanksgivings, etc. (email correspondence, Sebastian C. LeBeau II, January 13<sup>th</sup>, 2017). Springs (and unusual stone formations) are considered manifestations of sacred power, which inspires devotion as well as fear of the Creator (Dean 2010:12). Springs and unusual stone formations are areas of special power that figure prominently in Native life (BLM 2005:120).

Furthermore, contemporary Euro-American people dwelling along Spring Creek refer to it as “the Valley of the Seven Springs” (RWN 2007). If this conceptualization stretches back into the pre-contact period, the Spring Creek Oneota people would deem the entire valley as significant for two primary reasons: a) the meaningfulness/holiness of springs as mentioned; and b) the number of springs, i.e. 7, is considered sacred in Siouan theologies as discussed previously in this chapter. It is possible the stone cairns were built in this proximal area because of the aforementioned facts. Additionally, Native Informant #1 observed a large number of lightning

strikes around the cairns, which marks the presence of Thunder. The cairns and their overall placement are connected with Thunder; a protective/benevolent force in Siouan cosmologies. As told during an on-site visit, this may be culturally interpreted as animosity between Thunder of the Above World and Unktehi, the underwater panther/being (personal communication, Native Informant #1, July 22<sup>nd</sup>, 2014). Unktehi was/is feared due to its unkind nature but is still recognized as a spirit being, which therefore makes it sacred regardless of its temperament. If Unktehi is approached properly, it is still able to procure good for human beings:

Just as the Thunderbird is chief of the Powers Above, so the Unktehi or Underwater Panthers are chiefs of the Powers Below. According to Robert Good Voice (Round Plain) the Unktehi are everlasting. They live in the sea, toward the rising sun. One is an old man and one is an old woman. In appearance they are giant panthers with horns. Mr. Good Voice stated that it was the Unktehi who gave the Medicine Dance to the Sioux and showed them the good red road. (Howard 1984:106)

### *Summoning Protectors of the Sacred*

#### *Thunderbird Petroglyphs*

Oneota ceramics are rife with Thunder/thunderbird symbology, which is closely linked with the use of chevron symbols (Lothson 1976:39). Furthermore, Staeck (1994) documents the increased sociopolitical influence of the Thunderbird clan within pan-Siouan/ancestral Ho-Chunk village life in combination with the Water Spirit clan. During this time period, ritual leaders blessed by Thunder rose in prominence as well (ibid). Based on available archaeological evidence from 21GD258, the presence of both the Thunderbird and Water Spirit clans at



21GD258 most likely coincides with this marked increase in the spiritual influence of Thunder and its human associates within the pan-Siouan social sphere.

Furthermore, from a Siouan perspective, the upright red cedar staffs in the stone cairns of Red Wing are culturally associated with the power of Thunder, an altruistic power that lives in the western skyworld. Notably, thunderbird petroglyphs at 21GD187 are located due west of the calculated spatial mean/heart of cairn construction activity near 21GD95/21GD204. Sacred markings, such as petroglyphs, are believed to evoke spiritual power associated with the image (BLM 2005:114).

As Lothson (1976) states, assigning dates to petroglyph sites is extremely difficult. However, the geographical relationship between the Thunderbird petroglyphs found at 21GD187 and stone cairn construction in Red Wing is very provocative for the following reasons: 1) the connection between the use of red cedar in cairn construction and its affinity with Thunder; 2) the overall significance of thunderbird symbology within pan-Siouan/Oneota religious and daily life; 3) the relative proximity of the thunderbird petroglyphs to the heart of cairn construction activity, ~1.5 kilometers; 4) Thunder is thought to live in the western skyworld in Siouan cosmologies; and 5) the thunderbird markings are found due west of the calculated spatial mean for cairn construction activity, which are immediately adjacent to Spring Creek Oneota villages. In sum, although it is difficult to prove the sacred thunderbird markings at 21GD187 are associated with stone cairn construction near Red Wing, the circumstantiality of the preceding points is very small.

Note: Petroglyphs are commonly called “rock art”, but this is considered an insult to Native peoples because these sites possess immense spiritual power (LeBeau 2005:27). In the Native mindset, these sites were selectively chosen because of their holy character and their

association with specific spiritual beings such as those from the skyworld or underworld (Ojibwa 2012). Also, thunder and lightning symbology was used by Paleo peoples in ritual contexts (Bement et al. 1999).

### Rattlesnake Effigies

Rattlesnakes effigy mounds recorded at 21GD37/21GD38 were built immediately downriver along Spring Creek from the common focal point of cairn construction at 21GD54 and immediately adjacent to Oneota village life at 21GD95. Unfortunately, these effigies are now destroyed (GCHS 1976; transcribed interview, Lloyd Wilford, July 2<sup>nd</sup>, 1976). However, an Oneota vessel was excavated from these serpentine mounds, which confirms their builders belonged to this archaeological tradition (personal communication, Ronald Schirmer, May 28, 2015).

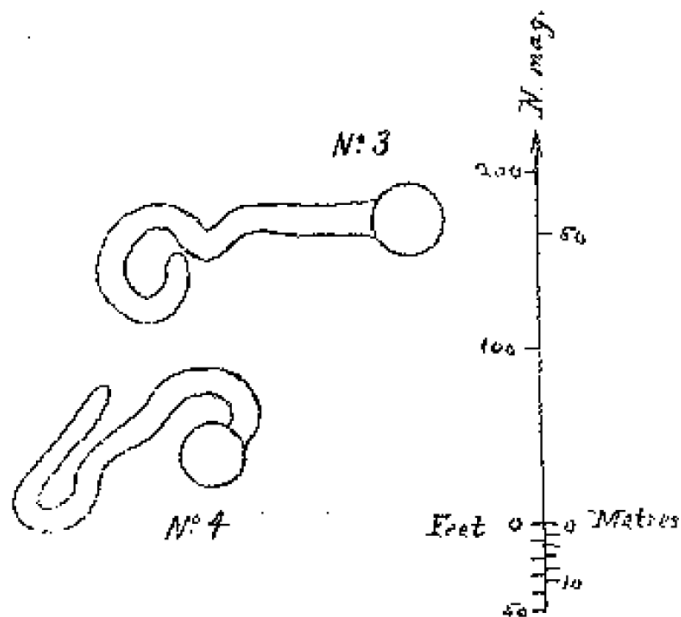


Fig 6-1: Rattlesnake effigies in Minnesota (Lewis 1887)

The rattlesnake, allied with Thunder, is considered an earthly protector. It is possible these effigies were built as territorial markers and/or in order to evoke this protective power as well. During a period of social strife circa AD 1400, anyone traveling upriver along the Spring Creek from the main Mississippi River channel would pass these effigies. Also, the Ho-Chunk, Ioway, and Otoe had a Snake Clan within their social order. According to Ioway oral tradition, this clan is now extinct but they were responsible for marking the perimeters of villages (GoodTracks 2009). Thus, it is plausible that these effigy mounds are directly connected with Oneota village life at 21GD95.

### **Demarcation of Sacred Space**

The densest cluster of hollow cairns were built along ridgetops surrounding a clandestine, hidden valley with respect to the larger regional landscape. The bowl-like topography of this valley could be a proverbial cradle that held and supported a community of individuals brought together during a period of environmental and/or social uncertainty. The symbology found throughout the immediate area is indicative of people calling upon altruistic forces to provide protection, solace and courage.

As Ellenberger (2012) states, the erection of culturally-relevant and intervisible features highlights aspects of the symbolic world, and community cohesion is strengthened through this type of expression. Furthermore, linear cairn alignments may demarcate physical and/or spiritual regions, or they may point to other ceremonial structures/cultural features (cf. Billé 2012:24;

BLM 2005:114; Mallam 1975:131). Therefore, the stone cairns may also function as boundary markers and delineate the location of a spiritual sanctuary for Spring Creek Oneota peoples during this time period.

### **Interpreting the Stone Cairn Site(s)**

#### **Site Placement (i.e. Hilltop)**

Hilltops are particularly ideal locations to facilitate a connection between the earthly and heavenly realms. They are the natural nexus points between the Above and Below worlds. Therefore, hilltops by themselves are loci of power (Wilson 2005:9-10). Generally speaking, ritual activities conducted in settlements are related to but are much different in character than rituals conducted at higher elevations (Chartkoff 1983:758). Also, the larger the cairn and the higher its profile it is more likely associated with human burial or a particular ceremonial activity (BLM 2005:121). The stone cairns of Red Wing were placed in full view from the villages below. Thus, the ceremonies associated with cairn construction would be visible or known to all. Therefore, in all likelihood, the stone cairns were not part of a vision quest, which is a privately-held ceremony that pertains solely to an individual.

Cairns or *hekti* are found at points of highest relative elevation because those locations possess more intrinsic power. For the Ioway people, elevated places provide "an easy departure point for the spirit to begin its journey to the west and ultimately the spirit road to the heavens above" (Foster 1996). Elevated locations are primarily used for spiritual activity (personal communication, Curtis Campbell Sr., July 9<sup>th</sup>, 2007). Also, the cairn would have been

constructed around an original prayer altar on the hilltop (personal communication, Curtis Campbell Sr., July 12<sup>th</sup>, 2007). Also, sites may also be made sacred through human activity/ritual, i.e. “yuwakan” – consecrated or made holy (LeBeau 2005). Generally speaking, stone features were placed in locations with particularly strong spiritual power where it could be obtained directly from the spirit world. Some locations are so spiritually charged that oral traditions strongly suggest that they only be used again in ceremony under specific conditions (Ojibwa 2012). From a Siouan perspective, hilltops by their very nature fit this criterion.

It must be noted that stone cairns were not merely constructed upon arbitrary high spots because other locations that closely match the same topography do not have an observable stone feature (cf. Brace 2005:17). In the Indigenous worldview, site placement does not follow a prescribed physical model but rather one that is metaphysical and therefore more unpredictable. From a Dakota/Lakota perspective, the natural setting even amongst the same types of features will most likely vary and its sense of serenity “is not cued to the surrounding environment, it is cued to the thing which is found or received” (LeBeau 2005:149). The vision is often obeyed by creating a feature or monument at that location (personal communication, Sebastian LeBeau II, July 2<sup>nd</sup>, 2015). Sacred sites such as burial mounds and stone cairns are viewed as *oicu* sites, i.e. “a place where one finds or receives things” from the spiritual realm (LeBeau 2005:149).

Furthermore, the amount of energy exuded in reaching the site is a measure of the sincerity of the prayer. To the local Dakota, if a site is more difficult to reach, arriving at that location and placing a stone becomes substantially more meaningful and prayerful due to the level of sacrifice made by the supplicant (Bergervoet 2008:15). Bringing stone to a site, or praying with it through feature construction, is deemed a sacrifice and symbolically represents the commitment behind their prayer. One builds up their spirit through suffering and sacrifice,

e.g. using larger/heavier stones as opposed to lighter ones (personal communication, Sebastian C. LeBeau II, July 3<sup>rd</sup>, 2015). It is believed the Creator will reward this display of humility and sacrifice. The stone is subsequently infused with this spiritual energy (LeBeau 2009:206).

From an Ioway perspective, the flight pattern of the Passenger Pigeon may also relate to the position of the cairns (personal communication, Lance M. Foster, October 17<sup>th</sup>, 2014). These birds also had a connection with red cedar and Thunder, which is a fundamental spiritual component in Red Wing cairn construction. Furthermore, according to Schorger (1955:136), the Passenger Pigeon was considered by the Ho-Chunk as the bird of the chief, and it was served at feasts. Feasts were held in order to build or strengthen social bonds and as part of specific religious and renewal-type ceremonies, e.g. the Medicine Dance, the return of Thunder in the springtime, etc. (Radin 1990:270). Feasting was commonplace in the Red Wing region during the Silvernale/Oneota period (cf. Schirmer 2015). It is also plausible that ancestral pan-Siouan/descendant Chiwere-Siouan groups would hold similar or identical social events in connection with cairn construction.

### **Architectural Significance**

The architectural plan and profile of a stone feature has symbolic meaning, and therefore, can be culturally decoded. Therefore, shape is a crucial consideration in these types of studies (Sherwood and Kidder 2011:83). From a Lakota perspective, it is the shape of the feature that in fact identifies a stone cairn (LeBeau 2009:203). After examining the findings of multiple stone feature studies from across North America, the unique hollow form with wooden staffs near Red Wing (i.e. lodge of time and space) appears to be one-of-a-kind. The cairns were built upon

untimbered, conspicuous hilltops with open viewsheds. Over time these locations have become wooded. In general, massive cairns are usually built in woodlands in order to make them more visible. They can function as a grave but not as a tomb, which could house body parts but not a full body (personal communication, Sebastian C. LeBeau II, March 8<sup>th</sup>, 2006). Ho-Chunk chiefs were often buried in stone chambers, which are similar to the Red Wing phenomena in profile view (Radin 1990:55; Thomas 1894:107, see Fig. 2A-1). However, no confirmed evidence of human remains was ever found inside the Red Wing hollow cairns. This fact adds to their mystique because similar architectural forms were used for mortuary purposes (see Appendix I/Chapter 2 Supplement).

Furthermore, what sets different types of cairns apart is not their construction or location, but the kind of prayer they represent (LeBeau 2009:93). If one juxtaposes the hollow cairn profile with the Ioway cosmology, they symbolically mirror one another (cf. Fig. 2-2, Winchell and Upham 1888:60; Foster 1996). The Ioway emerged as the primary tribal group in southeastern Minnesota during the late pre-contact period. If one applies Ioway cosmology to symbolically interpret the hollow cairn and its component parts, the hollow shape of the cairn may represent the dome of the sky and the red cedar staff the kettle pole or *axis mundi* that separates the Above and Below worlds. If the kettle pole is removed, the earth and sky collapse into each other. A spiritual conduit subsequently becomes activated, and the cairn becomes a dwelling place or “lodge” of sacred, eternal energy (see section ‘Lodge of Time and Space’).

It was suggested by a Dakota informant during this investigation the red cedar staff was possibly a spiritual plug between the earth and sky worlds (personal communication, Native Informant #1, July 22<sup>nd</sup>, 2014). This Dakota interpretation is consistent with Ioway cosmology, which says the axis mundi/kettle pole may be removed in order to create a spiritual conduit

between these respective realms. See also Appendix III/Chapter 6 Supplement for a preliminary ethnographic interpretation of all cairn components and materials used.

The stone cairns of Red Wing are evidence of highly complex, coordinated ritual activity. Based on Staeck's (1994) findings and archaeological evidence from 21GD0258 (a proximal single-component Spring Creek Oneota village with evidence of both Thunderbird and Water Spirit clans, who possessed great sociopolitical influence within the pan-Siouan villages during the late pre-contact period), it is proposed in Chapter 5 that an esteemed class of ritual leaders blessed by Thunder coordinated this effort. Also discussed in Chapter 5, social conditions circa AD 1400 near Red Wing and elsewhere suffer a severe downturn. It is plausible for this social uncertainty to have inspired the Spring Creek Oneota to construct the stone cairns as a means to mitigate as well as improve their social and/or environmental condition through prayer and the intervention of altruistic forces.

### **Site Preparation**

While surveying a cairn site, it is essential to consider how the site surface was prepared prior to monument construction (LeBeau 2009:122). The hilltops near Red Wing have a thin layer of loess, therefore very little soil would have to be physically removed prior to hollow cairn construction. Also, due to the complexity of the overall cairn structure, these monuments were not constructed piecemeal. Each stone cairn was constructed during a single event. Thus, one can easily surmise that all of the building materials were assembled prior to construction. Also, the stone cairns of Red Wing were built around an original prayer altar on the surface of the ground



(personal communication, Curtis Campbell Sr., July 12<sup>th</sup>, 2007). In all likelihood the assembled materials were ceremonially blessed as well.

### **Stone Placement**

There is evidence that the cairn builders followed an architectural template all the while executing highly-coordinated ritual behavior. A critical interpretive key for the meaning of the structure is the direction and way individual stones were laid during its construction. As mentioned in Chapter 4, the base stones were initially placed in a circular, clockwise fashion around the upright red cedar staff until mid-height. At this point, the builders switched direction and spiraled the stones in counter-clockwise fashion until reaching its apex for the upper half. The wooden staff, aside from its spiritual significance, would also function as a three-dimensional datum point for constructing the monument according to the required cultural template.

Notably, clockwise movement coincides with the earthly movement of the Below World realm (e.g. natural movement, movement of the sun). The cycle of life travels with the movement of the sun, for example from east to west (personal communication, Native Informant #1, August 27<sup>th</sup>, 2014). The heavens are mirrored or reflected in opposite manner on earth (cf. Deloria and Wildcat 2001:26). Therefore, clockwise movement on earth is reflected by counterclockwise movement in the heavens. The stones were placed in likewise manner in order to build the cairn. The unique placement of the stones most likely maintains a metaphysical balance between the upper and lower realms, respectively. Oftentimes Indigenous knowledge reproduces the cosmos and models the universe within the landscape (Deloria and Wildcat

2001:25). Native peoples often attempt to maintain order of the cosmos by reflecting the movements of celestial objects in the features that they create (Goodman 1992:2).

Located at the center of this conceived universe within each stone cairn, is the sacred seventh direction, i.e. the Above, the Below, the East, the South, the West, the North, and the Center (Foster 1996). Seven is revered by Siouan peoples as a sacred number (cf. Blaine 1995; Brown 1953; Campbell 2000; Dorsey 1897; Foster 1996; GoodTracks 2009; Howard 1972; LeBeau 2009; Mails 1979; Ruml 1996; Skinner 1915; Stanley 2004). The location of the seventh direction may be conceptualized as being equidistant from each cardinal directions in addition to both above and below, i.e. center of a sphere. Similarly, while building a stone cairn, the act of bringing a stone towards the middle of this conceptualized sphere also builds a sense of communal togetherness and oneness with the Creator (personal communication, Sebastian C. LeBeau II, July 3<sup>rd</sup>, 2015). For the Ioway, each of the seven cardinal directions has its own Deity Protector (*Wakanda Wawa'in*), and all these fall under the Creator, *Wakanda [Thunder]*, or *Ma'Un*" (Foster 1996). Additionally, seven also corresponds with the number of stars in Pleiades, the number of clans, number of sacred pipes and associated ceremonies (Foster 1996; GoodTracks 2009).

### **Intrinsic Feeling/Sense of Place**

For Native peoples, there are multiple methods of bringing spirits into relation with human beings, including: fasting, mental concentration, offerings and sacrifices, ceremonies, and prayer (Radin 1990:262-2643). Admittedly, the "spirituality represented by the originator(s), the physical selection of materials and structural conformity, the specific cultural event complete

with the prayers, blessings, sacred songs and meaning can never be reproduced” (Brace 2005:7). However, contemporary stories, songs, and ceremonies are based on ancestral roadmaps which provide “the tools of wayfinding in place and through life” for living peoples (Chambers 2008:124).

Ceremonies strengthen the bonds between individuals, their families and social groups, the landscape and the cosmos. Ultimately, stone cairn construction is considered “spiritual use of the land”, which is a place where the activity results in the creation of a human-made modification such as building an earth mound, a stone cairn, a stone effigy, etc. (LeBeau 2005:1). The intrinsic nature at a stone cairn site is imbued with a positive spiritual power/quality, or it can be negative. Its intrinsic nature is dependent upon the purpose and function of the altar (LeBeau 2005:43). During a field visit it was determined the stone cairn sites possess positive energy (personal communication, Native Informant #1, July 22<sup>nd</sup>, 2014).

Feature construction, such as building a mound or cairn, is conceived as “working the vision” (personal communication, Curtis Campbell Sr., October 18<sup>th</sup>, 2007). It is a means to bring aspects of the spirit realm into physical reality. Native peoples do not view these sites as mere symbols, but rather as prayer altars and conduits to the spirit world (personal communication, Sebastian LeBeau II, n/d). Stone features are symbolic representations of the Creator and physical markers of His presence in the world (cf. BLM 2005:121). In some cases, stone cairns found in line with celestial bodies such as the Pole Star (Polaris), Morning Star (Venus) and the Evening Star (Mercury) in order to honor these spirit beings (LeBeau 2009:192). Renewal ceremonies such as stone feature construction provide a way for humans to take part in the maintenance of creation (ibid). From an even deeper religious/ceremonial standpoint, sacrifice is necessary in order to purify and renew life (Goodman 1992:2).

Although the stone cairns of Red Wing cannot be reassembled to their original condition, their meaningfulness still resides in the landscape which can be felt and conveyed. The Red Wing cairn sites and adjacent valleys are acknowledged as special places to both Native and non-Native peoples to this day. Although this feeling is not quantifiable, it is this intrinsic feeling that provides a springboard for further exploring the philosophies housed within a “lodge of time and space.” As Whitridge (2004:243) explains, places imbued with meaning (such as stone cairns) occupy a middle ground between culture and nature, the ideal and the material, the individual and the social. Therefore, an “archaeology of place requires an archaeology of the imaginary” (ibid; cf. Binford 1981).

### **Social Significance of Red Wing Cairn Construction**

Built upon conspicuous hilltops and spatially clustered along Spring Creek, the prominence of the stone cairns and their cognitive impact upon local villagers and their reverential behavior was undoubtedly very great (cf. Hurst and Johnson 2017:27; Tuan 1977). For an Oneota villager, the conspicuous placement of the stone cairns facilitated a metaphysical exchange between the stone cairns and themselves through line-of-sight bonds. Moreover, each stone cairn would be conceived as an active altar/conduit located upon natural nexus points between the heavenly and earthly realms.

Strikingly, after juxtaposing contemporary Ioway cosmology/“landscape of belief” with the architectural profile of the hollow cairns (cf. Foster 1996), it is easily argued the stone cairns of Red Wing are a conspicuous expression of ancestral Ioway cosmological beliefs throughout the valley. Van Dyke et al. (2016:207) states: “[a]rchaeological features constructed *to be seen*

may communicate boundaries” or “celebrate asymmetrical power relationships” or “convey a sense of shared identity.” The stone cairns of Red Wing were most likely a means to construct and maintain social cohesiveness by expressing a shared belief/identity in physical form during a regional time of strife circa AD 1400. This hypothesis is temporally consistent with the emergence of unique tribal identities in the Upper Mississippi Region circa AD 1300 (Gibbon 2003:40-44). Intensified monument construction during periods of strife by Siouan peoples has been strongly argued elsewhere (cf. Betts 2010).

The creation of physical boundaries and visual anchors (often associated with historical narratives) is commonly invoked by indigenous observers in the southwest and elsewhere in North America as essential to the process through which communities are situated in time and space... the establishment and recognition of physical landmarks provides the means through which specific geographically situated identities emerge. (Bernardini and Peeples 2015:217)

Regional social dysfunction presented the Spring Creek Oneota with an unpleasant reality. Thus, in order to battle against physical and/or spiritual enemies, this would necessitate the need for renewal-type ceremonies, which would “channel the energy of creation into the life of the tribe” as well as provide “a kind of ritual theatre that make the tribe's cosmic images manifest for all to see and experience” (Ridington 1987:150). Spiritual renewal requires acts of sacrifice (Goodman 1992:2). The landscape surrounding the cairns was charged with mythic meaning and directionality by the Spring Creek Oneota through various ritual acts, e.g. building stone cairns, using sacred markers such as thunderbird petroglyphs and rattlesnake effigies in order to evoke altruistic/protective powers, establishing a ubiquitous line-of-sight bond with their deceased ancestors (cf. Jacobson-Tepfer and Meacham 2010:136). Hence, existing social bonds would be reaffirmed and serve as a means to maintain order within the cosmos and surrounding region.

The creation of a planned ritual landscape as one of the initial steps in the establishment of their new settlement would have linked the Millstone Bluff immigrants to their political and mythic past, served as a public expression of identity, and helped promote group solidarity through the performance of ritual activities associated with this body of symbolic imagery. This landscape also would have served the Millstone Bluff villagers as a daily physical reminder of their religious beliefs in addition to reinforcing their cosmological view of the universe. To them, the symbolic oppositions within this landscape may have signified the never-ending struggle between the Thunderers of the Upper World and the Horned Serpent of the Under World. (Wagner et al. 2004:63)

Therefore, it is argued the stone cairns of Red Wing are evidence of a cultural crescendo for Spring Creek Oneota peoples and provide initial evidence of ancestral Ioway ethnogenesis in this region. The reasons for the latter include: 1) tribalism begins across the region ca. AD 1300; 2) the lack of Oneota materials post-dating AD 1400 near Red Wing; 2) the Ioway are confirmed Oneota descendants; 4) the emergence of the Ioway nation in the Red Wing region and southeastern Minnesota during the late pre-contact period; and 5) the identical symbolism between the architectural profile of the hollow cairns with contemporary Ioway cosmological belief(s).

### ***A Lodge of Time and Space***

Although historic Native American beliefs have changed or been modified in comparison to their pre-contact heritage, enough information exists to identify fundamental cosmological themes (Wagner et al. 2004:46). The ability to recognize these ritual actions in combination with the aforementioned cosmological themes offers a viable avenue for interpreting the meaningfulness of these monuments even now. This is possible since cosmological systems (and

astronomical knowledge) are interwoven within Native cultures from past to present (Goodman 1992:2).

As stated in a previous section, the literal translation of the Dakota word for stone cairns, *hekti*, is: “Lodge - What is Past” (LeBeau 2009:93). Although dismantled, the sacredness of the Red Wing stone cairns derives itself from the undisturbed prayers of the original builders and through their ritual acts. They are still recognized as “a place where holy works were done” (personal communication, Curtis Campbell Sr., July 12<sup>th</sup>, 2007). These prayers remain infused in the stones and hilltops in addition to spiritual energy summoned from the heavenly realm. The cairn sites were thusly transformed from arbitrary locations to places both alive and full of meaning to this day. Because the supplicants’ prayers have not degraded over time, place and being remain intimately linked (cf. Thornton 1997:222).

Notably, Native peoples do not distance themselves from their past and ancestors. Rather, cyclic conceptions of time make them ever-present (cf. Fabian 1983; Ingold 1993). In some Native worldviews, encounters with “time” are generally irrelevant and even absent from the language (Little Bear and Heavy Head 2004:32). Moreover, “only the present is of any significance, because this present is no less than the sum of all events passed, those in various stages of becoming and those expected or hoped” (Little Bear and Heavy Head 2004:35). Simply, the spirits of the past are always accessible in the present moment at each cairn site.

An essential part of the meaningfulness of cairn construction is the act of coming towards the center, both literally and figuratively speaking (personal communication, Sebastian C. LeBeau II, July 3<sup>rd</sup>, 2015). Communal rituals serve as a means to unify individuals as a cohesive whole in addition to situating and reaffirming their connection with the landscape. Ritual acts are believed to assist in maintaining harmony within the universe (Tuan 1971:33). Wilson (2005:11)

explains that ritual actions, or the observed “performance”, is of greatest importance to Native peoples. Furthermore, it is the order to the cosmos and not the balance of nature that is being maintained (ibid). Prayers to the Creator and orienting oneself with respect to the sacred seven directions (i.e. above, below, north, south, east, west, center/self) offers many blessings to supplicants such as “purification, joy, good health, growth, endurance, wisdom, inner peace, warmth and happiness” (Mails 1979:58).

The stones used to construct each cairn are believed to imbue the original prayers of the builders (personal communication, Sebastian C. LeBeau II, July 3<sup>rd</sup>, 2015). From a Native viewpoint, one must consider that stone is “part of the living world, and through the creation of certain forms and configurations, stones have the power to transform and heal” and “stone circles in particular reflect the continuum between time, space, matter and spirit” (Goodman 1992:7). In sum, all things “possess a spirit – only the way we are arranged temporarily separates us” (Hallendy 2000:22). That is to say, all physical and spiritual matter is born out of the Creator and possesses vitality or spirit derived directly from this common source, which includes stone (ibid). As an example, this concept is reflected in the Dakota/Lakota prayer Mitakuye Oyasin, “All My Relations”, which refers to common bond amongst all things. From this perspective, both stone and people share a common father. Hence, for human beings, stone is considered to be a wise, older brother who was born at the dawn of time.

The ritual manner in which the limestone was placed possesses very significant meaning. In Native mindsets, there is a constant mirroring of what is above by what is below (Goodman 1992:1). Furthermore, when the movements of the stellar world are followed in a ritual manner on earth, a hierophany occurs and sacred power is drawn down; attunement to the will of the Creator can be achieved (ibid). The stones were presumably placed in both clockwise and



counterclockwise for the same purpose (lower half and upper half, respectively). In the Native mindset, clockwise movements correlate with life on earth (e.g. path of the sun, religious processions, etc.) Therefore, this movement is balanced out by counterclockwise movements in the heavens because the order of the cosmos must always be maintained.

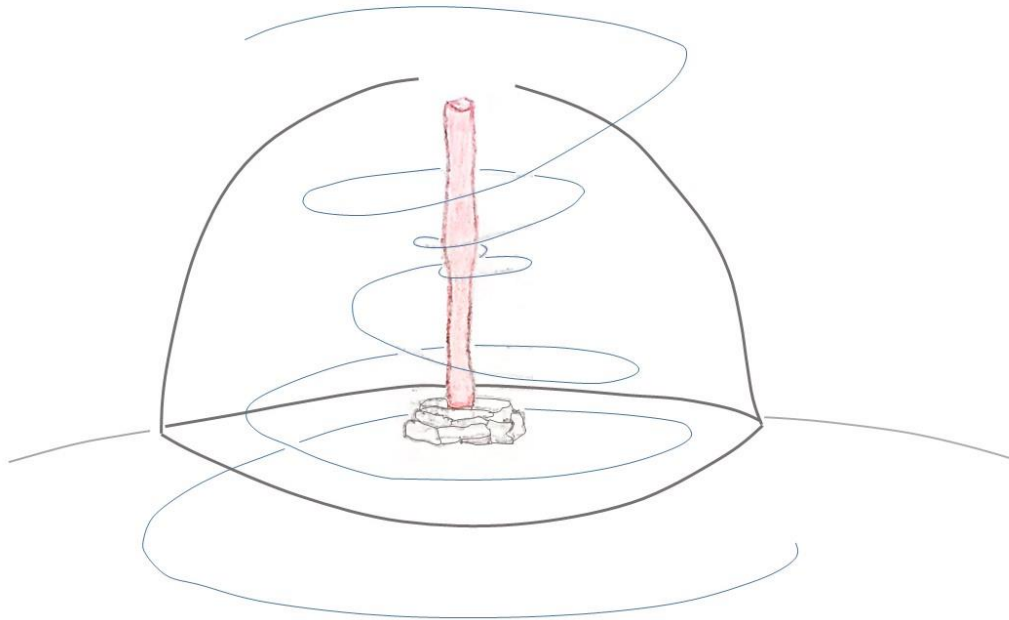


Fig. 6-2: Clockwise and counter-clockwise placement of stones around an upright cedar staff.

This ritual behavior mimics natural paths of movement on earth (clockwise) and mirrored, celestial movements (counterclockwise). Thusly, a metaphysical balance is maintained between respective realms. The stones also mark the directional movement of spiritual energy around the axis mundi (sketch by the author).

A metaphysical balance is maintained within the stone cairn itself through the unique way in which the stones were placed around the axis mundi, i.e. red cedar staff. The spiral pattern is also one of the symbols for Thunder, whose power is commonly sought for healing purposes (LeBeau 2009:198). Red cedar is also directly connected with Thunder in Siouan belief. An Ioway historian has suggested the stone cairns of Red Wing may have been a

“Thunder House” (personal communication, Lance M. Foster, October 17<sup>th</sup>, 2014). This designation still requires field confirmation at this time.

During the initial stages of this research a Dakota informant suggested the red cedar staff may have been ceremonially used as a spiritual plug between the Above and Below worlds (personal communication, Native Informant #1, March 27<sup>th</sup>, 2014). Red cedar was used in ritual contexts during the Mississippian period, which is relatively consistent with the current proxy date of the Red Wing stone cairns circa AD 1400 (cf. Wagner et al. 2004:48). Ethnographic and historical sources positively identify the Ioway people as the primary inhabitants in southeastern Minnesota during the late pre-contact period. Thus, it becomes very likely that these monuments were built by Ioway people or their direct Chiwere-Siouan ancestors. Furthermore, if one looks closely the Ioway Landscape of Belief, their cosmological worldview is physically mirrored in the architectural cross-section and components used in Red Wing cairn construction (cf. Foster 1996):

In fact the world could be looked upon as a great domed lodge, with the Earth-Island as its floor, and the walls and roof the sky. In the center was the invisible kettle-pole, the navel of the World, the axis mundi. One might remove it and travel to the Worlds Above and Below, as the Hero Twins did, for this was only the Middle World.

After juxtaposing the cairn profile with Ioway cosmological belief, the red cedar staff, a sacred object allied with Thunder (a protective/sacred force) and sign of eternal life in the Ioway worldview, symbolically serves as the kettle pole or Axis Mundi – a connecting rod between the Above and Below worlds. The hollow form of the cairns represents the dome of the sky.

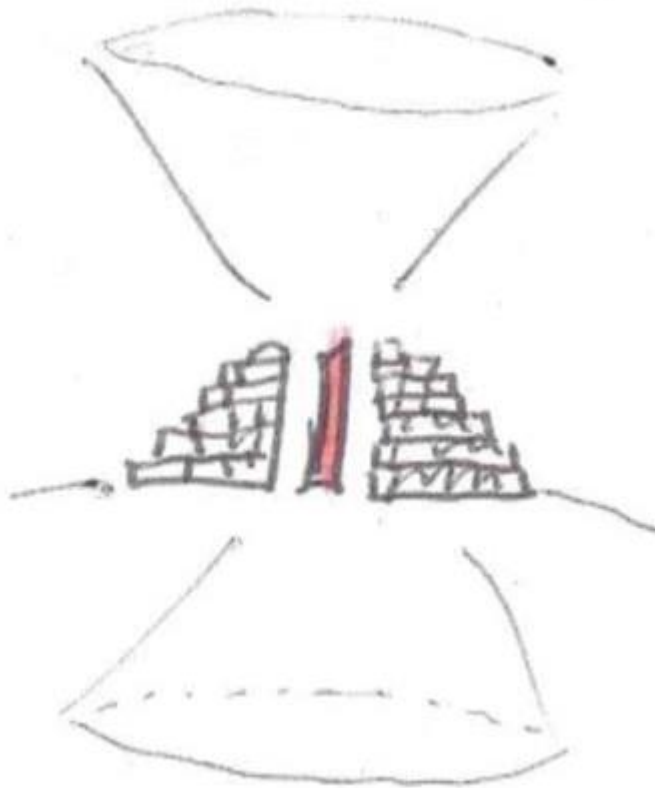


Fig. 6-3: Juxtaposition of Red Wing stone cairn profile with Ioway cosmology/landscape of belief.  
Profile sketch by the author.

Additionally, the Red Wing cairns are made entirely from limestone, which possesses the ability to purify spiritual energy in Siouan belief (personal communication, Native Informant #1, July 22<sup>nd</sup>, 2014). Cairns constructed upon hilltops are a means to reach towards the heavenly realm, to act as beacons for spirits, and function as conduits in order to commune with higher powers (cf. BLM 2005:113-115).

Furthermore, if the red cedar staff or “spiritual plug” as the Native informant suggested is figuratively removed, which correlates with the axis mundi or kettle pole in Ioway cosmology, the above and below realms subsequently collapse. As a result, a conduit of limitless spiritual

energy not confined by earthly limits of space and time now flows through each location. From a Dakota perspective, the stone cairns of Red Wing are transformed into a Lodge of Time and Space – a metaphysical spring for supplicants to satiate their spiritual thirst and reaffirm relationships with their sacred past in a culturally-defined location. While doing so, a supplicant is also able to orient themselves with respect to the cosmos, their ancestral past, and determine their soul’s path into the future (personal communication, Sebastian C. LeBeau II, July 3<sup>rd</sup>, 2015).

If one considers Goodman (1992) and a Lakota viewpoint, the two-dimensional cross-section of the cairn must be conceived in three dimensions. Mirrored, two-dimensional triangles that are common in Native artwork and symbology actually represent inverted cones (ibid). Thus, each cairn site is a three-dimensional nexus point, which harnesses and funnels boundless energy from respective spiritual realms (i.e. above and below) through the axis mundi at that particular location. Sensing this energy is analogous to standing next to a waterfall in which one does not have to stand directly in the path of the water in order to sense its movement and presence. The falling water creates a tangible change in the atmosphere that is physically felt (e.g. sense of place, intrinsic nature of the site). When the cairns were built, the sacred rituals and prayers called down the Spirit of the Creator, in order to make holy or consecrate the stone cairn locations, e.g. “yuwakan” – to make holy. It is through the Spirit of the Creator, or *Taku Skan Skan* – “All That Moves” that the holy will of the Creator is actualized (cf. LeBeau 2005; personal communication, Native Informant #1, February 6<sup>th</sup>, 2014). Hence, forevermore it is a spiritual wellspring of limitless, holy energy.

## Conclusion

From an ethnographic perspective, the stone cairns of Red Wing and the valleys adjacent to them are very holy places – ones imbued with spiritual energy to this day. The stone cairns are clearly sacred altars as well as principal components of a planned ritual landscape imbued with protective spiritual power (cf. Wagner et al. 2004:45). The strong geo-statistical relationship between nearby Spring Creek Oneota village sites and the stone cairns indicates who most likely built them and whose descendants provide an authoritative interpretation of these monuments, i.e. Chiwere-Siouan peoples. However, local Dakota-Siouan interpretations solicited during this investigation provided the essential cognitive key in order to unlock the mystery of the stone cairns.

After juxtaposing the architectural profile of the stone cairns with the Ioway landscape of belief, the cairn cross-section mirrors the Ioway cosmological conception of the universe. After removal of the sacred axis mundi or kettle pole (red cedar shaft), the stone cairns become free-flowing conduits of Eternal energy between the heavenly and earthly realms. As such, the cairns are spiritual wellsprings placed upon hilltops with altruistic energy pooling down in the adjacent valleys. It is currently surmised that cairn construction activity was very brief and very intense. Also, based upon ethnographic evaluation of cairn components and associated landscape features and archaeological evidence from 21GD258 – a rare single-component/occupation village within proximal distance of the densest cairn cluster, it is plausible that cairn construction activity was coordinated and overseen by religious leaders blessed by Thunder who emerge during this time amongst pan-Siouan peoples (cf. Staeck 1994).

According to both Khemnican Dakota and Ho-Chunk oral traditions, social strife occurred long before the arrival of Europeans in the Upper Mississippi valley (Campbell

2000:21-26; Stanley 2004:34). According to Campbell (2000), social disorder in the Red Wing region was related to the hoarding and abuse of sacred medicine plants as part of the sacred Medicine Dance, a religious ceremony shared by ancestral Ioway, Ho-Chunk, Oto and Dakota peoples (Skinner 1920:11). To date, the desire for power and conflict amongst Medicine Dance participants has been muted (GoodTracks 2009 – see Medicine Plants section). Both the Khemnican Dakota and Ho-Chunk orally document social fracture during the pre-contact era. Therefore, from a local ethnographic perspective, a tumultuous set of social circumstances would provide an adequate catalyst for the construction of the stone cairns of Red Wing.

For the Spring Creek Oneota, the act of building the stone cairns of Red Wing served as a means “to create the people who are of that place” (Tilley 1994:26). It is quite likely that this subgroup of regional Oneota people were calling upon altruistic deities and ancestral spirits in order to aid them during a time of need. After their communal sacrifice of building the stone cairns and intense prayer, social renewal would occur (cf. Goodman 1992:2). The stone cairns are also comprised of sacred elements and, as a whole, are prayer altars of major significance. Through a widely-visible, communal expression of a shared cosmological worldview, the Spring Creek Oneota were also able to reify existing beliefs and strengthen bonds as a cohesive group.

While researching and reviewing these interpretations, the author sought the input of an Ioway historian. After conferring, it was suggested that the unique type of stone cairn found near Red Wing is possibly a “Thunder House” (personal communication, Lance M. Foster, October 17<sup>th</sup>, 2014). Based on the observed relationship between the stone cairns with the Spring Creek Oneota tradition, whose symbology is rife with Thunder and the emergence of Oneota-descendant Ioway people in southeastern Minnesota during the late pre-contact period, a

“Thunder House” designation is currently the most authoritative cultural description of this stone feature (cf. Brace 2005:4). This designation still requires field verification at this time.

Thus, from a synthesized ethnographic perspective, the stone cairns of Red Wing functioned in one or more ways:

1. Prayer altar/conduit between heavenly and earthly realms
  - a. Hekti – Lodge of Time and Space, or literally translated as Lodge-What is Past. The cairns are places imbued with positive energy to this day due to holy work once performed at each site.
  - b. Individuals cairn components and hilltop placement have profound spiritual significance in Siouan belief(s)
2. Prominent landmark and communal expression of a shared cosmology and identity of Spring Creek Oneota people
  - a. Architecture mirrors historic Ioway cosmology
  - b. Possibly a “Thunder House” (personal communication, Lance M. Foster, October 17<sup>th</sup>, 2014).
3. An intervisible community of monuments connected through an individual line-of-sight bond with a common focal point:
  - a. Common focal point - An ancestral Oneota burial mound group, i.e. 21GD54
  - b. A common focal point is a means to orient and attach Spring Creek Oneota people with their sacred past and the surrounding physical landscape during a regional period of strife
4. Boundary markers

- a. The stone cairns demarcate a physical and spiritual stronghold of the Spring Creek Oneota people
- b. Territorial markings associated with cairn construction such as thunderbird petroglyphs and rattlesnake effigies were a means to evoke altruistic/protective forces from the spirit world

In conclusion, Native informants and present-day archaeologists acknowledge the serenity of the stone cairns and the surrounding valley. Tilley (1994:26) suggests the “spirit of a place may be held to reside in a landscape” and “[f]amiliarity with the land, being able to read and decode its signs allows individuals to know ‘how to go on’...” Hopefully, through continued ethnographic work, more knowledge pertaining to the stone cairns of Red Wing is awakened. Ethnographic information and Native consultation has thus far illuminated the meaningfulness of the stone cairns and the surrounding landscape.



## Chapter 7: Conclusion and Future Research

### Introduction

This investigation examined the stone cairns of Red Wing from multiple vantage points in order to answer nagging anthropological questions, which still include: who built the stone cairns; when; and why? Other important questions were also addressed: 1) What is the cultural significance of the cairns to both past and present Siouan peoples? 2) What evidence is available to illumine the behavior and social condition of the cairn builders? And 3) How are the form, materials, placement, and culturally-observable ritual acts at each cairn site philosophically transformed into a “lodge of time and space” as described by the local Dakota?

Due to the relative failure of past standalone studies to answer the aforementioned questions pertaining to stone cairn construction near Red Wing, a mixed-methods approach was employed in order to gather all existing information as well as generate new data, process it and identify areas of common ontological overlap, and rely upon Native authorities to explain the meaningfulness of the activity. The accumulated evidence comes from varying sources. It includes the following: historical documentation from 19<sup>th</sup> century cairn excavations and testimonies; an analysis of archaeological traditions from the region as a scientific base; oral histories and traditions of Siouan peoples whose ancestors dwelled in the Red Wing region; GIS/quantitative analysis; spatial and morphological survey data from each cairn site; available data from proximal village sites geo-statistically correlated with cairn construction; and cultural interpretations of the cairn sites from Native informants participating in this study.

Also, an initial attempt was made to discern the different types of stone features in the Red Wing region that are encountered in the landscape, the literature, and oral accounts. In sum, this study is one archaeologist's attempt at understanding the reasons for these phenomena, their uniqueness, and associated meaning to Native people today. More questions for future research have resulted (cf. Brace 2005:154).

### **Data Collection, Analysis and Synthesized Results**

Past investigations have not yielded any plausible answers to the persistent anthropological questions still surrounding the stone cairns of Red Wing: who built them, when, and why? Therefore, a mixed-methods approach was employed in order to utilize all known information, apply GIS techniques, generate new data, and solicit the interpretations of Siouan peoples whose ancestors lived in the Red Wing region.

Multiple types of data were collected or generated, which include: historical references, ethnographic references, topographical and morphological data at each cairn site, archaeological data from proximal villages, and current Siouan perspectives. The underlying assumption for this investigation was that various points of view would intersect in areas of common ontological overlap, which offers an agreed-upon starting point from which to analyze the stone cairn phenomena from both Western and Indigenous perspectives. Possible data conflicts were also anticipated (cf. Mason 2006). In those cases, one must assess "the exact terms of difference, the grounds of similarity, what may be proposed as a conjoint perspective, and what must remain as difference" (Whiteley 2002:408). On the other hand, ethnographic information gathered by

researchers is often misused or misplaced (Rundstrom and Deur 1999:242). Therefore, for this study, it was deemed essential to allow Native peoples the opportunity to interpret and analyze both the quantitative and qualitative information not only in order to avoid ethnocentric interpretations but to also offer them any new information brought to light during the entire investigation (Nicholas 2008:242).

### **GIS/Spatial Analysis**

Based on topographical and morphological field data collected from 2013-2014 and subsequent GIS/quantitative analysis, a strong geo-statistical correlation exists between nearby Spring Creek Oneota villages and the Red Wing stone cairns. Viewshed and intervisibility studies are the most common in landscape archaeology (Bellavia 2002). Therefore, these types of analyses were applied to the Red Wing cairn phenomena. Remarkably, after eliminating one spatial and statistical outlier, all individual lines-of-sight from each cairn location converge in the exact middle of a Woodland/Oneota burial mound group at 21GD54, which dates from AD 1100 – 1300. Since all of the stone cairns share a common visual anchor and cultural tethering point, this association also provides a baseline date for their construction from the Woodland/Red Wing Oneota period.

Furthermore, the unweighted spatial mean for all stone cairns (and also for both cairns/stone mounds) is in the immediate vicinity of 21GD95, a recorded Oneota village immediately adjacent to 21GD54 on the east bank of Spring Creek. Due to the paucity of cairn sites and measurable morphological traits because of their widespread dismantlement, simple bi-variate analyses were used to inspect the correlation strength between various independent

variables (cf. Artz and Goings 2006). A site intervisibility matrix was developed and shows a very significant, negative correlation between percentage of intervisibility and viewshed area, i.e. the smaller the viewshed size, the more cairns you can see from that location. This also suggests where the heart of activity was in the immediate vicinity of 21GD54 and 21GD95 along Spring Creek.

Identifying the geostatistical connection between the stone cairns and Oneota peoples necessitates the incorporation of available archaeological data from proximal villages and ethnographic interpretation vis-à-vis Oneota descendants (e.g. Ho-Chunk, Ioway, Oto and Missouria peoples). Also, since site-based approaches around particular locales can successfully merge oral history and archaeology, available Dakota Siouan perspectives from those dwelling the region (or close relatives elsewhere) were also sought (Robertson 2009:158).

Although each stone cairn has been destroyed, the physical connection between the stone cairn population, Oneota sites, and the surrounding landscape remains intact to this day. Admittedly, mutual relationship alone does not prove causation (Stanislawski 1973:378). However, it is extremely unlikely the prevalence of Oneota sites in the proximity of the stone cairns in addition to geo-statistical relationships between these monuments and other Oneota-related landmarks is mere happenstance. Radiocarbon dates from a rare, single-component Oneota village at 21GD258 suggest it was occupied circa AD 1400 during a single episode (cf. Schirmer 2016). Notably, this village lies immediately outside the primary cluster of stone cairns and was occupied approximately a century later than any other sites with recognizable Oneota expressions in the Red Wing region.

Future radiocarbon dates from the Oneota village at 21GD95 would provide the most defensible proxy date(s) of construction and proffer details about the daily lives of the cairn

builders. Beyond this study, it is imperative to assess if 21GD95 and 21GD258 were contemporaneous. If a relatively small number of cairn builders only inhabited the valley for a very brief period, this certainly helps explain why these monuments have remained so mysterious to this day.

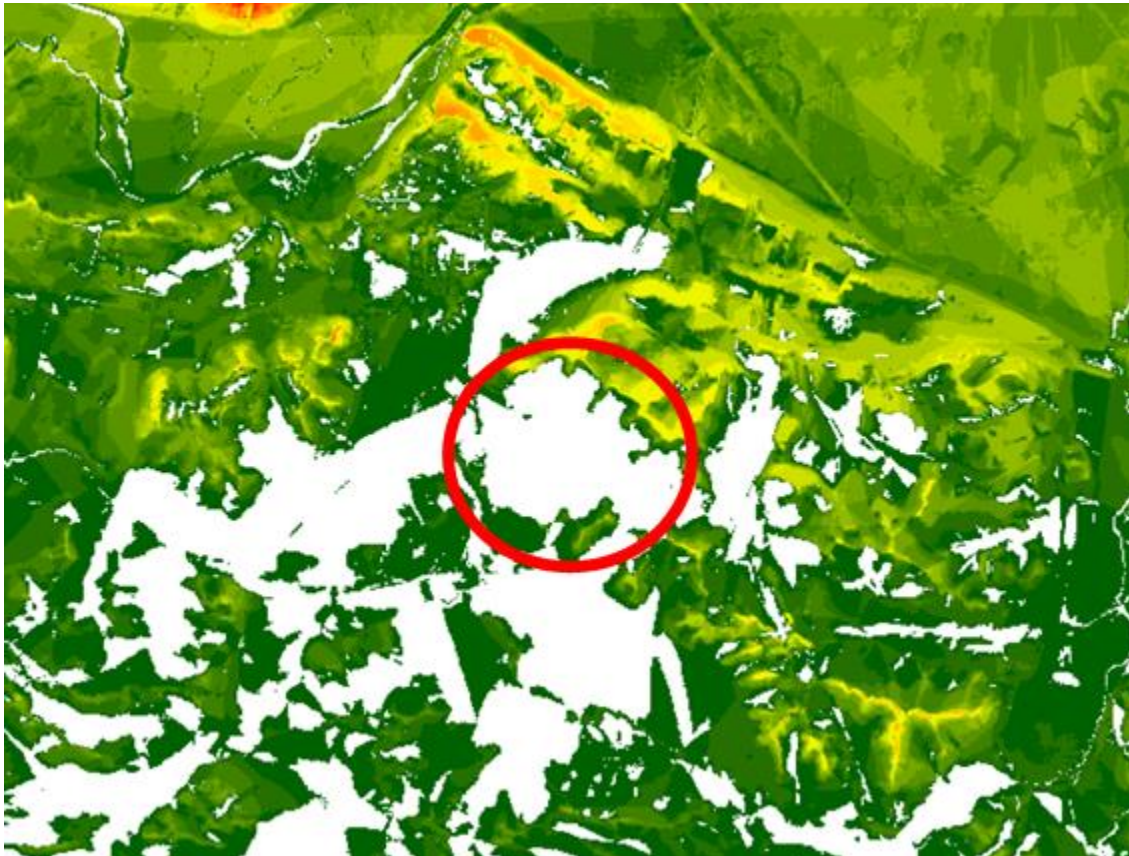


Fig. 7-1: Three-mile visibility and Stone Cairn Concentration (copyright MnDOT 2017)  
Visibility analysis parameters were 10 x 10-mile processing extents with 3-mile max outer radius viewing distance. Observer points were spaced at 1 kilometer (electronic correspondence, Jeff Walsh – Peregrine Aerspatial LLC, July 6<sup>th</sup>, 2017).

Interestingly, the stone cairns are also primarily concentrated around a valley that is completely hidden in relation to the larger Red Wing landscape (see Fig 7-1). Only one cairn (i.e. Cairn ID 1 – “Aiton”) is placed upon a highly-visible location. Thus, cairn construction was not

only an intense effort but also secluded and intimate. From AD 1050 – 1300, the major villages in Red Wing were united as a symbolic community during prolific aggregation events with highly visible material and non-material symbols (Fleming 2009:298). The secluded, intensified nature of stone cairn construction near Red Wing indicates a major shift in social interaction and behavior with respect to the larger region.

### *Archaeological Analysis*

Dobbs (1996) notes a fundamental shift in social behavior and type of monument construction 500 - 700 years ago, which he posits is connected to widespread climatic and cultural change in the Upper Mississippi River valley between AD 1400 – 1650 (Arzigian and Stevenson 2003:110). Dramatic changes in monument construction occurred in Minnesota after AD 1200. The pace of earthen mound construction slows and other forms of monuments were built. According to the current proxy date of AD 1400 for stone cairn construction in Red Wing, the cairns were constructed during the midst of this downward shift in physical environ and social behavior. Ultimately, there is ample evidence of environmental and social strife in the archaeological record across the Upper Mississippi region during this time period (email correspondence, Ronald C. Schirmer, June 15<sup>th</sup>, 2015).

Ecological and cultural factors must have greatly impacted the inhabitants of Red Wing as evidenced by a period of intense mound building and then its sudden termination approximately a century before the stone cairns were erected. Such a break with a centuries-old tradition would most likely require a “momentous event” (Parker Pearson 1999:17). The Red

Wing Oneota tradition in the major villages ends around AD 1300. Based on recent archaeological evidence, the Spring Creek Oneota are thought to be Bartron villagers who moved away from the Mississippi River channel and up the Spring Creek valley (Schirmer 2016).

Additionally, thunder vessels similar to the one found at 21GD258 were also excavated at two major Silvernale/Oneota villages, i.e. Mero (47PI02) and Bartron (21GD02). However, those sites were occupied a century earlier than the Spring Creek Oneota sites. Thus, an offshoot of these peoples were still in the Red Wing area after AD 1250. Due to the lack of Oneota materials dated from the 15<sup>th</sup> and 16<sup>th</sup> centuries in the Red Wing region, the Spring Creek Oneota either moved away to other Oneota centers in the region or they adopted a new cultural identity and mode of life within the Red Wing region itself (cf. Hall 1997:153). Later Dakota sites were generally concentrated near the present city of Red Wing and along the Mississippi River.

Additionally, above and below world symbologies are prevalent throughout the valley and are directly related to the pan-Siouan Medicine Dance practices of the pre-contact era (cf. Campbell 2000; Radin 1991; Skinner 1920; Wallis 1947). In all likelihood cairn construction was coordinated and supervised by an elite class of ritual specialists blessed/trained by Thunderers (cf. Staeck 1994). Presumably the Thunderbird and Water Spirit clans observed at 21GD258 possessed sociopolitical influence within the village as well (ibid). Whether the Red Wing cairn builders continued to live in the region or ultimately left remains unclear.

According to Gibbon (2003:40-44), unique tribal identities start forming in the Upper Mississippi basin around AD 1300. This is presumably due to an escalation in regional conflict with an influx of Oneota traits further north near Mille Lacs. Notably, this northward influx of Oneota traits is contemporaneous with the abandonment of Oneota villages in the Red Wing-Lake Pepin area. During this time Oneota peoples are also clustered along the Blue Earth River

in southern Minnesota as well as near La Crosse, Wisconsin. Between AD 1350 and 1650, Oneota villages were occupied for longer periods of time and were placed in more defensible positions. There is a documented increase in palisaded villages on the northern Mississippian frontier during this time period as well (Gibbon 2003:41).

Moreover, Dobbs (1984) suggests the Oto are possibly the direct descendants of the Blue Earth Oneota in southern Minnesota. The Ioway people are confirmed descendants of Orr phase Oneota in far southeastern Minnesota/northeastern Iowa (Griffin 1937; Mott 1938; Wilford and Brink 1974). Therefore, it is within the realm of possibility that the Spring Creek Oneota are also direct ancestors of the Ioway people, who emerged as the primary tribal group in the Red Wing region prior to their expulsion by the Dakota in the 17<sup>th</sup>-18<sup>th</sup> centuries.

It was not confirmed during this investigation if the stone cairns of Red Wing once contained physical human remains. Regardless, from a Siouan perspective, stone cairns do function in a mortuary capacity as beacons for spirits (BLM 2005:118). Therefore, their legal protection is justifiable under Minnesota Statute 307.08.

### **Ethnographic Resources/Native Consultation**

In corroboration with archaeological evidence, oral traditions from local Khemnican Dakota at Prairie Island and the Ho-Chunk Nation indicate that social fission(s) occurred within a larger, united Siouan community long before the arrival of Europeans in the 17<sup>th</sup> century (Campbell 2000:26; Stanley 2004:34). According to Campbell (2000), the Red Wing region was deemed sacred for many reasons, which included the abundance of medicine plants used in Medicine Dance/Lodge practices. This is why so many Dakota and non-Dakota peoples



congregated in the locality, prayed, built mounds, etc. (personal communication, Curtis Campbell Sr., July 9<sup>th</sup>, 2007).

Due to a foreboding religious prophecy, the sacred medicine plants were subsequently hoarded. This selfish behavior ran contrary to the ideals of the Medicine Dance/Lodge, which were rooted in humility and Wico-We-Chi-Wazi, or relatedness through sharing. Internal conflict subsequently arose amongst relatives, the sacred plants were put away for sakekeeping, and specific families left the area for good. This occurred many generations before the initial appearance of Europeans near Prairie Island/Red Wing (ibid; cf. Campbell 2000:26).

Within this environmental and social context, the stone cairns were built. To further complicate matters, the identity of the builders has remained unknown even to the Dakota. Therefore, it is very difficult to identify a sole responsible group. Thus, multiple perspectives were sought from tribes whose ancestors once lived in the Red Wing region. Cultural interpretation of stone features is more intellectually fruitful than excavating them (BLM 2005:114). Unfortunately, in sum, the tribal historians whom the author contacted were altogether unaware of this phenomena.

However, as Basso (1996:xvi) states, an ethnographer does not typically follow an intellectual map but instead follows the trail of clues laid out before them. The primary cognitive key which unlocked the mystery of the stone cairns of Red Wing was a Dakota interpretation of the red cedar shaft, which was suggested to have functioned as a spiritual plug between the Above and Below realms (personal communication, Native Informant #1, July 22<sup>nd</sup>, 2014). Later, after poring over historical accounts of their original architecture, the profile of an undisturbed stone cairn symbolically mirrors Ioway cosmology/“landscape of belief” (cf. Foster 1996; Winchell 1911:165-168).

The placement and the way in which the stone cairns were constructed also requires attention. As Mathews (2008:238) emphasizes:

The manner and location in which [cairns] were constructed may reflect a people's changing understanding about their world and their social identities while operating as a strategy for managing dynamic relations in society... recursive practice of cairn construction may be viewed as a reflection of larger societal themes of identity and the ideational structuring of social space.

Additionally:

In many ways, space and place are natural concepts for archaeology. The mapping of peoples and practices across space and time—evidenced by the distribution of artifacts, households, settlements, and monuments—is one of the most basic forms of archaeological analysis. The process of placemaking, however, reframes space as something produced by people through actions, a product of both intentionally conceived action and the unintended consequences of action. Place, then, is not a neutral backdrop or stage of human action, but a simultaneous product and producer of human action. (Mathews 2014:66).

Furthermore, the stone cairns were built upon hilltops because they are deemed more holy by Siouan peoples and a nexus point between the Above and Below worlds.

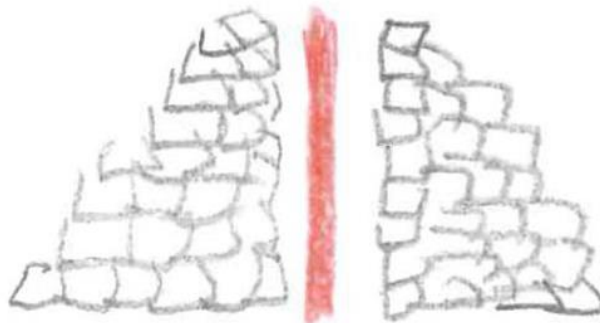


Fig. 7-2: Cairn profile as described by Colvill (cf. Winchell and Upham 1888:58-60; Winchell 1911:166)

Furthermore, the cairn builders spiraled stones around the vertical axis (red cedar shaft) in a ritually-significant manner. They first set a wedge stone upon the surface of the ground and

commenced by placing the individual limestone pieces in a clockwise manner until mid-height. Next, they switched directions and placed the remaining stones in a counterclockwise fashion until reaching its apex (electronic correspondence, David Tovar, October 5<sup>th</sup>, 2016). Since the heavenly and earthly realms are generally thought to reflect one another in Native cosmologies, the placement style of the stones also reflects a desire of the builders to maintain a metaphysical balance between the Above and Below realms and within each stone cairn.

The ancestors of Chiwere-Siouan tribes participated in the Oneota archaeological tradition. All confirmed pan-Siouan groups once dwelling in the Red Wing area (ancestral Ho-Chunk, Ioway, Oto and Dakota) commonly practiced the Dakotan version of the Medicine Dance (cf. Campbell 2000; Skinner 1920:11). The religious practice is rife with Above and Below world principles. The Ho-Chunk/Winnebago, who are considered grandfathers amongst the other Chiwere Siouan tribes, linguistically branch off from their Ioway, Oto, and Missouriia relatives circa AD 1500 (Springer and Witkowski 1982; Staeck 1994:694). These tribes remained closely tied during the historic period as well.

The tucked-away location of the Red Wing stone cairns, in combination with the regional social climate circa AD 1400, indicates these peoples were living in seclusion and behaving in a defensive, non-aggressive manner. Generally speaking, the Little Ice Age (LIA) circa AD 1300 caused dramatic downturns in social relations across the present-day United States (Foster 2012). The effects of the LIA in the Red Wing region still requires research attention. In the valley below the stone cairns, two human skull fragments (occipital bones) with evident trauma were found in separate household refuse pits at 21GD258. This bolsters the argument that these Spring Creek Oneota villagers were enduring a period of social strife. If warfare was waged it was most likely in the form of limited raids as opposed to full-on aggression against their foes since these

groups were generally organized for peace, not war (cf. Dobbs 1984:197). However, warrior classes were esteemed members within communities (GoodTracks 2009).

Staeck (1994) observed the increased sociopolitical influence of both the Thunderbird and Water Spirit clans within the pan-Siouan sphere of the late pre-contact period. Notably, both clans are observed at 21GD258. Moreover, due to the prevalence of Thunder symbology and other means to spiritually evoke this deity within the cairns themselves and throughout the surrounding valley, it is highly probable the construction of the stone cairns of Red Wing was coordinated and supervised by an elite class of ritual specialists blessed/trained by Thunder who emerge during this time as well (ibid).

Moreover, for the Ho-Chunk, the Thunderbird people were called “chiefs”, and the village leader was also selected from this clan (Radin 1990:272). It was the duty of the chief to ward off all evils as well as embody benevolence, compassion, bravery, and generosity (ibid). Also, the Water Spirit clan once occupied a high position in the Ho-Chunk council lodge (Radin 1990:115). Oto chiefs did not possess absolute power or authority. However, in situations where leadership was necessary, an individual would be selected by the hereditary chiefs (Dobbs 1984:195). This may also be true for the Spring Creek Oneota villages near Red Wing.

Thus, it becomes probable the Ioway nation has identifiable roots in the Spring Creek Oneota tradition, or the stone cairns of Red Wing are an expression of pan-Siouan cosmological belief/identity in between AD 1300 – 1400. At the very least, the stone cairns of Red Wing were a means to maintain group solidarity for the Spring Creek Oneota as well as impact the social and socio-mythic landscape of their descendants by recreating the cosmology of the builders (Rosebrough 2010:564, 393). For subsequent generations who visit these sacred places/effigies, the ability to interpret the observed symbolism will also preserve its associated ideals and

philosophies (personal communication, Curtis Campbell Sr., September 15<sup>th</sup>, 2007). It has also been suggested that ancestral Assiniboine, who regularly use stone in ritual contexts, built the stone cairns since they apparently preceded the Ioway in the Red Wing region (cf. Winchell 1911:70). However, the term “Khemnican” is attributed to the Assiniboine, and Khemnican Dakota do not know who built them (cf. Winchell and Upham 1888:60; personal communication, Curtis Campbell Sr., July 9<sup>th</sup>, 2007). Due to the close familial ties of the Assiniboine and Dakota peoples and their general lack of knowledge pertaining to the origin of the cairns, this association is doubtful.

### **Summary**

The stone cairns of Red Wing are principal components of a ritual landscape built by the Spring Creek Oneota and connected together through line-of-sight bonds, ca. AD 1300 – 1400. It is also surmised this activity was done in order to unify the Spring Creek Oneota during a tumultuous period of environmental and/or negative social flux (cf. Betts 2010). Notably, the common focal point of the Red Wing cairns is an Oneota burial mound group recorded at 21GD54. Therefore, it is quite conceivable that the cairn builders sought to establish a spiritual connection with their direct ancestors. Additionally, the stone cairns function as individual and communally-integrated prayer altars as well as a symbolic expression of the cosmological worldview of the Spring Creek Oneota.

Geography plays an important role in the social construction of sight communities (Bernardini and Peeples 2015:226). A clearly visible monument presumably possesses more social significance (Bernardini and Peeples 2015:219). At the present time it is argued the stone cairns of Red Wing are both a response to external influences such as climatic and cultural

change, and also signify conscious choice(s) of the Spring Creek Oneota to physically modify the landscape in a socially meaningful way. The catalyst(s) for this unilateral decision will become clearer as more evidence is accrued and time moves forward. At their foundation, cultural symbols like the stone cairns are clear and explicit expressions of ethnicity and group identity (Fleming 2009:97).

Based on the body of evidence collected during this investigation, the following suppositions can be made: 1) the Ioway or their direct ancestors built the stone cairns of Red Wing; or 2) the Ioway have identifiable roots in the Spring Creek Oneota tradition; or 3) the contemporary Ioway “landscape of belief” as described by Foster (1996) offers insight into worldview of pan-Chiwere Siouan/Oneota peoples circa AD 1500. Moreover, at the present time, the Ioway people offer the most authoritative interpretation of the stone cairns of Red Wing (cf. Brace 2005:4). This assertion is based on the following evidence: 1) a very strong geo-statistical relationship exists between between the stone cairns and proximal Oneota sites/villages; 2) the original architectural profile of the stone cairns mirrors contemporary Ioway cosmological belief; 3) Ioway ancestors participated in the Oneota archaeological tradition; and 4) the Ioway emerge as the primary tribal group in the region during the late pre-contact period. Of course, ethnographic information from other Oneota descendants may also be solicited.

For the Spring Creek Oneota, an intensification in ceremonial life acted as a handrail during a period of environmental and social flux (cf. Betts 2010). The stone cairns of Red Wing were central features of a distinctive cultural landscape, which established a firm sense of place, community, continuity, and belonging for these people. These monuments were a prayerful means for the Spring Creek Oneota to pull themselves together as a community and also to repel negative forces in a safe, secluded location during a period of regional strife (cf. Betts 2010:105).

Employing a hybrid methodology contributed greatly to the success of this study. GIS analysis, particularly intervisibility and viewshed analysis, were essential to unlocking the mystery of the stone cairns of Red Wing. Details of their original architecture/components in conjunction with Native interpretation of them proved invaluable. Incongruencies between Western and Indigenous perspectives were minimal for this study. In fact, both the pre-contact archaeological record and available oral traditions corroborate in the Red Wing region.

Three new archaeological sites were recorded at the Minnesota Office of the State Archaeologist (Cairn IDs 8, 12, and 13-14-15, respectively): 21GD0308, 21GD0309, and 21GD0310. Also, based on historical references, current field conditions, and available ethnographic information, a Red Wing-specific stone feature taxonomy was generated (see Chapter 4). It is a base template for further taxonomic research beyond this dissertation. The author accepts full responsibility for any misinterpretations or misapplications of cultural information in this study.

### **Future Research**

#### **Mixed-Methods approach**

Based on the results of this investigation, new information was certainly brought to light. The combination of different data sets (e.g. oral traditions, the archaeological record, spatial analysis, Native consultation) has led to a more complete picture of the landscape and the stone cairns themselves (cf. Mack 2004:79). A hybrid methodology is analogous with designing a truss bridge: The goal is to build a structurally-sound structure using innovative techniques, to

minimize the amount of material used, to provide an aesthetically-pleasing design, and most importantly to withstand all applied theoretical loads. This theoretical load is spread throughout the entire structure and its respective members. Some members are designed to support heavier loads but all are necessary. If a single member is removed, the entire structure will collapse.

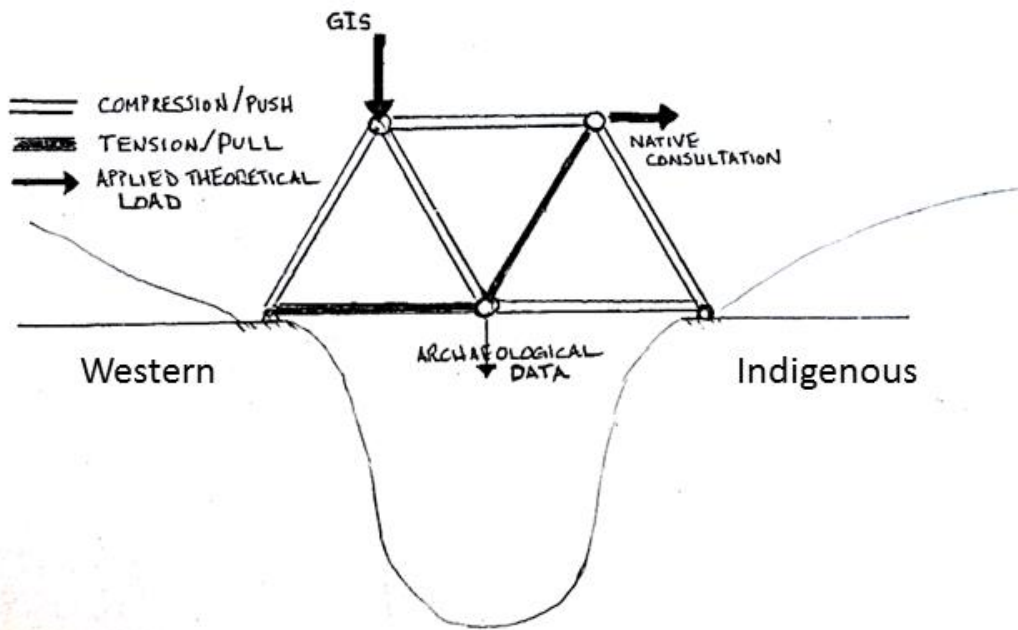


Fig. 7-3: Truss Bridge Concept and Application of Theoretical Loads  
(Sketch by the author)

From an engineering standpoint, all structural members either withstand or apply pressure in relation to each other (i.e. tension or compression forces). This ontological push and pull, which is so often avoided by respective parties in academia, is mathematically unavoidable in real-life bridge design. Different theoretical conditions will modify the amount of force applied to the structure and in which direction. Thusly, specific members must be designed to handle more load depending upon the aforementioned conditions. Therefore, if one wishes to design a



methodological bridge between Western and Indigenous approaches, it must also be able to withstand the existing and anticipated loads (i.e. scrutiny) applied by both Native and non-Native researchers.

This investigation was funded solely by the author and made possible through resources available to graduate students at the University of Kansas. Hopefully the initial results of this study provide sufficient and significant reason for acquiring research funds in order to address the following research questions.

### *Archaeological analysis*

- 1) Cultural crescendo vs. ethnogenesis: to which circumstance do the stone cairns of Red Wing stand as witness?

Further archaeological analysis of the associated Oneota village sites, particularly 21GD95, will test the hypothesis that the Red Wing cairn construction is a response to downward environmental and/or social conditions based upon botanical and artifact analyses. Presumably the proposed date of cairn construction near Red Wing (ca. AD 1300 – 1400) will be further refined by the application of geo-statistically applicable radiocarbon dates from 21GD95. Optimal Spectral Luminescence (OSL) dating also offers a precision method for determining when the cairns were built at each individual location (Williams 2012:60). However, the applicability of OSL testing is dependent upon the degree of disturbance at each cairn location. Additionally, were the villages at 21GD95 and 21GD204 located on the western end of the secluded valley occupied contemporaneously with 21GD258 on its eastern end? They are all Oneota villages but future excavation is necessary in order to confirm this question.

Also, future excavations would indicate if Oneota peoples living in the proximity of the stone cairns were indeed under stress and/or congregating *en masse* as indicated by pooling of resources, spatially-condensed modes of living during relative short periods, etc. Based on excavated materials from 21GD258 (i.e. the single-component Oneota village located immediately to the southeast of the densest cluster of Red Wing stone cairns), both the Thunderbird and Water Spirit clans were present in the valley and were prominent members within the Spring Creek Oneota social sphere. Their sociopolitical influence in relation to cairn construction and the ultimate fate of the Spring Creek Oneota requires further exploration (cf. Staeck 1994). For the Ho-Chunk, the chief was chosen from amongst the Thunderbird ranks and both the Thunderbird and Water Spirit moieties were fundamental to Ho-Chunk social order (Radin 1990:142-143, 273). The relationship between Spring Creek Oneota and Oneota groups living elsewhere in Minnesota circa AD 1400 requires attention as well (e.g. Blue Earth Oneota, La Crosse Oneota).

### *GIS/quantitative analysis*

- 2) Were other hollow cairns constructed in the Red Wing region? What other features are associated with their construction? Was their placement dependent upon other geographic or sociological variables?

Using available software, more work can be done to recreate the visual experience of the Spring Creek Oneota once dwelling amongst the stone cairns of Red Wing (cf. Ellenberger 2012):

The study of cultural landscapes has emerged as a central concern in historical archaeology. Archaeological fieldwork has traditionally focused almost exclusively on the discovery and excavation of sites. While site excavations remain of paramount importance, the focus of archaeological research has broadened to include the study of entire landscapes and surface survey in addition to, or instead of, excavation. (Brennan 2008:386)

Other cairn sites are assumed to exist across the region. At the present time the hollow forms (Types 3 and 4) seem confined to the area analyzed for this study, which also correlates with their mapped locations according to Brower's archaeological chart of the Red Wing region (*ibid*). Because the entire cairn population includes only 14 recorded sites, the small size of the dataset limits the number and types of applicable statistical tests. Furthermore, although the hollow cairns (Types 3 and 4) are seemingly concentrated in the same vicinity, more survey work is necessary across the broader region in order to confirm the findings of this study as well as locations recorded by T.H. Lewis and Brower (cf. Brower 1903; Winchell 1911). Based on initial results, the stone cairns were placed within sight of 21GD54, their common focal point and Oneota burial mound group. The placement of stone cairns in relation to the cosmos (i.e. archaeo-astronomy) and other social factors also merits further research (Artz and Goings 2006:16).

GIS techniques such as the DEM subtraction method described in Appendix II may be used to identify potential sites prior to field survey. Also, per Brower (1903), the stone cairn once documented at the mouth of the Big River, if the site remains relatively intact or can be located, also needs to be surveyed in order to assess its materials, morphology and any observable ritual behavior. If so, it may fall under one of the type categories provided in this dissertation or it may be its own distinct type.

Moreover, X-Ray Fluorescence (XRF) analysis may be used to definitively determine the source(s) of limestone used to construct the Red Wing cairns. Ground-Penetrating Radar (GPR) surveys of the associated villages and the valley itself will locate other archaeological features containing clues to the daily lives of those dwelling amongst the stone cairns. Non-intrusive magnetometry surveys at the cairn sites can be used to assess if lightning strikes are prevalent at each location. These results need to be compared with other hilltop locations without cairns in order to determine if lightning strike density was a determining factor in cairn site placement (cf. Maki et al 2015). From an ethnographic perspective, the cairns may have induced lightning strikes as well. Both perspectives require further exploration.

In the field of landscape archaeology, the most commonly studied aspects are intervisibility and viewshed. However, it is essential to consider pathways which connect place to place (Bellavia 2002:5). Also, one should expect to find archaeological sites near intersecting pathways. How locations are accessed is dependent upon both topography and observed cultural significance. During this study, initial least cost path (LCP) analysis using slope and land cover coefficients indicates the most suitable (i.e. least taxing) path for movement in the proximity of the stone cairns cuts exactly through the monumented valley and Oneota villages located at 21GD0095 and 21GD0258 (see Fig. 7-4; cf. Bellavia 2002; White and Barber 2012).

Furthermore, from a phenomenological perspective, landscapes are woven into one's being by moving through them (Tilley 1994:29-30; Ingold 2011:47). Thus, people of all ages moving through this landscape would be cognitively impacted by the presence of stone cairns on adjacent hilltops (see Fig. 7-2). It remains conjecture but the whole setting seems ideal for intensified prayer and in order to remain safeguarded during a period of environmental and/or social uncertainty.

Furthermore, if one wishes to pray in an elevated location, choosing the most difficult/taxing path may be deemed a show of humility and therefore the most spiritually beneficial for the supplicant (personal communication, Sebastian C. LeBeau II, July 3<sup>rd</sup>, 2015). This concept runs counter to least-cost path assumptions in Western research. One must be mindful of the fact that Native peoples were not merely scavenging/searching for food, they also prayed (recorded interview, Tom Ross, WDSE 2007). Therefore, site placement and function oftentimes dictate how these types of locations are approached (Tilley 1994:94).

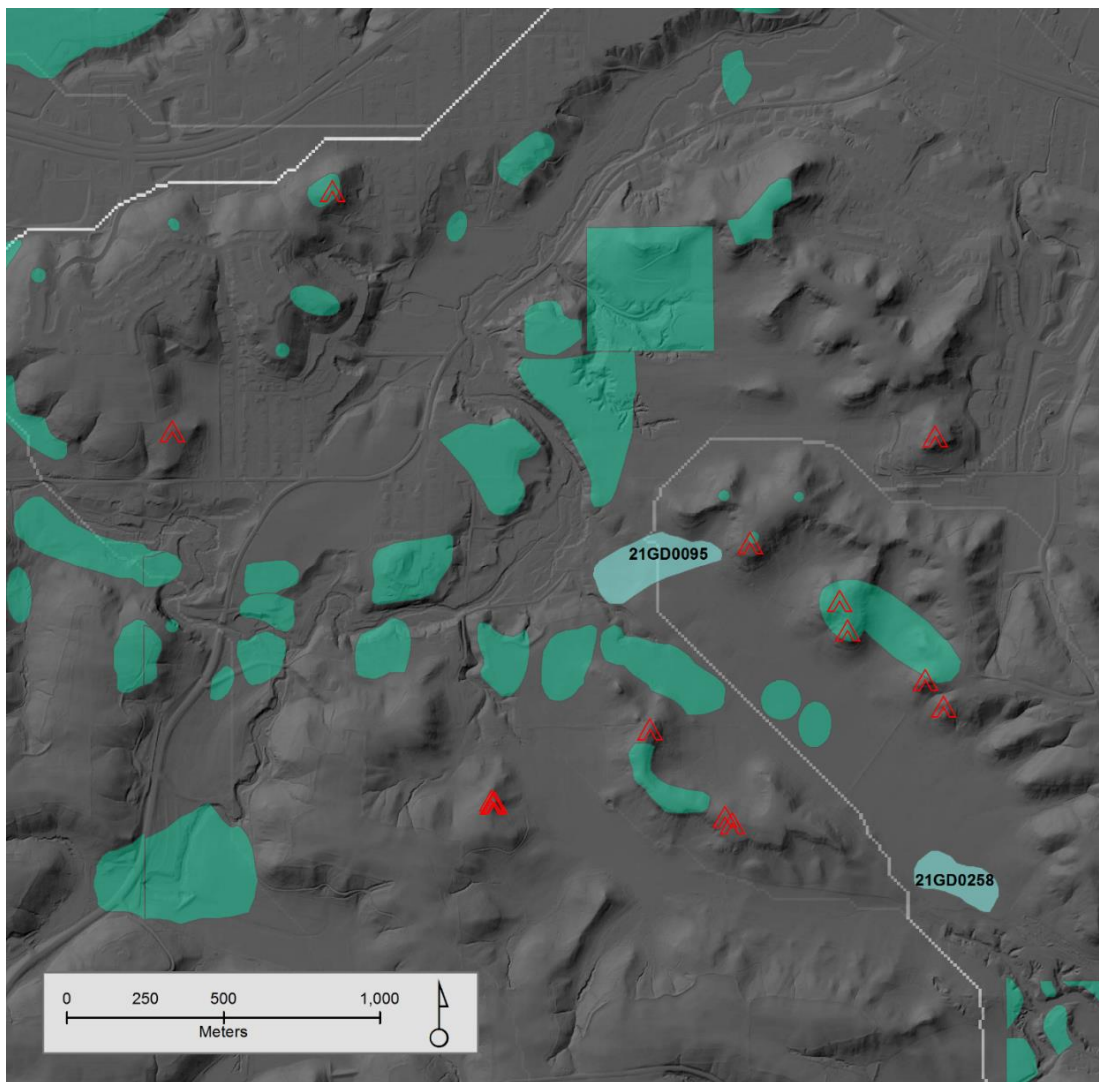


Fig. 7-4: Least Cost Path to 21GD0095 and 21GD0258

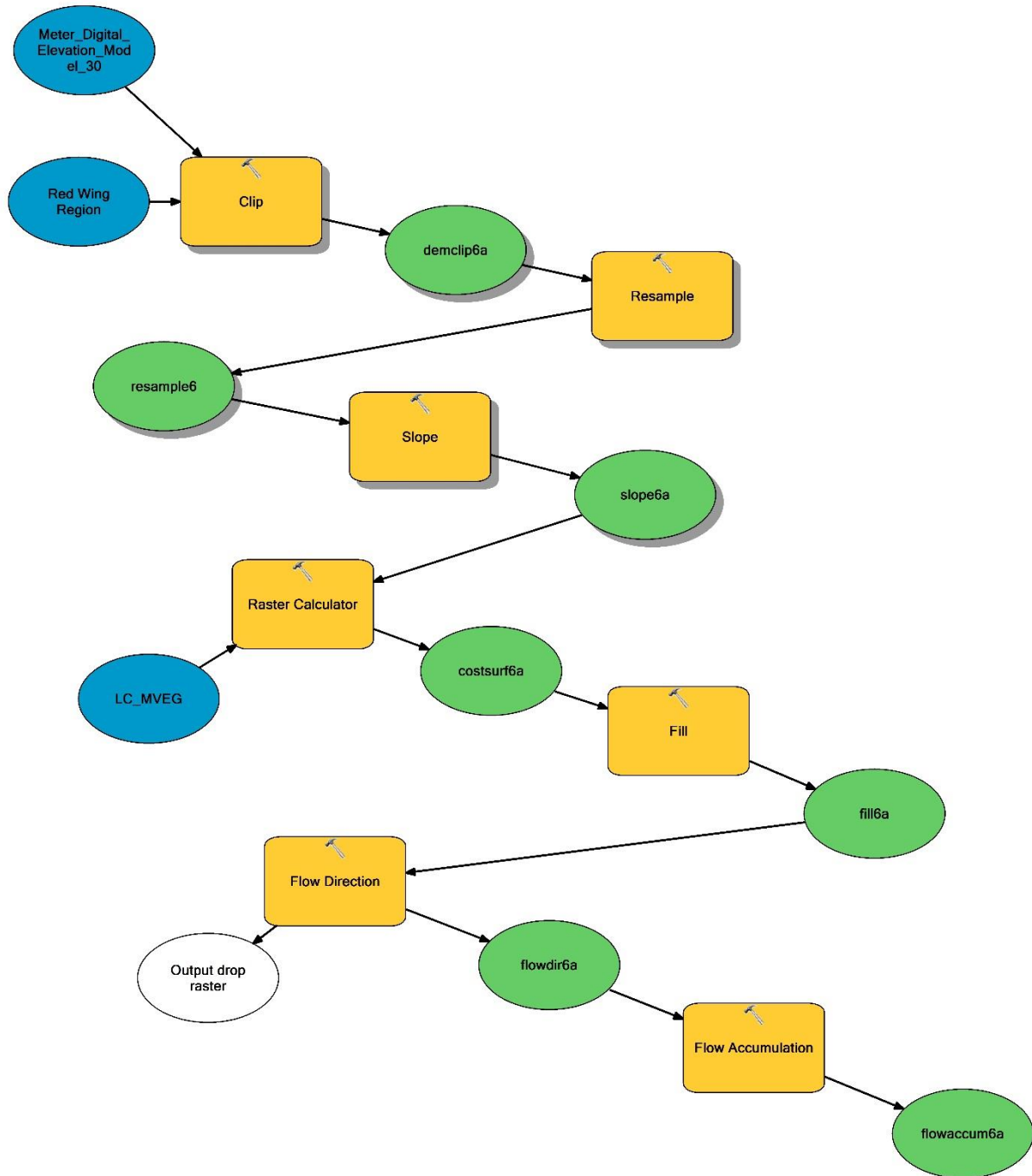


Fig. 7-5: LCP calculation flowchart (cf. Bellavia 2002)

The stone cairns of Red Wing may be located in association with other as yet unidentified landforms and cultural features. Therefore, additional qualitative evaluation is also required.

### **Ethnographic analysis**

- 3) How do the cairn sites function? Do they have a specific name? What other interpretations must be considered? Why were these specific places chosen?

Based on their placement and component parts, the stone cairns of Red Wing are the quintessence of the word “altar.” This study provides an adequate springboard into future metaphysical research pertaining to cairn/altar construction. Based on the results of this initial investigation, the traditions of Ioway people become a major focus of future work (cf. Blaine 1995; Skinner 1925; Wedel 1981; Wedel 1986). Understanding the phenomenological and philosophical importance of a “Thunder House” designation from a contemporary Ioway perspective is paramount. From an Indigenous standpoint, one must also ask why a specific site was chosen by those dwelling in the spirit world (personal communication, Lance M. Foster, October 17<sup>th</sup>, 2014). Additional ethnographic information pertaining to symbolism, style, and site selection needs to be gathered.

The entire population of stone cairns may indicate “larger societal conceptions of social space and identity by which people, both intentionally and unconsciously, structured cairn placement” (Mathews 2008). The cairn sites may eventually be deemed Traditional Cultural Property (TCP) sites after additional ethnographic evaluation vis-à-vis Chiwere-Siouan authorities (cf. LeBeau 2005, 2009). Hopefully additional knowledge is awakened through this

collaborative process. Many stone features are currently threatened across North America. Site preservation is imperative in order to ensure cultural attachment with these places remains intact. Importantly, although the physical integrity of the cairn sites is now lost, the significance of cultural landscape could make the cairn sites and/or surrounding valley eligible for the National Register of Historic Places.

### **Cultural landscape analysis**

- 4) What is the significance of the localized cairn landscape in Red Wing? How do Native peoples conceive of the Red Wing landscape as a whole? Do specific placenames exist? What inherent meaning may be derived from them?

Researchers today are challenged to consider Indigenous concepts of place and meaningfulness as well as to actively engage with the landscape (Allen 2010:828). The Red Wing region should be conceived as a single traditional cultural property comprised of innumerable individual sites imbued with sacred significance (personal communication, Sebastian C. LeBeau II, August 19<sup>th</sup>, 2017). Furthermore, future ethnographic research must include placename analysis, which illuminates the cultural meaningfulness of individual places and landscapes (Thornton 1997:221). According to local vernacular, the Red Wing cairns were constructed within the "Valley of the Seven Springs" (RWN 2007). Although its origin seems to be Euro-American, this placename is packed with significance from a Siouan perspective. The root of this placename and its meaning in relation to stone cairn construction is very intriguing. On a deeper level, placenames establish and perpetuate cultural identities and attachment to place



(Basso 1996; LeBeau 2009; Tilley 1994:26). This is true of both Native and non-Native people in the Red Wing region.

For example, Khemnican Dakota oral tradition states Barn Bluff or *Khemnican Paha* was the primary religious focal point and ceremonial base for Medicine Dance practices in the region. Furthermore, it is directly associated with the expansive number of earthen mounds built by pan-Siouan peoples during the Silvernale/Oneota phases (personal communication, Curtis Campbell Sr., July 9<sup>th</sup>, 2007; cf. Bergervoet 2008). A spatial, religious or symbolic connection between Barn Bluff, Spring Creek Oneota people and local stone cairn construction remains unverified but is possible. At the very least it is a prominent cultural landmark in both Dakota creation stories (cf. Campbell 2000; Westerman and White 2012:19).

Moreover, during the course of this study, further linguistic analysis of the placename “Khemnican” assigns another potential layer of meaning to Barn Bluff. In the Dakota language, the word *k/he-mni-can* is often translated as “hill-water-wood” but it should always be translated as “The Root” (personal communication, Curtis Campbell Sr., July 9<sup>th</sup>, 2007). After some discussion, it is also possible for the word Khemnican to be broken into different segments, i.e. *khe* = turtle; *mnica/mnicob* = to wade in water (email correspondence, Native Informant #1, July 21<sup>st</sup>, 2017; cf. LLC 2014). According to Campbell’s (2000:37) family oral account from Prairie Island, during the time period when the entire Earth was covered by water, the muskrat was tasked with bringing up mud from its depths in order to create land (Campbell 2000:37). Thus, from this perspective, Barn Bluff or *Khemnican Paha* may be conceived as the specific location where the muskrat piled the mud on the turtle’s back at “The Root” of this new era. If so, a cultural and spiritual connection with Barn Bluff would be reified through adherence to this belief and the observed physicality of the hill itself.



Fig. 7-6: Barn Bluff, Khemnican Paha, Red Wing, MN.

(From: Uniquely Minnesota, <http://www.uniquelyminnesota.com/activities/best-mn-fall-color-destinations.htm>, Accessed April 3, 2016)

Additionally, this linguistic breakdown of the word “Khemnican” is rather intriguing because many Native creation stories speak of a muskrat that piled mud on top of a turtle’s back, which includes one Dakota/Lakota version (email correspondence, Native Informant #1, July 21<sup>st</sup>, 2017). Local oral tradition also states the Khemnican people lived near Barn Bluff prior to this time period when Earth was covered with water (ibid). The Khemnican sub-band of the Mdewakanton Dakota were also called “The Root” (Campbell 2000:15; Howard 1984:15).

In sum, the significance of Khemnican Paha itself and the inherent meaning of its placename provides an impetus for broader and deeper placename research, from both Dakota and non-Dakota perspectives, in the Red Wing region and in proximity to the stone cairns. Thus,

future research should consider how Oneota-descendant peoples view Barn Bluff and other regional landmarks as well as elucidating the possible connections between them (cf. Appendix I). Ethnic landscapes incorporate cultural, cognitive, and spatio-temporal processes that do not remain still (Anschuetz et al. 2001:181). Therefore, they are by definition *dynamic*. An enhanced interpretation of these landscapes and peoples is possible through collaborative efforts between Western researchers and Indigenous communities (Silliman 2008).

### **Conclusion**

This study compiles and distills various sources of information in order to defensibly suggest who built the stone cairns of Red Wing, when and why. Furthermore, the stone cairns are fundamental components of a larger yet localized ritual landscape and arguably possess multiple linked functions. Moreover, the meaning of these cairn sites and the associated activity within this localized landscape are presented from Siouan points of view. As new information is brought to light during future studies, the assertions made in this dissertation will be modified or perhaps galvanized. The stone feature taxonomy developed for the Red Wing region is an initial attempt to distinguish between the various types of features encountered in the landscape, literature, and in Native testimonials. It merely provides a malleable base template that others may modify as other stone feature types are encountered during future surveys.

It is surmised the stone cairns of Red Wing were built by Spring Creek Oneota peoples (arguably ancestral Ioway) circa AD 1300 – 1400. Also, the cairns were constructed near a secluded valley, which served as a physical and spiritual sanctuary during a macro-level period of significant social change across the Upper Midwest. The stone cairns were principal

components of a localized ritual landscape woven together through line-of-sight bonds in order to evoke altruistic/protective deities in pan-Siouan belief(s). Moreover, based on the juxtaposition of contemporary Ioway cosmology and the original/intact architectural profile of the stone cairns (cf. Brower 1903; Winchell 1911; Winchell and Upham 1888), the stone cairns also function as effigies in order to preserve and communicate a shared cosmological belief and social identity. Also according to a local Dakota informant, effigies are built in order to preserve ideals and philosophies (personal communication, Curtis Campbell Sr., September 15<sup>th</sup>, 2007). The aforementioned hypothesis is also consistent with the documented emergence of unique tribal identities in the Upper Mississippi region circa AD 1300 (Gibbon 2003:40-43). Additionally, the Ioway are confirmed Oneota descendants and emerge as the primary occupying group in southern Minnesota during the late pre-contact era.

By constructing the stone cairns, the familial bonds amongst the Spring Creek Oneota would be maintained and reified during a period of environmental and/or social uncertainty across the region. Renewal ceremonies provide a means to maintain order within the cosmos, which is an important responsibility for Native peoples to uphold (Ridington 1987:155). Ho-Chunk philosophers constantly reflected upon the pervasive influence of both positive and negative forces in daily and spiritual life (Radin 1991:52). Peoples alive during the pre-contact era were subject to similar social dilemmas and personal shortcomings as contemporary peoples who also become lax in these responsibilities at times. Furthermore, as Campbell (2000:72) states, “When we would forget these things, the songs and the drum would remind us that this was our purpose in life--to be a good relative...and to have successful relationships with one another.” Also, when prayers are not only said but actually sung an emotional bond with the environment and fellow singers deepens (Tuan 2012:27). Therefore, the stone cairns of Red

Wing stand as witness to these long-ago prayers and songs of the Spring Creek Oneota and their shared desire to strengthen existing relationships amongst themselves, the landscape, and the cosmos.

For those living individuals rooted in traditional knowledge and possessing the ability to recognize the sacredness of altars and topographic features, the spiritual connection between the individual, the landscape and his/her ancestors is always maintained (BLM 2005:120).

Pedagogically, the spirit of a place resides in the landscape and “[f]amiliarity with the land, being able to read and decode its signs allows individuals to know ‘how to go on’ ...” (Tilley 1994:26). On one hand, the stone cairns of Red Wing convey a specific message according to the time and place in which they were built (cf. Clouse 2004:124-125). Additionally, the experience derived from paying homage at a stone cairn also offers something unique for the individual. As Basso (1996:7) writes, “...for what people make of their places is closely connected to what they make of themselves as members of society and inhabitants of the earth.”

At a base philosophical level, a *hekti* – “lodge of time and space” may be conceived as a place that allows an individual to seek solace and spiritual direction in the company of the Creator. Fundamentally, an individual is more able to accept his destiny if it is “decreed not merely by his mortal peers, but by the stars” (Tuan 1971:46). Individuals obtain inner peace when they realize “their relationship, their oneness, with the universe and all its Powers, and when they realize that at the center of the universe dwells Wakan-Tanka [Creator], and that this center is really everywhere, it is within each of us” (Brown 1953:115). Although human beings are subject to the confinements of space, time, and mortal bodies, the Creator is ever-present and accessible especially in specific places made holy, i.e. consecrated through ritual prayers and acts (cf. LeBeau 2005). As a result, the limits of time and space collapse; therefore making them

irrelevant in the presence of holy, eternal energy. In Native mindsets, “[t]he past and the future are one in the same – it’s all connected” (personal communication, Sebastian C. LeBeau II, July 17<sup>th</sup>, 2007). Thus, from an ethnographic point of view, the stone cairns of Red Wing not only mark the locations of spiritual wellsprings, but also offer the opportunity for supplicants to be in the presence of holy energy.

Summarily, the Red Wing landscape is deemed sacred by Native peoples namely for its natural features imbued with sacred power as well as multitudes of monuments made holy through prayers still captured within its hills, stones and soil. The spirits of past peoples and the meaning of their actions are not forgotten by those humbly seeking to understand their ideals and philosophies. This old knowledge lies dormant in the land; and from every generation someone will hear the voices of the past and pursue them (recorded interview, Jimm GoodTracks, Rundle and Rundle 2008). If one is truly willing to suffer for this knowledge, wisdom and endurance will be gained. Furthermore, as individuals spiritually mature, they learn an extremely valuable lesson: how to cope (recorded interview, Mae Murray Sine, Rundle and Rundle 2008). Most importantly, as a result of this personal sacrifice, a fire is rekindled to light the way for others.

In conclusion, the stone cairns of Red Wing were built by Spring Creek Oneota peoples who banded together and relied upon traditional ways and prayer in order to persevere during a period of significant change (cf. Betts 2010). Therefore, these monuments are not mere piles of stone but serve as a humble reminder that humans draw more from the land than mere physical needs – it inspires us to keep going.

*Aheri hegradanwena Maka mitawe ida wahu ke. (Baxoje)*

*I look unto the hills from which comes my strength. (Ioway)*

## Bibliography

- Aiton, J. F. 1852. What mean ye by these stones? *Annals of the Minnesota Historical Society: 1852*. Saint Paul: Minnesota Historical Society.
- Alex, L.M. 2010. *Iowa's Archaeological Past*. Iowa City: University of Iowa Press.
- Alexakis, D., A. Sarris, T. Astaras, and K. Albanakis. 2011. Integrated GIS, Remote Sensing and Geomorphologic Approaches for the Reconstruction of the Landscape Habitation of Thessaly during the Neolithic Period. *Journal of Archaeological Science* 38: 89-100.
- Alexander, Jr., E.C., D.J. Berner, Y. Gao, and J.A. Green. 2003. *Geologic Atlas of Goodhue County, Minnesota, C-12, Part B, Plate 10, Sinkholes, Sinkhole Probability, and Springs and Seeps*. Saint Paul: Minnesota Geological Survey.
- Allen, C. 2010. Serpentine Figures, Sinuous Relations: Thematic Geometry in Allison Hedge Coke's "Blood Run." *American Literature* 82(4): 807-834.
- Anschuetz, K. F., R.H. Wilshusen, and C.L. Scheick, C.L. 2001. An Archaeology of Landscapes: Perspectives and Directions. *Journal of Archaeological Research* 9(2): 157-211.
- Artz, J., and C. Goings. 2006. *Appendix A: Geospatial and Morphological Analysis of Stone Feature Data from the West Mine Area, Coteau Properties, Mercer County, North Dakota*. Report prepared and submitted to Ethnoscience, Inc. Iowa City: Office of the State Archaeologist.
- Arzigian, C.M., and K.P. Stevenson. 2003. *Minnesota's Indian Mounds and Burial Sites: a Synthesis of Prehistoric and Early Historic Archaeological Data*. Saint Paul: Minnesota Office of the State Archaeologist.
- Baerreis, D.A., R.A. Bryson, and J.E. Kutzbach. 1976. Climate and Culture Change in the Western Great Lakes Region. *Midcontinental Journal of Archaeology* 1(1): 39-57.
- Basso, K. 1996. *Wisdom Sits In Places: Landscape and Language among the Western Apache*. Albuquerque: University of New Mexico Press.
- Beck, W. and M. Somerville. 2005. Conversations between Disciplines: Historical Archaeology and Oral History at Yarrowarra. *World Archaeology* 37(3): 468-483.
- Bellavia, G. 2002. *Extracting "Natural Pathways" from a Digital Elevation Model: Applications to Landscape Archaeological Studies*. Paper presented at Computer Applications in Archaeology Conference: Archaeological Informatics, Gotland, Sweden. Oxford: Archaeopress.  
[http://proceedings.caaconference.org/files/2001/01\\_Bellavia\\_CAA\\_2001.pdf](http://proceedings.caaconference.org/files/2001/01_Bellavia_CAA_2001.pdf)

- Bement, L., B. Carter, and S. Turpin. 1999. *Bison Hunting at Cooper Site: Where Lightning Bolts Drew Thundering Herds*. Norman: University of Oklahoma Press.
- Benn, D. 1989. Hawks, Serpents, and Birdmen: Emergence of the Oneota Mode of Production. *Plains Anthropologist* 34: 233–260.
- Benn, D. 1995. “Woodland People and the Roots of the Oneota.” In *Oneota Archaeology: Past, Present, and Future*, edited by W. Green, 91-140. Report No. 20, University of Iowa, Iowa City: Office of the State Archaeologist.
- Benson, L.V., M.S. Berry, E.A. Jolie, J.D. Spangler, D.W. Stahle, and E.M. Hattori. 2007. Possible Impacts of Early-11<sup>th</sup>-, Middle-12<sup>th</sup>-, and Late-13<sup>th</sup>-Century Droughts on Western Native Americans and the Mississippian Cahokians. *Quaternary Science Reviews* 26: 336-350.
- Benson, L.V., T.R. Pauketat, and E.R. Cook. 2009. Cahokia’s Boom and Bust in the Context of Climate Change. *American Antiquity* 74(3): 467-483.
- Bergervoet, M. 2008. *A Monument Mosaic: Merging Indian Oral Tradition and Scientific Method*. MS Thesis, Department of Anthropology, Minnesota State University – Mankato.
- Bernardini, W., and M. Peeples. 2015. Sight Communities: The Social Significance of Shared Visual Landmarks. *American Antiquity* 80(2): 215-235.
- Beta Analytic Incorporated. 2015. *Radiocarbon Dating Results for Samples 03230, 03270, 035130, 032155, 032265, 032350, 043372, 04401, 159330, 1596B, 258235, 258450, 02338, 024055, 026648, 02150, 02565, 682U*. Report prepared and submitted to Dr. Ronald Schirmer, Minnesota State University – Mankato, May 26, 2015.
- Betts, C.M. 2010. Oneota Mound Construction: An Early Revitalization Movement. *Plains Anthropologist* 55(214): 97-110.
- Billé, F. 2012. “On Ideas of the Border in the Russian and Chinese Social Imaginaries.” In *Frontier Encounters: Knowledge and Practice at the Russian, Chinese and Mongolian Border*, edited by F. Billé, C. Humphrey and G. Delaplace. Cambridge: Open Book Publishers.
- Blitz, J.H. 2010. New Perspectives in Mississippian Archaeology. *Journal of Archaeological Research* 18: 1-39.
- Binford, L. 1981. The Archaeology of Place. *Journal of Anthropological Archaeology* 1: 5-31.
- Blaine, M.R. 1995. *The Ioway Indians*. Norman: University of Oklahoma Press.
- Boszhardt, R.F. 1998. Oneota Horizons: A La Crosse Perspective. *The Wisconsin Archaeologist* 79: 196–225.
- Brace, I.G. 2005. *Boulder Monuments of Saskatchewan*. Saskatoon: Saskatchewan Archaeological Society.



- Bray, E.C. 1985. *Billions of Years in Minnesota: The Geological Story of the State (Second Edition)*. Saint Paul: The Science Museum of Minnesota.
- Bray, E.C., and M.C. Bray, eds. 1976. *Joseph N. Nicollet on the Plains and Prairies: The Expeditions of 1838-39 with Journals, Letters, and Notes on the Dakota Indians*. Saint Paul: Minnesota Historical Society Press.
- Brayboy, B.M., and D. Deyhle. 2000. Insider-Outsider: Researchers in American Indian Communities. *Theory into Practice* 39(3): 163-169.
- Brennan, M. 2008. Reconstructing the Genealogical Landscape: Kinship and Settlement along Moccasin and Indian Creeks, Pope County. *The Arkansas Historical Quarterly* LXVII(4): 386-397.
- Brower, J.V. 1903. *Minnesota: Discovery of its Area: 1540-1665*. Saint Paul, MN: H.L. Collins Company.
- Brown, J.E. 1953. *The Sacred Pipe: Black Elk's Account of the Seven Rites of the Oglala Sioux*. Norman: The University of Oklahoma Press.
- Bryan, L. 2005. *Stone by Stone, Exploring Ancient Sites on the Canadian Plains*. Victoria, BC: Heritage House Publishing Co. Ltd.
- Cajete, G. 2000. *Native Science: Natural Laws of Interdependence*. Santa Fe: Clear Light Publishers.
- Callahan, K. 2001. Dakota Sacred Stones and Spirit Island, Mille Lacs, Minnesota: The Boulder Island That Moves. *The Minnesota Archaeologist* 60: 137-142.
- Campbell Sr., C. 2000. *A Family Oral History of Prairie Island*. Manuscript on file, Prairie Island Indian Community, Welch, Minnesota.
- Carr, C., and D.T. Case, eds. 2005. *Gathering Hopewell: Society, Ritual, and Ritual Interaction*. New York: Kluwer Academic/Plenum Publishers.
- Carver, J., and J.C. Lettsom. 1802. *Three years travels through the interior parts of North America, for more than five thousand miles: Containing an account of the Great Lakes, and all the lakes, islands, and rivers, cataracts, mountains, minerals, soil and vegetable productions of the north west regions : with a description of the birds, beasts, reptiles, insects, and fishes peculiar to the country : together with a concise history of the genius, manners, and customs of the Indians inhabiting the lands adjacent to the heads and to the westward of the great River Mississippi : and an appendix, describing the uncultivated parts of America, that are the most proper for forming settlements (4th American, from the last London ed.)*. Charlestown [Mass.]: Printed by Samuel Etheridge, for West and Greenleaf, Boston.

- Cash Cash, P. 2008. "The Land as Witness: Nez Perce and Sahaptin Placenames." In *Warra Wiltaniappendi: Strengthening Languages*, edited by R. Amery and J. Nash. Adelaide: University of Adelaide.
- Catlin, G. 2004. *North American Indians*. Edited by P. Matthiessen. New York: Penguin Books.
- Chambers, C. 2008. Where are we? Finding Common Ground in a Curriculum of Place. *Journal of the Canadian Association for Curriculum Studies* 6(2): 113-128.
- Chartkoff, J. 1983. A Rock Feature Complex from Northwestern California. *American Antiquity* 48(4): 745-760.
- Clouse, R.A. 2004. "Pattern and Function at the Jeffers Petroglyphs, Minnesota." In *The Rock-Art of Eastern North America: Capturing Images and Insight*, edited by C. Diaz-Granados and J.R. Duncan. Tuscaloosa: University of Alabama Press.
- Cook, E.R., R. Seager, R.R. Heim Jr., R.S. Vose, C. Herweijer, and C. Woodhouse. 2010. Megadroughts in North America: Placing IPCC Projections of Hydroclimatic Change in a Long-Term Palaeoclimate Context. *Journal of Quaternary Science* 25(1): 48-61.
- Curtiss-Wedge, F., ed. 1909. *History of Goodhue County*. Chicago: H.C. Cooper Jr. and Co.
- Dean, C. 2010. *A Culture of Stone: Inka Perspectives on Rock*. Durham: Duke University Press.
- Deloria, Jr., V. and D. Wildcat. 2001. *Power and Place: Indian Education in America*. Golden, CO: Fulcrum Resources.
- DeMallie, R.J. 1993. These Have No Ears: Narrative and the Ethnohistorical Method. *Ethnohistory* 40(4): 515-538.
- deMenocal, P.B. 2001. Cultural Responses to Climate Change during the Late Holocene. *Science* 292(5517): 667-673.
- Denig, E.T. 2000. *The Assiniboine*. Edited by J.N.B. Hewitt. Regina: Canadian Plains Research Center.
- Densmore, F. 1947. Imitative Dances among the American Indians. *The Journal of American Folklore* 60(235): 73-78.
- Dobbs, C.A. 1982. "Oneota Origins and Development: The Radiocarbon Evidence." In *Oneota Studies*, edited by G.E. Gibbon. Minneapolis: University of Minnesota.
- Dobbs, C.A. 1984. *Oneota Settlement Patterns in the Blue Earth River Valley, Minnesota*. PhD dissertation, Department of Anthropology, University of Minnesota – Minneapolis.
- Dobbs, C.A. 1991. *Cataloging and Preliminary Analysis of Archaeological Materials Obtained from the Bryan Site (21GD4), Goodhue County, Minnesota*. Minneapolis: Institute for Minnesota Archaeology.

- Dobbs, C.A. 1996. *Precontact American Indian Earthworks, 500 B.C. - A.D. 1650*. National Register of Historic Places Multiple Property Documentation Form (MPDF) submitted to the National Park Service, NPS Form 10-900-b, OMB No. 1024-0018, on behalf of Institute for Minnesota Archaeology, Minneapolis, MN. Accessed on March 20, 2015. <http://pdfhost.focus.nps.gov/docs/NRHP/Text/64500289.pdf>
- Dobbs, C.A., and K. Breakey. 1987. "A Preliminary Report on Investigations at the Energy Park Site (21GD158): A Silvernale Phase Village at the Lake Pepin Locality." Paper presented at the Midwest Archaeological Conference, Milwaukee, WI, October 16, 1987.
- Dobbs, C.A. and H.D. Mooers. 1991. *A Phase I Archaeological and Geomorphological Study of Lake Pepin and the Upper Reaches of Navigation Pool 4, Upper Mississippi River*. Minneapolis, Reports of Investigations No. 44, The Institute for Minnesota Archaeology.
- Dobbs, C.A., and G.R. Holley. 1995. "Reclaiming Silvernale: Implications of 12<sup>th</sup> Century Occupations in the Upper Mississippi." Paper presented at the 60<sup>th</sup> Annual Meeting of the Society for American Archaeology, Minneapolis, Minnesota, May 3-7, 1995.
- Dobbs, C.A., and R.C. Schirmer. 2003. "Mississippian, Oneota, and Ethnogenesis." Paper presented at the 61<sup>st</sup> Annual Conference of the Plains Anthropological Association, Fayetteville, AR.
- Dooling, D.M. 2000. *The Sons of the Wind: The Sacred Stories of the Lakota*. Norman: University of Oklahoma Press.
- Dorsey, J.O. 1886. Migrations of Siouan Tribes. *The American Naturalist* 20(3): 211-222.
- Dorsey, J.O. 1897. *Siouan Sociology: A Posthumous Paper*, Fifteenth Annual Report. Washington: United States Bureau of Ethnology.
- Durand, P. 1994. *Where the Waters Gather and the Rivers Meet: An Atlas of the Eastern Sioux*. Edited by R.S. Durand. Prior Lake, MN: Paul C. Durand.
- Eastman, C.A. 1915. *Indian Boyhood*. New York: Doubleday, Page and Company.
- Eastman, C.A. 2003. *The Soul of an Indian*. Mineola, NY: Dover Publications, Inc.
- Eliade, M. 1991. *Images and Symbols: Studies in Religious Symbolism*. Princeton: Princeton University Press.
- Ellenberger, K. 2012. *Scales of Visibility at a Chacoan Outlier: the Visual World of People at Kin Klizhin*. MA Thesis, State University of New York – Binghamton.
- Emerson, T.E. 1999. The Langford Tradition and the Process of Tribalization on the Middle Mississippian Borders. *Midcontinental Journal of Archaeology* 24(1): 3-56.
- Fabian, J. 1983. *Time and the Other*. New York: Columbia University Press.

- Fagan, B.M. 2005. *Ancient North America: The Archaeology of a Continent (4<sup>th</sup> edition)*. New York: Thames and Hudson, Inc.
- Fleming, E. P. 2009. *Community and Aggregation in the Upper Mississippi River Valley: The Red Wing region*. PhD dissertation, University of Minnesota Department of Anthropology. Ann Arbor: ProQuest/UMI. (Publication No. AAT 3360343.)
- Fleming, E.P., and J. Koncur. 2014. *A Paleoethnobotanical and Radiocarbon Study of the Sheffield Site, a 14<sup>th</sup> Century Oneota Site in Washington County, Minnesota*. A Report submitted to the Minnesota Historical Society, Legacy Grant #1310-02291. Saint Paul, MN: Science Museum of Minnesota.
- Foster, L. 1996. The Ioway and the Landscape of Southeast Iowa. *Journal of the Iowa Archeological Society* 43: 1-5. Accessed April 12, 2014. <http://ioway.nativeweb.org/iowaylibrary/seiowa.htm>
- Foster, L. 1999. "Tanji Na Che: Recovering the Landscape of the Ioway." In *Recovering the Prairie*, edited by R. Sayre. Madison: University of Wisconsin Press. Accessed April 12, 2014. <http://ioway.nativeweb.org/iowaylibrary/tanji.htm>
- Foster, W.C. 2012. *Climate and Culture Change in North America AD 900-1600*. Austin: University of Texas Press. <http://www.jstor.org/stable/10.7560/737419>
- Gibbon, G. 1972. Cultural Dynamics and the Development of Oneota Lifeway in Wisconsin. *American Antiquity* 37(2): 166-185.
- Gibbon, G. 1979. *The Mississippian Occupation of the Red Wing Area*. Saint Paul, MN: Minnesota Historical Society.
- Gibbon, G., ed. 1982. *Oneota Studies*. Minneapolis: University of Minnesota.
- Gibbon, G. 2003. *The Sioux: the Dakota and Lakota Nations*. Malden, MA: Blackwell Publishing.
- Gibbon, G. 2012. *Archaeology of Minnesota: the Prehistory of the Upper Mississippi River Region*. Minneapolis: University of Minnesota Press.
- Gibbon, G.E., and C. Dobbs. 1991. "The Middle Mississippian Presence in Minnesota." In *New Perspectives on Cahokia: Views from the Periphery*, edited by J. Stoltman. Madison, WI: Prehistory Press.
- Gibbon, G., and S. Anfinson. 2008. *Minnesota Archaeology: The First 13,000 Years*. Minneapolis: University of Minnesota. Accessed May 6, 2014. <http://anthropology.umn.edu/labs/wlnaa/first/contents/contents/html>
- Gilmore, M.R. 1919. *Uses of Plants by the Indians of the Missouri River Region*. Thirty-Third Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution 1911-1912. Washington: Washington Government Printing Office.

- Goodhue County Historical Society (GCHS). 1976. "An Interview with Dr. Lloyd Wilford." *Goodhue County Historical Society Oral History Program: 1968-1976*. Manuscript on file, Red Wing, MN.
- Goodman, R. 1992. *Lakota Star Knowledge: Studies in Lakota Stellar Theology*. Mission, SD: Sinte Gleska University.
- GoodTracks, J. 2009. *Baxoje-Jiwere Project: Ioway, Otoe-Missouria Language*. Accessed February 12, 2015. <http://iowayotoelang.nativeweb.org/index.htm>
- Green, W., ed. 1995. *Oneota Archaeology: Past, Present, and Future*. Iowa City: Office of the State Archaeologist, Report 20.
- Griffin, J.B. 1937. The Archaeological Remains of the Chiwere Sioux. *American Antiquity* 2(3):180-181.
- Griffin, J.B. 1961. Some Correlations of Climatic and Cultural Change in Eastern North American Prehistory. *Annals of the New York Academy of Sciences* 95: 710-717.
- Hall, R. 1997. *An Archaeology of the Soul: North American Indian Belief and Ritual*. Urbana: University of Illinois Press.
- Hallendy, N. 2000. *Inuksuit: Silent Messengers of the Arctic*. Vancouver: Douglas and McIntyre, Ltd.
- Henning, D. 1993. The Adaptive Patterning of the Dhegiha Sioux. *Plains Anthropologist* 38(146): 253-264.
- Henning, D. 1995. "Oneota Evolutions and Interactions: a Perspective from the Wever Terrace, Southeast Iowa." In *Oneota Archaeology: Past, Present, and Future*. Iowa City: Office of the State Archaeologist, University of Iowa.
- Hermes, M. 1998. Research Methods as a Situated Response: Towards a First Nations' Methodology. *Qualitative Studies in Education* 11(1): 155-168.
- Holley, G.R. 2005. "Birds of a Feather: The Bird Complex and Ramey Incised in the Late Prehistoric of the Midwest." Paper presented at the Southeastern Archaeological Conference, Columbia, SC, Nov 2-6, 2005.
- Holley, G.R., and M.G. Michlovic. 2013. *The Prehistoric Village Cultures of Southern Minnesota*. A Report submitted to the Minnesota Historical Society, Contract #4207813. Moorhead, MN: MSU-Moorhead Department of Anthropology and Earth Science. [https://mn.gov/admin/assets/2013-Prehistoric-Village-Cultures-of-Southern-Minnesota\\_tcm36-187251.pdf](https://mn.gov/admin/assets/2013-Prehistoric-Village-Cultures-of-Southern-Minnesota_tcm36-187251.pdf)
- Holliday, V.T. 1992. "Soil Formation, Time, and Archaeology." In *Soils in Archaeology: Landscape Evolution and Human Occupation*, edited by V.T. Holliday. Washington: Smithsonian Institution.

- Howard, J.H. 1972. Notes on the Ethnogeography of the Yankton Dakota. *Plains Anthropologist* 17(58): 281-307.
- Howard, J.H. 1984. *The Canadian Sioux*. Edited by R.J. DeMallie and D.R. Parks. Lincoln: University of Nebraska Press.
- Howey, M., M. Palace, and C. McMichael. 2016. Geospatial Modeling Approach to Monument Construction using Michigan from A.D. 1000-1600 as a Case Study. *PNAS* 113(27): 7443-7448. <http://www.pnas.org/content/113/27/7443.full.pdf>
- Hrobat, K. 2007. Use of Oral Tradition in Archaeology: The Case of Ajdovscina above Rodik, Slovenia. *European Journal of Archaeology* 10(1): 31-56.
- Hudak, J.G. 1972. Boulder Outlines in Southwestern Minnesota. *Plains Anthropologist* 17(58): 345-346.
- Hunt, B.G. 2006. The Medieval Warm Period, the Little Ice Age and Simulated Climatic Variability. *Climate Dynamics* 27(7-8): 677-694.
- Hurst, S., and E. Johnson. 2017. Prominent Places in the Landscape: Occupations at Cowhead Mesa along the Eastern Escarpment Edge of the South High Plains of Texas. *Plains Anthropologist* 62(241): 5-31.
- Ingold, T. 1993. The Temporality of the Landscape. *World Archaeology* 25(2): 152-174.
- Ingold, T. 2011. *Being Alive: Essay on Movement, Knowledge and Description*. London: Routledge.
- Institute for Minnesota Archaeology (IMA). 1999. "The Stone Cairns of Red Wing." From Site to Story: The Upper Mississippi's Buried Past. Accessed July 24, 2012. <http://www.fromsitetostory.org/rwl/stonecairns/stonecairns.asp>
- Jacobson-Tepfer, E., and J.E. Meacham. 2010. *Archaeology and Landscape in the Mongolian Altai: An Atlas*. Redlands, CA: ESRI Press.
- Johnson, E. 1988. *The Prehistoric Peoples of Minnesota (Revised Third Edition)*. Minnesota Prehistoric Archaeology Series, No. 3. Saint Paul: Minnesota Historical Society Press.
- Johnson, J.T. 2008. Kitchen Table Discourse: Negotiating the "Tricky Ground" of Indigenous Research. *American Indian Culture and Research Journal* 32(3): 127-137.
- Johnson, J.T., and B. Murton. 2007. Re/placing Native Science: Indigenous Voices in Contemporary Constructions of Nature. *Geographical Research* 45(2): 121-129.
- Juskalian, R. 2015. "Climate and the Khan." *Discover Magazine*, July/August 2015, 30-39.
- Koenen, B. 2007. "Cairns near Red Wing, Minnesota." Poster presentation at the Plains Anthropological Conference, Rapid City, SD, October, 2007.

- Koncur, J. 2015. "The McClelland Site (21GD258) and the Oneota Tradition in the Red Wing Region." Paper presented at the Council for Minnesota Archaeology conference, Saint Cloud, MN, February 14, 2015.
- Lakota Language Consortium (LLC). 2014. "New Lakota Dictionary Online." Accessed July 12<sup>th</sup>, 2017. <http://www.lakotadictionary.org/nldo.php>
- Landes, R. 1968. *Ojibwa Religion and the Midewiwin*. Madison: The University of Wisconsin Press.
- LaPierre, K.D. 2007. A Preliminary Report of a Rock Feature Complex on the East Side of Searles Lake (CA-SBR-12134/H), Western Mojave Desert, San Bernardino County, California. *Pacific Coast Archaeological Society Quarterly* 43(1-2): 84-100.
- LeBeau II, S.C. 2005. *Identification and Typing System for Traditional Cultural Property Sites: Applied Anthropology from a Lakota Perspective*. MS Thesis, Department of Anthropology, Minnesota State University – Mankato.
- LeBeau II, S.C. 2009. *Reconstructing Lakota Ritual in the Landscape: The Identification and Typing System for Traditional Cultural Property Sites*. PhD dissertation, University of Minnesota Department of Anthropology. Ann Arbor: ProQuest/UMI. (Publication No. AAT 3387280.)
- Lewis, T.H. 1887. Snake and Snake-like Mounds in Minnesota. *Science* 9(220): 393-394.
- Lewis, T.H. 1890. Stone Monuments in Northwestern Iowa and Southwestern Minnesota. *American Anthropologist* 3(3): 269-274.
- Link, A. 1975. A Bird Motif on a Mississippian Pot. *The Minnesota Archaeologist* 34:71-82.
- Link, A. 1979. Chunkey: The Game and Its Probable Use by Mississippians in Minnesota. *The Minnesota Archaeologist* 38(3): 129-145.
- Little Bear, L., and R. Heavy Head. 2004. A Conceptual Anatomy of the Blackfoot Word. *ReVision* 26(3): 31-38.
- Lloberas, M. 2007. Reconstructing Visual Landscapes. *World Archaeology* 39(1): 51-69.
- Long, S.H., J.E. Colhoun, and W.H. Keating. 1824. *Narrative of an expedition to the source of St. Peter's River, Lake Winnepeek, Lake of the Woods, andc., andc. performed in the year 1823, by order of the Hon. J.C. Calhoun, secretary of war, under the command of Stephen H. Long, major U.S.T.E.* Philadelphia: H.C. Carey and I. Lea.
- Long, S.H. 1860. *Voyage in a six-oared skiff to the Falls of Saint Anthony in 1817*. Philadelphia: H.B. Ashmead.
- Lothson, G.A. 1976. *The Jeffers Petroglyphs Site: a Survey and Analysis of the Carvings*. St. Paul: Minnesota Historical Society.

- Lowie, R. 1910. *The Assiniboine*, American Museum of Natural History, Anthropological Papers Vol. IV. New York: Order of the Trustees.
- Mack, A. 2004. One Landscape, Many Experiences: Differing Perspectives of the Temple Districts of Vijayanagara. *Journal of Archaeological Method and Theory* 11(1): 59-81.
- Mails, T. 1979. *Fools Crow*. Lincoln: University of Nebraska Press.
- Maki, D., S. Arnott, and M. Bergervoet. 2015. Lightning Induced Remanent Magnetization at the Buffalo Slough Burial Mound Complex. *The Minnesota Archaeologist* 74: 30-47.
- Mallam, R. 1975. *The Iowa Effigy Mound Manifestation: An Interpretive Model*. PhD dissertation, Department of Anthropology, University of Kansas.
- Mann, M.E., Z. Zhang, S. Rutherford, R.S. Bradley, M.K. Hughes, D. Schindell, C. Ammann, G. Faluvegi, and F. Ni. 2009. Global Signatures and Dynamical Origins of the Little Ice Age and Medieval Climate Anomaly. *Science* 326: 1256-1260.
- Martinez, D. 2004. The Soul of the Indian: Lakota Philosophy and the Vision Quest. *Wicazo Sa Review* 19(2): 79-104.
- Mason, R.J. 2000. Archaeology and Native North American Oral Traditions. *American Antiquity* 65(2): 239-266.
- Mason, R.J. 2006. *Inconstant Companions: Archaeology and North American Indian Oral Tradition*. Tuscaloosa: University of Alabama Press.
- Mather, D. 2015. Grand Mound and the Muskrat: A Model of Ancient Cosmology on the Rainy River. *Minnesota History* 64(05): 194-205.  
<http://collections.mnhs.org/MNHHistoryMagazine/articles/64/v64i05p194-205.pdf>
- Mathews, D. 2006. *Burial Cairn Taxonomy and the Mortuary Landscape of Rocky Point, British Columbia*. MA Thesis, Department of Anthropology, University of Victoria. Accessed October 6, 2016.  
[https://www.academia.edu/473371/Burial\\_Cairn\\_Taxonomy\\_and\\_the\\_Mortuary\\_Landscape\\_of\\_Rocky\\_Point\\_British\\_Columbia](https://www.academia.edu/473371/Burial_Cairn_Taxonomy_and_the_Mortuary_Landscape_of_Rocky_Point_British_Columbia)
- Mathews, D. 2008. "Immortal Landscape: Burial Cairns and Precontact Straits Salish Identity." Paper presented at the Northwest Anthropological Conference, Victoria, BC. Accessed October 6, 2016.  
[https://www.academia.edu/231208/Immortal\\_Landscape\\_Burial\\_Cairns\\_and\\_Precontact\\_Straits\\_Salish\\_Identity](https://www.academia.edu/231208/Immortal_Landscape_Burial_Cairns_and_Precontact_Straits_Salish_Identity)
- Mathews, D. 2009. *What the Dead Want: Reflections on Building a Burial Cairn*. Manuscript – BC Studies Paper. Accessed October 6, 2016.  
[https://www.academia.edu/231215/What\\_the\\_Dead\\_Want\\_Reflections\\_on\\_Building\\_a\\_Burial\\_Cairn](https://www.academia.edu/231215/What_the_Dead_Want_Reflections_on_Building_a_Burial_Cairn)



- Mathews, D. 2014. *Funerary Ritual, Ancestral Presence, and the Rocky Point Ways of Death*. PhD dissertation, Department of Anthropology, University of Victoria. Accessed October 6, 2016.  
[https://www.academia.edu/16031377/Funerary\\_Ritual\\_Ancestral\\_Presence\\_and\\_the\\_Rocky\\_Point\\_Ways\\_of\\_Death](https://www.academia.edu/16031377/Funerary_Ritual_Ancestral_Presence_and_the_Rocky_Point_Ways_of_Death)
- Maxwell, M.S. 1950. A Change in the Interpretation of Wisconsin's Prehistory. *Wisconsin Magazine of History* 33(4): 427-443.
- McCoy, M., and T. Ladefoged. 2009. New Developments in the Use of Spatial Technology in Archaeology. *Journal of Archaeological Research* 17: 263-295.
- McGee, R.J., and R.L. Warms. 2013. "Sapir-Whorf Hypothesis and Neo-Whorfianism." In *Theory in Social and Cultural Anthropology: An Encyclopedia*, edited by R.J. McGee and Richard L. Warms, 746-748. Thousand Oaks, CA: Sage Publications.
- Millhouse, P.G. 2012. *The John Chapman Site and Creolization on the Northern Frontier of the Mississippian World*. PhD dissertation, University of Illinois at Urbana-Champaign. Ann Arbor: ProQuest/UMI. (Publication No. AAT 3570667.)
- Minnesota Department of Transportation (MnDOT). 2017. "Mn/Model: Minnesota Statewide Archaeological Predictive Model." <http://www.dot.state.mn.us/mnmodel/> (accessed June 19<sup>th</sup>, 2017).
- Moore, R.J. 2008. *American Indians: the Art and Travels of Charles Bird King, George Catlin and Karl Bodmer*. Vercelli, Italy: VMB Publishers.
- Mott, M. 1938. The Relation of Historic Indian Tribes to Archaeological Manifestations in Iowa. *Iowa Journal of History and Politics* 36(3): 227-314.
- Nicholas, G.P. 2006. Decolonizing the Archaeological Landscape: The Practice and Politics of Archaeology in British Columbia. *American Indian Quarterly* 30(3/4): 350-380.
- Nicholas, G.P. 2008. "Melding Science and Community Values: Indigenous Archaeology Programs and the Negotiation of Cultural Differences." In *Collaborating at the Trowel's Edge: Teaching and Learning in Indigenous Archaeology*, edited by S.W. Silliman, 228-249. Tucson: University of Arizona Press.
- Ojakangas, R.W. 2009. *Roadside Geology of Minnesota*. Missoula, MT: Mountain Press Publishing Company.
- Ojibwa. 2012. "Sacred Places in New England." Native American Netroots.  
<http://nativeamericannetroots.net/diary/1228> (accessed March 8, 2016).
- Oneroad, A., and A. Skinner. 2003. *Becoming Dakota: Tales and Traditions of the Sisseton and Wahpeton*. Saint Paul: Minnesota Historical Society Press.
- Palmer, J.D. 2008. *The Dakota Peoples: A History of the Dakota, Lakota, and Nakota through 1863*. Jefferson, NC: McFarland Publishers.

- Parker Pearson, M. 1999. *The Archaeology of Death and Burial*. College Station: Texas AandM University Press.
- Pauketat, T., R. Boszhardt, and D. Benden. 2015. Trempealeau Entanglements: An Ancient Colony's Causes and Effects. *American Antiquity* 80(2): 260-289.
- Penman, J.T. 1988. Neo-Boreal Climatic Influences on the Late Prehistoric Agricultural Groups in the upper Mississippi Valley. *Geoarchaeology* 3(2): 139-145.
- Penman, J.T., and N.C. Sullivan. 1995. Late Prehistoric Mortuary Practices in the Upper Mississippi Valley. *The Minnesota Archaeologist* 54: 130-141.
- Perkl, B. 1998. Cucurbita pepo from King Coulee, Southeastern Minnesota. *American Antiquity* 63(2): 279-288.
- Poch, G. 1976. *Soil Survey of Goodhue County, Minnesota*. Washington: United States Department of Agriculture Soil Conservation Service.
- Pohl, F.J. 1964. Riddle of the Stone Beehives. *Bulletin of the Massachusetts Archaeological Society* 25(3/4): 72-76. <http://massarchaeology.org/Anniversary/MAS-v25n0304.pdf>
- Pond, G.H. 1872. "Ancient Mounds and Monuments: Iowa Indians and Mounds." In *Collections of the Minnesota Historical Society, Volume 1*. Saint Paul: The Society. Accessed September 1, 2014. <https://www.loc.gov/item/2011655169/>
- Pond, S.W. 1986. *The Dakota or Sioux in Minnesota as They Were in 1834*. Saint Paul: Minnesota Historical Society Press.
- "Prehistoric Period: An Overview of Prehistoric Archaeology in Minnesota (12,000 BC - AD 1650)." *Minnesota Office of the State Archaeologist* (MnOSA). Accessed June 17, 2016. <https://mn.gov/admin/archaeologist/the-public/mn-archaeology/prehistoric-period/>
- Raab, L.M. and D.O. Larson. 1997. Medieval Climatic Anomaly and Punctuated Cultural Evolution in Coastal Southern California. *American Antiquity* 62(2): 319-336.
- Radin, P. 1990. *The Winnebago Tribe*. Lincoln: University of Nebraska Press.
- Radin, P. 1991. *The Road of Life and Death: A Ritual Drama of the American Indians*. Princeton: Princeton University Press.
- Rasmussen, C.A. 1935. *A History of Goodhue County, Minnesota*. [United States: s.n.].
- Red Wing Newsroom (RWN). 2007. "Maurice Donald Johnson, 90, Featherstone Township." Red Wing Republican-Eagle (Red Wing, MN). November 21<sup>st</sup>, 2007. <http://www.republican-eagle.com/news/1121766-maurice-donald-johnson-90featherstone-township>
- Ridington, R. 1987. Omaha Images of Renewal. *The Canadian Journal of Native Studies* 7(2): 149-164.

- Ridington, R. 1993. A Sacred Object as Text: Reclaiming the Sacred Pole of the Omaha Tribe. *American Indian Quarterly* 17(1): 83-99.
- Robertson, M. 2009. Àite Dachaidh: Re-connecting People with Place—Island Landscapes and Intangible Heritage. *International Journal of Heritage Studies* 15(2-3): 153–162.
- Rodell, R. 1991. “The Diamond Bluff Site Complex and Cahokia Influence in the Red Wing region.” In *New Perspectives on Cahokia: Views from the Periphery*, edited by J.E. Stoltman. Madison, Wis: Prehistory Press.
- Rosebrough, Amy L. 2010. *Every Family a Nation: A Deconstruction and Reconstruction of the Effigy Mound ‘Culture’ of the Western Great Lakes of North America*. PhD dissertation, University of Wisconsin Department of Anthropology. Ann Arbor: ProQuest/UMI. (Publication No. AAT 3421933.)
- Ruml, M. 1996. *The Relationship Between the Tree-Dweller Dreamers and the Little People: Shamans, Power and Spirit Helpers in the Canadian Dakota Religious Tradition*. PhD dissertation, University of Ottawa Department of Religious Studies. Ottawa: Library and Archives Canada. <http://www.nlc-bnc.ca/obj/s4/f2/dsk3/ftp04/nq21031.pdf>
- Ruml, M. 2009. The Dakota Little People and the Tree-Dweller Dreamers: A matter of respect. *Studies in Religion* 38(3-4): 507-531.
- Ruml, M. 2010. “Mitakuye Owas’i (All My Relatives): Dakota Wiconi (Way of Life) and Wicozani Waste (Well-Being).” In *Aboriginal Policy Research Volume VI: Learning, Technology, and Traditions*, edited by J. White, J. Peters, D. Beavon, and P. Dinsdale. Toronto: Thompson Education Publishing.
- Rundle, K., and T. Rundle. 2008. *Lost Nation: The Ioway*. USA: Fourth Wall Films. DVD.
- Rundstrom, R., and D. Deur. 1999. “Reciprocal Appropriation: Toward an Ethics of Cross-Cultural Research.” In *Geography and Ethics: Journeys in a Moral Terrain*, edited by J. Proctor and D. Smith. London: Routledge.
- Schirmer, R.C. 2002. *Plant-use Systems and Late Prehistoric Culture Change in the Red Wing region*. PhD dissertation, University of Minnesota Department of Anthropology. Ann Arbor: ProQuest/UMI. (Publication No. AAT 3058664.)
- Schirmer, R.C. 2015. “Red Wing and the Archaeological Community: Taxonomic and Interpretive History.” In *Mounds, Villages, and Feasts: the Archaeology of Red Wing*, edited by R.C. Schirmer. Saint Paul: Prairie Smoke Press, Inc. Manuscript in preparation.
- Schirmer, R.C. 2016. *Radiocarbon Dating Early Oneota Sites in Southern Minnesota*. A Report submitted to the Minnesota Historical Society, Legacy Grant #1501-05965. Mankato, MN: Minnesota State University.

- Schirmer, R.C. 2017. "A New Phase Sequence for Red Wing Oneota." Paper presented at the 61<sup>st</sup> Annual Meeting of the Midwest Archaeological Conference, Indianapolis, IN, October 21<sup>st</sup>, 2017.
- Schmidt, E.W. 1941. A Brief Archaeological Survey of the Red Wing Area. *The Minnesota Archaeologist* 7(2): 71-80.
- Schorger, A.W. 1955. *The Passenger Pigeon: Its Natural History and Extinction*. Madison: University of Wisconsin Press.
- Schwindt, D.M., R.K. Bocinsky, S.G. Ortman, D.M. Glowacki, M.D. Varien, and T.A. Kohler. 2016. The Social Consequences of Climate Change in the Central Mesa Verde Region. *American Antiquity* 81(1): 74-96.
- Science Museum of Minnesota (SMM). 2016. "Link Vessel." Accessed April 10, 2016. [http://www.sciencebuzz.org/museum/object/2002\\_07\\_link\\_vessel](http://www.sciencebuzz.org/museum/object/2002_07_link_vessel)
- Sersha, T. 1973. *The Use of Plant Medicines by the Dakota Indians*. MA thesis, University of Manitoba Department of Anthropology. Ann Arbor: ProQuest/UMI (Publication No. AAT MK17858.)
- Sherwood, S.C., and T.R. Kidder. 2011. The DaVincis of Dirt: Geoarchaeological Perspectives on Native American Mound Building in the Mississippi River Basin. *Journal of Anthropological Archaeology* 30: 69–87.
- Siart, C., B. Eitel, and D. Panagiotopoulos. 2008. Investigation of Past Archaeological Landscapes using Remote Sensing and GIS: A Multi-Method Case Study from Mount Ida, Crete. *Journal of Archaeological Science* 35: 2918-2926.
- Silliman, S.W. 2008. "Collaborative Indigenous Archaeology: Troweling at the Edges, Eyeing the Center." In *Collaborating at the Trowel's Edge: Teaching and Learning in Indigenous Archaeology*, edited by S.W. Silliman. Tucson: University of Arizona Press.
- Simon, M. 2001. "Red Cedar, White Oak, and Bluestem Grass: The Colors of Mississippian Construction." Paper presented at the 47<sup>th</sup> Annual Meeting of the Midwest Archaeological Conference, La Crosse, Wisconsin. October 12-14, 2001.
- Skandfer, M. 2009. Ethics in the Landscape: Prehistoric Archaeology and Local Sámi Knowledge in Interior Finnmark, Northern Norway. *Arctic Anthropology* 46(1/2): 89-102.
- Skinner, A. 1915. *Societies of the Iowa, Kansa, and Ponca Indians*, Anthropological papers of the American Museum of Natural History v. 11, Part IX. New York: The Trustees.
- Skinner, A. 1919. A Sketch of Eastern Dakota Ethnology. *American Anthropologist*, New Series 21(2): 164-174.

- Skinner, A. 1920. *Medicine Ceremony of the Menomini, Iowa, and Wahpeton, Dakota, with Notes on the Ceremony Among the Ponca, Bungi Ojibwa, and Potawatomi Indians*. New York: Museum of the American Indian Heye Foundation.
- Skinner, A. 1925. Traditions of the Iowa Indians. *The Journal of American Folklore* 38(150): 425-506.
- Springer, J.W., and S.R. Witkowski. 1982. "Siouan Historical Linguistics and Oneota Archaeology." In *Oneota Studies*, edited by G.E. Gibbon. Minneapolis: University of Minnesota.
- Squier, E.G., and E.H. Davis. 1848. *Ancient Monuments of the Mississippi Valley: Comprising the Results of Extensive Original Surveys and Explorations*, Smithsonian Contributions to Knowledge Vol. I. Washington: The Smithsonian Institution.
- Squier, E.G., and E.H. Davis. 1998. *Ancient Monuments of the Mississippi Valley*. Edited by D. Meltzer. Washington: Smithsonian Institution.
- Staeck, J.P. 1994. *Archaeology, Identity, and Oral Tradition: A Reconsideration of Late Prehistoric and Early Historic Winnebago Social Structure and Identity as Seen through Oral Traditions*. PhD dissertation, Rutgers University, Department of Anthropology. Ann Arbor: ProQuest/UMI. (Publication No. AAT 9431136.)
- Stangroom, J. 2015. *Social Science Statistics*. Accessed February 1, 2015. <http://www.socscistatistics.com/Default.aspx>
- Stanislawski, M.B. 1973. Ethnoarchaeology and Settlement Archaeology. *Ethnohistory* 20(4): 375-392.
- Stanley, L. 2004. "Ratcliffe Sacred Rock and the Seven Sacred Stones, Iowa." In *The Rock-Art of Eastern North America: Capturing Images and Insight*, edited by C. Diaz-Granados and J.R. Duncan. Tuscaloosa: University of Alabama Press.
- Steltenkamp, M.F. 1997. *Black Elk: Holy Man of the Oglala*. Norman: University of Oklahoma Press.
- Stewart, A., D. Keith, and J. Scottie. 2004. Caribou Crossings and Cultural Meanings: Placing Traditional Knowledge and Archaeology in Context in an Inuit Landscape. *Journal of Archaeological Method and Theory* 11(2): 183-211.
- Stortroen, C.E. 1984. The Bryan Site: A Prehistoric Village in Southern Minnesota. *The Minnesota Archaeologist* 43(2): 37-46.
- Stuiver, M. and P.J. Reimer. 1986. A Computer Program for Radiocarbon Age Calibration. *Radiocarbon* 28(2B): 1022-1030.
- Sullivan, L.E. 1982. Multiple Levels of Religious Meaning in Culture: A New Look at Winnebago Sacred Texts. *The Canadian Journal of Native Studies* 2(2): 221-247. <http://www3.brandonu.ca/cjns/2.2/sullivan.pdf>

- Taylor-Hollings, J.S. 1999. *The Northwestern Extent of Sandy Lake Ware: A Canadian Perspective*. MA Thesis, University of Saskatchewan Department of Anthropology and Archaeology. Accessed June 20, 2013. <http://ecommons.usask.ca>
- Tedlock, B. 1991. From Participant Observation to the Observation of Participation: The Emergence of Narrative Ethnography. *Journal of Anthropological Research* 47(1): 69-94.
- Thomas, C. 1894. *Report on the Mound Explorations of the Bureau of Ethnology*. Washington: Smithsonian Institution Press. Accessed September 11, 2015. <https://archive.org/details/bureauofethnology00thomrich>
- Thornton, T.F. 1997. Anthropological Studies of Native American Place Naming. *American Indian Quarterly* 21(2): 209–228.
- Tilley, C. 1994. *A Phenomenology of Landscape: Places, Paths and Monuments*. Oxford: Berg Publishers.
- Toupal, R., M. Zedeno, R. Stoffle, and P. Barabe. 2001. Cultural Landscape and Ethnographic Cartographies: Scandinavian-American and American Indian Knowledge of the Land. *Environmental Science and Policy* 4: 171-184.
- Trigger, B.G. 1991. Distinguished Lecture in Archeology: Constraint and Freedom - a New Synthesis for Archeological Explanation. *American Anthropologist*, New Series, 93(3): 551-569.
- Tuan, Yi-Fu. 1971. *Man and Nature*. Washington: Association of American Geographers, Commission on College Geography, Resource Paper No. 10.
- Tuan, Yi-Fu. 1977. *Space and Place: the Perspective of Experience*. Minneapolis: University of Minnesota Press.
- Tuan, Yi-Fu. 2012. *Humanist Geography: An Individual's Search for Meaning*. Staunton, VA: George F. Thompson Publishing.
- United States of America. Bureau of Land Management (BLM). 2005. *Final Environmental Impact Statement FES 05-03: the Coteau Properties Company Federal Coal Lease Application NDM 91535 for West Mine Area, Freedom Mine, Mercer County, North Dakota*. United States Department of the Interior, North Dakota Field Office, Dickinson, N.D.
- United States of America. Minnesota Statute (MS 307.08). 2016. *Damages; Illegal Molestation of Human Remains; Burials; Cemeteries; Penalty; Authentication*. [Saint Paul, MN]. <https://www.revisor.mn.gov/statutes/?id=307.08>
- Upham, W. 1969. *Minnesota Geographic Names: Their Origin and Historic Significance*. Saint Paul: Minnesota Historical Society.

- Van Dyke, R.M, R.K. Bocinsky, T.C. Windes, and T.J. Robinson. 2016. Great Houses, Great Shrines, and High Places: Intervisibility in the Chacoan World. *American Antiquity* 81(2): 205-230.
- Wagner, M.J., M.R. McCorvie, and C.A. Swedlund. 2004. "Mississippian Cosmology and Rock-Art at the Millstone Stone Bluff Site, Illinois." In *The Rock-Art of Eastern North America: Capturing Images and Insight*, edited by C. Diaz-Granados and J.R. Duncan. Tuscaloosa: University of Alabama Press.
- Waldron, J., and E. Abrams. 1999. Adena Burial Mounds and Inter-Hamlet Visibility: a GIS Approach. *Midcontinental Journal of Archaeology* 24: 97-111.
- Walford, N. 1995. *Geographical Data Analysis*. Chichester, UK: John Wiley and Sons.
- Wallis, W. 1947. *The Canadian Dakota*, Volume 41, Part 1, Anthropological Papers of the American Museum of Natural History. New York: American Museum of Natural History.
- Watkins, J. E. 2003. Beyond the Margin: American Indians, First Nations, and Archaeology in North America. *American Antiquity* 68(2): 273-285.
- WDSE (WDSE) Productions. 2007. *Native Report: Jeffers Petroglyphs*. Season 2, Episode 3. Original Broadcast Date: January 25, 2007. Duluth, MN.
- Wedel, M.M. 1981. The Ioway, Oto, and Omaha Indians in 1700. *Journal of the Iowa Archeological Society* 28: 1-13.
- Wedel, M.M. 1986. Peering at the Ioway Indians through the Mist of Time: 1650–circa 1700. *Journal of the Iowa Anthropological Society* 33: 1–74.
- Wedel, M.M., and R.J. DeMallie. 1980. "The Ethnohistorical Approach in Plains Area Studies." In *Anthropology on the Great Plains*, edited by W.R. Wood and M. Liberty, pp. 110–128. University of Nebraska Press: Lincoln.
- West, G.A. 1907. "The Indian Authorship of Wisconsin Antiquities." In *The Wisconsin Archeologist vol.6, no. 4*. Milwaukee: Wisconsin Archeological Society.
- Westerman, G., and B. White. 2012. *Mni Sota Makoce: The Land of the Dakota*. Saint Paul: Minnesota Historical Society Press.
- White, D., and S. Barber. 2012. Geospatial Modeling of Pedestrian Transportation Networks: A Case Study from Precolumbian Oaxaca, Mexico. *Journal of Archaeological Science* 39: 2684-2696.
- Whiteley, P.M. 2002. Archaeology and Oral Tradition: The Scientific Importance of Dialogue. *American Antiquity* 67(3): 405-415.
- Whitridge, P. 2004. Landscapes, Houses, Bodies, Things: "Place" and the Archaeology of Inuit Imaginaries. *Journal of Archaeological Method and Theory* 11(2): 213-250.

- Wilford, L.A. 1941. A Tentative Classification of the Prehistoric Cultures of Minnesota. *American Antiquity* 6: 231-249.
- Wilford, L.A. 1952. *The Silvernale Mound and Village Site*. Manuscript on file, Department of Anthropology, University of Minnesota, Minneapolis.
- Wilford, L.A. 1955. A Revised Classification of the Prehistoric Cultures of Minnesota. *American Antiquity* 21(2): 130-142.
- Wilford, L.A. 1960. "The First Minnesotans." In *Minnesota Heritage*, ed. L.M. Brings, pp. 40-79. Minneapolis: T.S. Denison.
- Wilford, L.A. 1961. *The McKee Mound*. Manuscript on file, University of Minnesota Archaeology Collections. Saint Paul: Minnesota Historical Society.
- Wilford, L.A., E. Johnson, and J. Vicinus. 1969. *Burial Mounds of Central Minnesota*. Minnesota Prehistoric Archaeology Series No. 1. Saint Paul: Minnesota Historical Society.
- Wilford, L.A., and J.W. Brink. 1974. Hogback: A Proto-Historic Oneota Burial Site. *The Minnesota Archaeologist* 33(1-2): 1-79.
- Williams, D.B. 2012. *Cairns: Messengers in Stone*. Seattle: The Mountaineer Books.
- Wilson, M.C. 2005. The "Placing" of Identity in Nomadic Societies: Aboriginal Landscapes of the Northwestern Plains of North America. *Material History Review* 62: 7-19.
- Winchell, N.H. 1911. *The Aborigines of Minnesota: A Report based on the Collections of Jacob V. Brower, and on the Field Surveys and Notes of Alfred J. Hill and Theodore H. Lewis*. Saint Paul, MN: Minnesota Historical Society.
- Winchell, N.H., and W. Upham. 1888. *The Geology of Minnesota, Volume 2 of the Final Report*. Saint Paul: Minnesota Geological Survey. Accessed September 1, 2014. <http://purl.umn.edu/56281>
- Wozniak, J. 1978. *Contact, Negotiation and Conflict: an Ethnohistory of the Eastern Dakota, 1819-1839*. Washington: University Press of America.
- Wright, Jr., H.E. 1972. "Quaternary History of Minnesota." In *Geology of Minnesota - a Centennial Volume*, edited by P.K. Sims and G.B. Morey. Saint Paul, MN: Minnesota Geological Survey.
- Wright, Jr., H.E. 1989. "The Quaternary." In *The Geology of North America – an Overview*, edited by A.W. Balley and A.R. Palmer, pp. 513-536. Boulder, CO: Geological Society of America.
- Yamada, R. 2007. *The Spatial Relationships among Mounds in the Red Wing region, MN and WI*. MS Thesis, Minnesota State University – Mankato.



Zager, S. 2010. *Medicinal and Cultural Plants within Prairie Island and Neighboring Counties*. A report submitted to the Prairie Island Indian Community of Minnesota; manuscript on file. Maplewood, MN: Wildlands Ecological Services.

## Appendix I: Chapter 2 Supplement

### *Cairns, Stone Vaults and Burial Mounds*

Stone cairns are certainly not unique to the Red Wing region. However, one research goal is to determine if the Red Wing phenomena is unique based on form and/or function as compared to elsewhere. The Northwestern Archaeological Survey (NWAS) of the 1880s must be credited with documenting thousands of earthworks and other archaeological features before they were lost to history. T.H. Lewis personally surveyed sites across the entire Upper Midwest and Manitoba, which includes the stone cairns of Red Wing. Some of his notes and maps were included in N.H. Winchell's invaluable volume on Minnesota prehistory, i.e. the "Aborigines of Minnesota" published in 1911. It remains to be the most comprehensive reference on earthworks in the state and most of the earthworks documented by Lewis are linked to mortuary and ritual activities (Dobbs 1996). Early settlers in Red Wing and Goodhue County noted the extent of this activity thusly:

Through how many ages the Indians flourished in this county is a question that will never be satisfactorily settled. At any event, the white men found here a band of Indians whose ancestors, according to their tribal traditions, had occupied the land for ages, and had for headquarters, "Hem-minne-cha," which is now known as Cannon Junction, with straggling villages extending in every direction within a radius of six miles. The villages of the Sioux Indians were usually found situated near a collection of earth mounds; but there are no well authenticated accounts of the Indians found there by the early explorer, having practiced to any great extent mound burial, but they did follow the custom of scaffold burial, as was noticed by Hennepin at Prescott Point, at the mouth of the St. Croix in 1680... Within a radius of six miles from Cannon Junction I have located, mapped and charted over four thousand Indian burial mounds, earthworks, stone cairns, etc., showing conclusively that this region must have been inhabited for many ages. (Curtiss-Wedge 1909:32)

In Red Wing, Lloyd Wilford excavated two mounds in the Spates Mound Group (21GD0036) in 1947 and 1950: Mound 36 on the lower terrace and Mound 45 on the upper terrace. Fleming (2009:25-26) notes the findings:

Four features were discovered in Mound 36 – a rock cairn of 35 friable limestone blocks arranged in a circle near the mound center, and three shallow rectangular pits oriented east to west in the subsoil below the rock cairn (Gibbon 1979:71). Two of the pits contained only remnants of human bone material (including that of a child) and no artifactual remains – although the soil was not screened, so small artifacts might have gone unnoticed. The third pit was found to be empty. The mound fill contained a side-notched and a stemmed projectile point, a mid-section of a chert knife or projectile point, and a single “Silvernale” sherd, suggesting that the mound was constructed during or after the occupation of the village.

Wilford conducted many studies and excavated many mounds across Minnesota but did not publish most of his results. At the Sheffield site (21WA0013), Wilford excavated a mound and found a substantial cairn comprised of boulders for its base and sandstone slabs of various sizes were in the upper portion (Arzigian and Stevenson 2003:164; Wilford et al. 1969:4). He described them as “rather triangular in shape.... In general the rocks at the base were boulders, whereas those in the upper portion were largely easily fractured sandstone slabs of many sizes..... plus [granite boulders] at bottom. Former are structural here, latter obtainable in river” (Wilford et al. 1969; Arzigian and Stevenson 2003:164). Wilford (1961:5) noted the designation of rock features may vary based on the home state of the investigator. Rock cairns are commonly found in Woodland mounds of Minnesota, which are ascribed to the Mille Lacs Aspect. It has been asserted that the Red Wing cairns were once covered by soil that washed away (Winchell 1911:404-405), but this is improbable based on site observations today.

Cairns are also present in mounds in Wisconsin ascribed to the Effigy Mound Aspect, which has been proven to be a shared ritual system consisting of many individual and unique

groups rather than one monolithic entity (Rosebrough 2010). In identical fashion, the Silvernale phase in Red Wing is also a conglomeration of multiple groups partaking in a shared material and ritualistic lifeway (Fleming 2009). Thus, stone feature construction was a common activity performed in specific ceremonial contexts by many distinct groups.

Upriver from Red Wing, Brower (1903:47) also notes “a single stone cairn was found at the mouth of Big River on a high terrace opposite the enclosure which is located on the upper or northwestern side of that stream, six miles from Prescott.” No mention of its shape or contents was made. Thomas (1894:85) notes stone cairns located on the top of one particular bluff in Grant County, Wisconsin, contained fragments of decaying human bones. In Fillmore County in southeastern Minnesota, groups of limestone slabs with no human remains were found at Gladly Mound (21FL0004), and were referred to as structural elements in the mound (Arzigian and Stevenson 2003:164).

In general, cairn features are commonly associated with mound construction/burial practices (Arzigian and Stevenson 2003:164). Cairns were found in every archaeological region in Minnesota where mound excavations occurred. Most have unknown ages and cultural associations, and also vary widely in size: 1-7 feet wide and up to 11 feet long, 0.4 to 2.5 feet in thickness and no consistent shapes are reported (Arzigian and Stevenson 2003:165). They are commonly defined as altars in Wisconsin and oftentimes contain bundle burials (Arzigian and Stevenson 2003:164; Wilford 1961:5). To clarify, a secondary/bundle burial is an orderly arrangement of the accumulated bones of an individual whose flesh has been removed naturally while placed on a scaffold (Arzigian and Stevenson 2003:26). Long, hard winters and frozen ground would necessitate such burial practices (Arzigian and Stevenson 2003:41). In Dakota custom, it was the responsibility of a “bone man” or *hu-hu-wicasa* to bundle the skeletal remains

and inter them. Both men and women participated in this ceremony (personal communication, Curtis Campbell Sr., July 9<sup>th</sup>, 2007).

Winchell (1911:401-402) documents various burial methods found in Minnesota: 1) Burials of bundled bones; 2) Burials accompanied by cremation; 3) Burials in horizontal position; 4) Burials in sitting posture; 5) Stone graves or cists; 6) Clay urns or sarcophagi; 7) Irregular and successive burials; and 8) Burials in pits. Winchell (1911:404-405) further states, “burials that have been observed in stone vaults, as in Houston county, and perhaps those of the stone cairns of Goodhue county, were probably in a sitting position” (Winchell 1911:404-405; cf. Thomas 1894:107).

Near the confluence of the Little Iowa River and the Mississippi, Thomas (1894:107) excavated an earthen mound that was 32 feet in diameter, 8 feet in height, and contained a walled circular vault inside. He states that although this vault did not have a true arch like the stonework in the furnaces, the main portion remained standing and was built of flat stones and gradually lessened in diameter as it rose. The vault structure was then capped with a single stone. The architecture of the stone vault is quite similar to the cairns built near Red Wing. Unlike the Red Wing cairns, a squatting adult skeleton with a small earthen vase “of the usual globular form” was found inside (note: this ceramic form is commonly associated with Oneota vessels).

The burial of the dead in a folded (or sitting position) is known to have been a common practice of the Winnebago of Wisconsin, as well as of other Indian tribes, who also followed other methods of internment (West 1907:189). Stone chambers are found in numerous places and were apparently used for burial in all instances (see Fig. 5-3).

Ho-Chunk informants stated chiefs were often buried in them (Radin 1990:55). Many earthworks in Wisconsin were found to have interior stone vault construction. Stone mounds and

circles are also occasionally found in connection with Wisconsin mound groups (West 1907:204). West (1907:188-189) documented the following types of mound burial:

The several modes of mound burial, which have been observed repeatedly by various intelligent investigators from Lapham's day to the present time, may be summarized as follows: 1a. The burial of one or of a number of skeletons or bodies in a folded position (the sitting or kneeling posture of some authors) on, or in an excavation beneath the natural surface of, the ground. The interments occasionally surrounded by a wall or vault of stone slabs or boulders, or the pit covered (or walled in) with bark or logs. A mound of one or several layers of earth was erected over the whole. b. The burial of one or more skeletons or bodies at full length (face up), or lying on the side, on or above the natural surface of the ground, or in a pit or pits beneath. The skeletons on the same level or scattered through the mound at different levels, regularly or irregularly disposed. Also sometimes inclosed by a stone vault, or surrounded by stones.

2a. The burial of the bundled bones of a number of skeletons either on, or in an excavation beneath the natural surface of the ground. Each skull resting upon or near the collection of bones of the skeleton to which it belonged. b. The burial on, or in an excavation beneath the surface of the ground, of the disconnected bones of a number or many skeletons, or of closely packed skeletons. The confused mass of bones covered with a hardened layer of clay upon which a fire was sometimes built. The mound was completed by the addition of one or several layers of soil. Thomas, who in his "Burial Mounds of the Northern Section of the United States" (5 B. E.) has devoted a chapter to a consideration of the character of the burial mounds of Wisconsin says: "Of the methods of construction and modes of burial there appear to be some two or three types, though not so different as to necessarily indicate different tribes or peoples — p. 14. Horizontal and folded burials may occur in the same mound. The skeletons may lie in one or various directions.

Burials occur either beneath the apex or the rim, or at any level in a mound. Indications of the use of fire in connection with the burial ceremonies may accompany any mode of interment. This accounts for the mistaken notion that charred or partly consumed bones are evidences of human sacrifice or of cremation.

The burial of the dead in a folded (or sitting position) is known to have been a common practice of the Winnebago, as well as of other Indian tribes, who also followed other methods of internment.

Cairn construction along the Mississippi River in the far northeastern corner of Iowa (Allamakee County) and southeastern corner of Minnesota (Houston County) is primarily

associated with Orr phase Oneota as discussed in Chapter 5. Within a square earthwork in Allamakee County, Thomas (1894:102) found an 18-ft diameter cairn, 3-ft high, and built of loose sandstone. The stones covered traces of human bones, charcoal, and ashes. Another cairn was found adjacent to this feature with earth placed upon a mass of charred bones, ashes, charcoal, and fragments of pottery (ibid). At another location near present-day New Albin, Iowa, Thomas found a “crypt or rude stone coffin” made of sandstone within an oblong mound, which was 6 feet in length and 18 inches wide (Thomas 1894:103). It was formed by first placing flat sandstones on the natural clay surface. Subsequently, the other slabs were stood up on their sides along the length of the structure and at its ends. An adult person was found inside it, fully extended, and with the head oriented almost due west. The remains were very much decayed and burial items included some stone chips, rude stone scrapers, a *Unio* or freshwater mussel shell, and some fragments of pottery (ibid).

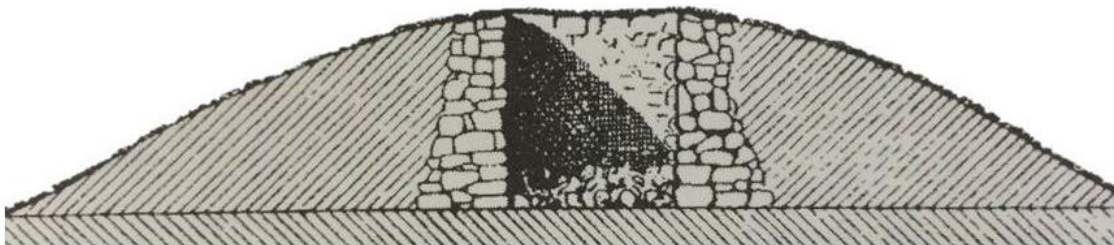


Fig. 2A-1: Stone vault in Mound 2, Jefferson Site (21HU0005).  
Vertical Exaggeration is 2X. (Arzigian and Stevenson 2003:405).

From 1882-1883, Cyrus Thomas excavated in Mound 2 at 21HU0005 (Fig. 2A-1) and its dimensions were recorded as 25 feet in diameter by 6 feet high. According to Thomas, previous

investigators had removed a child's remains dating from the post-contact period as determined by its associated burial items (trinkets, beads, etc). He also states that looters had disturbed this mound by removing the top slabs of the stone chamber. Although human remains were not directly mentioned with this feature, Thomas found a two-foot thick deposit of charcoal, ash, and split animal bones (Arzigian and Stevenson 2003:404-405). Other nearby mounds showed indication of "rock burials" as well (ibid). Burials in this area have been definitely associated with Orr phase Oneota and are discussed further in Chapter 5.

In West Virginia, Thomas (1894:408) observes a "wellhole" cairn type that closely matches the Red Wing cairn cross-section as described by W.J. Colvill (cf. Winchell 1911:166; Winchell and Upham 1888:60). Unlike the "wellhole" cairns of West Virginia, the Red Wing cairns were not apparently used for primary burial and also incorporate wooden shafts. The wellhole cairn is much larger in size, sometimes up to 50 feet in diameter. Thomas's observations include site preparation, construction method, source of stone, and effort required:

First, the earth (unless the place selected is a bare rock) is removed to the solid rock foundation and an approximately level space from 10 to 30 feet in diameter formed. Centrally on this was placed a layer of flat stones, with the best edge inward, around a circle about 3 feet in diameter. Upon the outer edge of these, others were placed with their outer edges resting upon the prepared foundation running entirely around the circle. Then another inner layer with the best edge inward and the thinner edge resting on the outer layer, the stones of one layer breaking joints with those below, as far as the size and form would admit of it. Outside of the inner row and with the edges resting on it other circles were added, until a diameter ranging from 20 to 50 feet, or even more, was attained; thus often extending upon the sloping earth not removed in forming the foundation. The last, or outer circle, usually consisted of but a single layer, over which earth was thrown, being sometimes heaped up until it equaled in contents one-half the rock pile. The height of these piles was found to vary from 4 to 8 feet, in one or two instances reaching 10 feet. But in all cases the circular space or opening in the center continued to the top the same diameter as at the bottom, somewhat resembling the so-called "wellholes" of the early western pioneers.



Many of the stones used in these heaps have evidently been obtained by rude quarrying in the stratified cliffs, often half a mile distant. Some of them measure from 4 to 6 feet in length, half as wide, and of a thickness which renders them so heavy as to require from two to four stout men to handle them. Beneath the somewhat upturned edges of many of these stones in the different layers are frequently found the decayed (and often charred) remains of human skeletons, usually horizontal, with the head or feet (generally the latter) toward the central "wellhole." With these were generally found fragments of coarse pottery, rude, but very large celts; also lance and arrow heads, and occasionally rude clay or stone pipes, but rarely, if ever, stone hoes or other agricultural implements. All the cavities of the heap not originally used for burial are filled with earth or mortar, often well baked by fire. (Thomas 1984:408)

The vertical shaft or "wellhole" found from its base to the apex closely matches Colvill's description of Red Wing cairns (cf. Winchell and Upham 1888:60). Also, Thomas noted these distinctive cairns or "stone heaps" were located on the summits of nearly all prominent bluffs, spurs, and high points of the region. This also matches the stone cairns of Red Wing, i.e. large and elaborate stone structures with high vertical profiles and conspicuous placement.

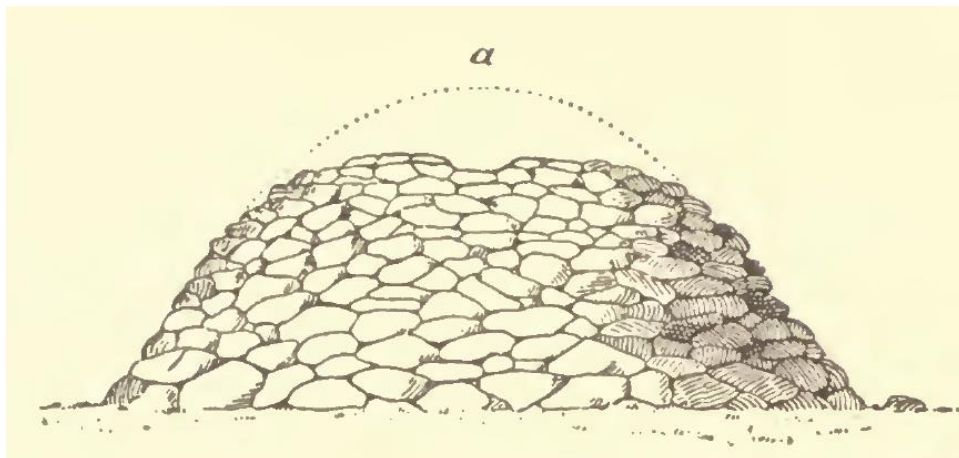


Fig. 2A-2: West Virginia "wellhole" cairn (Thomas 1894:408)

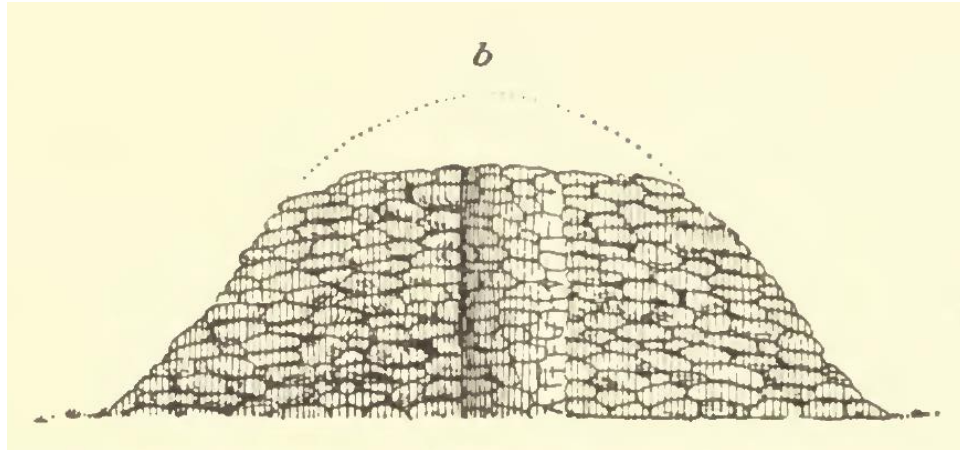


Fig. 2A-3: West Virginia “wellhole” cairn (Thomas 1894:408)

In Massachusetts, Pohl (1964) describes beehive stone features built into hillsides and argues they were presumably used by early white settlers for defensive reasons. He discusses utilitarian reasons for their construction and does not address any possible religious associations. Although the architectural form is very similar to the Red Wing phenonema, their placement within hillsides separates them as different types of structures since the Red Wing features were placed upon exposed promontories. The Red Wing cairns were constructed as monuments of some kind and in clear observational view.

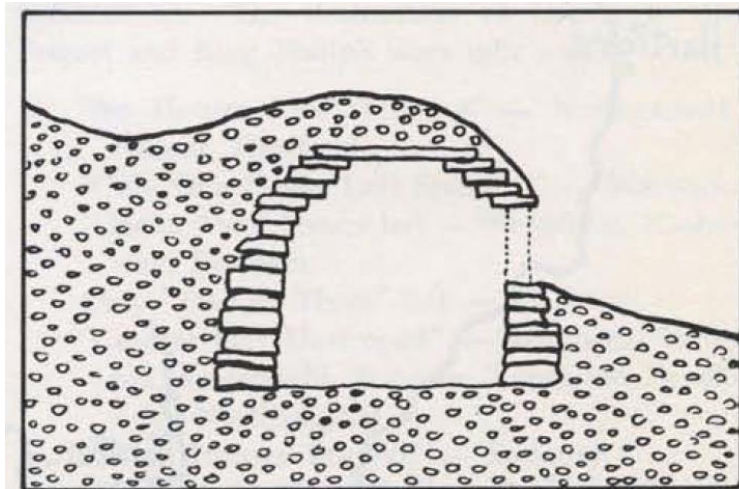


Fig. 17. CROSS SECTION OF BEEHIVE, showing opening, corbelling, slope of ground, and hummock.

Fig. 2A-4: Cross Section of Stone Beehive in Massachusetts (Pohl 1964:74)



Fig. 18. FRONT VIEW OF BEEHIVE.

Fig. 2A-5: Front View of Stone Beehive in Massachusetts (Pohl 1964:75)

## *Red Wing Earthworks and Cultural Traditions*

Approximately 3,000 earthworks were constructed in the Red Wing region (148 sq. km) from AD 1050 – 1300. Major village mound groups in the Red Wing region include: Adams (47PI12), Bartron (21GD02), Belle Creek (21GD72), Bryan (21GD04), Energy Park (21GD158), Mero/Diamond Bluff Complex (47PI02, 47PI93), and Silvernale (21GD03) sites. The number of mounds associated with each village group ranges from 60 to over 390 (Yamada 2007:6) and these villages range from 2.5 – 8.0 hectares in area (Schirmer 2002:54). To this day the major village areas have consumed most research energy but earthworks are located throughout the region and require proper examination. Dobbs (1996) summarizes the spatial, temporal and cultural affiliation of earthworks throughout the study region:

The only true-Mississippian complex in Minnesota is associated with the Silvernale context (A.D. 1150 - 1250) in the Red Wing vicinity. The Red Wing Oneota context (A.D. 1100 - 1300) is also probably associated with the extensive mound building in the same area. In southeastern Minnesota, Late Prehistoric mounds are affiliated with the Orr Oneota context (A.D. 1200 - 1650). Late Prehistoric mounds in southwestern Minnesota have Plains Village associations affiliated with the Cambria, Great Oasis, and Big Stone contexts. The character and pace of the construction of earthworks and mounds may change markedly after ca. 800 years ago. Non-mound earthworks seem to become more common and the pace of mound construction seems to slow. In fact, while some mounds were re-used for additional interments (cf. Anfinson 1984:27), relatively little new mound construction actually took place in the Midwest after perhaps 500 years ago. The reasons for these changes remain obscure, but are most probably linked to the cultural and climatic changes that dominated the Minnesota landscape between roughly A.D. 1400 and 1650.

Dobbs (1985) had previously tentatively proposed a Red Wing region definition, but additional work led to a somewhat expanded revision into a Lake Pepin locality. The locality, as defined, included the major and minor habitation and mound sites with evidence of affiliation with Mississippian and Oneota traditions dating to between A.D. 1000 and 1300 (Dobbs and

Breakey 1987:3; Schirmer 2015). Radiocarbon dates from UW-Milwaukee excavations at the Diamond Bluff site (47PI02) range between A.D. 1001 and 1281 calibrated (Rodell 1991; Stuiver and Reimer 1986). Specifically, those artifacts and materials displaying a blend of both Mississippian and Oneota traits constituted a separate phase called Silvernale (Gibbon and Dobbs 1991).

Middle to Late Woodland peoples also constructed conical and linear mounds, and most often used for human burial. Based on artifact analyses, these mounds indicated a seemingly egalitarian network of Woodland peoples (Rosebrough 2010). The Oneota complex continues to challenge archeological interpretation, although it is theorized that Late Woodland peoples adopted particular traits of Mississippians (i.e. intensified maize horticulture, shell-tempered pottery, platform mound construction – all being found in the Red Wing region), and became “Oneota.” Late Woodland, Mississippian, and Oneota peoples all constructed mounds (Fleming 2009; Rosebrough 2010). How these entities interacted on a socio-political and economic plain remains to be an important archaeological question in this locality.

The local villages with purely Oneota components (i.e. Adams) were deemed Adams phase (Dobbs and Holley 1995). Dobbs (1996) assembled the names and time periods of various archaeological traditions identified in Minnesota’s past: Southeastern Minnesota Late Woodland (AD 500 - 1000), Kathio (AD 800 - 1000), Blackduck (AD 700 - 1200), Psinomani (AD 1000 - 1650), Cambria (AD 1000 - 1200), Great Oasis (AD 900. - 1200), Big Stone (AD 1200 - 1400), Silvernale (AD 1150 - 1250), Red Wing Oneota (AD 1150 - 1400), Orr Oneota (AD 1200 - 1650). Cambria and Great Oasis complexes are within the Initial Variant of the Plains Village tradition (Gibbon 2012:163). These complexes are generally between A.D. 1000 – 1200 (Gibbon 2012:165). Note: the term “tradition” is used to describe a lasting artifact type, assemblage of

tools, architectural style, economic practice, or art style and implies a degree of cultural continuity; and the term “phase” refers to similar components from more than one site (Fagan 2005:50-51).

Eastern Dakota (Santee) bands, who are now the primary Native inhabitants of southern Minnesota, traditionally made pottery of pounded clay tempered with crushed rock (Skinner 1919:165; Howard 1984:10). Sandy Lake ware, a late precontact to early postcontact archaeological manifestation, was first found in central Minnesota and is considered part of the Psinomani culture, which persisted from A.D. 1000 to 1750. It is often found in area where wild rice grows. Linguistic affiliation and archaeological materials directly relate the Assiniboine of southern Canada and the Eastern Dakota of Minnesota (Lowie 1910; Taylor-Hollings 1999). Based on evidence from past excavations in this region, pre-contact earthworks and archaeological features in Red Wing are primarily associated with known Oneota descendants, i.e. Chiwere-Siouan peoples including the Ioway, Otoe, Missouriia, and Ho-Chunk.

Although Chiwere-Siouan peoples are the most closely associated descendants of Oneota peoples, this does not negate the possibility that ancestral Dakota peoples of the Mille Lacs Aspect also participated to some degree in the Silvernale and Oneota lifeways. Specifically, Ogechie ceramics are a blend of Oneota and Sandy Lake/Psinomani traits (MnOSA 2016). Furthermore, wild rice is common food stuff in the Red Wing region during the pre-contact period and its main source is most likely central and northern Minnesota (personal communication, Ronald C. Schirmer, June 3<sup>rd</sup>, 2016).

Mississippian peoples are usually defined by the presence of “maize horticulture, fortified communities with large earthen mounds, social ranking, and a set of rituals and symbols concerned with fertility, ancestors, and war” but variance in any of these traits and respective

degree can be observed in specific localities and within regional populations (Blitz 2010:3). In Red Wing, we see Mississippian influence in material forms: ceramic style, gaming (i.e. Chunkey stone concentration in Goodhue County), and mound construction (i.e. platform mound construction at Energy Park site).

Interestingly, most discoidals or chunkey stones in Minnesota were found in Goodhue County, which indicates a stronger Mississippian influence (Link 1979:140). Although the actual influence of Middle Mississippian tradition is shown to be far less substantial than previously thought (cf. Fleming 2009), it is within reason that lifeway elements, customs, or games such as Chunkey made their way north. Cahokian and Middle Mississippian influence extended north into southeastern Minnesota and western Wisconsin during the 11<sup>th</sup> and 12<sup>th</sup> centuries (Pauketat et al. 2015:261).

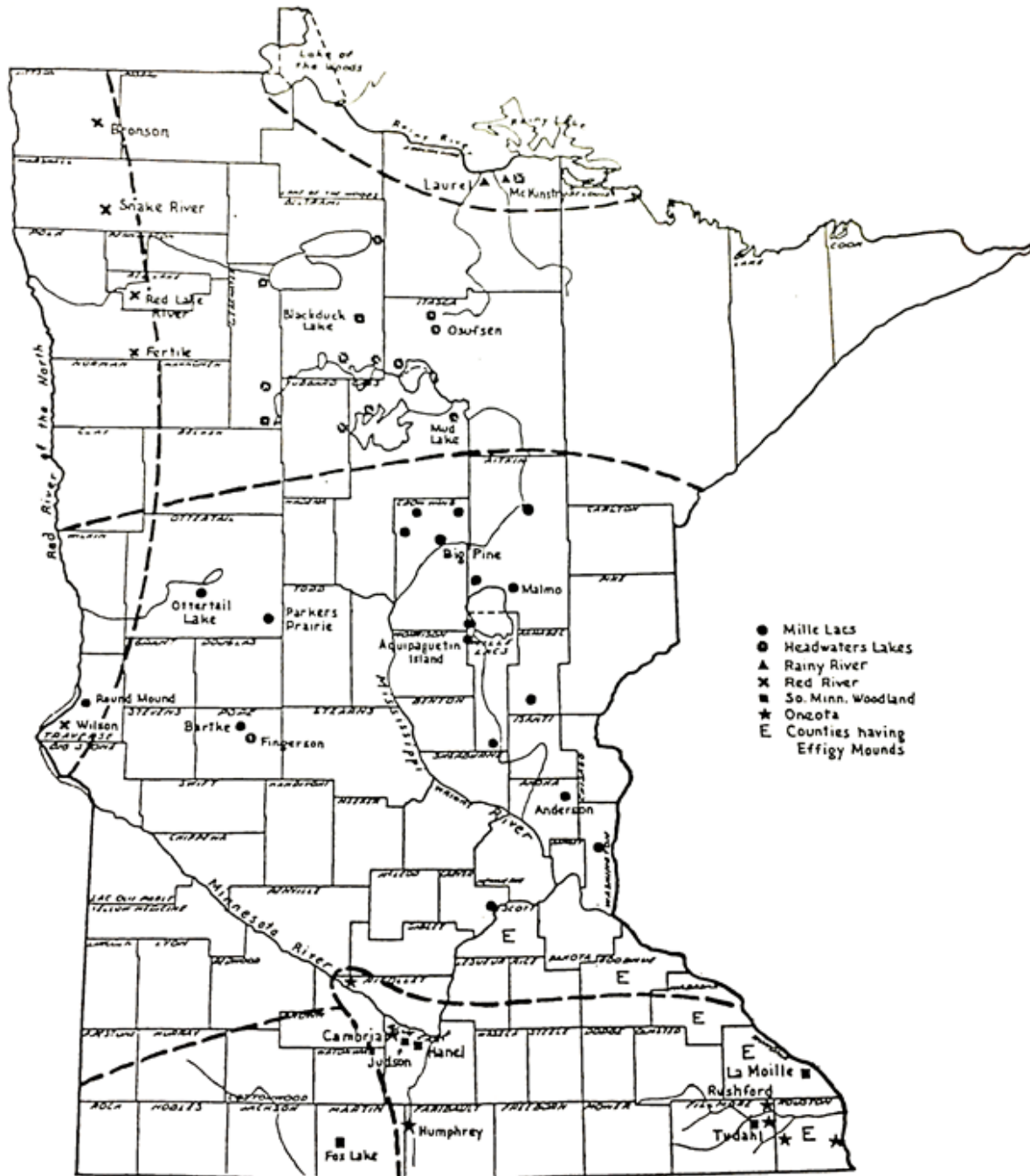


Fig. 2A-6: Wilford's (1941) Pre-Contact Archaeological Aspects of Minnesota.  
 See also Anfinson (1990:136).



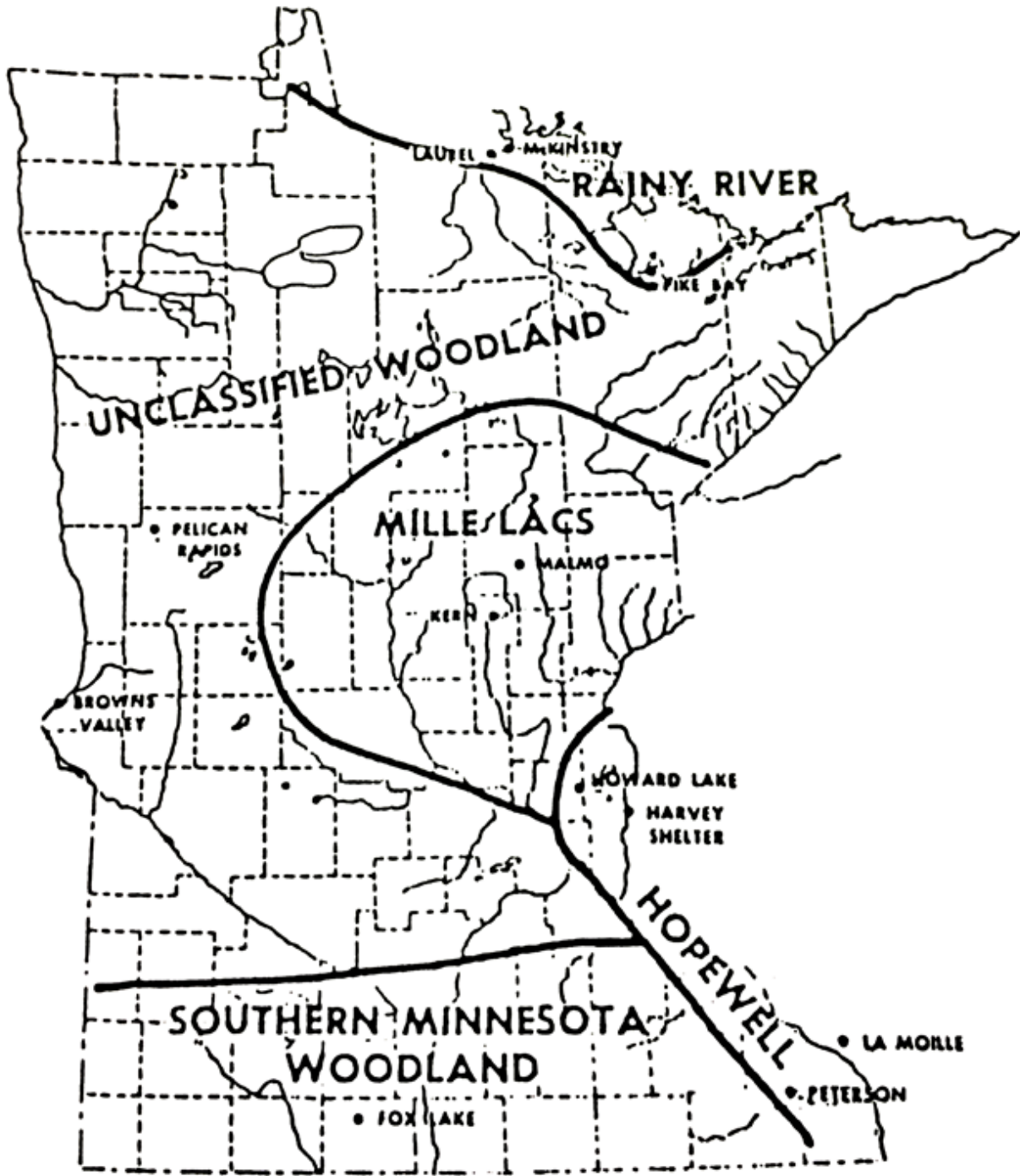


Fig. 2A-7: Wilford's (1960) Early Pre-Contact Archaeological Aspects of Minnesota.  
 See also Anfinson (1990:137).

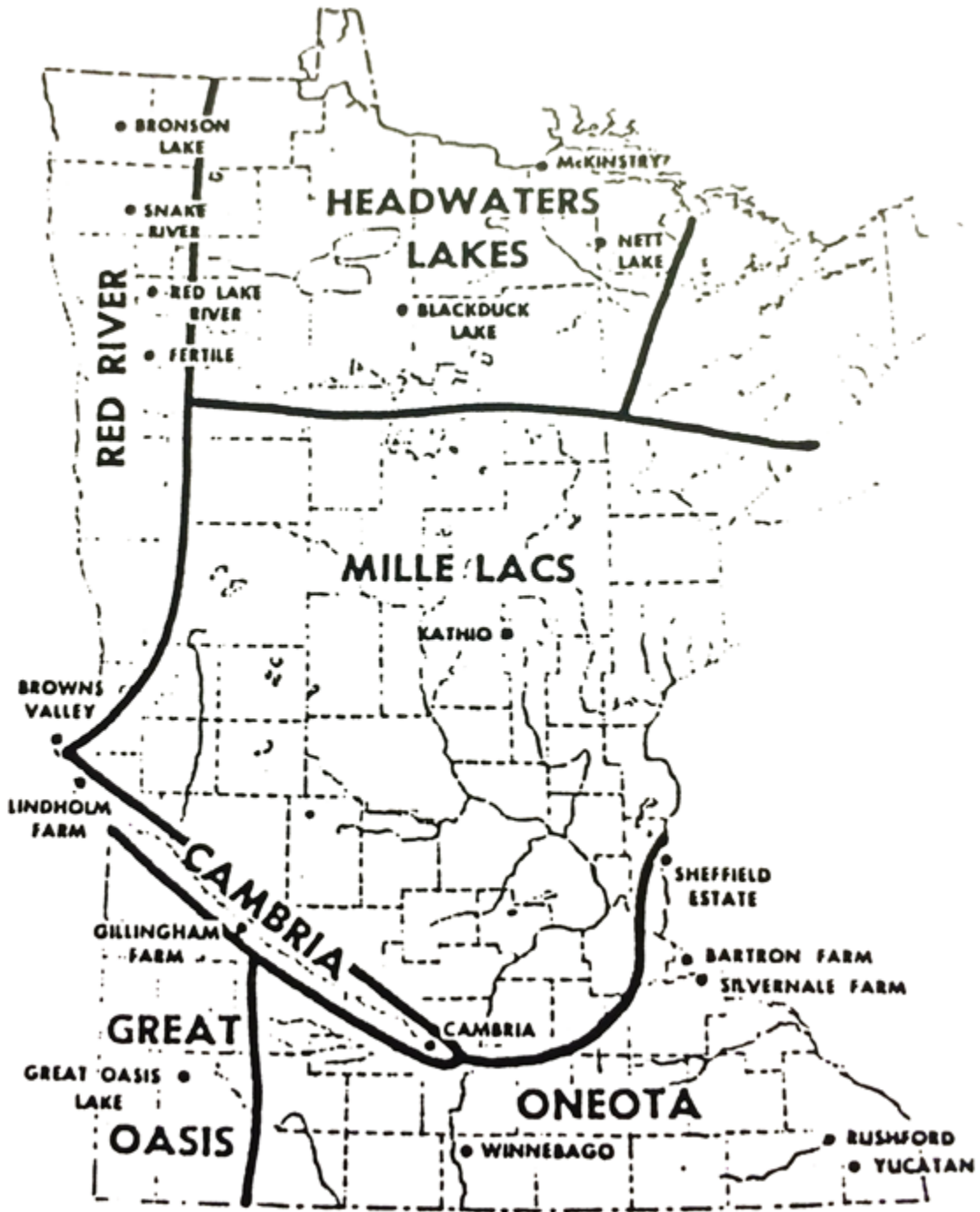


Fig. 2A-8: Wilford's (1960) Pre-Contact Archaeological Aspects of Minnesota ca. A.D. 1100 – 1300. See also Anfinson (1990:137).

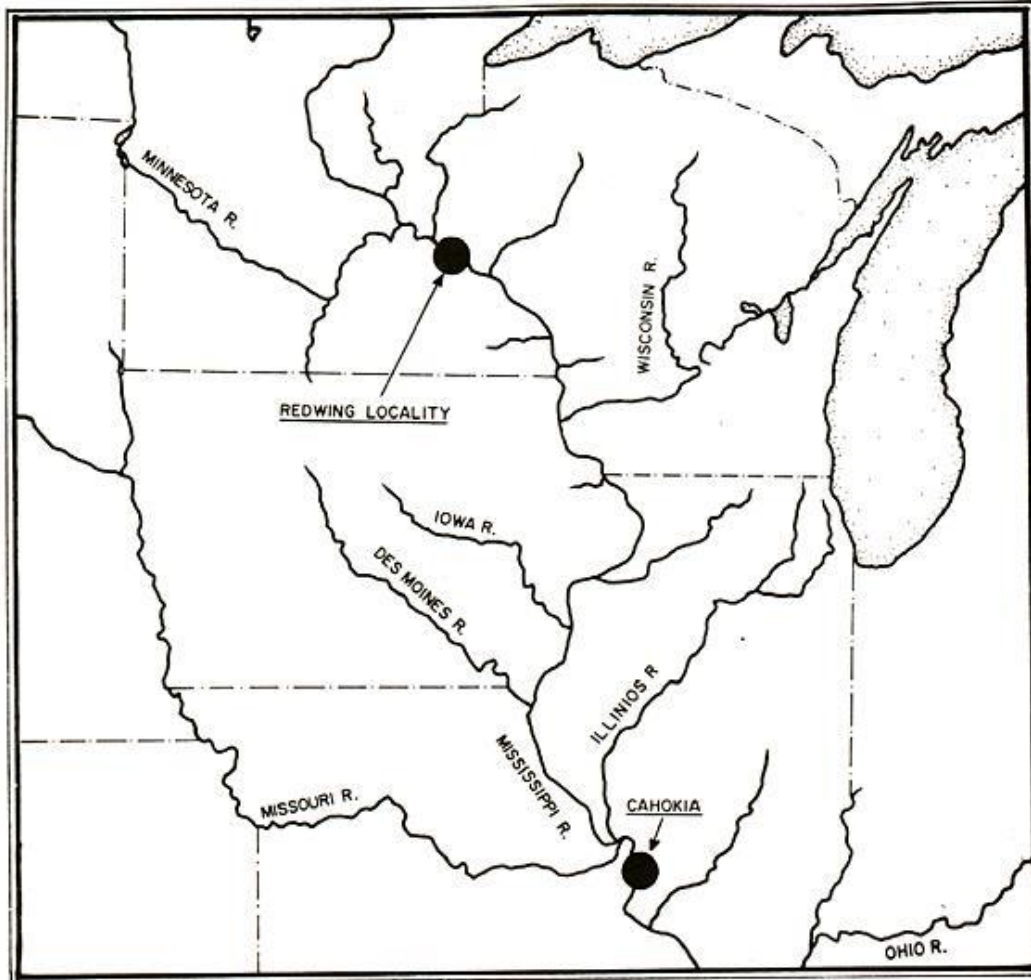


Fig. 2A-9: Major population centers ca. AD 1000 – 1300 (IMA 1999).

Middle Mississippian-inspired traits are found in the Red Wing region (Rodell 1991). However, Cahokian influence on the peoples of Red Wing was far less than previously thought (Fleming 2009). The effects of Mississippian contact have generally been overestimated and there is no evidence of mass movement of Mississippian populations into the area (Rosebrough 2010:558).

In the past 1,200 years, global and regional climatic records indicate two distinct climatic episodes: the Medieval Climatic Anomaly (MCA) lasting from approximately cal. A.D. 950 to

1200 (Hunt 2006), and the Little Ice Age (LIA) lasting from A.D. 1300 to 1850 (deMenocal 2001). The effects of the MCA are not uniform across the region so it seems unlikely the climate had “any straightforward relationship to agricultural intensification or to the spread of maize-based agriculture and/or Mississippian-ism during this period” (Schirmer 2002:53). Based on temporal comparisons, the proliferation of the Silvernale lifeway and its expiration coincide with the MCA and dawn of the LIA, respectively.

Paleoenvironmental data indicate a megadrought in the Plains region ca. AD 1200 – 1250 but conditions in the northern halves of Minnesota and Wisconsin seem to have been less harsh with modest decreases in precipitation only (Benson et al. 2009:477; Schirmer 2015). Available data (cf. Cook et al. 2010) indicate that Red Wing was largely insulated from the effects of megadrought occurring elsewhere in southern Wisconsin and Minnesota from AD 1100 to 1250. Most water would have flowed into Red Wing from northern Minnesota and Wisconsin, which was not hit hard by drought. If so, high-production areas such as Red Wing would have made it quite popular as an aggregation center during a period of water stress elsewhere (Schirmer 2015).

Historically-linked tribes to the Red Wing region include the Iowa, Ho-Chunk, and Dakota. Both the Dakota and Iowa constructed mounds (Winchell 1911:93), as did the Ho-Chunk (West 1907). Radin (1990:2) documents multiple sub-groups within the Siouan language family: 1) Ioway, Oto, Missouriia, and Ho-Chunk (Chiwere-Winnebago); 2) Omaha, Ponca, Osage, Quapaw, and Kansa (Dhegiha); 3) Mandan, Hidatsa, and Crow; and 4) Dakota and Assiniboine. This linguistic association is also observed in the archaeological and ethnographic records, respectively. A cross-cultural examination of these respective nations and their relationship with stone and the world around them elucidates potential reasons for ritual acts and

inclusion of specific objects in sacred ceremonies. Common beliefs are anticipated amongst Siouan peoples based upon their relatedness and shared ancestry.

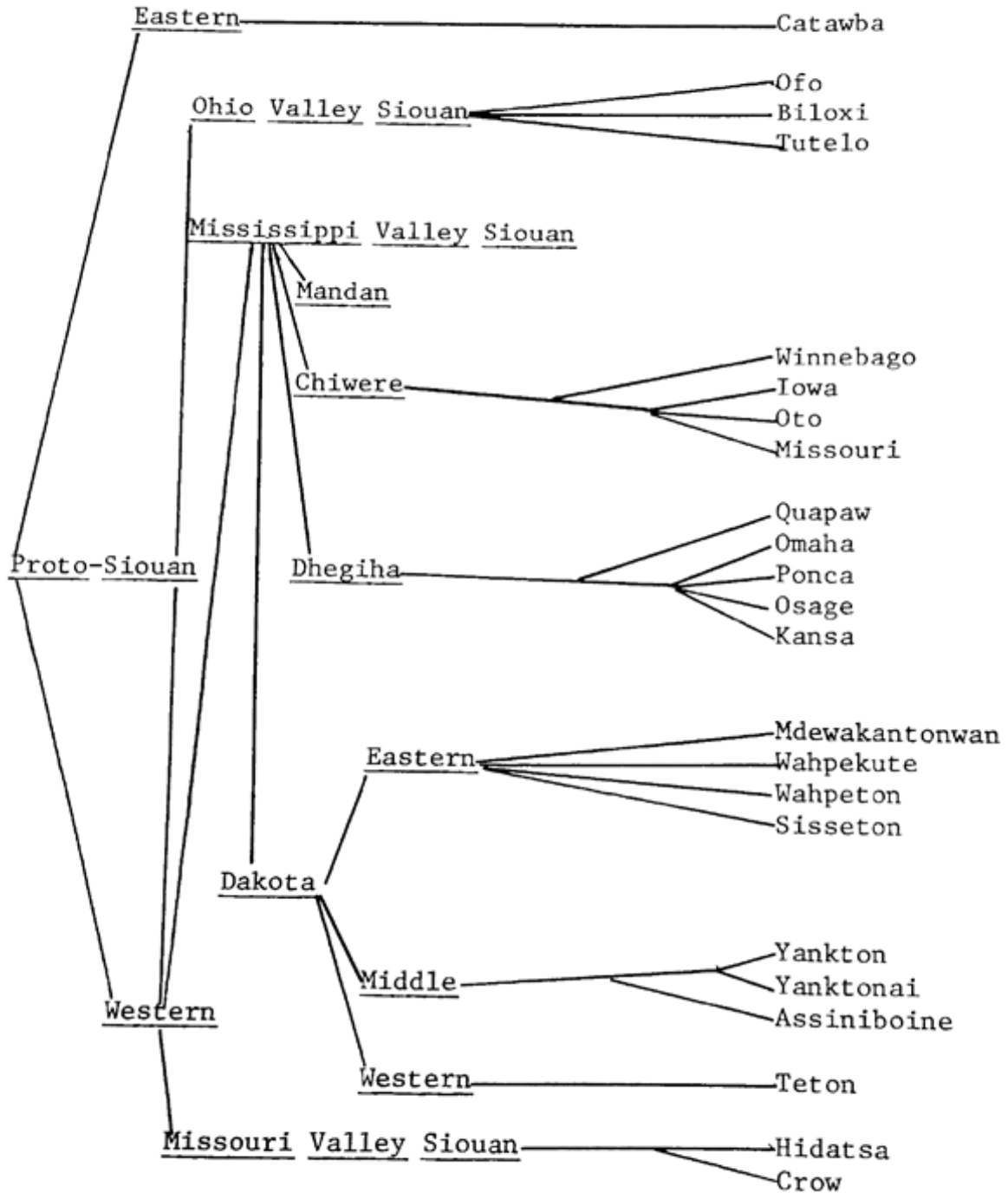


Fig. 2A-10: Siouan Linguistic Tree (Wozniak 1978:103)

### **Local Stone Features, Native Peoples, and Euro-American Explorations**

Stone can have many uses; which includes both utilitarian and spiritual functions. Even today at many NAGPRA repatriation burials, many tribes now mark these sites with a cairn or line it with stone (LeBeau 2009:215). A cairn (or “hekti” in the Dakota-Siouan language group) may possess one or many functions:

Previous studies have stated a hekti can be constructed to mark sites for ceremonial site areas, they can be prayer altars, burial markers, or support for scaffolding of a burial, or memorials/monuments for the dead, for battles, trail markers, boundary markers, bison drive alignments, or finishing lines for horse or foot races; they can function as supports for tipi or flag poles, or meat drying racks, supports for spears or other kinds of weapons. Some may have been constructed as platforms for buffalo skulls by hunters and/or spiritual leaders in anticipation of a kill; they could also have been constructed by playing children or represent trash piles (see also Lueck et al. 1989). Additionally some hektipi may be a result of clearing a space of rocks for a fireplace or sleeping place (Sundstrom 2003:270). (LeBeau 2009:207-208)

Thomas (1894:534-535) notes the construction of boulder mosaics or effigies on the northern plains but their purpose remains uncertain. These effigies are much smaller than the mounds of Wisconsin but these stone features in his opinion are positively linked with this earlier custom and some may be of recent construction as well. A stone buffalo effigy was constructed in southwestern Minnesota and has been partly reconstructed by the Murray County Historical Society. Some of the stones are imbedded into the virgin prairie suggesting their antiquity (Hudak 1972:345-346). Small stone cairns were placed in line with the buffalo’s legs during its construction (Lewis 1890:271). Not far from the stone buffalo effigy, horseshoe-shaped stone enclosures were found in nearby Pipestone County, Minnesota (Winchell

1911:109). Based on its description, the design closely matches structures built in northern California for vision quests (cf. Chartkoff 1983).

Effigies were constructed to preserve cultural ideals and philosophies in the physical landscape (personal communication, Curtis Campbell Sr., September 15<sup>th</sup>maxwe, 2007; cf. Mather 2015). For instance, a stone effigy in the form of a human being was constructed in Murray County, Minnesota. In Dakota it is called “tuyan-witchashta-karapi; in English, the place where has been built up a man of stone” (Winchell 1911:108). The more accurate rendering of the name in Dakota is “Inyan Wicasta Kagapi”, or in French “La ou l’on fait l’homme de pierre”, or Man Made of Stone (Durand 1994:33). As Charles Eastman (1915:137) describes, this effigy has its own oral tradition and reinforces the importance of humility:

Stone Boy himself could not be entirely destroyed, but he was overcome by his enemies and left half buried in the earth, condemned never to walk again, and there we find him to this day. This was because he abused his strength, and destroyed for mere amusement the lives of the creatures given him for use only. (Eastman 1915:137)

Immediately across the Mississippi channel from Red Wing and outside Hager City, Wisconsin, a boulder outline or pictograph of a large bow and arrow can still be seen on the bluff side. It was constructed of limestone and points downriver towards Lake Pepin and under favorable conditions can be seen from Barn Bluff and up to a distance of four to five miles (Curtiss-Wedge 1909:23). Its dimensions are 185 feet north-south and 71 feet east-west. Brower (1903:xxii; Curtis-Wedge 1909:23) writes:

The intention seems to have been to represent a bow and arrow partly drawn to shoot toward Lake Pepin. Many of the limestones of which the outline is made weigh about 100 pounds. The entire form of this boulder outline can be observed by the unaided eye from Barn Bluff on the Minnesota side of the Mississippi during clear weather.

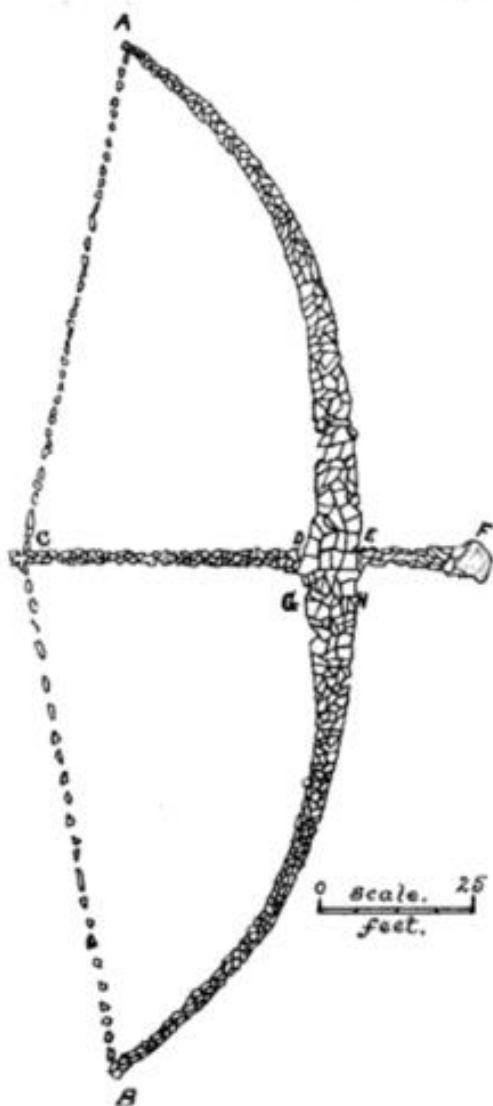


It is the only stone effigy constructed in Wisconsin history and is generally designated as a bird (cf. Rodell 1991). Conversely, both Brower (1903) and local Khemnican oral tradition (cf. Campbell 2000) document it as a bow and arrow. In the Dakota language, it is referred to as “Wahkeipe Kagapi”, or “Arrowmaker.” Oral tradition states that every spring, when the lightning and thunder returned to the area, the lightning would first strike these stones.



Fig. 2A-11: Boulder Effigy, *Wahkeipe Kagapi*, Hager City, Wis.  
2012 aerial image via Google Earth.





BOULDER OUTLINE (RESTORED).

Surveyed by W. W. Hill, 1902.

DISTANCES: A to B, along bow, 185 feet. C to D, 45 feet. E to F, 18 feet. G to H, 8 feet.

This unique boulder outline is situated on the slope of a bluff, near Hager, Wisconsin, Section 36, Township 25, Range 18. Some of the stones representing the bowstring are displaced. The intention seems to have been to represent a bow and arrow partly drawn to shoot toward Lake Pepin. Many of the limestones of which the outline is made weigh about 100 pounds. The entire form of this boulder outline can be observed by the unaided eye from Barn Bluff on the Minnesota side of the Mississippi during clear weather. Prof. Edward W. Schmidt was associated with Mr. Hill when the explorations were conducted.

Fig. 2A-12: Original Outline – Boulder Effigy, Hager City, Wis. (Brower 1903)

Furthermore, Dakota oral tradition states the Arrowmaker effigy was designed by the Wicanphi Wanyaka Nazin Okodakiciye (a non-Dakota group) as a symbol that Dakota peoples in the region would remain allies in the future. It is said the stones were brought there and not gathered locally because the extra energy expended to do so would be considered an act of sacrifice and humble prayer (personal communication, Curtis Campbell Sr., April 5, 2008).

Another important geologic feature, Inyan Bosdata or Standing Rock, was a natural sandstone obelisk located on the Cannon River (see Fig. 2A-13). The Cannon River was called Inyan Bosdata Wakpa, or Khemnican Wakpa by the local Dakota people (personal communication, Curtis Campbell Sr., 11/16/2008). The spire in the figure below is now gone. LeBeau (2005:58-59) states the Lakota consider this location as the original obelisk site or “Inyan Omdo’ton Pasda’ta.” These types of sites are imbued with either positive or spiritual energy, which is dependent upon their function. The aforementioned cultural figure Stone Boy or “Inyan Hoksila” is affiliated with these types of sites.



Fig. 2A-13: Castle Rock or “Inyan Bosdata”, “Standing Rock”, in Dakota County, MN.  
Image courtesy of Bray (1985:36).



Fig. 2A-14: Chimney Rock or “Eyisha Panpanna”, Soft Red Stone, in Dakota County, MN. It was recognized by Dakota people as a holy place and source of red ochre (Campbell 2000; image courtesy of [http://www.minnesotaseasons.com/Destinations/Chimney\\_Rock\\_SNA.html](http://www.minnesotaseasons.com/Destinations/Chimney_Rock_SNA.html), Accessed April 5, 2016).



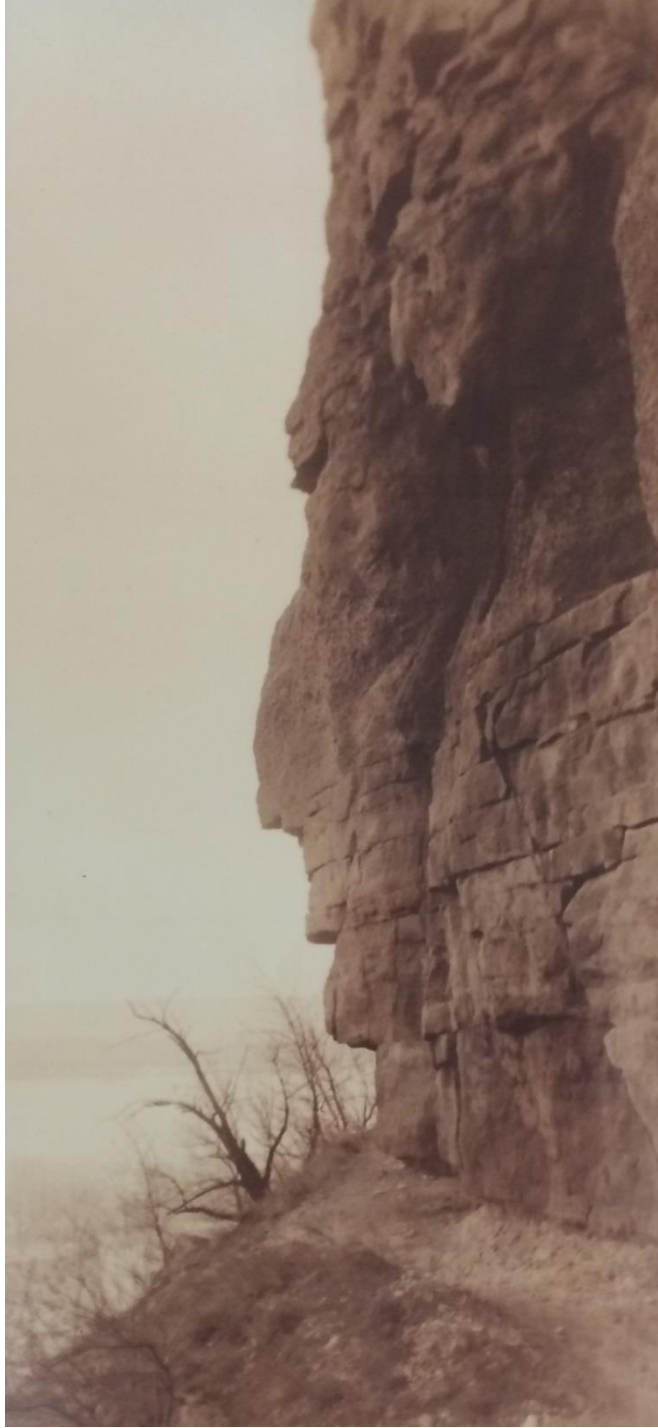


Fig. 2A-15: A historic photo of the now-obliterated western face on Khemnican Paha/Barn Bluff. Dakota people referred to this face as “Chaske Cistinna”, or “Small Firstborn.” Barn Bluff has sacred significance in Dakota oral traditions (Campbell 2000; Westerman and White 2012; photo courtesy of Prairie Island Indian Community THPO).



Fig. 2A-16: “Inyan Tiyopa” or “Stone Door”, Frontenac State Park, MN.  
This is a sacred place to the local Dakota. Etymology: Inyan Tiyopa – (1) stone (2) a door or opening  
(Durand 1994:32; 2014 photo taken by the author)

Other sacred and cross-culturally recognized locations across Minnesota include Pipestone National Monument and Jeffers Petroglyphs. Pipestone is famous for its still-active Catlinite quarries, which is considered sacred ground by indigenous peoples from both far and wide (Catlin 2004). Jeffers Petroglyphs in Cottonwood County is known for its exposed Sioux Quartzite bedrock and glyphs that stretch back at least 9,000 years. Both of these sites offer researchers clues about the cosmological and spiritual beliefs of ancient peoples as well as those living now.

The origins of Jeffers Petroglyphs are presently unknown but data suggest “two possible periods of execution: (1) 3000 B.C. to 500 B.C., based on the appearance of nearly a hundred carvings of atlatls; (2) 900 A.D. to 1750 A.D., indicated by the presence of glyphs resembling motifs and symbols used by early historic peoples of the northern Plains” and “the Jeffers glyphs seem to be related to carvings at other Midwestern sites, and the subject matter depicted suggests correlation to hunting activities, warfare, and the performance of sacred ceremonies” (Lothson 1976:1). Furthermore:

A second period of petroglyph construction – from about 900 A.D. to 1750 A.D. – was suggested by the appearance of carvings that resemble the symbols used by historic Dakota, Oto, and Iowa Indians. A close comparison of the Jeffers Petroglyphs depicting thunderbirds, bison, turtles, shamans, dragonfly symbols, and some geometric designs with common Siouan and northern Plains art symbols found in decorations on historic Dakota pipe bags, tepee walls, and rawhide shields revealed similarities that are regarded as more than accidental... (Lothson 1976:3)

Based on facts presented by Lothson, the interpretation of the glyphs is dependent upon cosmological understandings of regional peoples that created them over many millennia. Dakota traditionalist Tom Ross from the Upper Sioux Community stated in an on-site interview at Jeffers Petroglyphs that these ancient peoples were not merely foragers – they also prayed. The



petroglyphs are indeed sacred markings that possess deep spiritual meaning (WDSE Productions 2007).



Fig. 2A-17: Jeffers Petroglyphs site.  
(2014 photo taken by the author)



Jeffers Petroglyphs (21CO0003) is situated upon an outcrop of exposed Sioux quartzite bedrock and originates from sands and beach deposits dating from 1.4 to 1.7 billion years ago and amazingly the ripple marks are visible in the stone (Clouse 2004:110).



Fig. 2A-18: Thunderbird petroglyph, Jeffers Petroglyphs site.  
(2014 photo taken by the author)





Fig. 2A-19: Water Spirit petroglyph, Jeffers Petroglyphs site.  
(2014 photo taken the author)

During his 1766-67 travels through Minnesota, Jonathan Carver witnessed at Wakan Tipi, “Dwelling Place of the Great Spirit” in present-day Saint Paul, Minnesota, Dakota people venerating the site and its many cave hieroglyphics (Carver and Lettsom 1802:38-39). He also observed Dakota people interring bone bundles as part of mortuary ceremonies near present-day

Saint Paul (Winchell 1911:403). Scaffold burial would allow for the flesh to first be removed from the bones. Once those remains were collected and bundled they would be interred. One mound may contain multiple bundle burials/person as evidenced by multiple cists and collections of remains found during early mound excavations in Minnesota (ibid). A solitary mound with multiple bundle burials is the internment place of an entire family (personal communication, Curtis Campbell Sr., July 9<sup>th</sup>, 2007). Furthermore, the Dakota knew the exact locations of ancestral burials (Campbell 2000:41). The Dakota retained their old custom of mound burial well into the historic period (Winchell and Upham 1888:60).

Other explorers also noted the relationship of Native groups and stone. Major Stephen H. Long noted the construction of stone piles on the summit of Trempealeau Mountain near Winona, Minnesota and described them as “fragments of the rock rocky stratifications which constitute the principal part of the hill, but some of them small piles by the Indians” (Long 1860:16). Like elsewhere, these stone piles are unfortunately no longer visible on the terrain. Long also notes a sacred granite boulder painted red near present-day Newport, Minnesota. It had been long-venerated by Dakota Indians as “Inyan Sha” or Red Rock. A nearby scaffold cemetery was also noted (Pike and Coues 1895:73). Some offerings observed included an eagle feather, two roots of the “Pomme de Prairie” (*Psoralea esculenta* or Prairie Turnip) painted red with vermillion, and a willow branch also painted red that stood upright in the ground on one side (Long et al. 1824:288). The use of the red wooden staff in a stone ritual context is comparable to the interior design and construction of the Red Wing cairns. Blue oak staffs (*Quercus leucobalanus*) were also found by Sweney inside one or multiple hollow cairns in Red Wing. Note: in Alberta, a sharpened oak stake painted blue was found inside a stone burial dating between AD 1200 and 1500 (Bryan 2005:83). Colors possess great significance and

specific meanings amongst different tribes. Consulting with Native informants and ethnographic sources must be done to explore this topic further. This topic is discussed further in Chapter 6.

### ***Khemnican Dakota Oral Tradition and History of Prairie Island/Red Wing***

Campbell (2000) and his family's oral tradition documents many groups of Dakota and non-Dakota origin living together in the Prairie Island/Red Wing region for many centuries. This oral tradition states long ago peoples gathered in this region due to an abundance of sacred medicine plants, which were used in their daily and spiritual lives as part of the Medicine Lodge lifeway, or Medicine Dance (Campbell 2000; cf. Radin 1990; Skinner 1920 – see Chapter 6). The origins of the Siouan Medicine Dance are associated with Algonkian peoples from the east and the Wahpeton Dakota asserted that they indeed obtained the Medicine Dance ceremony from the Sauk (Skinner 1920:12). Selected excerpts from this oral tradition (as they pertain to pre-European activities and the archaeological record) are provided here in piecemeal fashion:

Oral history tells of a time period when the Khemnican were very numerous, and were not part of the Mdewakanton Dakota of past generations many centuries ago. They were of some Dakota and some Star Society (non-Dakota) origin, but in their finding and their use of the different tribal medicine plants they were not the same as other Dakotas in this area. Earlier oral history or Khemnican legends through the ancient medicine lodge practice of the Wakan Unktehi (the Holy Being) tell of a time period when visitors from other families who were not Dakota were here in the Prairie Island/Red Wing area. Some of these family groups lived across the Wak-pa Kai-kai, or the Mississippi River, from Prairie Island, where the Wamnduska Em-ni-sh-a Oko-dak-ici-ye, or the Serpent Cliff Society Dakota family group had lived many centuries before European culture.... These family groups lived directly across the Mississippi River from Prairie Island and from that place that used to be called Taku-shkan-shkan, or Things That Move. This place is now known as Buffalo Slough. Where the Serpent Cliff Society Dakota family group and the other Star Society families lived is now known as Diamond Bluff, Wisconsin. (Campbell 2000:13)

Also:

The oral history goes on to say that many of these families left about the same time the first Europeans were seen in the Mississippi River Valley. There were others who left with some of the Khemnican Dakota families and other Dakota families of this area long before the arrival of any Europeans. This one family group was called by the Khemnican Dakota as the Wicanhpi Wanyaka Na-zin Oko-dak-ici-ye (The Standing Star Lookers Society) who lived with the Khemnican Dakota in this area for a very long time when there were more Khemnican than any other Dakota family group. The other family group that was most mentioned were called Apiya Wicanhpi Ya-wa Oyate, or the Readjust Star Readers People. There were more families in this group. These were the two family groups who were not Dakota (There were others who were not Dakota even before this time period). (Campbell 2000:14)

Additionally:

The two non-Dakota families who left this area with many of the Khemnican Dakota families and some of the other Dakota families were the No-u-pa To-ke-ca Wicanhpi Oko-dak-ici-yapi Ti-waha, or the Two Different Star Society families. The oral history continues, and it is said that some of the Khemnican and the Wicanhpi Wanyaka Na-zin Oko-dak-ici-ye, or the Standing Star Lookers' Society, adopted each other and some of their culture and customs many, many generations before they left this area of Prairie Island/Red Wing. According to Khemnican legends or oral history, this was because of the continuing philosophies of the Unktehi medicine lodge practice of the Prairie Island area in earlier Dakota times. One of the many other family groups was called by the Khemnican Dakota as Oyate Ta-te Yu-za (People Held by the Winds). Others were called the Ho-ta Ska So-ta A-pe, or the Gray Smoking Leaf People. One of the other families was known as Pa Wan-na Wam-ni-ca Wa-ni-ca, or The Head of an Extinct Animal. These were the non-Dakota family groups who were here when the Europeans were first seen in the Mississippi River Valley far to the south of this Prairie Island/Red Wing area.... The Khemnican Dakota of earlier times were known simply as The Root. According to medicine lodge philosophies, there was a time period when the remainder of the Khemnican families continued to teach other Dakota in this area the more indepth use of the tribal medicine plants. Later, they became part of the Mdewakanton family group, or sub-band of the Mdewakanton Dakota. According to the medicine lodge philosophies of the Wakan Unktehi, the simplicity of The Root was now among the Dakota. The philosophies of the collected family group, the knowledge of the medicine plants' habits, and the use of the various tribal medicine plants had a different meaning to the Khemnican Dakota of earlier times. (Campbell 2000:15)

Furthermore:

Some of the Ch-oo-tey or Shooter families left earlier with some of the Khemnican Dakota and the Wicanhpi Wanyaka Na-zin Oko-dak-ici-ye (or the Standing Star

Lookers Society), and some of the Apiya Wicanhpi Ya-wa Oyate (or the Readjust Star Readers People) centuries before the arrival of any Europeans. (Campbell 2000:25)

The Khemnican and Star society families were known for their strong sense of tradition and sincere humility, which they felt unlocked the spiritual power of the medicine plants and of the world around them. The Dakota were close observers of the stars and had given names to many singular stars and constellations, respectively (Pond 1986:85). The traditional family groups of earlier generations in the Prairie Island/Red Wing area believed firmly in the ideal of Wico-We-Chi-Wazi, or “Relatedness through Sharing” [excerpt from Bergervoet (2008:66-67)] :

According to Khemnican Dakota oral history, in the early times the people also discovered the healing properties of the medicine plants, i.e. ginseng (hutkan), bitterroot (sinkpa tawatue), and lady’s slipper (pejuta ska). The Khemnican and Wah-kuh-tay Dakota groups were known by the respective Indian bands as the most knowledgeable pertaining to these plants. Women kept this knowledge, were responsible for the collection of medicinal plants, and began teaching others about their medicinal properties (personal communication, Curtis Campbell Sr., July 12, 2007). The plants were bundled and given to the respective family groups. After time, the plants began to spread and were found throughout the landscape (ibid). It was the use of the medicinal plants, especially during Medicine Lodge practices, that reinforced the Dakota ideal of Wico-we-chi-wazi, or “relatedness through sharing” (personal communication, Curtis Campbell Sr., n/d). Pre-contact peoples in the Red Wing region lived throughout the landscape for centuries before dwelling in large communities along major waterways. For what specific reason did these people begin to congregate en masse? The reason for village formation, according to Dakota oral history, was Medicine Lodge activities (personal communication, Curtis Campbell Sr., September 15, 2007). It is said that food and game were always plentiful around Prairie Island or Tinta Wita. Social contact always existed between the various groups of people that inhabited the area. It was through the act of using medicinal plants, and the Medicine Lodge ceremony that reinforced the ideal of Wico-we-chi-wazi, or Relatedness through Sharing. In Dakota belief, plants were placed on Earth by the Wakan Unktehi (Holy Being) for the Dakota people to use as a “continuance of his creation of a way of life to be used as a proper maintenance in the balance of this life in proper harmony with the land” (ibid). Also, it was desired that each sequential generation would become increasingly proficient in the use of medicine plants and pass on that knowledge to secure a healthy future for the people.

Furthermore, this oral tradition also states that during one of these ceremonies it was foretold that great changes were coming. Subsequently, groups began hoarding resources and eventually groups fought and split apart. Of particular note, the introduction of metal was deemed a bad omen. Similar to many places elsewhere, as traditions and circumstances changed across the entire North American continent due to Euro-American encroachment, the Medicine Lodge ceremony near Red Wing became much less prevalent (Campbell 2000). Eventually, other documented Mdewakanton Dakota tradition states the Ioway were responsible for many mounds in the vicinity of Mendota, and the Ioway people remained in southern Minnesota until the Dakota obtained firearms (Pond 1872:144-145).

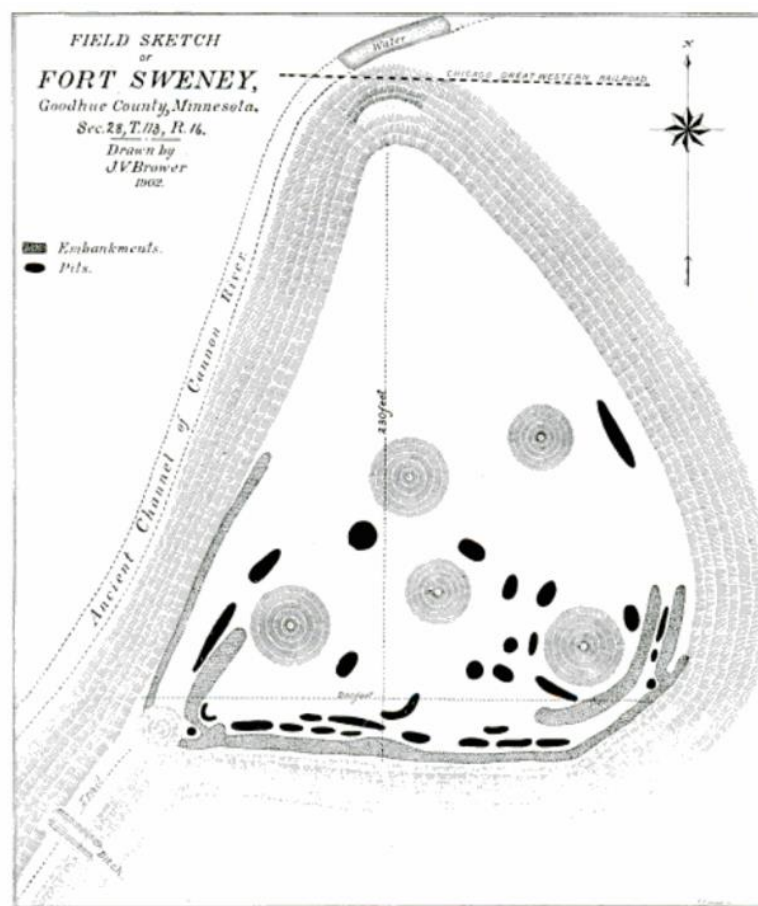


Fig. 2A-20: Fort Sweney, Plate XII (Brower 1903)

Fort Sweney (21GD0026), a mortuary site from the Woodland, Mississippian, and/or Oneota tradition, is located along the Cannon River near its confluence with Belle Creek. Brower (1903:60) insisted it was site of a past battle between the Dakota and Ioway although this is highly conjectured. Nonetheless, the Ioway Indians were eventually driven out of the Cannon Valley region by the Dakota during the historic period (Brower 1903:60). It was documented that the Dakota wished to re-settle the country they had always claimed to own since the expulsion of the Assiniboine, and were led by Chiefs Red Wing and Wapahasha (Winchell and Upham 1888:60).

Hostilities between the Assiniboine and Dakota began prior to European arrival. Reasons for their mutual animosity are not clear and multiple stories exist (cf. Lowie 1910:7; Ruml 1996:11; Winchell 1911:71). The Assiniboine were originally part of the Wazi-kute gens of the Ihanktonwanna Dakota (Skinner 1897:222). The “Wamnduska Emnisha Okodakiciye”, or Serpent Cliff Society, are believed to be directly related to the Assiniboine as we recognize them today (personal communication, Curtis Campbell Sr., July 12, 2007). Dakota informants told Col. W.J. Colvill that the term “He-mni-chan” (as well as the Legend of Winona and many other local names) in fact belonged to the Assiniboine (Winchell and Upham 1888:60). The Dakota word “He-mni-chan” translates exactly as “Hill-Water-Wood”, but its true translation means “The Root” (Campbell 2000). The Khemnican are a recognized sub-band of the Mdewakanton “Spirit Lake Dwellers” of the Eastern Dakota, or Santee (from Isanyati – “Dwellers at the Knife”) (Ruml 1996:19) but long before European contact they were an autonomous group apart from the Mdewakanton (Campbell 2000).

Although there are conflicting legends as to why the Assiniboine and Dakota separated, the Dakota called them “Hohe”, i.e. enemy (Ruml 1996:11). The Assiniboine were once allied

with the Dakota and subsequently the Yanktonai (Ihanktonwanna) or Wazikute gens of the Nakota (Denig 2000:xxviii). The Assiniboine inhabited the Lake of the Woods region by ca. A.D. 1650 and already established close ties with the Kristinaux or Cree (Winchell 1911:71). The Assiniboine already inhabited the region surrounding Lake Nipigon and Lake of the Woods by the middle of the seventeenth century (Lowie 1910:7). During historic times, Dakota people solicited plant knowledge from the Assiniboine from a place called “Can-O-Wan Na-Sa-Pi” in northeastern South Dakota (Durand 1994). Overall resentment between these groups lasted until at least 1820 (Winchell 1911:71).



## Appendix II: Chapter 4 Supplement

### Cairn/Stone Feature Survey Protocol

Please record the architectural/morphological attributes of the stone feature as well as the spatial setting, observed human behavior, and ethnographic context (cf. Artz and Goings 2006; Bernardini and Peoples 2015; Brace 2005; Chartkoff 1983; Dobbs 1996; LeBeau 2005, 2009; Mathews 2008; Van Dyke et al. 2016).

#### 1. Literature/Documentation Review

##### Comprehensive Background Investigation

- a. Geomorphological and geological study
- b. Review existing literature/survey documentation (e.g. Brower 1903; Curtis-Wedge 1909; Winchell 1911)
- c. Develop an initial categorization of features
  - i. Topographical and morphological description(s) – see example below
- d. Examining other documented features elsewhere
- e. Examining the local archaeological record
- f. Solicitation and incorporation of local knowledge(s) and histories (e.g. ethnographic visits, cultural interpretations of features)

*Red Wing Mound and Cairn Taxonomy (example)*

(cf. Winchell 1911:143-168; email correspondence, David Tovar, October 15<sup>th</sup>, 2016):

- 1) Conical
  - a) Mound constructed of soil alone (pg. 161)
    - i) Large: >43 ft. in diameter (pg. 143)
    - ii) Medium Conical: between 22 ft. and 42 ft. in diameter (p. 143)
    - iii) Small Conical: less than 22 ft. in diameter (p. 143)
  - b) Mound constructed stone/soil admixture (pgs. 156, 159, 161)
    - i) Large: >43 ft. in diameter (pg. 143)
    - ii) Medium Conical: between 22 ft. and 42 ft. in diameter (pg. 143)
    - iii) Small Conical: less than 22 ft. in diameter (pg. 143)
- 2) Linear (pgs. 143, 144, 156)
- 3) Platform, i.e. flat-topped (pgs. 144, 151)
- 4) Effigy (pgs. 156)
- 5) Cairns – an agglomeration of stone, the sum of which form a heap or pile when viewed laterally
  - a) Cairn located on Type 1, a, ii (pg. 161)

- b) Cairn located on ground surface (pgs. 165, 166)

**2. Site Survey Questions/Checklist (see also Dobbs 1996 and LeBeau 2005 for archaeological site integrity and indigenous survey considerations):**

Physical Setting (record each of the following):

- g. Topographical Location (e.g. xyz coordinates)
- h. Placement/Position (e.g. top of summit, elevated ridgeline, base of a hill, overlooks a spring)
- i. Viewshed/Visibility (e.g. what other features can be seen from its location)
- j. Notable landmarks and/or activity centers (e.g. “Barn Bluff”, “many Oneota village sites nearby”)
- k. Flora (e.g. “Eastern Red Cedar growing from its center”, “lots of wood lilies around the site”)

Description:

Architecture/Morphology (record each of the following):

*[provide plan/profile sketch with dimensions]*

- l. Foundation Type (e.g. square base, circular and/or oval-shaped structure built upon bedrock)
- m. Survey Measurements (e.g. average base diameter, height, etc.)
- n. Original Form (e.g. conical, hollow, stacked stone, dome-shape)

Description:

Feature Association (select/discuss one or more of the following):

- o. Solitary monument (e.g. landmark, religious altar)
- p. Multiple, identical features in close proximity
- q. Multiple, different features in close proximity (e.g. cairn, medicine wheel, and a stone effigy within the same locale)
- r. Spatial patterning (observed or inferred, astral, boundary demarcation of physical and/or religious space, etc.)

Description:

Inferred Construction Period (select one of the following):

- s. Single episode
- t. Accumulation over time
- u. Undetermined

Description:

Construction Materials (address each of the following):

*[Examining the feature as a sum of its parts]*

- v. Homogenous construction (e.g. it is made entirely of stone?)
- w. Multiple materials/elements (e.g. stone cairn with wooden staff, stone cairn with human remains, etc.)
  - i. Type of material (e.g. flat/tabular sheets of limestone, round granite cobbles, wood, soil)
- x. Source of material (e.g. nearby stone outcrop, non-local material transported from elsewhere)
- y. Uncertain/unable to discern (e.g. dismantled)

Description:

Observed Behavior:

- z. What activity took place?
  - i. Solitary effort?
  - ii. Multiple participants?
  - iii. Multiple episodes of construction?
  - iv. How was the feature constructed? (observed behavior: e.g. clockwise and counter-clockwise rock placement)
  - v. Who is responsible (if known)?
    - 1. Do the construction materials possess known religious/spiritual significance?
  - vi. Description of activity (e.g. prayer/ritual, utilitarian)
    - 1. Is the feature distinguishable from others? If yes, how so?
    - 2. Or, is it similar to other features in terms of architecture, placement, etc? If yes, how so?
    - 3. Observed variance in feature types
    - 4. Is it unique? If so, how?

Description:

- aa. Local/indigenous interpretation
  - i. On-site survey with Native informant(s) and/or tribal authority
  - ii. Identifying possible reasons for its construction (e.g. burial, altar, establishment of ritual space, landmark)
  - iii. Ethnographic knowledge (as applied to the following):
    - 1. Spatial/topographical location
    - 2. Flora/fauna
    - 3. Local geographic/geologic/anthropologic features

4. Construction materials
- iv. Phenomenological interpretation
  1. Intrinsic nature of the site (e.g. good/bad feeling at its location)
  2. Comments on observed behavior
  3. How are individual features intertwined with the larger physical landscape? Are they?
  4. Why was a feature constructed here?
  5. Which metaphysical concept(s) must be considered or explored further?

Description:

Measured and generated attribute values are:

Measured Variables:

- Average Diameter (calculated from N-S and E-W field measurements)
- Rock Type (i.e. limestone, sandstone, etc.)
- Rock Shape (i.e. cobbles, angular, tabular)
- Rock Size (cm, average value)
- Local fauna (e.g. Eastern Red Cedar, grassy area, etc.)
- Observed Type (i.e. hollow/excavated pit, stone mound, etc.)
- Surface Visibility
- Materials Present (i.e. ceramics, lithics, biological materials, other)
- Setting (e.g. Bluff, hilltop)
- X,Y,Z coordinates

Generated Variables:

- Viewshed Area: Output rasters indicate which areas of the landscape are reciprocally visible from each respective cairn location.
- Intervisibility %: Based on the generated viewshed rasters, this quantitatively measures the degree to which other cairn sites are visible from each respective location
- Slope: May provide information regarding orientation and paths of least resistance to these locations.
- Aspect: The direction in which the respective site slope faces
- Assumed Height: generated from a historic photo and measured height-diameter ratio
- Volume: This is calculated based on a historic photo and field-measured diameter (see Appendix II/Chapter 4 Supplement for formula derivation).

The geo-spatial analysis techniques/tests are:

1. Calculating the unweighted spatial mean of recorded stone feature sites
2. Conducting viewshed analyses in order to assess which areas are visible from respective cairns locations, and vice-versa.
  - a. A site intervisibility matrix and percentage of visibility from each cairn location is generated based on the viewshed results
    - i. Generate a thematic map based on site intervisibility % from each cairn location
  - b. Use bi-variate analysis to compare topographical and morphological variables with viewshed size/area from each site, and compare viewshed size/area with respect to site inter-visibility.
  - c. Intersect all or selected viewshed rasters in order to identify common focal areas
    - i. Spatial and statistical outliers, if present, are removed in subsequent tests in order to generate more refined results
3. Distance to cairn sites from calculated focal points
  - a. Distances are measured from focal points to all known cairn locations and used in statistical analyses. These distances/analyses include:
    - i. Calculating a 95% Confidence distance interval based on distance to cairn sites from their spatial mean(s)
    - ii. Calculating a 95% Confidence distance interval based on distance to cairn sites from common focal area(s)

- iii. These base radii (buffer areas) indicate the primary extent of cairn construction

### 3. Site Interpretation and Determination of Function

#### Synthesizing Collected Information and Site Interpretation

##### bb. Classifying the Feature

- i. Identify the appropriate taxonomic classification if it exists (cf. LeBeau 2005)
- ii. Locate, Identify, Describe, Justify (LeBeau 2005)
- iii. Distill geographic, archaeological, and ethnographic perspectives into a malleable classification system

##### cc. Inferred function(s):

##### dd. Function confirmed by culturally-affiliated tribal authority? (cf. Brace 2005:4)

- i. If yes, the feature type is confirmed and/or a new classification is created.

Description:

- **Archaeological Site Integrity Considerations according to National Register Bulletin 36 (Dobbs 1996):**

Most groups of earthworks in Minnesota have been plowed or otherwise disturbed to some extent. Therefore, delineating clear criteria of integrity for earthwork sites is particularly important. National Register Bulletin 36 discusses the problem of integrity for archaeological sites and the following outlines how integrity is applied here to earthwork sites:

**Design:** Design includes the combination of elements that create the form, plan, space, structure, and style of a property. In the case of earthwork sites, this includes the layout and plan of the earthworks; the form and style of the individual earthwork (conical, effigy, linear, ditchwork, etc.); and whether they are still physically present or have been plowed down or otherwise disturbed. To have integrity of design, at least some of the earthworks at the site must be clearly visible and convey the original sense of design and layout.

**Setting:** Setting includes elements such as topographic features, open-space, viewshed, landscape, vegetation, and manmade features, and the relationship between these features. For earthworks to have integrity of setting, the site area must by and large appear as it did during the site's period of significance. A broad rule of thumb would be to ask whether the site today would be recognizable to someone who lived at or visited the site at the time it was occupied.

**Materials:** Materials include the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. By definition, earthwork sites that have not been plowed or otherwise disturbed have integrity of materials. Even plowed or partially destroyed mounds may still contain intact deposits of materials. Soil staining, ditches, or faint topographic relief may be visible in aerial photography, allowing reconstruction of the site's plan. Artifacts may be scattered on the site's surface and intact sub surface materials such as pits or chambers may also be present. Mounds which have been partially excavated in the past may still contain clearly defined stratigraphy or additional subsurface features. To possess integrity of materials, a site must have visible earthworks present and intact deposits of materials that are verifiable by a variety of methods of investigation, including aerial photography, geophysical study and imaging, and excavation or other form of sub-surface investigation.

**Workmanship:** Workmanship is the evidence of labor and skill of the individuals who built the earthwork. An earthwork site must retain enough integrity to demonstrate the construction methods used. Mounds which have been partially reconstructed may still retain integrity of materials. Mounds that have been largely or completely reconstructed do not. In general, workmanship of earthworks is not especially relevant to their significance since the same basic methods were used to construct them through time and space.

**Feeling:** As stated in Bulletin 36, page 20: integrity of feeling is present if an archaeological site's features in combination with its setting convey a historic sense of the property during its period of significance. Feeling may be especially important if an earthwork is considered a traditional cultural property, but in most cases feeling is much the same as setting.

**Association:** Integrity of association is present if a site is the place where an event or activity occurred and is sufficiently intact to convey that relationship. Integrity of association is especially important under Criterion A. This would apply to archaeological sites that are recognized 'type' sites for specific archaeological complexes or time periods. Because they define the archaeological complexes or cultures or time periods, type sites are directly associated with the events and broad patterns of history. In addition, archaeological sites that define the chronology of a region are directly associated with events that have made significant contributions to the broad patterns of our history.

- **Lakota Identification and Taxonomic System for Traditional Cultural Properties and Sites (ITS-TCPS; LeBeau 2005:11):**

***Locate; Identify; Describe; Justify:***

***Site Type Number and Name of Site:*** Name of site and ITS-TCPS site number

***Activity:*** States the kind of activity occurring in the site, ceremonial, spiritual, cultural.

***Location:*** States typical locations where the site can be found in the landscape.

***Physical Setting:*** Indicates the type of natural setting in which a site is commonly found.

***Intrinsic Nature:*** Identifies the spiritual nature of the site as interpreted by the Lakota.

***Natural Site Features:*** Lists of typical natural features found in the site.

***Manmade Site Features:*** List of manmade features, cultural objects etc. found in the site.

***Cultural Reference Section:*** Records additional information about the activity itself such as its origin among the Lakota, and its association with a cultural figure.

***Notes:*** Helpful information about the activity.

***Comments:*** Additional comments about the activity.

### **Volume Generation Formula for a Red Wing Stone Cairn**

- Beehive/Hollow/Open-Topped Dome with Single Wooden Staff (Type 4), i.e. Hekti – “Lodge of Time and Space”



The original volume calculation presented here is based on a historic photo of an intact, freestanding hollow cairn feature. Volume generation is possible by applying the Theorem of Pappus, which allows one to generate volumes of solids from areas rotated about an axis based on the distance traveled by its centroid. Furthermore, in order to simplify future volume calculations, the primary goal was to generate an easy formula based on its sole recordable attribute at each site; the average base diameter, “d”. Thus, the historic photo (cf. IMA 1999) was first imported into Microsoft Word and its outline was traced. Next, an x-y Cartesian plane was superimposed on top of traced outline in order to measure coordinate pairs along its cross-section. These coordinate pairs were then plotted using Microsoft Excel and a best-fit line equation was generated:

X	Y
0	0
0.2	0.8
0.42	1.3
0.6	1.43
0.8	1.48
1.07	1.49
1.3	1.5
1.4	1.49
1.7	1.28
1.88	1.05
2.15	0

Table 4A-1: Recorded coordinate pairs along beehive/hollow cairn cross-section

## Cairn Outline and Best-Fit Equation

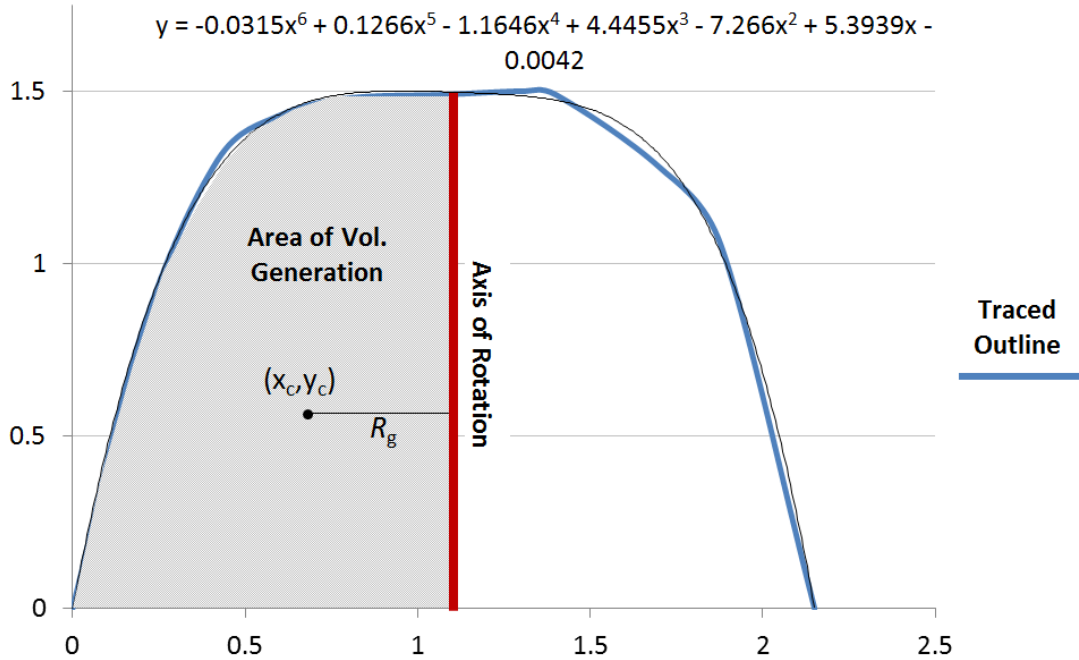


Fig. 4A-1: Cairn Volume Generation – Cairn Outline and Best-Fit Equation

The next step in the simplification process is to derive a ratio between the feature height and diameter; as well as the ratio between the volume of a freestanding cairn and the volume of a cylinder with the same base diameter, “d”. The volume of a cairn can be quickly found by multiplying this ratio by the volume of a cylinder, which is a relatively easy calculation given the height and diameter of the feature are known. Note: the diameter value “d” is the mean value of ground measurements taken in both north-south and east-west directions, respectively.

Based on the aforementioned photo and scaled measurements, the ratio between height vs. diameter is:

$$\frac{h}{d} = 0.7$$

Or,

$$h = 0.7 * d$$

Now, it is necessary to calculate the volume of a cylinder based solely on “d”, given:

$$\text{Vol. of cylinder} = \pi r^2 h$$

Thus, by substituting values  $r$  and  $h$ , respectively, with  $r = d/2$  and  $h = 0.70*d$ , the volume of a cylinder with a base diameter of “d” becomes:

$$\text{Vol. of a cylinder, “d”} = \pi*(d/2)^2*(0.70*d) = 0.55d^3 \quad (\text{eq. 1})$$

For the next step, the Theorem of Pappus is applied in order to calculate the volume of the freestanding beehive cairn/open-topped dome cairn. This is accomplished by multiplying the Area of Volume Generation (i.e. lamina) by the distance traveled by its centroid, which in this case is 360 degrees around the axis of rotation (see Fig. 4A1). Note: the axis of rotation is located at the cross-sectional midpoint along the x-axis. Therefore, the distance traveled by the centroid equals the circumference of circle ( $C = 2\pi r$ ), given  $r = R_g$ . Thus:

$$\text{Volume of Beehive Cairn (Type 4)} = \text{Area of Vol. Generation} * 2\pi * R_g \quad (\text{eq. 2})$$

The Area of Volume Generation is calculated by integrating the best-fit line equation with respect to  $x$ ; from  $x = 0$  to 1.075 (the graphical midpoint along the  $x$ -axis and location of the axis of rotation):

$$dA = \int y dx$$

$$\text{Area of Vol. Generation} = \int_0^{x/2} y dx$$

Thus, if  $x = 2.15$ :

*Area of Vol. Generation* =

$$\begin{aligned} &= \int_0^{1.075} (-0.0315x^6 + 0.1266x^5 - 1.1646x^4 + 4.4455x^3 - 7.266x^2 + 5.3939x - 0.0042)dx \\ &= 1.278 \text{ units}^2 \end{aligned}$$

Next, it is necessary to calculate the x-coordinate of the centroid ( $x_c$ ) for the “Area of Volume Generation”, which is required for determining  $R_g$ . Therefore, a summation of all vertical-strip moments generated by rotating the “Area of Volume Generation” around the y-axis is calculated thusly:

$$\begin{aligned} My &= \int_0^{x/2} dMy = \int_0^{x/2} x dA = \int_0^{x/2} x (y dx) \\ My &= \int_0^{1.075} x (-0.0315x^6 + 0.1266x^5 - 1.1646x^4 + 4.4455x^3 - 7.266x^2 + 5.3939x - 0.0042)dx \\ &= 0.805 \text{ units}^3 \end{aligned}$$

The x-coordinate of the centroid ( $x_c$ ) can now be calculated:

$$\begin{aligned} X_c &= \frac{My}{A} \\ X_c &= \frac{0.805}{1.278} = 0.63 \end{aligned}$$

Therefore, the Radius of Generation ( $R_g$ ) is:

$$R_g = \left(\frac{x}{2}\right) - Xc$$
$$R_g = \left(\frac{2.15}{2}\right) - 0.63 = 0.445$$

Now,  $R_g$  is substituted back into Eq. 1:

$$\text{Volume of Cairn "d"} = [\text{Area of Vol. Generation} * 2\pi * R_g] = 1.278 * 2\pi * 0.445 = 3.573 \text{ units}^3$$

Next:

$$\text{Volume of Cylinder (from eq. 1)} = 0.55d^3 = 0.55(2.15)^3 = 5.466 \text{ units}^3$$

Thus:

$$\text{Volume Ratio (Vr)} = \frac{\text{Vol Cairn}}{\text{Vol Cylinder}} = \frac{3.573}{5.466} = 0.65$$

Finally, if one multiplies Equation #1 by the preceding Volume Ratio ( $V_r$ ), the volume of an intact, freestanding beehive cairn/open-topped dome with a single wooden staff (Type 4) can be quickly calculated based on its ground-level, mean diameter ( $d$ ). Thus:

$$\text{Volume of Beehive Cairn} = \text{Vol of Cylinder} * V_r = 0.55d^3 * 0.65$$

or,

$$\text{Volume of Beehive Cairn/Open-Topped Dome (Type 4)} = 0.3575d^3 \quad (\text{eq. 3})$$

## Cairn Survey Results, Graphs, Maps and Tables

A Pearson correlation coefficient ( $R^2$ ) was generated for each graph using Microsoft Excel. This value measures the strength of the relationship between variables. A perfect, positive correlation has a value of +1, and a perfect negative relationship has a value of -1. It assumes the variables are approximately normally distributed, a linear association exists, and there are no outliers in the data (Stangroom 2015).

The  $R^2$  values were then tested for significance ( $p < 0.05$ ) using the TDIST function in Microsoft Excel. Two-tailed probability values ( $p$ ) were determined for each bi-variate test (see Table 4-3 in Chapter 4). To begin, since the sample size ( $n$ ) is less than 30 (i.e.  $n < 30$ ), a t-value ( $t$ ) is first calculated using the formula below.. The t value is dependent upon correlation value ( $r$ ), sample size ( $n$ ), and desired confidence level ( $\alpha = 0.05$ ). The resultant t-value is converted into a probability value ( $p$ ) using the TDIST function in Microsoft Excel. If  $p < 0.05$ , the relationship is deemed significant. The aforementioned test assumes the following: degrees of freedom =  $n - 2$ ; number of tails = 2.

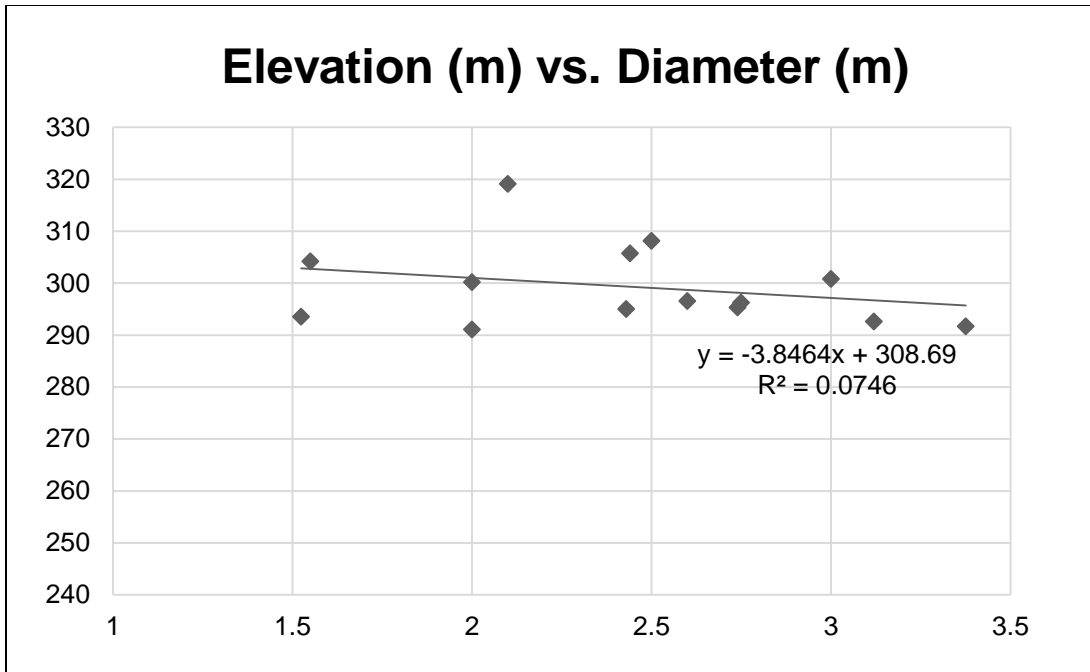
$$t = \frac{r \times \sqrt{n - 2}}{\sqrt{1 - r^2}}$$

t= t-value

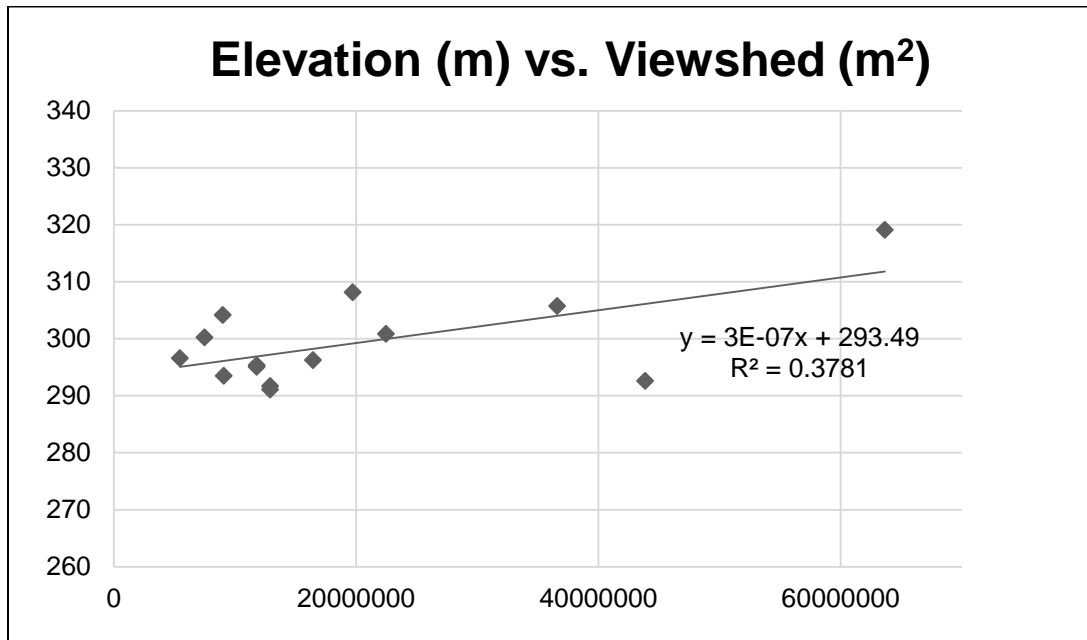
R= correlation value

N= sample size

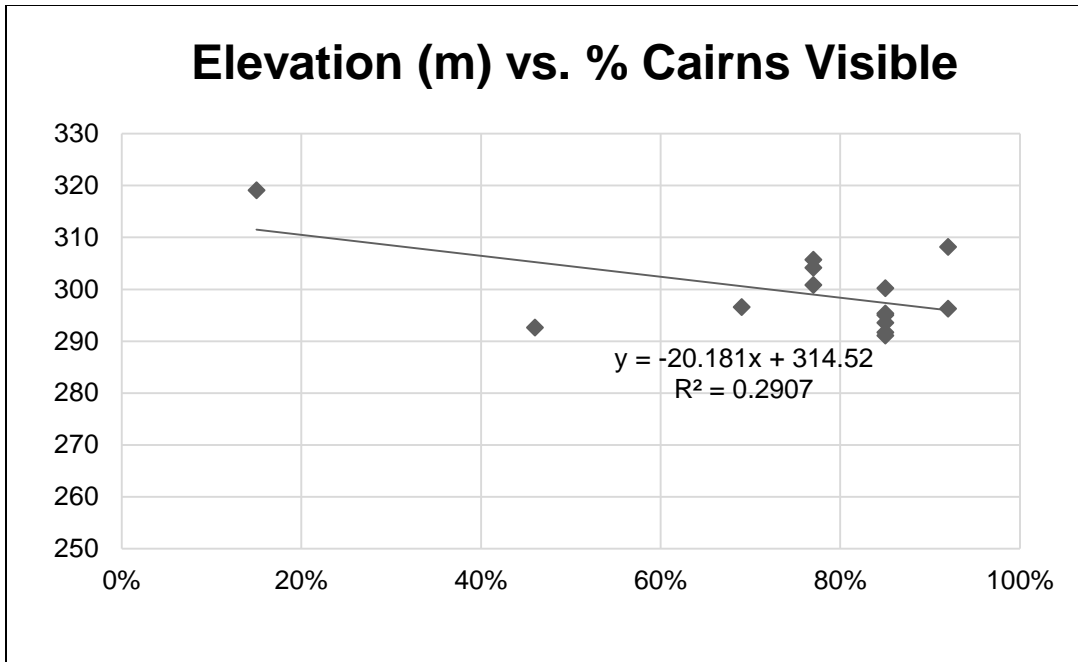
The following graphs and statistical tests were generated from the following survey results:



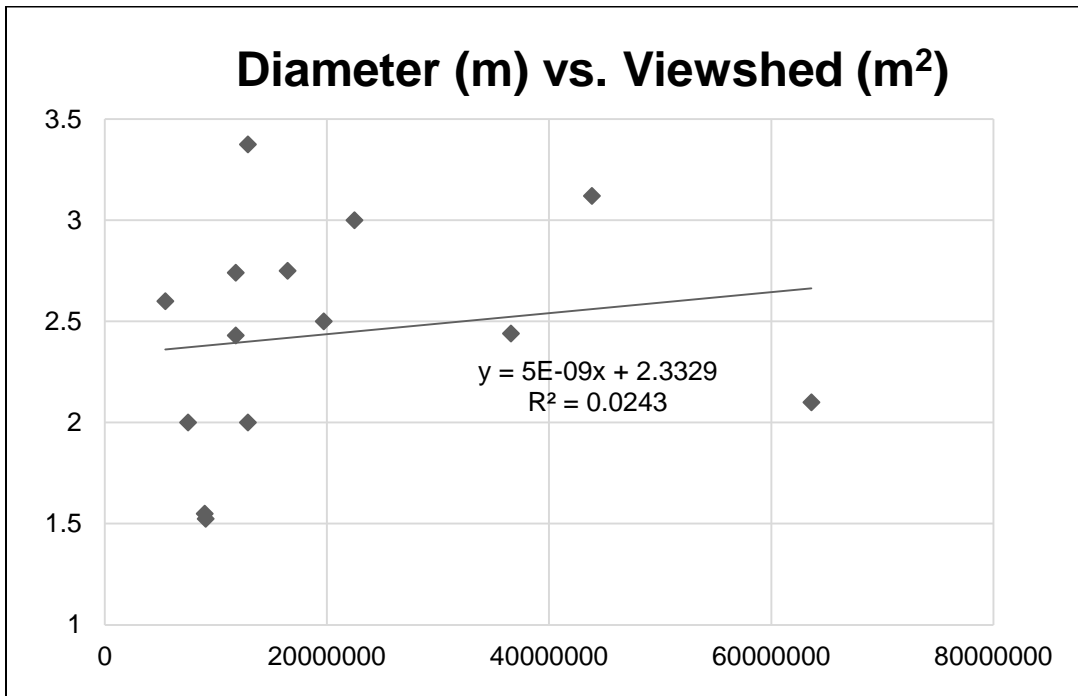
Graph 4A-1: Elevation (m) vs. Diameter (m). Note: weak correlation.



Graph 4A-2: Elevation (m) vs. Viewshed Size (m<sup>2</sup>). Note: significant Correlation ( $p < 0.05$ ).

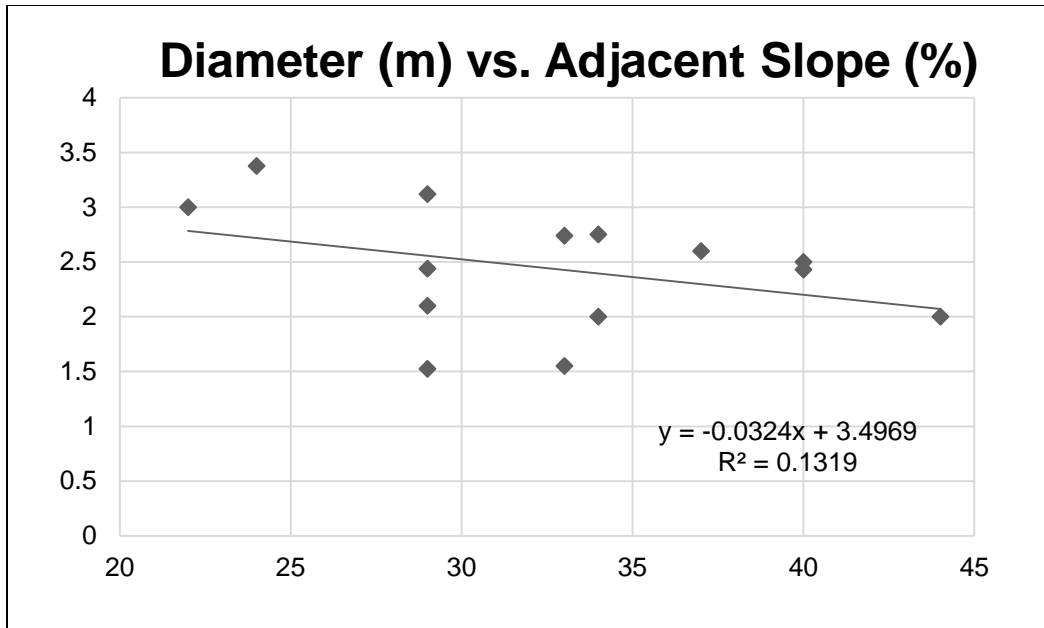


Graph 4A-3: Elevation (m) vs. % Cairns Visible. Note: significant correlation ( $p < 0.05$ ).



Graph 4A-4: Diameter (m) vs. Viewshed Size ( $m^2$ ). Note: weak correlation.





Graph 4A-5: Diameter (m) vs. Adjacent Slope %. Note: weak correlation.

ID	X coord	Y coord	Distance to Spatial Mean (m)	Distance from Spatial Mean (n = 14)	Distance from Spatial Mean (n=13)
1	5E+05	5E+06	1820.789718	1992.736126	1794.943607
2	5E+05	5E+06	4151.130576	4093.600593	-
3	5E+05	5E+06	134.9376287	333.0723959	416.0375121
4	5E+05	5E+06	309.2163326	299.58437	569.0467669
5	5E+05	5E+06	361.3747172	291.6112976	580.2333643
6	5E+05	5E+06	653.2068715	544.5369421	834.8118914
7	5E+05	5E+06	746.0750344	622.8644968	908.3701966
8	5E+05	5E+06	772.7199344	879.7856019	1082.38297
9	5E+05	5E+06	552.2758263	434.7606111	282.6081945
10	5E+05	5E+06	745.1613561	554.1391834	587.929729
11	5E+05	5E+06	763.7597088	570.0923645	614.9265141
12	5E+05	5E+06	1892.920621	1994.581337	1717.939927
14	5E+05	5E+06	1058.449988	977.1453656	750.0488721
15	5E+05	5E+06	1065.432848	984.3311645	756.972877
21GD23*	5E+05	5E+06	1185.193468		
21GD26*	5E+05	5E+06	2460.691776		
21GD28*	5E+05	5E+06	1642.509475		*Sites recorded as stone mounds
21GD214*	5E+05	5E+06	1656.877731		
21GD272*	5E+05	5E+06	4474.299887		Note:
Spatial Mean (n=19)	5E+05	5E+06	0	ID 13 is a small rock circle and therefore excluded	
Spatial Mean (n=14)	5E+05	5E+06	0		
Spatial Mean (n=13)	5E+05	5E+06	0		

Table 4A-2: Distance to Unweighted Spatial Mean from each cairn site

Stone Feature Distance from Spatial Mean	Distance (m)
MEAN=	1391.95
STDEV.P=	1164.46
N=	19
ALPHA=	0.05
CONFIDENCE.T=	561.25
MAX DIST	1953.20
MIN DIST	830.70

Table 4A-3: 95% confidence radius from population spatial mean (n=19)

Hollow Cairn Distance from Spatial Mean	Distance (m)
MEAN=	1040.92
STDEV.P=	1000.96
N=	14
ALPHA=	0.05
CONFIDENCE.T=	577.94
MAX DIST	1618.85
MIN DIST	462.98

Table 4A-4: 95% confidence radius from population spatial mean (n=14)

Hollow Cairn Distance from 21GD54 (excluding ID 2)	Distance (m)
MEAN=	1222.36
STDEV.P=	227.80
N=	13
ALPHA=	0.05
CONFIDENCE.T=	137.66
MAX DIST	1360.02
MIN DIST	1084.70

Table 4A-5: 95% confidence radius from 21GD54 (n=13)

Hollow Cairn Distance from Spatial Mean (excluding ID 2)	Distance (m)
MEAN=	838.17
STDEV.P=	439.11
N=	13
ALPHA=	0.05
CONFIDENCE.T=	265.35
MAX DIST	1103.52
MIN DIST	572.82

Table 4A-6: 95% confidence radius from spatial mean (n=13)

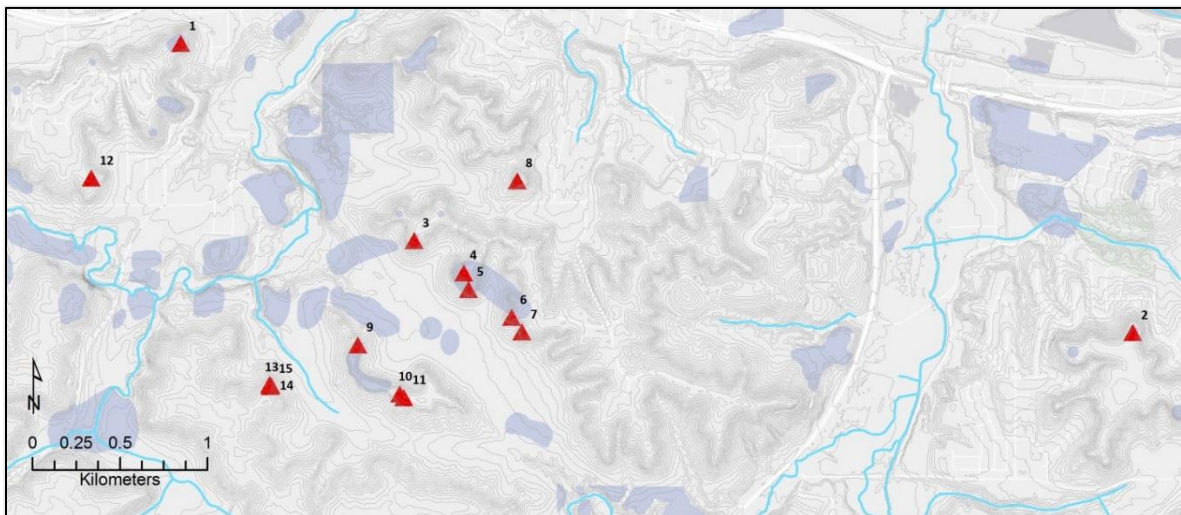


Fig. 4A-2: Stone cairn locations and corresponding ID numbers used in data tables.  
 Note: recorded archaeological sites are shown in purple.

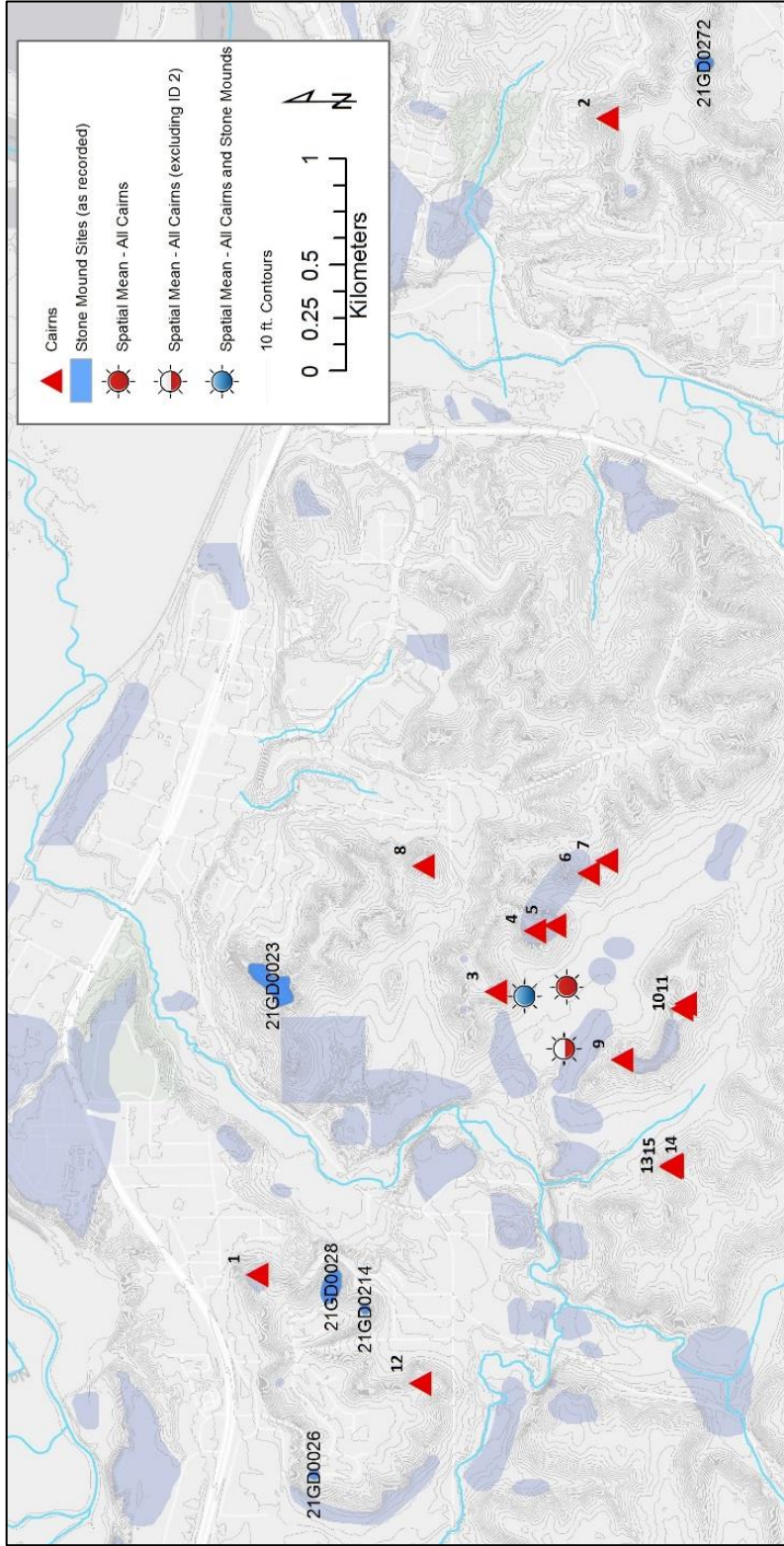


Fig. 4A-3: Unweighted Spatial Mean Locations



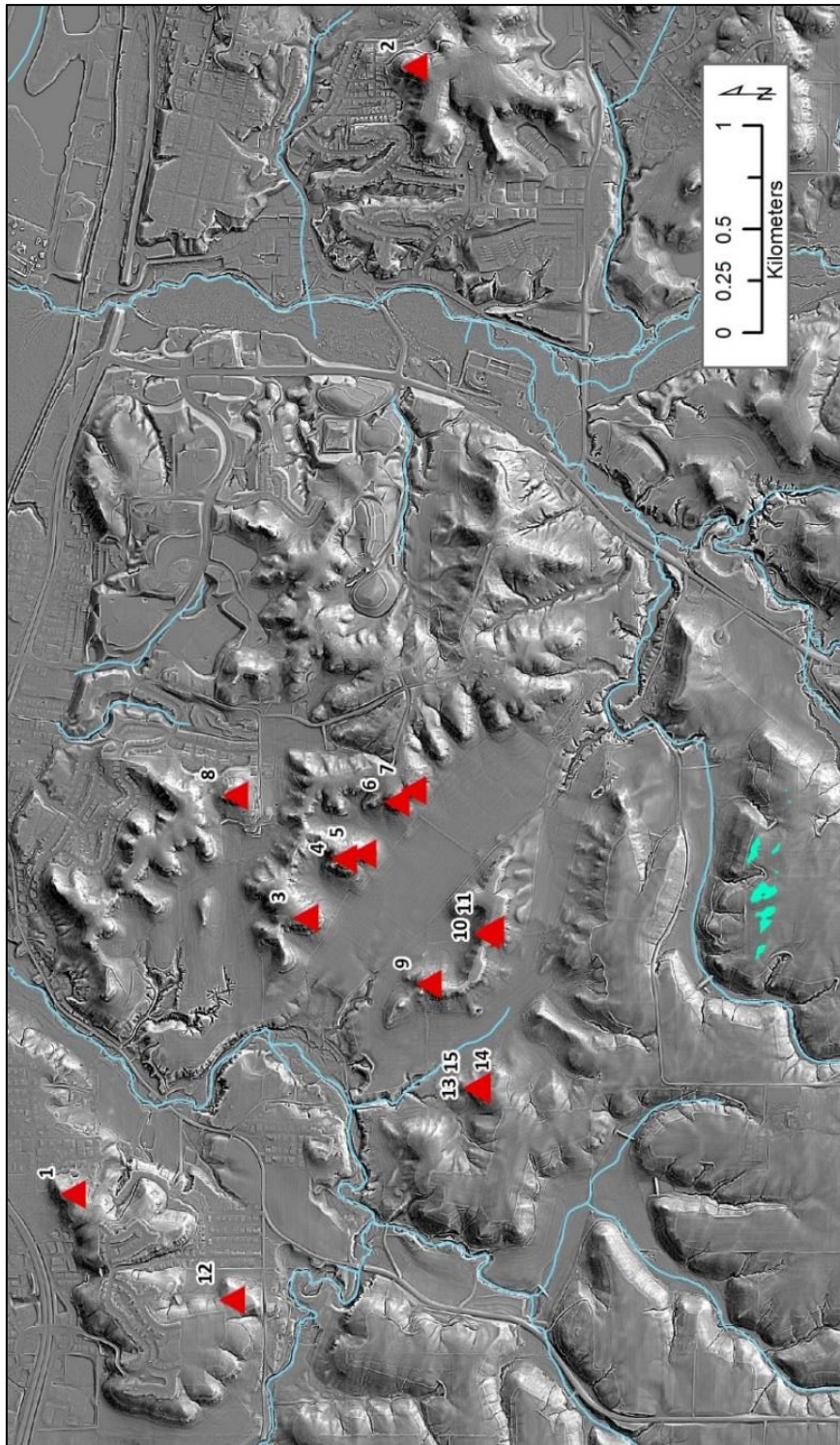


Fig. 4A-4: Viewshed Intersection Areas for Entire Cairn Population (n=14).  
Note: Very small areas are highlighted at the middle/bottom of the image.

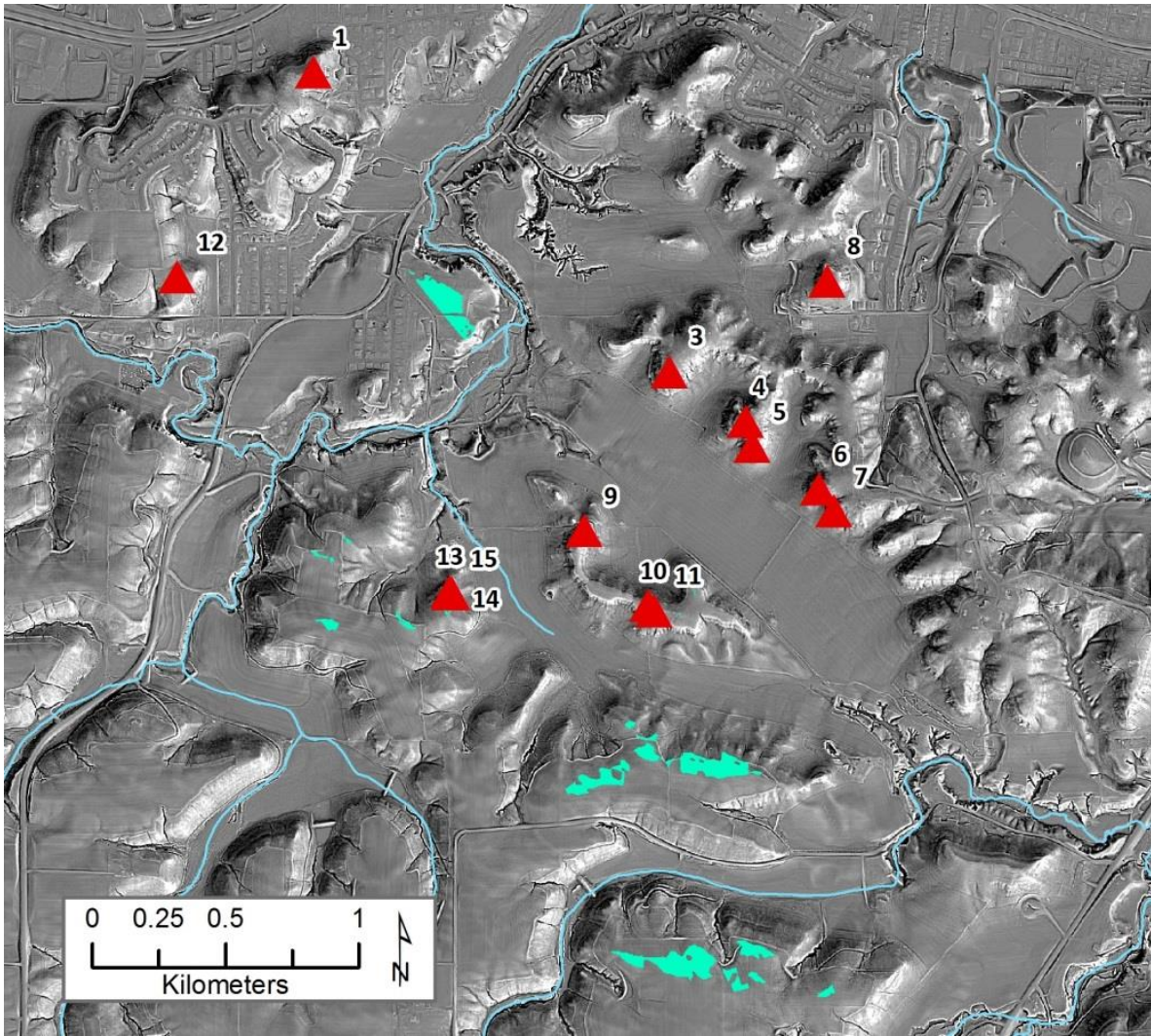


Fig. 4A-5: Viewshed Intersection Areas after excluding Cairn ID 2 (n = 13)

**Viewshed Raster Calculation and Digital Prosection Method**

In order to create a more accurate representation of the landscape from the original 1-m LiDAR-derived DEM, the Focal Statistics tool in ArcGIS was used to generate a mean elevation surface (10 meter by 10 meter neighborhood). The viewshed rasters based on the original 1-m DEM were not consistent with field observations. Conversely, the mean surface produced



accurate results. The Focal Statistics tool in ArcToolbox was used to generate a 10-m x 10-m neighborhood mean raster from the original DEM.

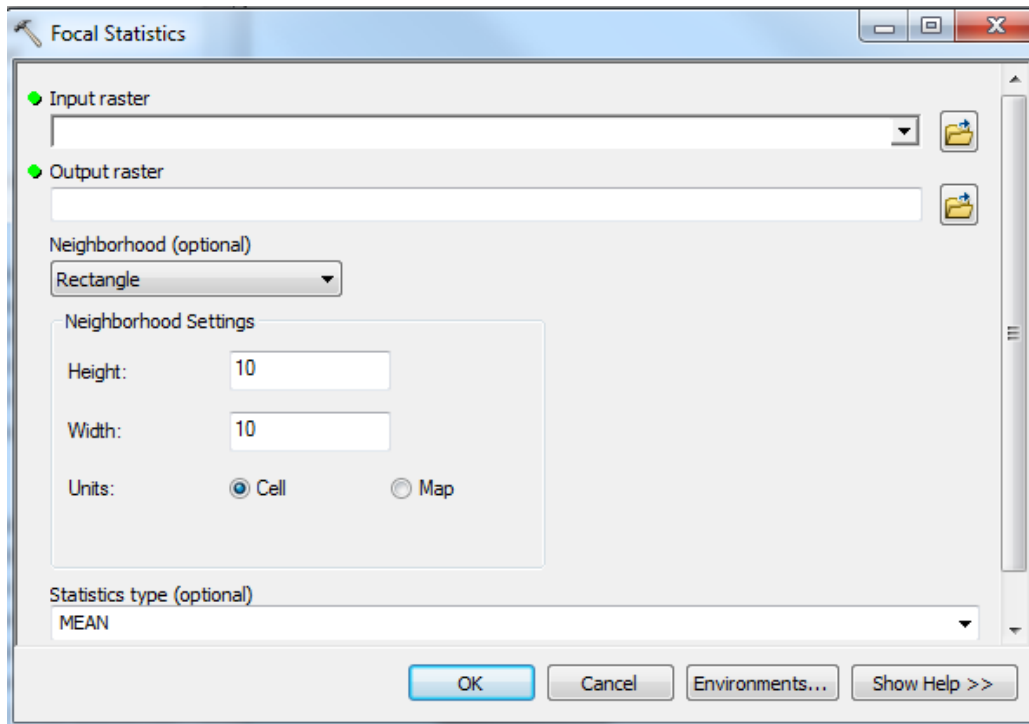


Fig. 4A-6: Neighborhood parameters for deriving a mean DEM from the 1-meter original

Furthermore, David Maki, a geophysicist with ArchaeoPhysics LLC, recommended subtracting the mean neighborhood raster from the original DEM in order to highlight additional anomalies in the LiDAR that are above or below the average elevation within a given neighborhood (e.g.  $DEM_{orig} - DEM_{avg} = DEM_{subtracted}$ ). The output raster displays a range of high and low values, and features above or below the local neighborhood mean surface are indicated by light and dark areas. Using a 10-meter by 10-meter neighborhood, this technique is particularly useful for mound site prospection. Mound features will appear as white anomalies (they are above the mean surface) and excavation pits will appear as dark anomalies (they are below the mean surface). Stone cairn remnants near Red Wing are generally indistinguishable

but the excavation pit(s) are visible in specific spots. The stone cairns are difficult to observe because of their dismantled condition and their relatively small size (2 meters or less in diameter) in comparison with the 1-meter DEM resolution of the input raster. Other photogrammetric tools such as drone technology may be able to produce better results by generating finer-resolution DEMs and higher-quality aerial imagery.

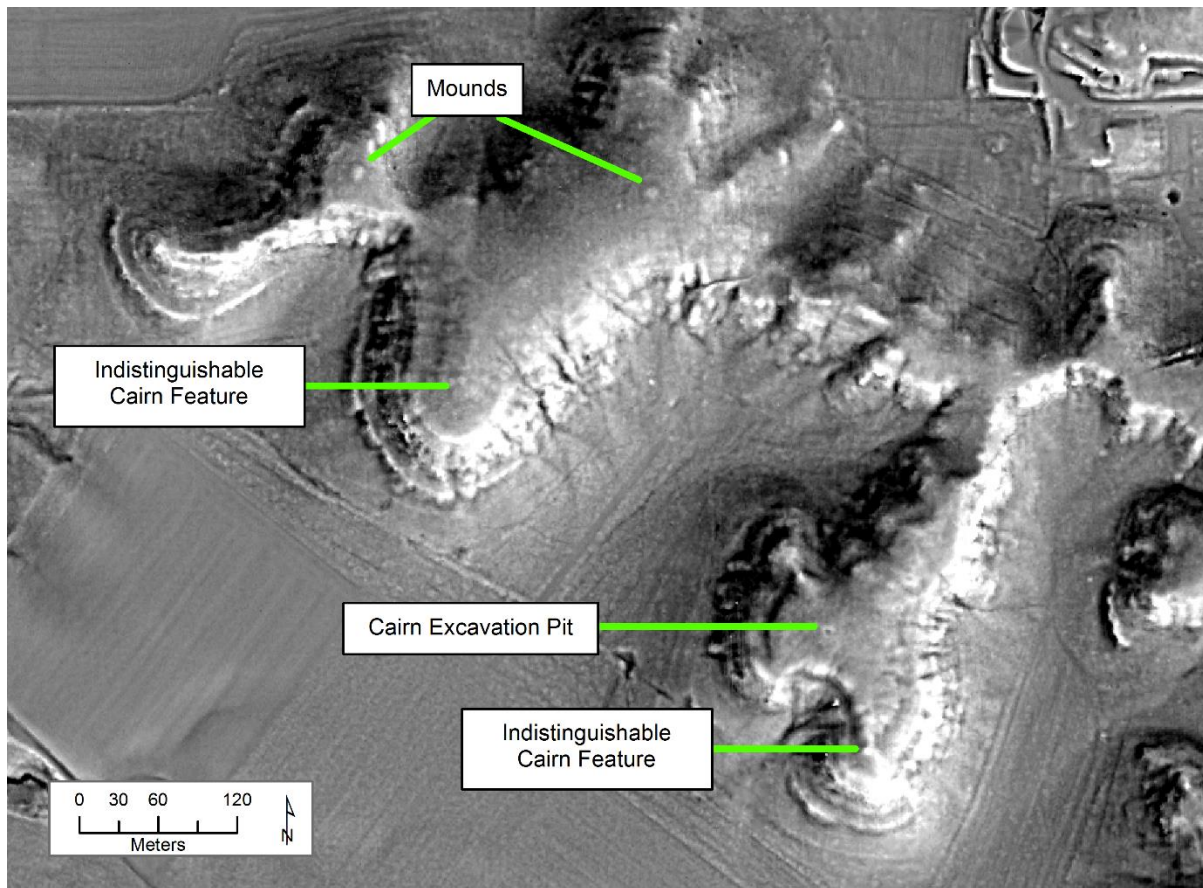


Fig. 4A-7: LiDAR Prosection Results with Subtracted DEM as base layer



## Appendix III: Chapter 6 Supplement

### Preliminary Significance of Cairn Components/Materials

#### Stone/Limestone:

The use of limestone in cairn construction is ubiquitous near Red Wing. Limestone is found in the upper geologic stratum throughout the Red Wing region and is readily available in nearby outcrops adjacent to the cairn sites in Red Wing. Orr Oneota peoples, who are ancestral Ioway, also lined burials with stone slabs. In one particular case, an individual was buried (possibly a person of high social or ceremonial rank) in a seated position with a remnant of a cedar staff nearby (Blaine 1995:14). This use of limestone in combination with a red cedar staff is identical to the Red Wing stone cairns. Limestone slabs were sometimes used to line burials (personal communication, Native Informant #1, May 16<sup>th</sup>, 2014).

According to a Dakota informant, limestone purifies prayer and/or spiritual energy (personal communication, Native Informant #1, May 16<sup>th</sup>, 2014). This concept is approachable if one considers the Lakota creation story (cf. Dooling 2000). According to the Lakota worldview, at the beginning of time Inyan bled himself dry in order to satisfy Earth, or *Maka*. His blood/spirit is *Skán*, which is also the water that covers the earth. From a geological standpoint, limestone is sand/sediment located on ancient seafloors from eons ago. At that time the sand was able to purify the water, i.e. spirit/Skán. Over time, the ancient oceans receded and the seafloors eventually hardened and became limestone. Although the limestone is now physically impervious to water, it never lost its intrinsic ability to purify spirit.

Stone is considered holy since it is from the beginning of time and transcends the ephemeral nature of life. Thus, due to its permanence, it is deemed part of the sacred world and the prayers of individuals who ascribe values and feelings to stone will transcend time as well (Williams 2012:89). During the 19<sup>th</sup> century, Dakota people conveyed to Joseph Nicollet that everything on earth perishes except stone (Bray and Bray 1976:270). Therefore, the Dakota believe these objects merit their veneration and by these stones they make their oaths. For Siouan peoples, communication with the spirit realm is facilitated through stone and praying with it (BLM 2005:121). To pray with stone is “to recreate the world as it is described in the oral tradition, is to pass on this information to descendants within a *tiospaye* —extended family” (LeBeau 2009:190). Stones were also used during Medicine Lodge practices in combination with medicine plants and water (Campbell 2000:24). Praying with these stones made them holy (personal communication, Curtis Campbell Sr., July 19<sup>th</sup>, 2017). The Medicine Dance was the common religious practice of Ho-Chunk, Ioway, Oto and Dakota peoples during the pre-contact period (Skinner 1920:11).

According to Dakota and Lakota peoples, “Inyan” is described as the original god, who lives in stone. Additionally, Inyan is also believed to live in elevated locations such as hills and peaks. Stone is used in prayer because it is deemed a direct connection between individuals, Inyan and Wakan Tanka, i.e. the Great Spirit (cf. Callahan 2001:137). Stone feature construction lies within the male ceremonial realm. This fact is attributed to the relationship between stone and Inyan, who is a male-like power (BLM 2005:121). For the Dakota, praying with stone is also connected with their belief in Taku Skan Skan, the spirit or energy of movement (Callahan 2001:137). Taku Skan Skan is the spirit of the Creator and the means by which the will of the Creator is made manifest (personal communication, Native Informant #1, February 6<sup>th</sup>, 2014).

### **Wooden Staff(s):**

As noted in the historic literature (cf. Brower 1903; Winchell 1911, etc.), wooden posts of Eastern Red Cedar (*Juniperus virginiana*) and Blue Oak/Swamp Oak (*Quercus leucobalanus*) were found inside the stone cairns of Red Wing. Simon (2001) states that red cedar and white oak are both part of Mississippian ceremonialism and there is adequate evidence of these specific types of wood being used in ritual circumstances (Schirmer 2002:30).

### **Red Cedar (*Juniperus virginiana*)**

Red Cedar is imbued with deep spiritual significance and meaning for Siouan peoples. It is a holy object by its very nature. The Ioway believe cedar has the ability to purify, to attract good spirits, and to protect one from evil (documentary interview with Lance M. Foster, Rundle and Rundle 2008). The presence of cedar on or near a promontory may suggest the presence of a cultural site (LeBeau 2009:141). Cedar trees may also serve as a ceremonial post (LeBeau 2009:142). The cedar is viewed as being in communion with Higher Powers (cf. Gilmore 1919:10-11).

Furthermore, cedar is considered a protection item (personal communication, Native Informant #1, May 16<sup>th</sup>, 2014). Tornadoes do not destroy the sacred red middle section of a cedar tree (personal communication, Sebastian C. LeBeau II, February 8<sup>th</sup>, 2006). The local Dakota believe that cedar trees, or Wazi, grow in abundance around places with spirits, particularly cemeteries and old scaffolding places. Red Cedar is considered a “soul tree” (personal communication, Curtis Campbell Sr., June 20<sup>th</sup>, 2007).

During this investigation, it was suggested the red cedar staff originally incorporated into the Red Wing stone cairns may have functioned as a spiritual “plug” between the Above and Below worlds (personal communication, Native Informant #1, March 27<sup>th</sup>, 2014). Secondly, it may have functioned as a lightning rod since Thunder was an important part of seasonal beliefs and in daily life (email correspondence, Native Informant #1, June 15<sup>th</sup>, 2014). In either case, the cairn builders were possibly attempting to construct a spiritually-charged landscape; one endowed with altruistic power from the heavens and pooling in the adjacent valleys. If “spiritual plugs” were to be removed, each stone cairn subsequently becomes an open, continuous conduit of free-flowing energy, analogous to a water faucet being left on.

Also, within Siouan tradition, Red Cedar and Thunder have great affinity. Thunder is able to strike and destroy evil spirits that would otherwise harm humanity (Foster 1996, 1999). It is an ally to the Creator. Thus, Thunder is associated with curing and healing (Holley 2005; cf. Landes 1968:25). In addition to cedar, braids of sweetgrass are also pleasing to Thunder (Howard 1984:105). Thunder lives in the western skyworld. West is also considered the place of honor within a lodge, the place where venerated or sacred possessions were stored, and the direction a virtuous soul follows in the afterlife in Ho-Chunk, Ioway, and Dakota cosmology (cf. GoodTracks 2009; Campbell 2000; Radin 1990). Great good can be invoked through mediums to the Great Spirit, such as Thunder (cf. Denig 2000:104).

Moreover, Thunder and Snakes are also allies and protectors of the upper and lower worlds, respectively. According to the Ioway, underworld forces are chaotic and necessary for creation but they are not friendly to human life. Therefore, Thunder reorders what is out of step with creation. Both Thunder and Snakes are allied against evil (Lance Foster in Goodtracks 2009; c.f. “clown”). Sacred clowns, also allied with Thunder, are human beings blessed by

Thunder who are tasked with reordering what is socially and/or spiritually out of line with the Creator. Thunder, Snakes and Clowns are protectors of the sacred and all three are associated with cedar. Cedar signifies the continuity of life because of its perpetually green needles and red inner core – it possesses unending vitality (Lance Foster in Goodtracks 2009; c.f. “clown”).

In sum, Eastern Red Cedar is deemed sacred for multiple reasons: 1) its color, which is recognized ubiquitously amongst Native peoples for its spiritual significance; 2) the red cedar tree is sacred to Thunder (Zager 2010), which are altruistic beings possessing the power to both create and destroy life in addition to providing protection; 3) it is an evergreen tree, which represents the continuance and perpetuity of life; and 4) it possesses great spiritual significance for Siouan peoples both past and present. Its ritual inclusion in the stone cairns of Red Wing was absolutely deliberate and therefore it must have possessed great cultural and spiritual significance for the Spring Creek Oneota.

### **Sacred Poles and Ceremonial Vivification**

Sacred staffs and/or the application of red paint were commonplace in pan-Siouan religion and daily life. Generally speaking from a metaphysical standpoint, sacred poles and staffs function as a conduit between the sky and earth realms. From a metaphysical standpoint, a sacred pole functions as an *axis mundi*, i.e. a conduit and means of contact between these realms. As a result, blessings may be descended upon the lower realm and disseminated to all (Eliade 1991). This concept also applies to the ceremonial fitting of a pipe bowl with a wooden stem during prayerful invocation of the Creator.

Sacred poles/staff are also used in ceremonial contexts. For instance, Blaine (1995:256) documented an Ioway burial as witnessed by Lewis Henry Morgan at Nemaha Agency ca. 1860.

For mortuary purposes, the Ioway either used hollowed-out graves or built a cairn with associated grave goods. In this specific case, Morgan noted a wooden grave post was erected near the grave and also painted vermillion. Additionally, a tall staff with an emblem was placed near the grave (ibid). For the Ioway, red paint is a sign of life (Blaine 1995:186). From a local Red Wing context, the prayer staffs used during the Dakota Medicine Dance combine the altruistic/healing powers of red cedar, Thunder and the rattlesnake (cf. Campbell 2000). Also, medicine poles usually stood near each Dakota house (Howard 1984:5). The use of sacred poles in mound burials has also been noted (cf. Maki et al. 2015).

Amongst the Omaha, who are also descended from the Oneota, the ceremonial act of painting a sacred pole is called *Waxthexe xigithe*, which means “to, paint, to anoint, to grease the Sacred Pole with red” (Ridington 1993:97). It reminds them of the power of Wakonda, “a power by which things are brought to pass” and helps relate human beings to “the seen to the unseen, the dead to the living, a fragment of anything to its entirety” (Ridington 1993:98). The origin of the Sacred Pole ceremony of the Omaha is difficult to separate from the political needs of that time. The ceremony was a reformulation of time-proven symbols to affirm the authority of the chiefs during a critical period in Omaha-Ponca history. In short, the Sacred Pole ceremony amplified the sense of unity amongst tribal members as well as the authority of the chiefs (Hall 1997:108).

Locally near Red Wing, red ochre or Ey-i-sha Pan-Panna would be collected at Sundigan Wicasasni Paha, or Cunning Fox Hills. In burial rituals, it was applied to the feet of the deceased and symbolizes the path of a virtuous soul towards the west along the Canku Sha, or Red Road (Campbell 2000). Radin (1990:167-168) also described a Ho-Chunk burial overseen by the Thunder people. The individual’s spirit was told where to go in the spirit realm and his head was

oriented towards the west. A tree branch was placed near his grave and the mourners tied a small stick to it painted red. This was done so that nothing should cross his path into the spirit realm (ibid). For all Siouan descendants from the Red Wing region (Ho-Chunk, Ioway and Dakota), the Red Road leads to the west, which corresponds with the dwelling place of Thunder. Note: for the Dakota/Lakota, all things sacred are colored red (LeBeau 2009:233).

### **Blue/Swamp Oak**

Near Red Wing, W.M. Sweney documented the use of two ‘blue/swamp’ oak staffs (Bur Oak or *Quercus leucobalanus*) oriented in an east-west direction within a collapsed hollow cairn (Brower 1903:62; Winchell 1911:165-168). Sweney does not mention if paint was applied to the staffs or not, or if he was unable to tell. Based on Siouan ethnographic information, the two upright staffs may have been erected in order to orient souls towards the west for the purposes of following the Red Road into the spirit world (cf. BLM 2005:118). The Ioway, during periods of war, would erect a white oak post roughly 7-8 inches in diameter and paint it red. After ceremonial use, the war post gained additional sacred qualities (Blaine 1995:106-108).

### **Mussel shell:**

The decaying mussel shells found inside the cairns were possibly used to hold paint (personal communication, Native Informant #1, May 16<sup>th</sup>, 2014). During specific Siouan rituals, red ochre and/or vermilion paint which was ritually applied to wooden staffs (see Sacred Poles and Ceremonial Vivification).

## **Appendix IV: University of Kansas HSCL Approval with Adult Informed Consent**

Approved by the Human Subjects Committee University of Kansas, Lawrence Campus (HSCL). Approval expires one year from 4/18/2013  
HSCL # 20803

### **Oral Consent Statement**

#### **Lodges of Time and Space: An Initial Analysis of Stone Cairns in the Red Wing region**

As a graduate student in the University of Kansas's Department of Geography, I am conducting research about cairns and their significance to Indigenous people whose ancestors lived near Red Wing, Minnesota. I would like to interview you to obtain your views on why this landscape is so special. Also, what do cairns mean to you? Why is stone so important and meaningful? What inspired the construction of cairns? Were there specific types? You have no obligation to participate and you may discontinue your involvement at any time.

We will only use your name in our research publications with your permission; otherwise you will not be personally identified.

Should you have any questions about this project or your participation in it, please contact me or my advisor Prof. Jay T. Johnson ([jaytjohnson@ku.edu](mailto:jaytjohnson@ku.edu)) immediately.

If you have any questions about your rights as a research participant, you may call the Human Subjects Protection Office at +1 785 864-7429 or email [irb@ku.edu](mailto:irb@ku.edu).



## Appendix V: Informants

This appendix lists both past and present informants who participated in this investigation, which includes both KU HSCL Approval (see Appendix III) and previous IRB approval from MSU-Mankato (cf. Bergervoet 2008):

- Curtis Campbell Sr.  
Prairie Island Indian Community – Welch, MN  
Dakota Elder (1935-2009)
- Lance M. Foster, M.A.  
Iowa Tribe of Kansas and Nebraska – White Cloud, KS  
Tribal Historic Preservation Officer
- Sebastian C. LeBeau II, Ph.D.  
Cheyenne River Lakota Tribe – Eagle Butte, SD  
Oral Historian and Archaeologist
- Thomas Ross  
Upper Sioux Community – Granite Falls, MN  
Dakota Elder (1948-2013)
- Native Informant #1  
Mdewakanton Dakota  
Male Traditional Consultant
- Ronald C. Schirmer, Ph.D.  
Minnesota State University – Mankato  
Red Wing Research Archaeologist and Professor
- David Tovar  
University of Wisconsin-Oshkosh  
Archaeologist
- Larry Heady  
Delaware Tribe  
Eastern Region Tribal Relations Specialist  
United States Forest Service

## **Appendix VI: Cairn Site Data**

Since all cairn sites near Red Wing have been dismantled it is impossible to provide completely accurate morphological data from each individual site. The following information was collected at each site during field surveys from 2013-2014. Furthermore, due to present field conditions and the degree of disturbance at each site, it is very difficult to determine the specific type of stone feature based upon the Red Wing-specific taxonomy presented in Chapter 4 (i.e. which cairns contained a single red cedar staff, two swamp oak staffs, etc.) However, the unique hollow “stone cairn” locations as mapped by Brower (1903) are consistent with the site locations recorded during this study. Therefore, the following cairn sites are all assumed to be hollow except Cairn ID 2, which is consistent with Brower’s findings as well (i.e. no features identified as a “stone cairn” were recorded east of Hay Creek). Also, after analyzing the collected field data and developing the aforementioned taxonomy, Cairn ID 13 was determined to be a stone ring and was subsequently excluded from further GIS and data analysis.

The stone cairns of Red Wing are a truly unique stone manifestation based upon their hollow architecture and historically-documented components alone. As discovered during this study, these hollow stone features are all keyed to 21GD54 (a Red Wing Oneota burial mound group located along Spring Creek) through a common line-of-sight bond. Furthermore, the stone cairns of Red Wing are generally intervisible with one another and principal components of a larger cultural and ritual landscape of the Spring Creek Oneota circa AD 1300 – 1400. The application of contemporary Ioway cosmology elucidates the meaning and function of these sacred altars. The Ioway people are also direct Oneota descendants who emerge as a primary group in southern Minnesota prior to initial European contact in the 17<sup>th</sup> century. The stone

cairns may be an initial expression of Ioway ethnicity or it very strongly suggests a direct connection between today's Ioway and the Spring Creek Oneota.

All cairns site listed in this appendix have been officially recorded at the Minnesota Office of the State Archaeologist (OSA). In order to safeguard the stone cairns of Red Wing for posterity as well as on-site Native interpretations, additional site-specific information must be solicited directly from OSA.

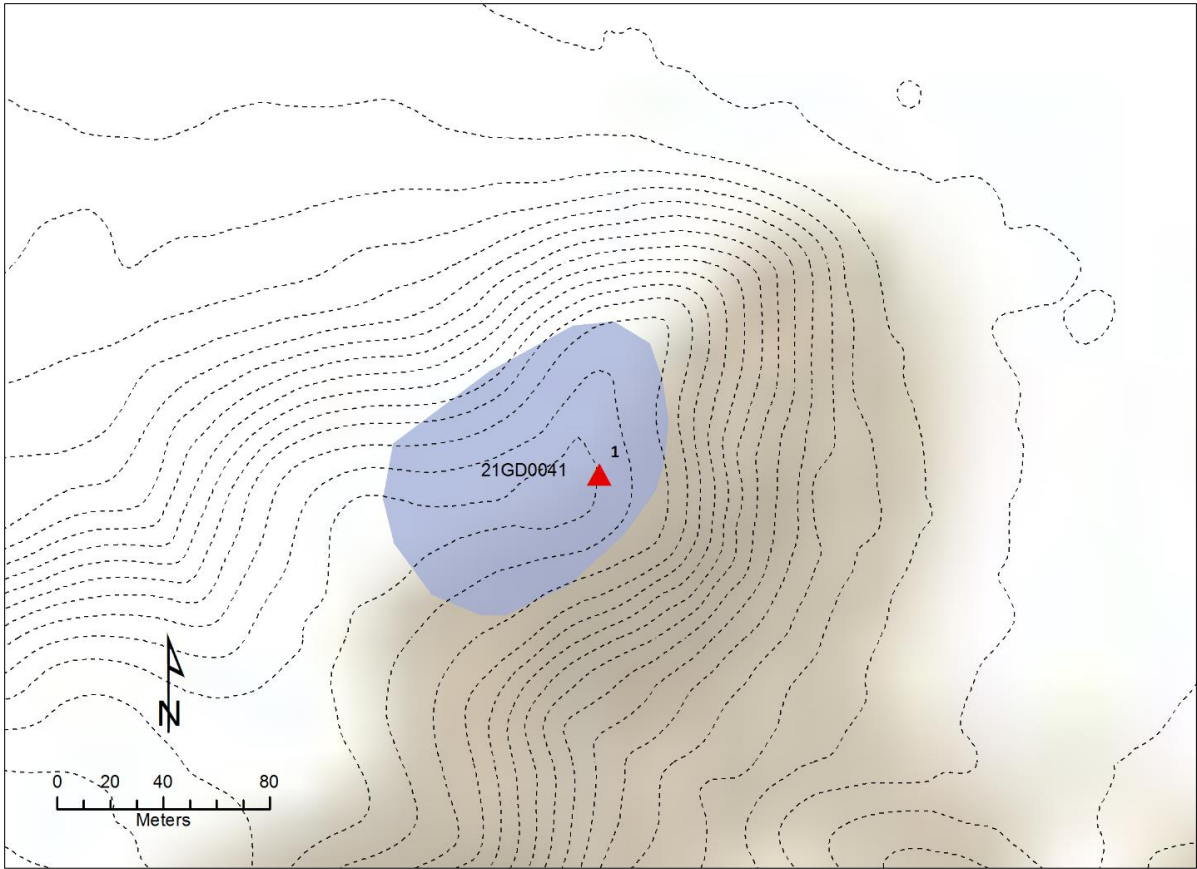


Fig. 6A-1: Cairn ID 1

<b>Cairn ID</b>	1
<b>OSA Site Number</b>	21GD41
<b>Elevation (m)</b>	292.61
<b>Mean Diameter (m)</b>	3.12
<b>Estimated Orig. Height (m)</b>	2.18
<b>Estimated Orig. Volume (m3)</b>	10.86
<b>Viewshed Area (m2)</b>	43,848,956
<b>% Other Cairns Visible</b>	46%

Table 6A-1: Cairn ID 1

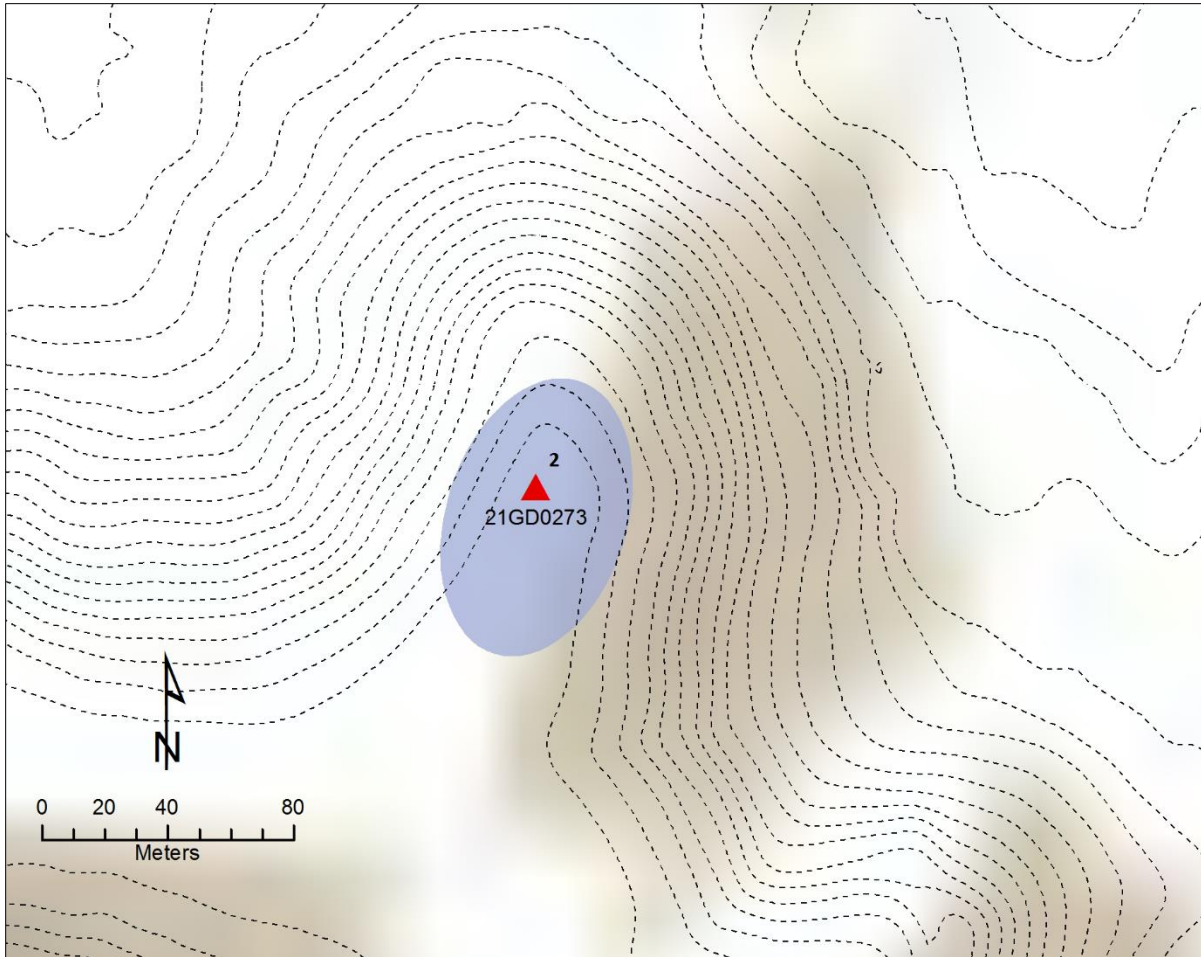


Fig. 6A-2: Cairn ID 2

<b>Cairn ID</b>	2
<b>OSA Site Number</b>	21GD273
<b>Elevation (m)</b>	319.13
<b>Mean Diameter (m)</b>	2.10
<b>Estimated Orig. Height (m)</b>	-
<b>Estimated Orig. Volume (m3)</b>	-
<b>Viewshed Area (m2)</b>	63,625,998
<b>% Other Cairns Visible</b>	15%

Table 6A-2: Cairn ID 2

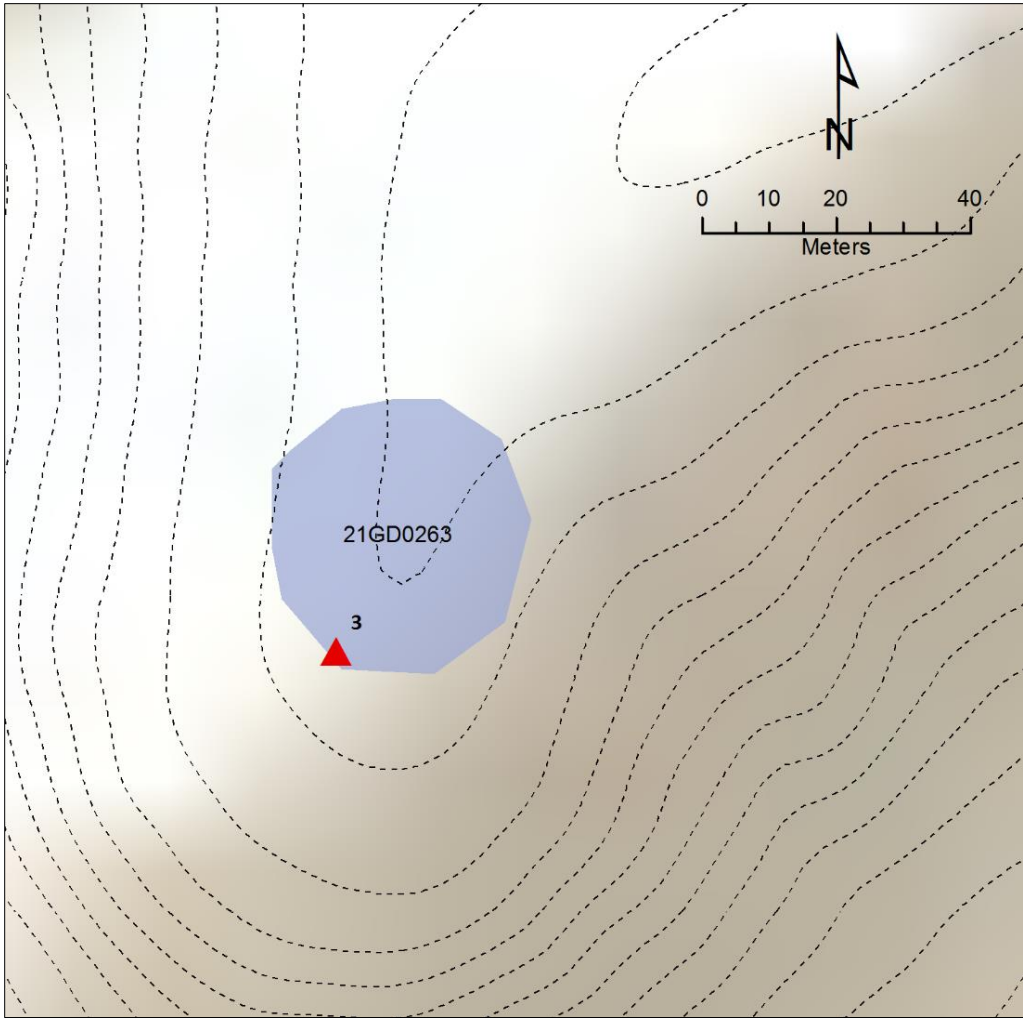


Fig. 6A-3: Cairn ID 3

<b>Cairn ID</b>	3
<b>OSA Site Number</b>	21GD263
<b>Elevation (m)</b>	300.84
<b>Mean Diameter (m)</b>	3.00
<b>Estimated Orig. Height (m)</b>	2.10
<b>Estimated Orig. Volume (m3)</b>	9.65
<b>Viewshed Area (m2)</b>	22,457,526
<b>% Other Cairns Visible</b>	77%

Table 6A-3: Cairn ID 3

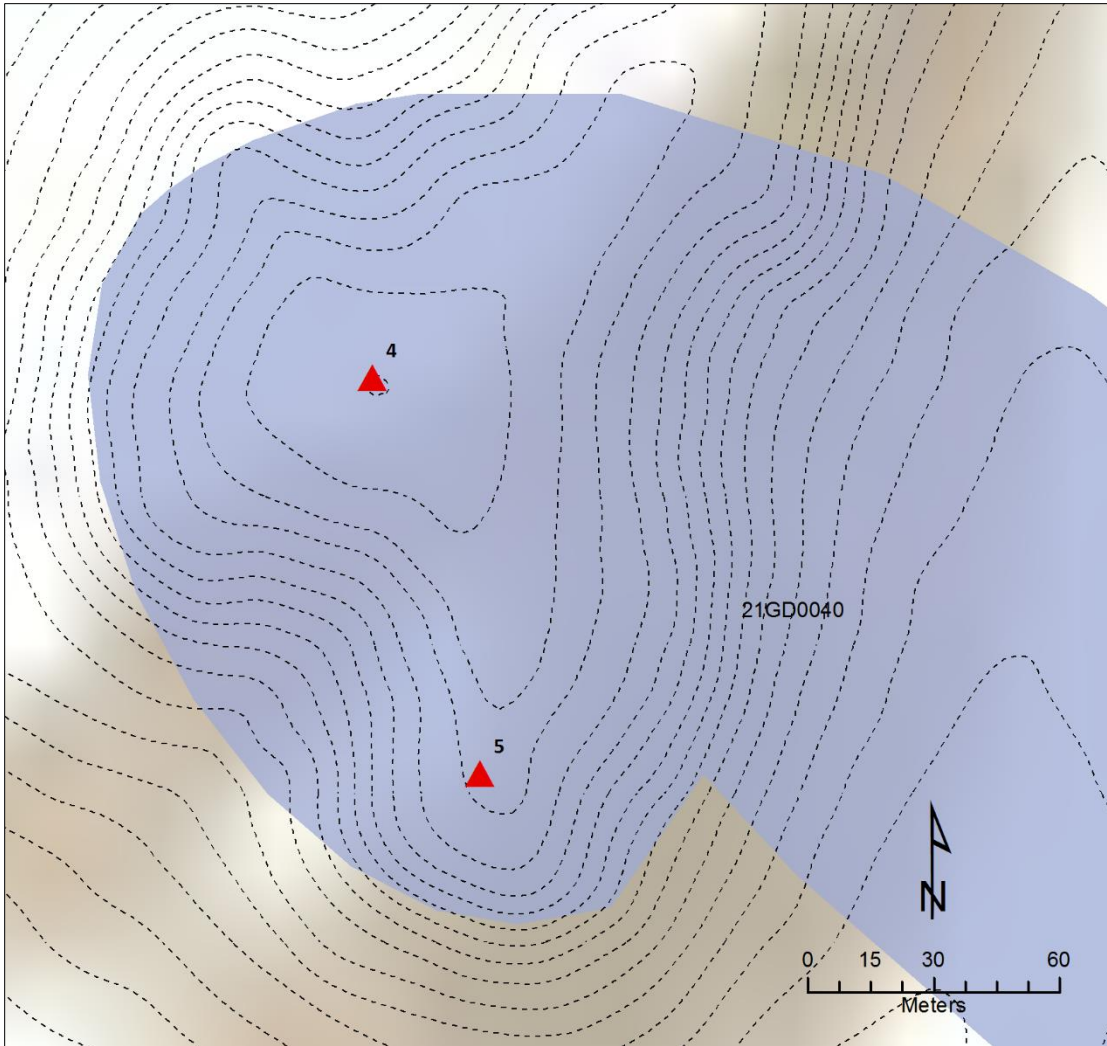


Fig. 6A-4: Cairn ID 4

<b>Cairn ID</b>	4
<b>OSA Site Number</b>	21GD40
<b>Elevation (m)</b>	308.15
<b>Mean Diameter (m)</b>	2.50
<b>Estimated Orig. Height (m)</b>	1.75
<b>Estimated Orig. Volume (m3)</b>	5.59
<b>Viewshed Area (m2)</b>	19,695,277
<b>% Other Cairns Visible</b>	92%

Table 6A-4: Cairn ID 4



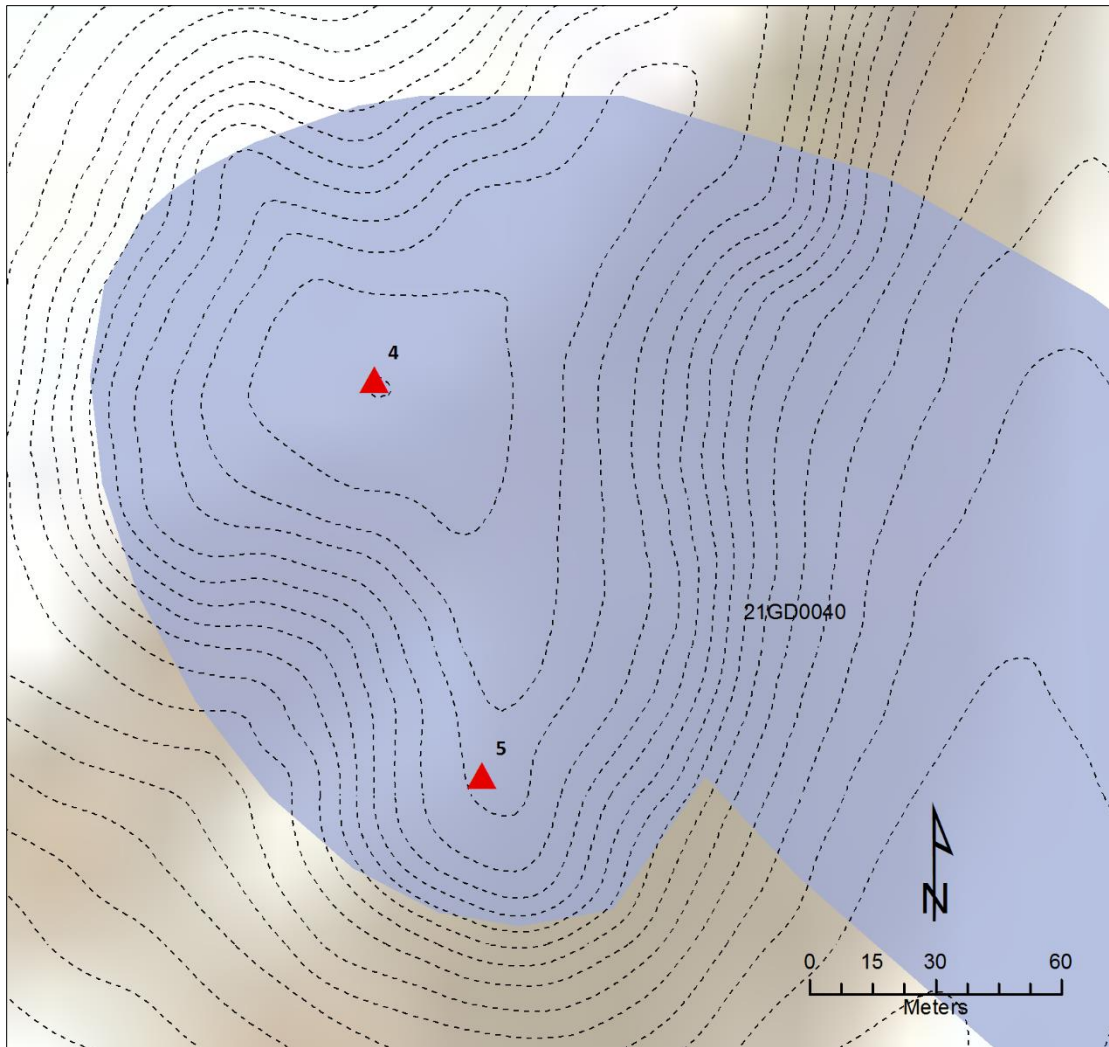


Fig. 6A-5: Cairn ID 5

<b>Cairn ID</b>	5
<b>OSA Site Number</b>	21GD40
<b>Elevation (m)</b>	300.23
<b>Mean Diameter (m)</b>	2.00
<b>Estimated Orig. Height (m)</b>	1.40
<b>Estimated Orig. Volume (m3)</b>	2.86
<b>Viewshed Area (m2)</b>	7,479,654
<b>% Other Cairns Visible</b>	85%

Table 6A-5: Cairn ID 5



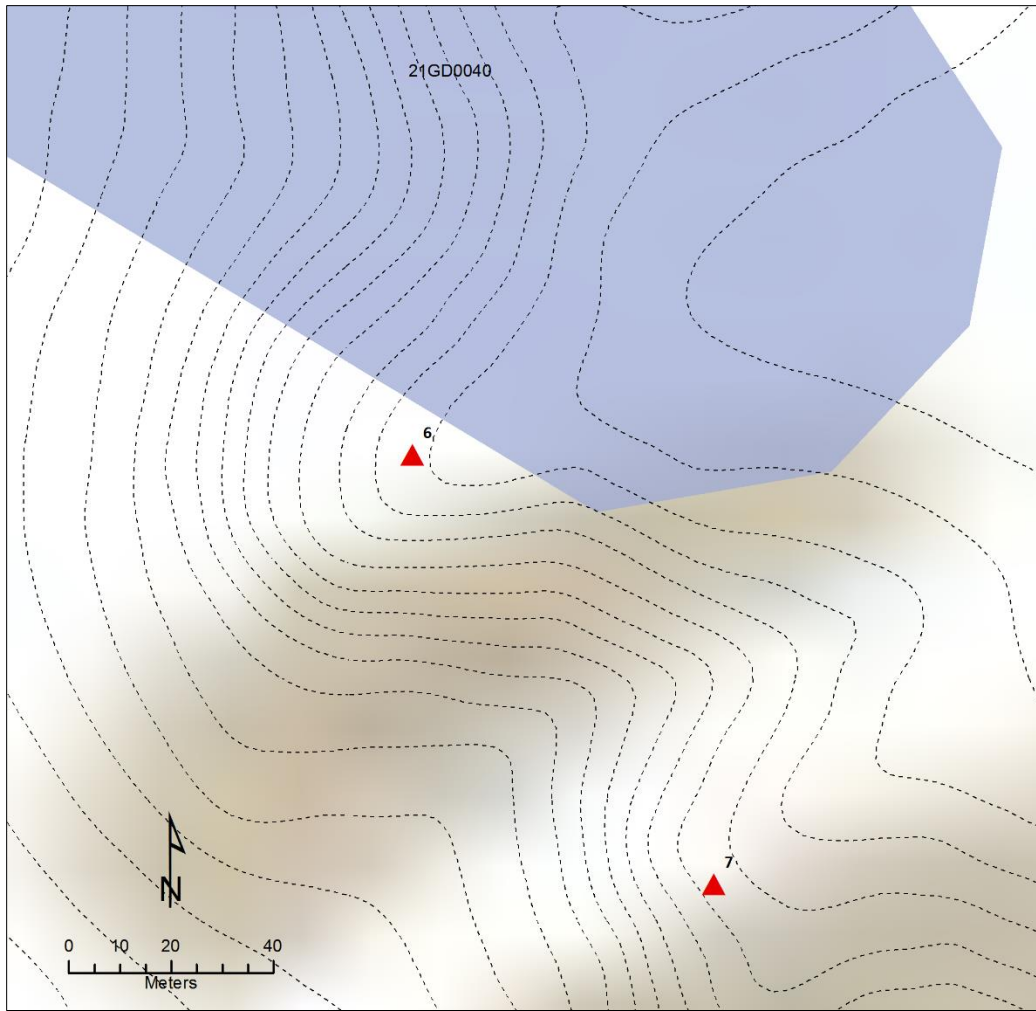


Fig. 6A-6: Cairn ID 6

<b>Cairn ID</b>	6
<b>OSA Site Number</b>	21GD40
<b>Elevation (m)</b>	304.19
<b>Mean Diameter (m)</b>	1.55
<b>Estimated Orig. Height (m)</b>	1.09
<b>Estimated Orig. Volume (m3)</b>	1.33
<b>Viewshed Area (m2)</b>	8,973,470
<b>% Other Cairns Visible</b>	77%

Table 6A-6: Cairn ID 6

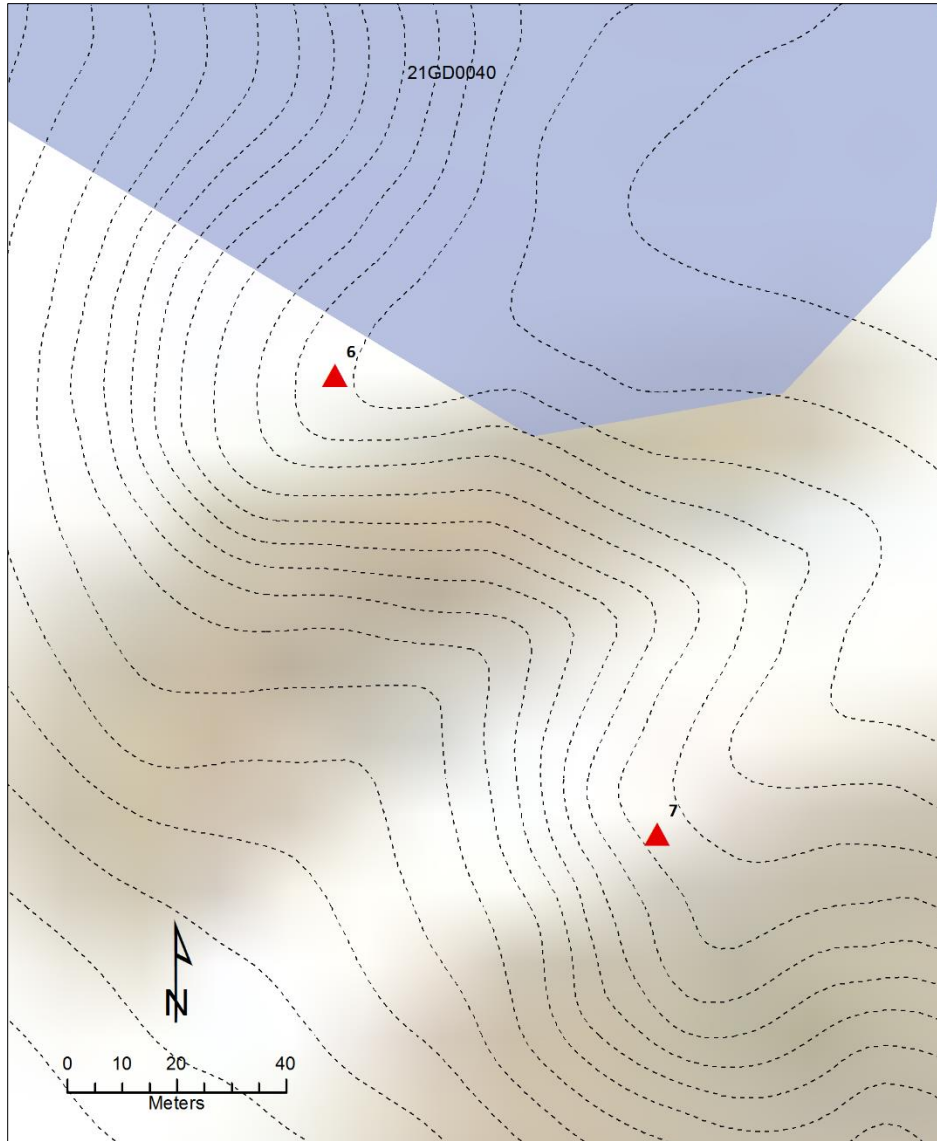


Fig. 6A-7: Cairn ID 7

<b>Cairn ID</b>	7
<b>OSA Site Number</b>	21GD40
<b>Elevation (m)</b>	296.57
<b>Mean Diameter (m)</b>	2.60
<b>Estimated Orig. Height (m)</b>	1.82
<b>Estimated Orig. Volume (m3)</b>	6.28
<b>Viewshed Area (m2)</b>	5,430,848
<b>% Other Cairns Visible</b>	69%

Table 6A-7: Cairn ID 7

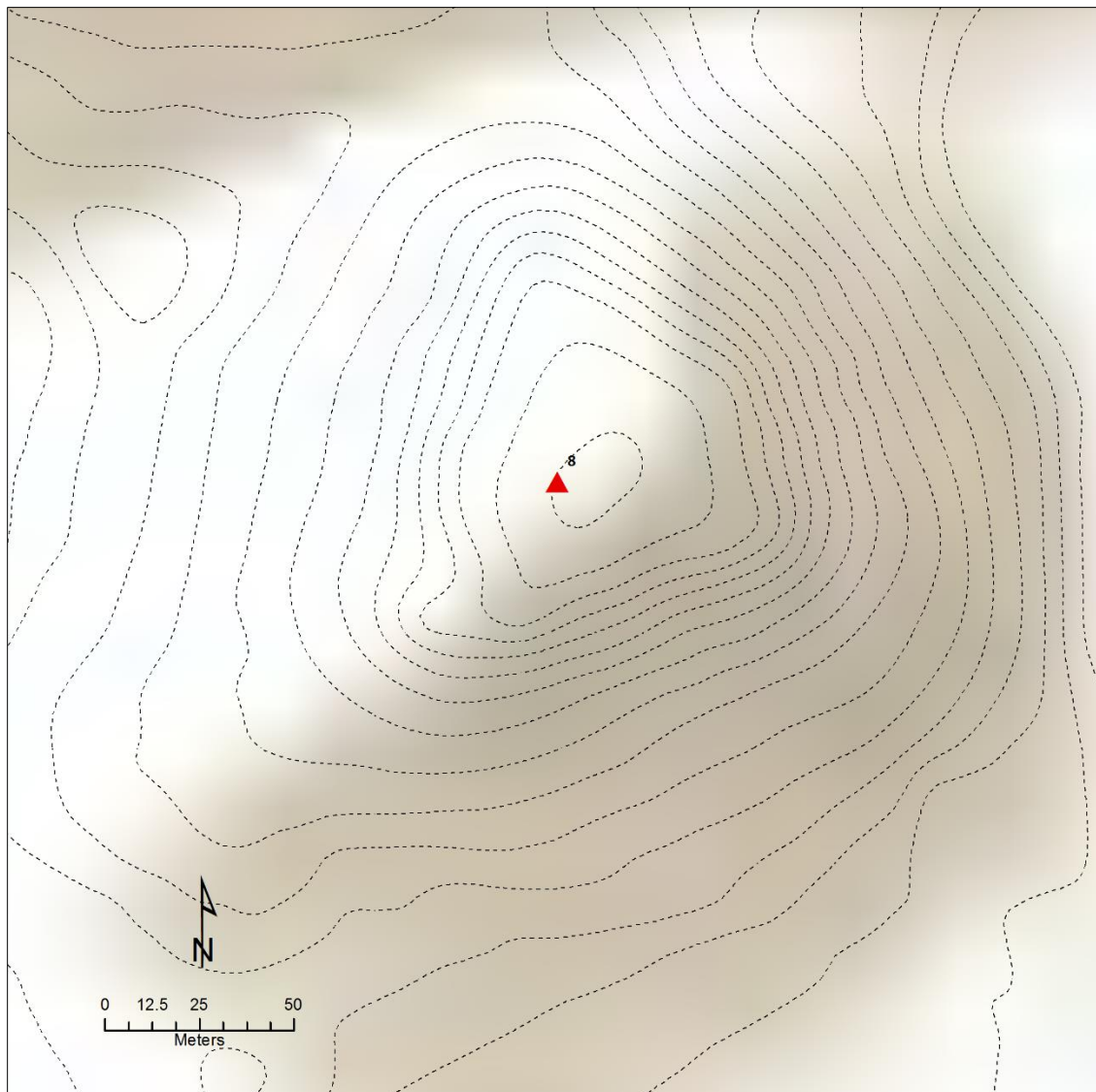


Fig. 6A-8: Cairn ID 8

<b>Cairn ID</b>	8
<b>OSA Site Number</b>	21GD308
<b>Elevation (m)</b>	305.71
<b>Mean Diameter (m)</b>	2.44
<b>Estimated Orig. Height (m)</b>	1.71
<b>Estimated Orig. Volume (m3)</b>	5.19
<b>Viewshed Area (m2)</b>	36,571,956
<b>% Other Cairns Visible</b>	77%

Table 6A-8: Cairn ID 8

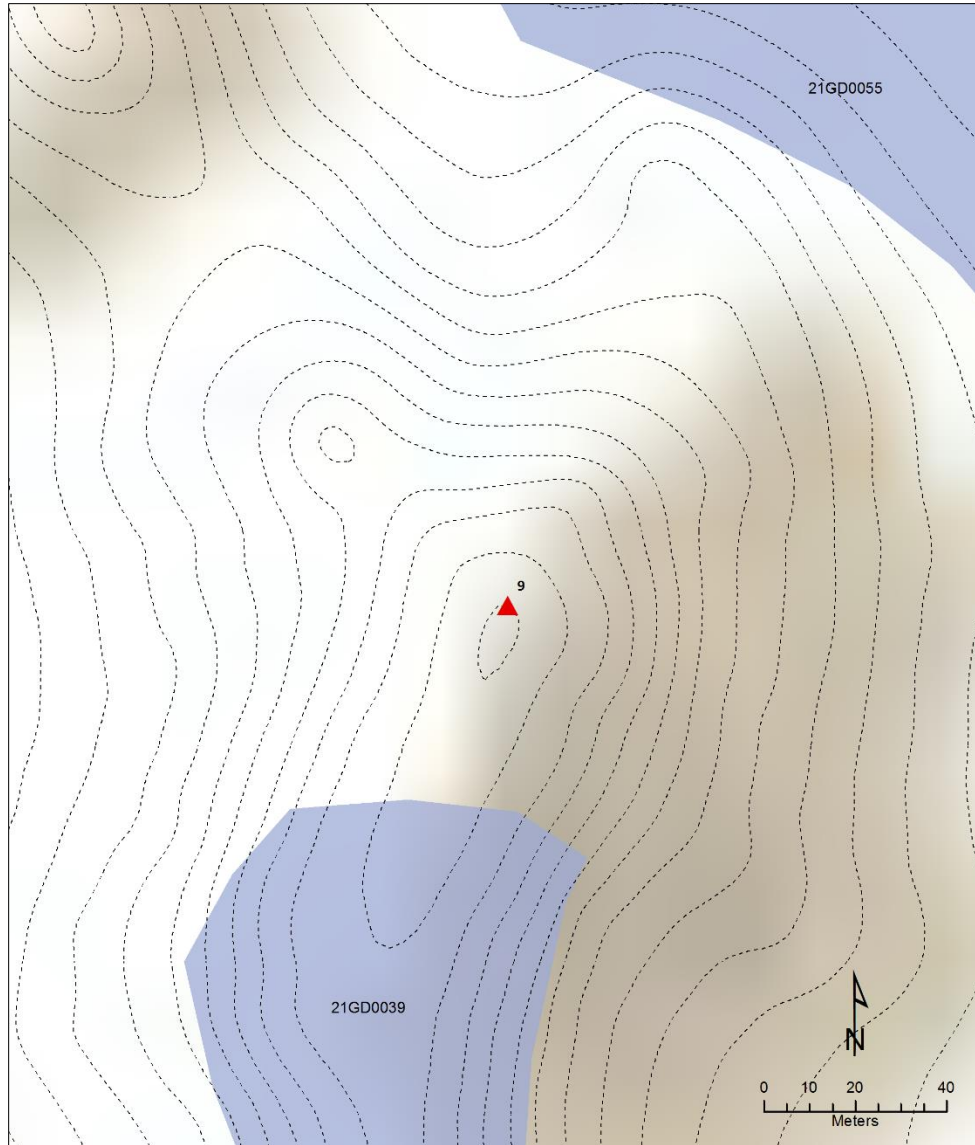


Fig. 6A-9: Cairn ID 9

<b>Cairn ID</b>	9
<b>OSA Site Number</b>	21GD39
<b>Elevation (m)</b>	296.27
<b>Mean Diameter (m)</b>	2.75
<b>Estimated Orig. Height (m)</b>	1.93
<b>Estimated Orig. Volume (m3)</b>	7.44
<b>Viewshed Area (m2)</b>	16,437,324
<b>% Other Cairns Visible</b>	92%

Table 6A-9: Cairn ID 9

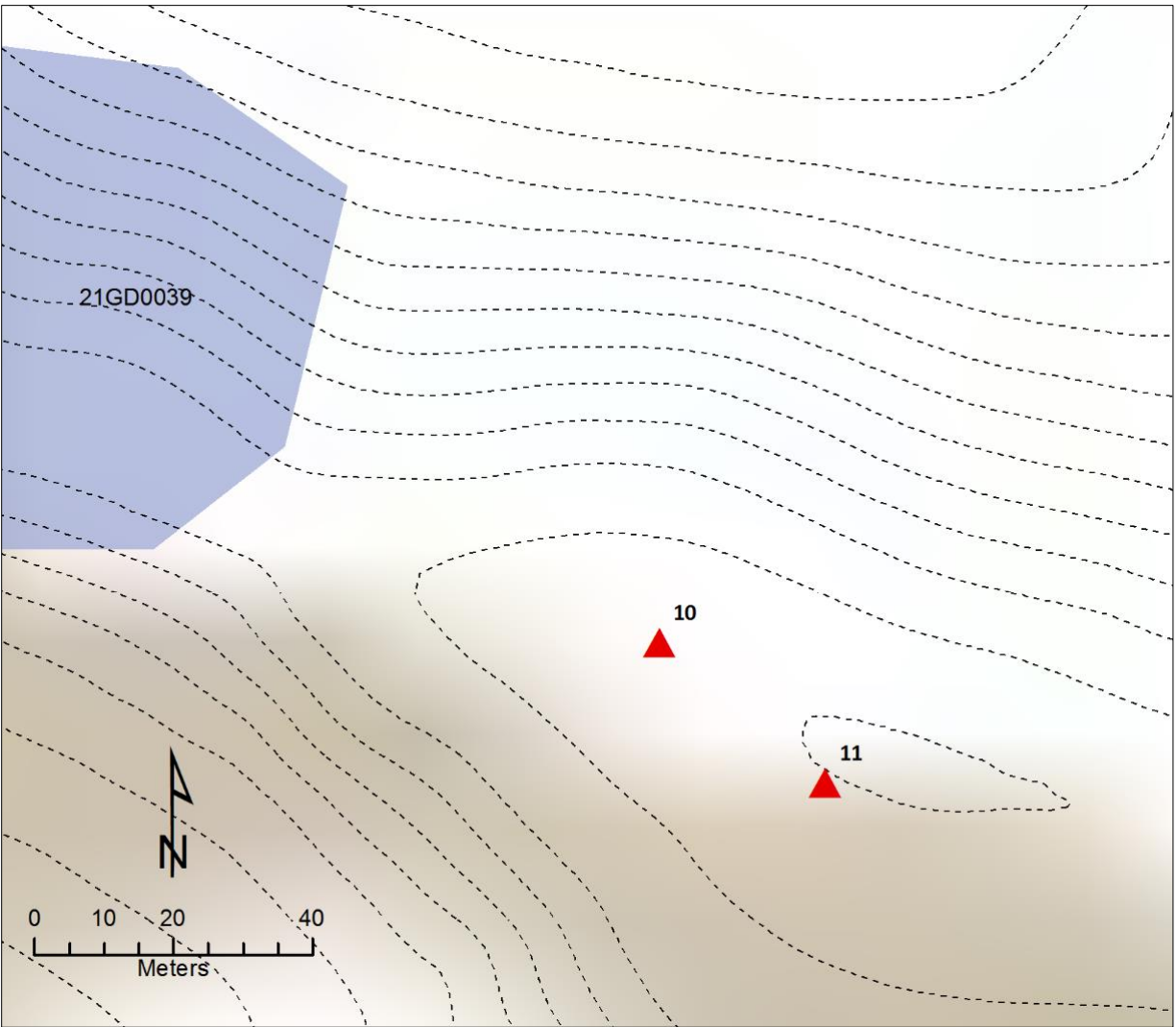


Fig. 6A-10: Cairn ID 10

<b>Cairn ID</b>	10
<b>OSA Site Number</b>	21GD39
<b>Elevation (m)</b>	295.05
<b>Mean Diameter (m)</b>	2.43
<b>Estimated Orig. Height (m)</b>	1.70
<b>Estimated Orig. Volume (m3)</b>	5.13
<b>Viewshed Area (m2)</b>	11,787,595
<b>% Other Cairns Visible</b>	85%

Table 6A-10: Cairn ID 10

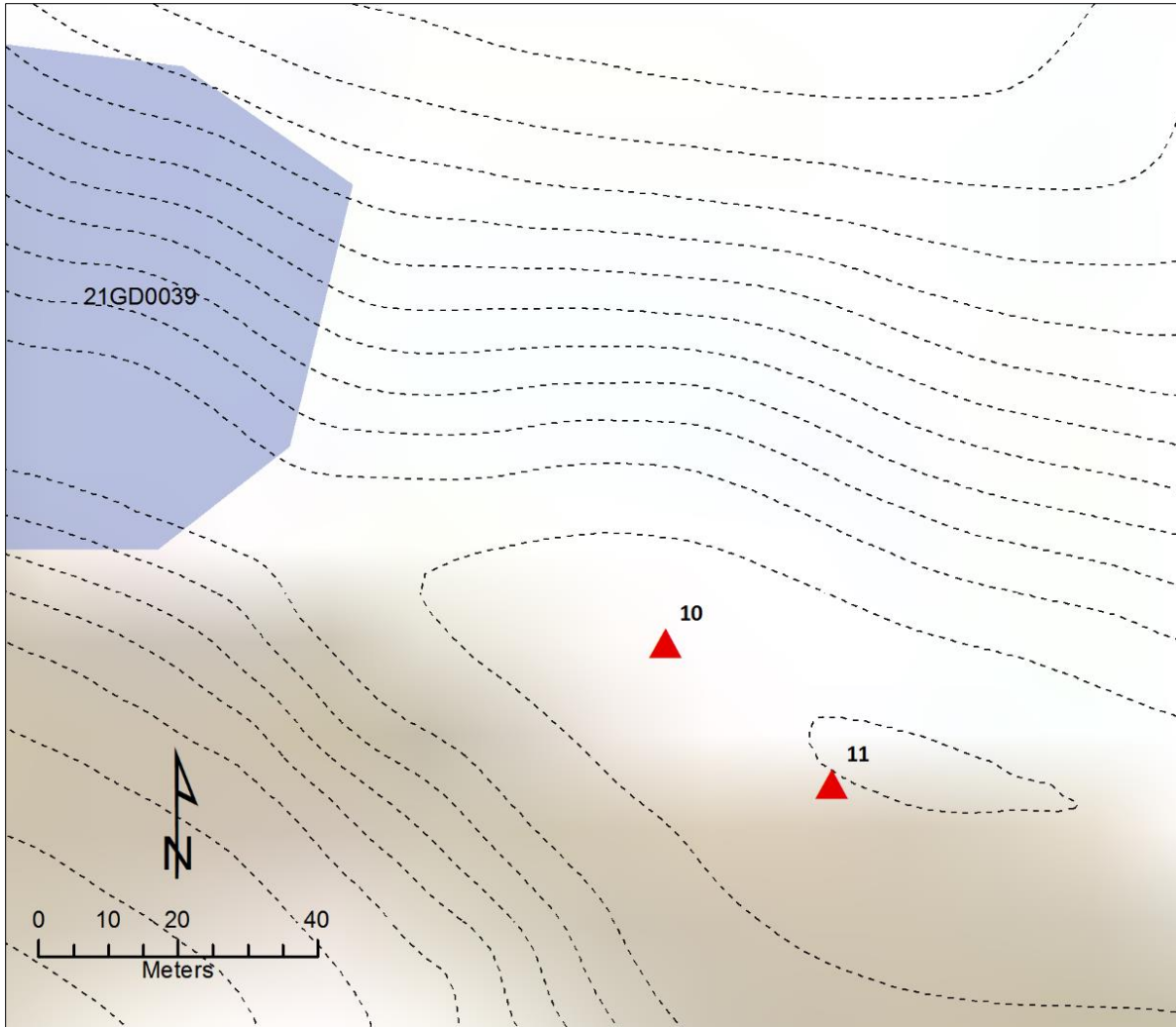


Fig. 6A-11: Cairn ID 11

<b>Cairn ID</b>	11
<b>OSA Site Number</b>	21GD39
<b>Elevation (m)</b>	295.35
<b>Mean Diameter (m)</b>	2.74
<b>Estimated Orig. Height (m)</b>	1.92
<b>Estimated Orig. Volume (m3)</b>	7.35
<b>Viewshed Area (m2)</b>	11,787,595
<b>% Other Cairns Visible</b>	85%

Table 6A-11: Cairn ID 11



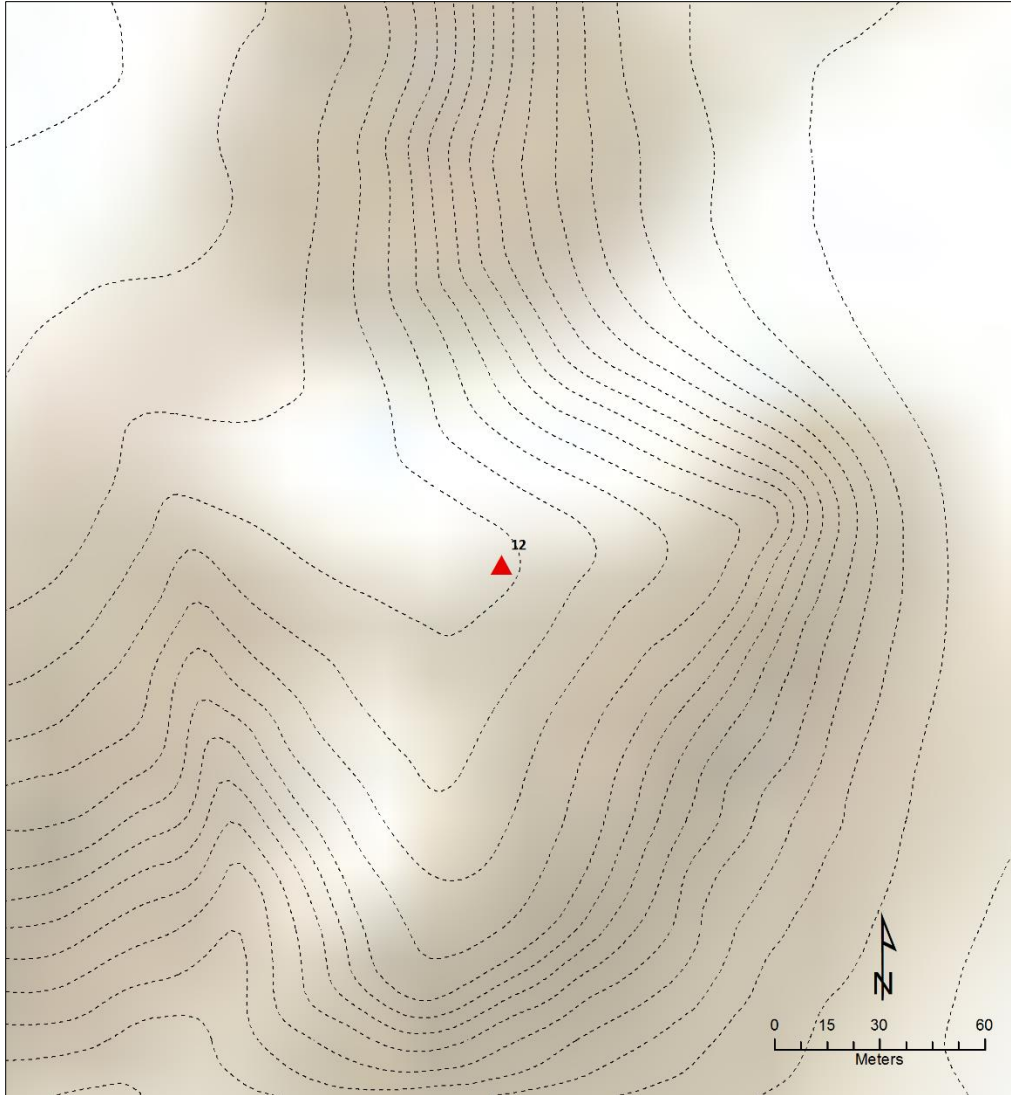


Fig. 6A-12: Cairn ID 12

<b>Cairn ID</b>	12
<b>OSA Site Number</b>	21GD309
<b>Elevation (m)</b>	293.52
<b>Mean Diameter (m)</b>	1.52
<b>Estimated Orig. Height (m)</b>	1.07
<b>Estimated Orig. Volume (m3)</b>	1.27
<b>Viewshed Area (m2)</b>	9,062,693
<b>% Other Cairns Visible</b>	85%

Table 6A-12: Cairn ID 12

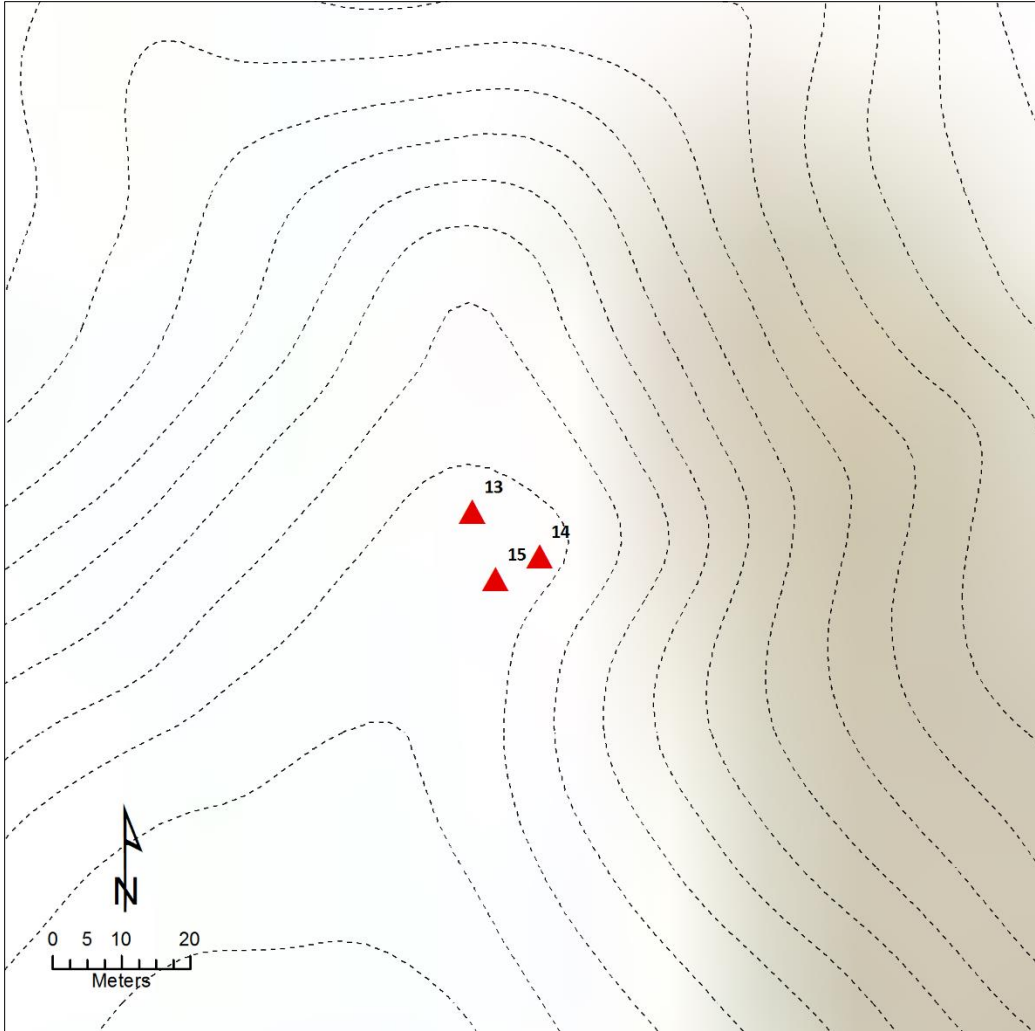


Fig. 6A-14: Cairn ID 14

<b>Cairn ID</b>	14
<b>OSA Site Number</b>	21GD310
<b>Elevation (m)</b>	291.08
<b>Mean Diameter (m)</b>	2.00
<b>Estimated Orig. Height (m)</b>	1.40
<b>Estimated Orig. Volume (m3)</b>	2.86
<b>Viewshed Area (m2)</b>	12,878,968
<b>% Other Cairns Visible</b>	85%

Table 6A-14: Cairn ID 14



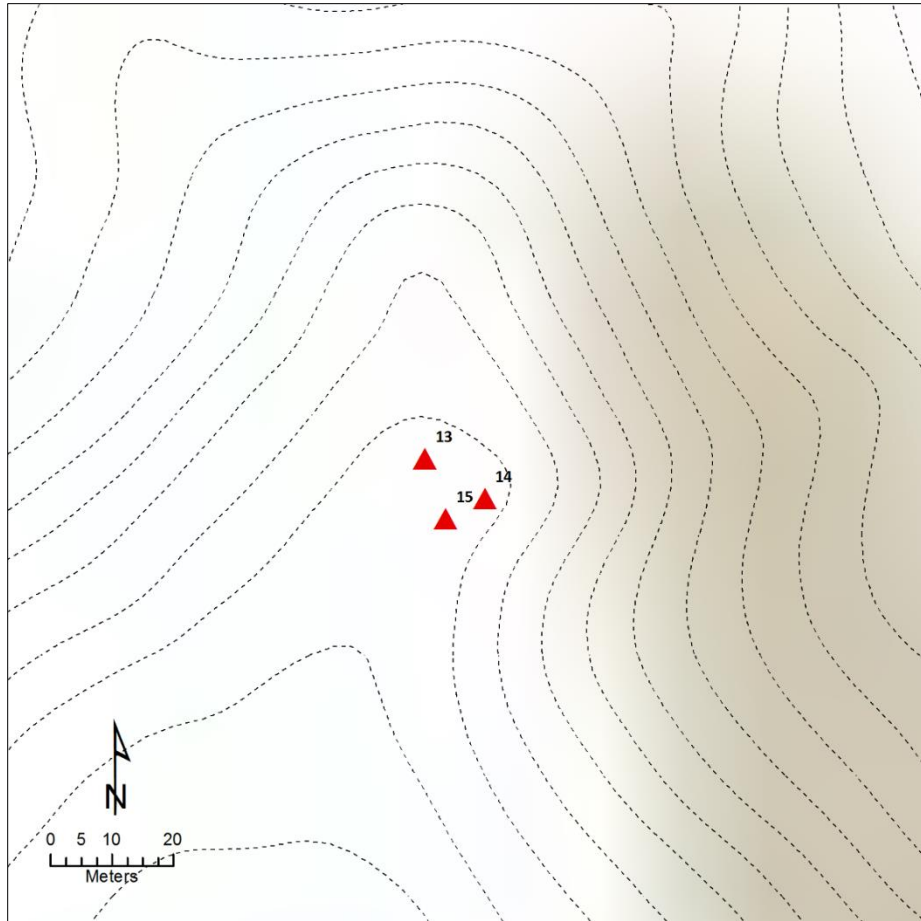


Fig. 6A-15: Cairn ID 15

<b>Cairn ID</b>	15
<b>OSA Site Number</b>	21GD310
<b>Elevation (m)</b>	291.69
<b>Mean Diameter (m)</b>	3.38*
<b>Estimated Orig. Height (m)</b>	2.36*
<b>Estimated Orig. Volume (m3)</b>	13.74*
<b>Viewshed Area (m2)</b>	12,878,968
<b>% Other Cairns Visible</b>	85%

Table 6A-15: Cairn ID 15

\*The original diameter of the feature was very difficult to ascertain due to a wide scatter of stones and legal site protection under MS 307.08, which prohibits any further molestation of the stone feature site. Therefore, these specific values are dubious.